



 **Product of Alumroll Novin co.**

Architectural Aluminum Systems
Technical Catalogue - 2024





Alumroll Novin co.

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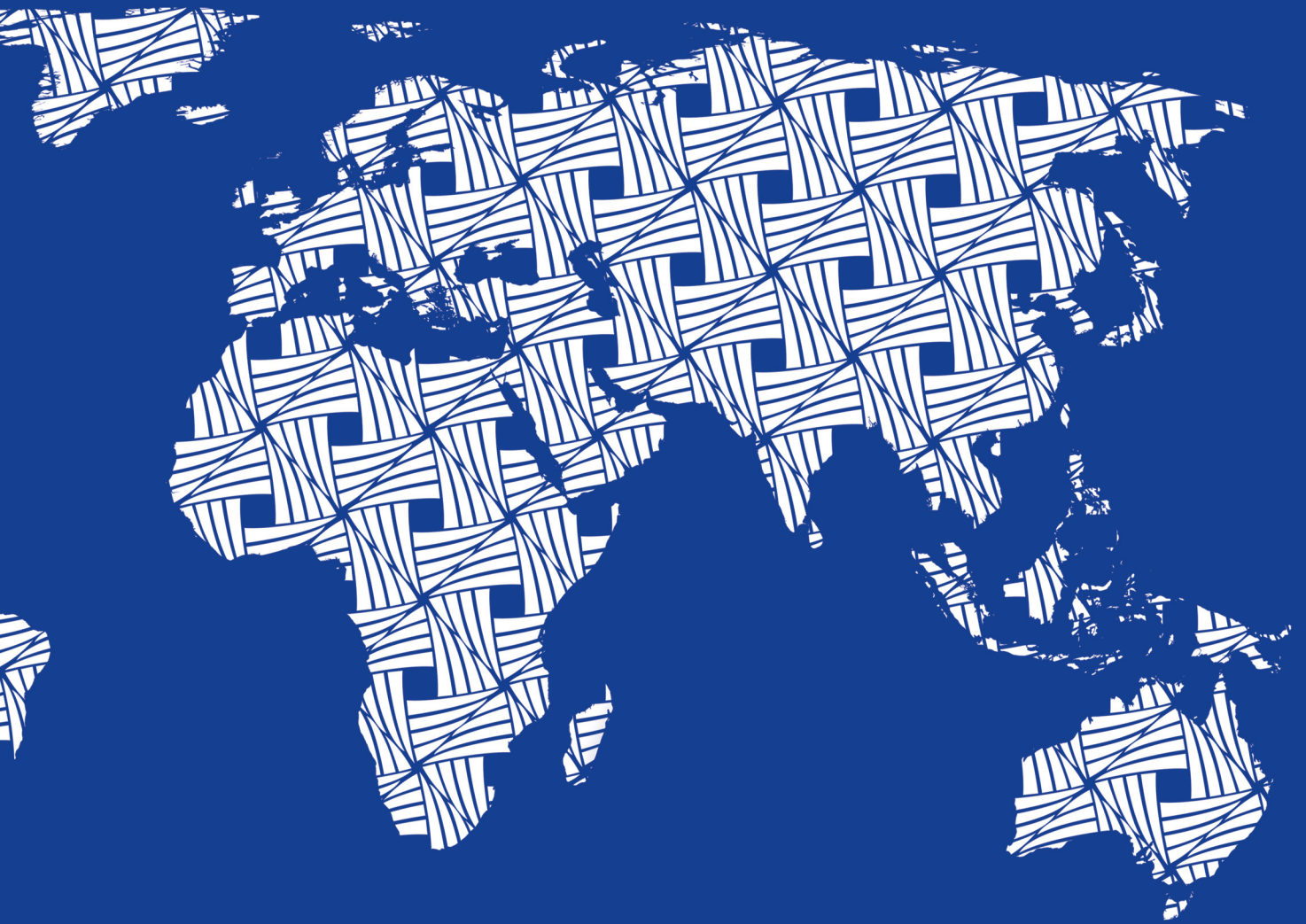


- ۱_ دارای گواهینامه فنی از مرکز تحقیقات راه، مسکن و شهرسازی
- ۲_ دارای علامت استاندارد ایران
- ۳_ واحد نمونه صنعتی استان مرکزی در سال ۱۴۰۰
- ۳_ واحد نمونه صنعتی کشوری سال ۹۶
- ۴_ واحد نمونه صنعتی استان مرکزی در سال ۹۵
- ۵_ واحد ساعی و تلاشگر استان مرکزی در سال ۹۴
- ۶_ واحد نمونه صنعتی استان مرکزی در سال ۹۳
- ۷_ واحد نمونه صنعتی استان مرکزی در سال ۹۲
- ۸_ واحد نمونه صنعتی استان مرکزی در سال ۹۰



صادرات محصولات به کشورهای مختلف

Exporting to Several Countries



صنایع آلومرول نوین

- بزرگترین صادر کننده مقاطع آلومینیومی ایران
- اولین و بزرگترین صادر کننده مقاطع آلومینیومی به کشورهای مشترک المنافع (CIS)
- رشد ۱۰۰ درصدی صادرات در سال ۱۴۰۱ نسبت به سال گذشته
- تنها صادر کننده مقاطع آلومینیومی به آفریقا و اروپا
- تنها صادر کننده محصولات آلومینیومی به سوریه
- عضویت در اتاقهای مشترک بازرگانی

ALUMROLL NOVIN CO.

- The biggest Aluminum Profile Exporter of Iran
- The First and the Biggest Aluminum Exporter to CIS Countries
- 100 percent growth of Export Rate of 2022 in compare to the last year
- The Solo Exporter of Aluminum Profiles to Europe and Africa
- The Solo Exporter of Aluminum Products to Syria
- Member of Joint Chambers of Commerce (between Iran and other countries)

• Italy	• ایتالیا
• Germany	• آلمان
• Iraq	• عراق
• Turkey	• ترکیه
• Bahrain	• بحرین
• Afghanistan	• افغانستان
• Turkmenistan	• ترکمنستان
• Armenia	• ارمنستان





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صنایع آلومرول نوین

ALUMROLL NOVIN CO.

بزرگترین تولید کننده انواع محصولات آلومینیومی کشور

تداعی قدرت و صلابت بخش خصوصی



سابقه فعالیت شرکت صنایع آلومرول نوین در حوزه صنعت آلومینیوم کشور به حدود سال ۱۳۵۲ شمسی و احداث کارخانه آلومرول در اراک باز می‌گردد. در آن زمان، کارخانه آلومرول با بکارگیری مدرن‌ترین و به روزترین سیستم‌های ریخته‌گری و هموژنایزینگ بیلت آلومینیوم و نیز پرسهای مدرن اکستروژن Schloemann، یکی از بزرگترین تولیدکنندگان مقاطع آلومینیومی در ایران و خاورمیانه لقب گرفت و سالها بعنوان برترین تولیدکننده مقاطع آلومینیومی ساختمانی در کل کشور مطرح بود. اما با افزایش تقاضای کیفی و کمی مقاطع آلومینیومی در صنایع مختلف، امکانات موجود در این شرکت نتوانست پاسخگوی تمام این نیازها باشد. لذا گوی رقابت را به برخی از رقبای داخلی و خارجی واگذار کرد. با واگذاری کارخانه آلومرول به بخش خصوصی در سال ۱۳۸۶ و با بهره‌گیری از توان فنی و بازرگانی صنایع آلومینیوم پردیس و نیز بهینه‌سازی و بهبود شرایط کیفی و فنی خطوط تولید قدیمی و همچنین افزودن خطوط تولید رنگ پودری و اکستروژن جدید به مجموعه، این شرکت تحت عنوان صنایع آلومرول نوین، نه تنها در بخش ساختمان، که در سایر صنایع دیگر نیز توانست مجدداً به سطح اول تولید کنندگان محصولات آلومینیومی باز گردد.

با این حال با توجه به گسترش روزافزون استفاده از فلز آلومینیوم در صنایع گوناگون و لزوم افزایش کیفیت محصولات آلومینیومی و کاهش بهای تمام شده این محصولات از طریق استقرار خطوط تولید پیشرفته و به روز دنیا و ورود فن‌آوری‌های نوین این صنعت، بمنظور تأمین نیازمندی‌های بازارهای داخلی و خارجی، جلوگیری از خام‌فروشی، ایجاد ارزش افزوده بالا و دستیابی به توان رقابت در بازارهای صادراتی و توجه به این نکته که محل فعلی شرکت در محدوده شهری واقع شده و امکان توسعه فضاهای تولیدی برای آن وجود نداشت، از سال ۱۳۸۸ مطالعات اولیه مربوط به به احداث اولین و بزرگترین شهرک اختصاصی صنعت آلومینیوم کشور را در زمینی به مساحت ۳۶ هکتار در شهرک صنعتی شماره ۳ اراک آغاز نمود که ۲۵ هکتار از آن به عنوان سایت شرکت صنایع آلومرول نوین و ۱۱ هکتار آن نیز جهت طرح توسعه شرکت روان‌گداز پردیس اختصاص داده شده است که فاز اول مجموعه صنایع آلومرول نوین تا ۷۰٪ به بهره‌برداری رسیده و ادامه پروژه نیز در حال انجام می‌باشد. همچنین، عملیات ساخت شرکت روان‌گداز پردیس در فاز اول با زیربنایی به مساحت ۲۱،۰۰۰ متر مربع و در همین رابطه، پس از مذاکره با بزرگترین و معتبرترین تأمین کنندگان انواع ماشین‌آلات و فن‌آوری‌های صنعت آلومینیوم در دنیا و انجام بازدیدهای متعدد فنی و بازرگانی، اقدام به واردات ماشین‌آلات گوناگون در قالب طرح توسعه هولدینگ آلومرول نمود. این طرح، شامل بروزرسانی و نوسازی واحدهای مختلف از جمله ریخته‌گری، قالب‌سازی، اکستروژن، آنودایزینگ، رنگ پودری و طرح چوب و انتقال تکنولوژی در بخش‌های مختلف می‌گردد که براساس آن، فاز اول طرح اجرا شده و هم اکنون به بهره‌برداری رسیده‌است.





Introduction of ALUMROLL NOVIN CO.



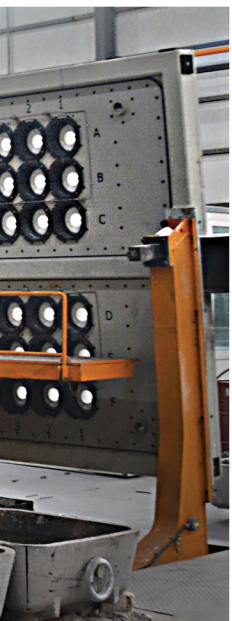
The background of Sanaye Alumroll Novin Co. in field of aluminium dates back to 1973, when the Alumroll factory was established in Arak. At that time, Alumroll factory used to be named as one of the greatest producers of aluminium profiles in Iran and middle east for many years, by using the best and latest aluminium billetcasting and homogenizing systems and SCHOLEAMANN modern extrusion presses.

However, with increasing the market's quality/quantity demand, the existing facilities of the company was not sufficient to meet the expectations of the customers and it ceded a part of the market to its competitors.

After Iranian government cession of the company to the private sector in 2008, the technical and commercial facilities of Paradise Aluminium Industries – new owner – was utilized to restart the production lines, modernization of machineries and adding new production equipment including powder coating lines and extrusion presses, the company regained its position in production of aluminum products, not only in architectural applications, but also in industrial and non-constructional sections, under the new name of 'Sanaye Alumroll Novin Co.'.

Anyway, due to expanding of using aluminium metal in different industries and vital need to enhance the quality of aluminium products by means of establishing modern and up-to-date production lines and latest technologies in order to meet the local and international market demands, preventing raw-sale, increasing value-added and obtaining the capability of competition in international markets, and since the company was located in an urban area and it was not possible to develop the production spaces, the initial studies of construction of the first and the biggest exclusive aluminum industrial town of the country started in an area of 36 hectares. Around 25 hectares of this area is allocated to Sanaye Alumroll Novin company and the rest is for Ravan Godaz Pardis company. The first phase of Sanaye Alumroll Novin Company has 70% progress and the rest of the project is underway. Furthermore, after technical and commercial negotiations with a large number of reputable global suppliers of machineries and technologies in the field of Aluminium, the first phase of Ravan Godaz Pardis company was started with construction of 21,000 square meter of production halls, and importing various machineries and production lines afterwards. This plan included updating and upgrading production plants including cast house, die shop, extrusion, anodizing, powder coating and sublimation and know-how transfer in different fields based on which the first phase has been completed and is in operation.





واحد ریخته گری Casting Plant



فاز اول طرح توسعه شامل راه اندازی کوره های ذوب و نگهدارنده کچ شونده ۳۰ و ۵۰ تنی آلومینیوم، سیستم ریخت بیلت آلومینیومی به روش ایراسلیپ (airslip) به ظرفیت ۱۶۰ تن در روز، واحد هموژنایزینگ بیلت های آلومینیومی به ظرفیت ۲۴۰ تن در روز و سیستم کامل جابجایی، برش، مارکینگ، بسته بندی و توزین بیلت های ریخت شده در این واحد است.

ماشین آلات راه اندازی شده در این بخش از جدیدترین فناوری های روز دنیا بهره می برند که از آن جمله می توان به استفاده از مشعل های Regenerative، سیستم کنترل اتمسفر کوره و گاززدایی از کف کوره (Porous Plugs) برای کوره های ذوب و نگهداری، بکارگیری دستگاه ریخت بیلت آلومینیوم به روش ایراسلیپ برای اولین بار در کشور با قابلیت ریخت بیلت های ۶ تا ۱۰ اینچ، تجهیزات انبارش و جابجایی بیلت آلومینیوم به صورت کاملاً اتوماتیک، کوره های هموژنایزینگ بیلت آلومینیوم به روش Batch Type هریک به ظرفیت ۴۰ تن به همراه سیستم خنک کننده و تثبیت کننده عملیات هموژنایزینگ، و سیستم های برش در طول های بلند و کوتاه، بسته بندی، مارکینگ و توزین کاملاً اتوماتیک اشاره کرد.



In the framework of the first phase of development plan, the 30 ton and 50 ton capacity tiltable melting/holding furnaces, 160 ton/day capacity airslip billet casting system, 240 ton/day capacity aluminium billet homogenizing plant with automatic stackers and de-stackers, cutting, marking, bundling and packing and weighting systems were installed.

The machineries of this plant use the latest technology in the world, including:

- Regenerative burners for better thermal performance and saving energy up to 30%
- Furnace atmosphere control system
- Porous plugs for degassing from the bottom of the furnaces
- Airslip casting system for 6 to 10 inch billets which has been used for the first time in Iran
- Fully automatic billet stackers and de-stackers
- Batch type 40 ton/batch capacity homogenizing furnaces
- Homogenizing stabilizer system with 40 ton/batch capacity cooling cabinets
- Long and short billet cutting systems
- Robotic bundling section
- Automatic marking and weighing devices



واحد طراحی، ساخت و عملیات حرارتی قالب‌های اکستروژن
Extrusion Die Designing, Manufacturing and Heat
Treatment Plant

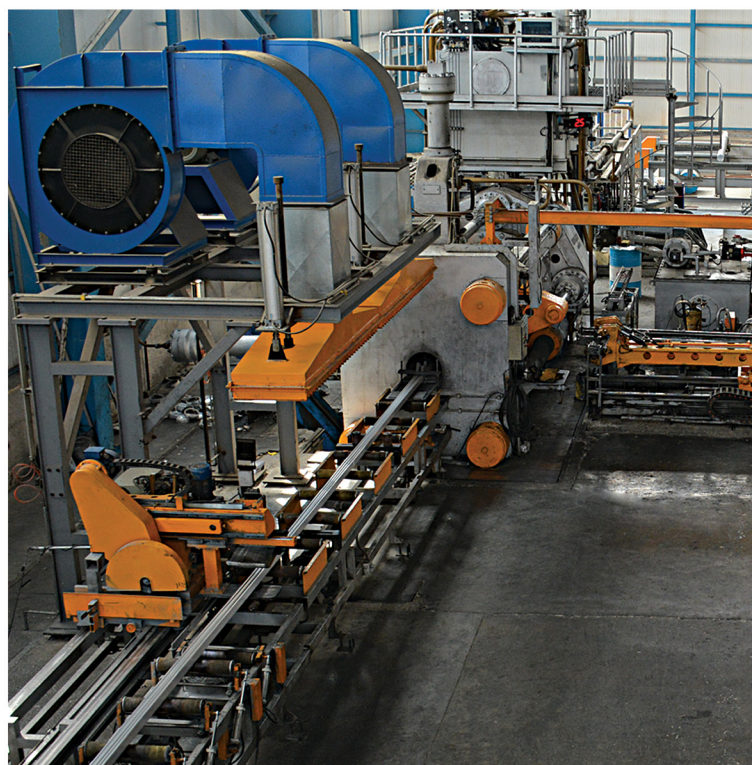


واحد ساخت قالب‌های اکستروژن این مجموعه، از نظر وسعت، امکانات و ظرفیت یکی از واحدهای کم نظیر در کشور است که با بهره‌گیری از برترین فولادهای گرم‌کار اروپایی (ویژه ساخت قالب‌های اکستروژن که بطور مستقیم توسط واحد بازرگانی خارجی مجموعه تأمین می‌گردد)، ابزارآلات و نرم افزارهای پیشرفته طراحی، شبیه‌سازی و اصلاح قالب و تجهیزات مدرن CNC و با استفاده از تخصص واحد مهندسی، قادر به طراحی، ساخت و نگهداری انواع قالب‌های صنعتی و ساختمانی مورد نیاز صنعت اکستروژن تا قطر ۶۰۰ میلیمتر است. همچنین، باتوجه به اهمیت انجام صحیح فرایند عملیات حرارتی و نیتراسیون بر روی قالب‌های اکستروژن و تأثیر آن بر کیفیت و طول عمر آنها، عملیات حرارتی با استفاده از کوره‌های مدرن بر روی قالب‌ها انجام می‌شود. ضمن آنکه به منظور بهبود کیفیت سطحی پروفیل‌های اکستروژنی و افزایش طول عمر قالب‌ها، فرایند نیتراسیون با استفاده از مدرن ترین کوره‌های نیتراسیون منطبق بر آخرین فن‌آوری و استانداردهای روز دنیا در داخل خود مجموعه صورت می‌پذیرد.

The company's die shop is unique in the country in terms of work space, equipment and capacity. Using high quality European hot work tool steel bars (especial for making extrusion dies) purchased directly by foreign trade department of the company, modern software for designing, simulating the dies and CNC machineries, together with the expertise of the engineering department, the company is capable to design, manufacture and maintain all kind of industrial and architectural extrusion dies, required in the field of extrusion industry, up to a diameter of 600 mm.

Furthermore, taking the importance of correct heat treatment and nitration process on extrusion dies and its essential effect on their quality and lifetime into consideration, the heat treatment process is done on extrusion dies by modern furnaces. In addition, to reach the surface hardness of extrusion dies the nitriding process is performed by the most modern gas nitration furnace inside the company in accordance with the latest international standards.





واحد اکستروژن Extrusion Plant



از تجهیزات موجود در این بخش می‌توان به کوره‌های پیش‌گرم بیلت با طول بلند، سیستم برش گرم بیلت (Hot Shear, Hot Sow) کوره‌های پیش‌گرم قالب بصورت Batch Type، مجموعه‌ای از پرس‌های اکستروژن اروپایی شامل دو دستگاه پرس اکستروژن ۱۴۵۰ تنی ۵ و ۶ اینچ، دو دستگاه پرس اکستروژن ۲۰۰۰ تنی ۷ و ۸ اینچ، یک دستگاه پرس اکستروژن ۲۵۰۰ تنی ۸ و ۱۰ اینچ و یک دستگاه پرس اکستروژن ۳۱۵۰ تنی ۱۰ و ۱۲ اینچ، مجهز به جدیدترین سیستم‌های هیدرولیک و اتوماسیون، سیستم کوئنچینگ مقاطع تولیدی، کنترل دمای پروفیل خروجی و بکارگیری میزهای اکستروژن مجهز به دبل پولر، دستگاه‌های استرچ و برش نیمه اتوماتیک اشاره کرد. خطوط اکستروژن این مجموعه قادر به تولید مقاطع آلومینیومی در گروه‌های آلیاژی ۱۰۰۰ تا ۷۰۰۰ تا عرض ۴۰۰ میلی‌متر می‌باشند. همچنین کوره‌های ایجینگ به ظرفیت ۲۴ تن برای پروفیل‌های آلومینیومی تا طول ۱۴ متر در مجموعه مستقر شده و در حال بهره‌برداری می‌باشند.

Log preheating furnaces with hot shears/hot saws, batch type die heating ovens, complete set of European extrusion presses including 2 x 1450 ton 5-6 inch, 2 x 2000 ton 7-8 inch, 1 x 2500 ton 8-10 inch and 1 x 3150 ton 10-12 inch machines equipped with latest hydraulic and automation systems, quenching systems, run-out tables equipped with double pullers, semi-automatic stretcher and cold saw machines are used in extrusion lines in order to produce aluminium sections in alloy groups 1000-7000 with the maximum width of 400 mm. in addition, the ageing process is done in 24 ton/batch capacity ageing ovens for the profiles to the length of 14 m.



واحد عملیات حرارتی و کار سرد Heat Treatment and Cold Working Plant



واحد عملیات حرارتی و کار سرد با در اختیار داشتن سه دستگاه کوره عمودی عملیات حرارتی انحلالی (Solution Treatment) مجهز به سیستم کوئنچ با سرعت بالا، پیشرفته‌ترین روشهای گردش هوا و اندازه گیری کنترل یکنواختی دما، سیستم جدایش گازهای احتراق از محفظه بارگیری کوره، قادر به انجام انواع عملیات حرارتی انحلالی بر روی کلیه مقاطع از آلیاژهای نوردی و ریختگی آلومینیوم تا طول ۳/۵ متر و عرض ۱ متر می باشد و همچنین در این واحد کوره‌های ایجینگ برقی و گازی با سیستم گردش هوای یکنواخت و کنترل دقیق دما به منظور انجام پیرسختی انواع آلیاژهای آلومینیوم مورد استفاده قرار می گیرد.

This plant utilizes 3 sets of vertical solution treatment furnaces, equipped with high speed quenching system, advanced air circulation and temperature uniformity controlling methods and combustion air separation system from load chamber, enabling it to perform solution heat treatment process on all roll milling and casting alloys to the length of 3.5 meters and width of 1 meter. In addition, electrical and gas heated ageing furnaces equipped with uniform air circulation and temperature precise control are used to perform ageing process on different aluminium alloys.

Anodizing Plant





واحد آنودایزینگ Anodizing Plant



امروزه با گسترش روزافزون استفاده از پروفیل‌های آلومینیومی بخصوص در صنایع ساختمانی و همچنین صنایع دیگر و تغییر ذائقه بازار و انتظار مشتریان برای برخورداری از بهترین کیفیت تولیدی، فرایند پوشش سطحی مقاطع آلومینیوم به روش آنودایزینگ طبیعی (نقره‌ای) و رنگی، به یکی از بخشهای اصلی چرخه تولید پروفیل‌های آلومینیومی مبدل شده است که علاوه بر نقش فنی و تکنیکی، آن را به یکی از جنبه‌های دکوراتیو و تزئینی مقاطع آلومینیومی مبدل ساخته است. برخورداری از یک واحد آنودایزینگ با فن‌آوری روز دنیا هنگامی اهمیت بیشتری پیدا می‌کند که انجام این فرایند، نیازمند کنترل دائمی کلیه پارامترهای مربوطه از جمله میزان جریان برق، ضخامت لایه پوششی، یکنواختی رنگ و لزوم استفاده از مواد شیمیایی با کیفیت بسیار بالا و کنترل ترکیب شیمیایی آن در آنودایزینگ مقاطع آلومینیومی می‌باشد. یکی از مشکلاتی که بسیاری از واحد های آنودایزینگ با آن مواجه هستند، عدم امکان کنترل یکنواختی رنگ است که حتی با وجود بکارگیری، فاکتورهای ثابت آنودایزینگ، به دلیل دستی بودن عملیات و وجود خطاهای انسانی، در بسیاری از موارد قابل کنترل نیست.

با درک این موضوع و بمنظور ارائه کیفیتی درخور انتظارات مشتریان و دستیابی به میزان تولید مورد نیاز، این شرکت نسبت به راه اندازی خط آنودایزینگ تمام اتوماتیک به ظرفیت ۶۰ تن در روز از معتبرترین سازنده اروپایی خطوط آنودایزینگ نموده‌است. این واحد، بزرگترین و پیشرفته‌ترین واحد آنودایزینگ مقاطع آلومینیومی در کشور و یکی از چند نمونه انگشت‌شمار این خط در منطقه خاورمیانه و غرب آسیا است، که با بهره‌گیری از جدیدترین فناوری روز دنیا، قادر به انجام عملیات الکتروکالرینگ، پولیش شیمیایی مقاطع آلومینیومی و عملیات آبکاری به روش غوطه‌وری در چهار رنگ مختلف بصورت همزمان می‌باشد. علاوه براین، با بهره‌گیری از تجهیزات گوناگون قادر به انجام پوشش آنودایز با طرح های مختلف بر روی مقاطع مختلف آلومینیومی می‌باشد.

Nowadays, with expanding the use of aluminium profiles in construction and other industries together with the evolution of aluminium market and extensive changes in taste and demands of customers, the natural anodizing and electro coloring surface treatment processes are considered as one of the most important parts of aluminium profile production chain. These procedures not only have technical and protective roles, but also are one of the decorative aspects of aluminium profiles. Having a modern anodizing plant becomes even more important when it is understood that achieving required quality needs permanent control on all relevant parameters like electric current, anodizing layer thickness and color uniformity and high quality chemicals together with chemical composition control.

One of the problems which many of anodizing plants face is the failure in controlling the color uniformity, which cannot be solved even with utilizing the anodizing fixed factors, due to the manual nature of the operations and human errors.

Realizing this and to meet the quality appropriate to the demand of customers and achieve the required production capacity, the company installed a fully automatic anodizing line with capacity of 60 tons per day, manufactured by most reliable European supplier. As the biggest and newest one, this QUALANOD authenticable plant is the pioneer of quality/quantity in the country and one of the few samples of this line in the middle east and west Asia regions, which can provide different surface treatment processes on aluminium profiles such as electro coloring, chemical polishing, immersion coloring in four different colors simultaneously. In addition, by utilizing various machineries / devices, it is able to perform anodization coating with various patterns on different sections.





واحد رنگ پودری

Powder Coating Plant



یکی دیگر از روشهای پوشش سطحی مقاطع آلومینیوم، استفاده از ترکیبات پلیمری به صورت پاشش پودرهای پلی استر و اپوکسی پلی استر به روش الکترواستاتیک بر روی سطح و فراوری پودر در کوره های پخت در دمای ۱۸۰ تا ۲۰۰ درجه سانتی گراد است. باتوجه به تنوع بی نهایت رنگ ها و طرح های پودر، با این روش می توان گستره وسیعی از گزینه ها در پوشش سطحی را در اختیار مصرف کنندگان قرار داد. این مجموعه با در اختیار داشتن دو واحد پیشرفته رنگ پودری به روش الکترواستاتیک، شامل تجهیزات مدرن پاشش و کوره های پخت رنگ، بزرگترین و مجهزترین واحد رنگ پودری کشور است که علمیات پوشش رنگ بر روی انواع مقاطع آلومینیومی تا طول ۱۴ متر و ظرفیت ۶۰ تن را در رنگ ها و طرح های مختلف اجراء می کند.

One of the other methods of surface coating of aluminium profiles is using polymer compositions by spraying polyester and epoxy polyester powders electrostatically on profile surfaces and processing the powder in baking furnaces in the temperature of 180~200°C. Due to unlimited variety of colors and designs of powders, this process offers a wide range of options to the customers. The 2 electrostatic powder coating plants of the company are the biggest and most equipped powder coating plants in the country and perform powder coating of aluminium profiles to the length of 14 meters and capacity of 60 tons per day in different colors and designs.



واحد دکورال Sublimation Plant

به کارگیری مقاطع آلومینیومی در صنعت ساختمان و دکوراسیون داخلی، لزوم ایجاد تنوع در فرایند رنگ را ایجاب می‌نماید که در همین راستا می‌توان به فرایند ایجاد طرح‌ها و نقش‌های مختلف، همچون طرح چوب، مرمر، گل و حتی مناظر طبیعی اشاره کرد. در این روش ابتدا با استفاده از رنگی‌های پلی‌اورتان مقاوم در برابر هوازگی، پوششی بر روی سطح مورد نظر ایجاد گردیده و در مرحله بعد، درکوره‌هایی به دمای ۲۰۰ درجه در مدت ۱۰ دقیقه، طرح مورد نظر موجود بر روی فیلم کشیده شده روی پروفیل، با استفاده از حرارت بر روی پوشش رنگ تثبیت می‌گردد. واحد دکورال مجموعه با به کارگیری جدیدترین و مدرن‌ترین تجهیزات تمام اتوماتیک دکورال ساخت شرکت SEF ITALIA قادر به تولید روزانه ۳۰ تن انواع مقاطع و صفحات آلومینیومی با طرح‌های متنوع می‌باشد.

The application of aluminium profiles in construction industry and interior architecture necessitates to create diversity in painting, among which wood, marble, flowers and even natural landscapes can be mentioned. This process is generally named as sublimation. In this method, the desired surface is first covered by polyurethane weathering resistant materials. Then the film containing the desired design is pulled over the profile. Profiles are heated for 10 minutes in 200°C in special furnaces, in order to stabilize the design on the powder coating layer. The sublimation unit of the company uses very modern fully automatic machineries made by SEF ITALIA, to produce 30 tons/day of various aluminium sections and plates with different designs.





واحد تولید پروفیل های ترمال بریک

Thermal Break Profiles Production line



در این واحد تولید پروفیل های ترمال بریک که در صنعت ساختمان مورد استفاده قرار می گیرند، انجام می گردد. در این واحد، جای گذاری نوار پلی آمید در پروفیل های آلومینیومی و دوخت آن به صورت کاملاً اتوماتیک انجام می شود. از نکات مهم تولید پروفیل های ترمال بریک، کیفیت نوار پلی آمید بکاررفته و نیز کیفیت فرایند دوخت پروفیل است، بگونه ای که نوار پلی آمید بطور صحیح و محکم در پروفیل آلومینیومی قرار گرفته و دوخت می شود، این موضوع به کمک استفاده از ماشین آلات مدرن و مجهز و نوارهای پلی آمید با کیفیت بالا که توسط دستگاه های خریداری شده و در داخل خود مجموعه تولید می گردد، میسر شده است. کیفیت فرایند دوخت از طریق نمونه گیری مداوم از پروفیل های تولیدی و انجام آزمون در دستگاه های مخصوص از طریق اعمال فشار برشی بررسی و کنترل می گردد.

علاوه بر آن، به منظور حصول اطمینان از کیفیت نوار پلی آمید مورد نیاز، این مجموعه نسبت به خرید دو خط اکستروژن این نوع نوارها و قالب های مربوطه از یکی از تولیدکنندگان معتبر خارجی اقدام نموده و تولید آن در داخل مجموعه و با مرغوب ترین مواد اولیه انجام می گردد.

The thermal break profiles used in construction industry are produced in this line. The knurling, inserting polyamide strings and sewing process are done fully automatically. One of the most important factors in manufacturing thermal break profiles is the quality of the polyamide profiles and sewing process, so the polyamide string to be inserted inside aluminium profile correctly and tight. This advantage has been achieved by means of advanced machineries and improving the quality of the polyamide strips by producing them inside the holding, according to the international standards. The quality of sewing process is inspected through continuous sampling and testing in special devices by applying appropriate pressures and checking the results.

In addition, in order to ensure the quality of needed polyamide sections, the company installed two polyamide extrusion lines, purchased from one of the reliable suppliers. So the required sections are produced inside the company from the best raw materials.





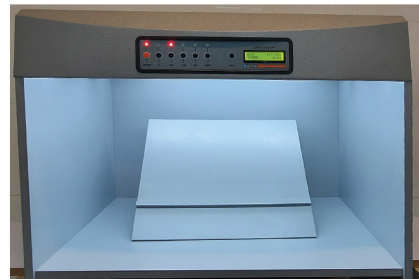
جدا از تجهیزات تولیدی که برای دستیابی به ظرفیت و مرغوبیت مورد نیاز لازم است، کنترل کیفیت و بهبود مستمر آن نیز همواره از دغدغه‌های این مجموعه بوده است. به ویژه آنکه این مجموعه وظیفه تأمین مواد اولیه و محصولات مورد نیاز طیف وسیعی از صنایع گوناگون را براساس استانداردهای مختلف برعهده دارد که برآوردن این تعهدات، جز از طریق اجرای دستورالعمل‌های دقیق کیفی و نظارت دائمی برکلیه فرایندهای تولیدی ممکن نیست. در همین راستا، کارشناسان کنترل کیفی این مجموعه با استفاده از انواع تجهیزات لازم و ارتباط دائمی با آزمایشگاه مجموعه، هریک از فرایندهای تولید و محصولات آن را در چهارچوب استانداردهای مربوطه مورد بازرسی و کنترل دقیق قرار می‌دهند تا از تطابق آن با الزامات کیفی اطمینان حاصل گردد. به منظور حصول اطمینان از کیفیت محصولات تولیدی، واحد کنترل کیفی مجموعه از آزمایشگاه‌های مجهز متالورژی، شیمیایی و رنگ پودری برخوردار است که علاوه بر مواد اولیه ورودی به مجموعه، نسبت به کنترل کیفی کلیه محصولات تولید شده در خطوط تولید براساس استانداردهای بین‌المللی و مشخصات فنی مورد نیاز اقدام می‌نماید تا از کسب رضایت‌مندی مشتریان و تداوم بهبود کیفی محصولات تولیدی مجموعه اطمینان حاصل گردد.

آزمایشگاه متالورژی مجموعه یکی از مجهزترین آزمایشگاه‌های کشور در صنعت آلومینیوم است که با دراختیار داشتن تجهیزات زیر قادر به بررسی کلیه خواص متالورژیکی، فیزیکی و مکانیکی مواد فلزی می‌باشد:

- دستگاه اندازه‌گیری هیدروژن بصورت برخط (Online) ساخت معتبرترین سازنده اروپایی که برای اندازه‌گیری و کنترل میزان هیدروژن موجود در مذاب آلومینیوم بکار می‌رود
- دستگاه کوانتومتری با قابلیت شناسایی و اندازه‌گیری کمترین مقادیر بیش از ۳۰ عنصر مؤثر در آلیاژهای مختلف آلومینیوم
- دستگاه تست کشش، فشار و خمش به منظور اندازه‌گیری خواص مکانیکی آلیاژهای تولیدی
- دستگاه میکروسکوپ متالوگرافی و پلاریزاسیون جهت بررسی ساختار مواد و مقاطع تولیدی
- دستگاه برش و پولیشر دوقلوی اتوماتیک جهت آماده‌سازی نمونه‌های متالوگرافی
- دستگاه آزمون اولتراسونیک جهت بررسی غیر مخرب عیوب داخلی مقاطع
- دستگاه اندازه‌گیری هدایت الکتریکی
- دستگاه سختی سنج ثابت و پرتابل جهت آزمون سختی مقاطع آلومینیومی
- دستگاه‌های متنوع و دقیق اندازه‌گیری ابعادی
- دستگاه میکرو-هاردنس برای اندازه‌گیری سختی سطحی قالب‌های اکستروژن
- دستگاه اسپری نمک به منظور بررسی میزان مقاومت سطح پوشش‌ده شده در برابر خوردگی
- دستگاه فام سنج به منظور بازرسی کیفیت رنگ
- دستگاه سنجش براقیت برای اندازه‌گیری میزان براقیت رنگ
- دستگاه کراس کات برای کنترل چسبندگی رنگ پودری روی سطح پروفیل
- دستگاه ضخامت سنج بابت کنترل ضخامت لایه رنگ

در آزمایشگاه شیمی واحد آنودایزینگ، عوامل مؤثر بر فرایند از جمله غلظت عناصر شیمیایی موجود در وان‌های مختلف بطور دائمی اندازه‌گیری می‌شود تا با کنترل پارامترهای فرایند، محصولی با کیفیت تولید شده و در اختیار مشتریان قرار گیرد. علاوه بر آن، با استفاده از جدیدترین تجهیزات، طیف رنگ آنودایز رنگی، ضخامت لایه آنودایزینگ و همچنین کیفیت لایه سیل ایجاد شده مطابق با استاندارد QUALANOD به طور دائم اندازه‌گیری و کنترل می‌شود.

آزمایشگاه رنگ پودری نیز با در اختیار داشتن گان‌ها و کوره‌های آزمایشگاهی، رنگ‌های ورودی به شرکت را قبل از ارسال به خط تولید مورد بررسی قرار می‌دهد. از دیگر آزمایش‌های این قسمت می‌توان به کنترل ضخامت لایه رنگ پوشش شده، میزان براقیت و بررسی میزان چسبندگی رنگ به پروفیل بر اساس استاندارد QUALICOAT اشاره نمود که به کمک بهترین تجهیزات خریداری شده از معتبرترین شرکت‌های اروپایی، به صورت دائم تحت آزمایش و کنترل قرار می‌گیرد. در همین رابطه و باتوجه به سطح کیفی محصولات، این مجموعه گواهی‌نامه‌های IMS، گواهی‌نامه فنی از وزارت راه و شهرسازی و همچنین گواهی‌نامه‌های ISO ۱۴۰۰۱، ISO ۹۰۰۱ و ISO ۴۵۰۰۱ را دریافت نموده است.





Beside the production facilities which are needed to achieve the desired capacity, quality control and continuous improvement has always been of the company's concerns. Especially, when this company is responsible for supplying materials and products to a wide range of industries, based on various standards. Fulfilling these expectations is possible only through implementation of precise quality instructions and permanent monitoring of production procedures. In this company, the quality control experts are responsible for monitoring and inspecting all production procedures and their products from beginning to the end in frame of appropriate standards, to ensure that any process and product comply with quality requirements. Considering the scope of company's production activities, the quality control unit employs advanced metallurgy, chemistry and powder coating laboratories in which in addition to the input raw materials, the quality of all produced products of production lines are inspected according to the international standards and customer requirements in order to ensure customers satisfaction and continuous improvement of production procedures.

The metallurgy laboratory of the company is one of the most advanced samples of the country in the field of aluminium which is able to investigate all metallurgical, physical and mechanical specifications of metallic materials, using the following equipment:

- Online hydrogen measuring device produced by one of the most reliable European manufacturers for measuring and controlling hydrogen content in liquid aluminium
- Advanced quantometer device able to identify and measure the lowest amount of more than 30 effective elements of aluminium alloys
- Tension, pressure and bending test device in order to check the mechanical specifications of casted alloys
- Metallography and polarization microscope to check the microstructure of produced materials and sections
- Automatic twin cutting and polishing device for preparation of metallography samples
- Ultrasonic test device for nondestructive test of internal defects
- Electrical conductivity measuring device
- Stationary and portable hardness testers for checking the hardness of aluminium sections
- Various and precise dimensional measuring equipment
- Microhardness device in order to control the hardness of surface of the aluminium dies
- The salt spray machine in order to control the quality of the powder coating layer against corrosion
- Color-meter device for inspection of the color quality and specifications
- Glossy-meter device for checking the gloss of the colors
- The cross-cut device to check the stickiness of the powder coating to the aluminium profile surface
- The thickness-meter device for measuring the thickness of the powder coating layer

In Chemistry laboratory, the effective factors of the process especially the content of chemicals in the tanks is measured continuously to meet the quality demanded by customer and required by the standards. In addition, the electro anodizing color spectrum, the anodizing layer thickness and the quality of sealing layer is controlled continuously by means of advanced equipment and according to QUALANOD standard requirements.

Furthermore, in the powder coating laboratory, the quality of the input powders is controlled by laboratory spraying guns and ovens before sending to production lines. Moreover, the thickness of powder coating layer, gloss value and powder adhesion to the metal surface according to the QUALICOAT standard are other tests performed in this laboratory.

Due to the high quality of the products, this holding, as an IMS qualified complex, this holding has been able to achieve technical certification of the ministry of roads and urban development ISO 9001, ISO 14001 and ISO 45001 standards.



واحد ماشین سازی

Parts and Machineries Manufacturing Plant



یکی از اهدافی که در عقد قرارداد خرید ماشین آلات و تجهیزات با تأمین کنندگان خارجی دنبال می‌شود، علاوه بر بهره‌گیری از دانش فنی موجود برای ساخت و استفاده از ماشین آلات و بکارگیری تجربه کارشناسان مجموعه در اجراء و تأمین تجهیزات با بهترین کیفیت، اجراء این پروژه‌ها بصورت مشترک با تأمین کنندگان خارجی است. به این معنا که تنها بخش‌هایی از خطوط تولید و ماشین آلات که در داخل کشور قابل ساخت نبوده و یا تجهیزاتی که در داخل کشور یافت نمی‌شود توسط طرف خارجی تأمین و دیگر بخش‌ها از جمله سازه فلزی و تجهیزات گوناگون توسط شرکت صنایع آلومرول نوین و مطابق با مشخصات فنی و نظارت تأمین کننده اصلی ساخته می‌شود که انجام این موضوع موجب انتقال تکنولوژی طراحی و ساخت این تجهیزات و افزایش توان فنی شرکت می‌گردد. در همین راستا، مجموعه از سال ۱۳۹۶، اقدام به راه‌اندازی واحد ماشین‌سازی خود نمود. بایره‌گیری از مهندسين مجرب و متخصص، علاوه بر واحد طراحی مهندسی پیشرفته، با به کارگیری انواع تجهیزات ساخت سازه های فلزی، اعم از دستگاههای برش، تراش، اره، جوش، سنگ‌زنی و تست و یک واحد رنگ‌کاری مستقل، امکان طراحی و ساخت بخش‌های گوناگون مربوط به پروژه‌های ساخت و نوسازی تجهیزات را فراهم نموده است.

One of the desired goals of implementing production lines through international non-Iranian suppliers, in addition to the improve the know-how of construction of the machineries and using the existing knowledge in the holding, in order to procure the best and highest quality machineries, is to create joint projects, through which only those critical parts and accessories that cannot be manufactured or found locally are supplied by foreign supplier and other parts such as steel structures and different components will be provided by Alumroll, according to technical specifications and under supervision of supplier. That facilitates designing and manufacturing know-how transfer and increasing technical capability of this company. For this purpose, this company launched its parts and machineries manufacturing plant, in 2017. This plant performs all designing and manufacturing activities for different parts of its construction and renovation projects, using a wide range of facilities like cutting, lathe, welding, grinding, test and painting machineries.





لجستیک Logistics



In order to maintain an on time delivery and prevent any damage to the products during transportation, the company uses its wide transportation network including trailers, trucks and pickups not only for covering domestic deliveries, but also for sending the products to different countries such as Iraq, Afghanistan, Turkey, Armenia, Turkmenistan and ...

به منظور تحویل به موقع محصولات و جلوگیری از بروز هرگونه آسیب حین حمل و نقل آن، مجموعه با استفاده از شبکه گسترده لجستیک خود شامل انواع تریلر، کامیون و کامیونت علاوه بر پوشش مشتریان داخل کشور، حمل محصولات صادراتی خود را به کشورهای مختلف از جمله عراق، افغانستان، ترکیه، ارمنستان، ترکمنستان و ... به انجام می‌رساند.

تحقیق و توسعه Research and Development



In addition to achieving the latest machineries, equipment and technologies around the world in the field of producing aluminium sections, the R&D department of the company try to provide the customers with the best services through constant connection with reputable production companies and the provider centers of technical knowledge and know-how transfer, around the world.

One of the company main goals within the framework of the R&D activities is providing new systems for constructional and architectural profiles and their accessories based on climate, geography and culture of Iran and according to the latest international standards. To this end, a team of experts of the company was assigned to conduct extensive studies for designing and executing of those systems in consultation with most reliable Iranian and non-Iranian companies, led to design of a series of new profile systems. In the near future, the manufacturing, production and standard tests will be completed and the systems will be available for construction companies and other end-users via ORGADATA software.

علاوه بر دستیابی به جدیدترین تجهیزات، ماشین‌آلات و فن‌آوری‌های روز دنیا در زمینه تولید مقاطع آلومینیومی کارشناسان بخش تحقیق و توسعه این مجموعه در راستای ارائه بهترین خدمات به مشتریان بطور مستمر با معتبرترین شرکت‌های تولیدی و مجموعه‌های ارائه‌کننده دانش فنی و انتقال تکنولوژی در سراسر دنیا در ارتباط بوده و همواره در تلاش برای بهبود مستمر تکنولوژی و محصولات تولیدی مجموعه می‌باشند.

یکی از اهدافی که در چهارچوب تحقیق و توسعه در این مجموعه مدنظر بوده‌است، ارائه سیستم‌های پروفیل ساختمانی شامل مقاطع در و پنجره و نمای ساختمان و سایر مقاطع وابسته با توجه شرایط جغرافیایی، اقلیم و فرهنگ ایرانی و البته منطبق با آخرین استانداردهای بین‌المللی می‌باشد. در همین راستا، تیمی از متخصصین مجموعه مطالعات گسترده‌ای را برای طراحی و اجراء سیستم‌های جدید با مشاوره معتبرترین شرکت‌های داخلی و خارجی آغاز نمود که نهایتاً به طراحی سری جدید سیستم‌های پروفیل منتهی شده است. که به زودی مراحل ساخت و تولید و انجام تستهای استاندارد آن انجام و به منظور تسهیل در امر ساخت و اجرای این سیستم‌ها از طریق نرم‌افزار Orgadata به سازندگان سیستم‌های ساختمانی ارائه می‌گردد.



Aluminium as material

آلومینیوم یک فلز بسیار جوان (نو ظهور) است که برای اولین بار در سال ۱۸۵۴ استخراج شد. به طور تجاری از سال ۱۸۸۶ به عنوان یک فلز گران بها تولید شد و تولید صنعتی آن برای برنامه های عمرانی در دهه ۱۹۵۰ گسترش یافت. امروزه آلومینیوم نقش کلیدی در پایداری ساختمان های جدید و نوسازی واحدهای قدیمی ایفا می کند و با توجه به خواص عملکردی خود در بحث انرژی، ایمنی و راحتی ساختمان های جدید نقش آفرینی می کند.

Aluminium is a very young metal, extracted for the first time in 1854. Commercially produced as a precious metal from 1886, its industrial production for civil applications only achieved wide use in the 1950's. Now aluminium plays a key role for the sustainability of new buildings and the renovation of existing ones. Thanks to its performance properties aluminium contributes to the energy performance, safety and comfort of new buildings.



مزایای آلومینیوم

The advantages of aluminium



Design flexibility

The extrusion process offers an almost infinite range of forms and sections, allowing designers to integrate numerous functions into one profile.

Long service life

Aluminium building products are made from alloys that are weatherproof, corrosion-resistant and immune to the harmful effects of UV rays, ensuring optimal performance over a very long period of time

High strength-to-weight ratio

Thanks to the metal's inherent strength and stiffness, aluminium window and curtain wall frames can be very narrow. Material's light weight makes it easier to transport and handle on-site, reducing the risk of work related injury.

انعطاف پذیری در طراحی

فرآیند اکستروژن طیف وسیعی از اشکال و مقاطع را ارائه می دهد و به طراحان اجازه می دهد تا کاربردهای متعددی را در یک پروفیل ادغام کنند.

طول عمر بالا

محصولات ساختمانی آلومینیوم از آلیاژهایی ساخته شده اند که مقاومت به خوردگی در برابر آب و هوا و همچنین مقاومت بالا در برابر اثرات مضر اشعه ماوراء بنفش داشته که عملکرد مطلوبی را در مدت زمان طولانی تضمین می کند.

نسبت استحکام به وزن بالا

به لطف استحکام و سختی ذاتی این فلز، پنجره ها و پروفیل های نمای ساختمان آلومینیومی می توانند بسیار ظریف طراحی گردند. که این امر سبب کاهش وزن سازه، حمل و نقل و جابجایی آسان تر و کاهش خطر صدمات ناشی از کار می شود.



High-reflectivity

This characteristic feature makes aluminium a very efficient material for light management. Aluminium shading devices can be used to reduce the need for air conditioning in summer.

Fire safety

Aluminium does not burn and therefore is classified as a noncombustible construction material (European Fire Class A1). Aluminium alloys will nevertheless melt at around 650 C, but without releasing harmful gases.

No release of dangerous substances

Several studies have proved that aluminium building products do not present a hazard to occupants or the surrounding environment. Aluminium building products have no negative impact, either on indoor air quality or on soil, surface and groundwater.

Optimal security

Where high security is required, specially designed, strengthened aluminium frames can be used. While the glass for such applications may well be heavy, the overall weight of the structure remains manageable thanks to the light weight of the aluminium frames.

Alloys

Aluminium in its pure form is a very soft metal. Thanks to the addition of alloying elements such as copper, manganese, magnesium, zinc, etc. and thanks to suitable production processes, the physical and mechanical properties can be varied in a wide range to satisfy the requirements of a large number of different applications. AKROLL profiles are extruded from the following alloys:

EN AW-1050 [Al 99.5]
EN AW-6060 [Al Mg Si]
EN AW-6063 [Al Mg0.7 Si]
EN AW-6061 [Al Mg1 Si Cu]
EN AW-6005 [Al Si Mg]
EN AW-6082 [Al Si1 Mg Mn]

The most common aluminium alloy which is used by AKROLL is EN AW 6063. Here are the properties of this alloy:

MATERIAL PROPERTIES

Aluminium alloy EN AW 6063 T5
Ultimate tensile strength $R_m = 175 \text{ MPa}$
Yield strength $R_{p0.2} = 130 \text{ MPa}$
Modulus of elasticity $E_{Al} = 70 \text{ GPa}$
Coefficient of thermal expansion $\alpha = 23,4 \times 10^{-6} / ^\circ\text{K}$

قابلیت بازتاب بالا

این ویژگی مشخص، آلومینیوم را به یک ماده بسیار کارآمد برای مدیریت نور تبدیل می‌کند. می‌توان از سیستم سایه‌بان آلومینیومی برای کاهش نیاز به تهویه مطبوع در تابستان استفاده کرد.

ایمنی آتش

آلومینیوم نمی‌سوزد بنابراین به عنوان یک مصالح ساختمانی غیر قابل احتراق دسته بندی می‌شود (کلاس اروپایی آتش-A1). با این وجود، آلیاژهای آلومینیوم در دمای ۶۵۰ درجه سانتیگراد بدون انتشار گازهای خطرناک ذوب می‌شوند.

عدم آلودگی محیط زیستی

مطالعات متعدد ثابت کرده است که محصولات ساختمانی آلومینیومی خطری برای ساکنان یا محیط اطراف ندارند. این محصولات هیچ تأثیر منفی چه بر کیفیت هوای داخل خانه و چه بر روی خاک و آبهای سطحی و زیرزمینی ندارند.

امنیت مطلوب

در مواردی که امنیت بالایی مورد نیاز است، می‌توان از فریم‌های آلومینیومی تقویت شده با طراحی خاص استفاده کرد. در حالی که شیشه برای چنین کاربردهایی ممکن است سنگین باشد، اضافه وزن سازه را می‌توان با وزن کم فریم‌های آلومینیومی کنترل کرد.

آلیاژها

آلومینیوم به صورت خالص یک فلز بسیار نرم است. به لطف افزودن عناصر آلیاژی مانند مس، منگنز، منیزیم، روی و غیره و با بهره‌گیری فرآیندهای مناسب تولید، می‌توان خواص فیزیکی و مکانیکی را در طیف وسیعی تغییر داد تا نیاز رنج وسیعی از کاربردهای مختلف را برآورده سازد. پروفیل‌های مورد استفاده برای اکستروژن آلومینیوم از آلیاژهای ذیل می‌باشد:

رایج ترین آلیاژ آلومینیوم که توسط آکرول استفاده می‌شود EN AW ۶۰۶۳ است. در اینجا خواص این آلیاژ آمده است:

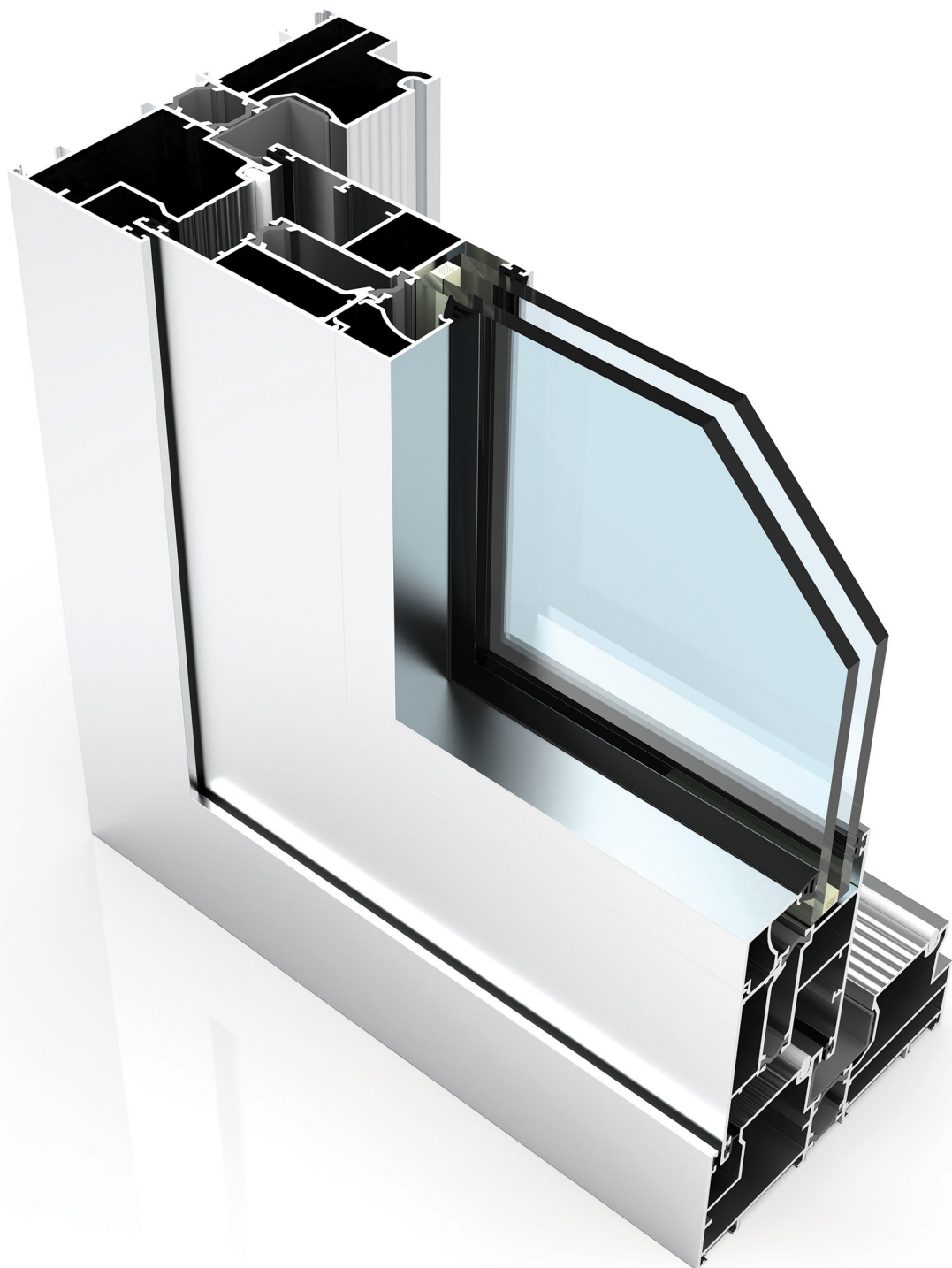




Alumroll Novin co.

Architectural
Aluminum Systems

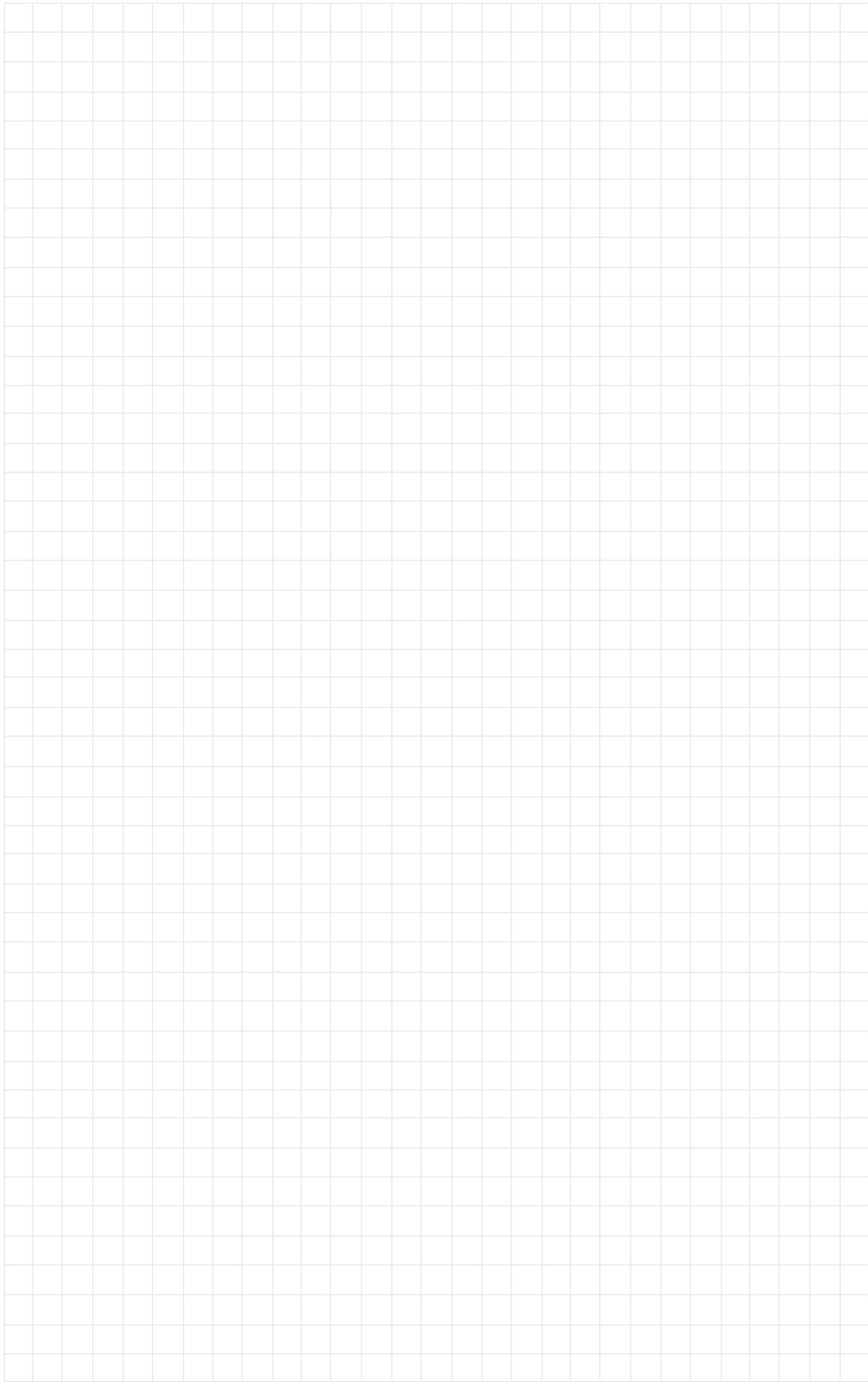
 Thermal Break Systems
ALN 400 & ALN 500 Series





AKROLL

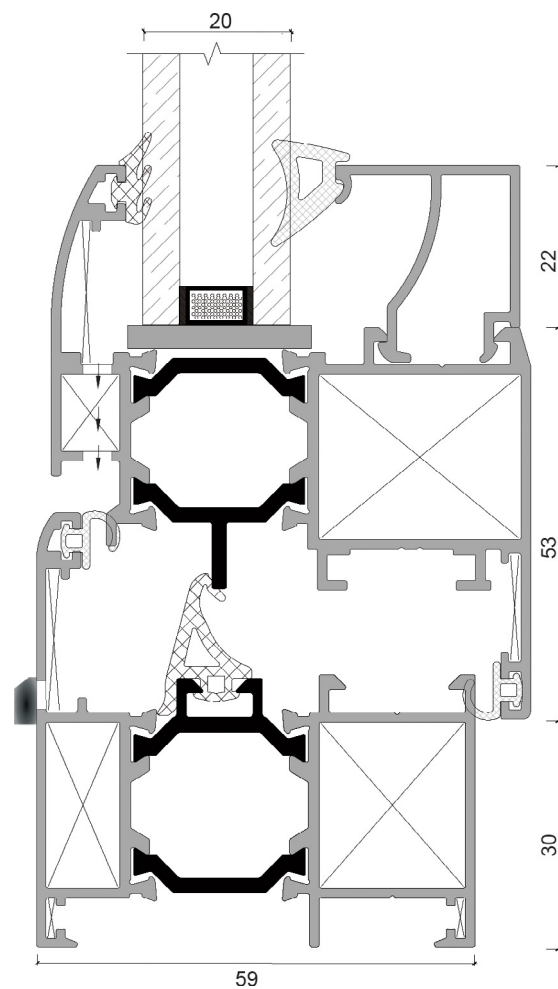
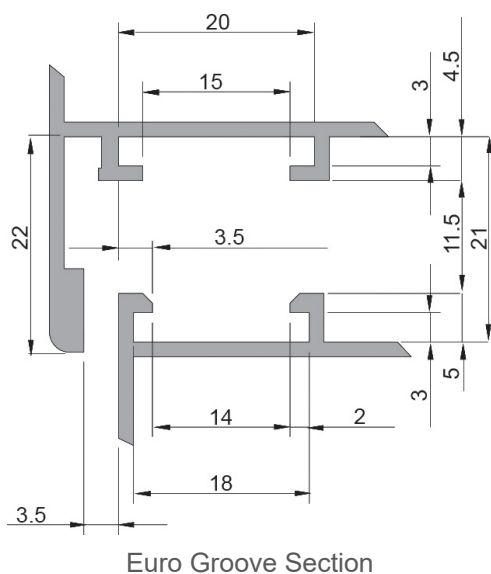
Product of Alumroll Novin Co.





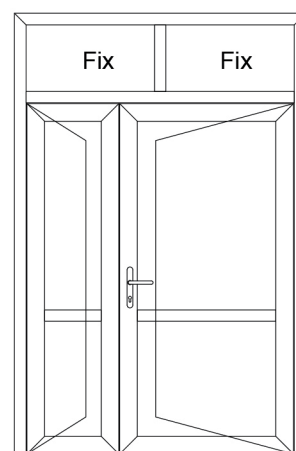
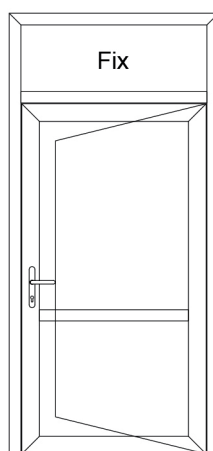
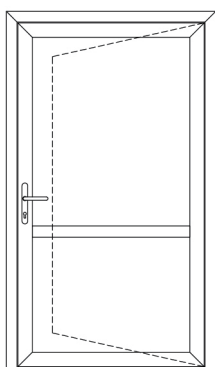
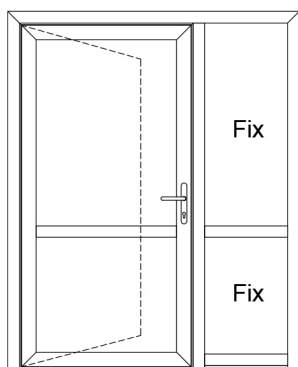
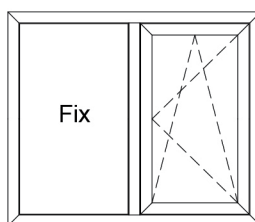
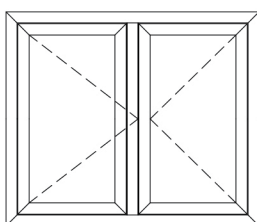
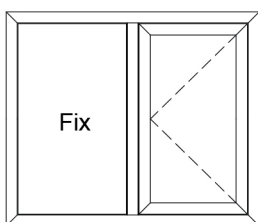
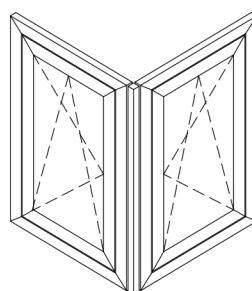
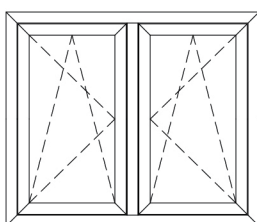
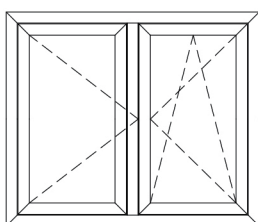
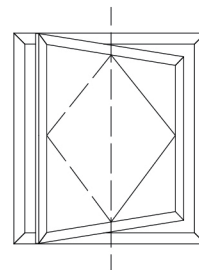
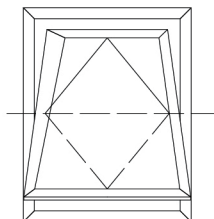
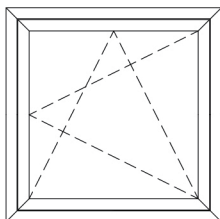
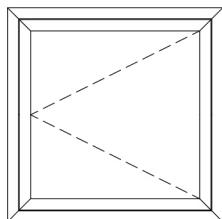
Hinged System 60 Series

. Profile width:	60 - 77 mm
. Vent width:	65 mm
. Wall thickness:	1.3 - 1.4 mm
. Rubber description:	EPDM DIN 7863
. Glass thickness:	18 - 40 mm
. Aluminum alloy extrusion:	EN AW 6063 T5
. Isulation bar :	Polyamide Width 24 mm
. Thermal permability :	$U_f = 2.58 \text{ w/m}^2\text{k}$
. Safety drainage system	
. Various typologies	



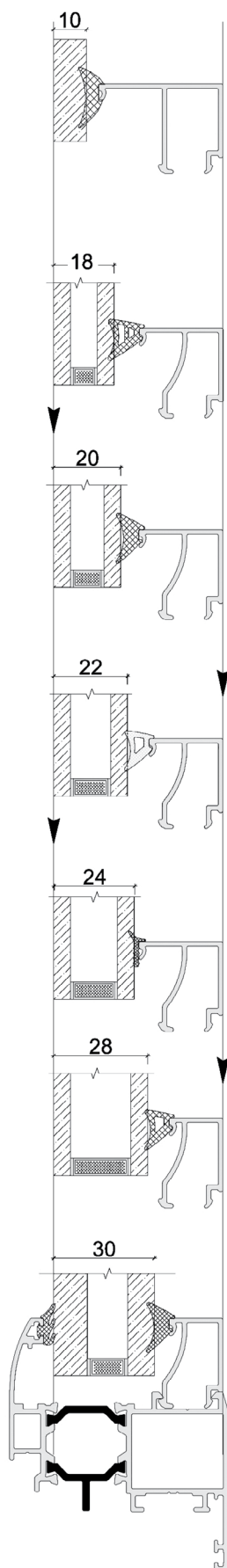
Hinged System 60 Series

Typologies

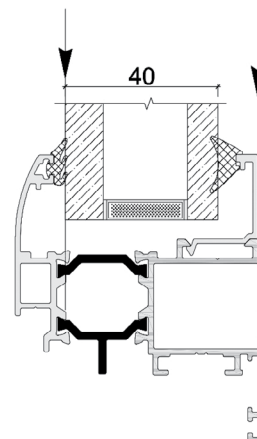
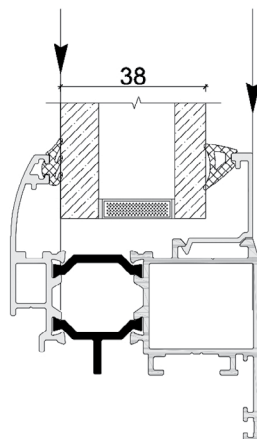
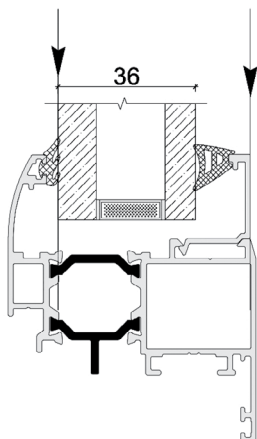


Hinged System 60 Series

Glazing Table

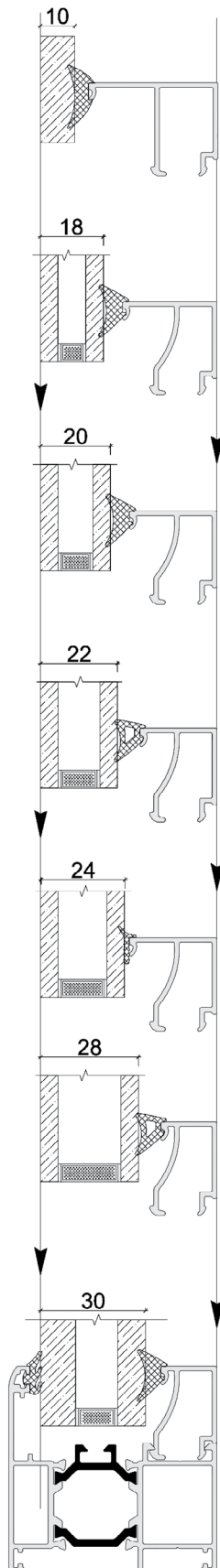


Glazing Thickness	Gasket Inside	Gasket Outside	Glazing Bead
10 mm	 1008/Gasket 3 mm	 MO68	 ALN-497
18 mm	 EP-021	 MO68	 ALN-421
20 mm	 EP-016	 MO68	 ALN-421
22 mm	 EP-016	 MO68	 ALN-323
24 mm	 EP-015	 MO68	 ALN-421
28 mm	 EP-019	 MO68	 ALN-423
30 mm	 EP-016	 MO68	 ALN-423
36 mm	 EP-021	 MO68	 ALN-424
38 mm	 EP-019	 MO68	 ALN-424
40 mm	 EP-016	 MO68	 ALN-424

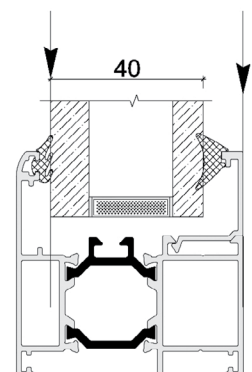
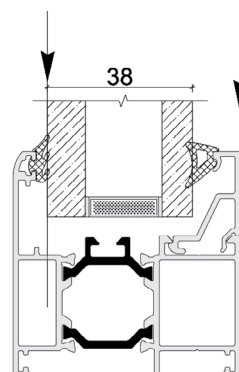
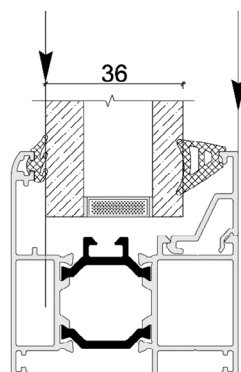


Hinged System 60 Series

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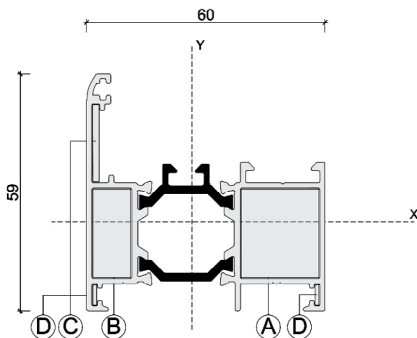
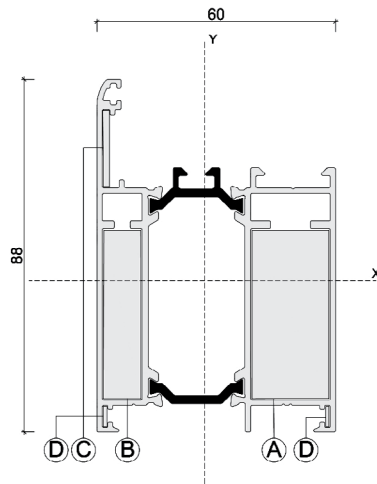
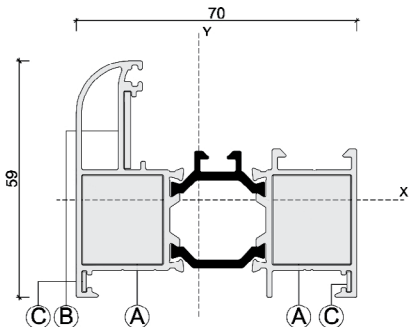
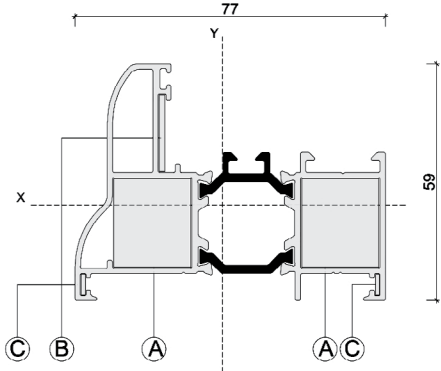


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38 mm	 EP-019	 MO68	 ALN-322
40 mm	 EP-016	 MO68	 ALN-424



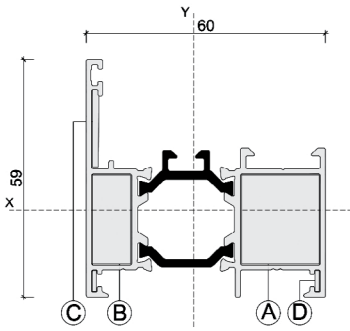
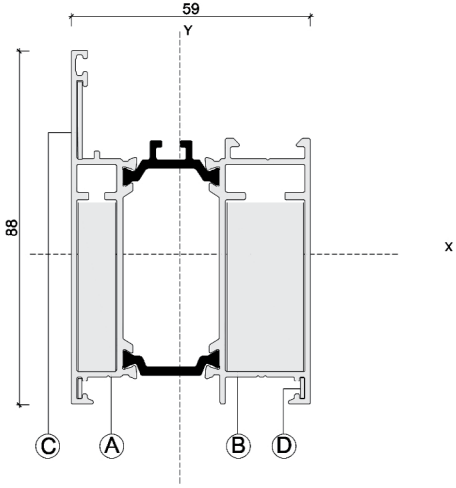
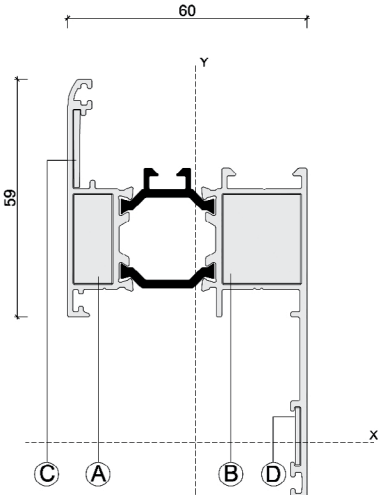
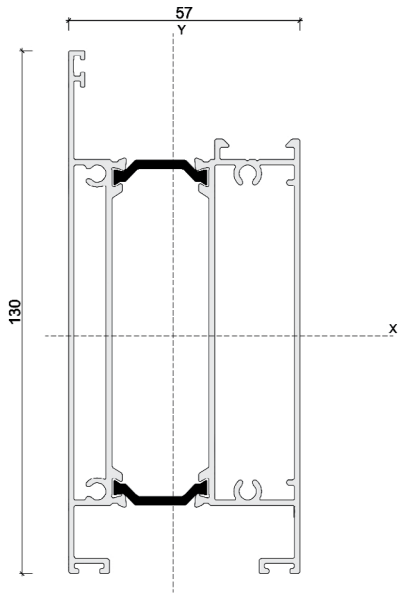
Hinged System 60 Series

Profile & Accessories Information

			
I_x : 8.15 cm ⁴	I_y : 18.2 cm ⁴	I_x : 31.86 cm ⁴	I_y : 28.06 cm ⁴
Frame : ALN-400	A: PCP-22/19 mm 	Frame : ALN-409	A: PCP-42/19 mm 
	B: PCP-22/9 mm 		B: PCP-42/9 mm 
Weight: 1210 gr/m	C: fuji 2000 	Weight: 1755 gr/m	C: fuji 2000 
	D: MO 19 		D: MO 19 
			
I_x : 11.37 cm ⁴	I_y : 27.09 cm ⁴	I_x : 11.62 cm ⁴	I_y : 29.73 cm ⁴
Frame : ALN-408	A: PCP-22 / 19 mm 	Frame : ALN-466	A: PCP-22 / 19 mm 
	B: fuji 2000 		B: fuji 2000 
Weight: 1397 gr/m	D: MO 19 	Weight : 1435 gr/m	C: MO 19 

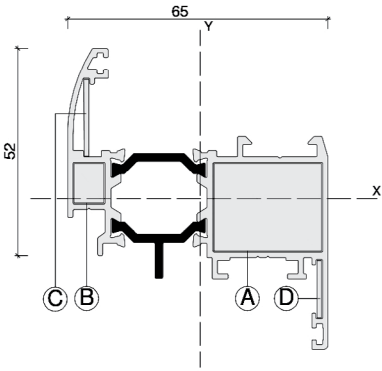
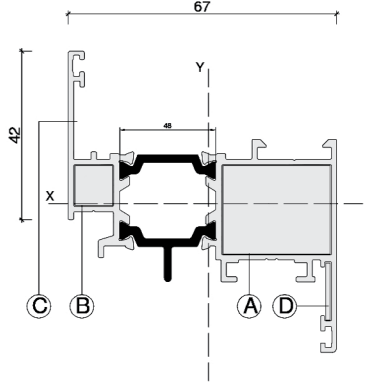
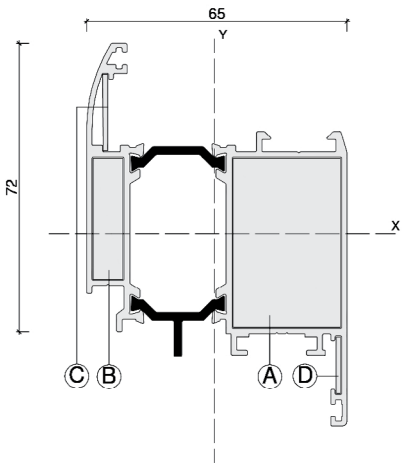
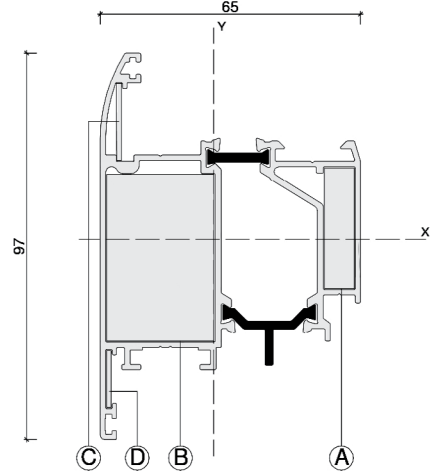
Hinged System 60 Series

Profile & Accessories Information

			
I_x : 7.49 cm ⁴	I_y : 17.91 cm ⁴	I_x : 30.52 cm ⁴	I_y : 27.72 cm ⁴
Frame : ALN-415	A: PCP-22/19 mm B: PCP-22/9 mm	Frame : ALN-440	A: PCP-42 / 9 mm B: PCP-42 / 19 mm
Weight : 1191gr/m	C: fuji 2000 D: MO 19	Weight: 1760 gr/m	C: fuji 2000 D: MO 19
			
I_x : 24.34 cm ⁴	I_y : 25.25 cm ⁴	I_x : 101.67 cm ⁴	I_y : 37.42 cm ⁴
Frame : ALN-449	A: PCP-22 / 9 mm B: PCP-22 / 19 mm C: fuji 2000 D: MM77	Profile : ALN-410	A: – B: –
Weight : 1440 gr/m		Weight: 2335 gr/m	

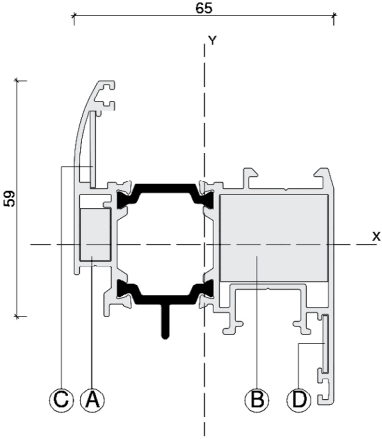
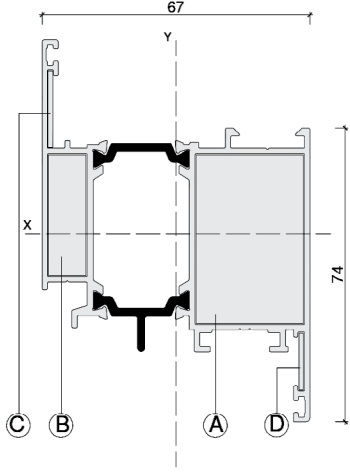
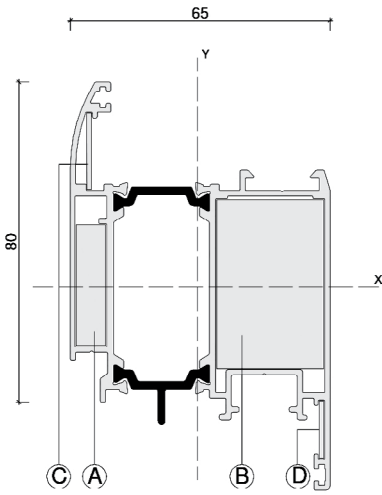
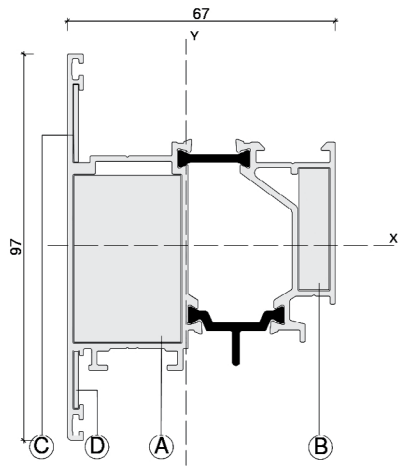
Hinged System 60 Series

Profile & Accessories Information

			
I_x : 11.21 cm ⁴	I_y : 24.05 cm ⁴	I_x : 10.27 cm ⁴	I_y : 25.02 cm ⁴
Sash : ALN-401	A: PCP-22 / 26 mm B: PCP-10 / 7 mm	Sash : ALN-416	A: PCP-22 / 26 mm B: PCP-10 / 9 mm
Weight: 1334 gr/m	C: fuji 2000 D: MM77	Weight : 1337 gr/m	C: fuji 2000 D: MM77
			
I_x : 27.62 cm ⁴	I_y : 30.97 cm ⁴	I_x : 29.94 cm ⁴	I_y : 30.41 cm ⁴
Sash : ALN-402	A: PCP-42 / 26 mm B: PCP-30 / 7 mm	Sash : ALN-403	A: PCP-30 / 7 mm B: PCP-42 / 26 mm
Weight: 1640 gr/m	C: fuji 2000 D: MM77	Weight: 1706 gr/m	C: fuji 2000 D: MM77

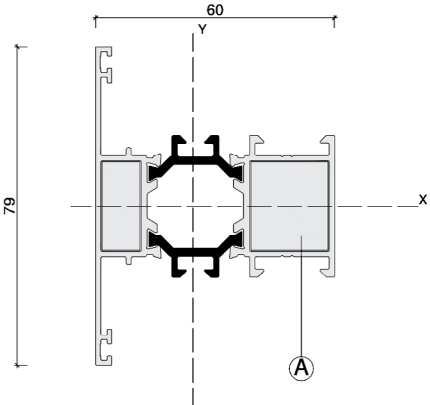
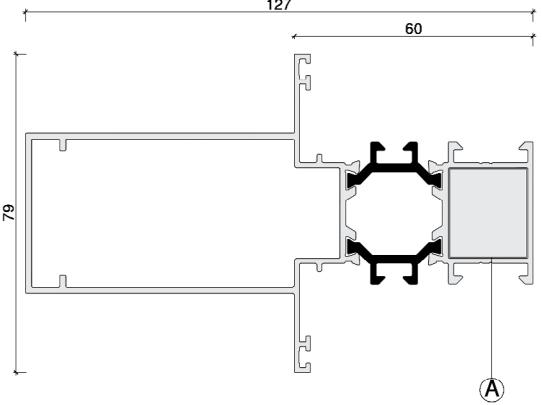
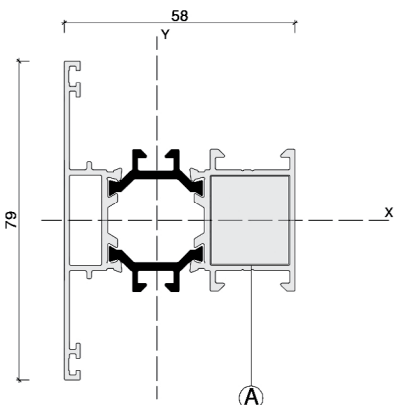
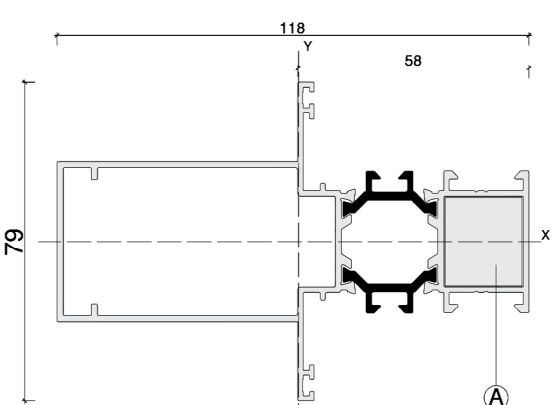
Hinged System 60 Series

Profile & Accessories Information

			
I_x : 14.95 cm ⁴	I_y : 26.89 cm ⁴	I_x : 25.70 cm ⁴	I_y : 32.28 cm ⁴
Sash : ALN-498	A: PCP-13 / 7 mm B: PCP-22 / 26 mm	Sash : ALN-441	A: PCP-42 / 26 mm B: PCP-30 / 9 mm
Weight : 1499 gr/m	C: fuji 2000 D: MM77	Weight : 1640 gr/m	C: fuji 2000 D: MM77
			
I_x : 35.97 cm ⁴	I_y : 12.70 cm ⁴	I_x : 28.23 cm ⁴	I_y : 32.79 cm ⁴
Sash : ALN-499	A: PCP-30 / 7 mm B: PCP-42 / 26 mm	Sash : ALN-447	A: PCP-42 / 26 mm B: PCP-30 / 7 mm
Weight : 1827 gr/m	C: fuji 2000 D: MM77	Weight : 1701 gr/m	C: fuji 2000 D: MM77

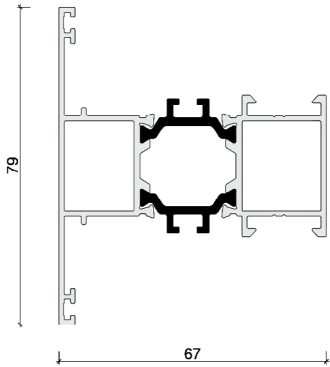
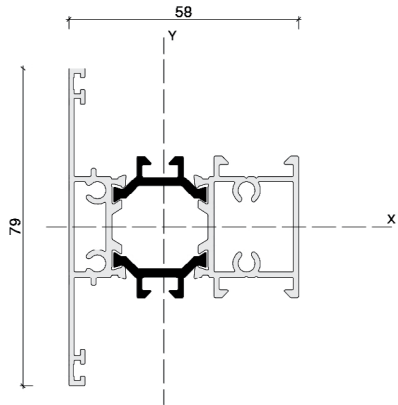
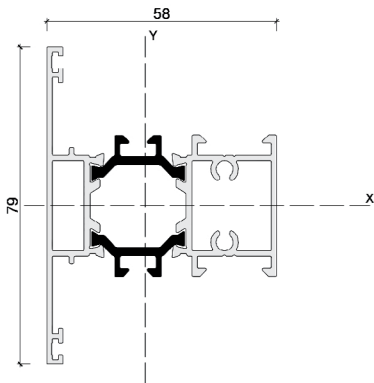
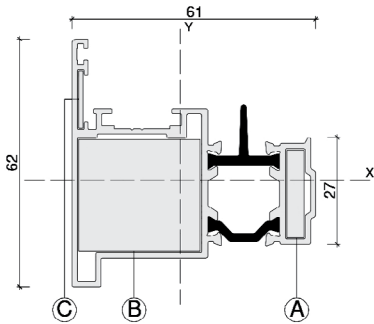
Hinged System 60 Series

Profile & Accessories Information

			
I_x : 11.04 cm ⁴	I_y : 19.22 cm ⁴	I_x : 19.27 cm ⁴	I_y : 100.3 cm ⁴
Flat Transome : ALN-417	A: ALN-445	Flat Transome : ALN-465	A: ALN-445
Weight : 1092 gr/m		Weight : 1938 gr/m	B: —
			
I_x : 10.97 cm ⁴	I_y : 17.85 cm ⁴	I_x : 18.41 cm ⁴	I_y : 82.72 cm ⁴
Transome : ALN-406	A: ALN-445	Transome : ALN-420	A: ALN-445
Weight : 1275 gr/m		Weight : 1867 gr/m	B: —

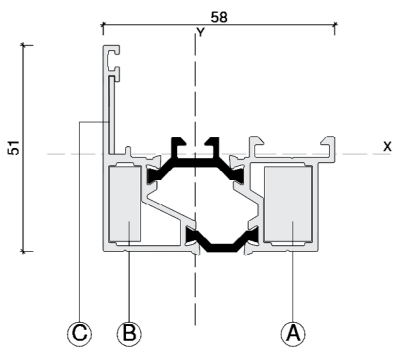
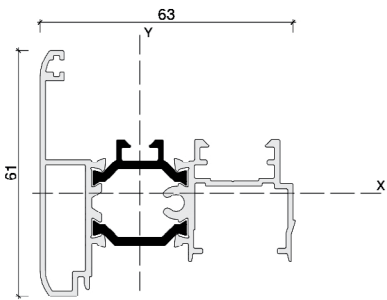
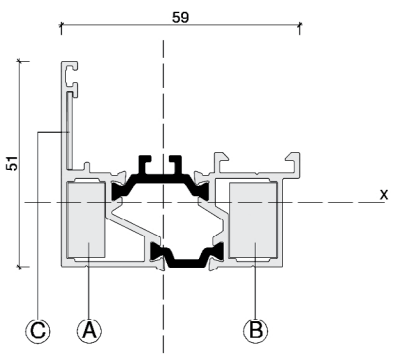
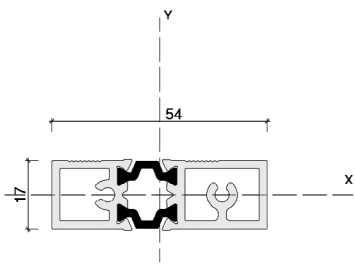
Hinged System 60 Series

Profile & Accessories Information

			
I_x : 11.32 ⁴	I_y : 25.23 ^{cm⁴}	I_x : 11.33 ^{cm⁴}	I_y : 19.67 ^{cm⁴}
Transom : ALN-494	A: –	Transom : ALN-407	A: –
Weight : 1355 gr/m	B: –	Weight : 1406 gr/m	B: –
			
I_x : 11.20 ^{cm⁴}	I_y : 19.08 ^{cm⁴}	I_x : 8.61 ^{cm⁴}	I_y : 17.92 ^{cm⁴}
Transom : ALN-404	A: –	Transom : ALN-411	A: PCP-22 / 4 mm 
Weight: 1353 gr/m	B: –	Weight : 1232 gr/m	B: PCP-28 / 30 mm 
			C: MM77 (AKW-810) 

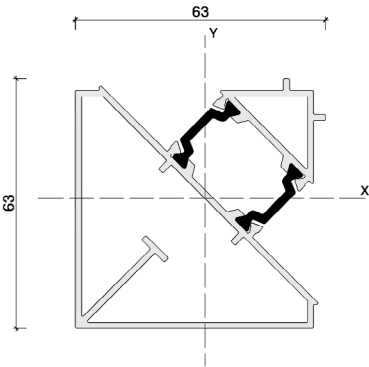
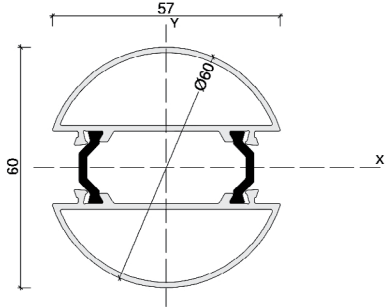
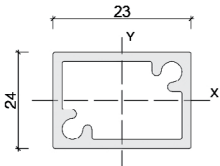
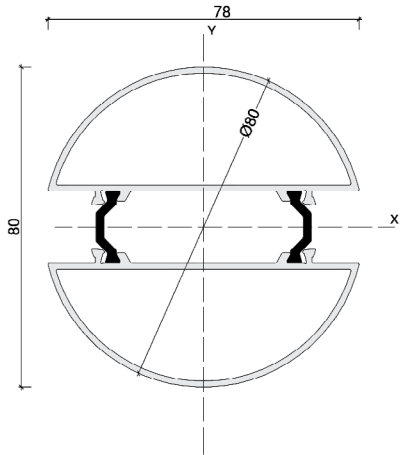
Hinged System 60 Series

Profile & Accessories Information

			
I_x : 5.52 cm ⁴	I_y : 13.29 cm ⁴	I_x : 6.85 cm ⁴	I_y : 16.75 cm ⁴
Profile : ALN-418	A: PCP-19 / 11 mm 	Profile : ALN-405	
Weight : 1101 gr/m	B: PCP-19 / 7 mm 	Weight : 1196 gr/m	
	C: fuji 2000 		
			
I_x : 5.54 cm ⁴	I_y : 14.03 cm ⁴	I_x : 1.19 cm ⁴	I_y : 10.46 cm ⁴
Transome : ALN-448	A: PCP-19 / 9 mm 	Profile : ALN-419	A:
Weight : 1128 gr/m	B: PCP-19 / 11 mm 	Weight : 1016 gr/m	B:
	C: fuji 2000 		C:

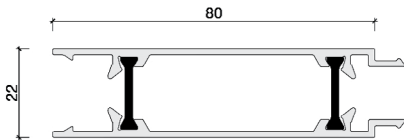
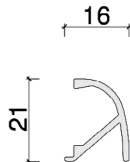
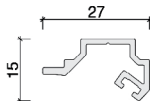
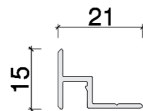
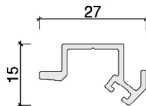
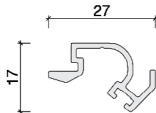
Hinged System 60 Series

Profile & Accessories Information

			
I_x : 22.95 cm ⁴	I_y : 22.95 cm ⁴	I_x : 12.02 cm ⁴	I_y : 12.13 cm ⁴
Coupling : ALN-468	A: –	Coupling : ALN-413	A: –
Weight : 1714 gr/m	B: –	Weight : 1214 gr/m	B: –
			
I_x : --- cm ⁴	I_y : --- cm ⁴	I_x : 30.79 cm ⁴	I_y : 33.53 cm ⁴
Coupling : ALN-469	A: –	Coupling : ALN-414	A: –
Weight : 337 gr/m	B: –	Weight : 1720 gr/m	B: –

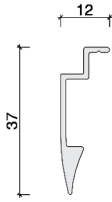
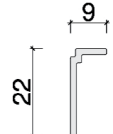
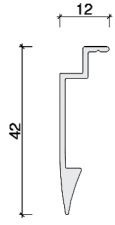
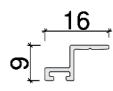
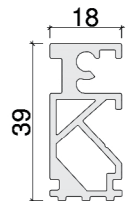
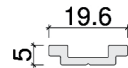
Hinged System 60 Series

Profile & Accessories Information

							
Profile :	ALN-425	Weight:	1057 gr/m	Profile :	ALN-229	Weight :	192 gr/m
							
profile:	ALN-426	Weight :	208 gr/m	profile:	ALN-228	Weight :	135 gr/m
							
profile:	ALN-427	Weight :	208 gr/m	Profile :	ALN-429	Weight :	235 gr/m

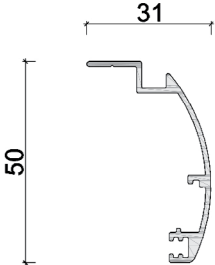
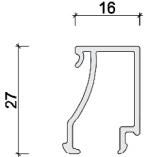
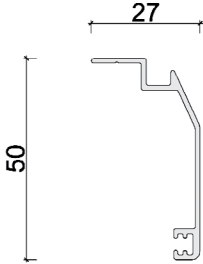
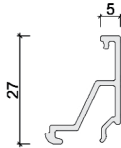
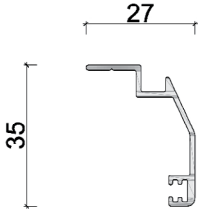
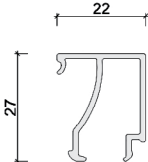
Hinged System 60 Series

Profile & Accessories Information

							
Profile :	ALN-428	Weight :	219 gr/m	Profile :	ALN-442	Weight :	118 gr/m
							
Profile :	ALN-430	Weight :	230 gr/m	Profile :	ALN-443	Weight :	75.6 gr/m
							
Transom bar profile:	ALN-445	Weight :	742 gr/m	Profile :	ALN-331	Weight:	140 gr/m

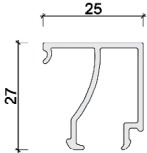
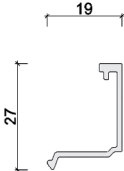
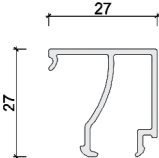
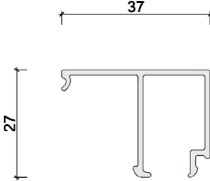
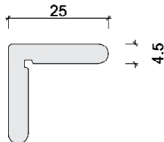
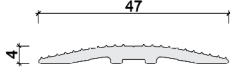
Hinged System 60 Series

Profile & Accessories Information

			
Flange profile: ALN-219	Weight : 362 gr/m	Glazing beads: ALN-423	Weight : 281 gr/m
			
Flange profile: ALN-221	Weight : 302 gr/m	Glazing beads: ALN-321	Weight : 224 gr/m
			
Flange profile: ALN-222	Weight : 254 gr/m	Glazing beads: ALN-323	Weight : 302 gr/m

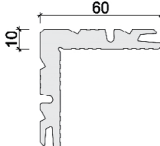
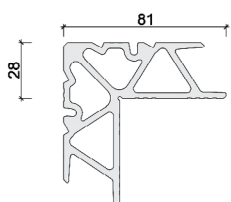
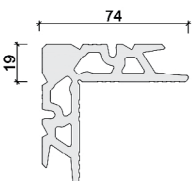
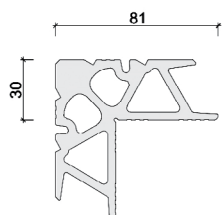
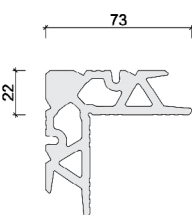
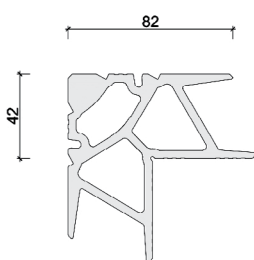
Hinged System 60 Series

Profile & Accessories Information

			
Glazing beads: ALN-421	Weight : 313 gr/m	Glazing beads: ALN-424	Weight : 167 gr/m
			
Glazing beads: ALN-422	Weight : 321 gr/m	Glazing bead: ALN-497	Weight : 350 gr/m
			
Corner Joint: MO 19 399012	Weight : 533 gr/m	profile: ALN-444	Weight : 344 gr/m

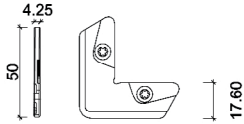
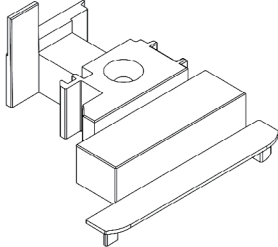
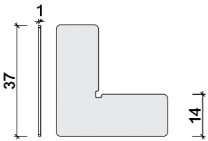
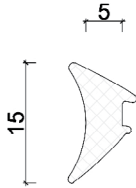
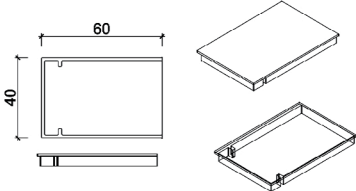
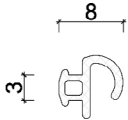
Hinged System 60 Series

Profile & Accessories Information

							
Corner Joint:	PCP-10	Weight :	2454 gr/m	Corner Joint:	PCP-28	Weight :	3429 gr/m
							
Corner Joint:	PCP-19	Weight :	3499 gr/m	Corner Joint:	PCP-30	Weight :	4539 gr/m
							
Corner Joint:	PCP-22	Weight :	3718 gr/m	Corner Joint:	PCP-42	Weight :	5133 gr/m

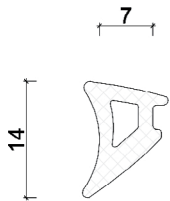
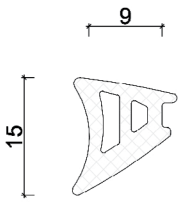
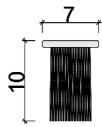
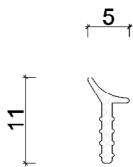
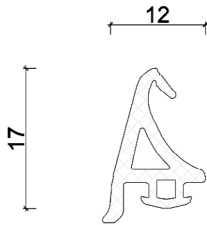
Hinged System 60 Series

Profile & Accessories Information

			
Corner Joint: Fuji 2000	Weight : —	Cap: TS-60	Weight : —
			
Corner Joint : MM 77	Weight : --- gr/m	Gasket: EP-016	Weight : 77 gr/m
			
Cap : AKW-904	Weight: —	Gasket: EP-018	Weight: 27 gr/m

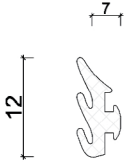
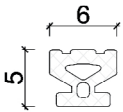
Hinged System 60 Series

Profile & Accessories Information

			
Gasket: EP-019	Weight : 61 gr/m	PB7-3P-50-700	Weight : –
			
Gasket: EP-021	Weight : 80 gr/m	PB7-3P-70-1000	Weight : –
			
Gasket: EP-015	Weight : 21 gr/m	Gasket: TH60	Weight : 101 gr/m

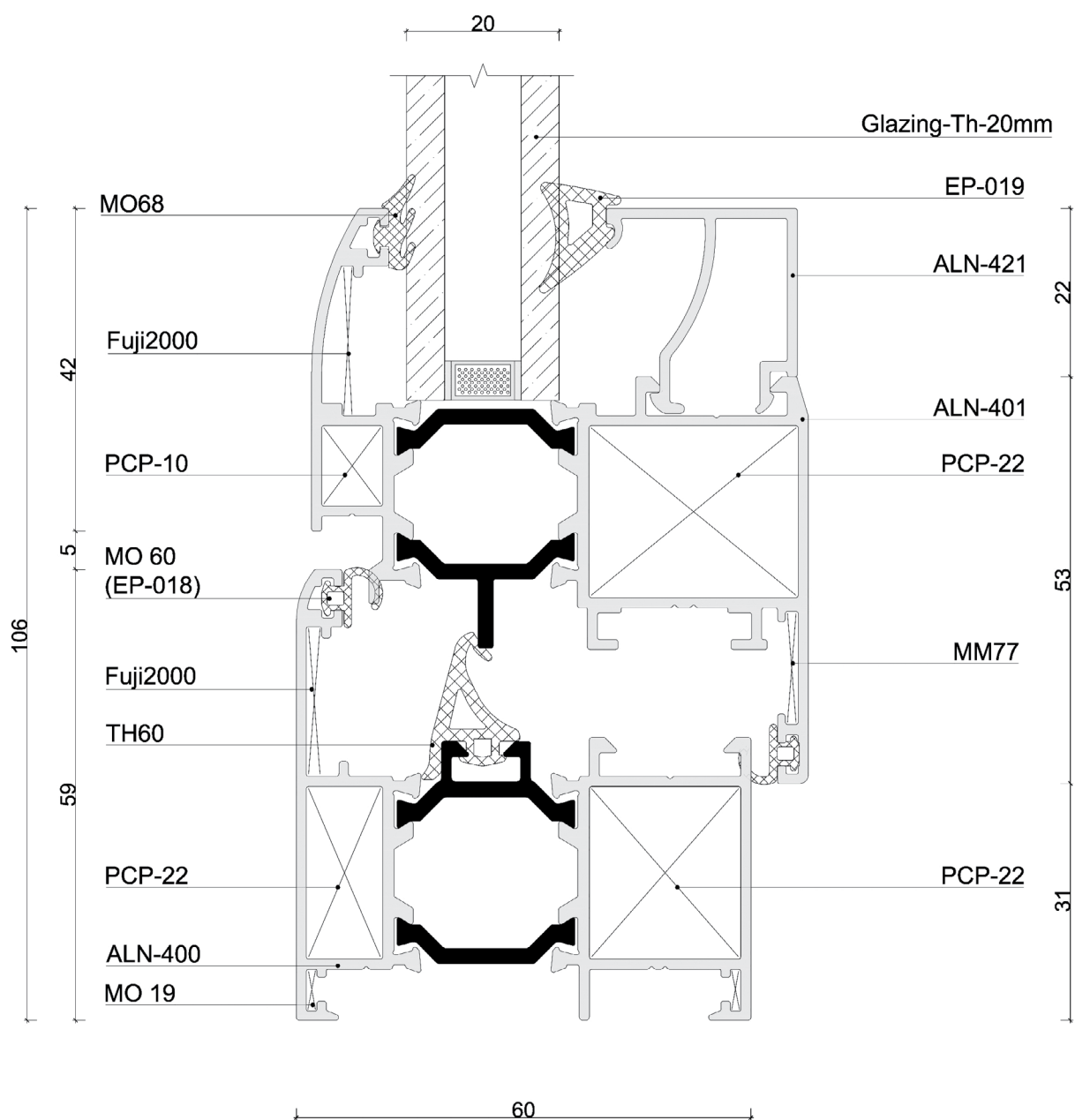
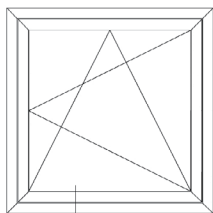
Hinged System 60 Series

Profile & Accessories Information

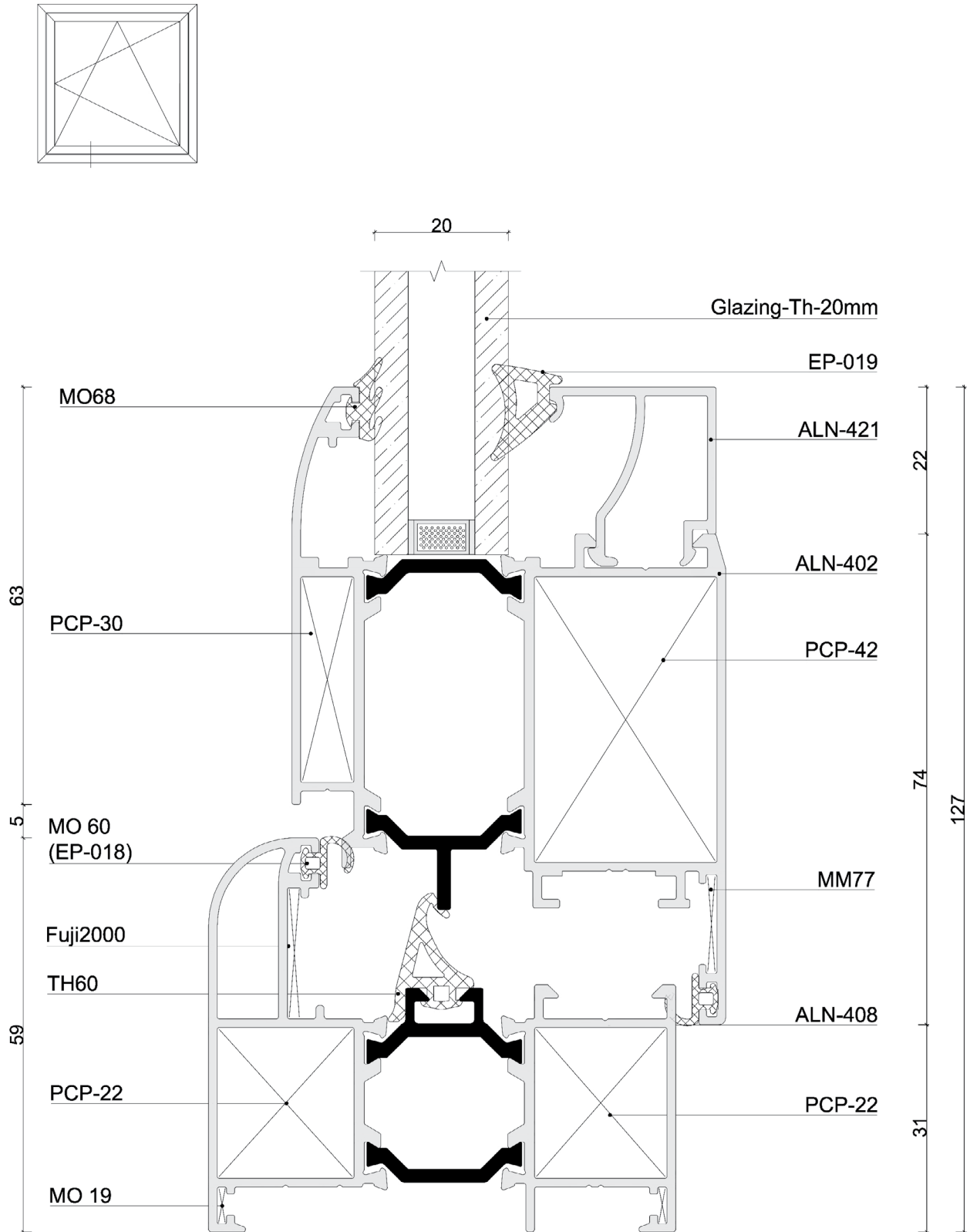
	
Gasket: MO68	Weight : 48 gr/m
	
Gasket: mo 60-1	Weight: 26 gr/m

Hinged System 60 Series

Fabrication Details

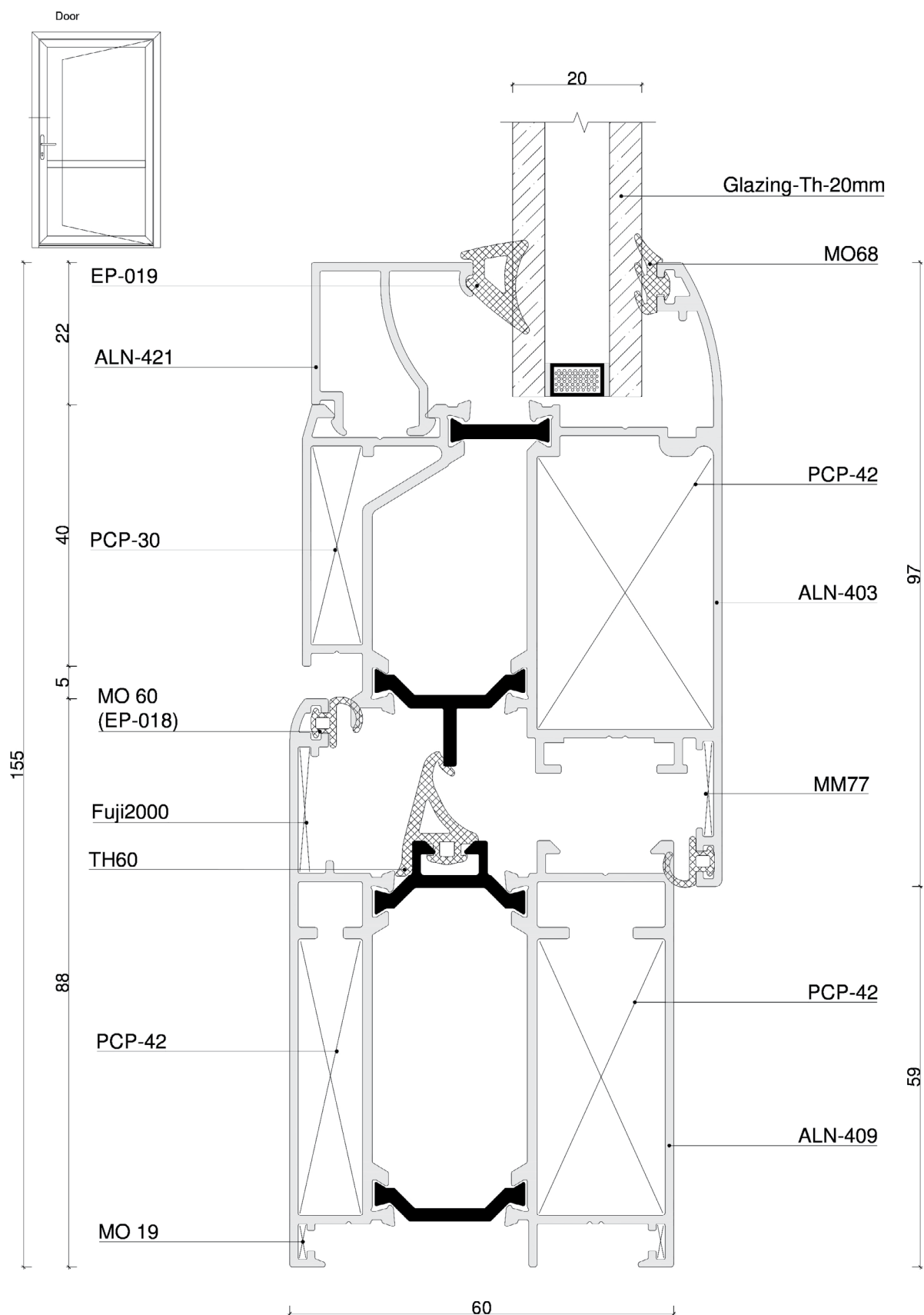


Hinged System 60 Series Fabrication Details

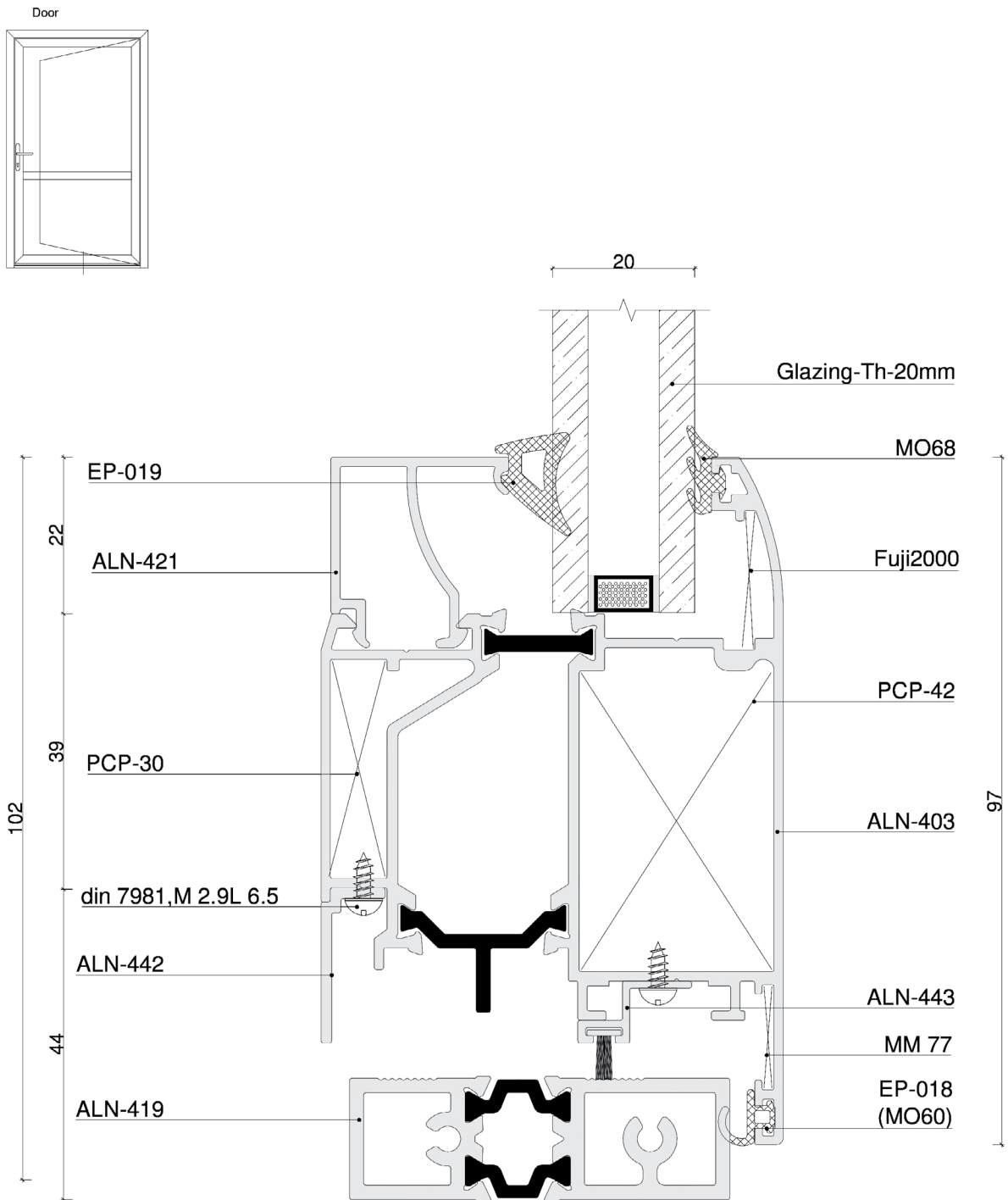


Hinged System 60 Series

Fabrication Details

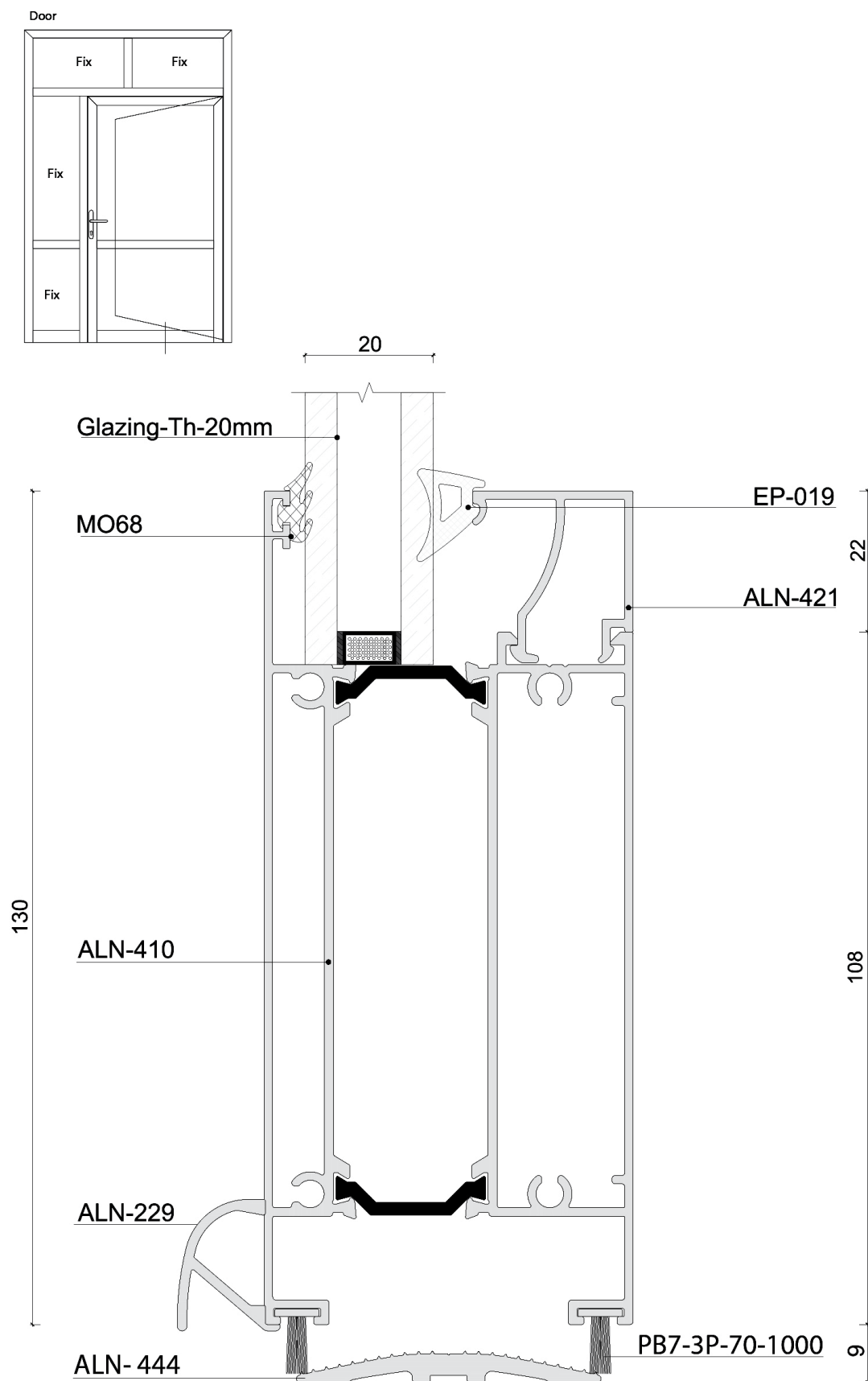


Hinged System 60 Series Fabrication Details



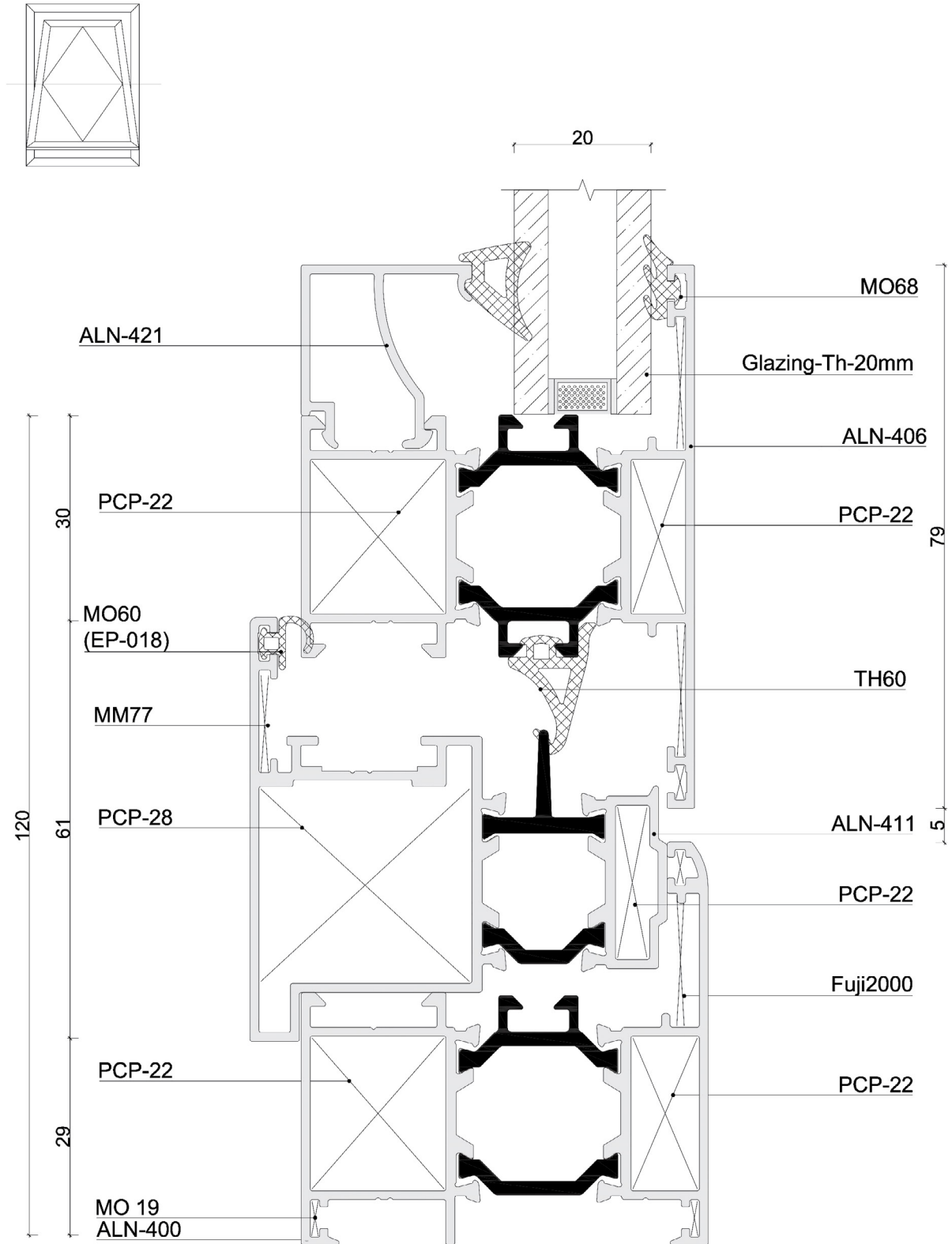
Hinged System 60 Series

Fabrication Details



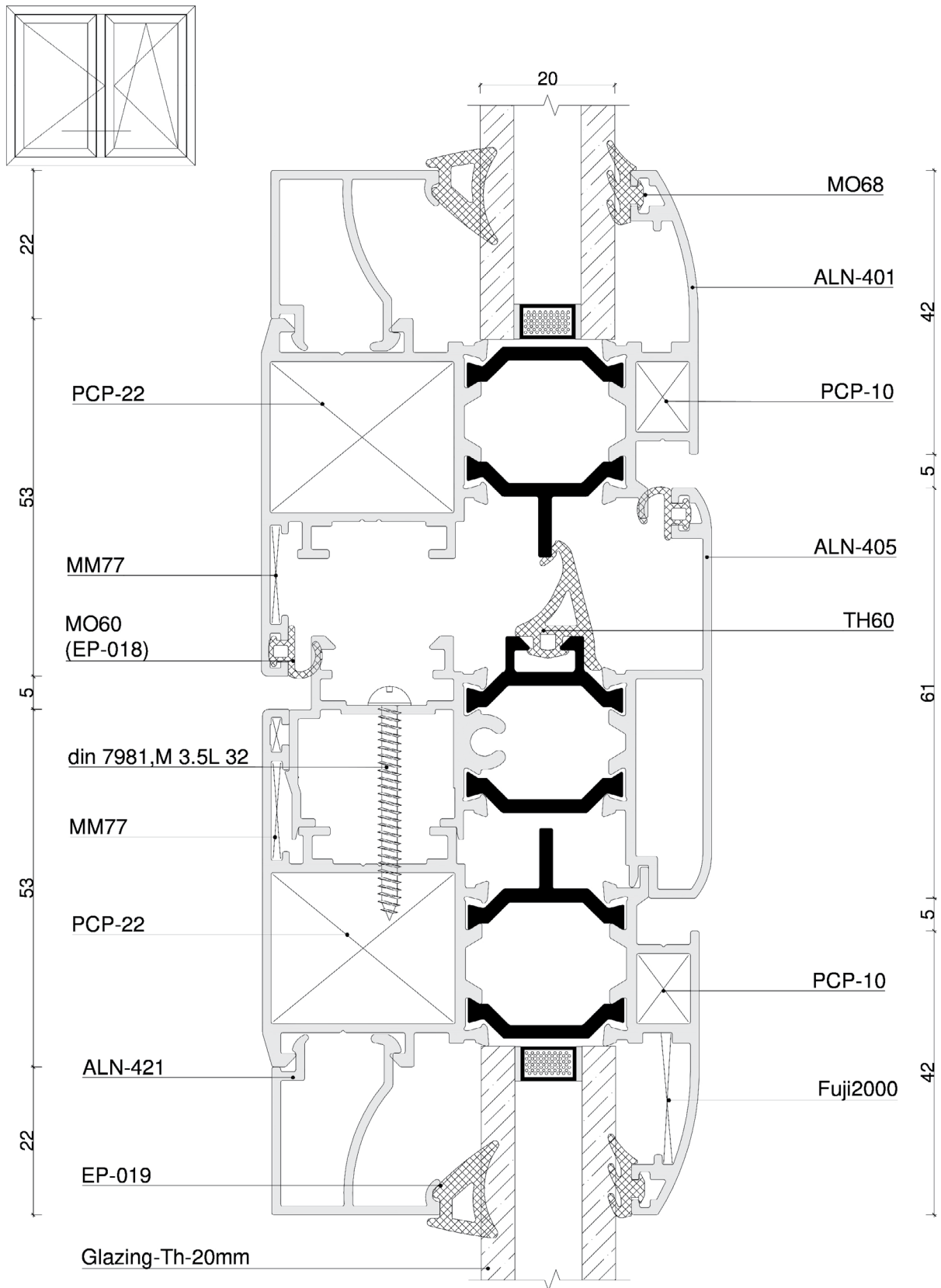
Hinged System 60 Series

Fabrication Details

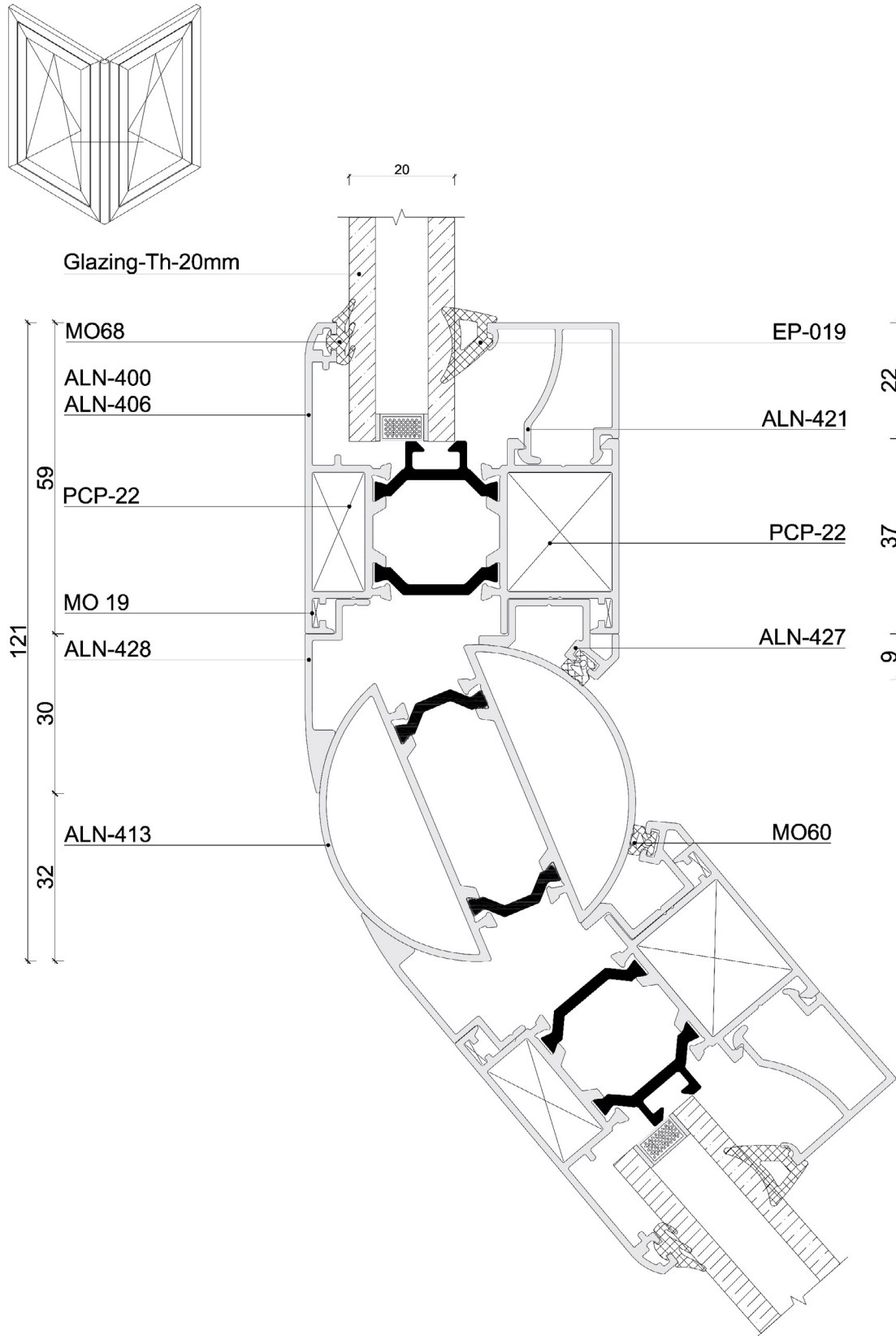


Hinged System 60 Series

Fabrication Details

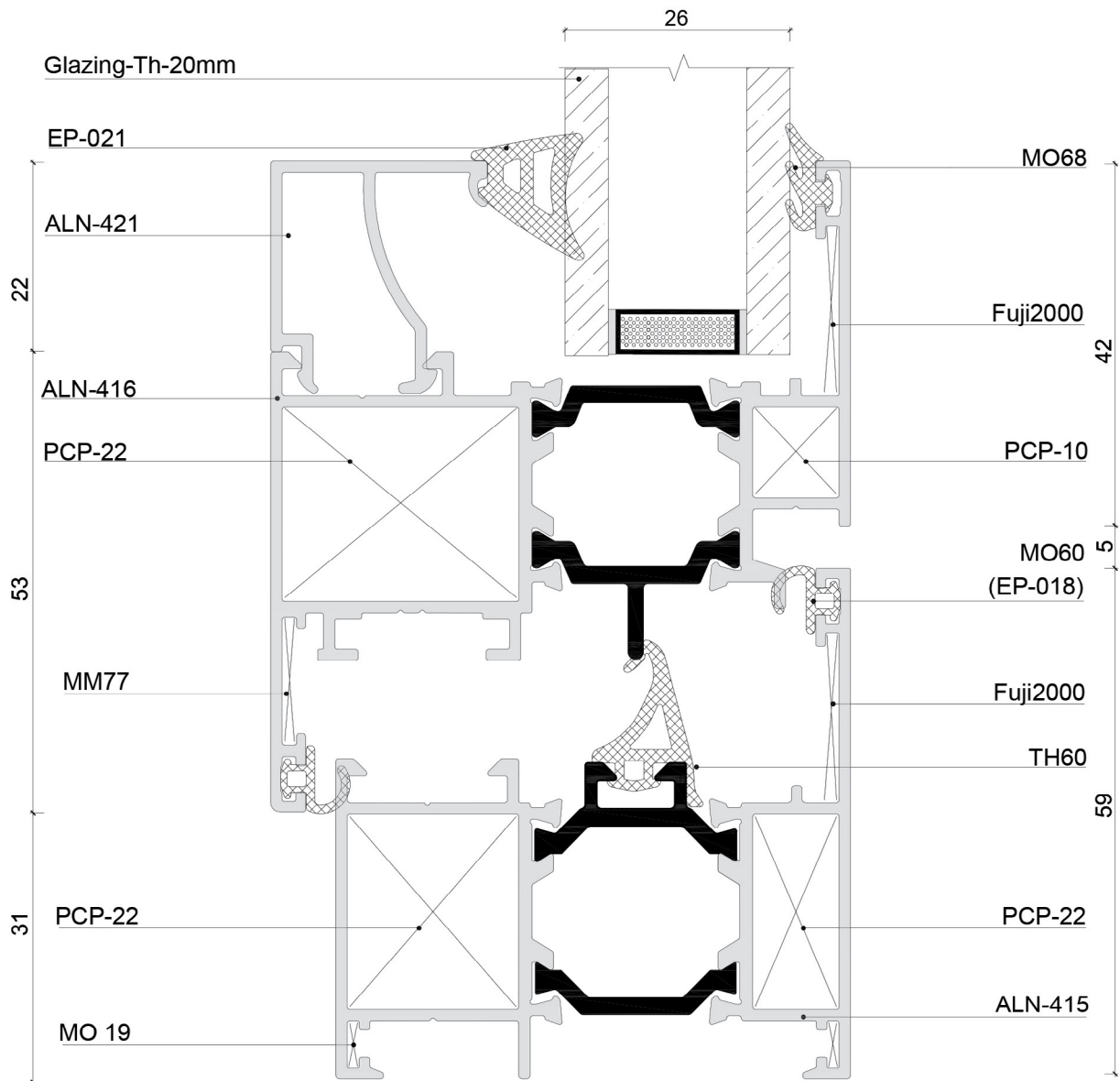
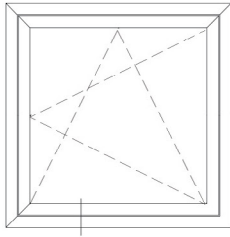


Hinged System 60 Series Fabrication Details



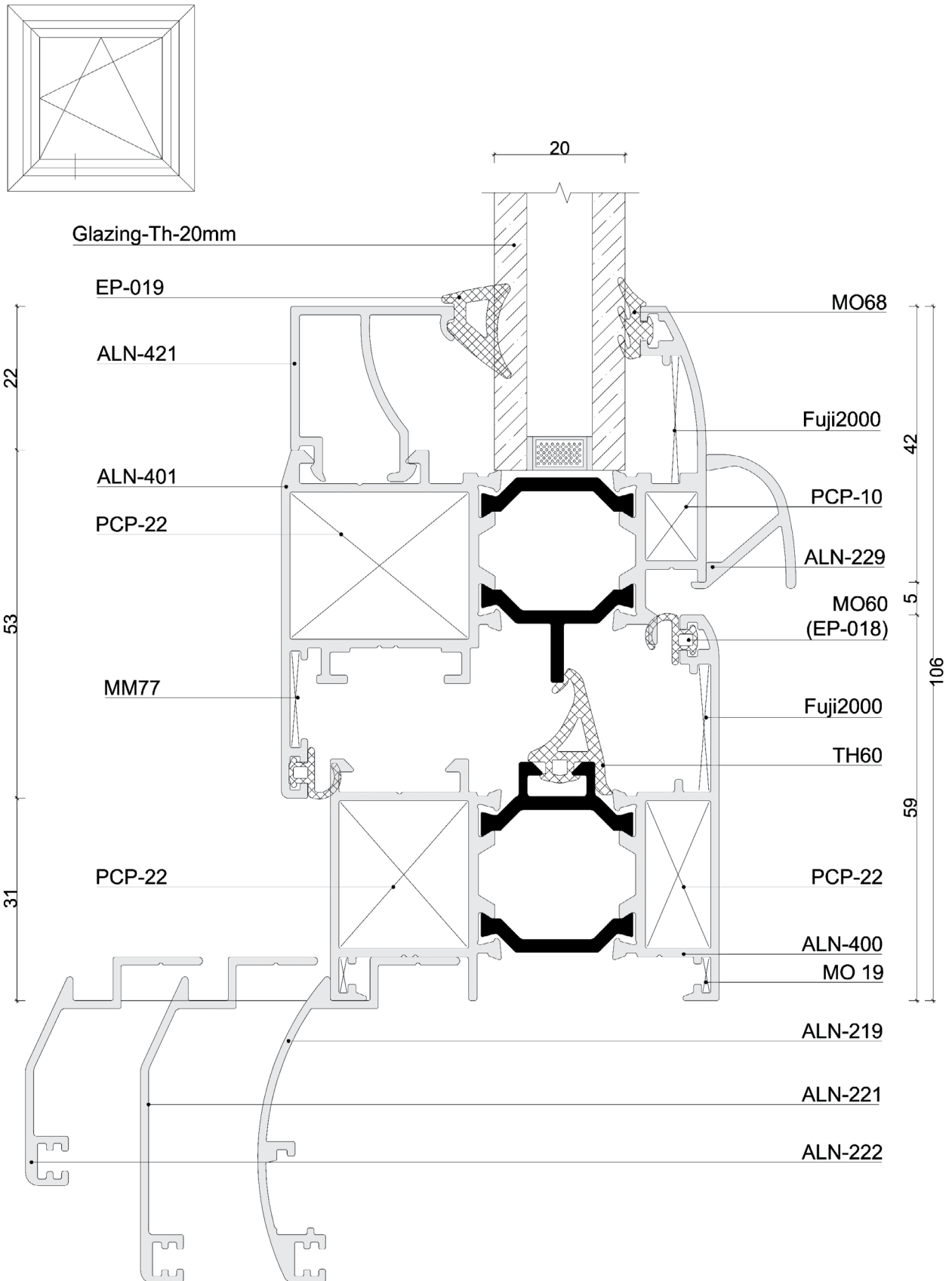
Hinged System 60 Series

Fabrication Details



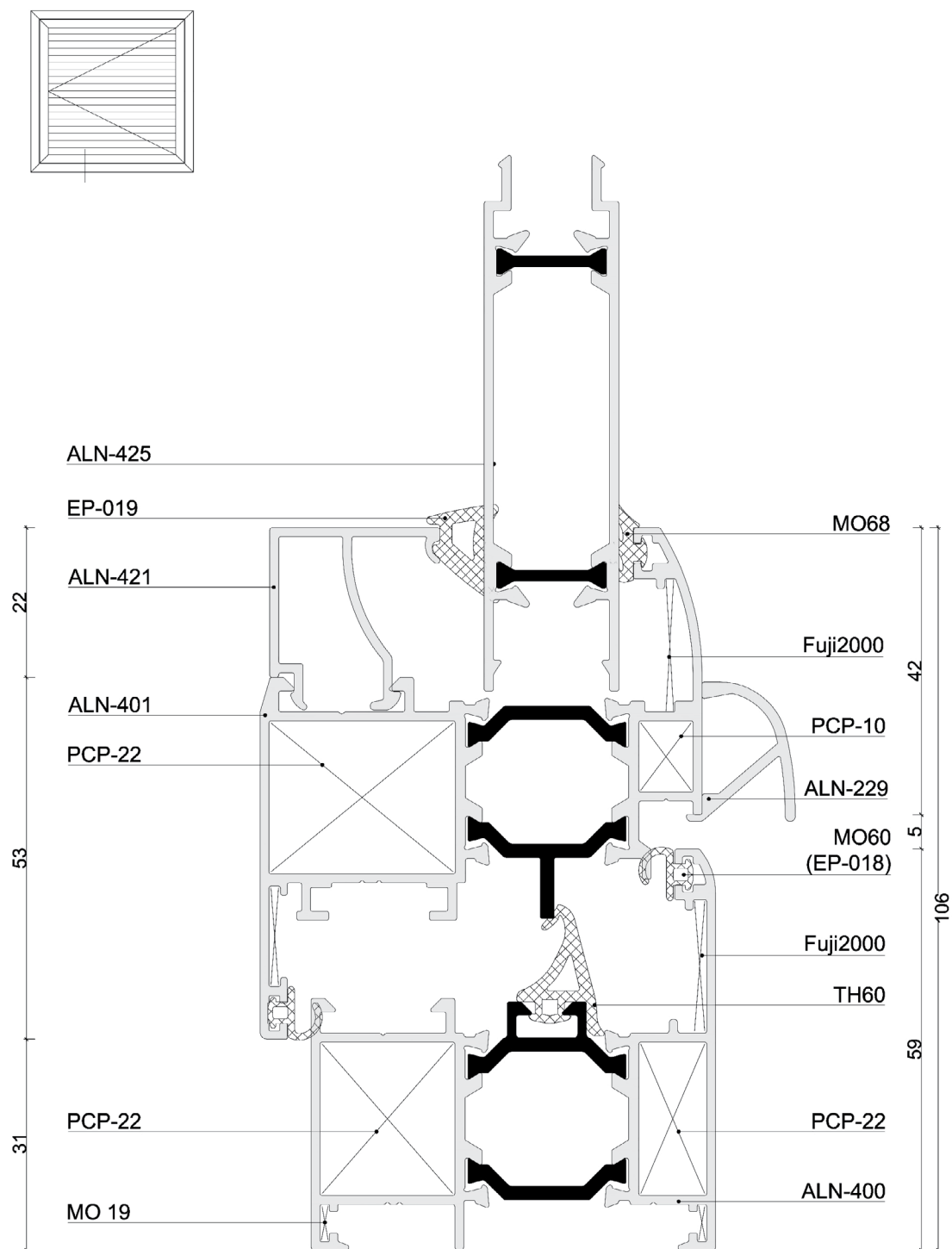
Hinged System 60 Series

Fabrication Details

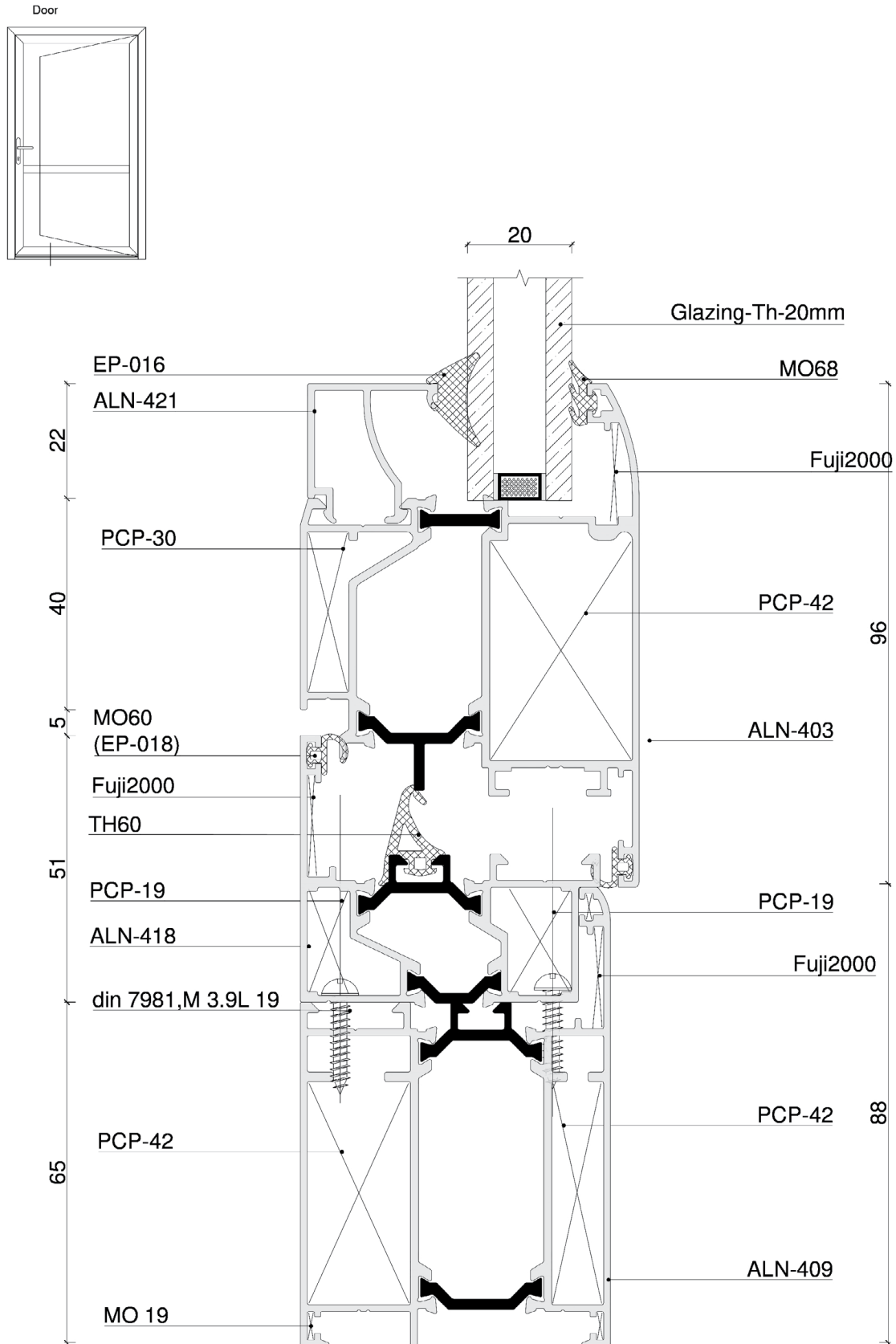


Hinged System 60 Series

Fabrication Details

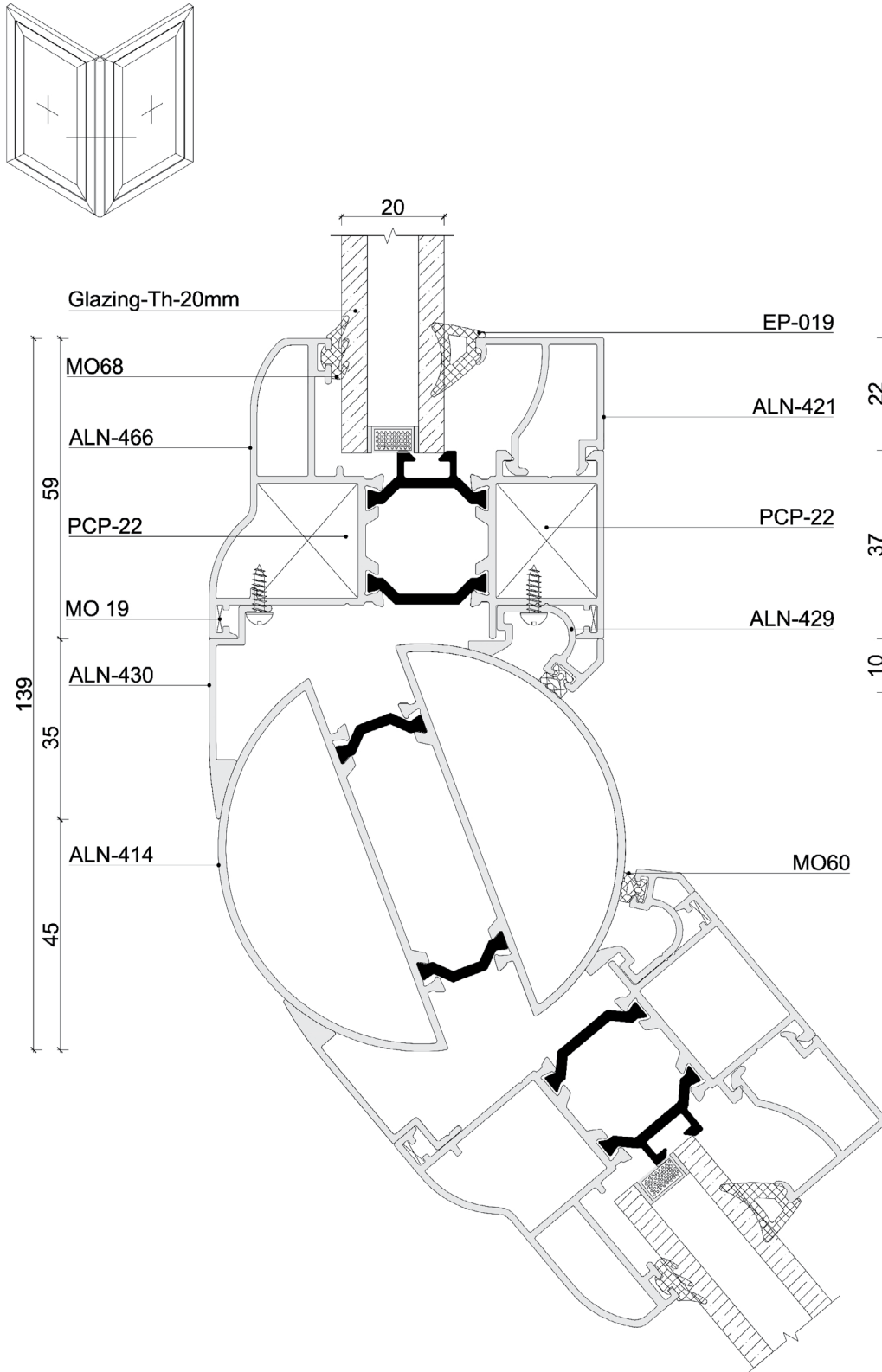


Hinged System 60 Series Fabrication Details



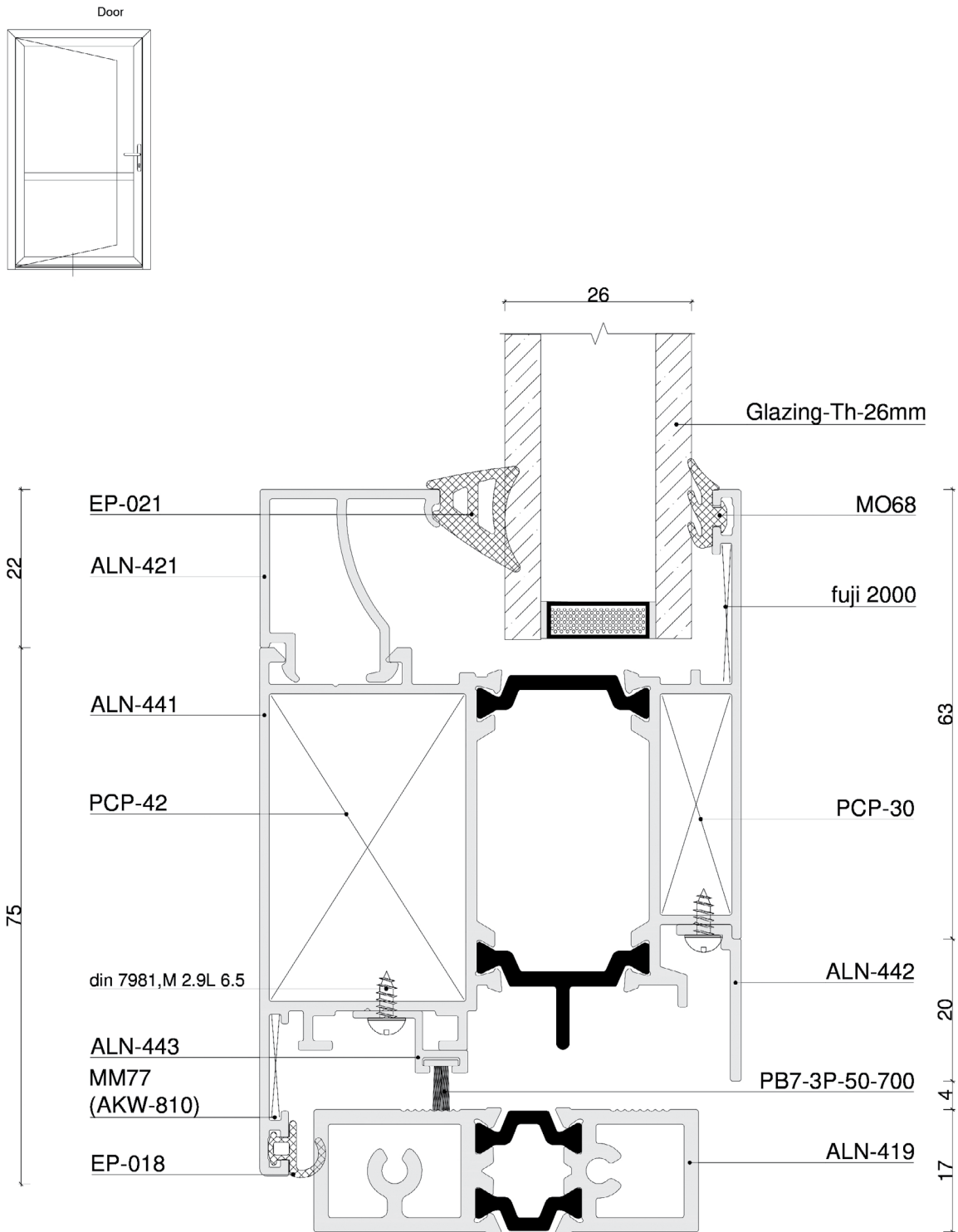
Hinged System 60 Series

Fabrication Details



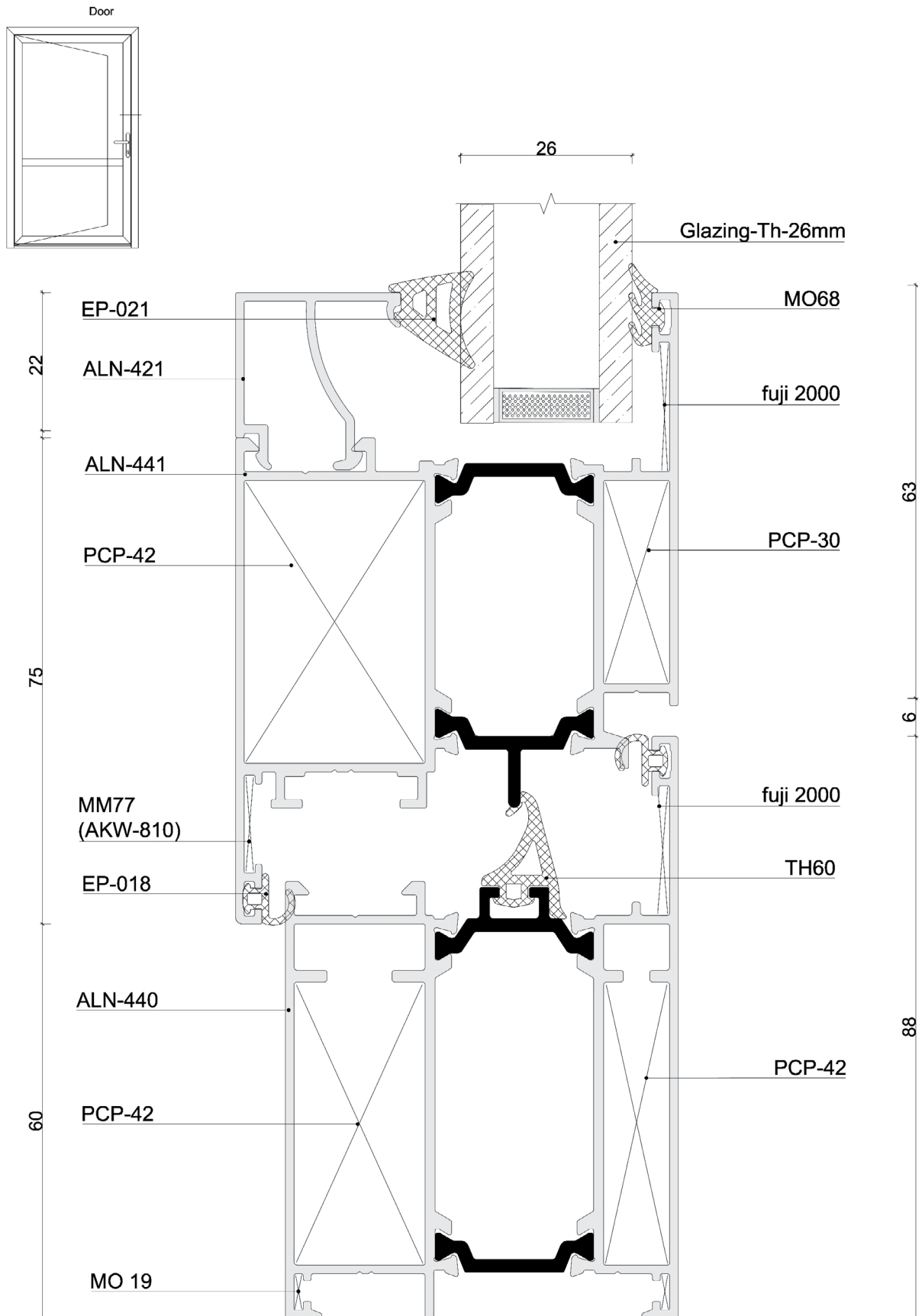
Hinged System 60 Series

Fabrication Details

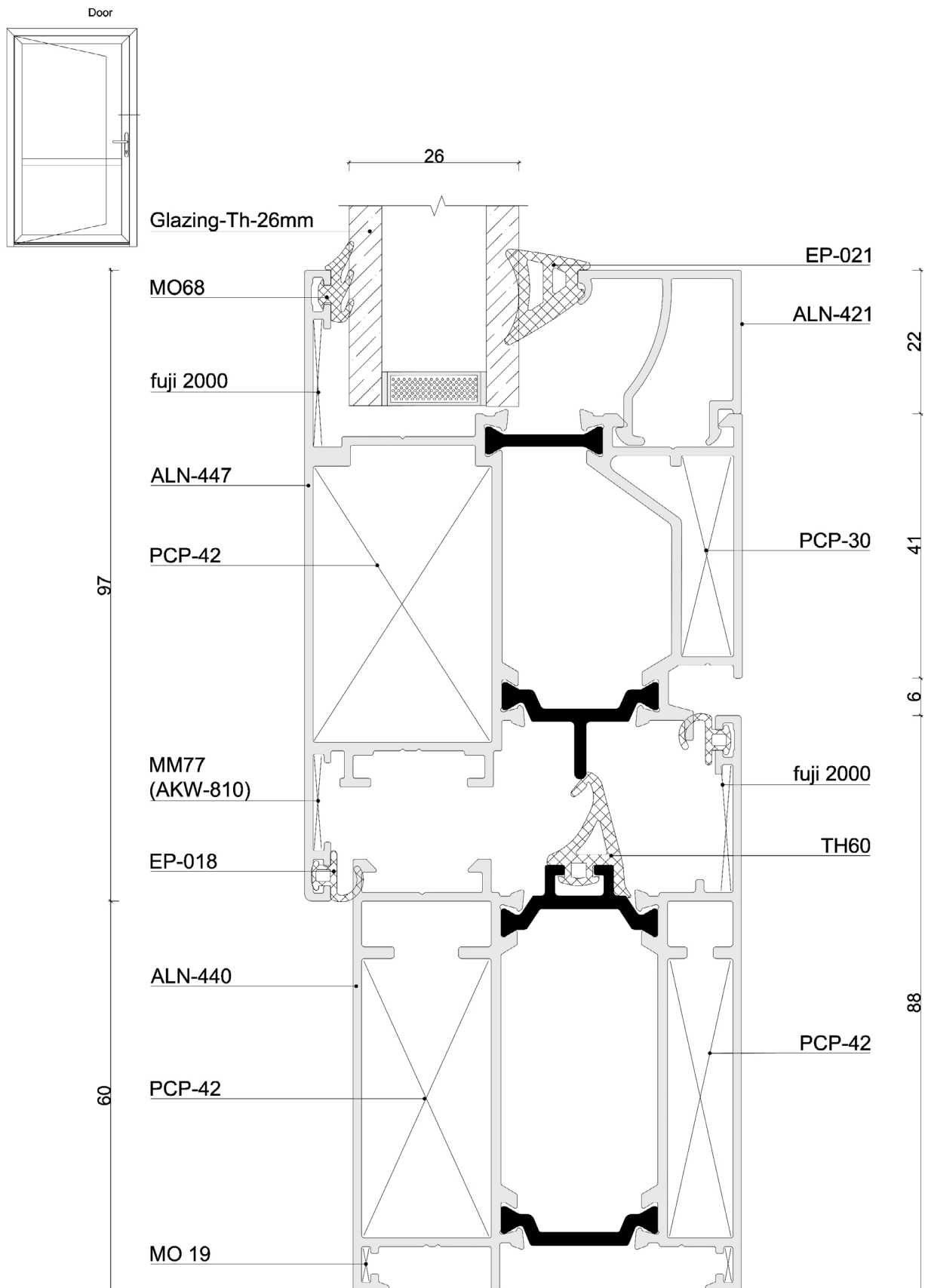


Hinged System 60 Series

Fabrication Details

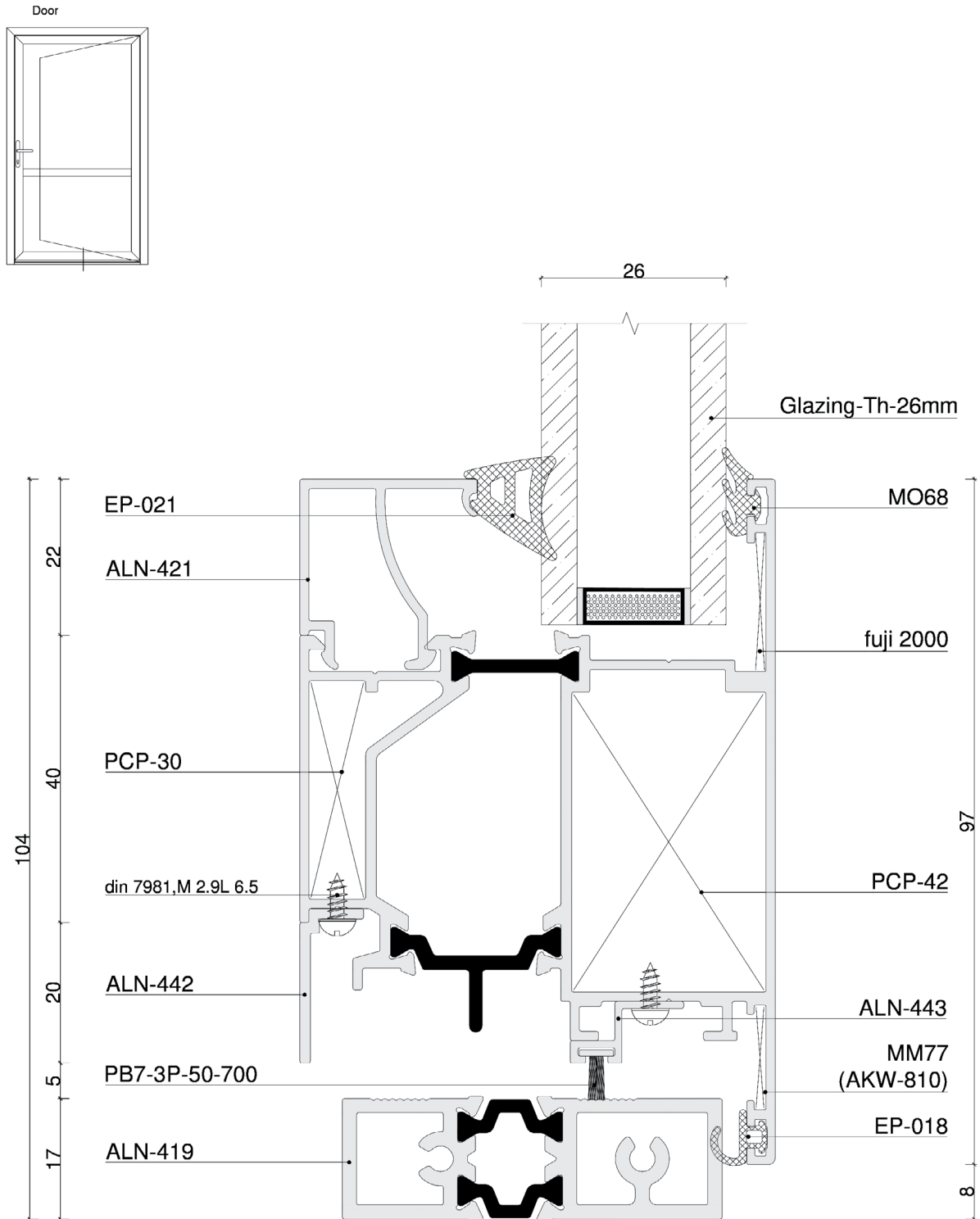


Hinged System 60 Series Fabrication Details



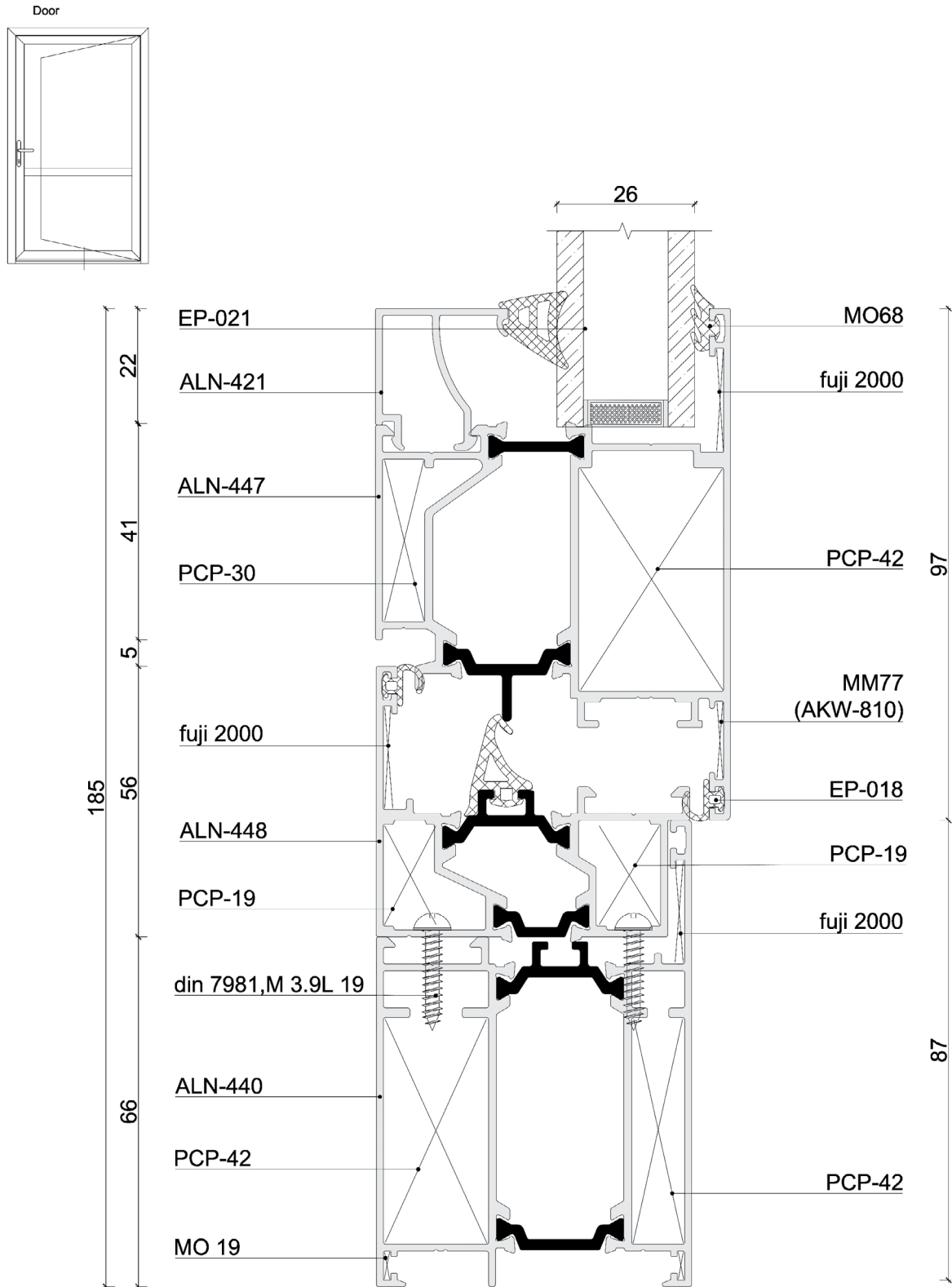
Hinged System 60 Series

Fabrication Details



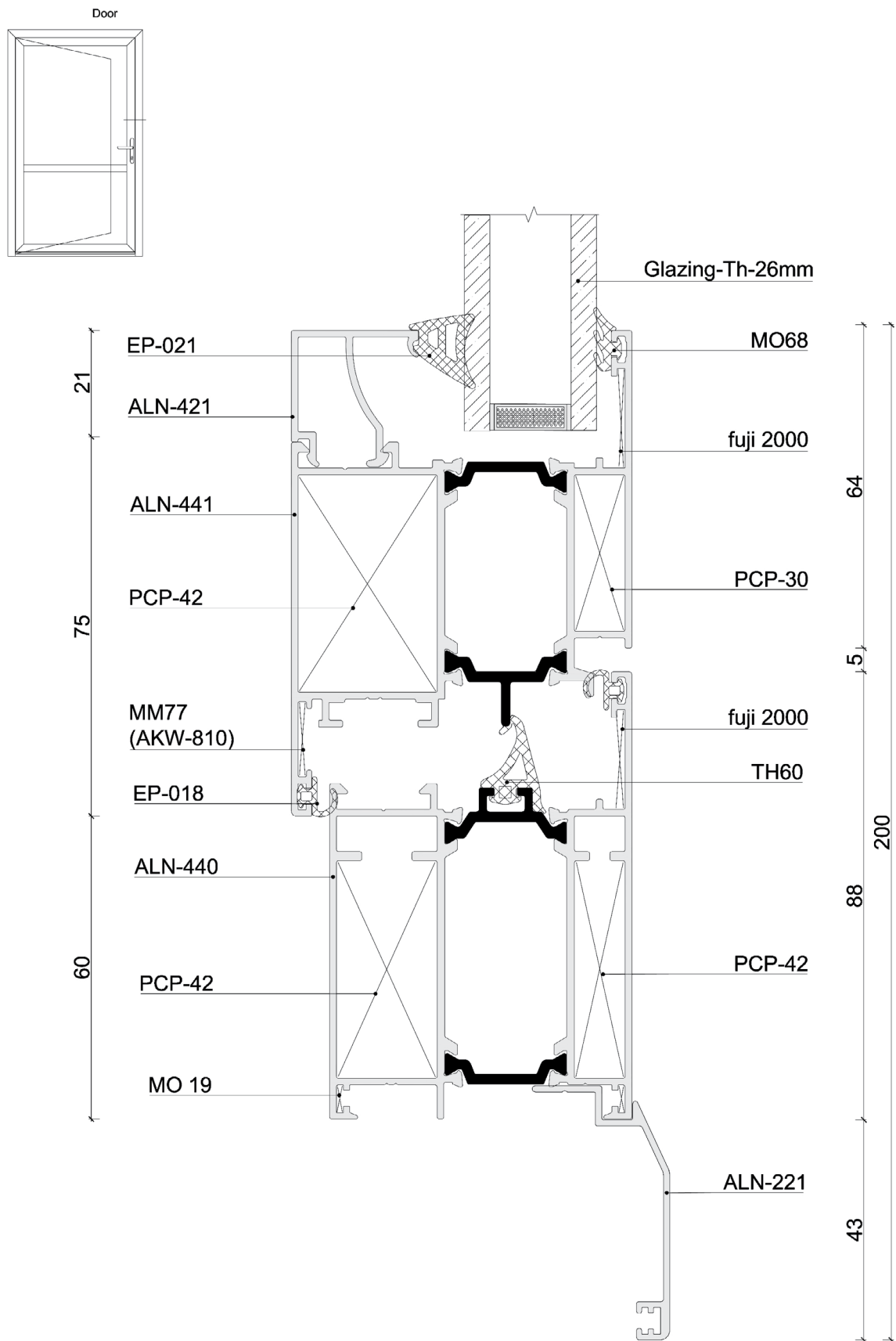
Hinged System 60 Series

Fabrication Details



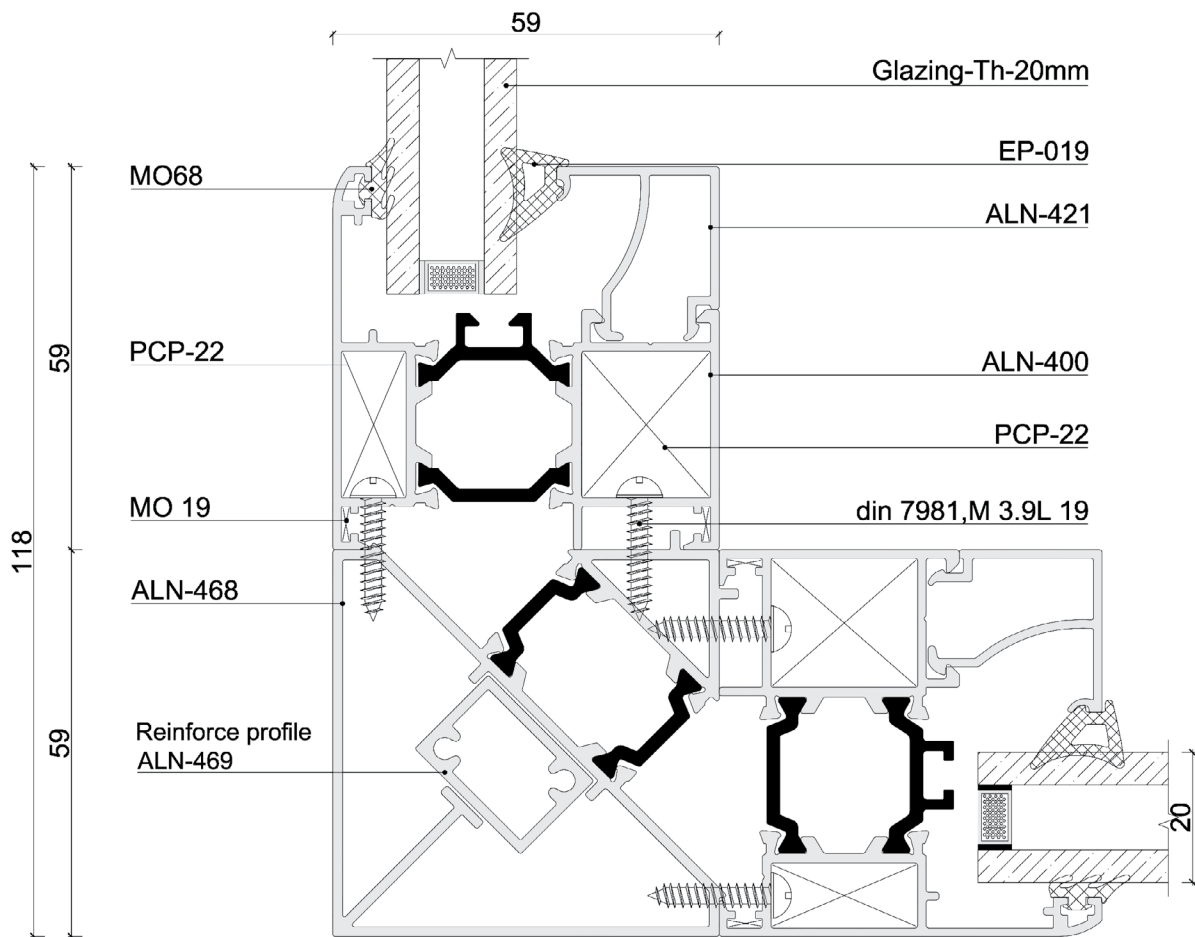
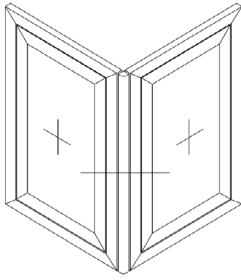
Hinged System 60 Series

Fabrication Details



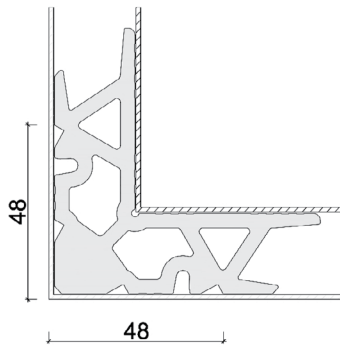
Hinged System 60 Series

Fabrication Details

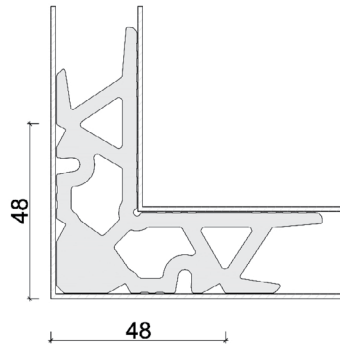


Hinged System 60 Series

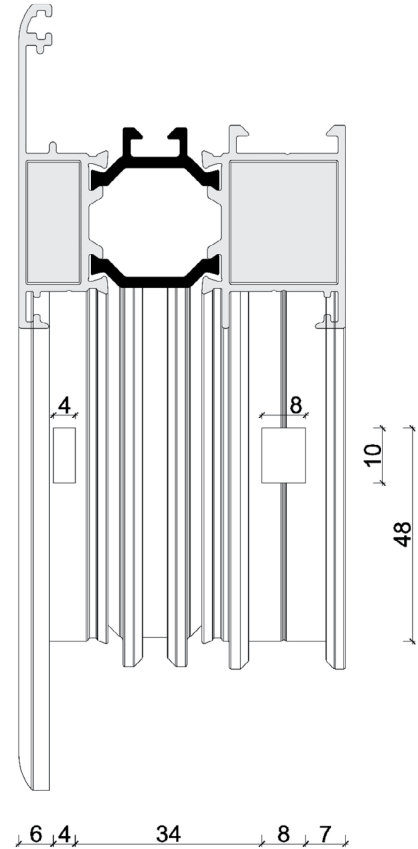
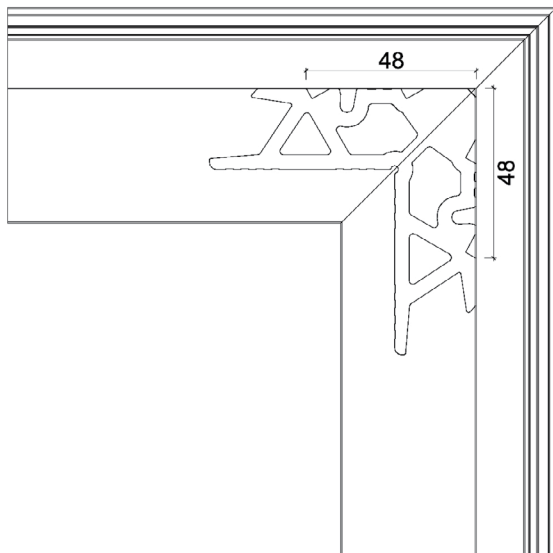
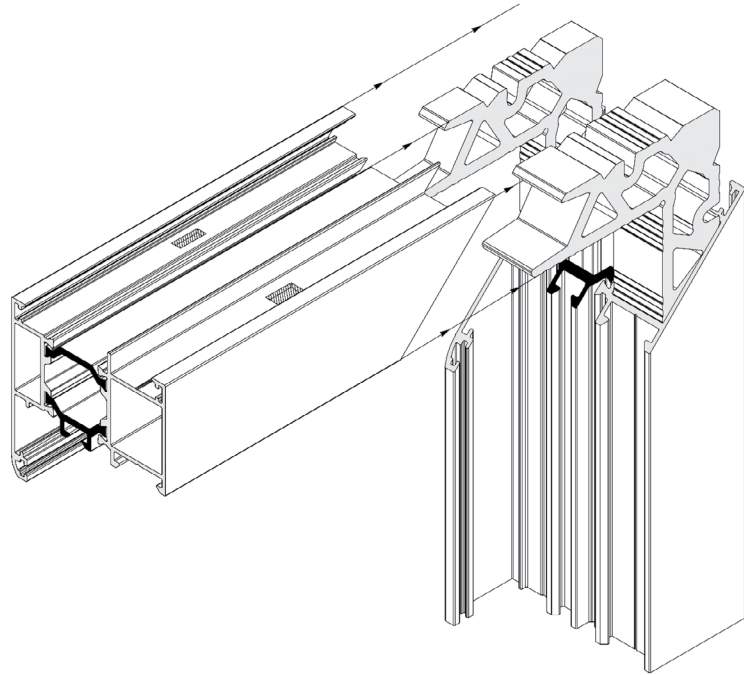
Assembly Drawing



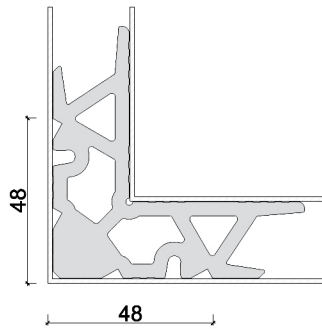
PCP-22 / 19



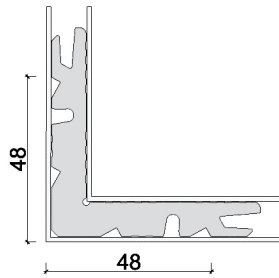
PCP-22 / 9



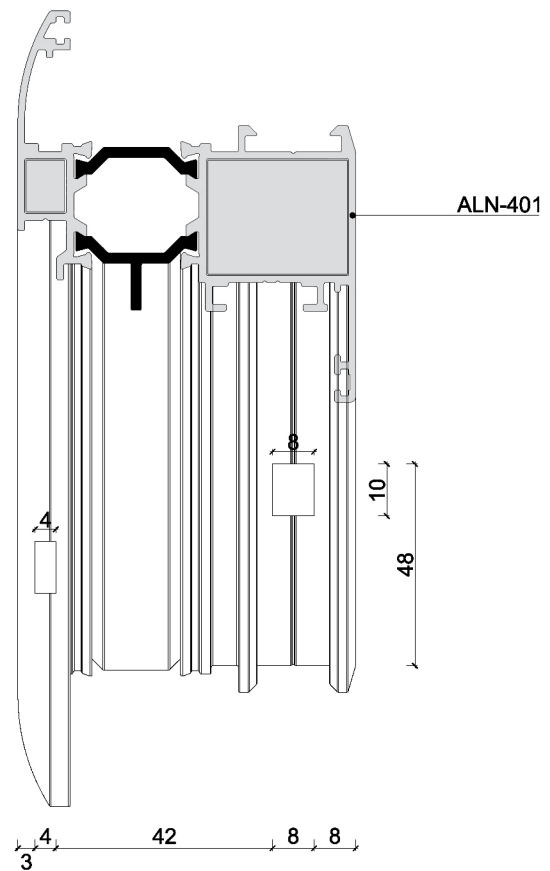
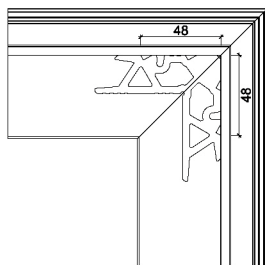
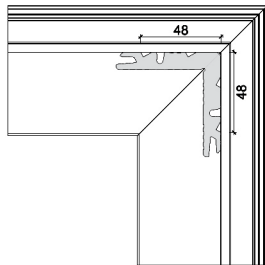
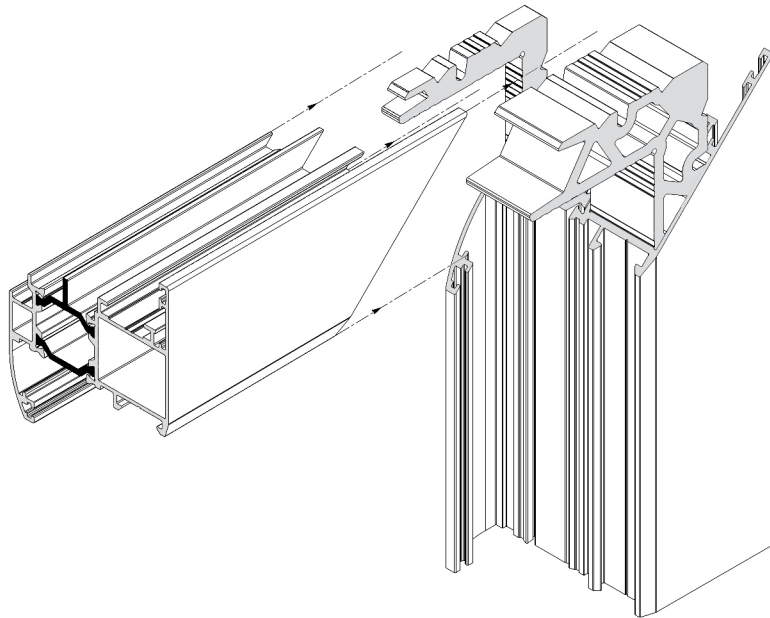
Hinged System 60 Series Assembly Drawing



PCP-22 / 26



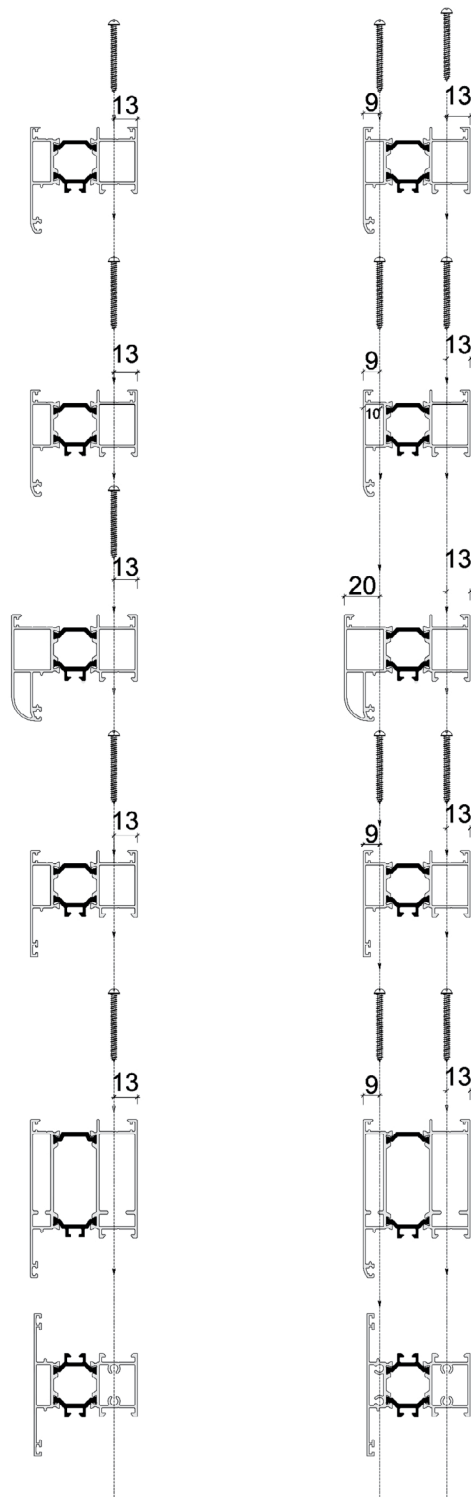
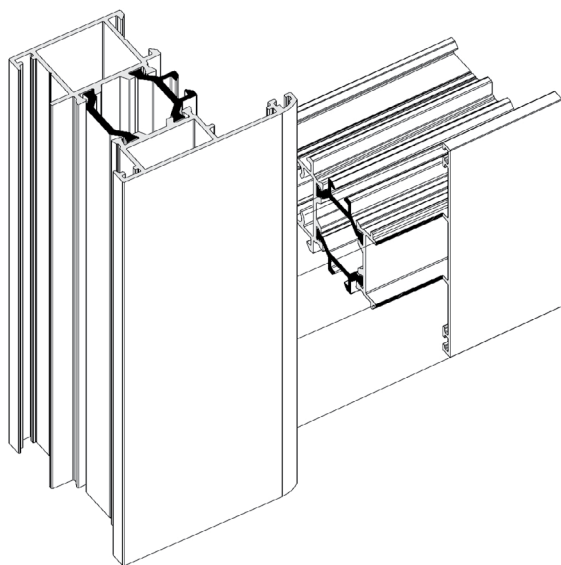
PCP-10 / 7



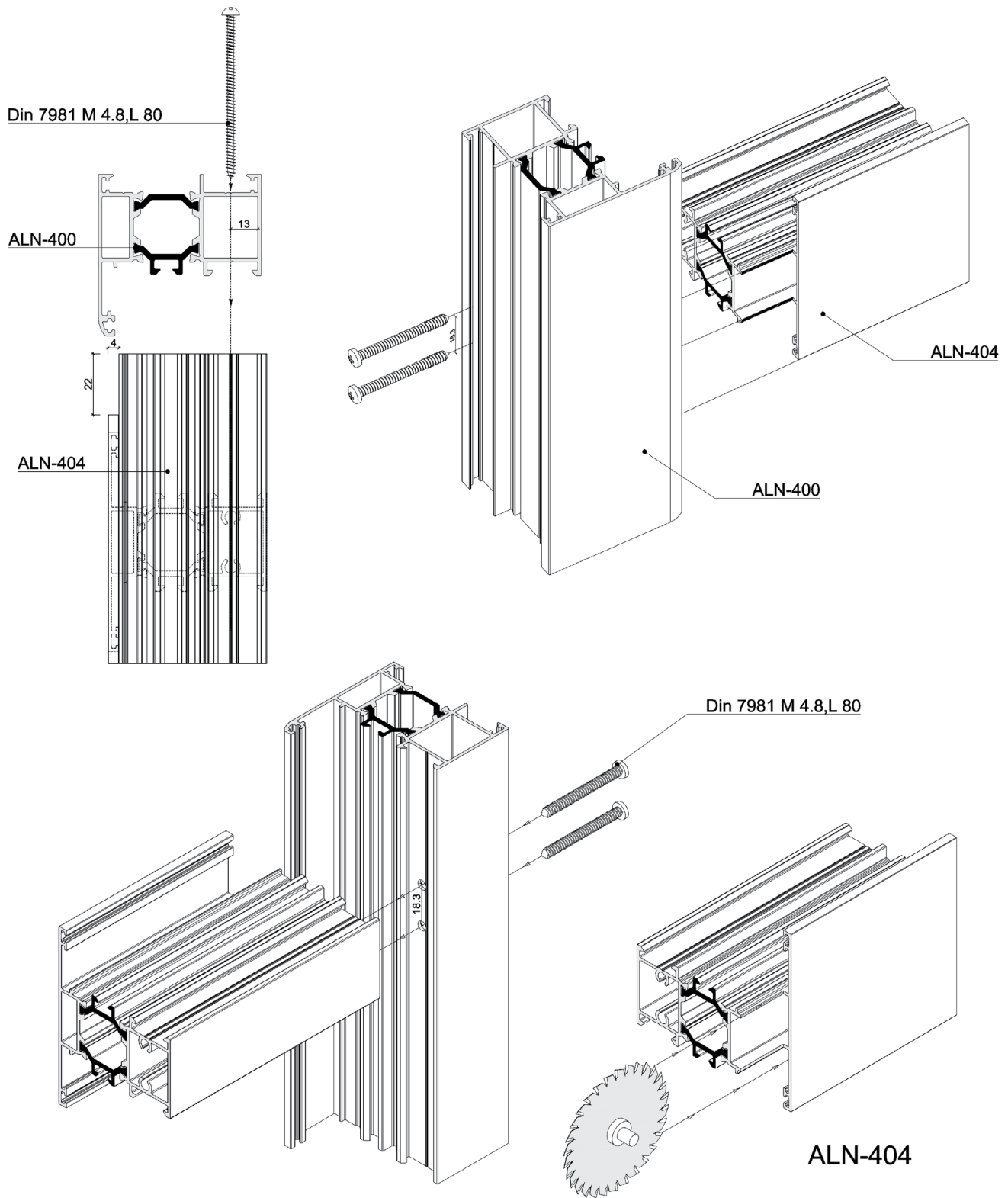
Hinged System 60 Series

Assembly Drawing

Connection - frame to transom

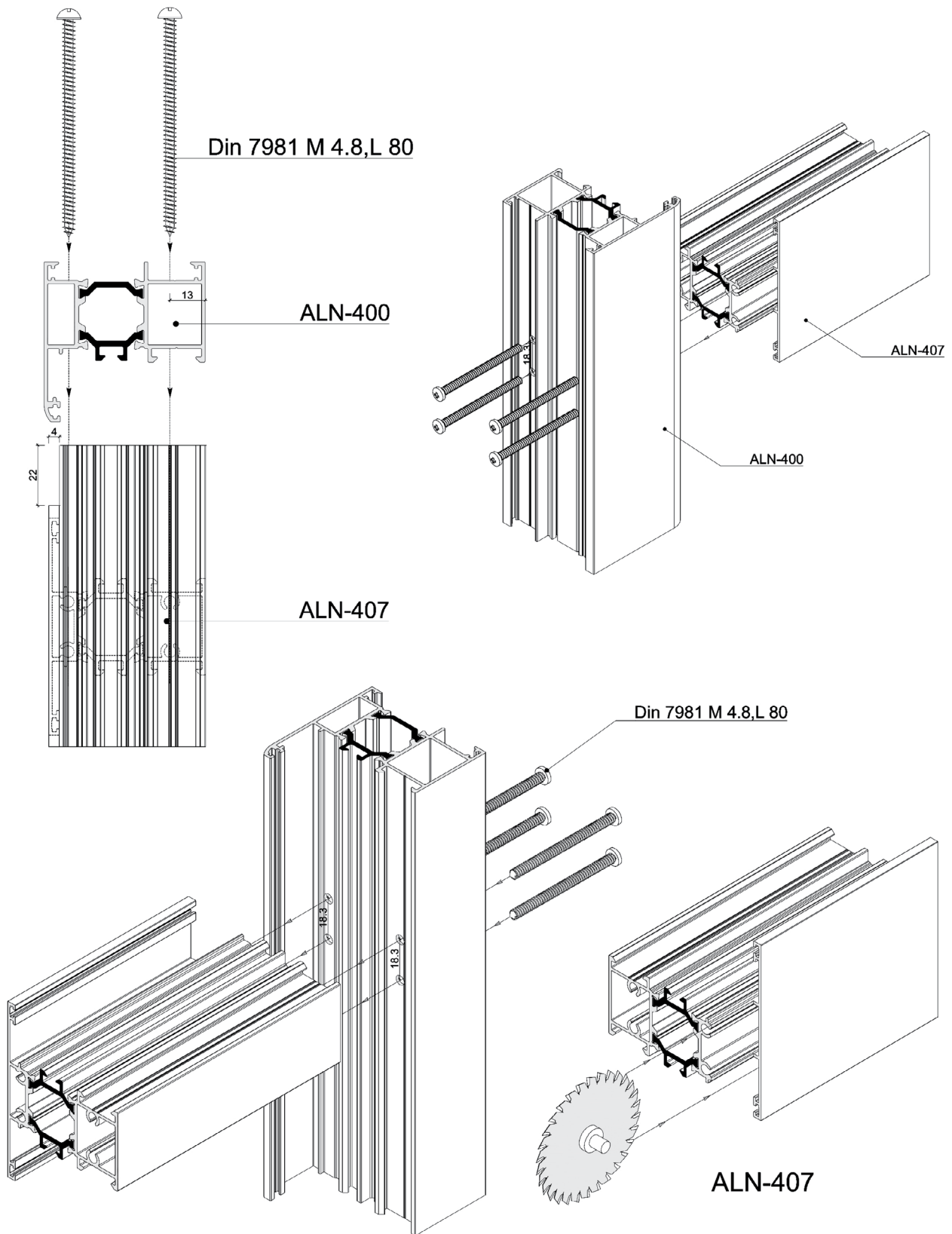


Hinged System 60 Series Assembly Drawing

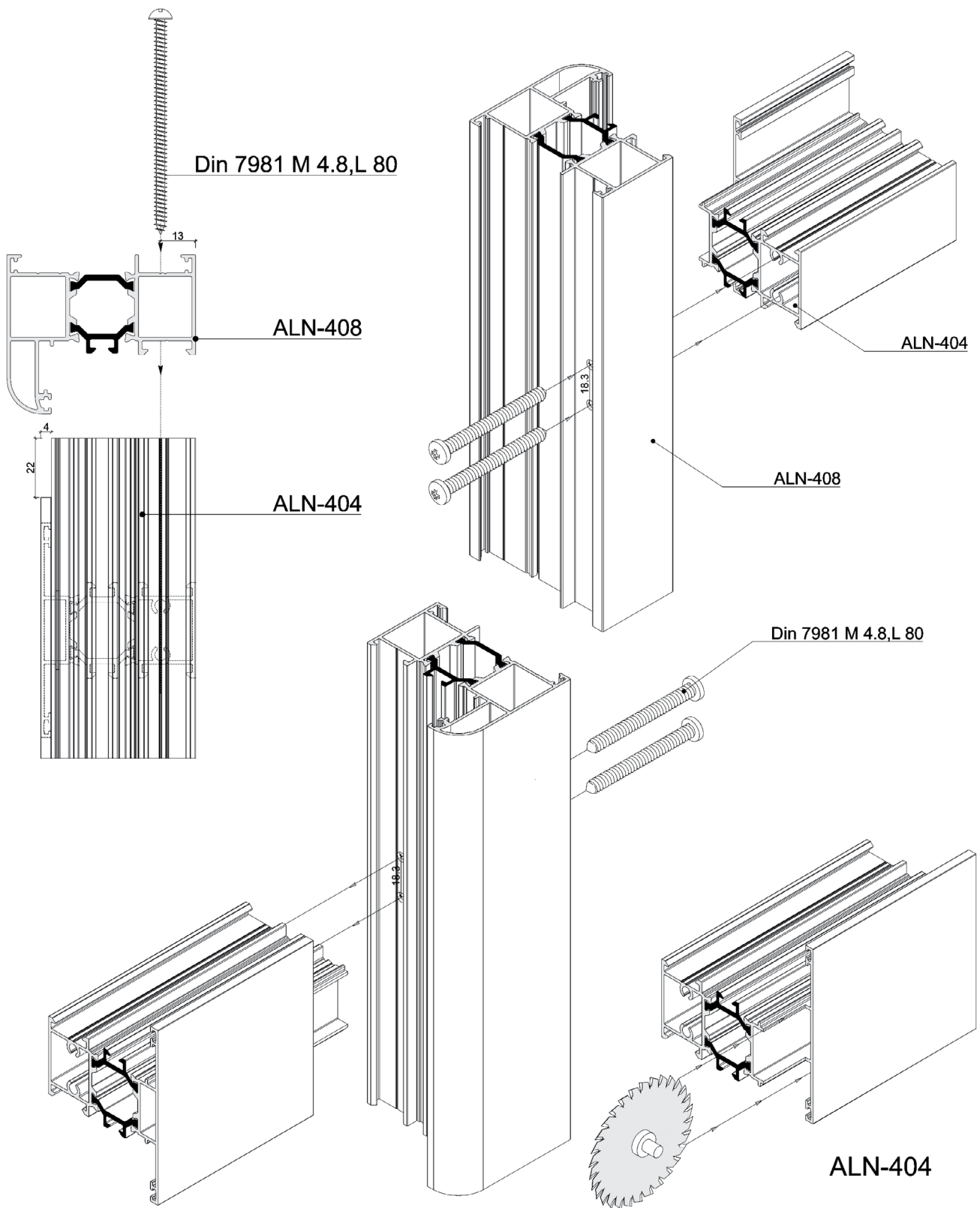


Hinged System 60 Series

Assembly Drawing

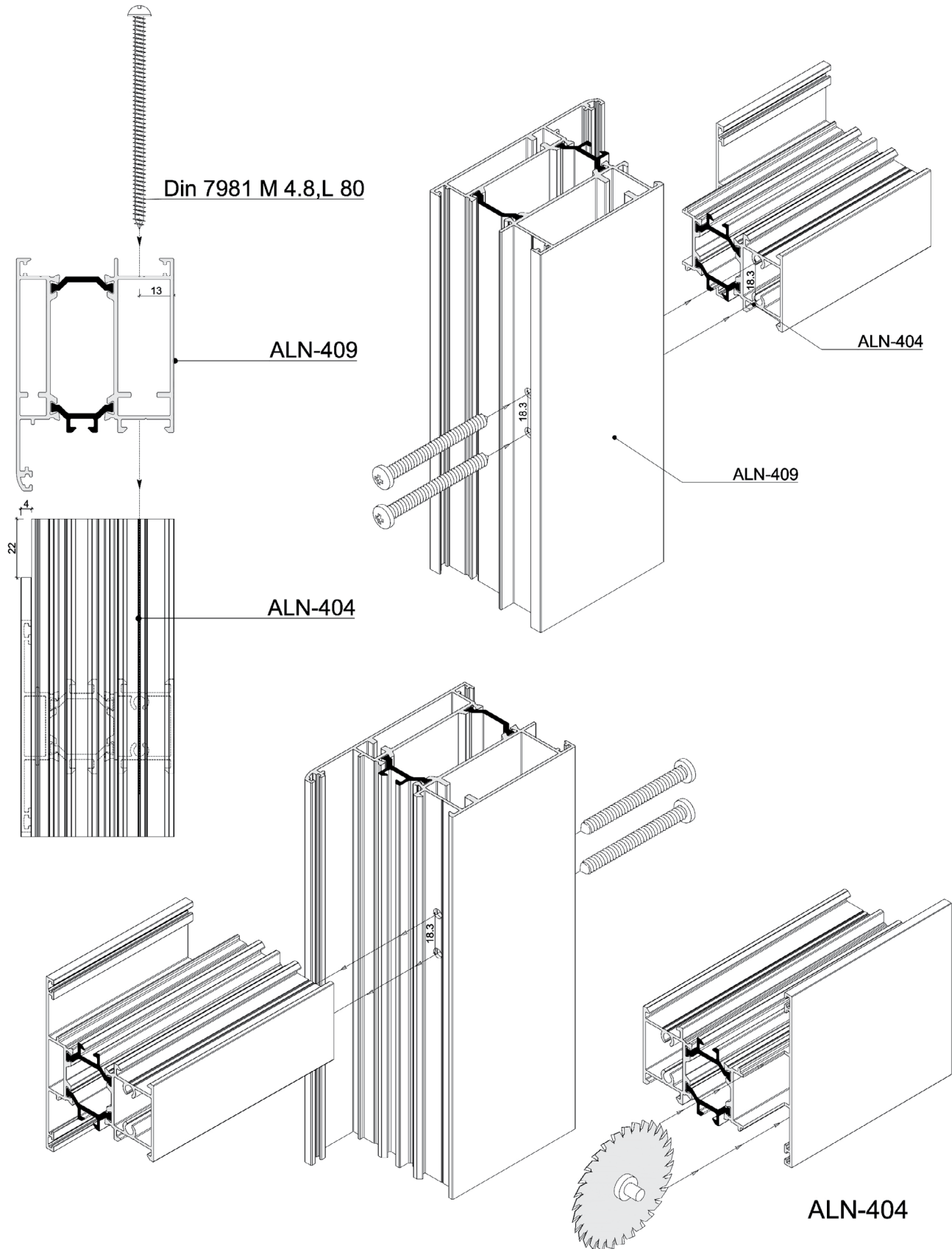


Hinged System 60 Series Assembly Drawing

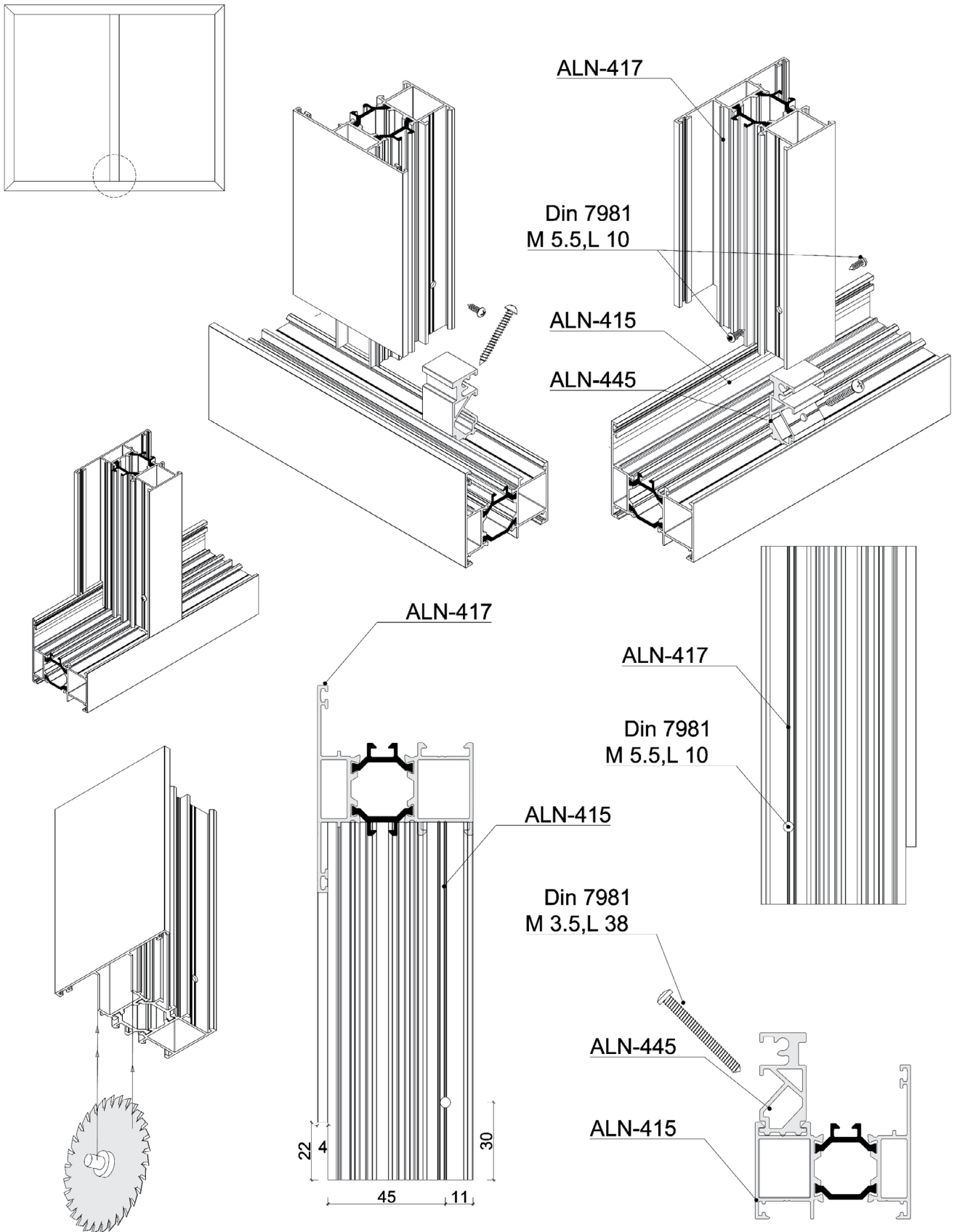


Hinged System 60 Series

Assembly Drawing

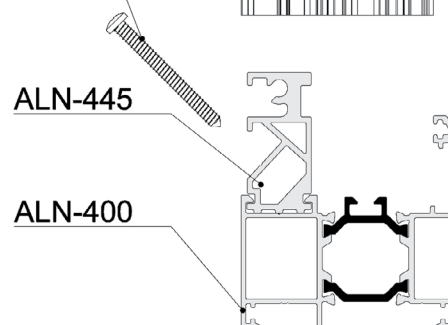
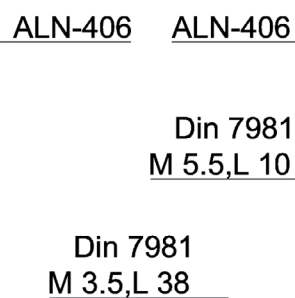
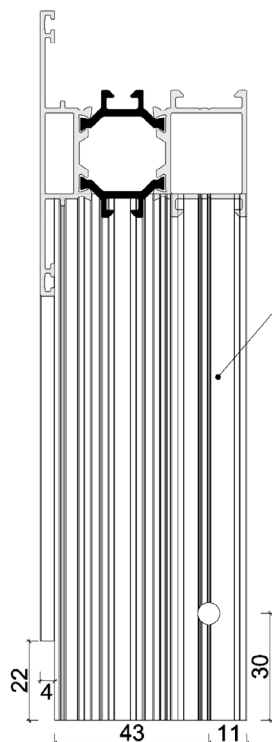
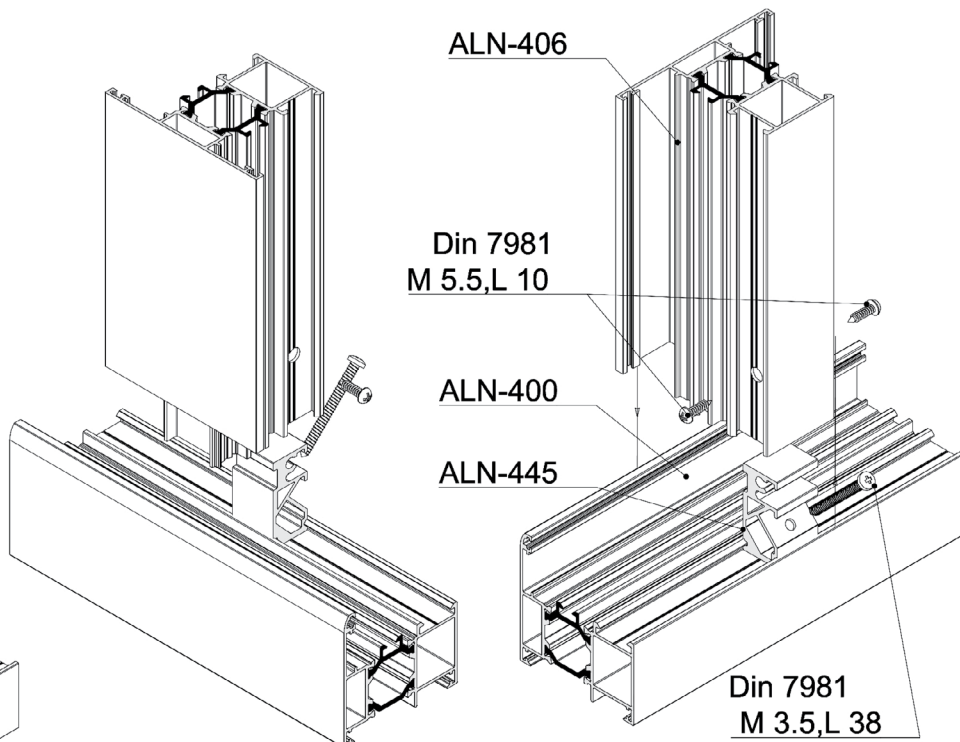
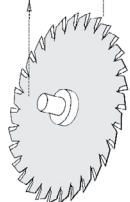
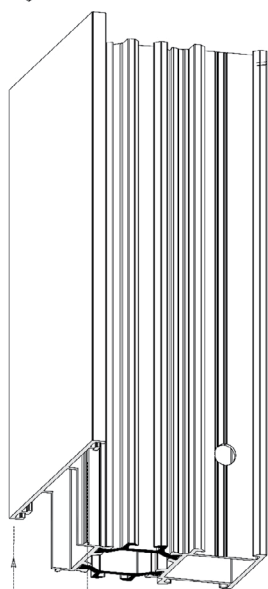
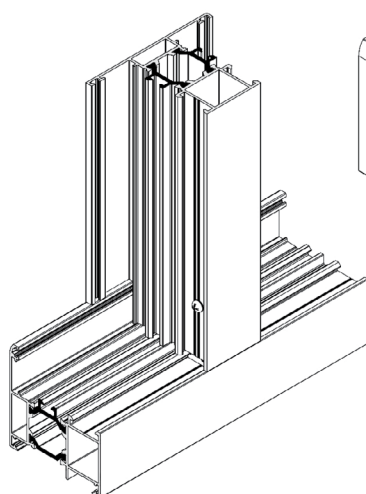
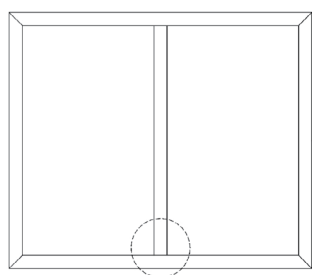


Hinged System 60 Series Assembly Drawing



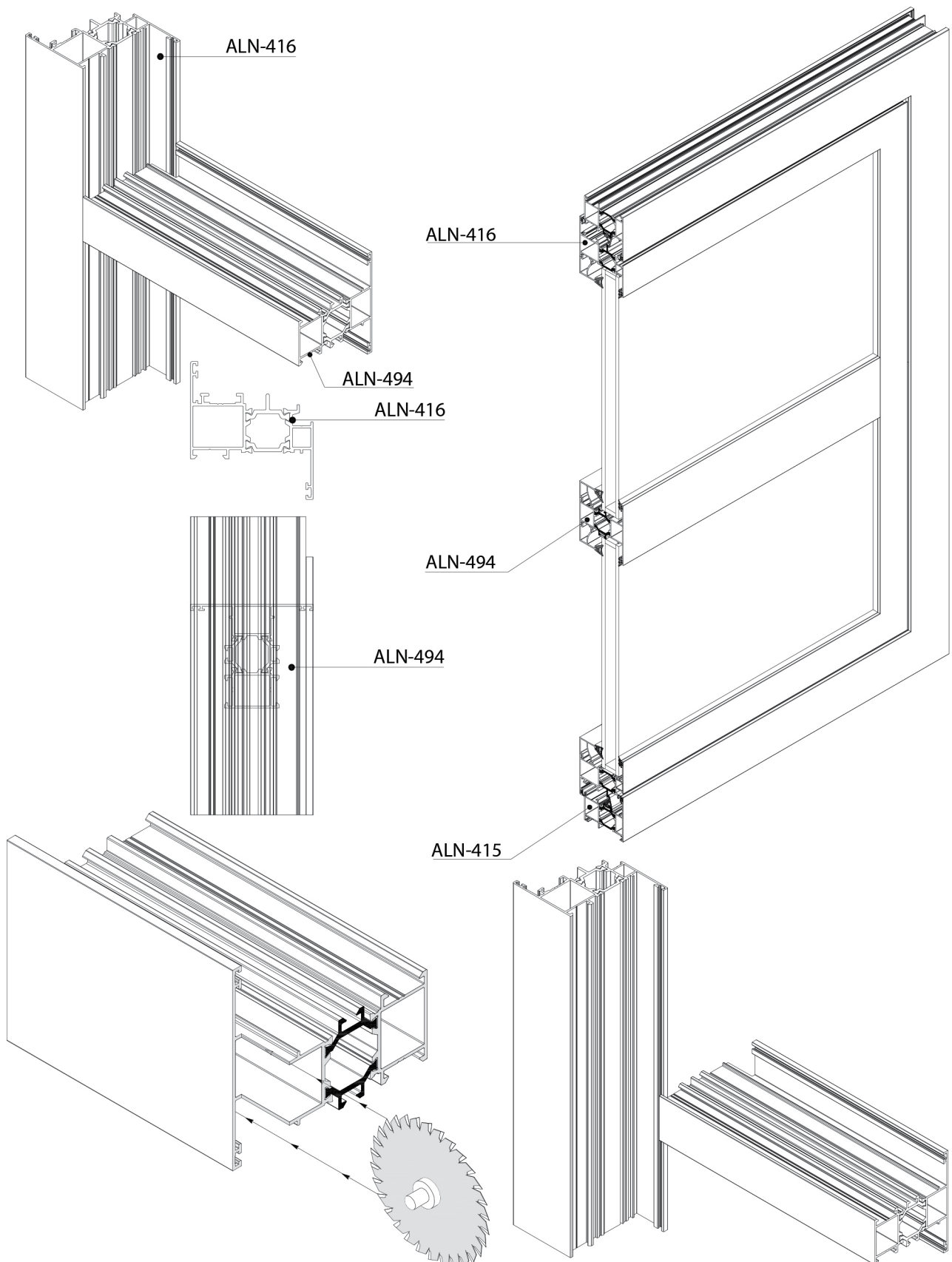
Hinged System 60 Series

Assembly Drawing



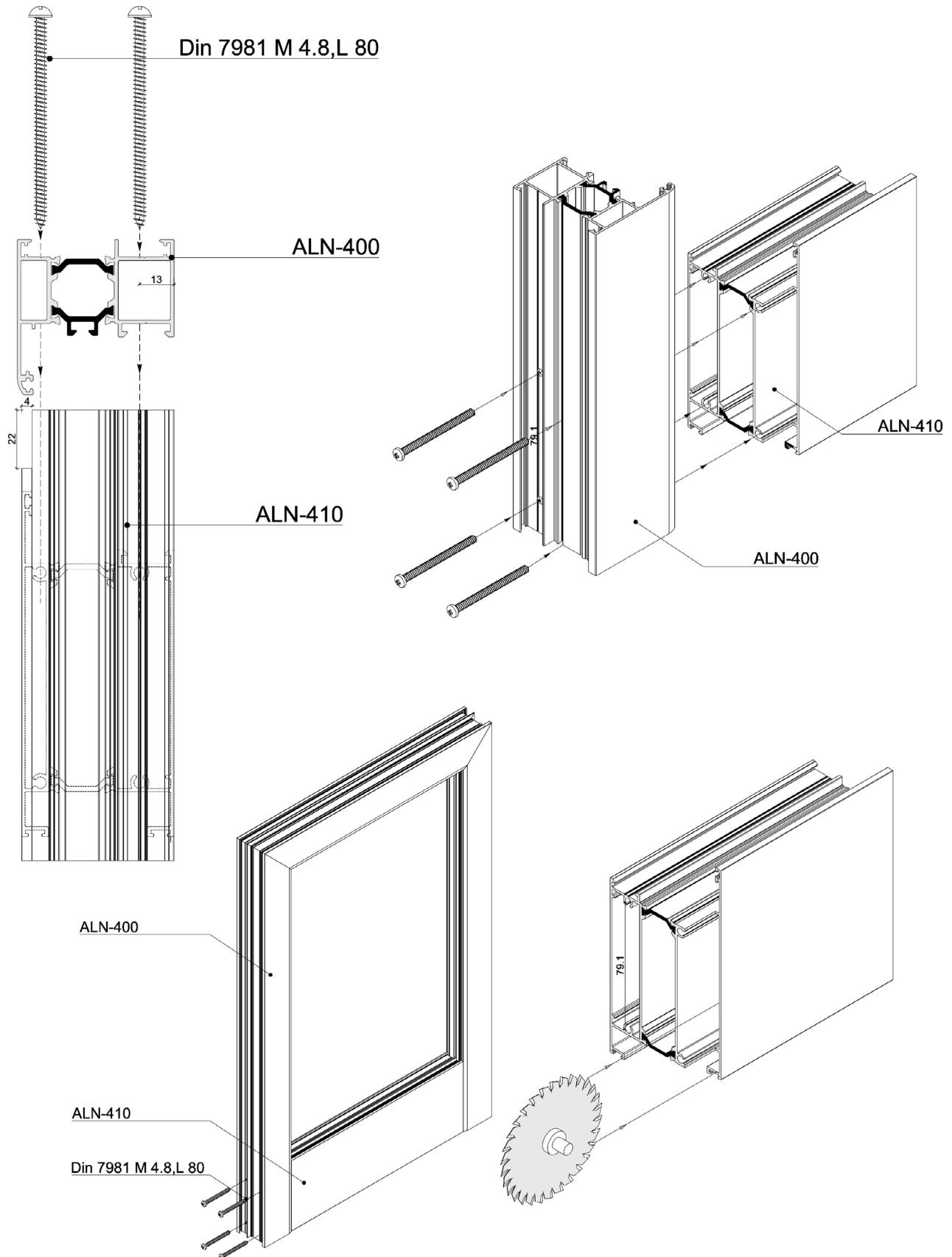
Hinged System 60 Series Assembly Drawing

Connection - Sash to Transom

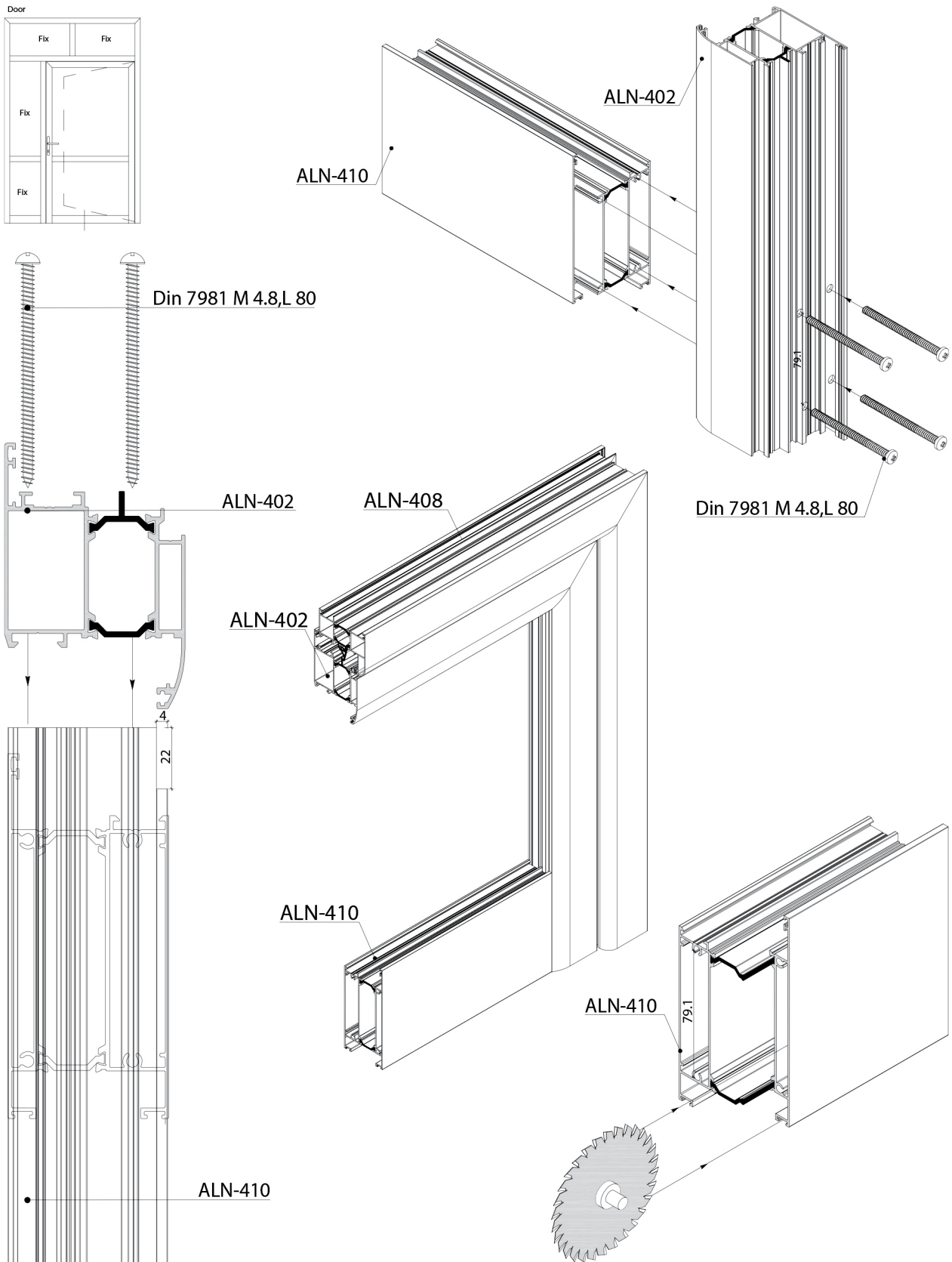


Hinged System 60 Series

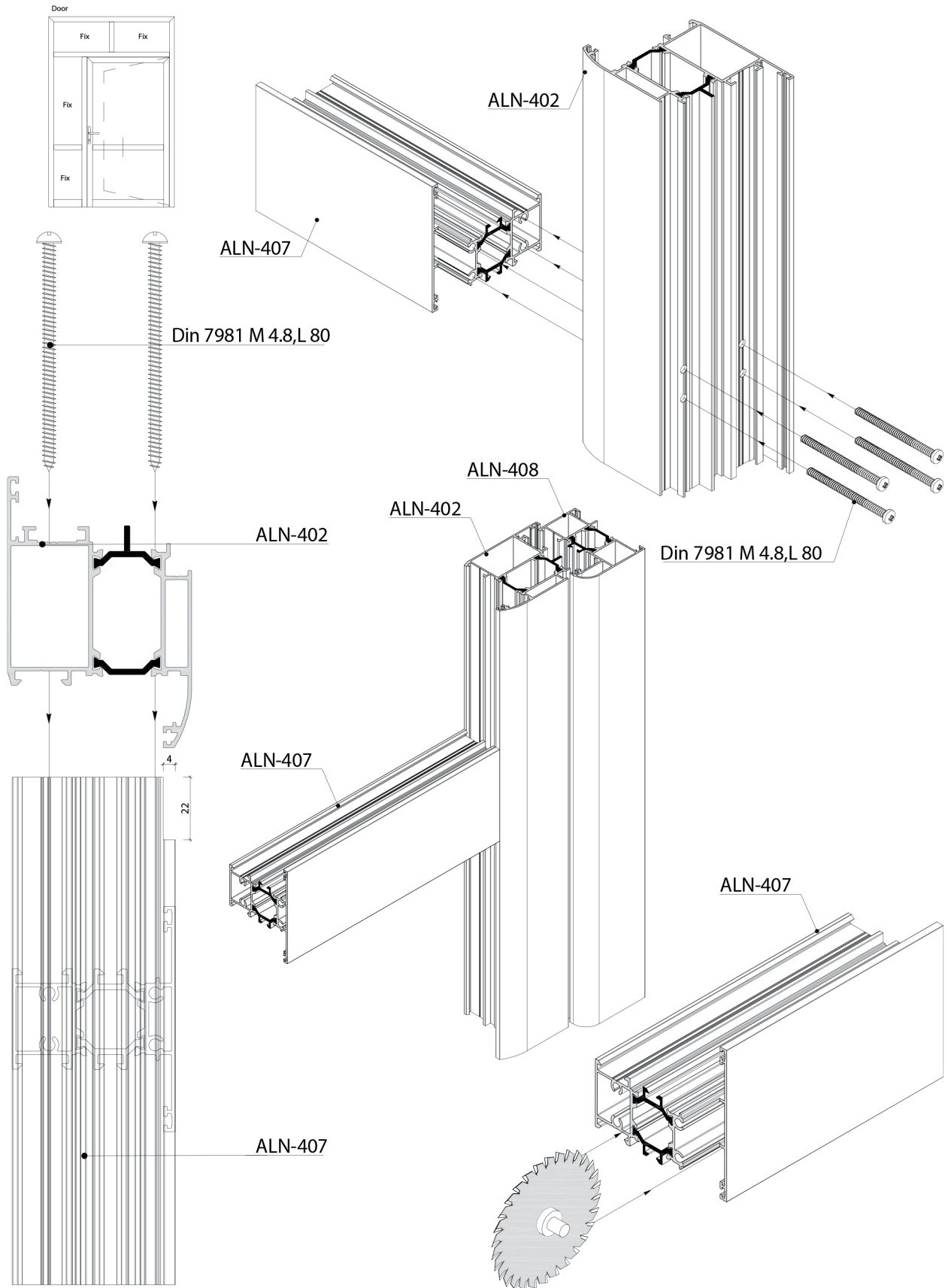
Assembly Drawing



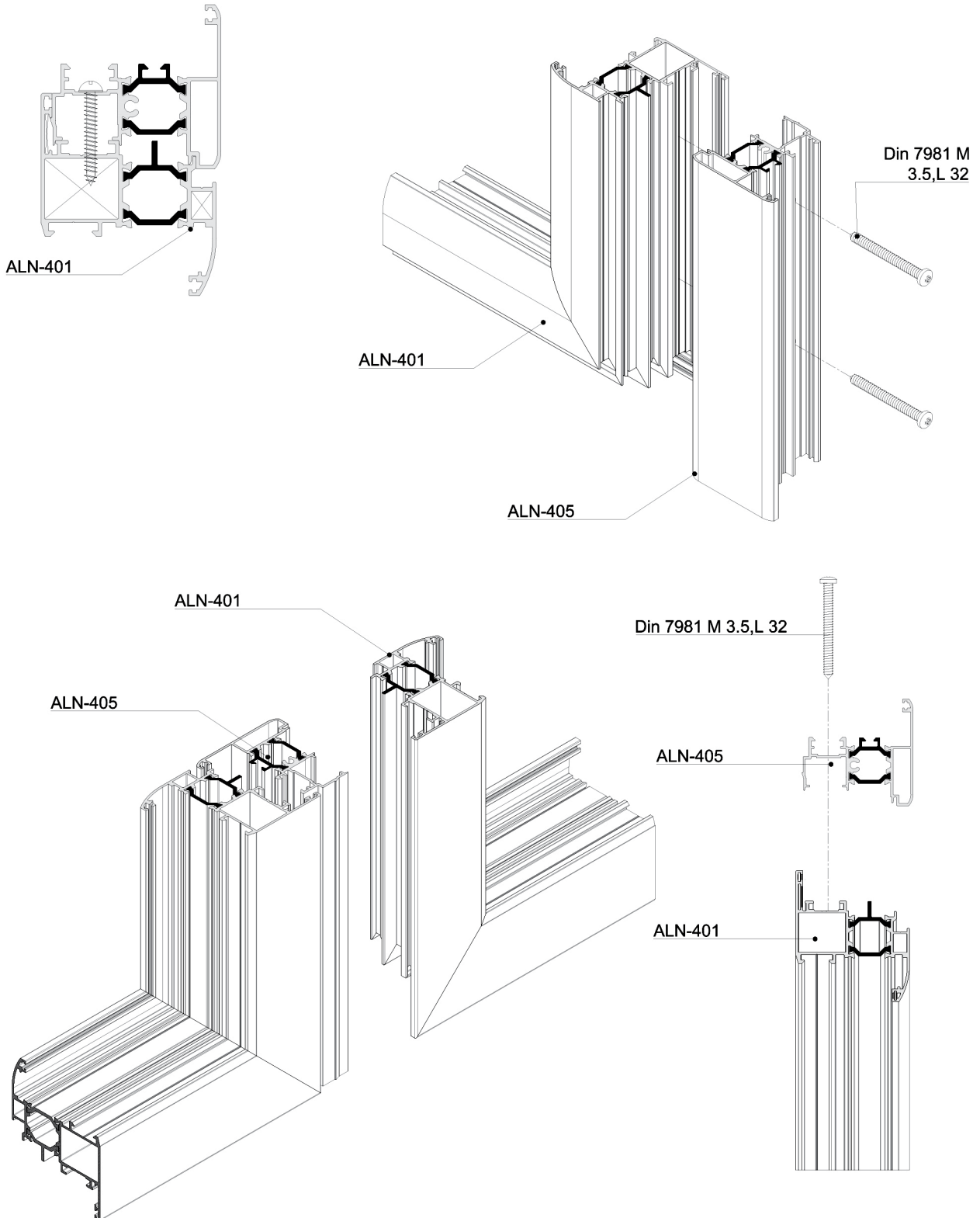
Hinged System 60 Series Assembly Drawing



Hinged System 60 Series Assembly Drawing

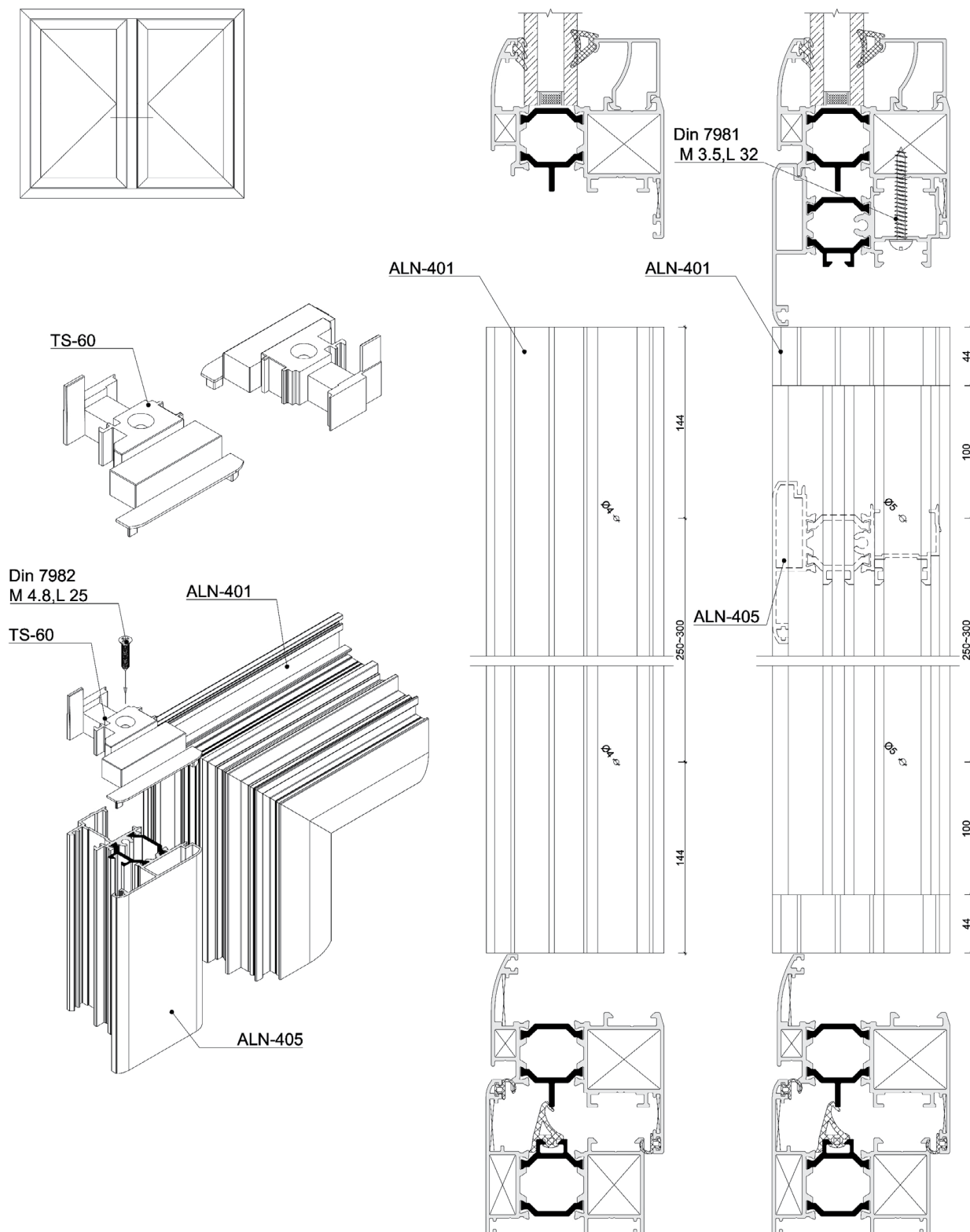


Hinged System 60 Series Assembly Drawing

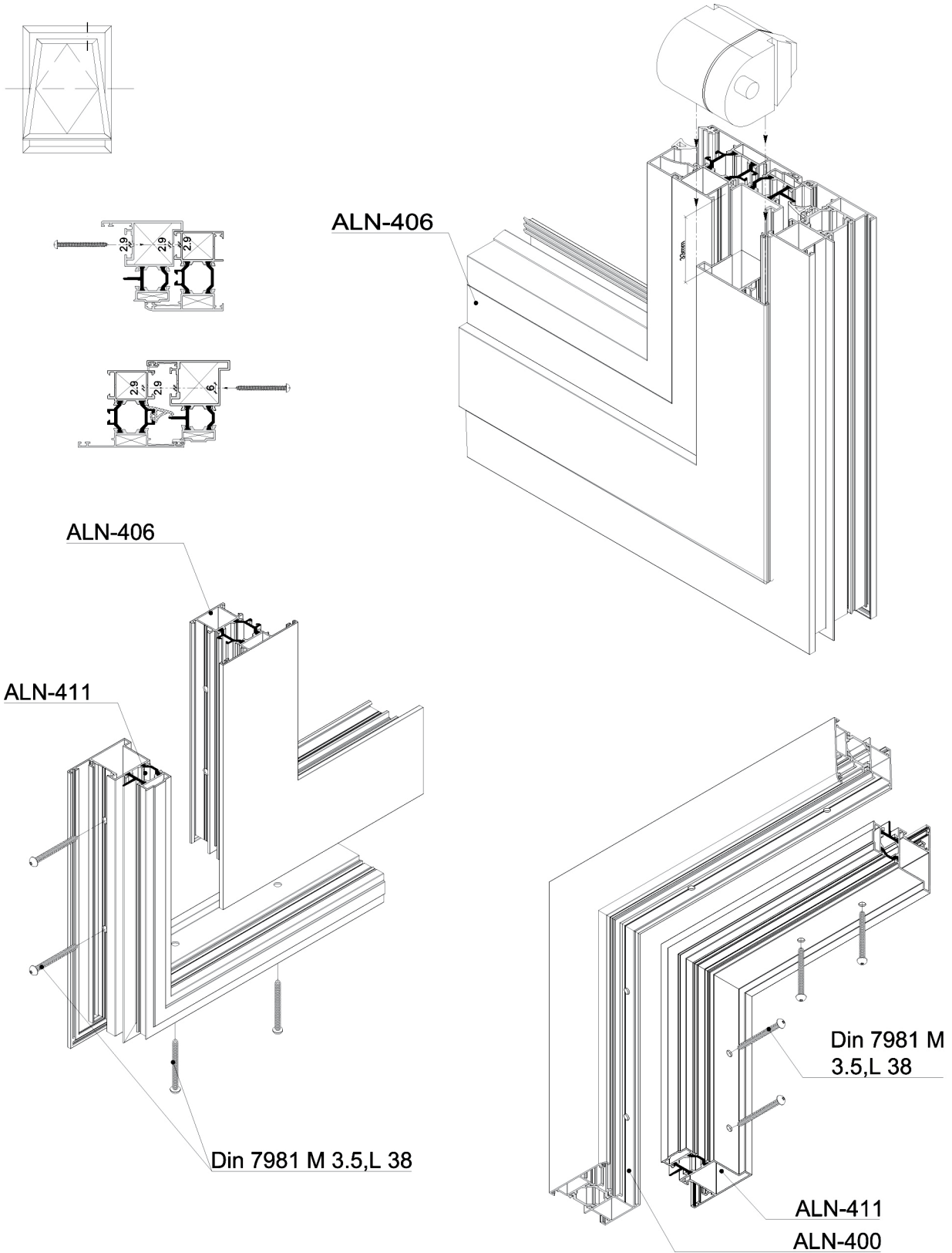


Hinged System 60 Series

Assembly Drawing

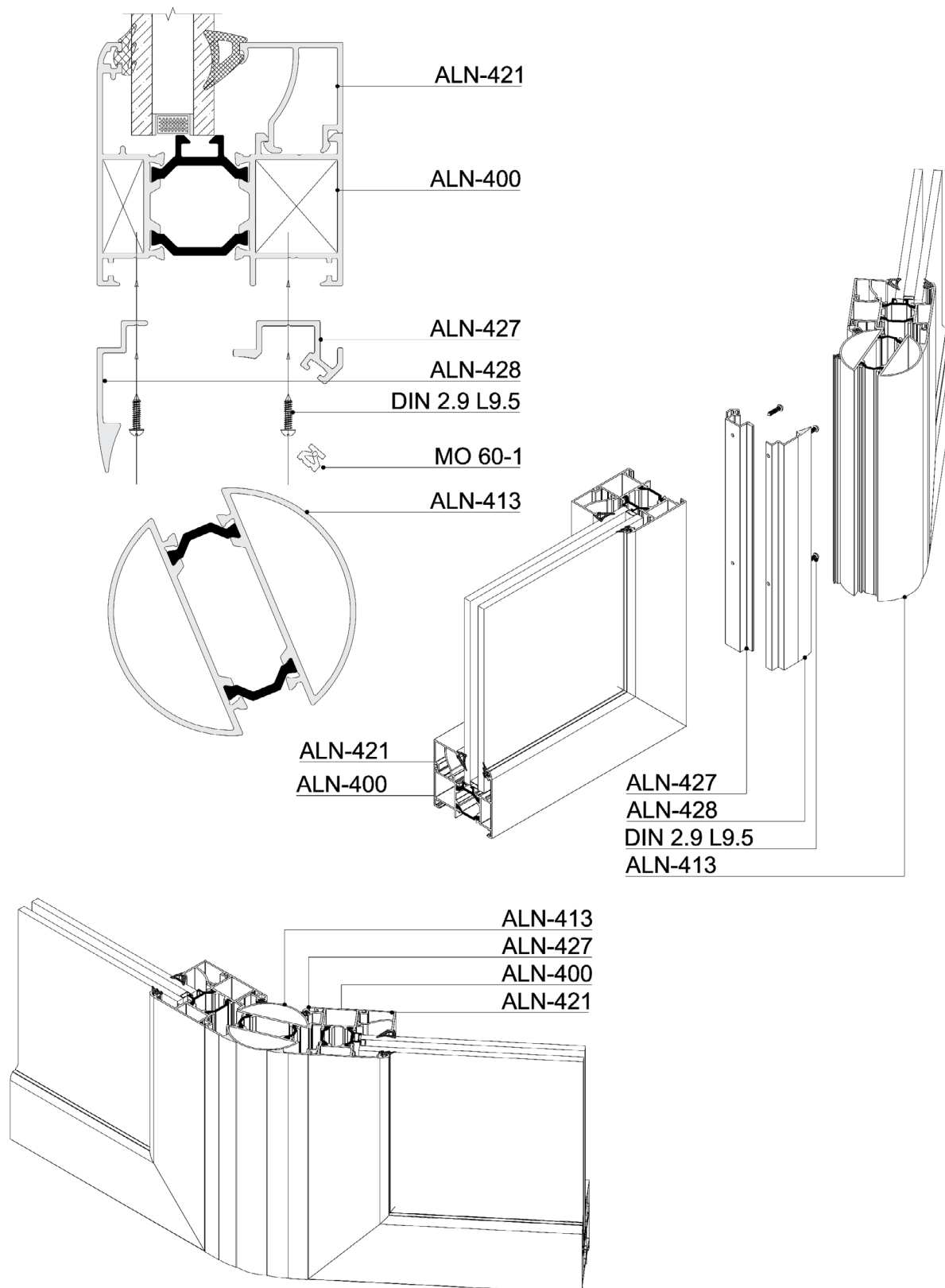


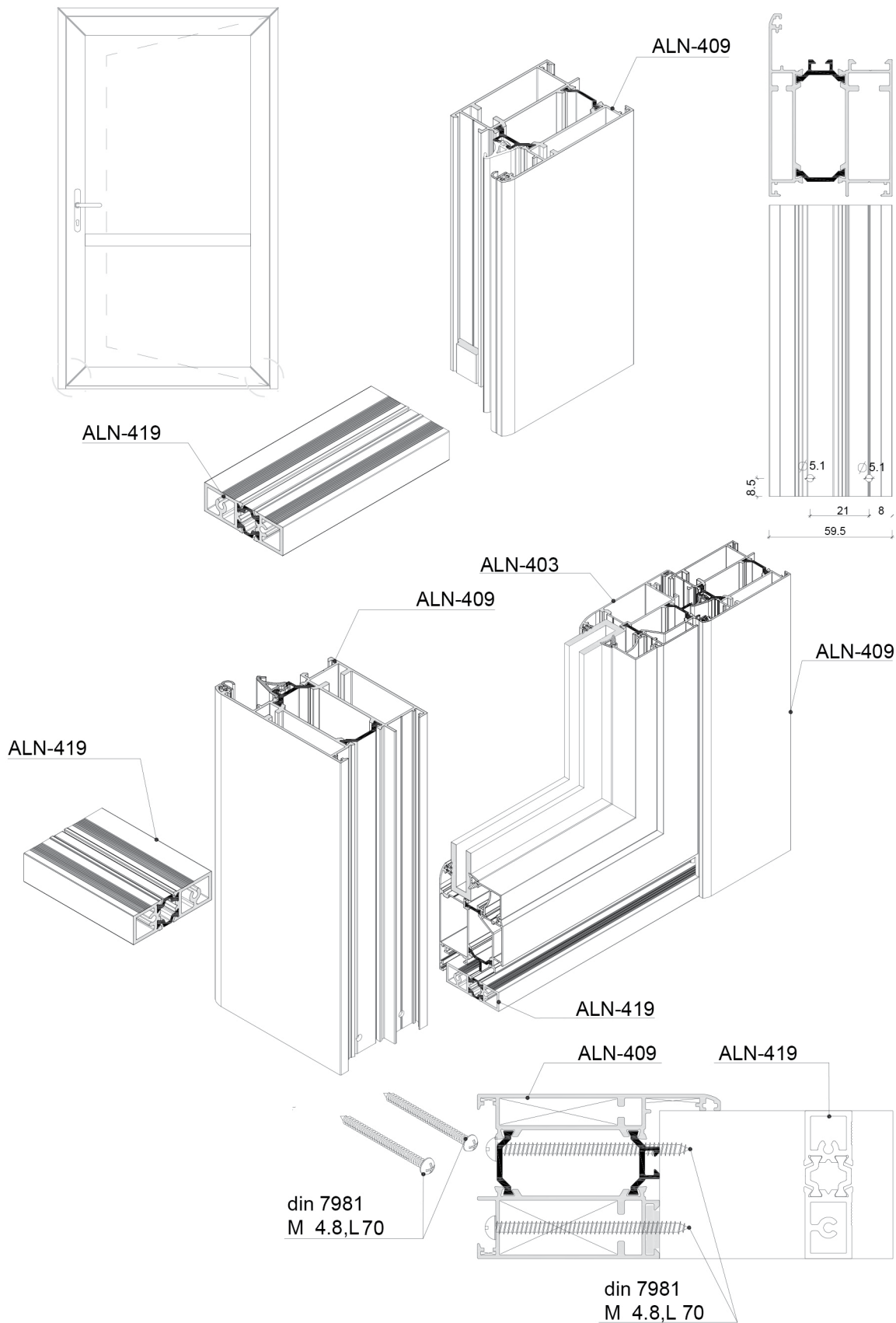
Hinged System 60 Series Assembly Drawing



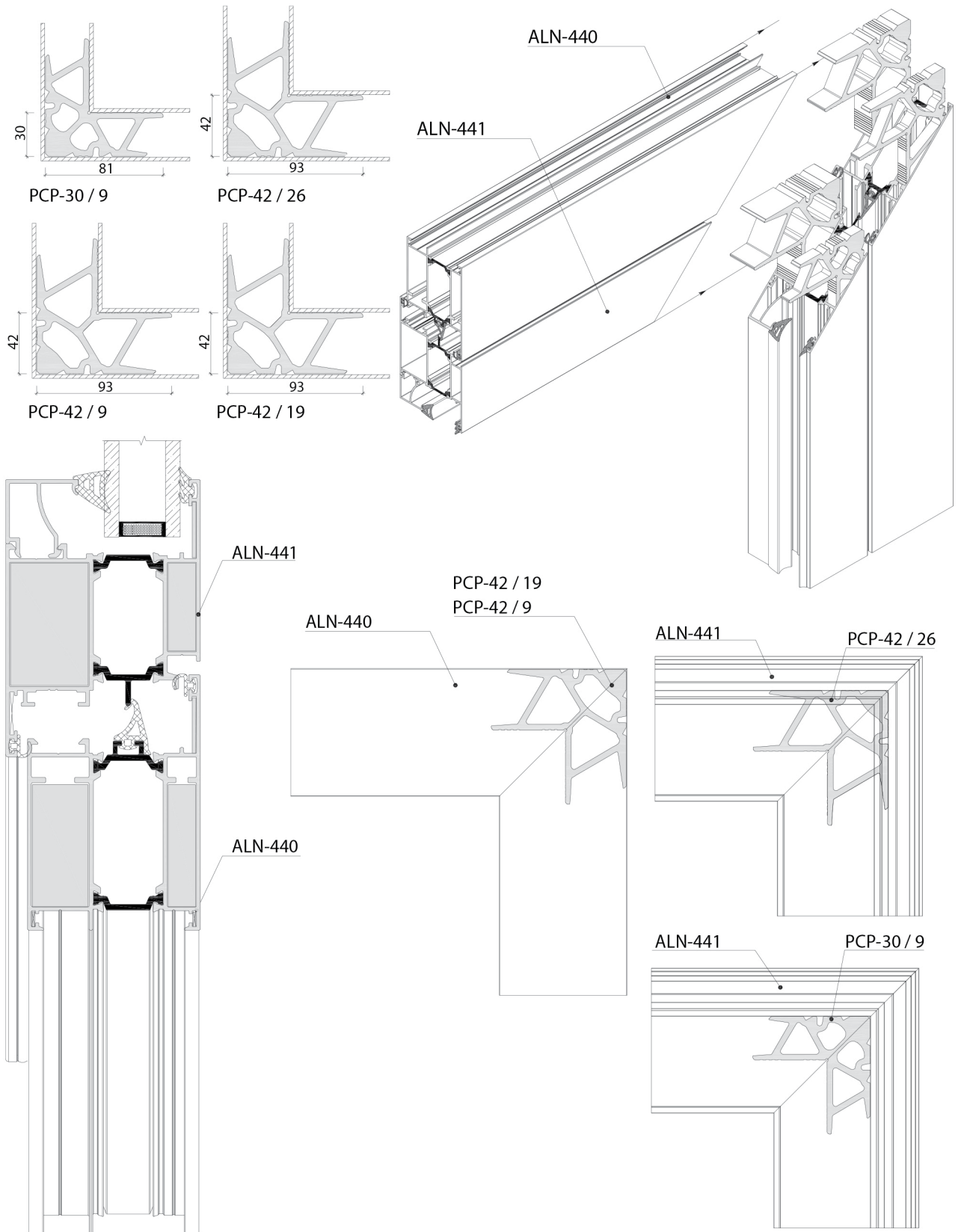
Hinged System 60 Series

Assembly Drawing

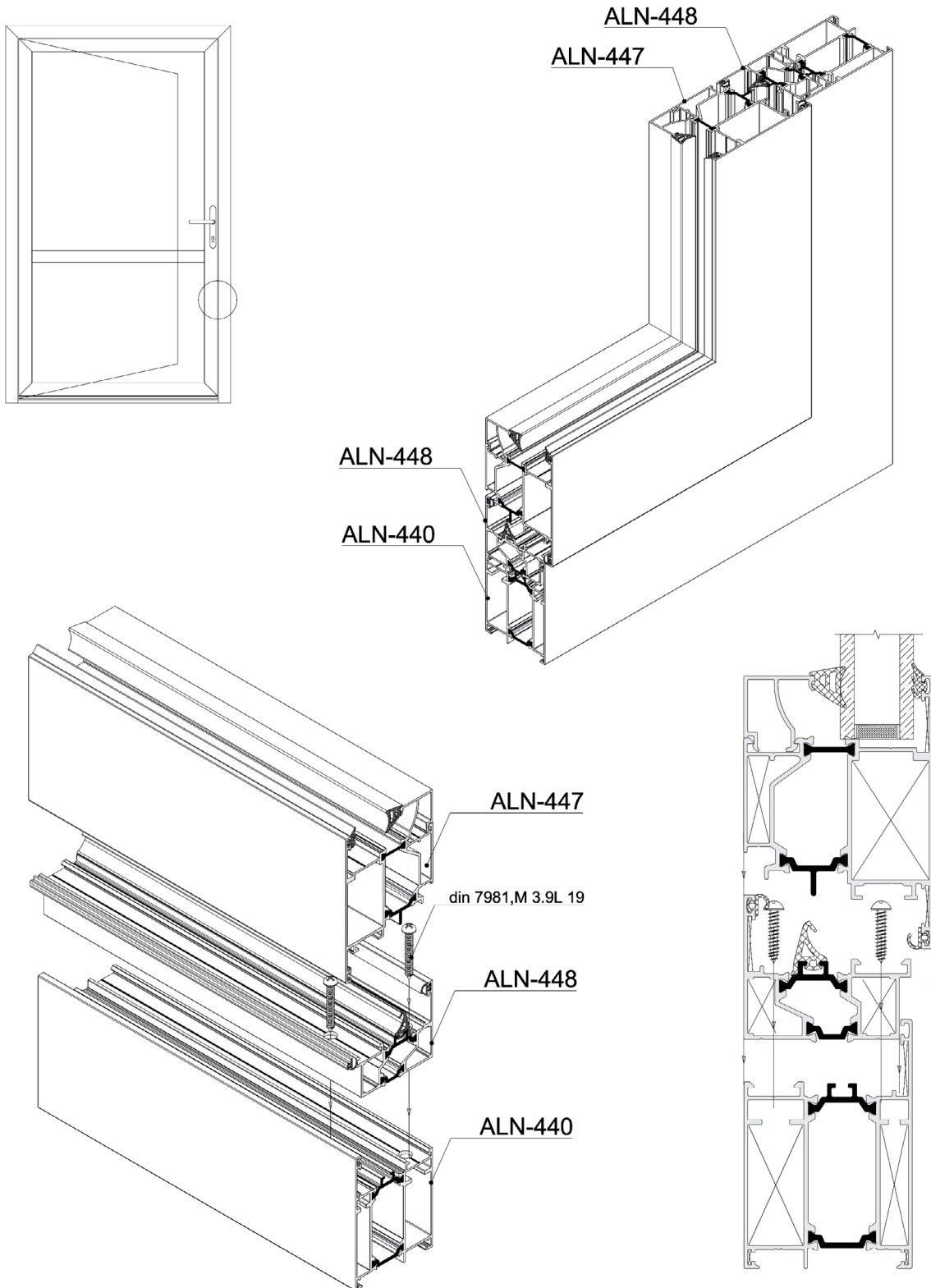




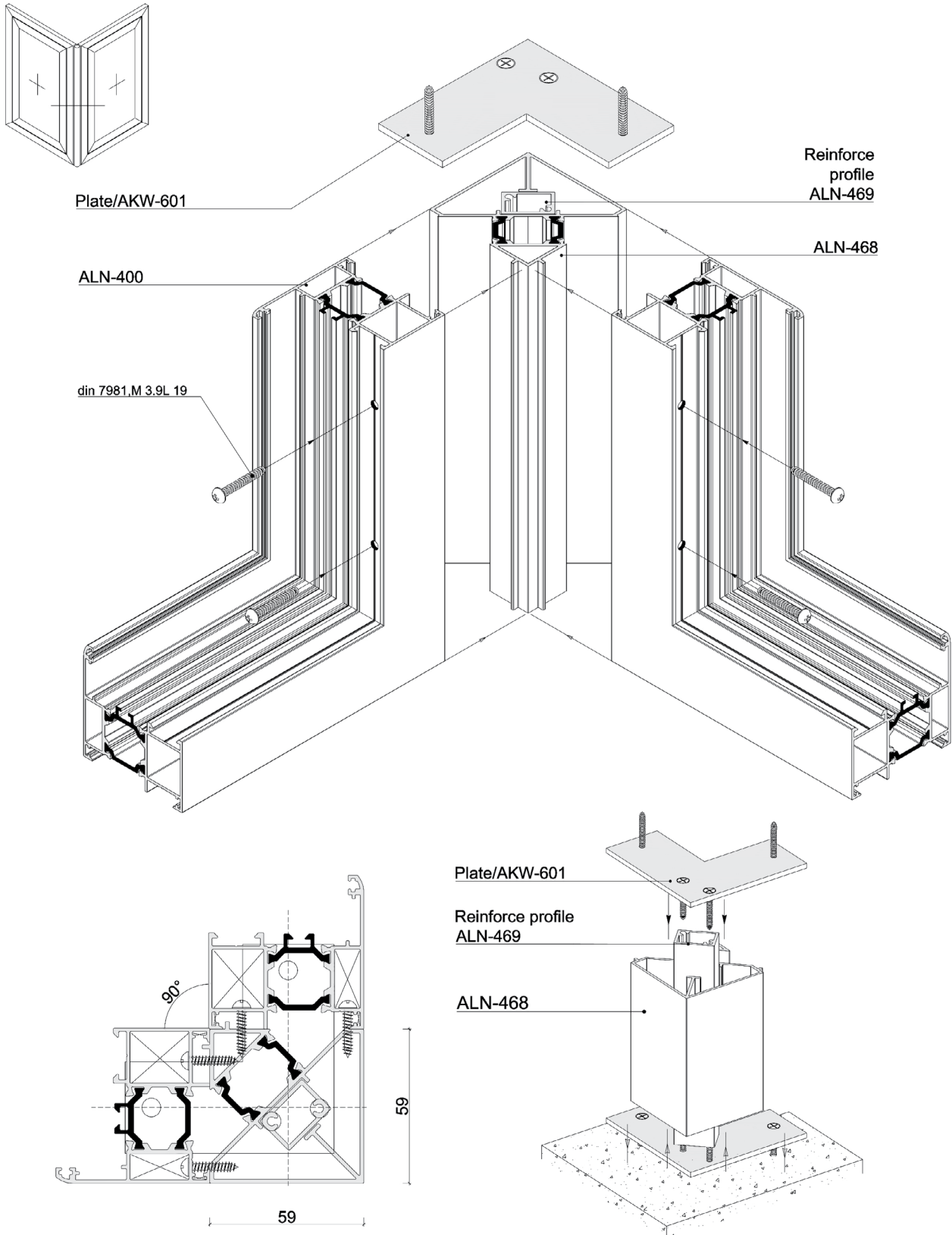
Hinged System 60 Series Assembly Drawing



Hinged System 60 Series Assembly Drawing

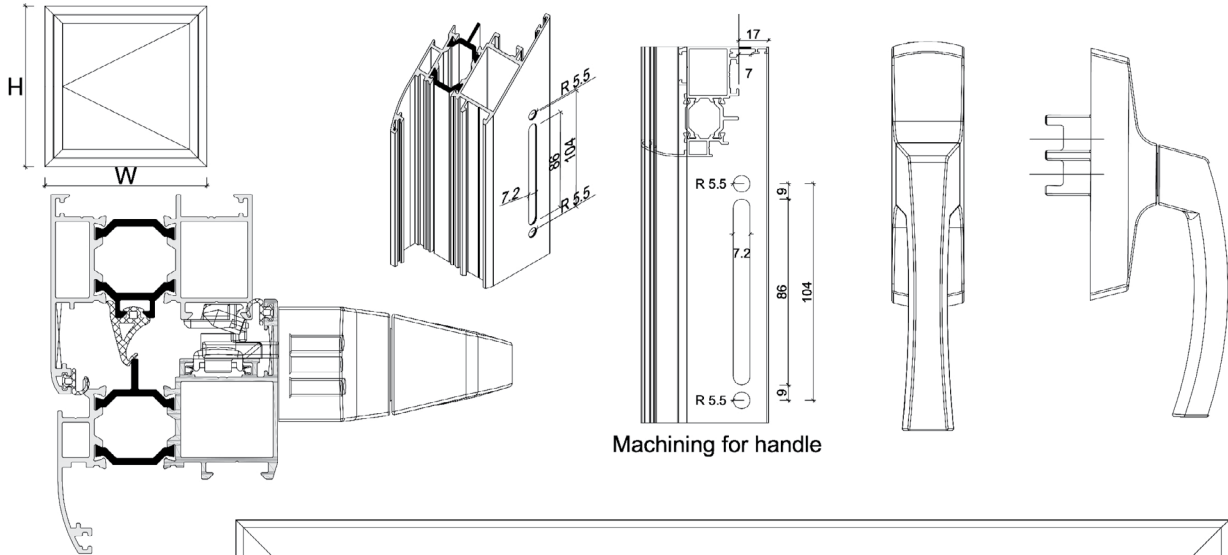


Hinged System 60 Series Assembly Drawing



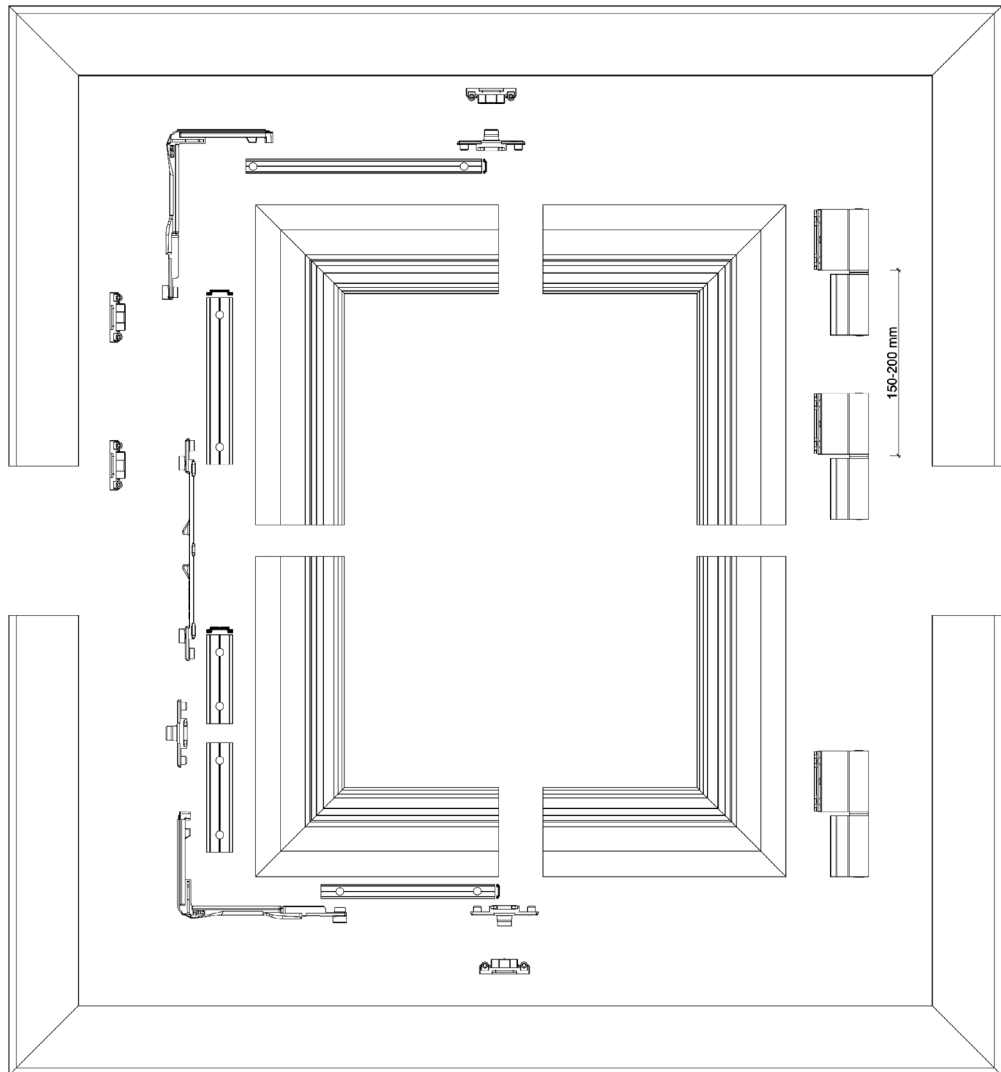
Hinged System 60 Series

Hardware Installation



Machining for handle

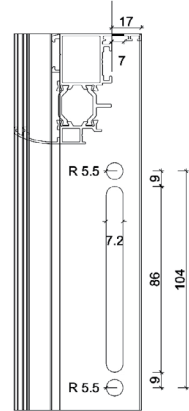
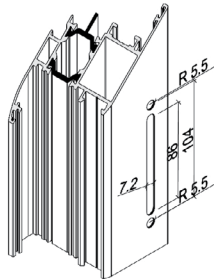
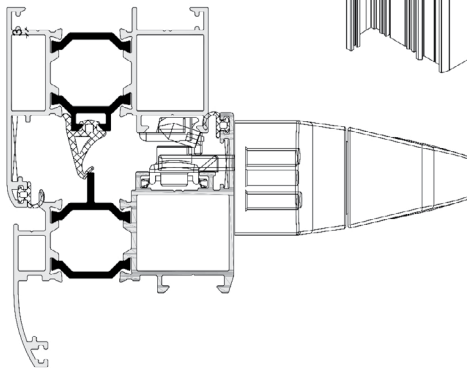
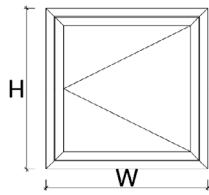
$1200 \leq H$
 $1200 \leq W$



Installation of turn hardware

Hinged System 60 Series

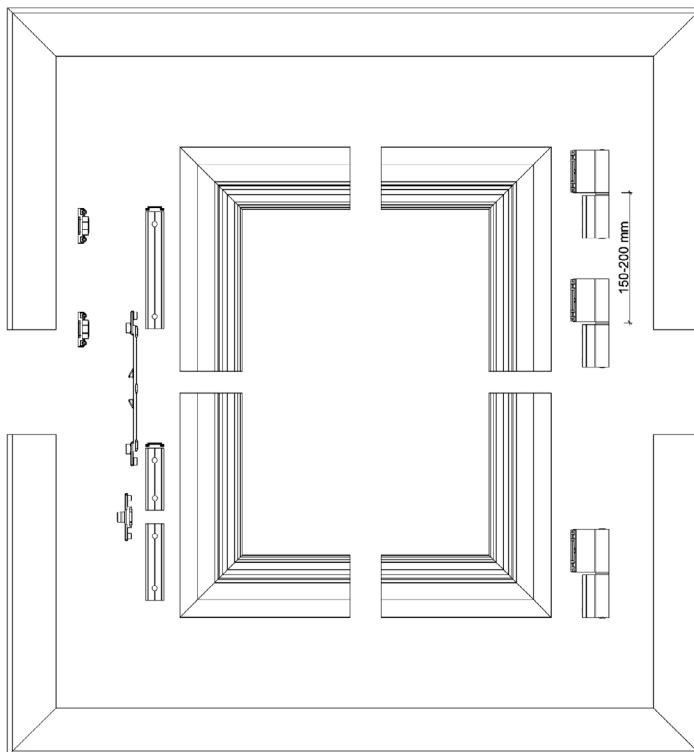
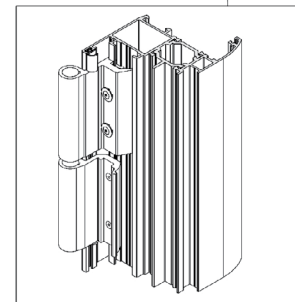
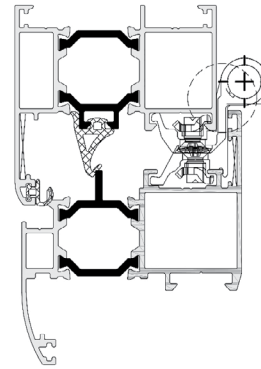
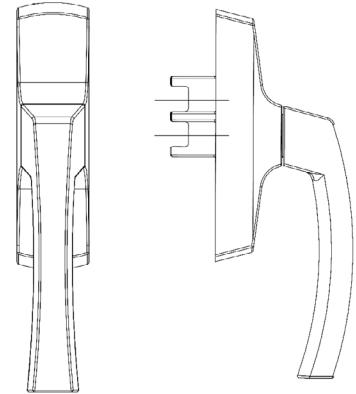
Hardware Installation



Machining for handle

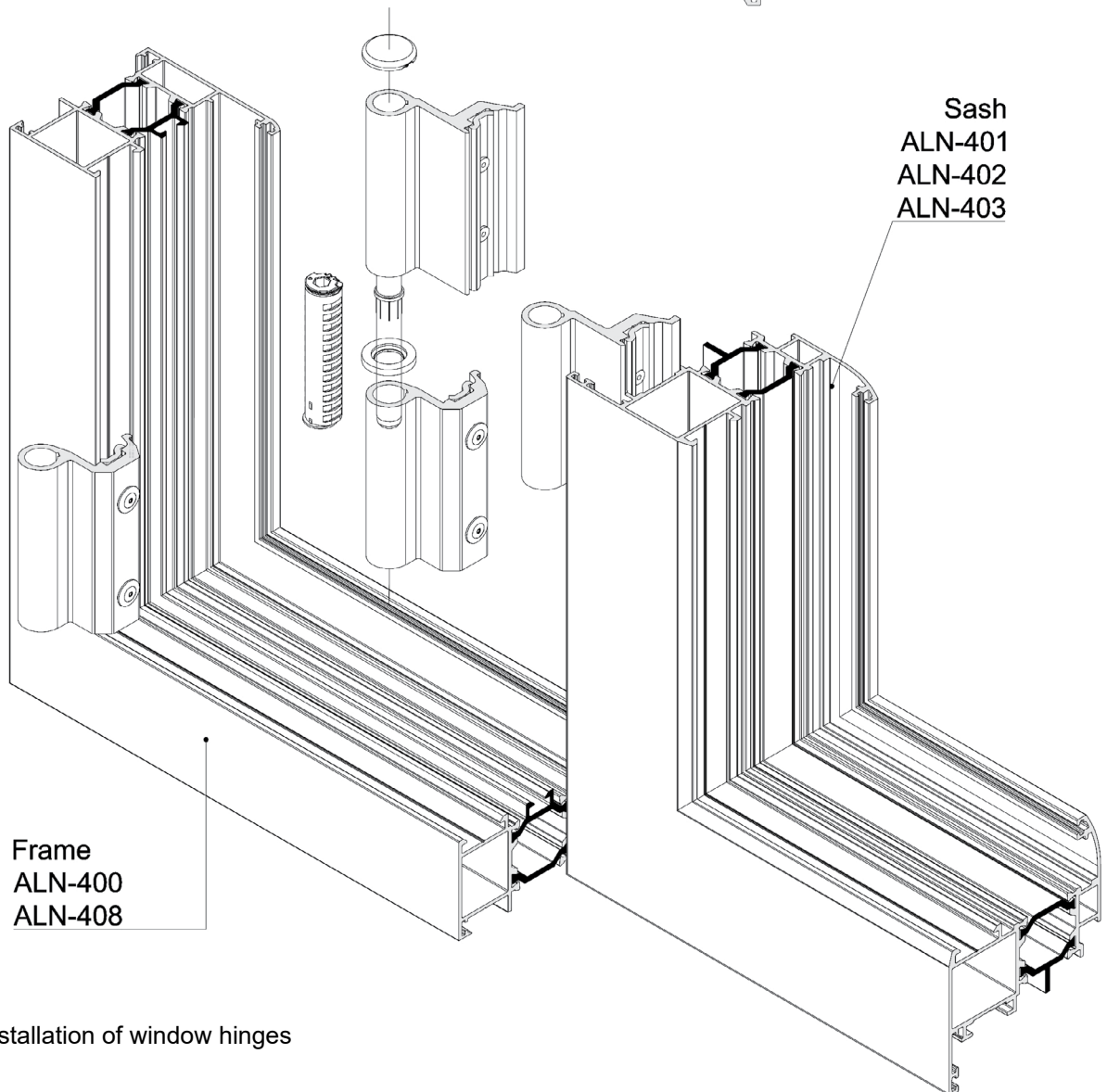
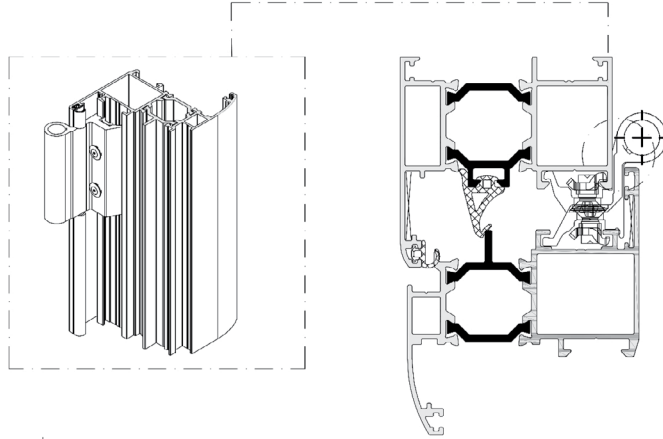
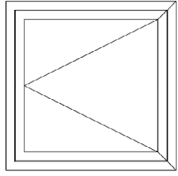
$$1200 \geq H$$

$$1200 \geq W$$



Installation of turn hardware

Hinged System 60 Series Hardware Installation



Installation of window hinges

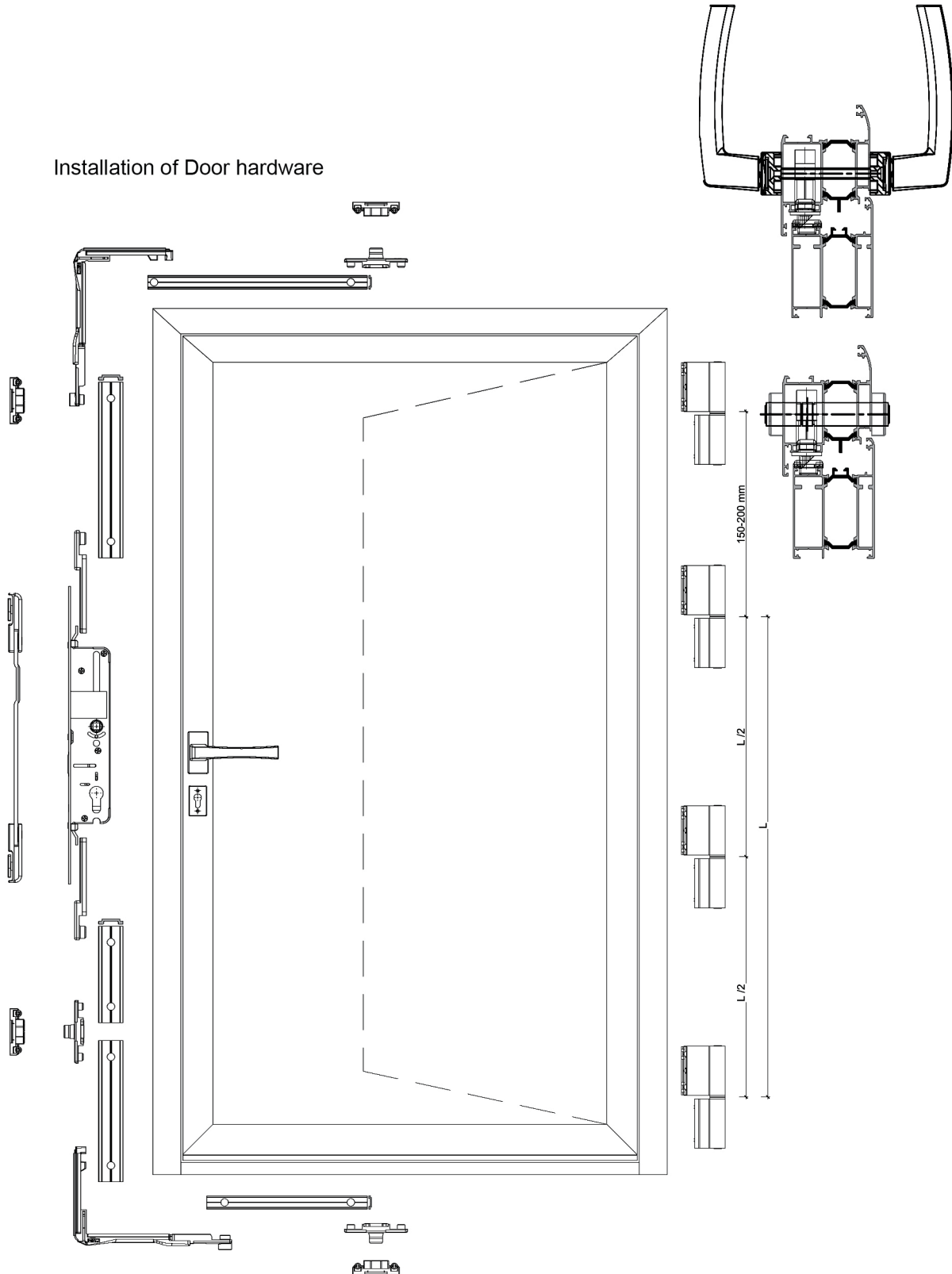


Hinged System 60 Series

Hardware Installation

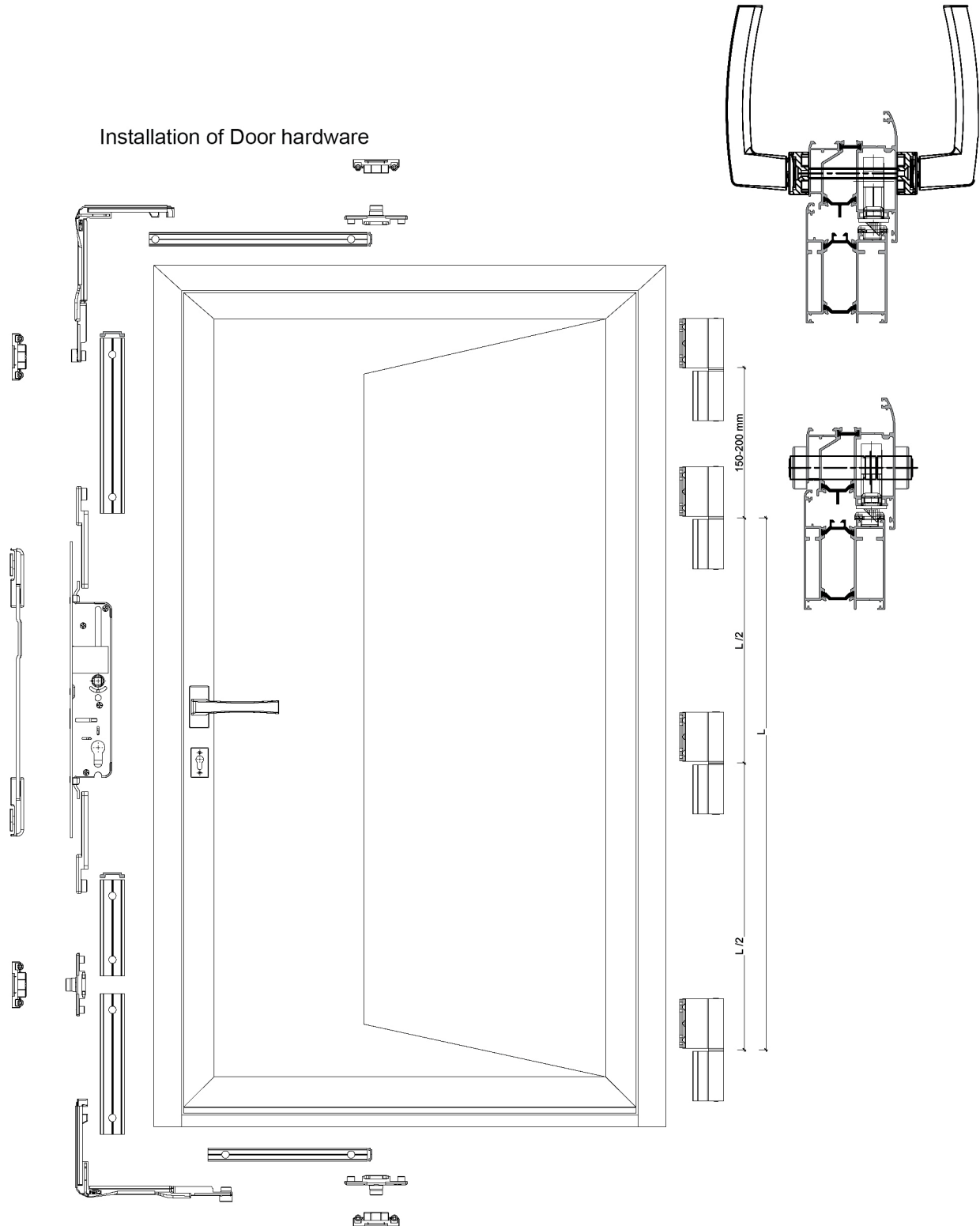
Inward opening

Installation of Door hardware



Hinged System 60 Series

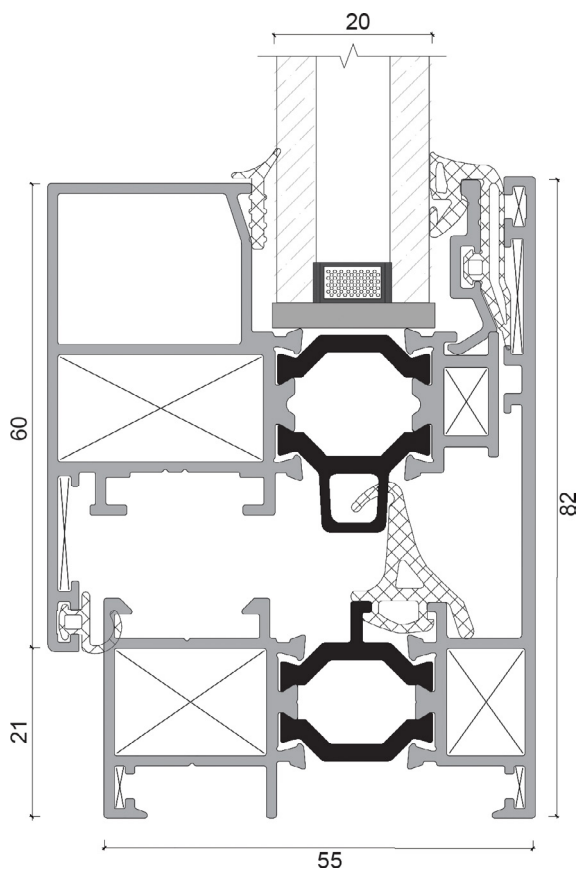
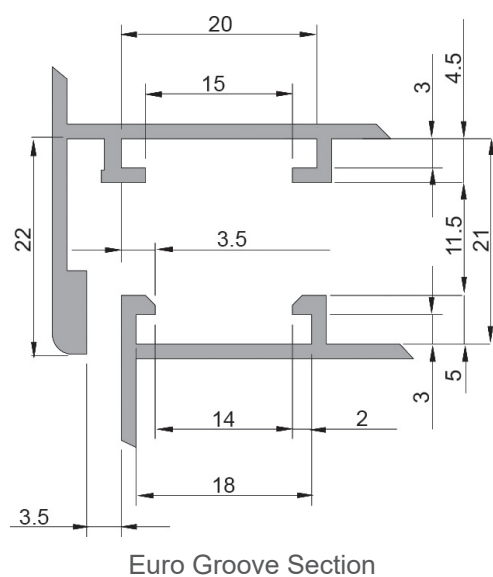
Hardware Installation





Hidden vent System 55 Series

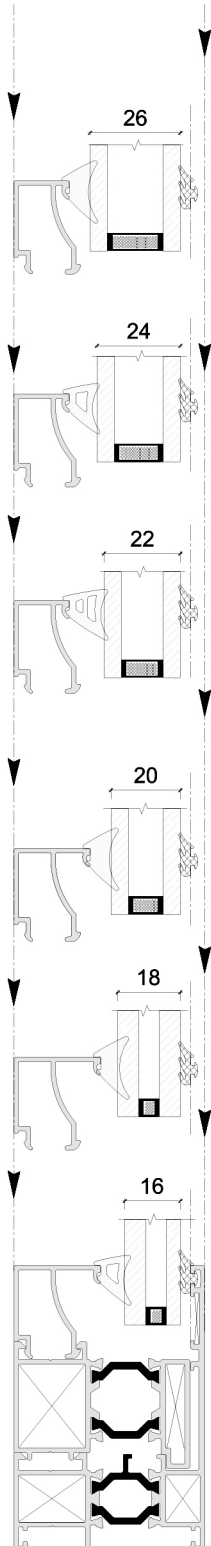
. Profile width:	55 mm
. Vent width:	58 mm
. Wall thickness:	1.3 - 1.4 mm
. Rubber description:	EPDM DIN 7863
. Glass thickness:	16 - 26 mm
. Aluminum alloy extrusion:	EN AW 6063 T5
. Isulation bar :	Polyamide Width 20 mm
. Safety drainage system	
. Various typologies	





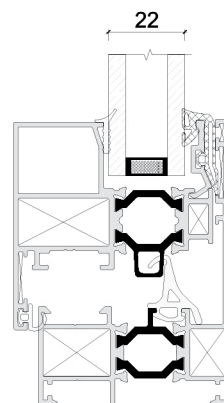
Hidden vent System 55 Series

Glazing Table



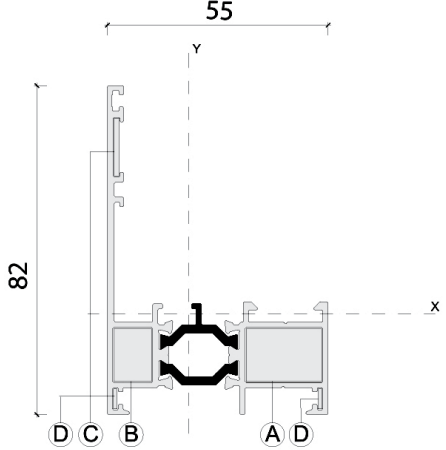
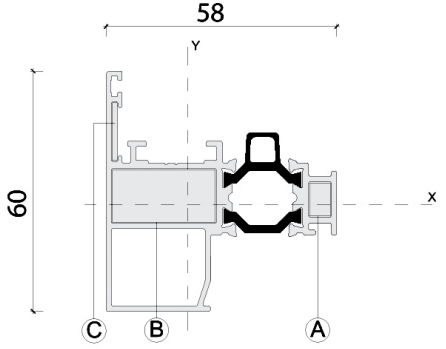
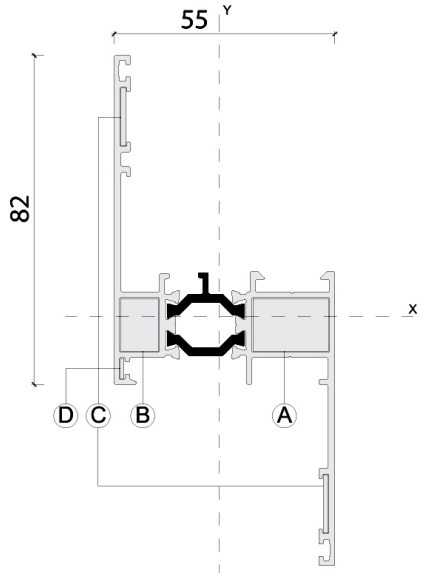
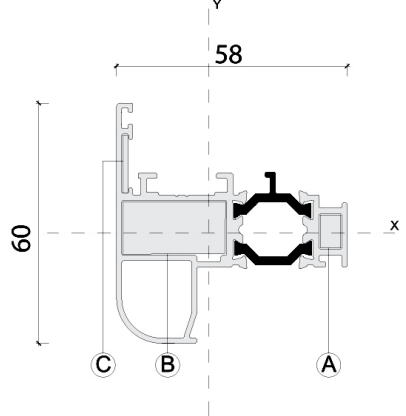
Glazing Thickness	Gasket Inside	Gasket Outside	Glazing Bead
16 mm	5.5 EP-019	MO68	ALN-421
18 mm	4.5 EP-016	MO68	ALN-421
20 mm	4.5 EP-016	MO68	ALN-323
22 mm	7.5 EP-021	MO68	ALN-423
24 mm	5.5 EP-019	MO68	ALN-423
26 mm	4.5 EP-016	MO68	ALN-423

Glazing Thickness	Gasket Inside	Gasket Outside	Glazing Bead
22 mm	1.9 EP-015	51927	ALN-438



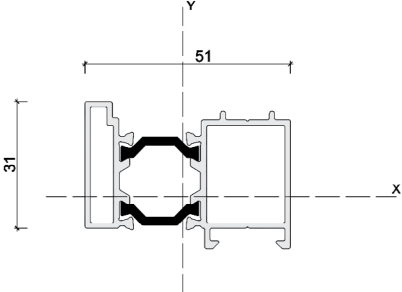
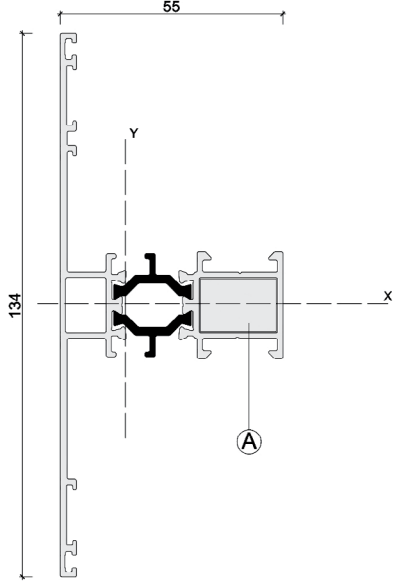
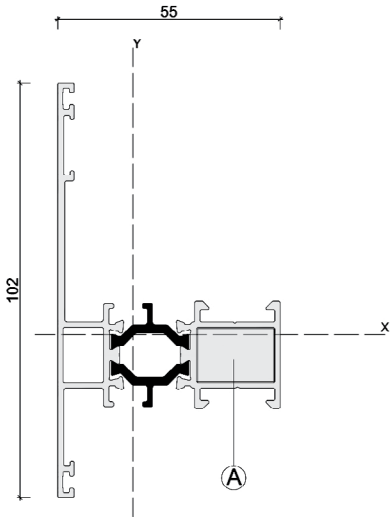
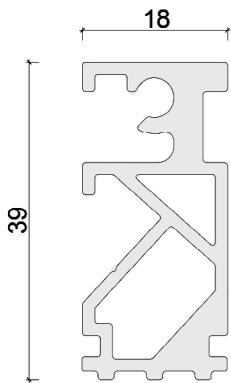
Hidden vent System 55 Series

Profile & Accessories Information

			
I_x : 17.72 cm ⁴	I_y : 15.70 cm ⁴	I_x : 7.50 cm ⁴	I_y : 13.94 cm ⁴
Frame : ALN-431	A: PCP-13 / 18 mm 	Sash : ALN-433	A: PCP-8 / 5 mm 
	B: PCP-13 / 9 mm 		B: PCP-13 / 26 mm 
Weight: 1199 gr/m	C: MM77 (AKW-810) 	Weight: 1209 gr/m	C: MM77 (AKW-810) 
	D: MO 19 		—
			
I_x : 36.15 cm ⁴	I_y : 23.50 cm ⁴	I_x : 6.50 cm ⁴	I_y : 13.63 cm ⁴
Frame : ALN-432	A: PCP-13 / 18 mm 	Sash : ALN-434	A: PCP-8 / 5 mm 
	B: PCP-13 / 9 mm 		B: PCP-13 / 25 mm 
Weight : 1425 gr/m	C: MM77 (AKW-810) 	Weight : 1155 gr/m	C: MM77 (AKW-810) 
	D: MO 19 		—

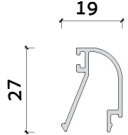
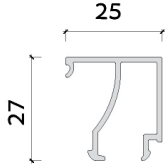
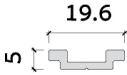
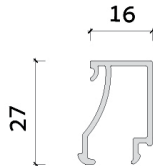
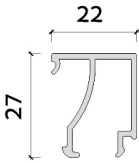
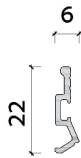
Hidden vent System 55 Series

Profile & Accessories Information

			
I_x : 3.30 cm ⁴	I_y : 9.27 cm ⁴	I_x : 41.83 cm ⁴	I_y : 17.79 cm ⁴
Profile :ALN-435		Transom : ALN-437	A: ALN-445
Weight: 943 gr/m		Weight : 1467 gr/m	
			
I_x : 22.03 cm ⁴	I_y : 16.15 cm ⁴		
Transom : ALN-436	A: ALN-445		
Weight : 1297 gr/m		Transom bar profile: ALN-445	Weight : 818 gr/m

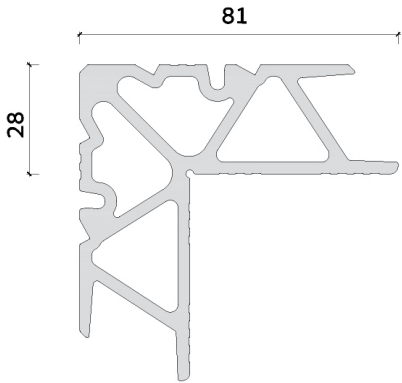
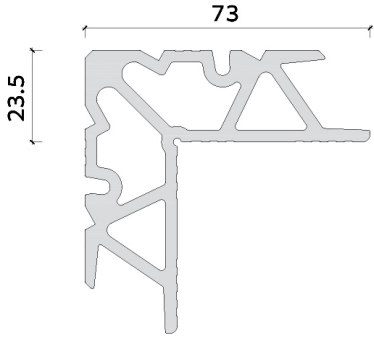
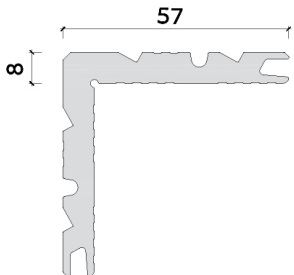
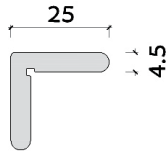
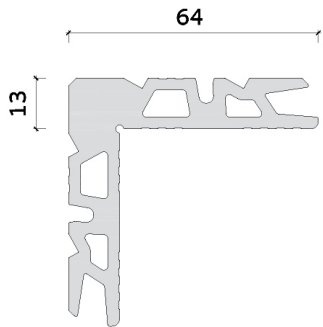
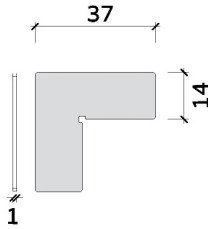
Hidden vent System 55 Series

Profile & Accessories Information

			
Glazing bead: ALN-439	Weight : 235 gr/m	Glazing bead: ALN-421	Weight : 313 gr/m
			
profile: ALN-331	Weight : 747 gr/m	Glazing bead: ALN-423	Weight : 281 gr/m
			
Glazing bead: ALN-323	Weight : 302 gr/m	Glazing bead: ALN-438	Weight : 122 gr/m

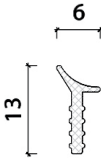
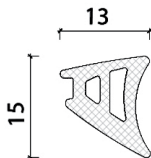
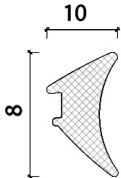
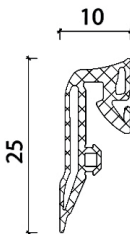
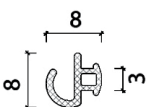
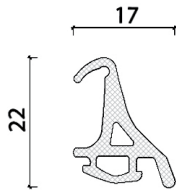
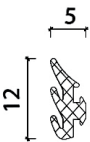
Hidden vent System 55 Series

Profile & Accessories Information

			
Corner Joint: PCP-28	Weight : 3429 gr/m	Corner Joint: PCP-24	Weight : 2918 gr/m
			
Corner Joint: PCP-8	Weight : 1947 gr/m	Corner Joint: MO 19 399012	Weight: –
			
Corner Joint: PCP-13	Weight : 2673 gr/m	Corner joint: MM 77	Weight : –

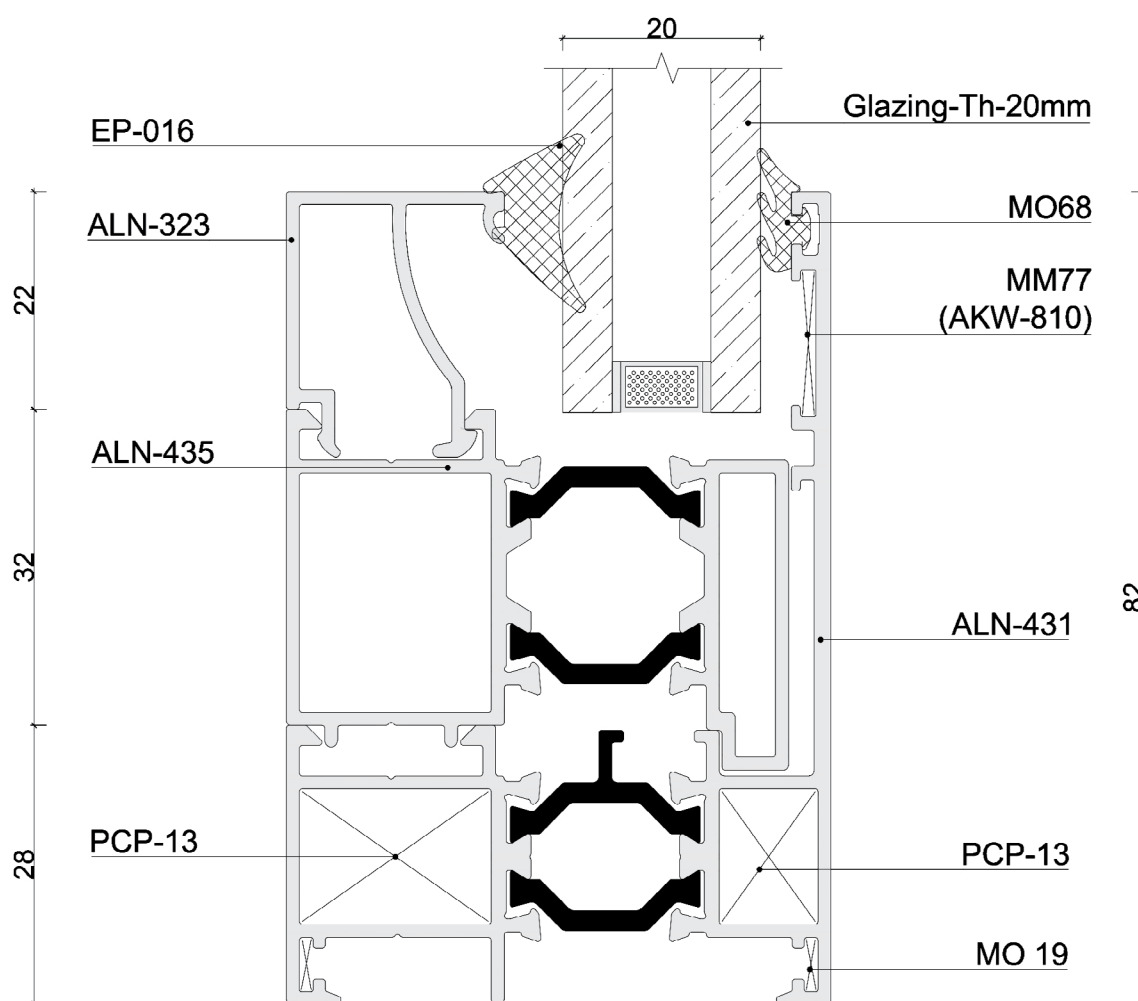
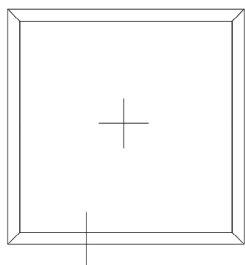
Hidden vent System 55 Series

Profile & Accessories Information

			
Gasket: EP-015	Weight : 21 gr/m	Gasket: EP-021	Weight : 80 gr/m
			
Gasket: EP-016	Weight : 77 gr/m	Gasket: TH55 lk	Weight : 112 gr/m
			
Gasket: EP-018	Weight : 77 gr/m	Gasket: TH55L	Weight : 152 gr/m
			
Gasket: MO68		Weight : 46 gr/m	

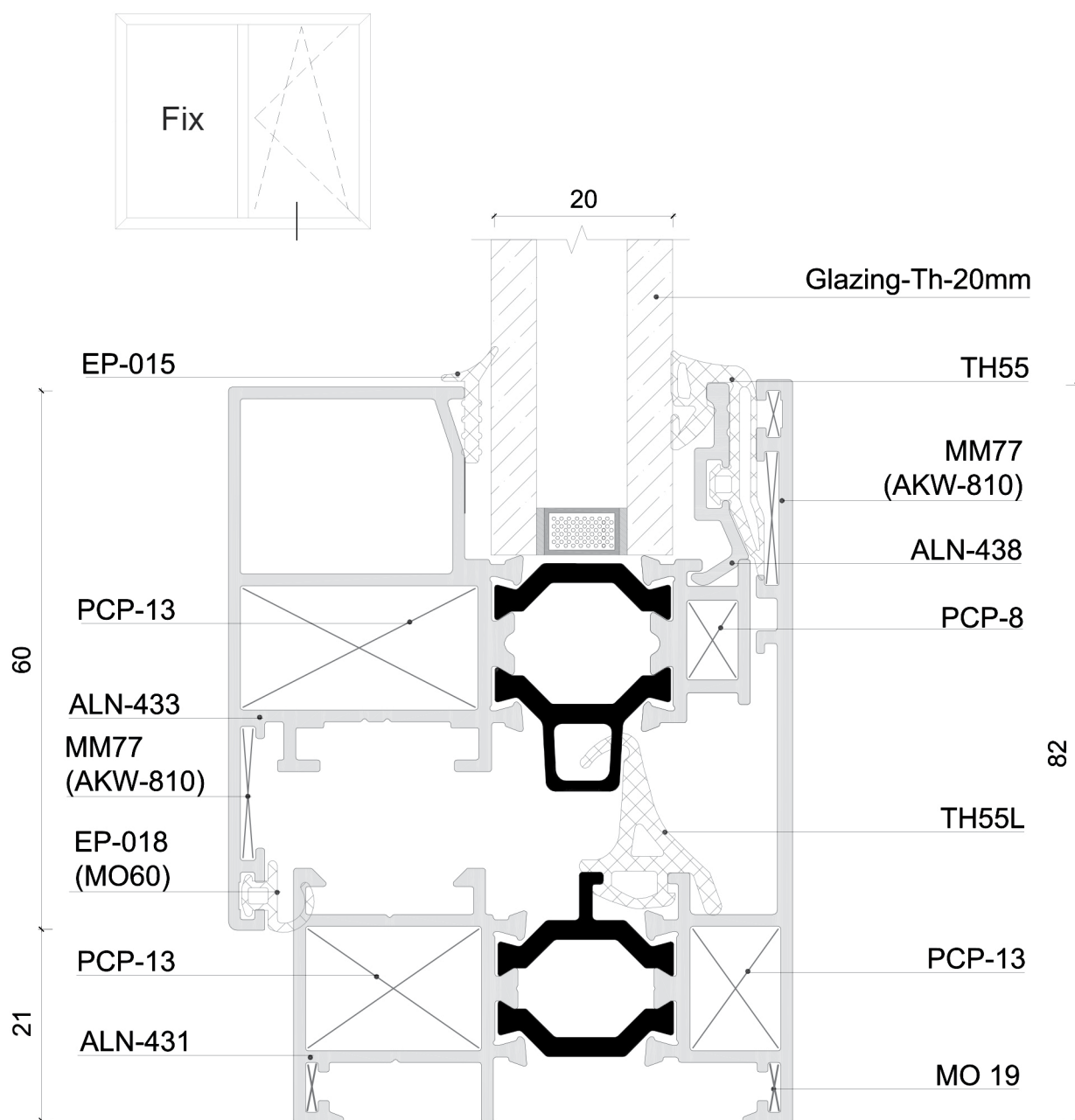
Hidden vent System 55 Series

Fabrication Details



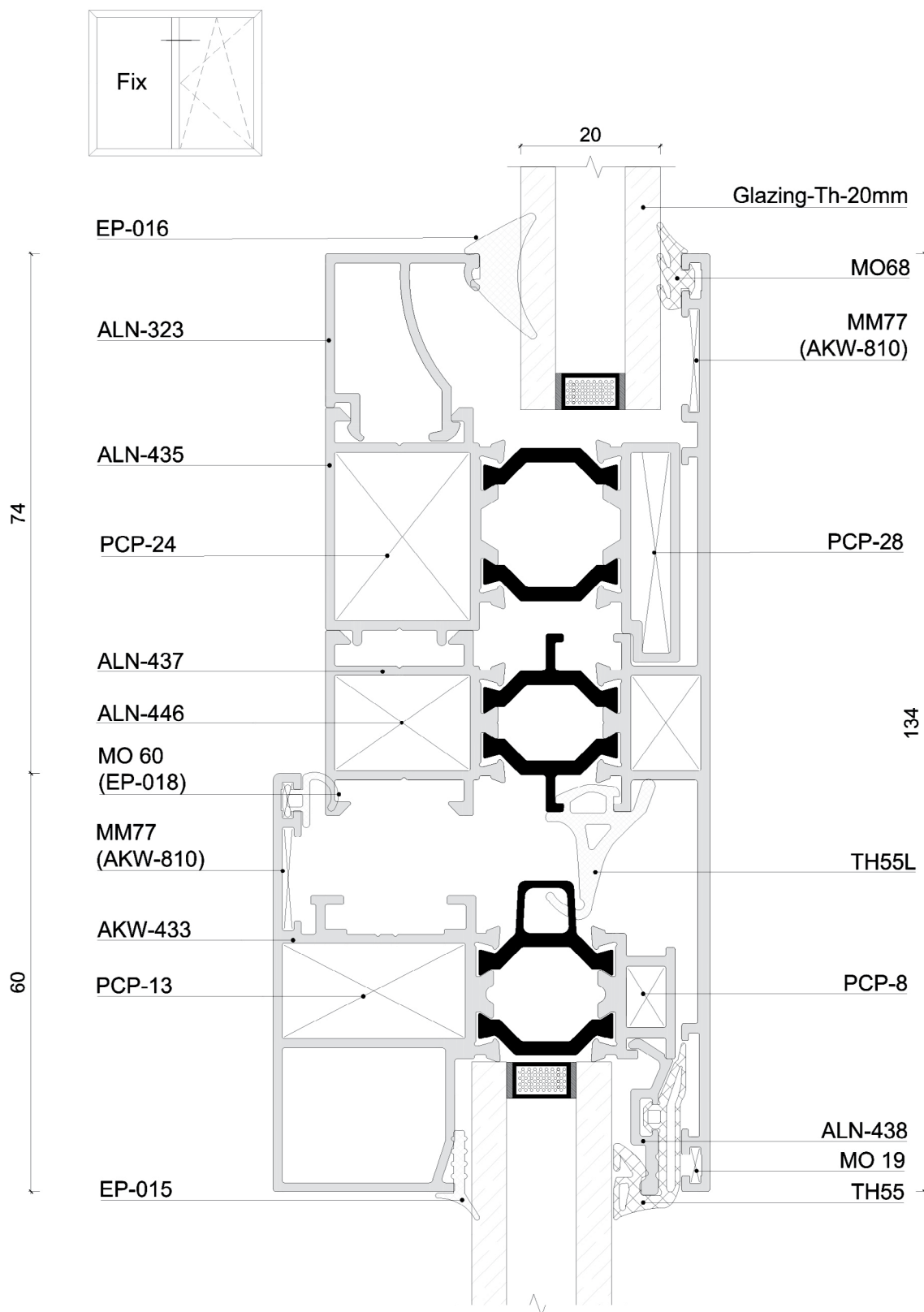
Hidden vent System 55 Series

Fabrication Details



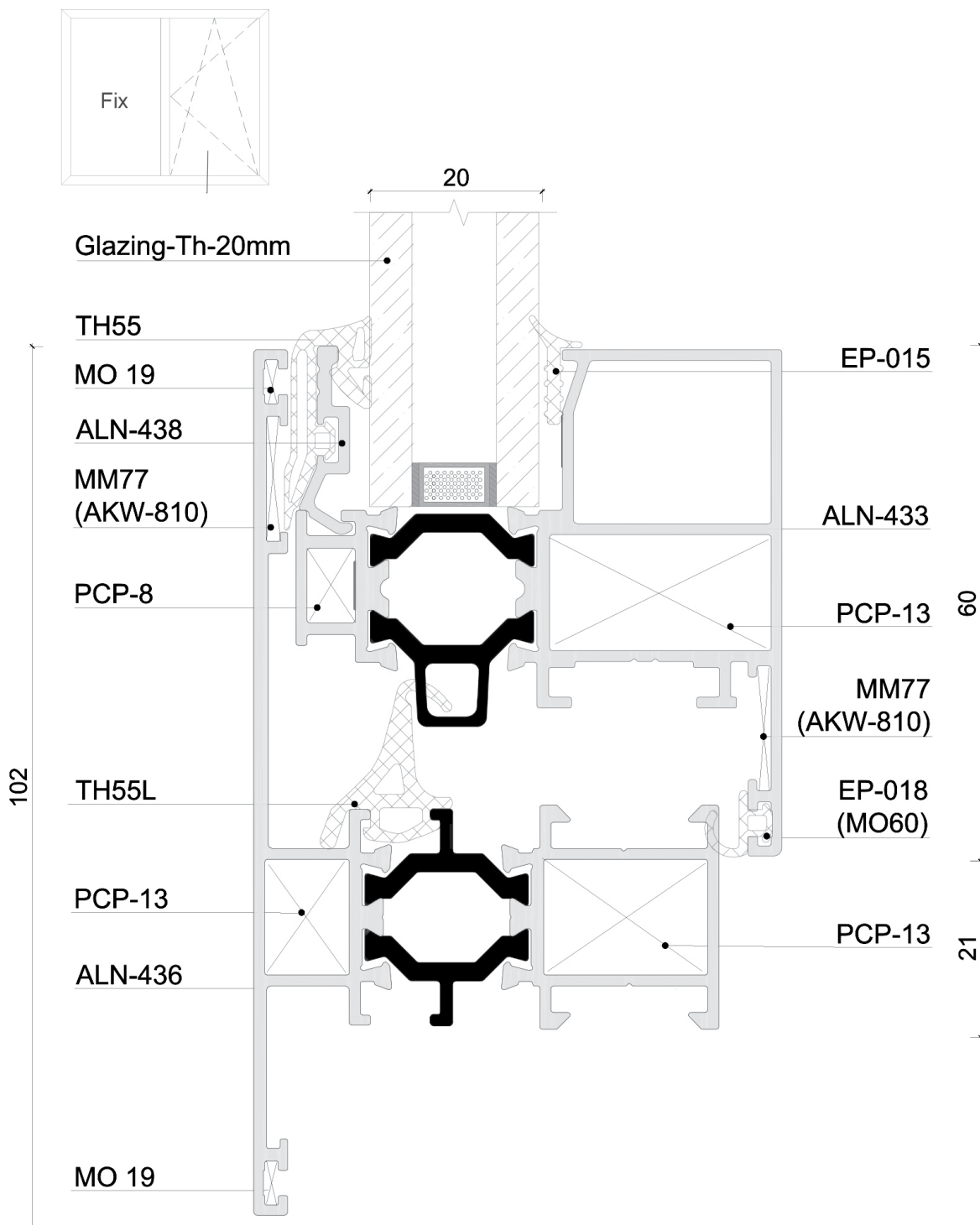
Hidden vent System 55 Series

Fabrication Details



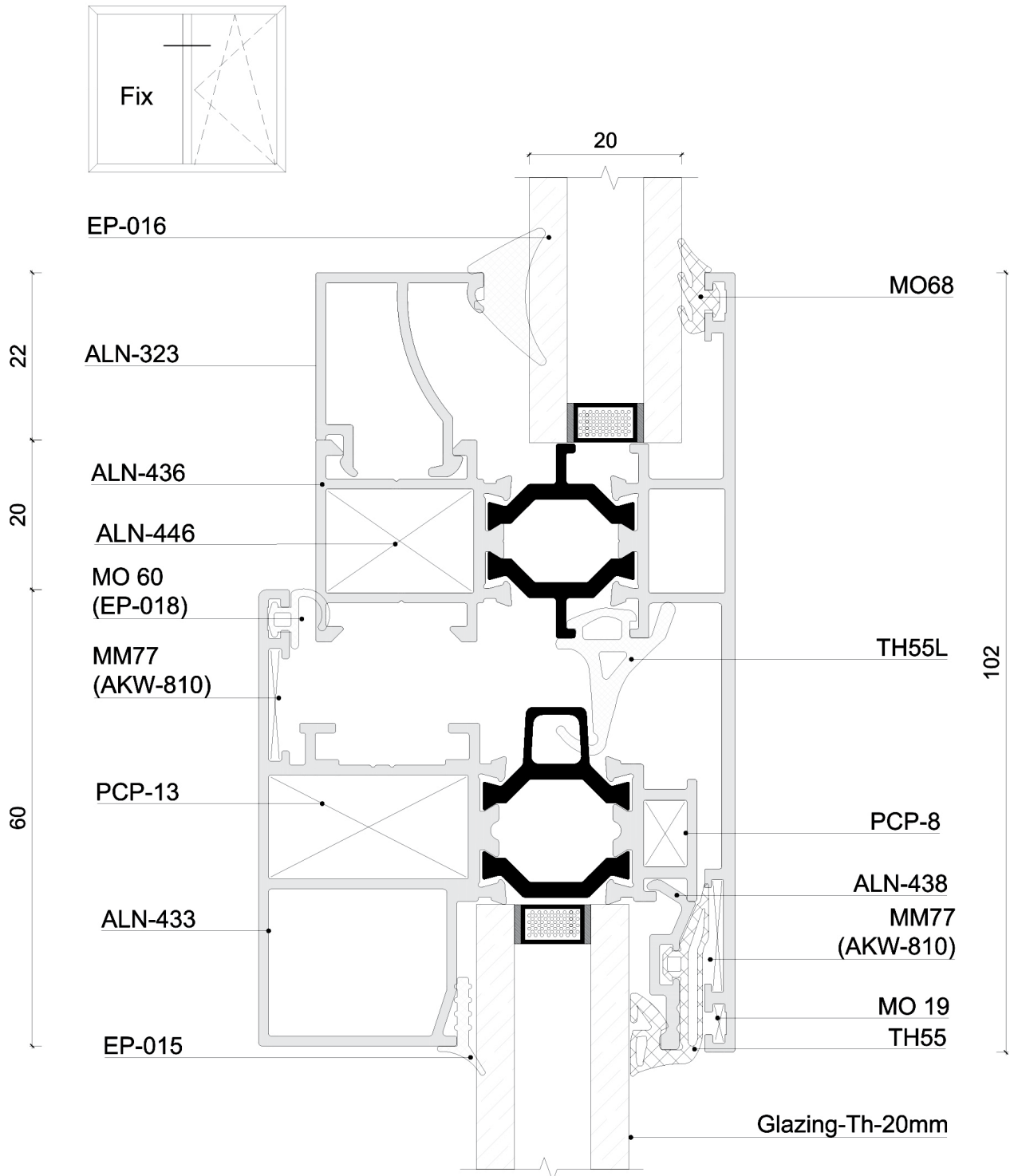
Hidden vent System 55 Series

Fabrication Details



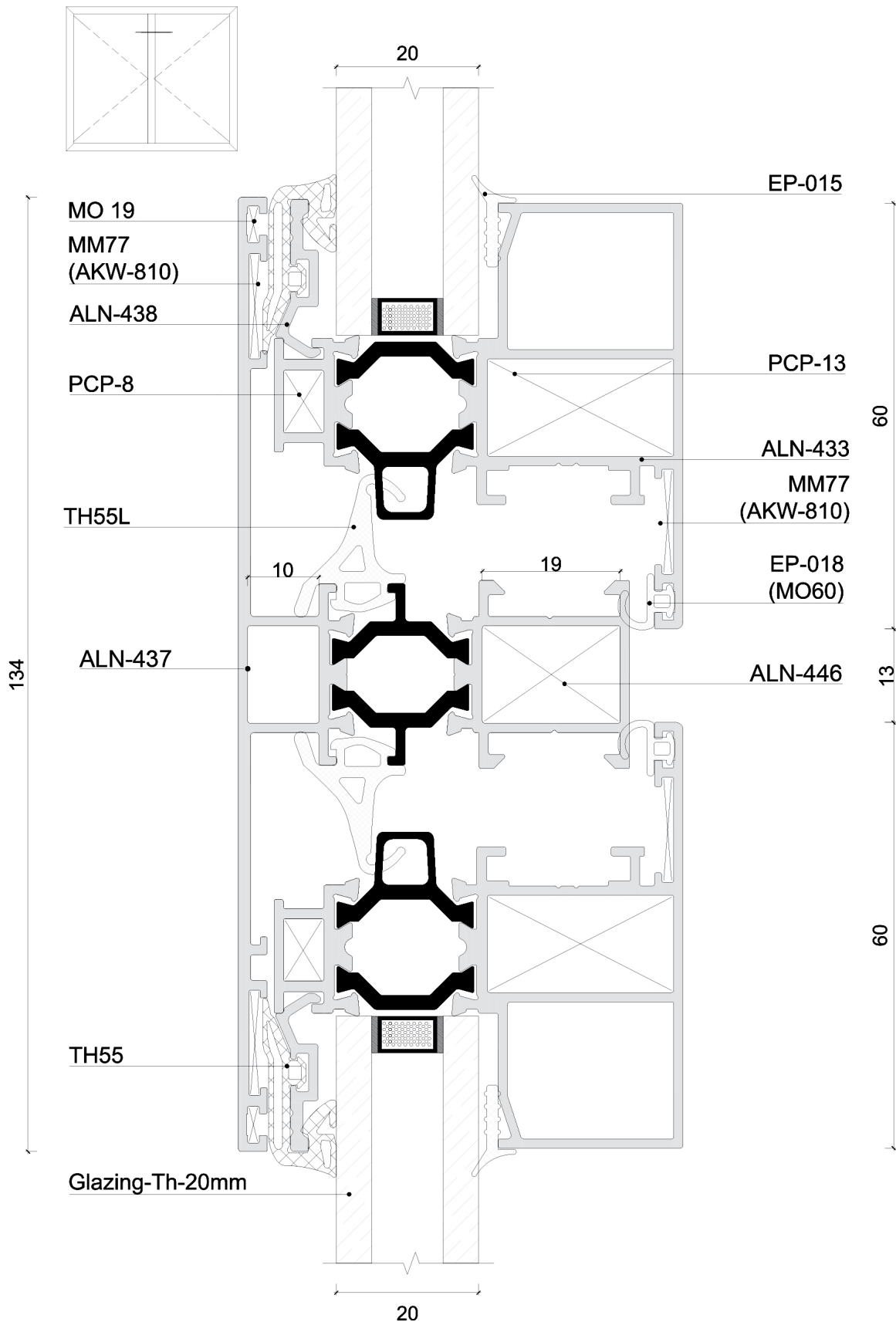
Hidden vent System 55 Series

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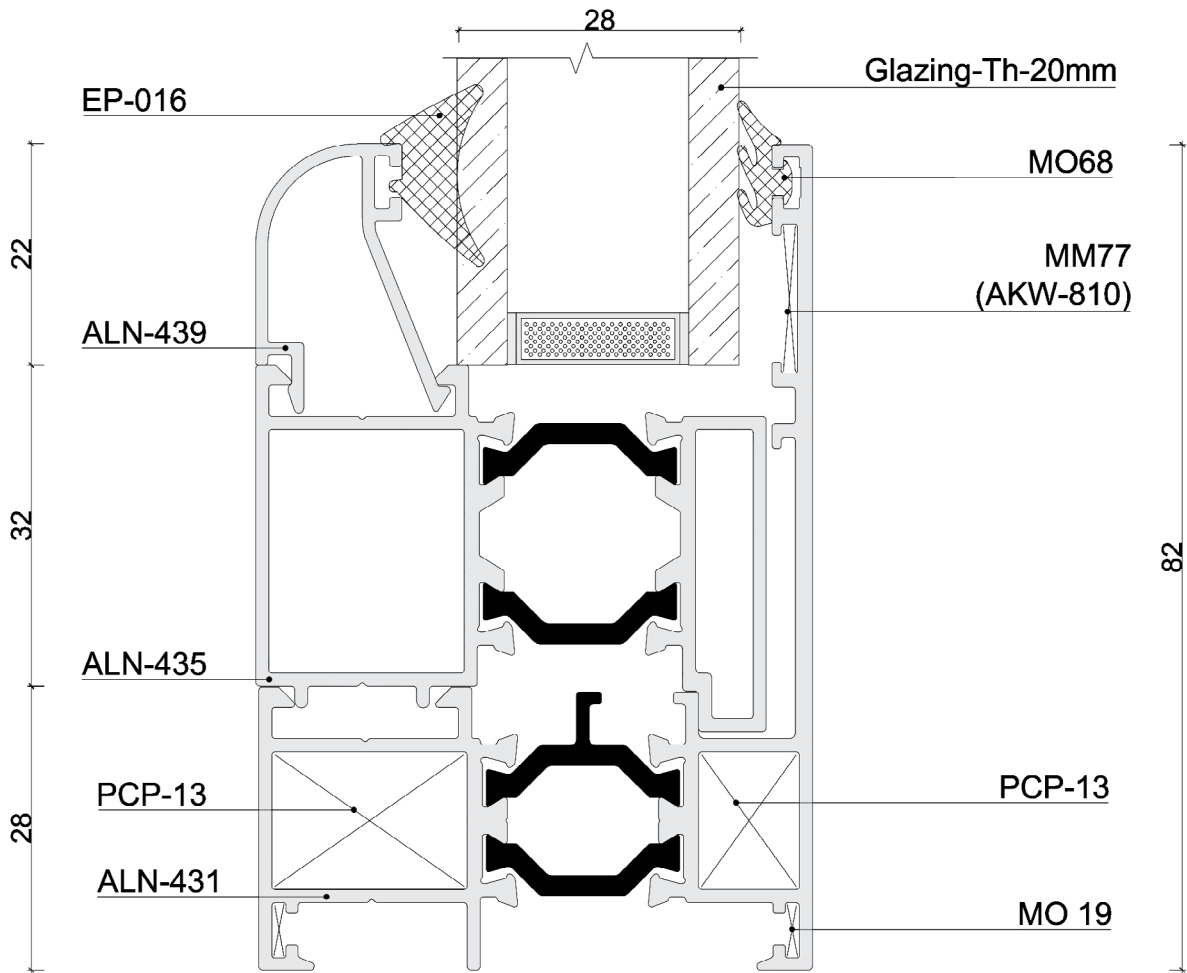
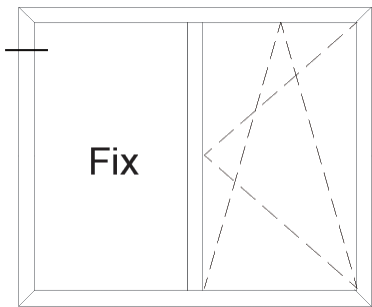


Hidden vent System 55 Series

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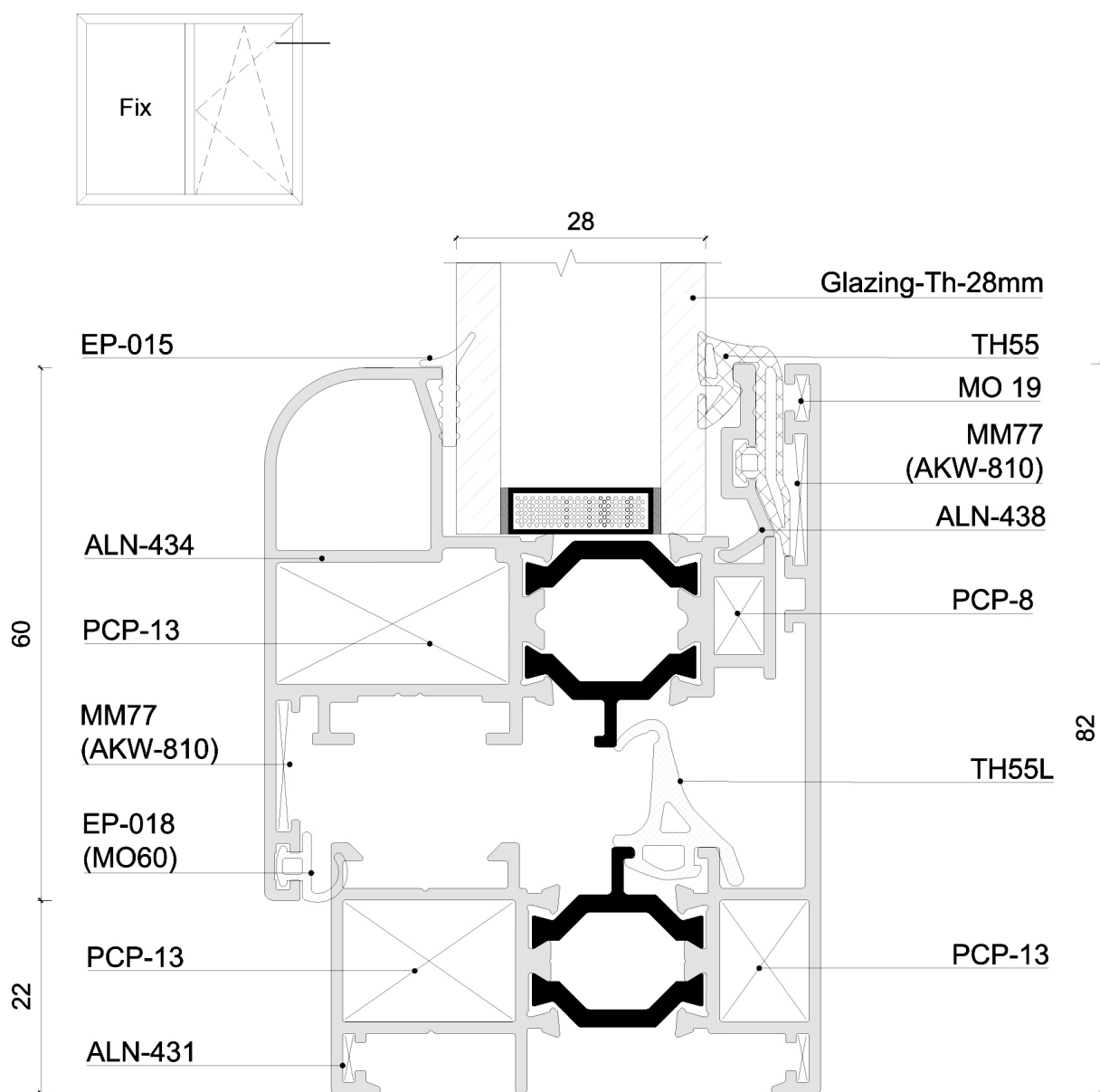


Hidden vent System 55 Series
Fabrication Details



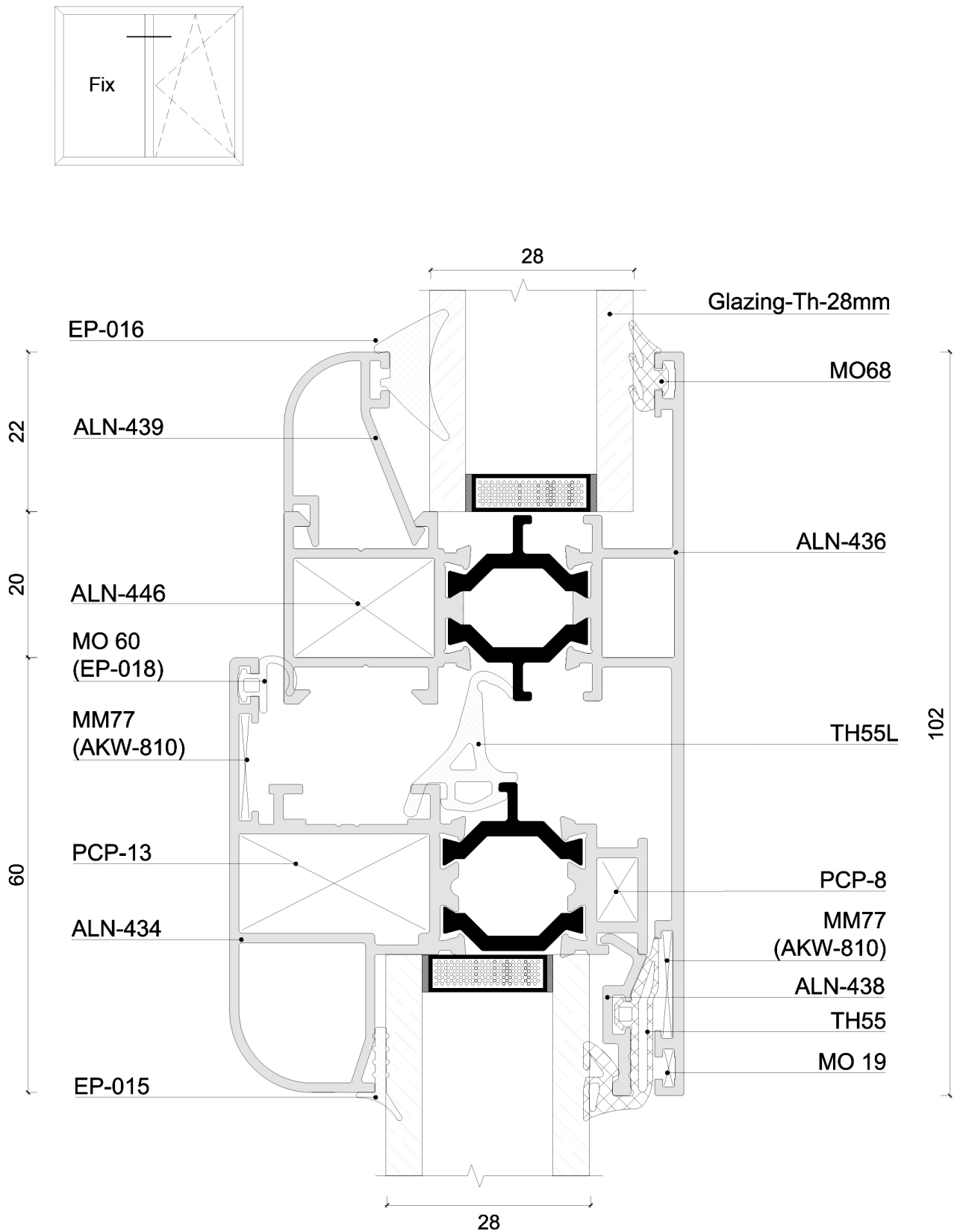
Hidden vent System 55 Series

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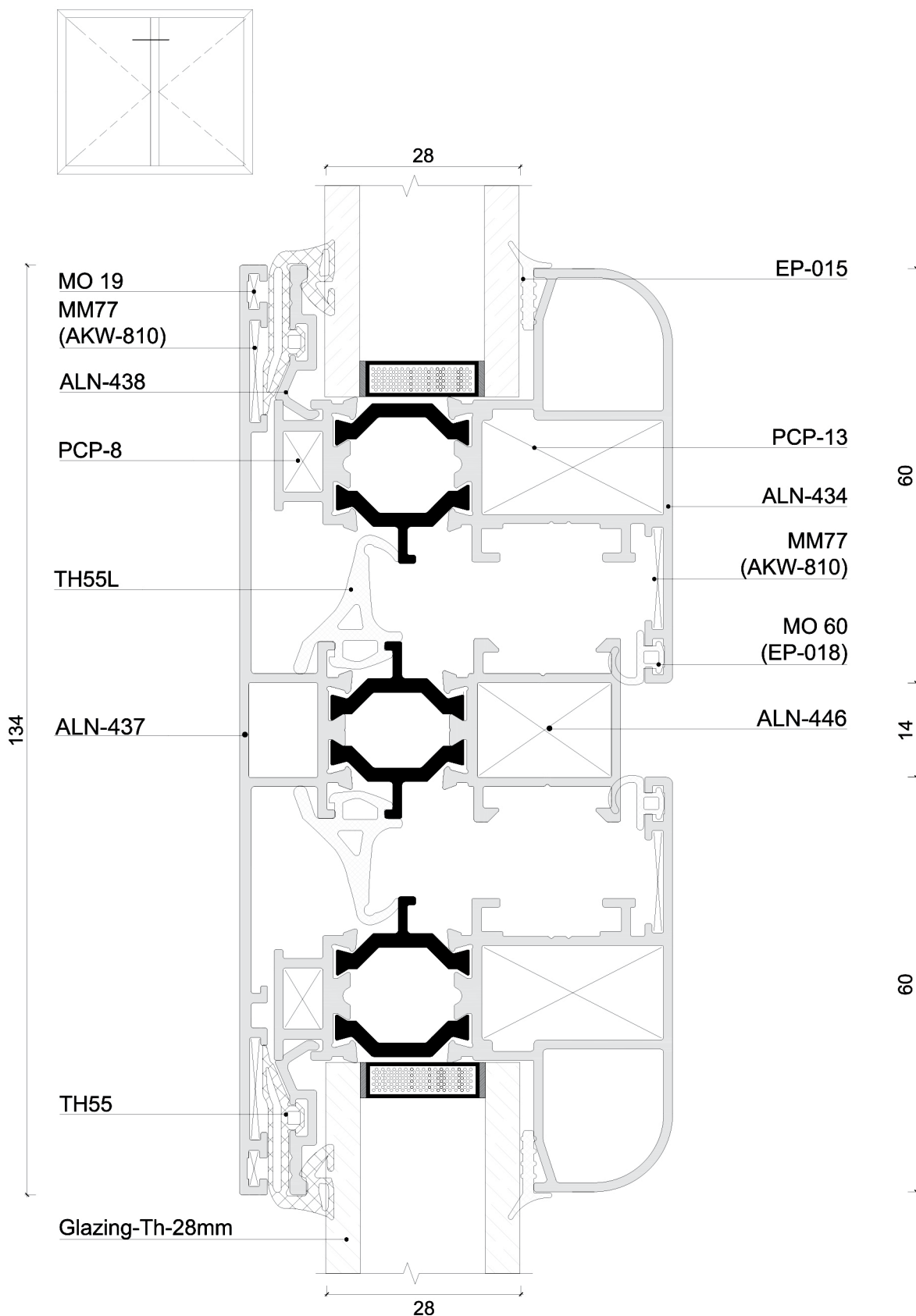
Hidden vent System 55 Series

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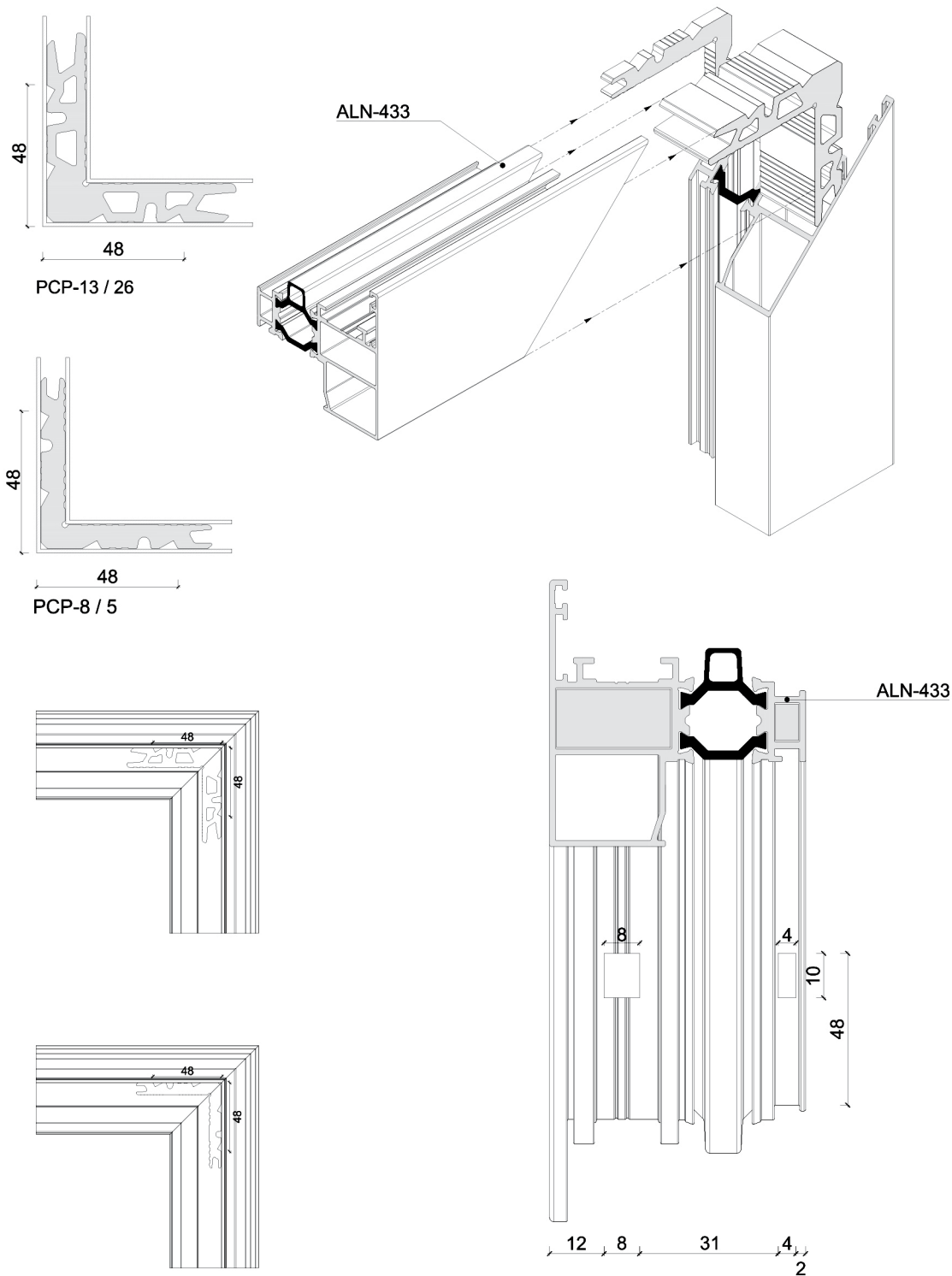


Hidden vent System 55 Series

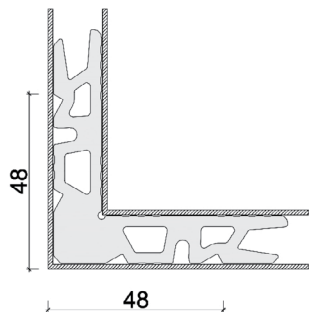
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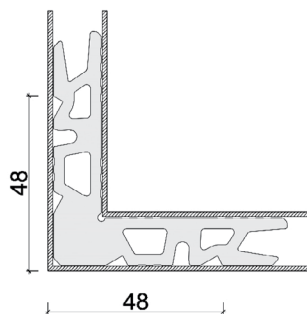
Hidden vent System 55 Series
Assembly Drawing



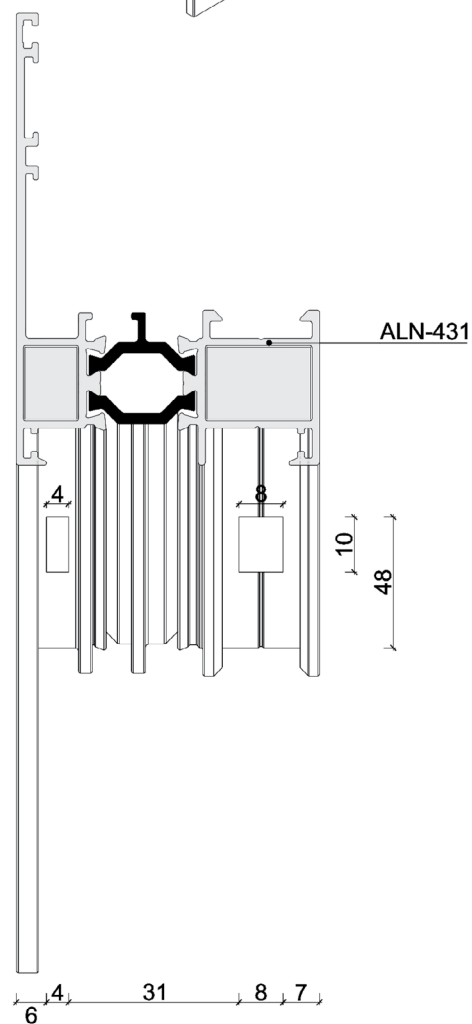
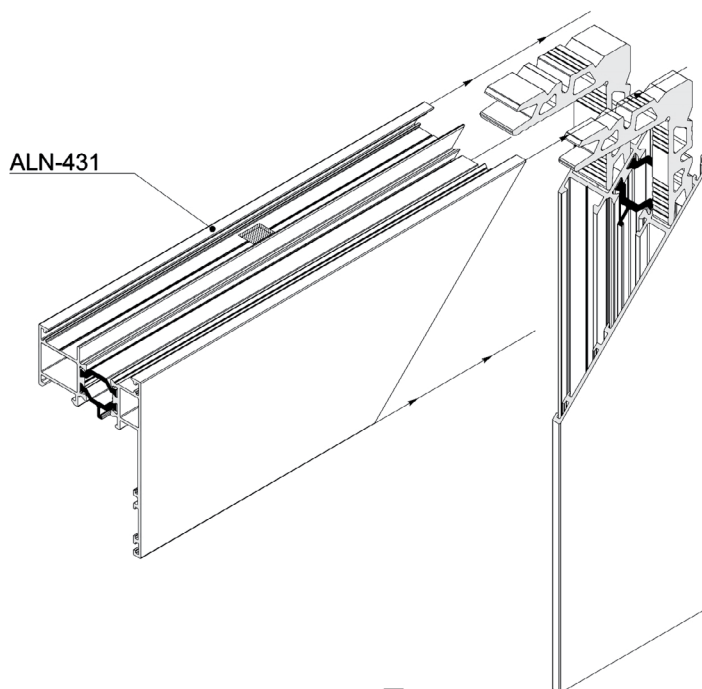
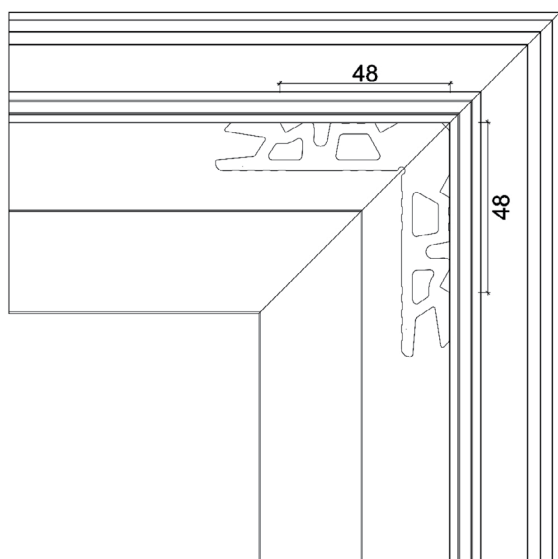
Hidden vent System 55 Series Assembly Drawing



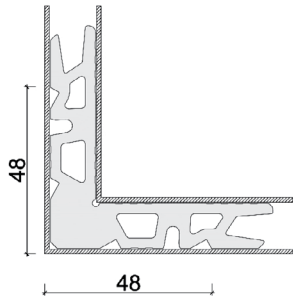
PCP-13 / 18



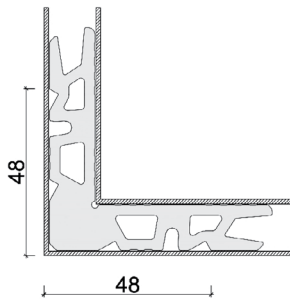
PCP-13 / 9



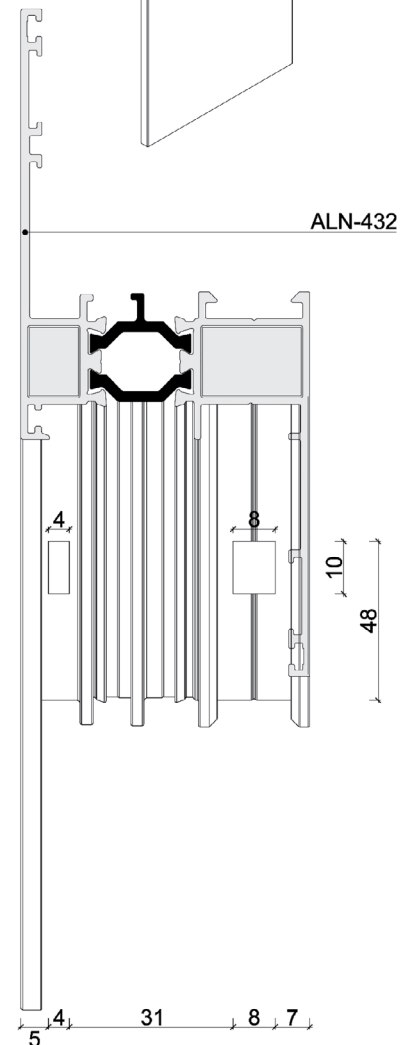
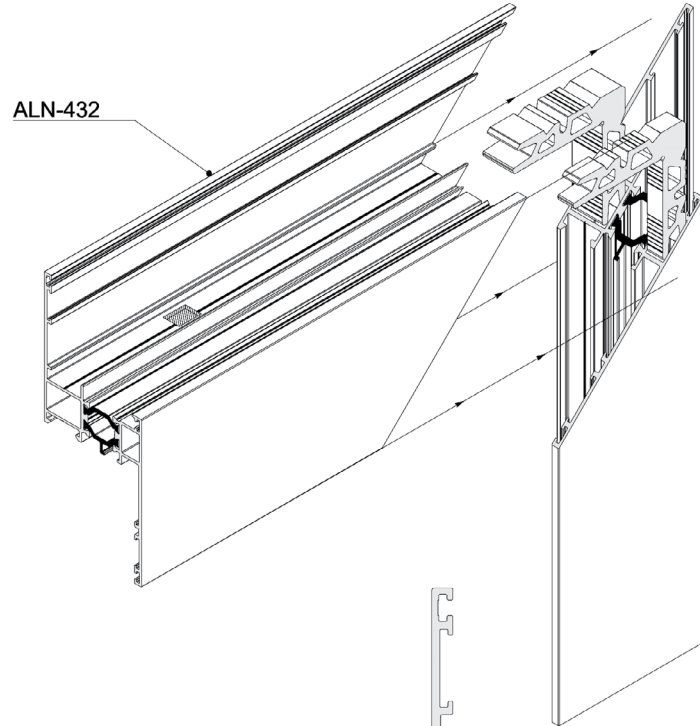
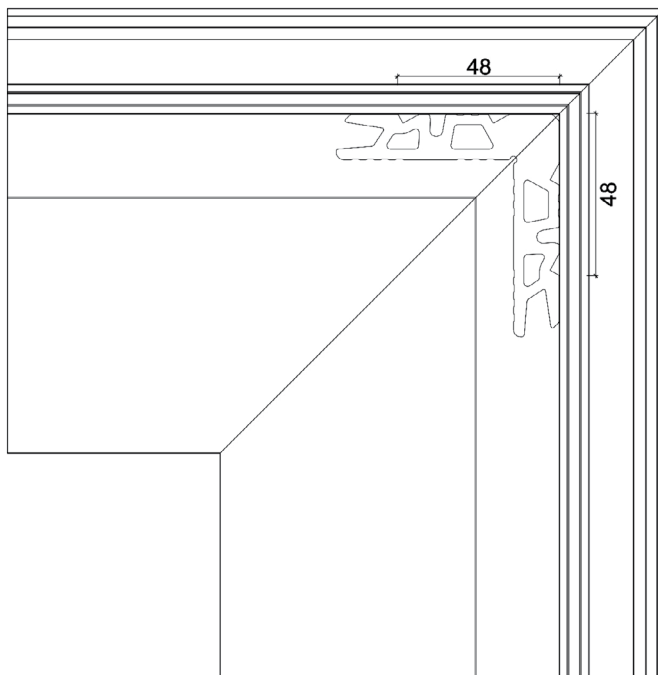
Hidden vent System 55 Series Assembly Drawing



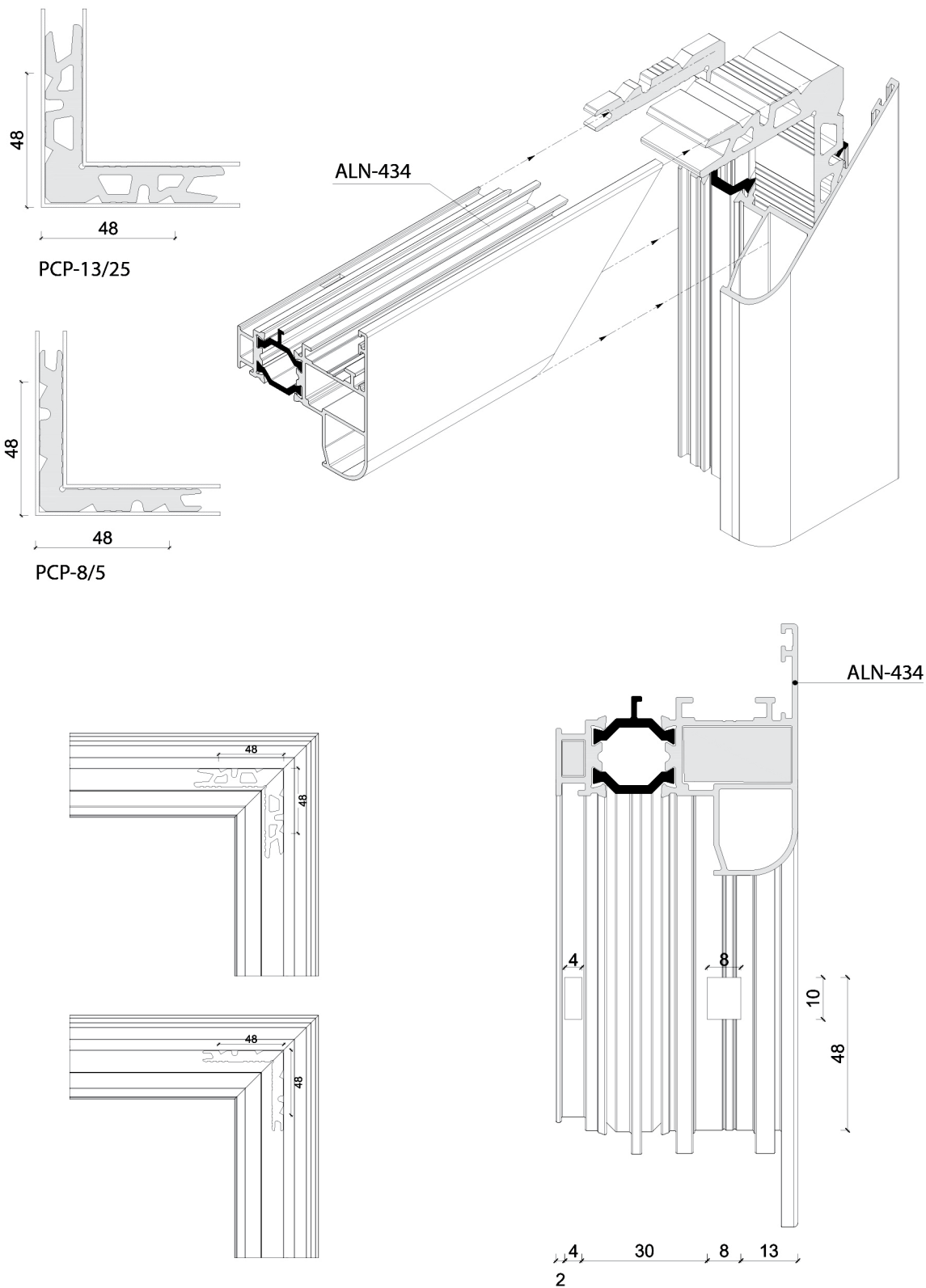
PCP-13 / 18



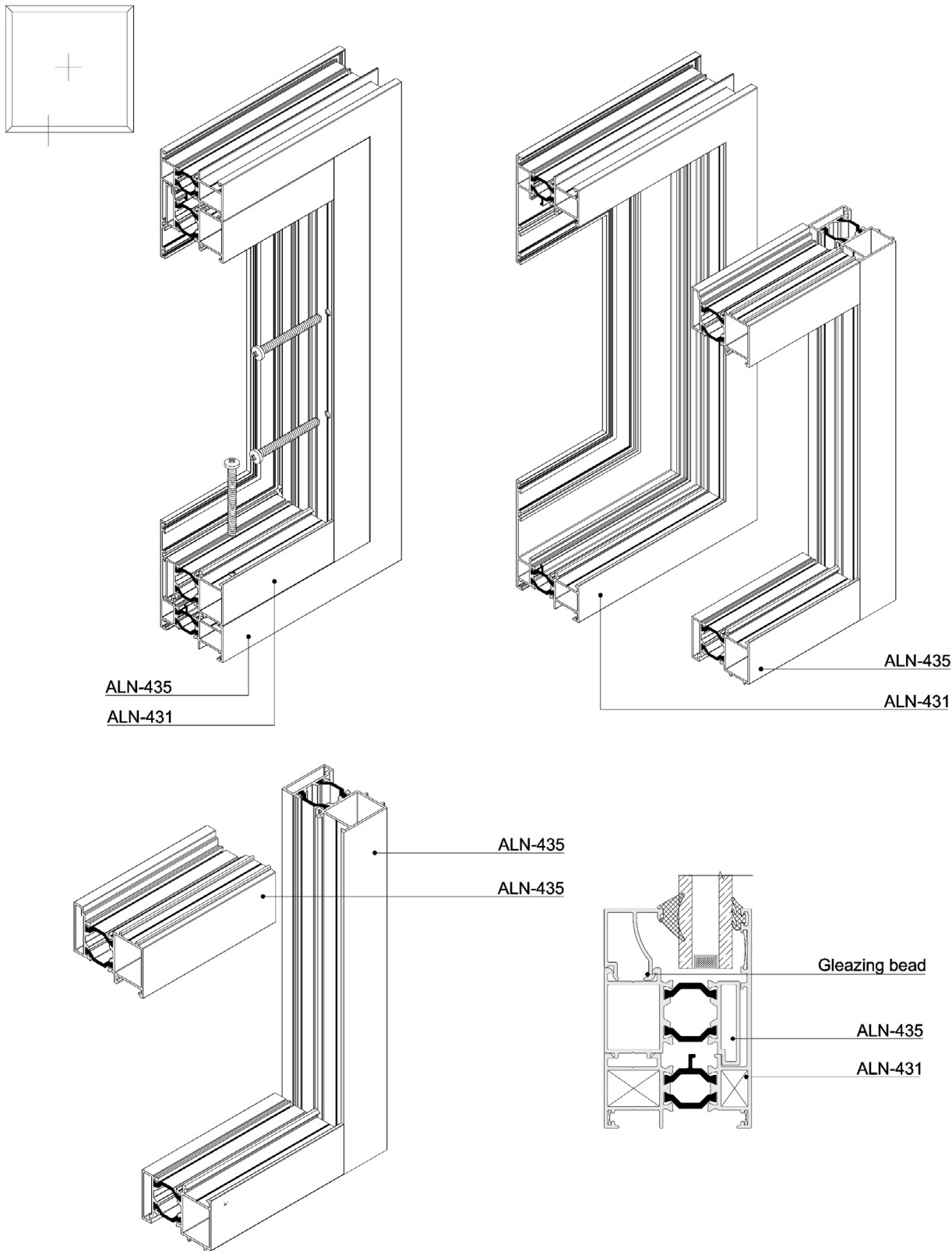
PCP-13 / 9



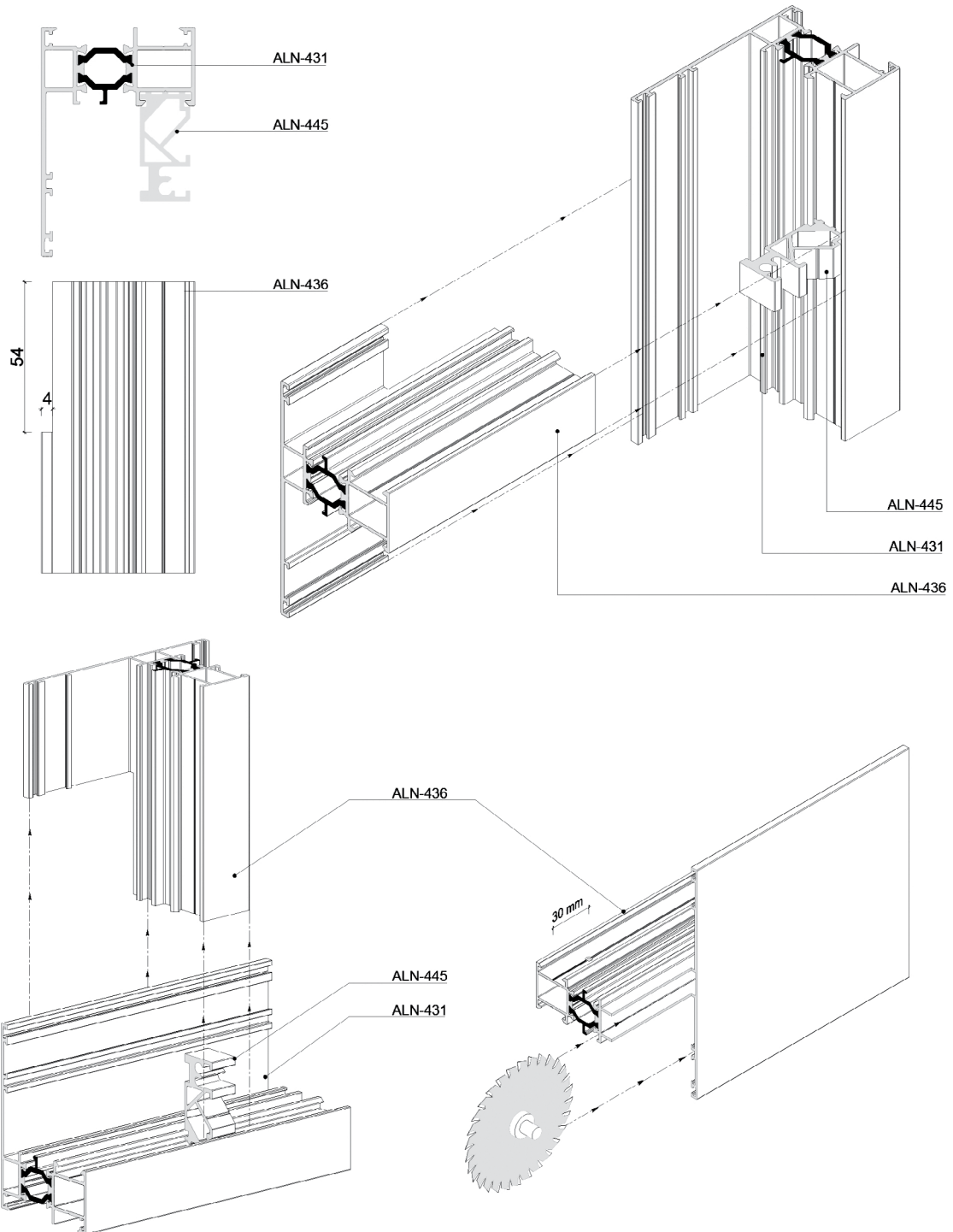
Hidden vent System 55 Series Assembly Drawing



Hidden vent System 55 Series
Assembly Drawing

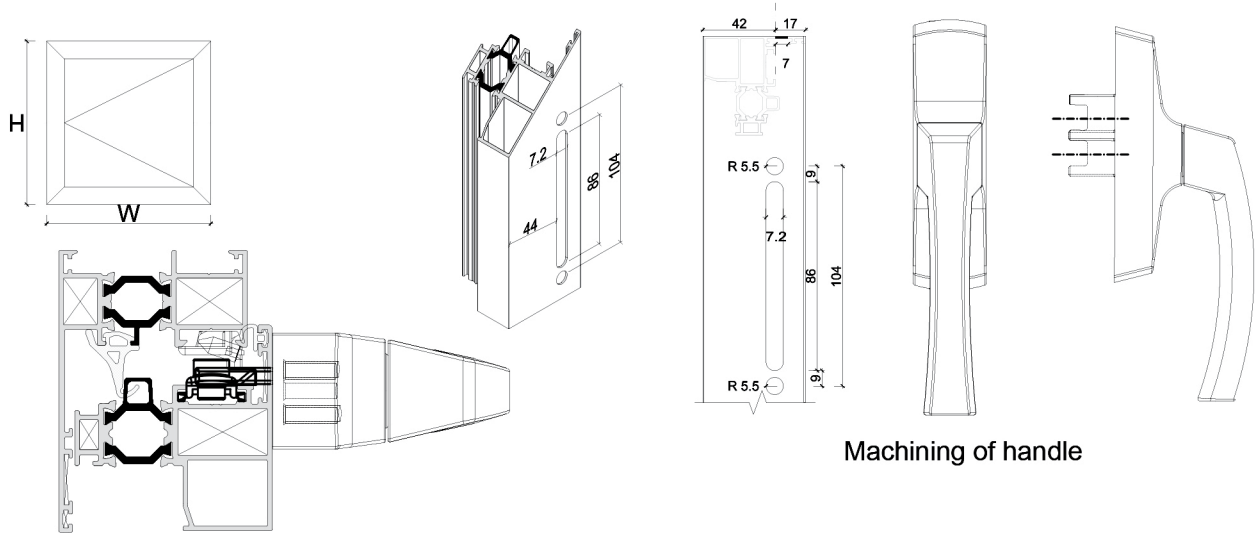


Hidden vent System 55 Series Assembly Drawing



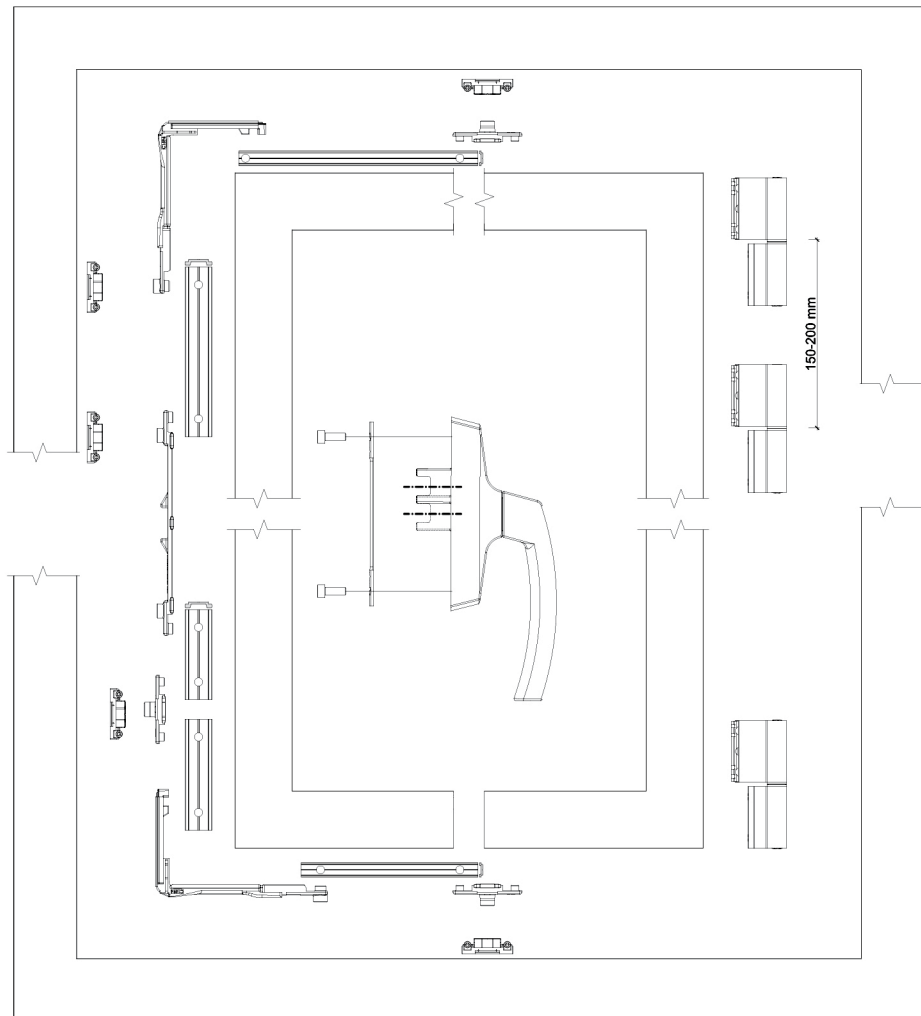
Hidden vent System 55 Series

Hardware Installation



Machining of handle

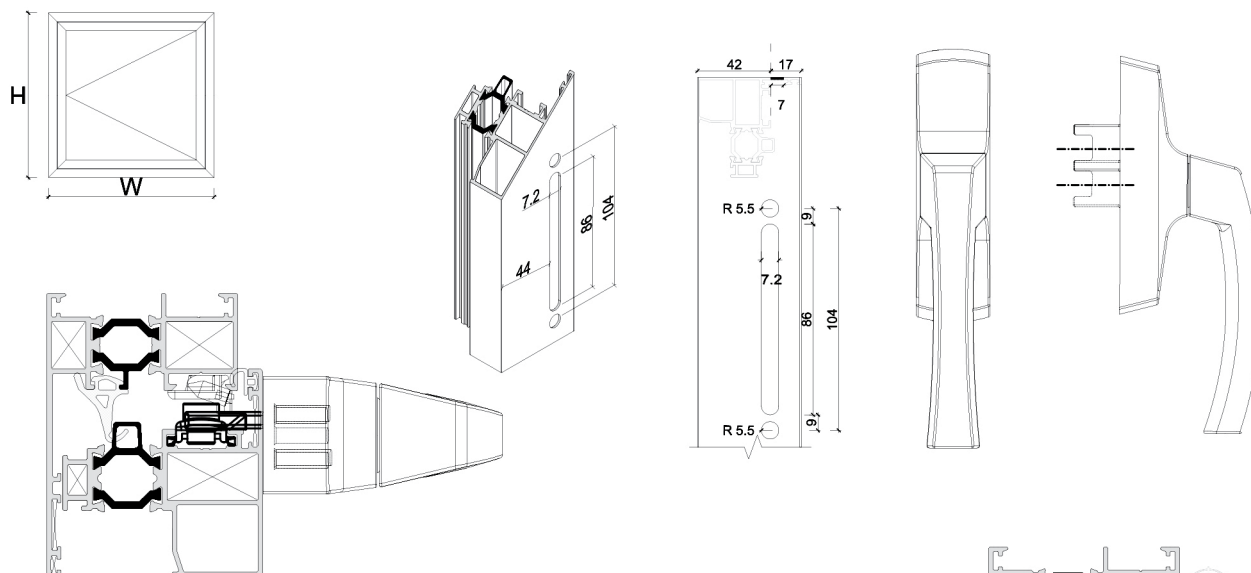
$1200 \leq H$
 $1200 \leq W$



Turn hardware installation

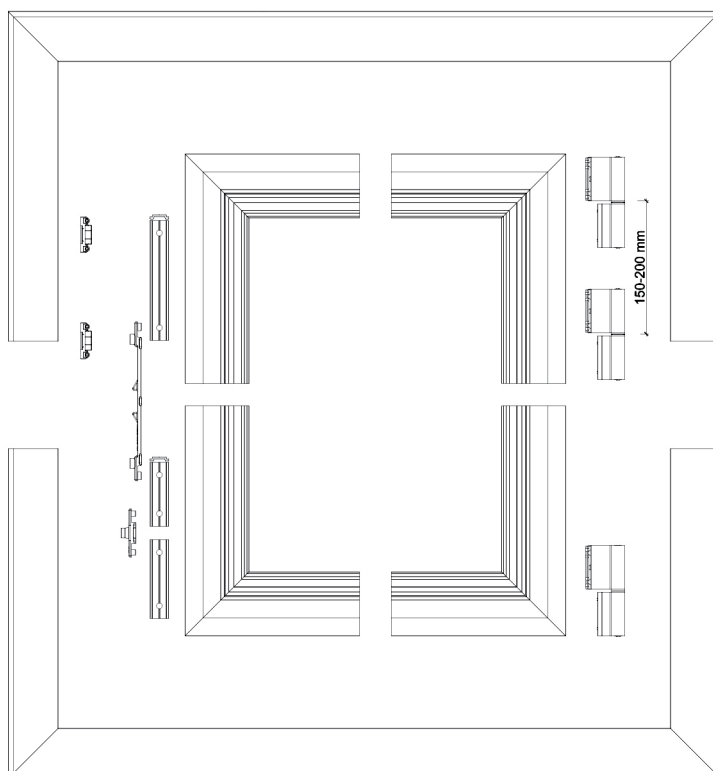
Hidden vent System 55 Series

Hardware Installation



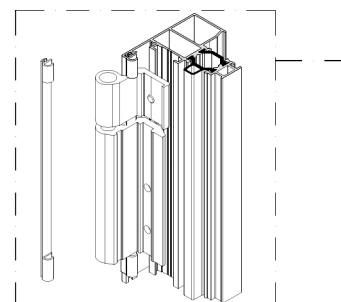
$$1200 \geq H$$

$$1200 \geq W$$

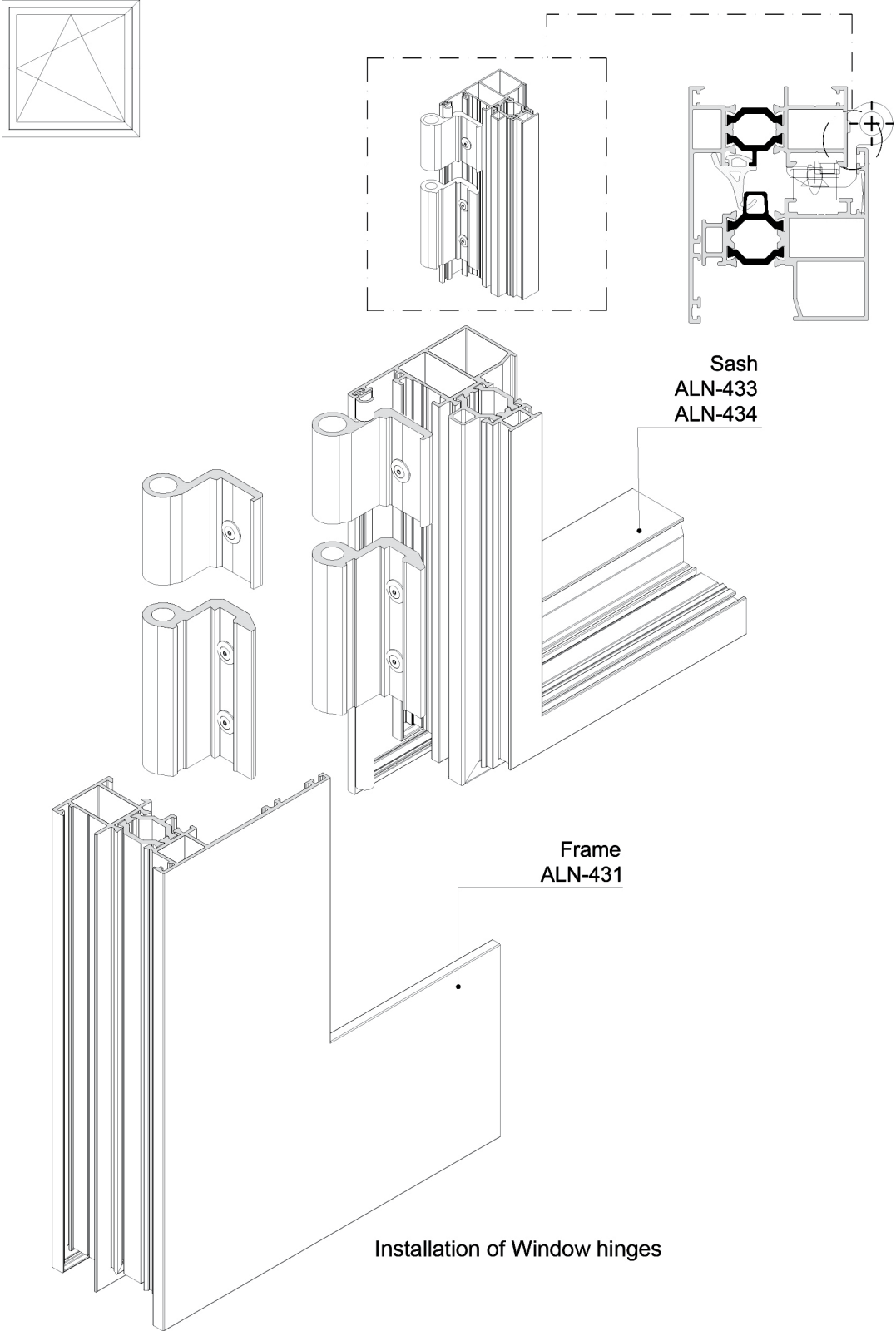


Installation of turn hardware

Window hinges Installation



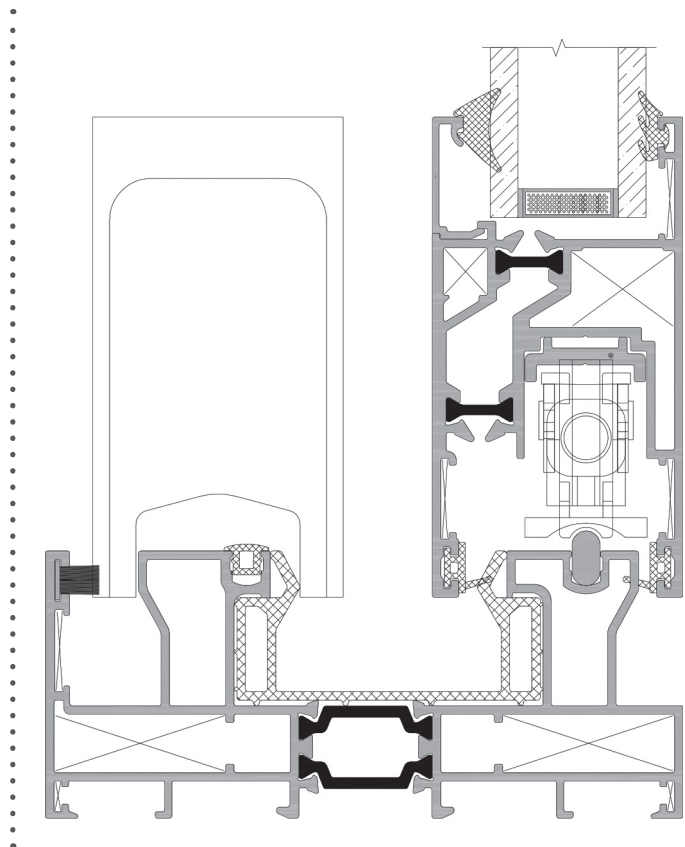
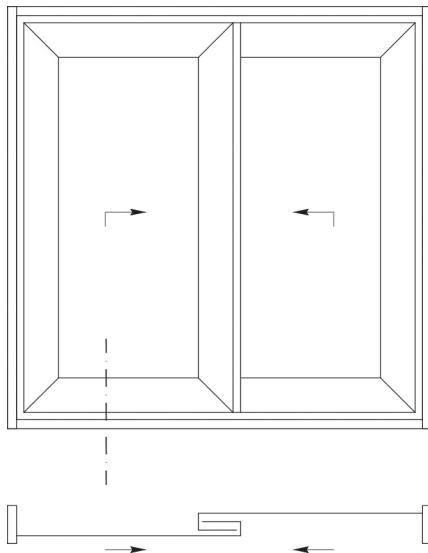
Hidden vent System 55 Series
Hardware Installation





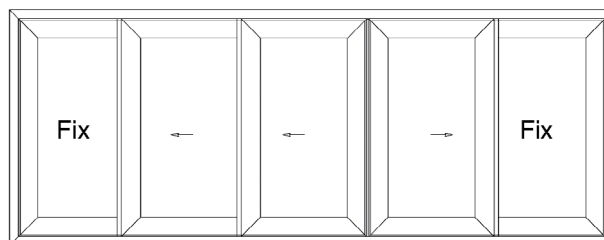
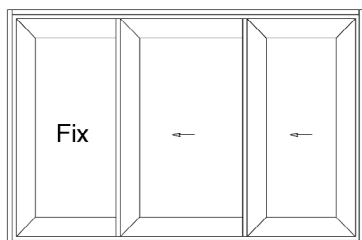
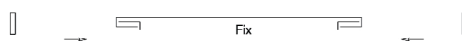
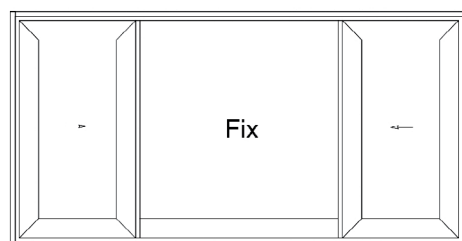
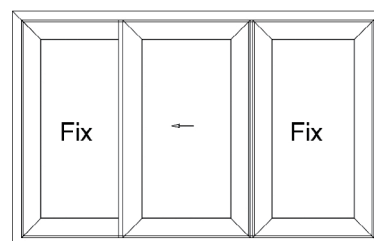
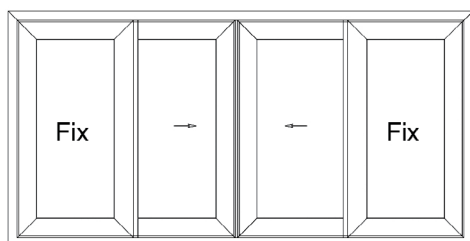
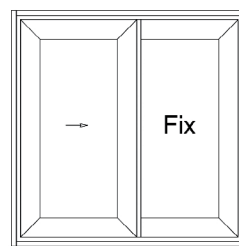
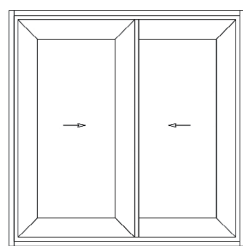
Lift & Slide System 115 Series

. Profile width:	115 mm
. Vent width:	45 mm
. Wall thickness:	1.5 mm
. Rubber description:	EPDM DIN 7863
. Glass thickness:	24 - 34 mm
. Aluminum alloy extrusion:	EN AW 6063 T5
. Isulation bar :	Polyamide Width 24 mm
. Thermal permability :	Uf = 2.58 w/m²k
. Safety drainage system	
. Various typologies	



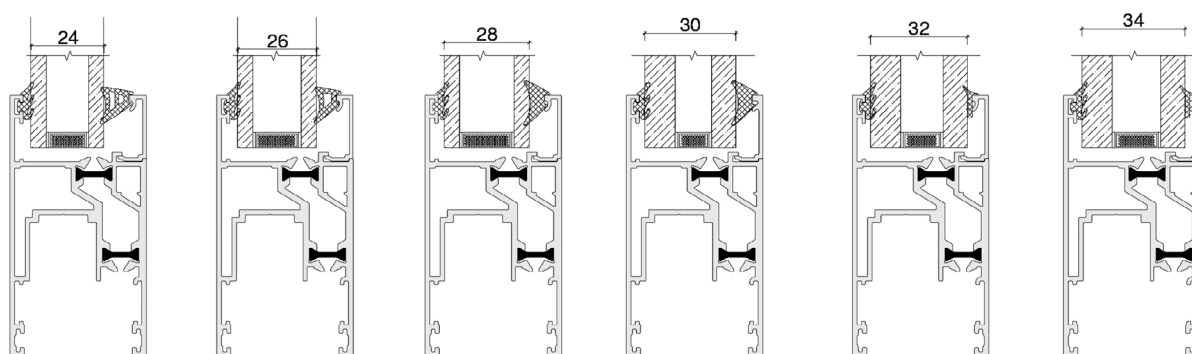
Lift & Slide System 115 Series

Typologies



Lift & Slide System 115 Series

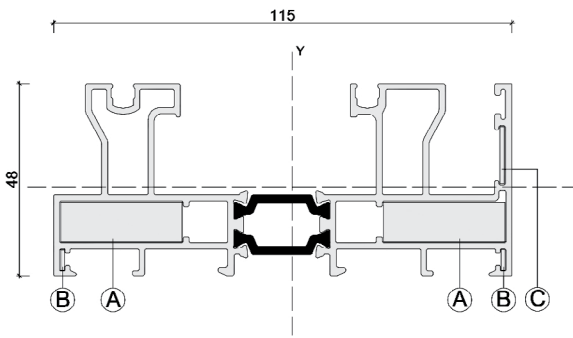
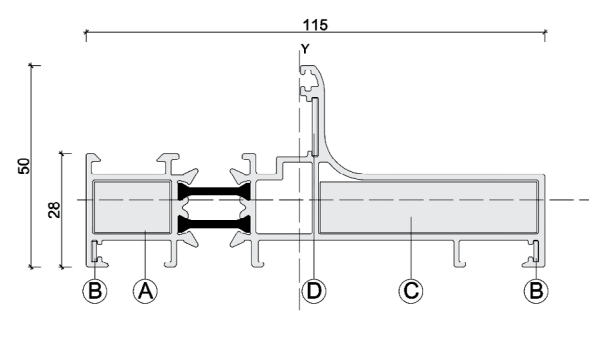
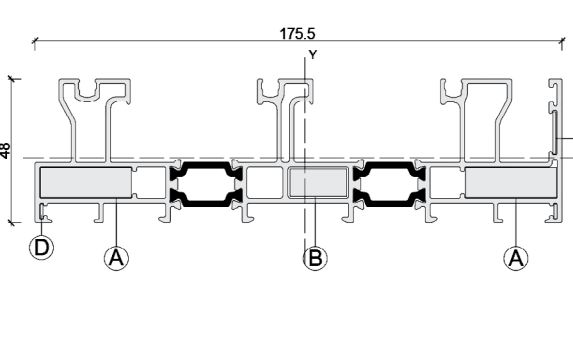
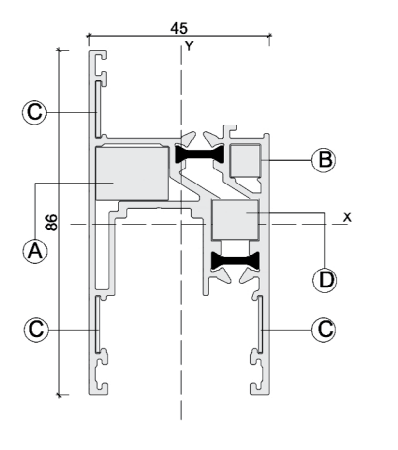
Glazing Table



Glazing Thickness	Gasket Inside	Gasket Outside	Glazing Bead
24 mm	 EP-021	 MO68	 ALN-460
26 mm	 EP-019	 MO68	 ALN-460
28 mm	 EP-016	 MO68	 ALN-460
30 mm	 EP-016	 MO68	 ALN-461
32 mm	 EP-015	 MO68	 ALN-460
34 mm	 EP-015	 MO68	 ALN-461

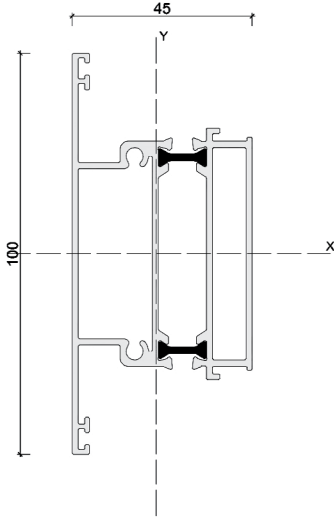
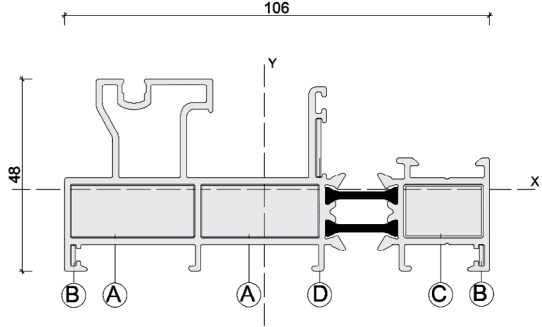
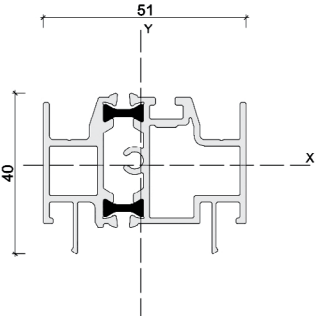
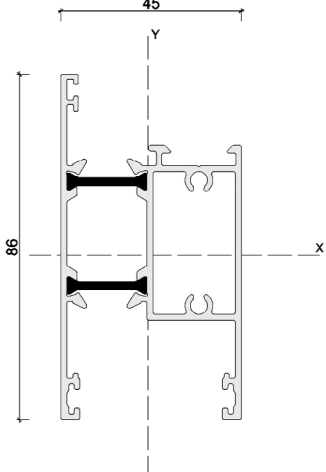
Lift & Slide System 115 Series

Profile & Accessories Information

			
I_x : 17.40 cm ⁴	I_y : 114.00 cm ⁴	I_x : 7.20 cm ⁴	I_y : 71.40 cm ⁴
Frame : ALN-500	A: PCP-10 / 30 mm 	Frame : ALN-502	A: PCP-13 / 19 mm 
Weight: 2316 gr/m	B: MO19(399012) 	Weight: 1780 gr/m	B: MO19(399012) 
	C: MM77 		C: PCP-13 / 54 mm 
			D: MM77 
			
I_x : 24.58 cm ⁴	I_y : 363.43 cm ⁴	I_x : 17.20 cm ⁴	I_y : 26.00 cm ⁴
Triple rail Frame: ALN-501	A: PCP-10 / 30 mm 	Sash: ALN-503	A: PCP-13 / 18 mm 
Weight: 3456 gr/m	B: PCP-10 / 19 mm 	Weight: 1775 gr/m	B: PCP- 8 / 7 mm-with Glue 
	C: MM77 		C: MM77 
	D: MO19(399012) 		D: PCB 10/ 11 Allen 

Lift & Slide System 115 Series

Profile & Accessories Information

			
I_x : 15.24 cm ⁴	I_y : 35.46 cm ⁴	I_x : 12.55 cm ⁴	I_y : 72.94 cm ⁴
Transom : ALN-504	—	Mono rail Frame: ALN-506	A: PCP-13 / 30 mm 
Weight: 1720 gr/m	—		B: MO19(399012) 
			C: PCP-13 / 19 mm 
			D: MM77 
			
I_x : 4.84 cm ⁴	I_y : 10.40 cm ⁴	I_x : 15.24 cm ⁴	I_y : 24.85 cm ⁴
profile : ALN-505	—	Transom: ALN-507	—
Weight: 1258 gr/m	—	Weight: 1485 gr/m	—



Lift & Slide System 115 Series

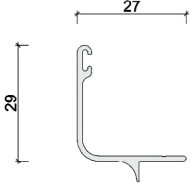
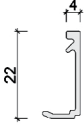
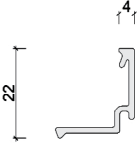
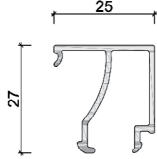
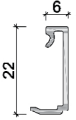
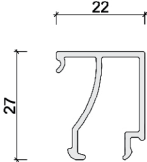
Profile & Accessories Information

Cover: ALN-510	Weight: 332 gr/m	Adjoining profile : ALN-513	Weight: 427 gr/m
Cover: ALN-511	Weight: 535 gr/m	Adjoining profile : ALN-514	Weight: 135 gr/m
Cover: ALN-512	Weight : 484 gr/m	Adjoining profile : ALN-515	Weight: 203 gr/m



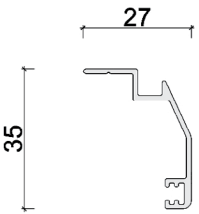
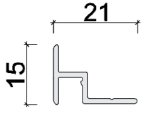
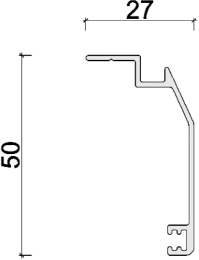
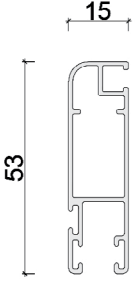
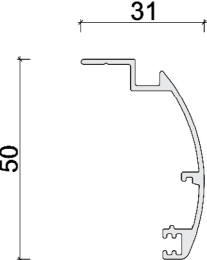
Lift & Slide System 115 Series

Profile & Accessories Information

			
Profile : ALN-489	Weight: 221 gr/m	Glazing bead : ALN-461	Weight: 119 gr/m
			
Glazing bead : ALN-474	Weight: 170 gr/m	Glazing bead : ALN-421	Weight: 313 gr/m
			
Glazing bead : ALN-460	Weight: 127 gr/m	Glazing beads: ALN-323	Weight : 302 gr/m

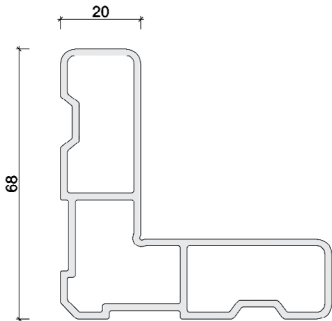
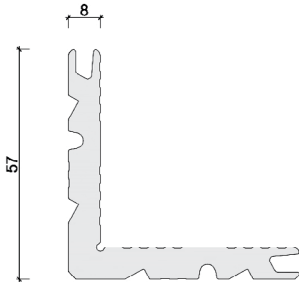
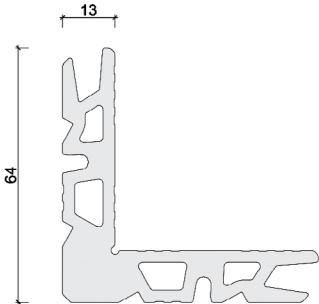
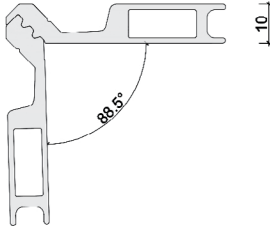
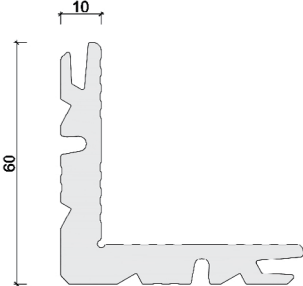
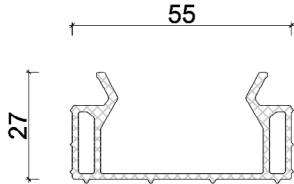
Lift & Slide System 115 Series

Profile & Accessories Information

			
Flange profile: ALN-222	Weight : 254 gr/m	Profile : ALN-228	Weight: 135 gr/m
			
Flange profile: ALN-221	Weight : 302 gr/m	Fly screen : ALN-207	Weight: 448 gr/m
			
Flange profile: ALN-219	Weight : 362 gr/m	Rail : ALN-462	Weight: 119 gr/m

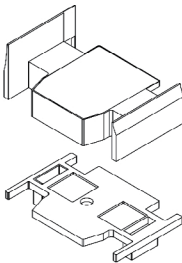
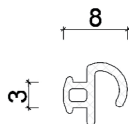
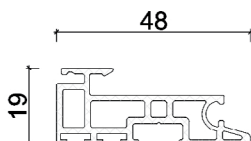
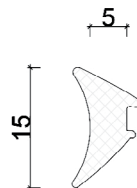
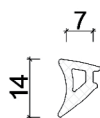
Lift & Slide System 115 Series

Profile & Accessories Information

			
Corner Joint: PCP-20	Weight: 1377 gr/m	Corner Joint: PCP-8	Weight: 1947 gr/m
			
Corner Joint: PCP13	Weight: 2672 gr/m	Corner Joint: PCB10	Weight: —
			
Corner Joint: PCP-10	Weight: 2454 gr/m	Gutter: UT TS115 60027	Weight : —

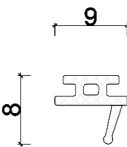
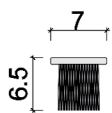
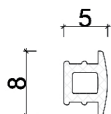
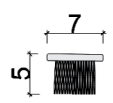
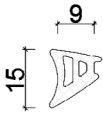
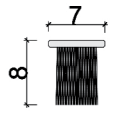
Lift & Slide System 115 Series

Profile & Accessories Information

					
Cap:	60025	Weight : _	Gasket:	EP-018	Weight : 27 gr/m
					
Gasket:	MOC TS115 60028	Weight : —	Gasket:	EP-016	Weight : 77 gr/m
					
Gasket:	EP-019	Weight : 61 gr/m	Gasket:	MO68	Weight : 48 gr/m

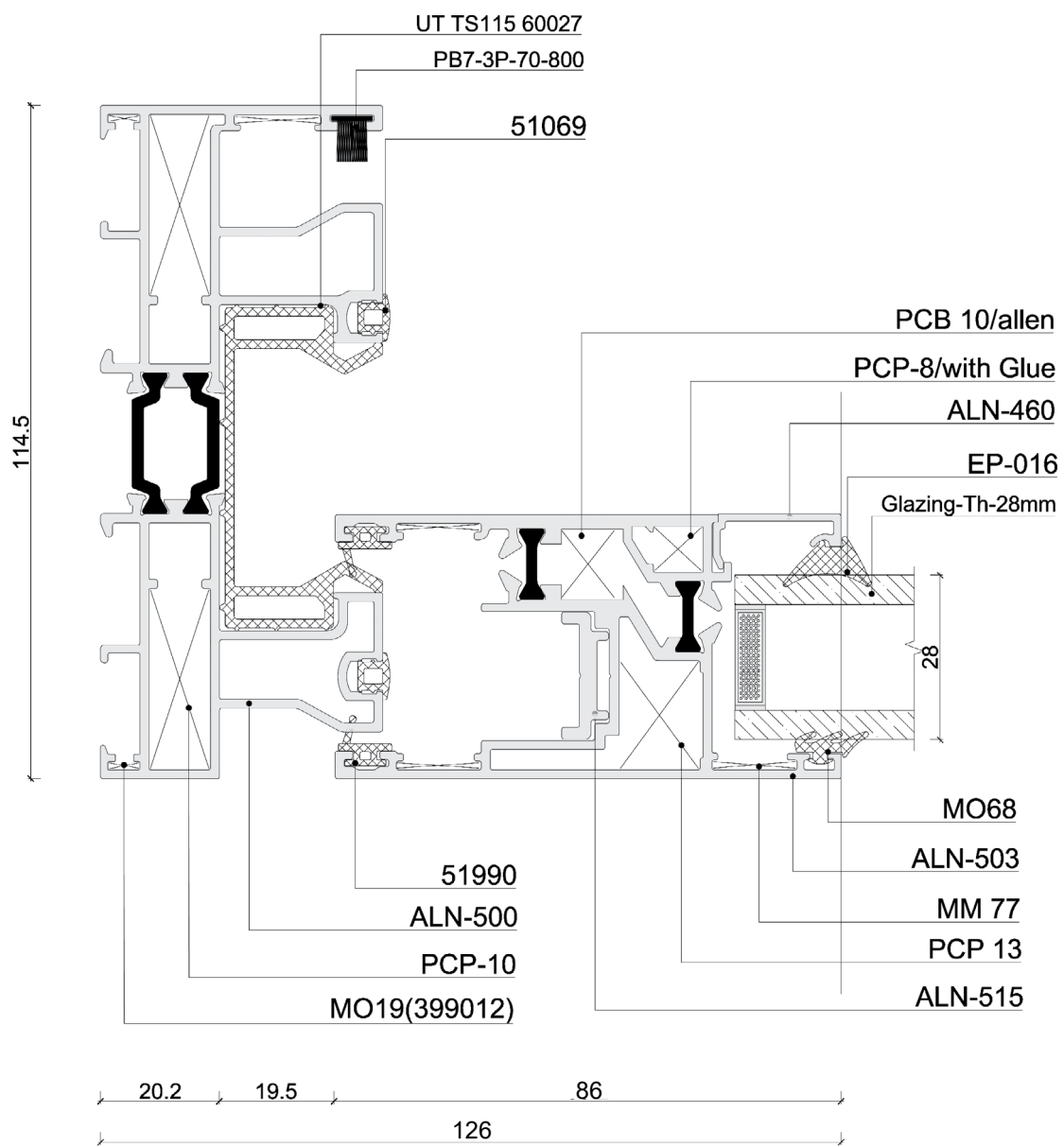
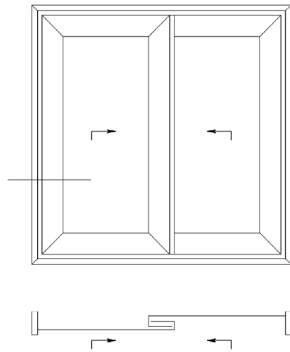
Lift & Slide System 115 Series

Profile & Accessories Information

			
Gasket : 51990	Weight: 34 gr/m	PB7-3P-70-650	Weight: —
			
Gasket : 51069	Weight: 27 gr/m	PB7-3P-70-500	Weight: —
			
Gasket: EP-021	Weight : 80 gr/m	PB7-3P-70-800	Weight: —

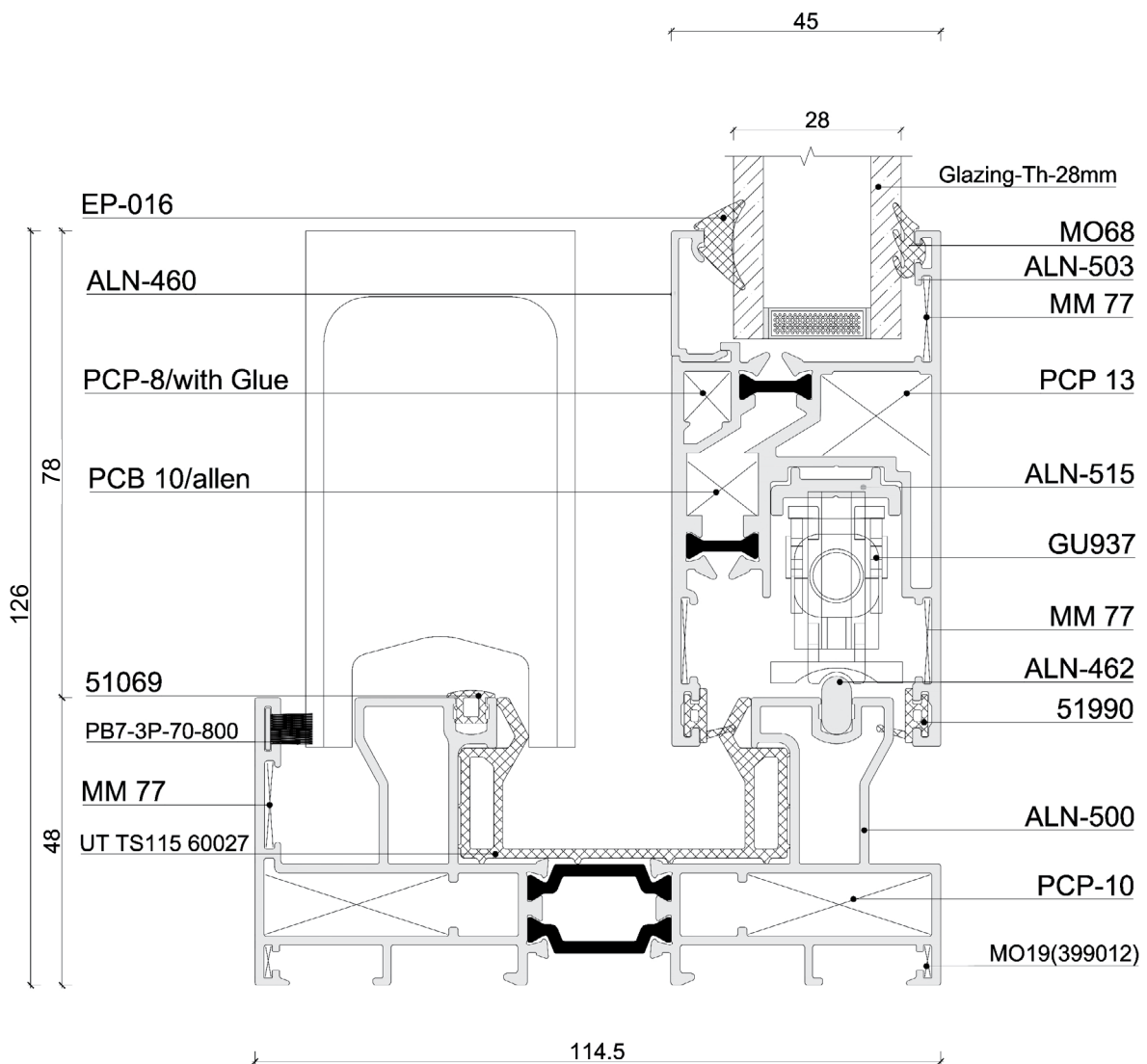
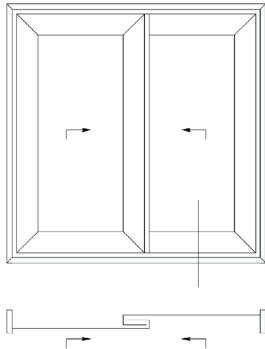
Lift & Slide System 115 Series

Fabrication Details



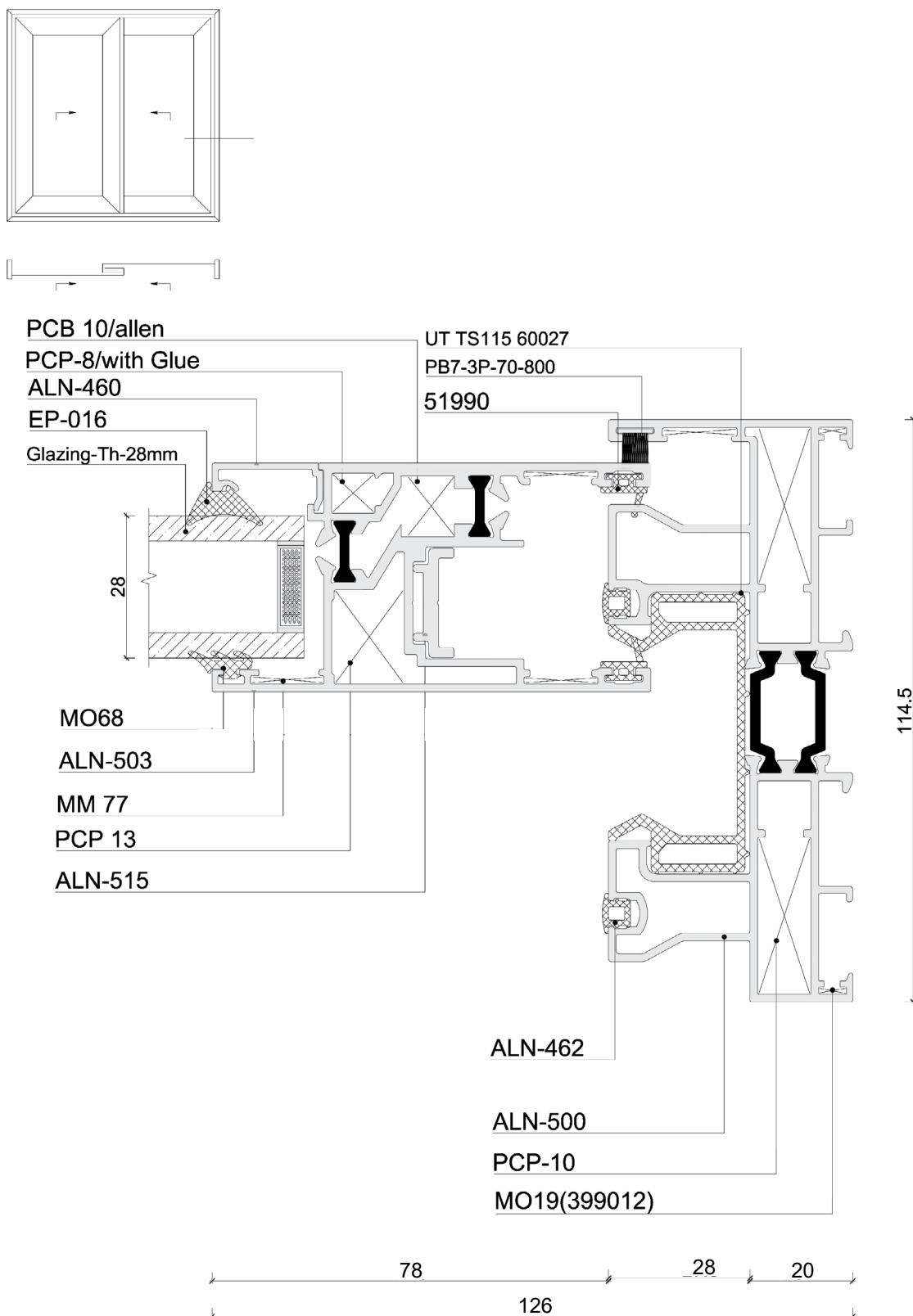
Lift & Slide System 115 Series

Fabrication Details



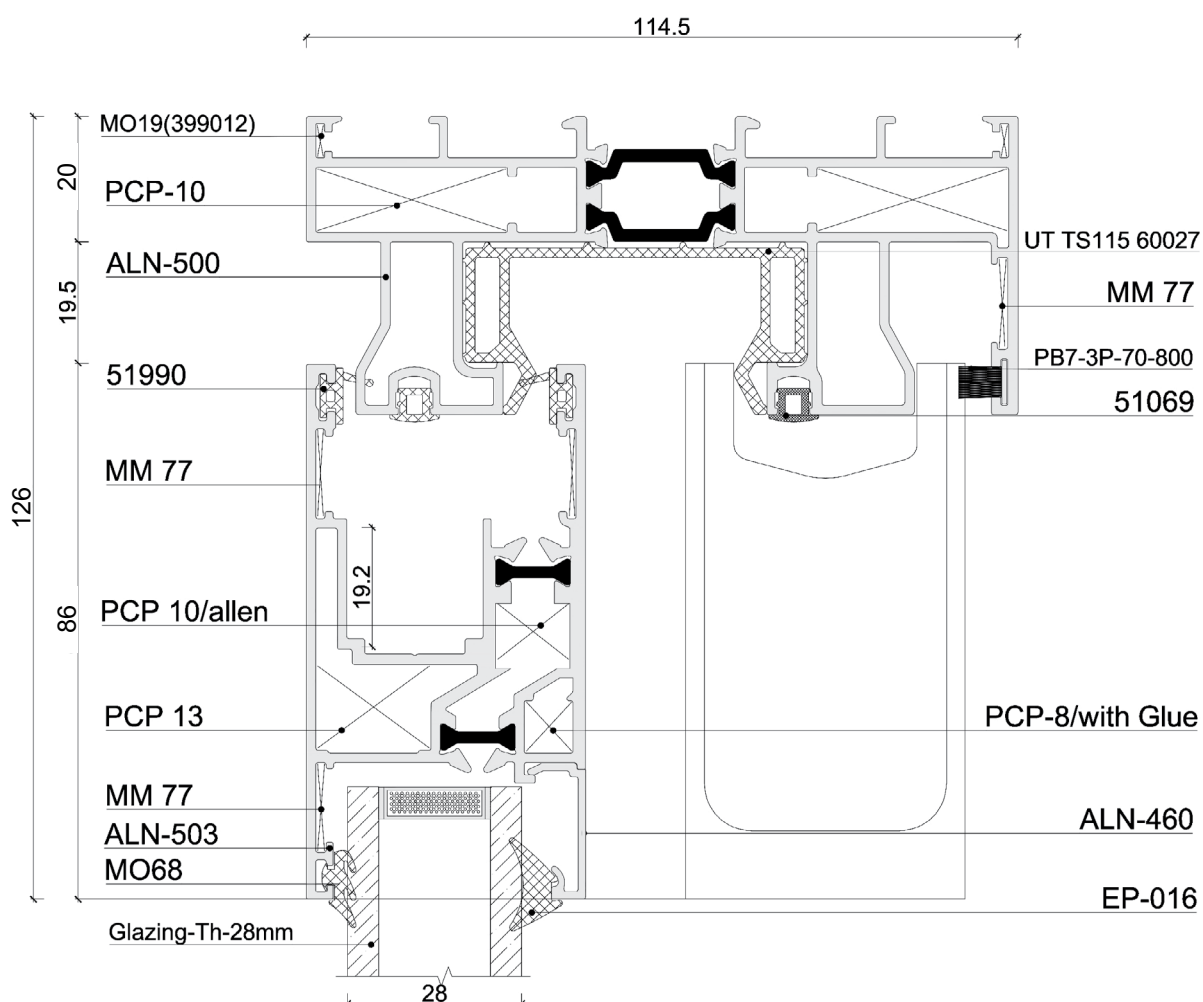
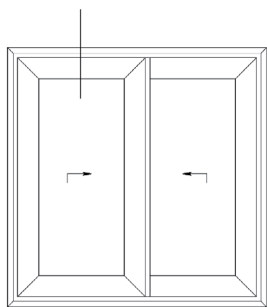
Lift & Slide System 115 Series

Fabrication Details



Lift & Slide System 115 Series

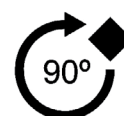
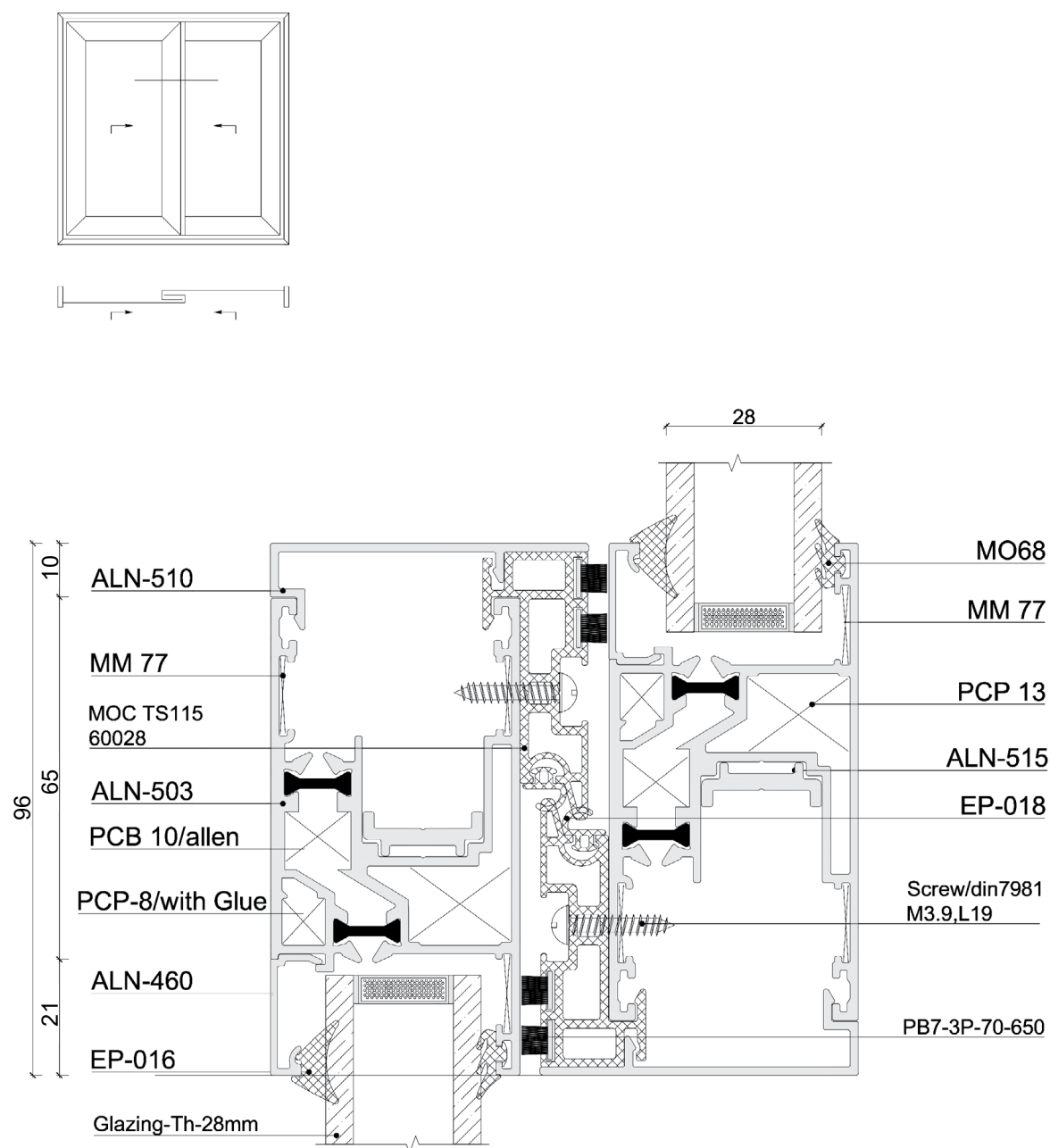
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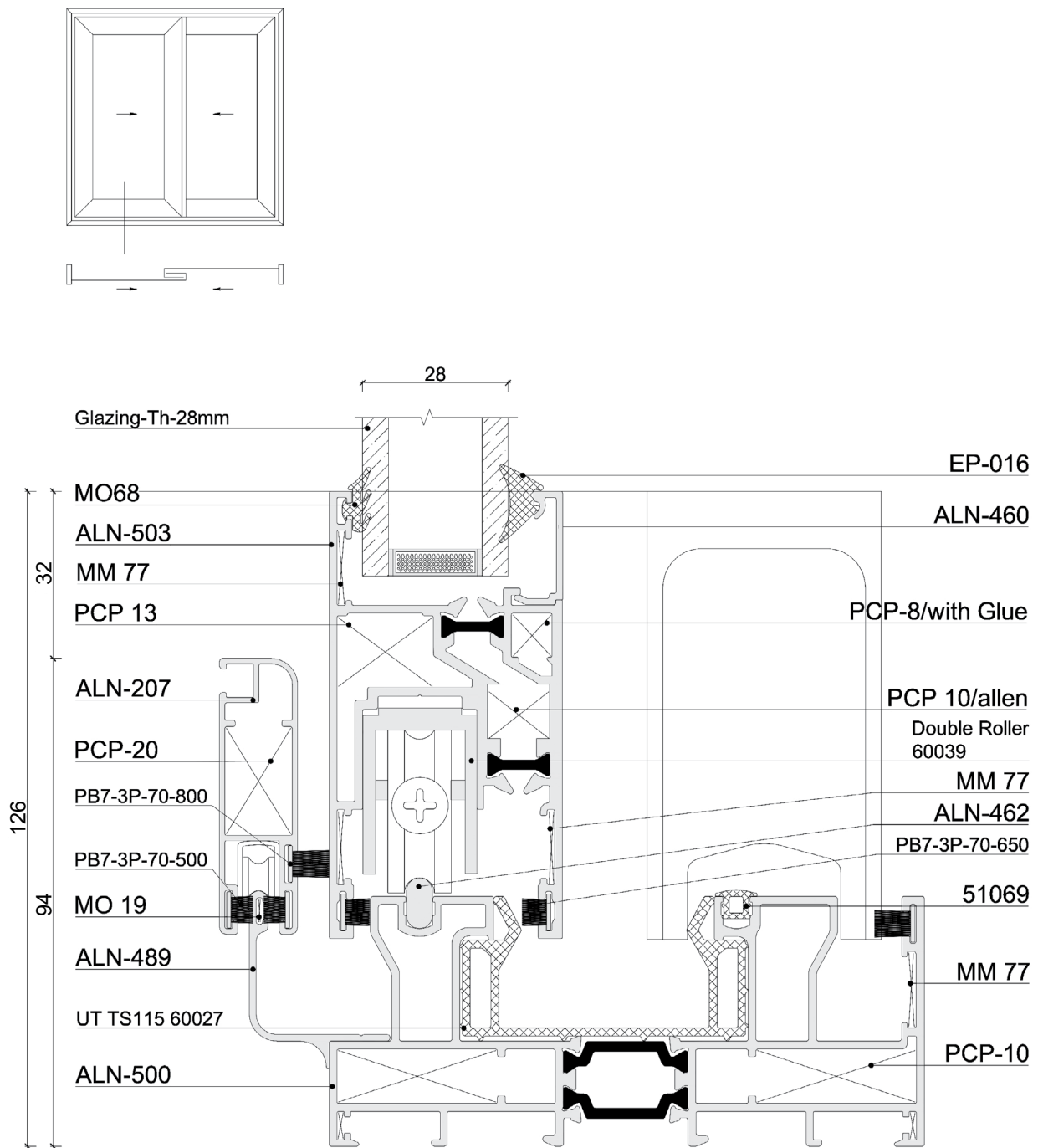
Lift & Slide System 115 Series

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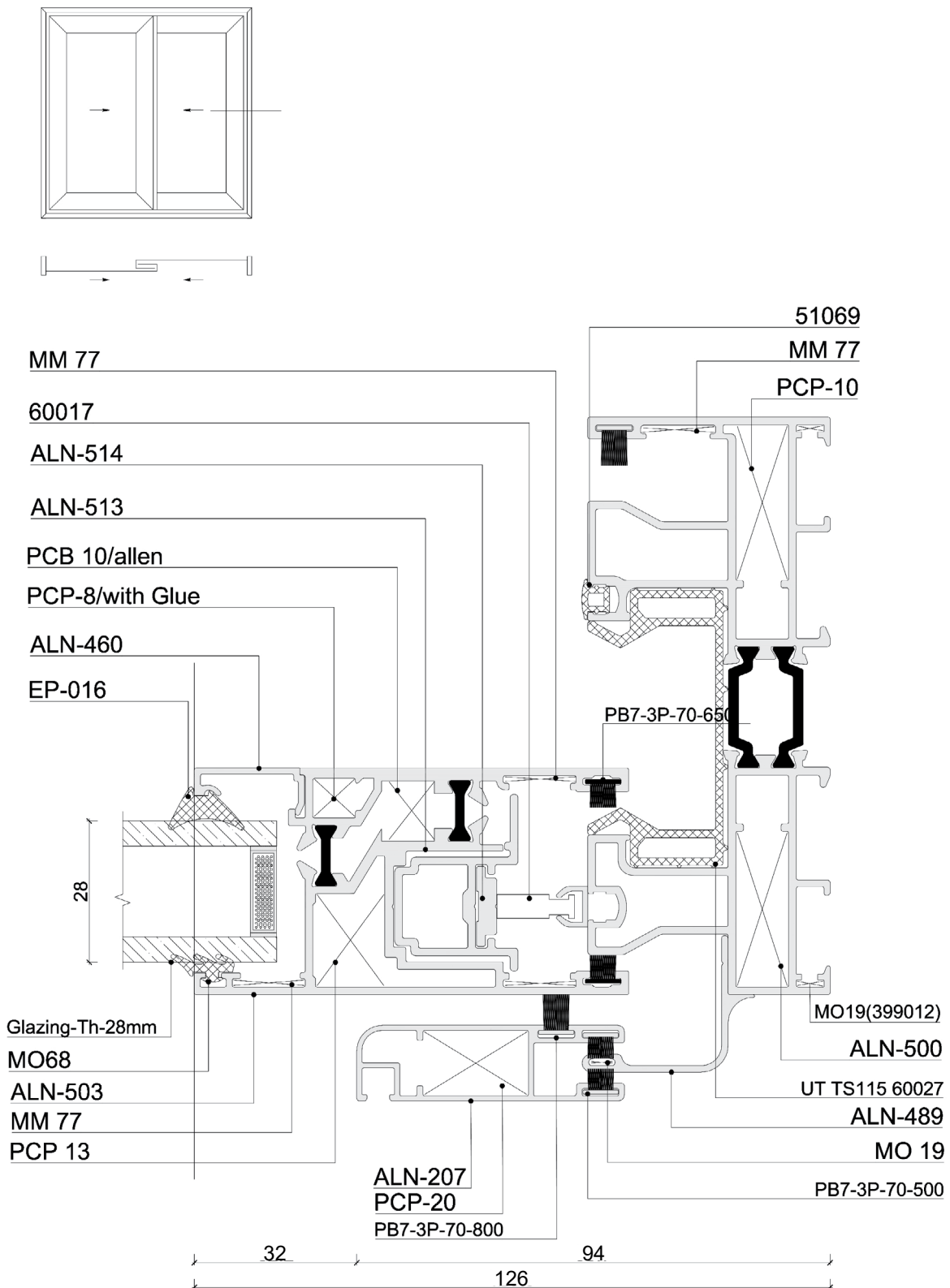
Lift & Slide System 115 Series

Fabrication Details



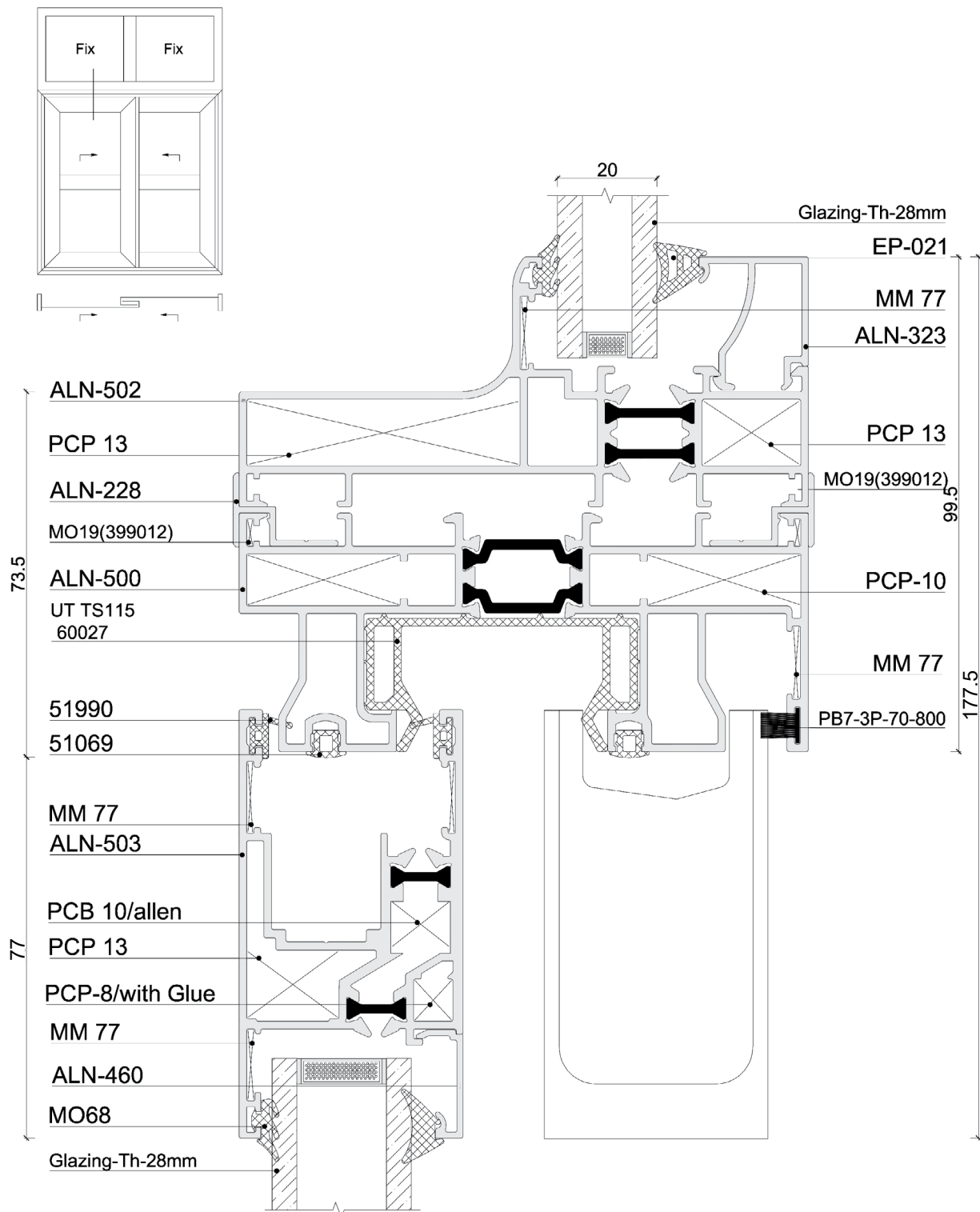
Lift & Slide System 115 Series

Fabrication Details



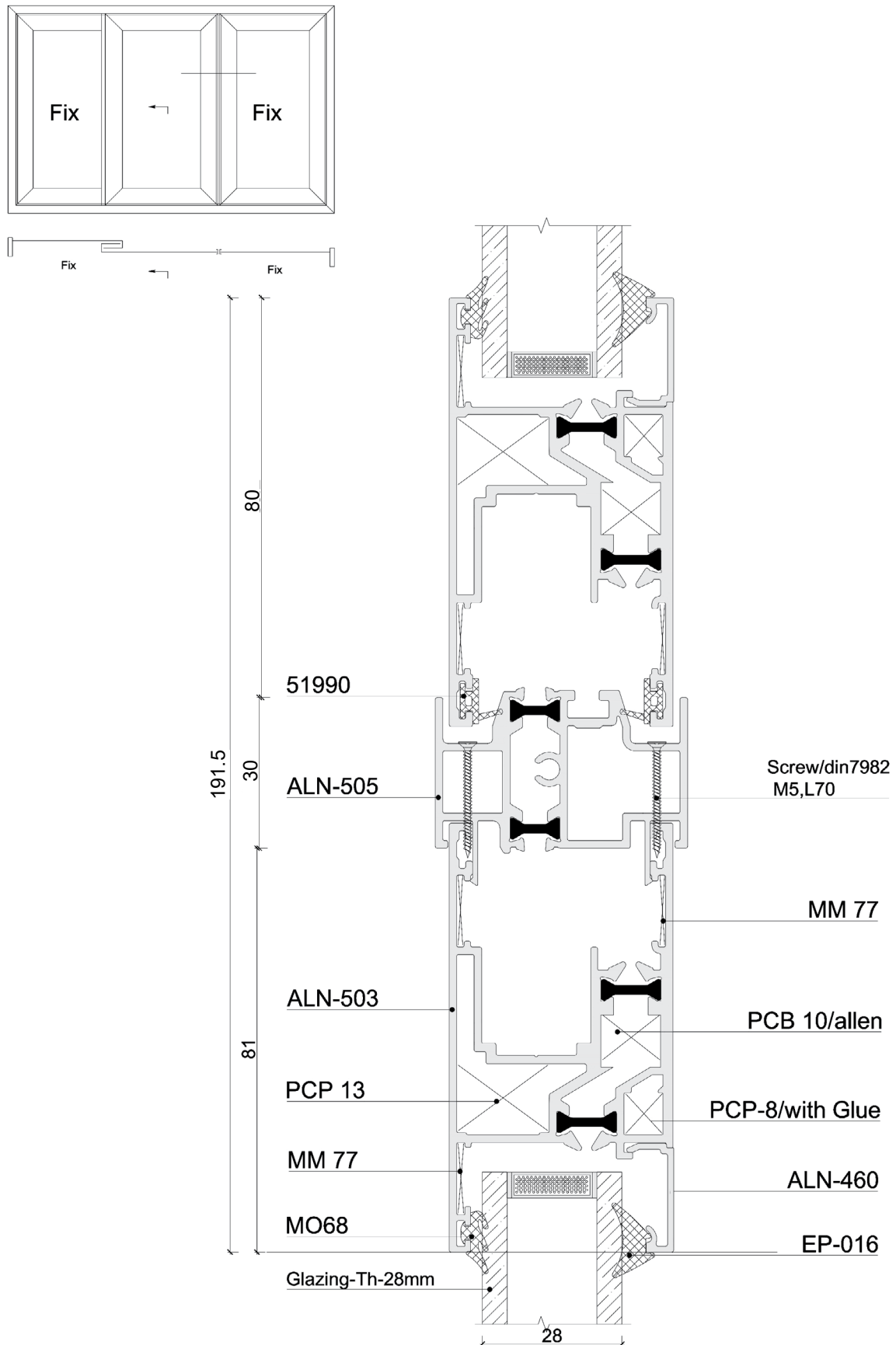
Lift & Slide System 115 Series

Fabrication Details



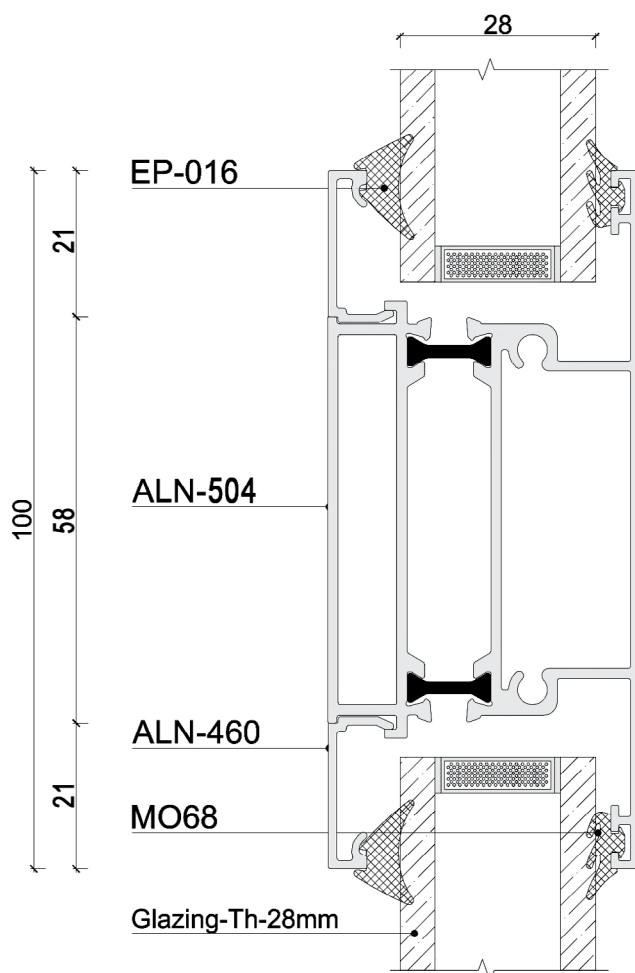
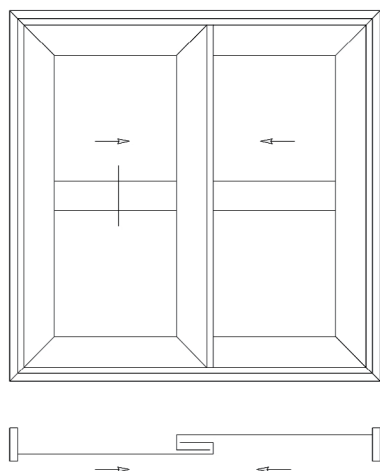
Lift & Slide System 115 Series

Fabrication Details



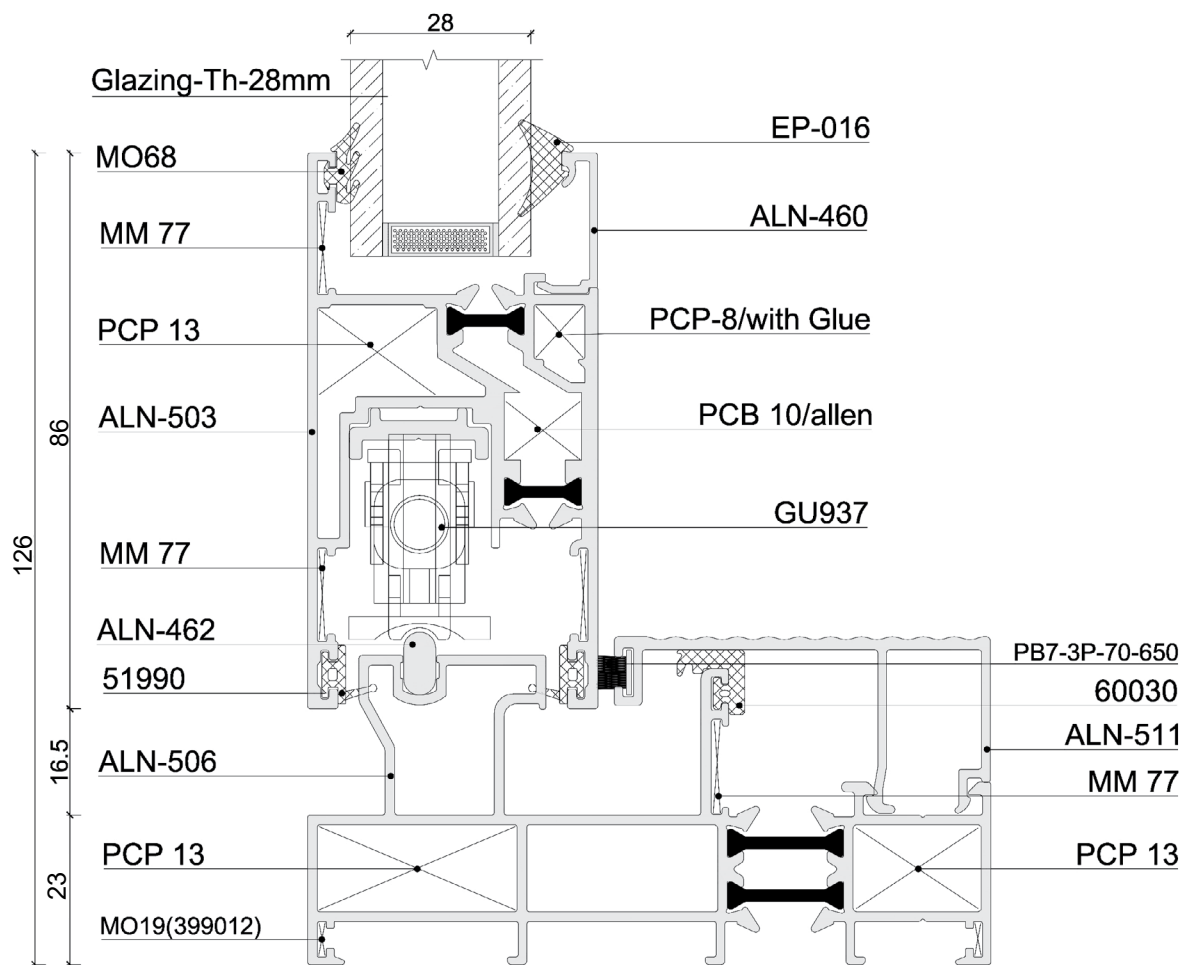
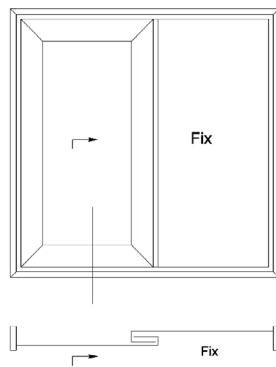
Lift & Slide System 115 Series

Fabrication Details



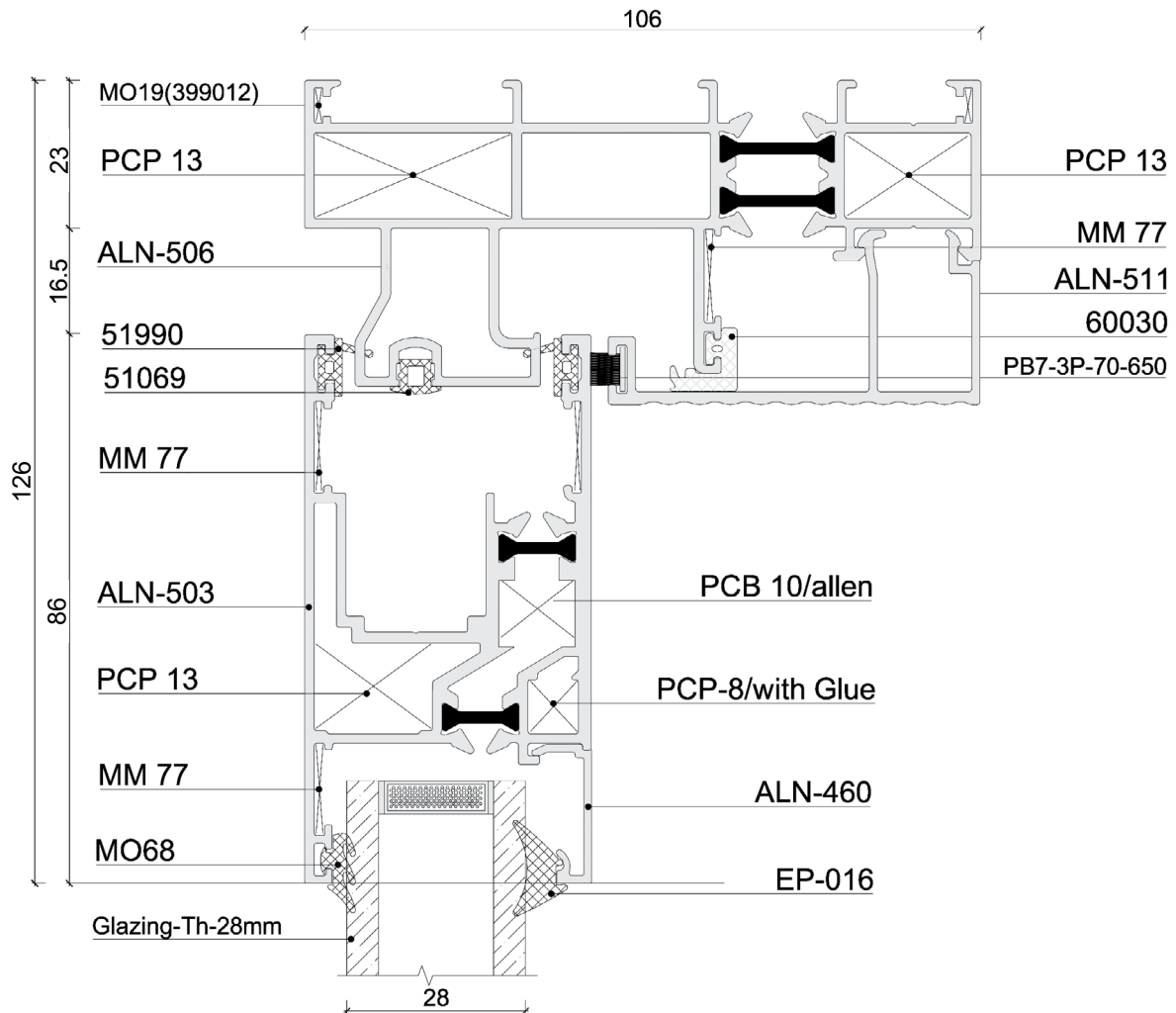
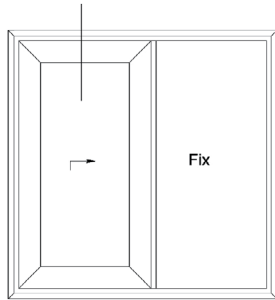
Lift & Slide System 115 Series

Fabrication Details



Lift & Slide System 115 Series

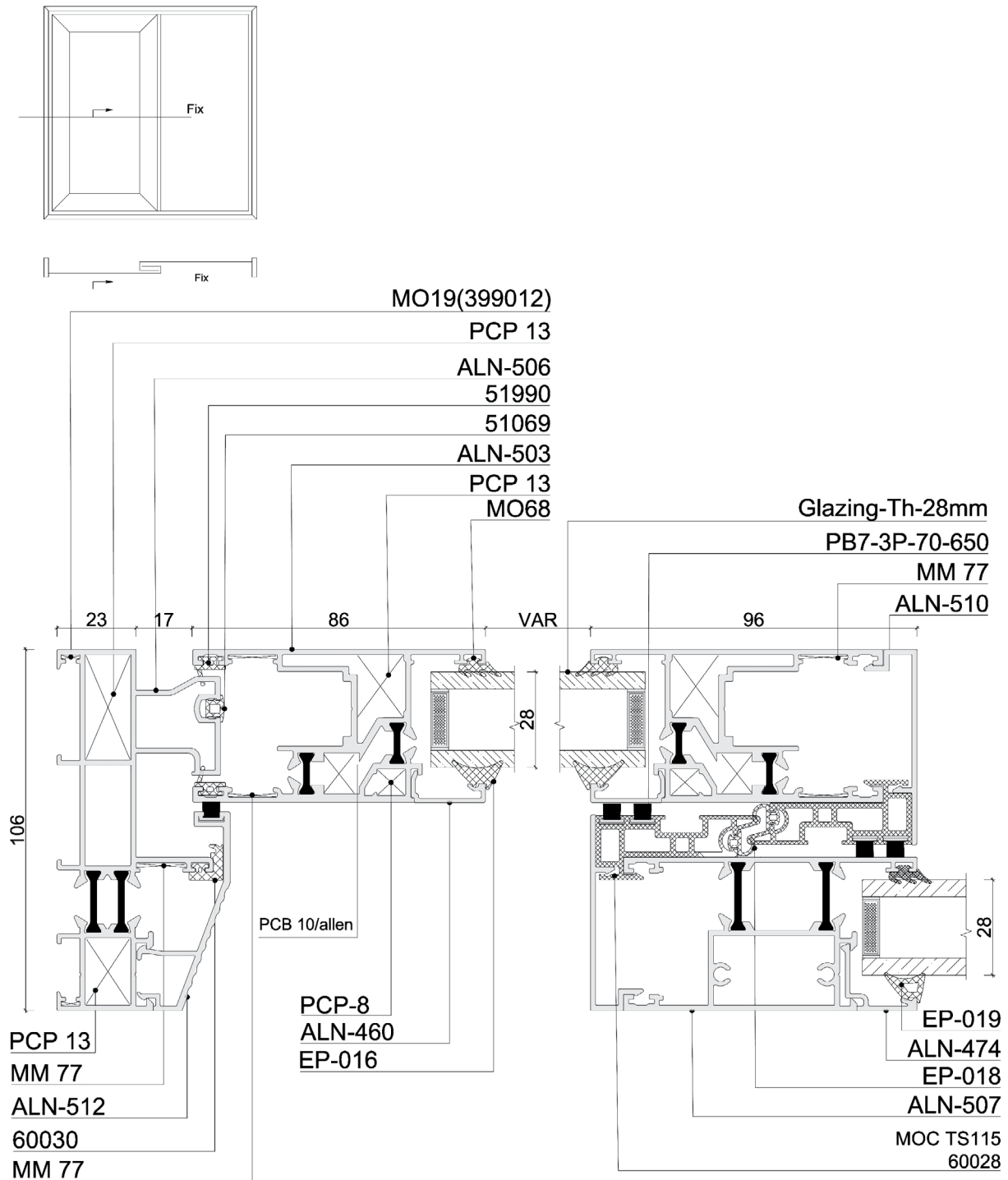
Fabrication Details





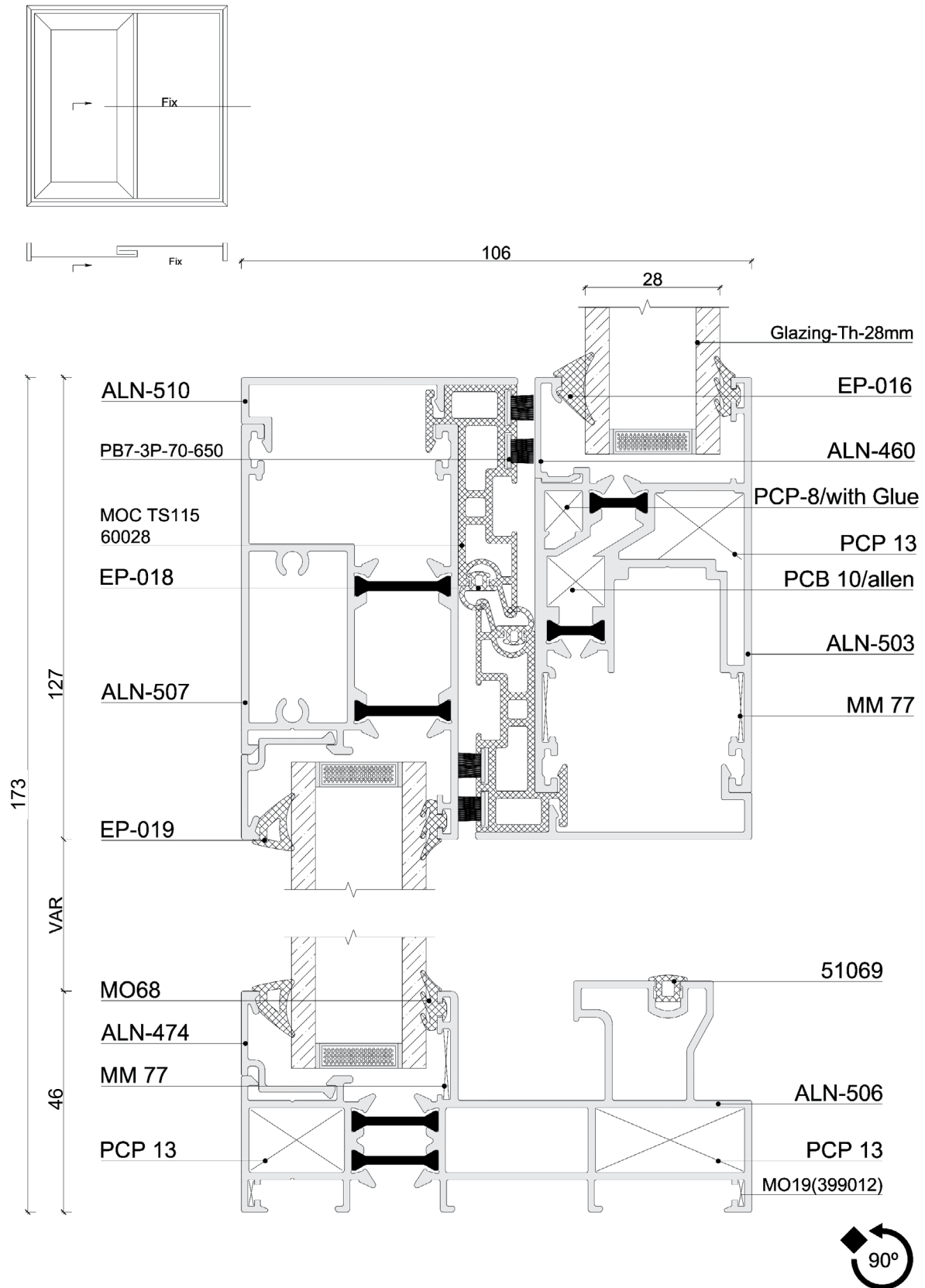
Lift & Slide System 115 Series

Fabrication Details



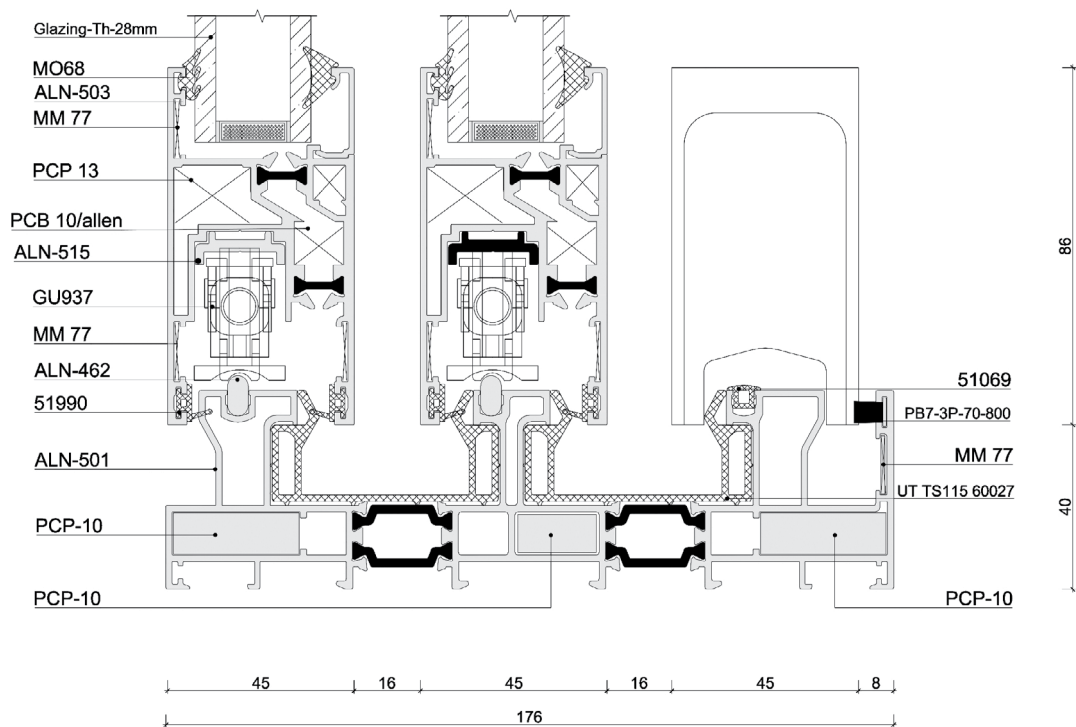
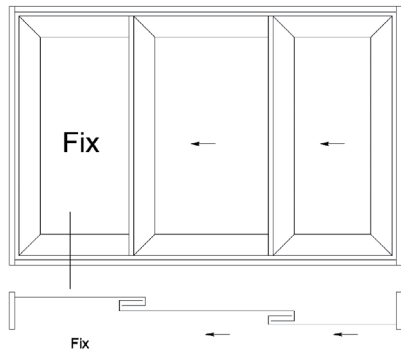
Lift & Slide System 115 Series

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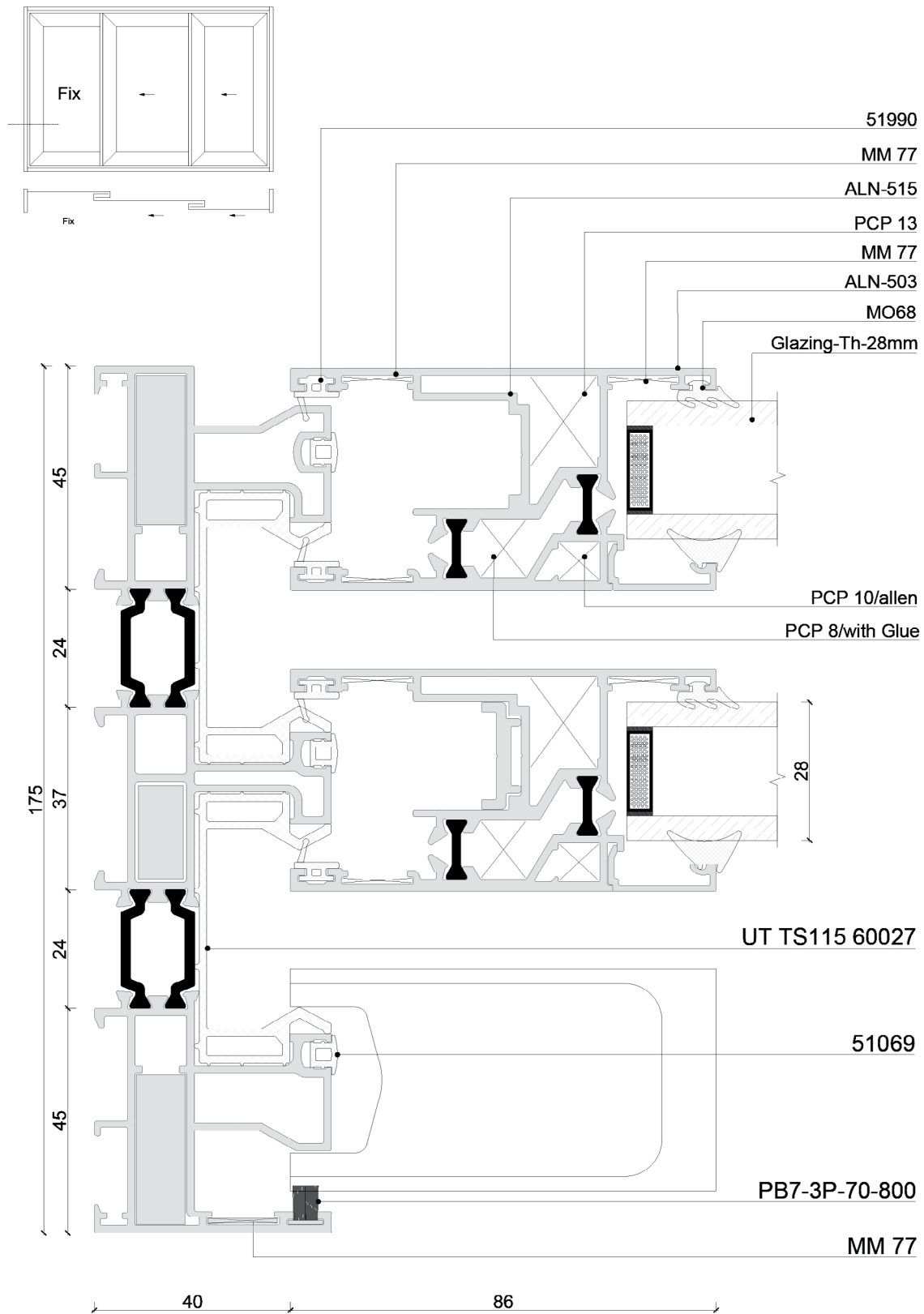
Lift & Slide System 115 Series

Fabrication Details



Lift & Slide System 115 Series

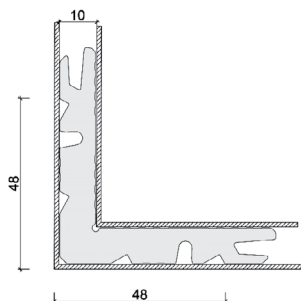
Fabrication Details



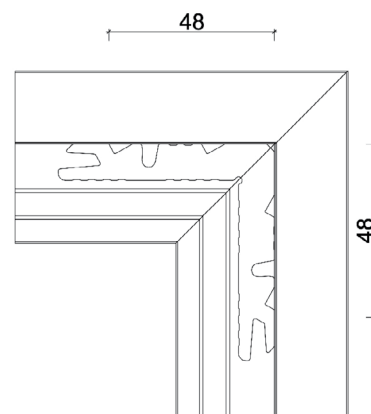
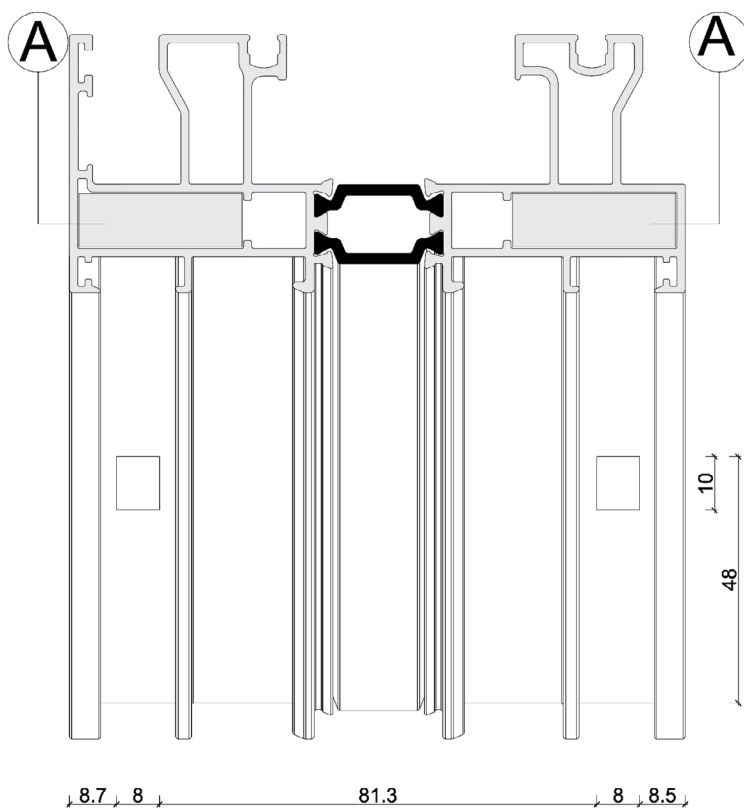
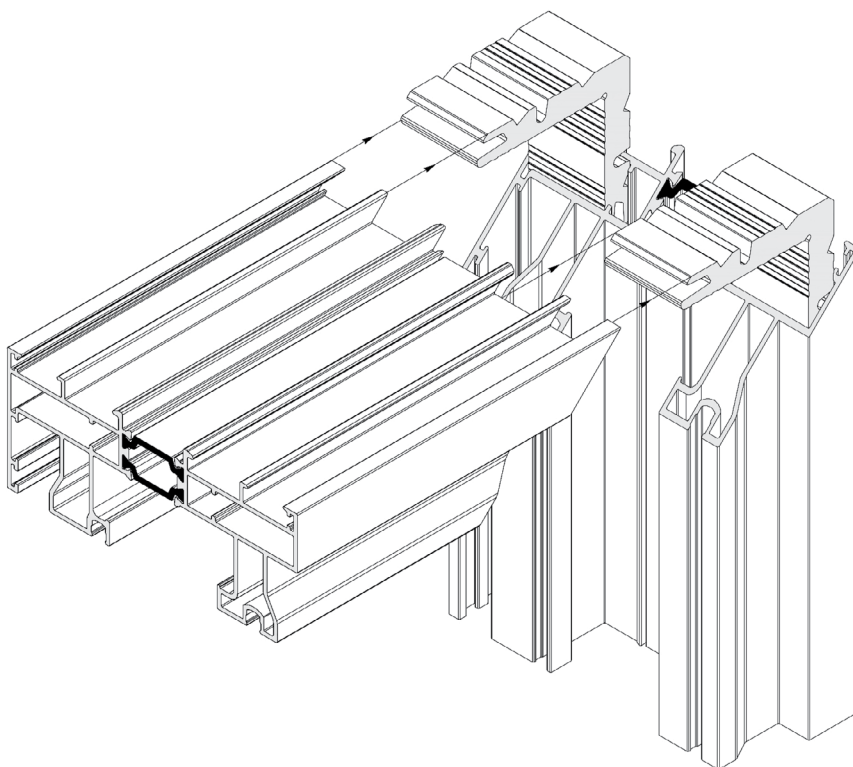
Lift & Slide System 115 Series

Assembly Drawing

ALN 500

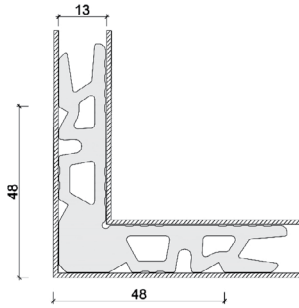


A:PCP-10 / 30 mm

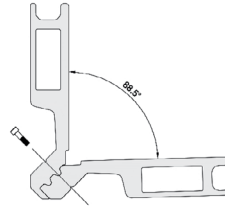


Lift & Slide System 115 Series

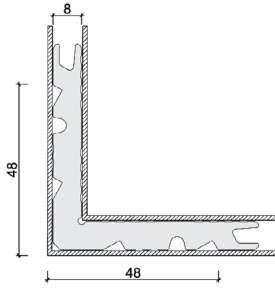
Assembly Drawing
ALN 503



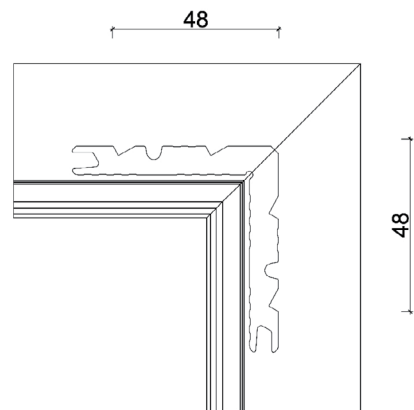
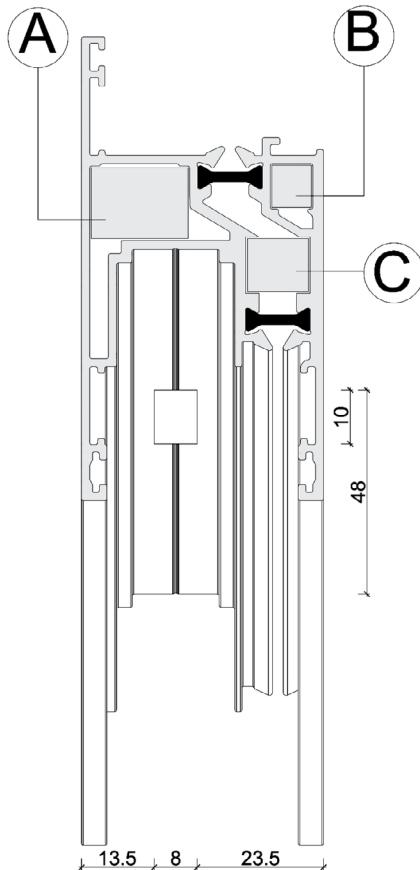
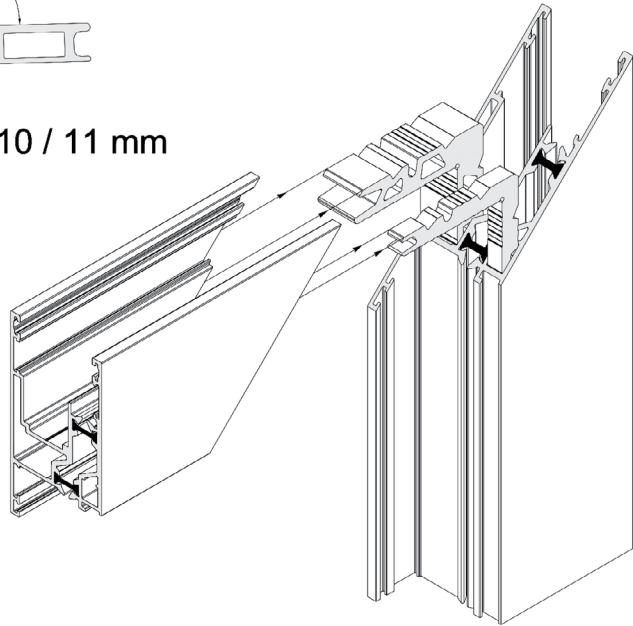
A:PCP-13 / 18 mm



C:PCB-10 / 11 mm



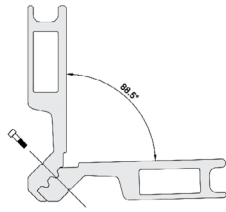
B:PCP-8 / 7 mm
Assemble with glue



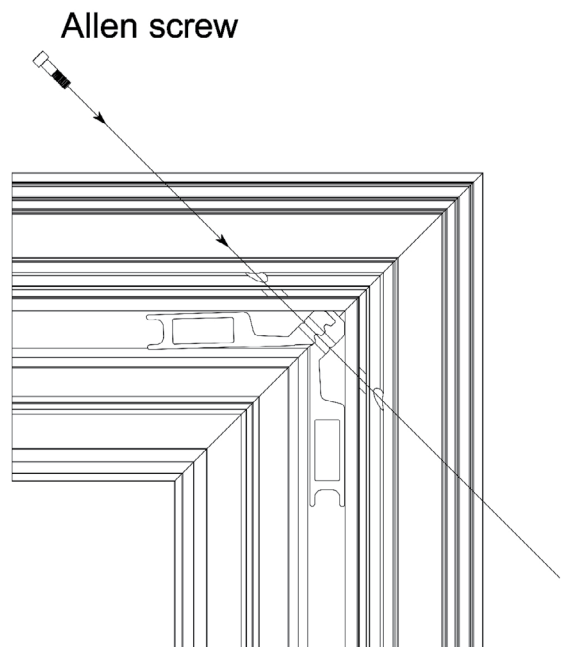
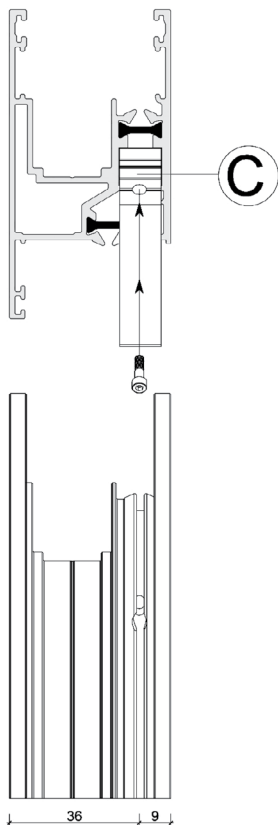
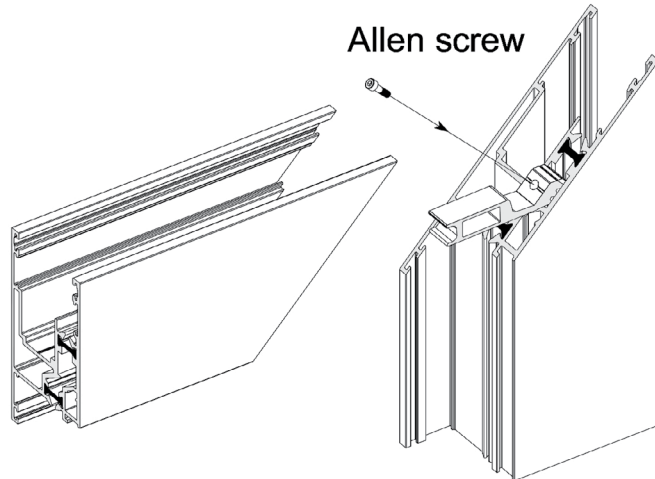
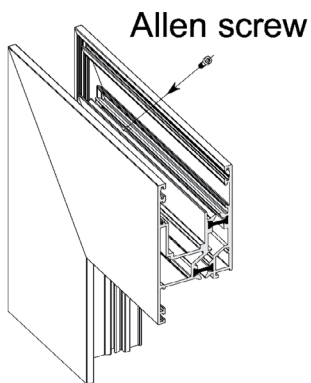
Lift & Slide System 115 Series

Assembly Drawing

ALN 503



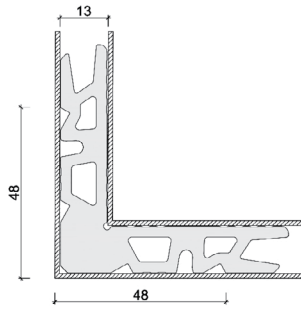
C:PCB-10 / 11 mm



Lift & Slide System 115 Series

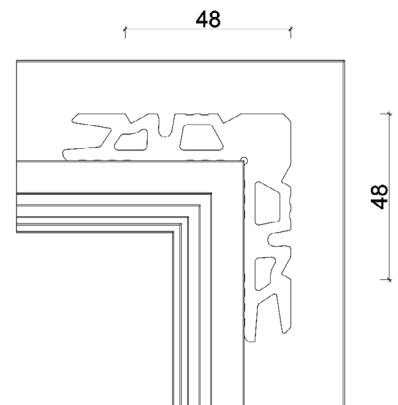
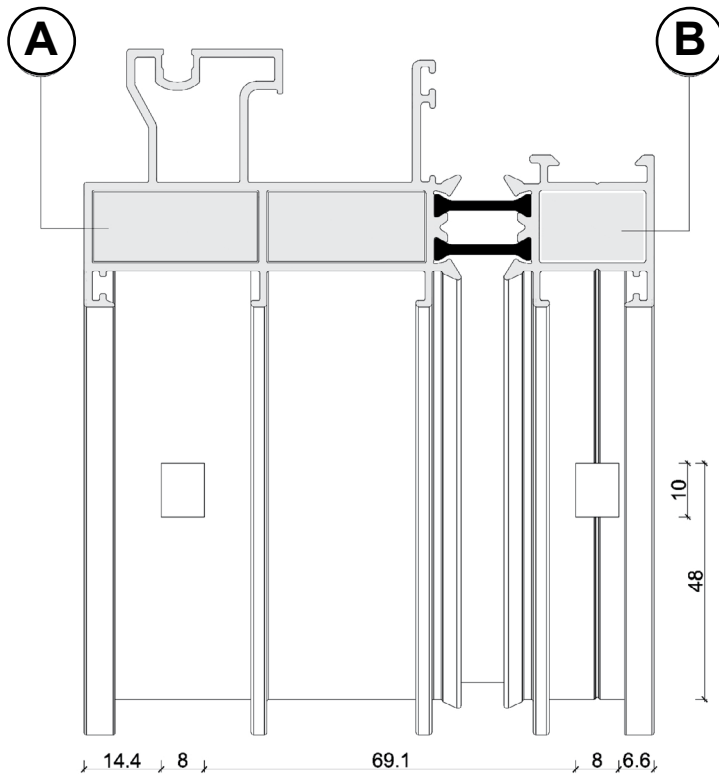
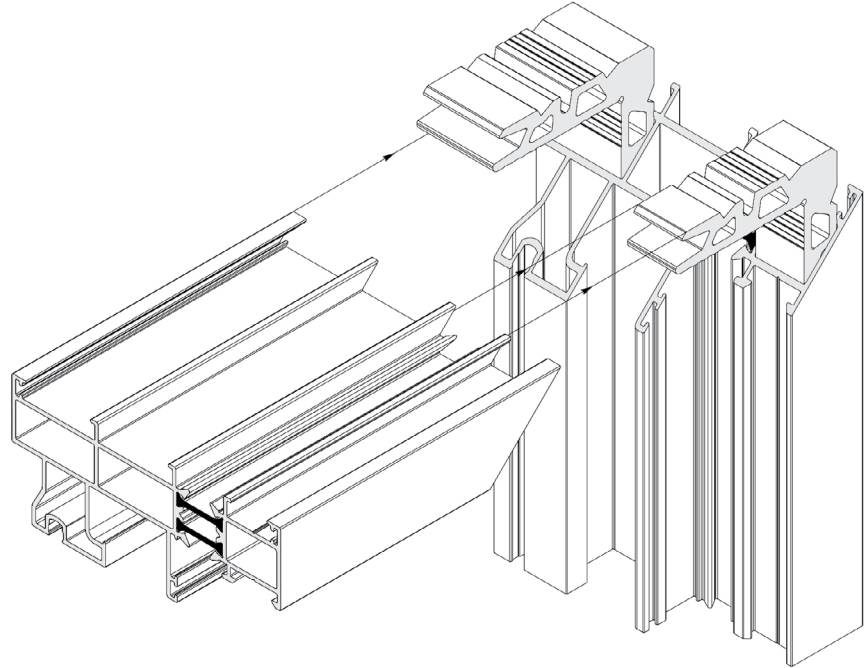
Assembly Drawing

ALN 506



A:PCP-13 / 30 mm

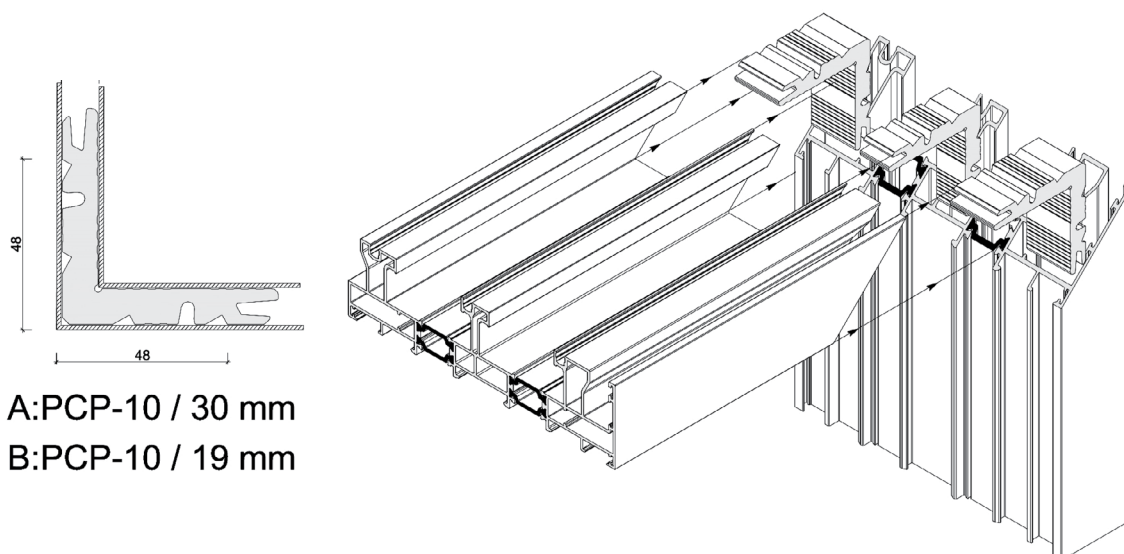
B:PCP-13 / 19 mm



Lift & Slide System 115 Series

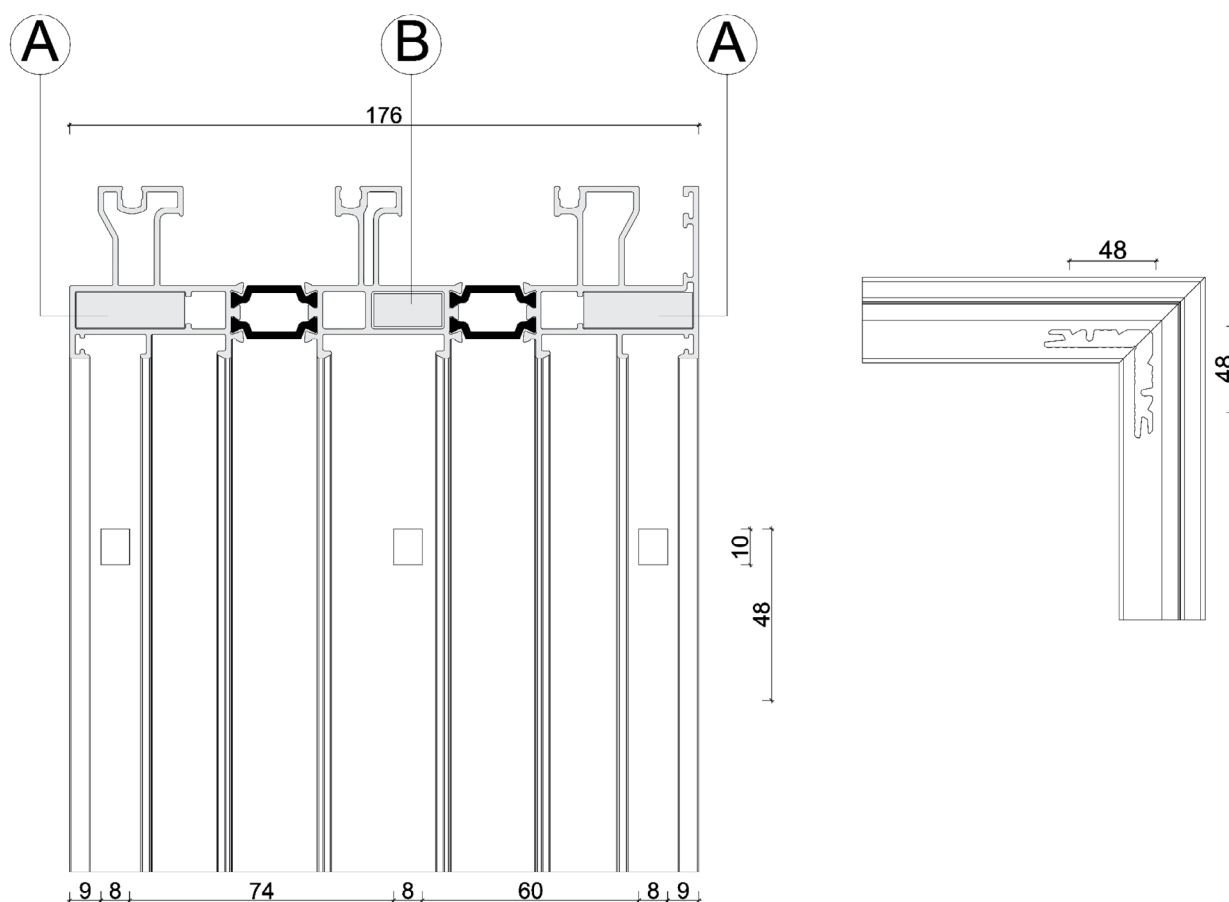
Assembly Drawing

ALN 501



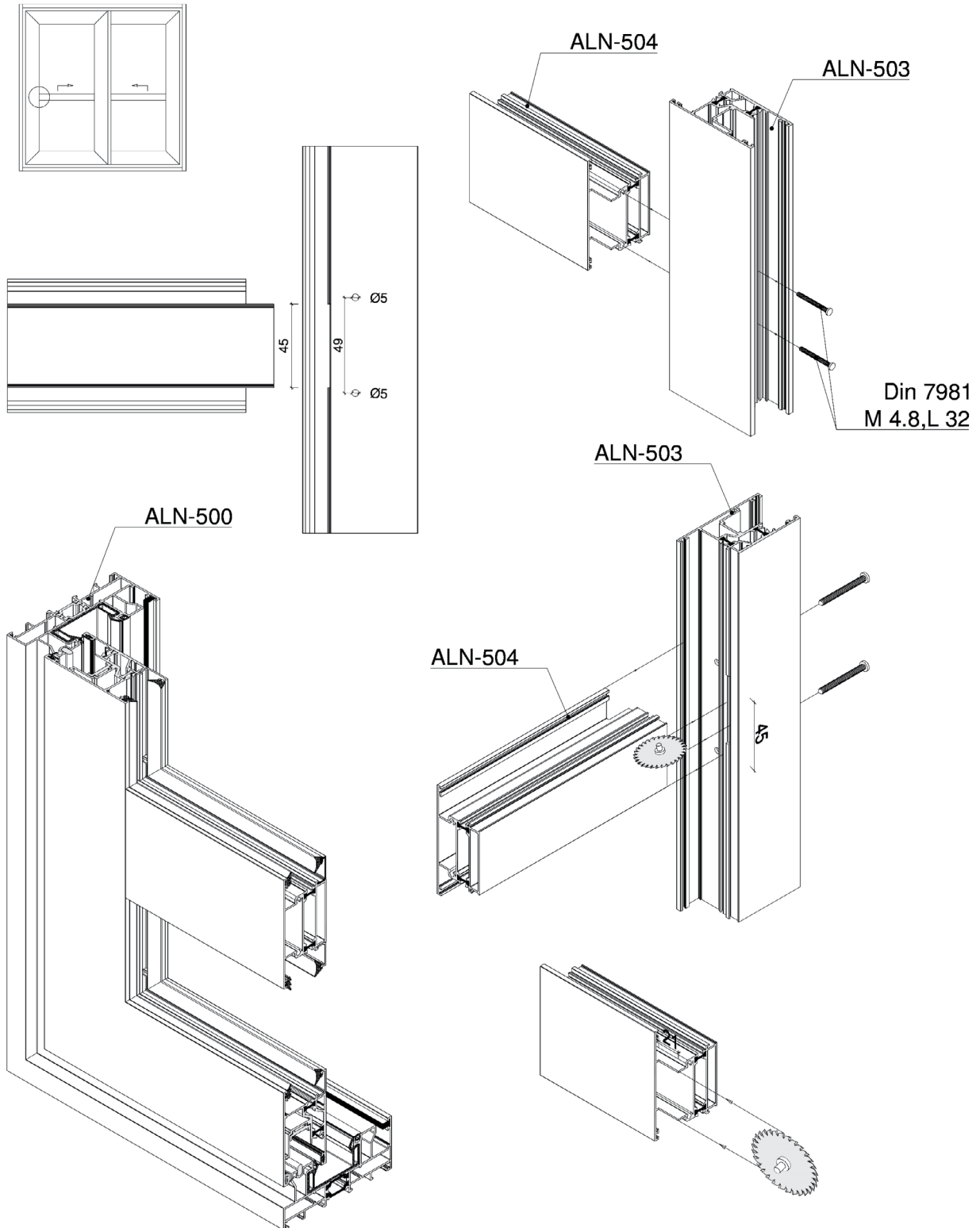
A:PCP-10 / 30 mm

B:PCP-10 / 19 mm



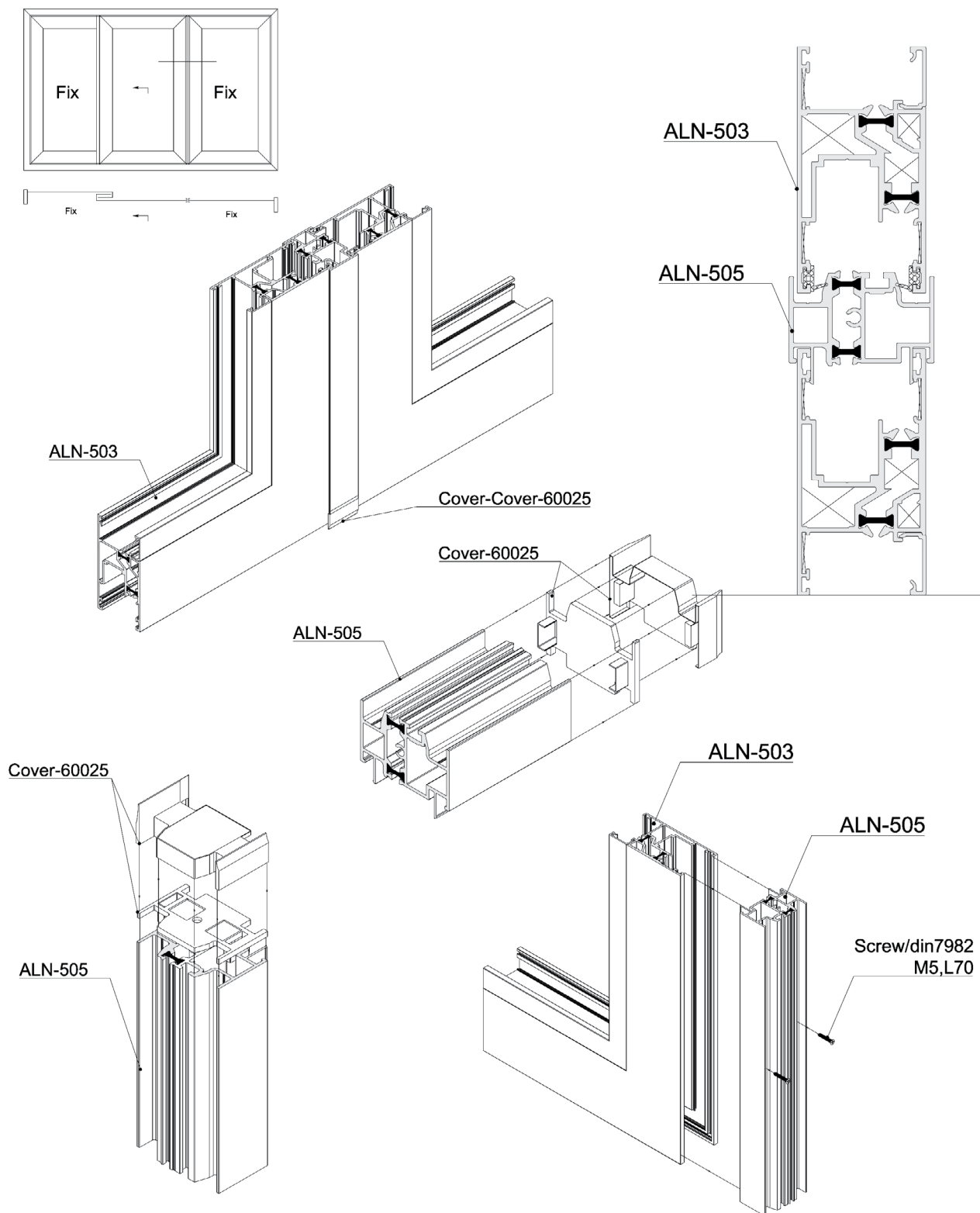
Lift & Slide System 115 Series

Assembly Drawing



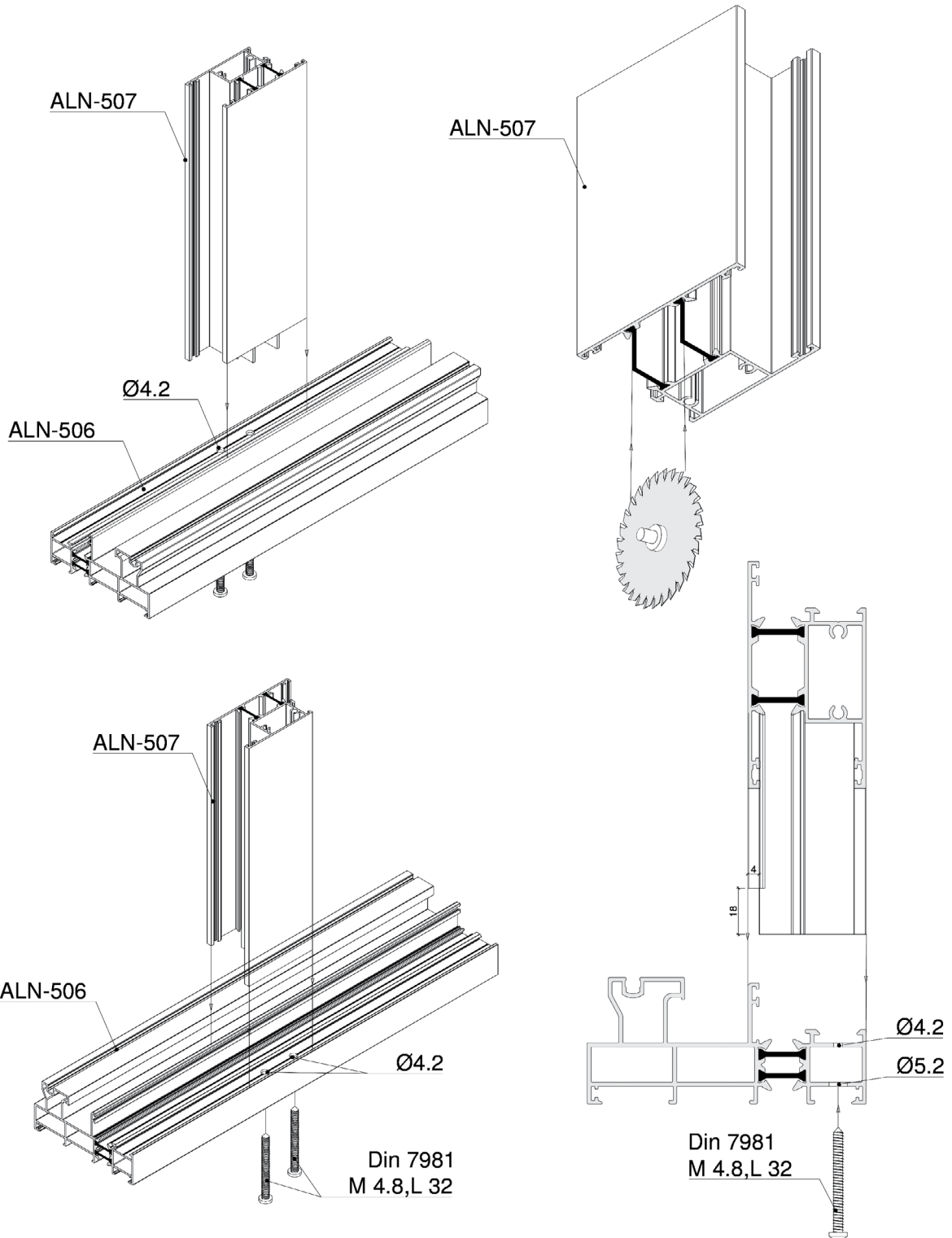
Lift & Slide System 115 Series

Assembly Drawing



Lift & Slide System 115 Series

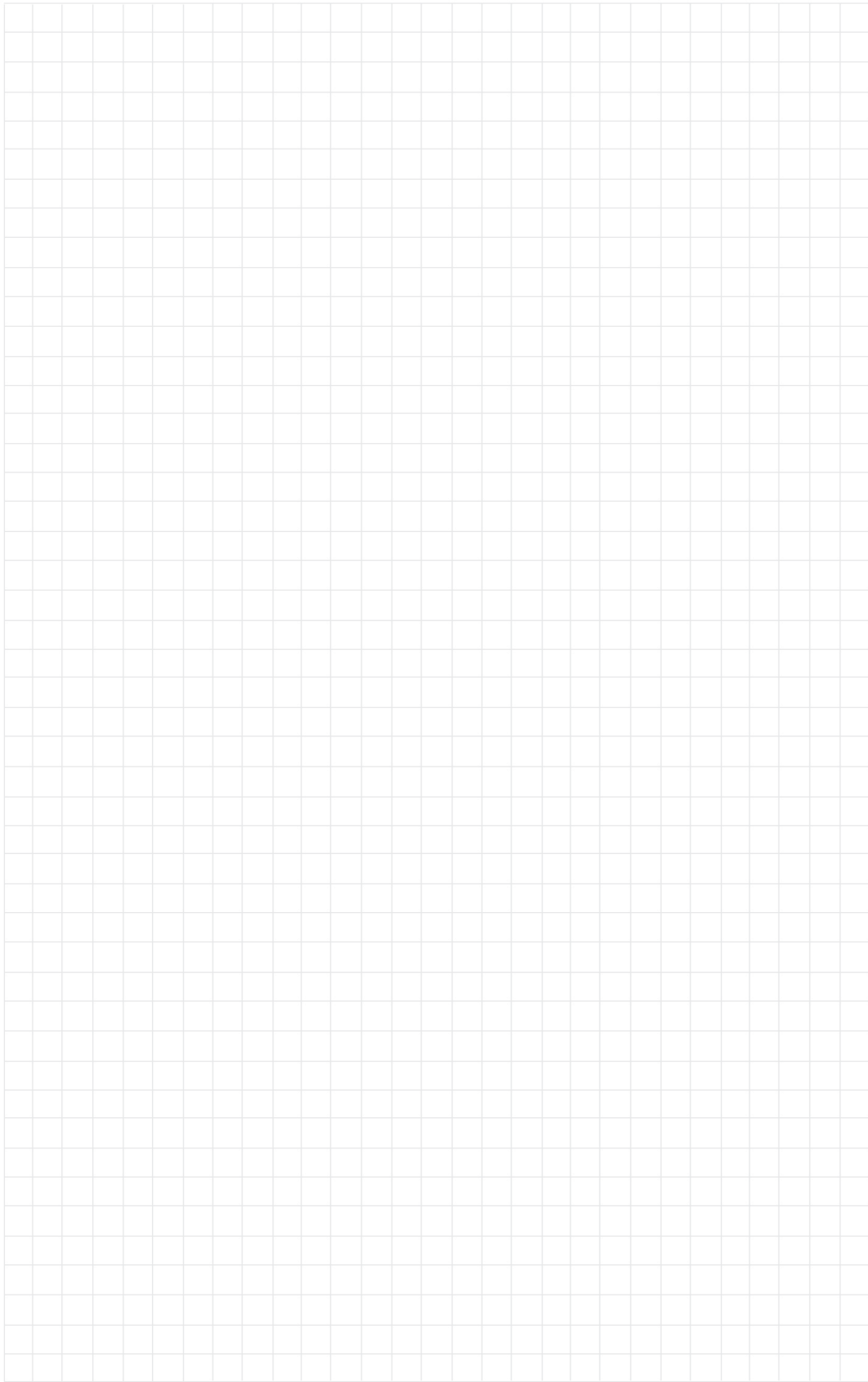
Assembly Drawing





AKROLL

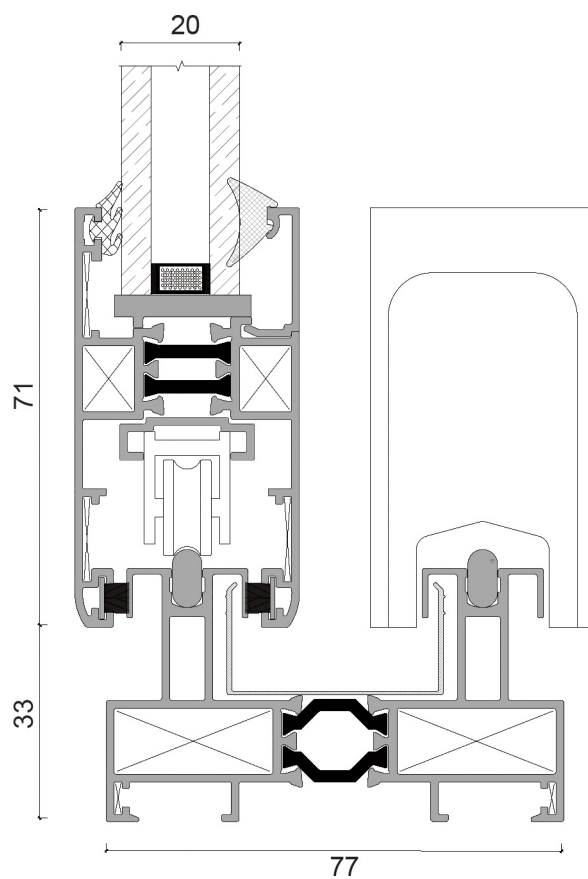
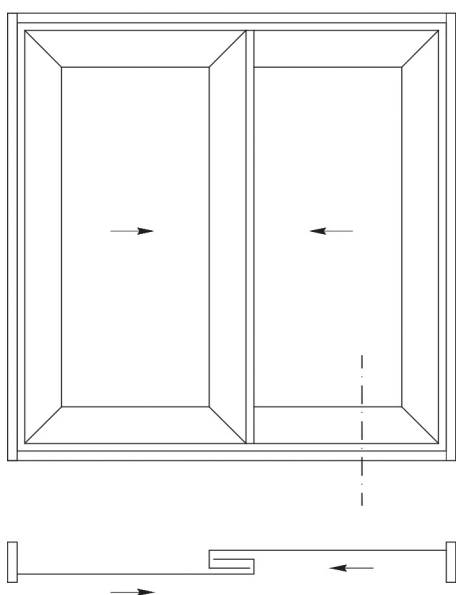
Product of Alumroll Novin Co.





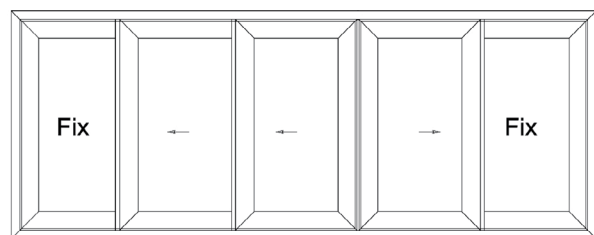
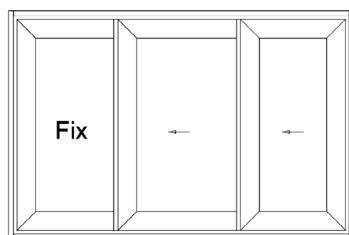
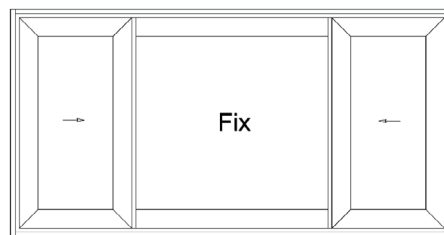
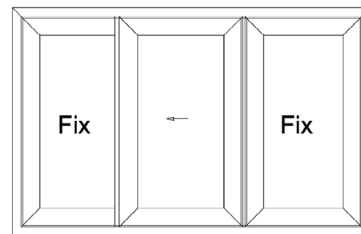
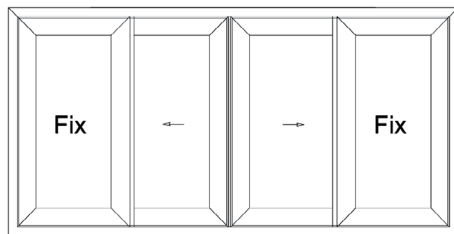
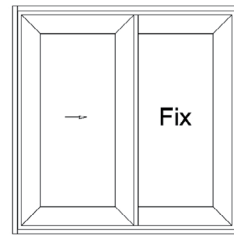
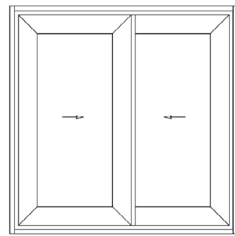
Slide System 77 Series

. Profile width:	77 - 110 mm
. Vent width:	38 mm
. Wall thickness:	1.3 - 1.4 mm
. Rubber description:	EPDM DIN 7863
. Glass thickness:	18 - 26 mm
. Aluminum alloy extrusion:	EN AW 6063 T5
. Isulation bar :	Polyamide Width 18 mm
. Safety drainage system	
. Various typologies	



Slide System 77 Series

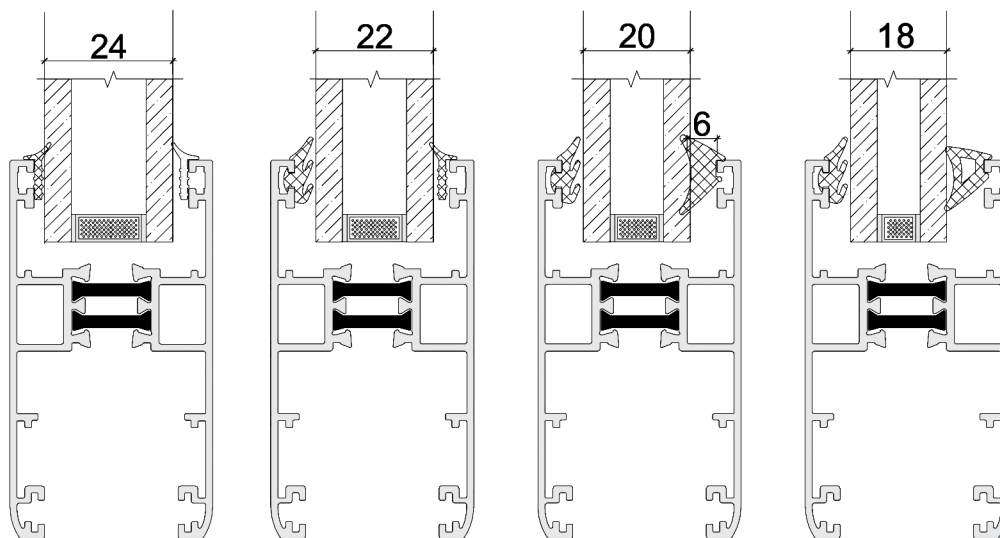
Typologies



Slide System 77 Series

Glazing Table

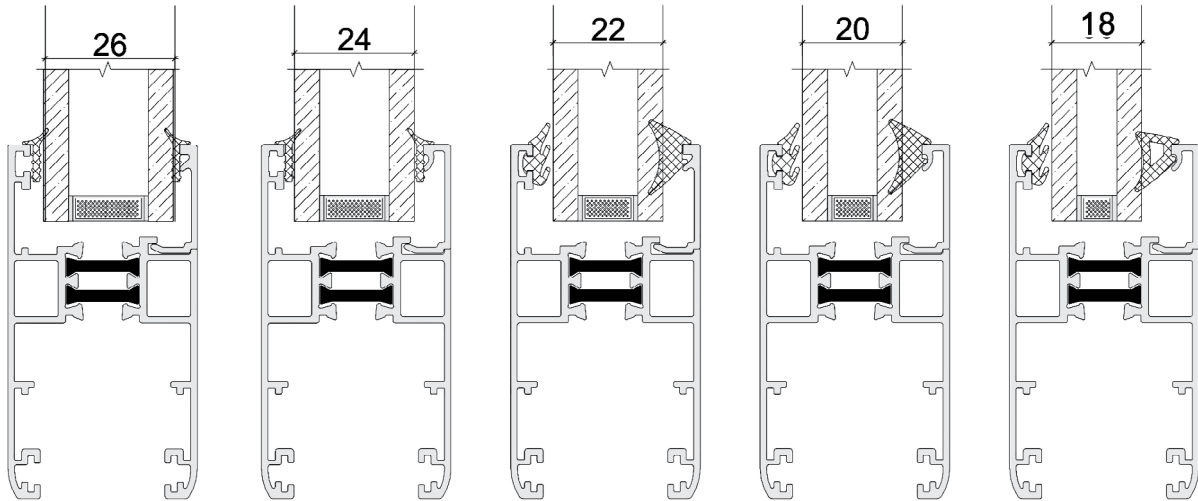
ALN-456



Glazing Thickness	Gasket Inside	Gasket Outside
18 mm	 EP-021	 MO68 3 mm
20 mm	 EP-019	 MO68
22 mm	 EP-015	 MO68
24 mm	 EP-015	 EP-015

Slide System 77 Series

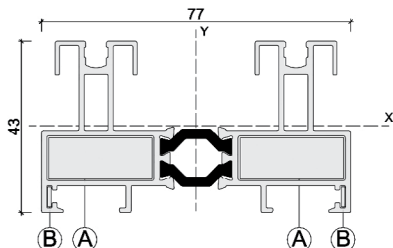
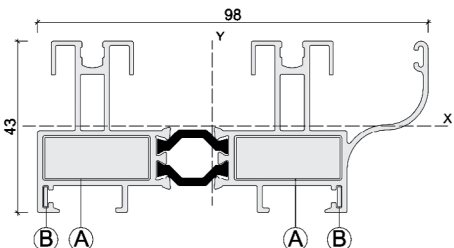
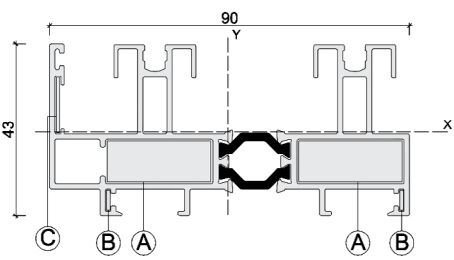
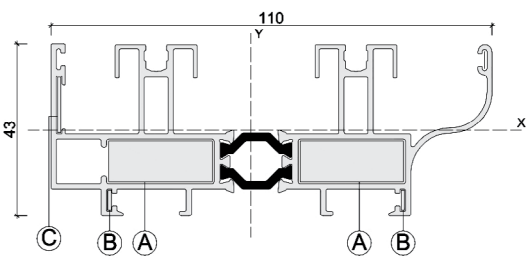
Glazing Table
ALN-455



Glazing Thickness	Gasket Inside	Gasket Outside	Glazing Bead
18 mm	 EP-019	 MO68	 ALN-460
20 mm	 EP-016	 MO68	 ALN-460
22 mm	 EP-016	 MO68	 ALN-461
24 mm	 EP-015	 EP-015	 ALN-460
26 mm	 EP-015	 EP-015	 ALN-461

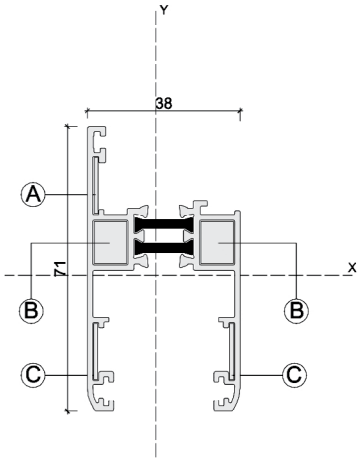
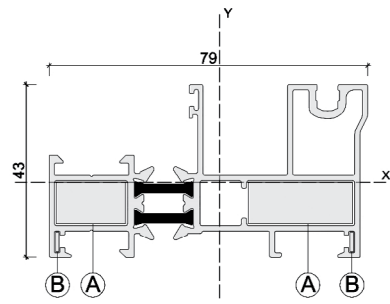
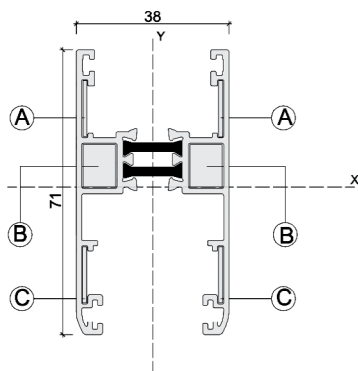
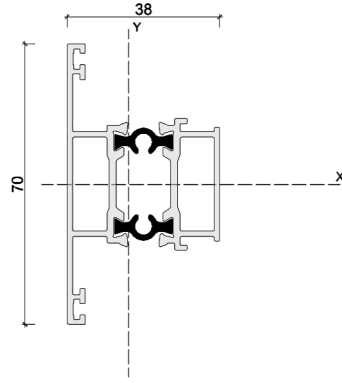
Slide System 77 Series

Profile & Accessories Information

			
I_x : 8.40 cm ⁴	I_y : 32.54 cm ⁴	I_x : 9.04 cm ⁴	I_y : 47.04 cm ⁴
Frame : ALN-451	A: PCP-11 / 26 mm 	Frame : ALN-452	A: PCP-11 / 26 mm 
Weight: 1485 gr/m	B: MO19(399012) 	Weight: 1640 gr/m	B: MO19(399012) 
			
I_x : 9.53 cm ⁴	I_y : 49.22 cm ⁴	I_x : 10.15 cm ⁴	I_y : 67.82 cm ⁴
Frame : ALN-453	A: PCP-11 / 26 mm 	Frame : ALN-454	A: PCP-11 / 26 mm 
Weight: 1696 gr/m	B: MO19(399012) 	Weight: 1850 gr/m	B: MO19(399012) 
	C: MM77 		C: MM77 

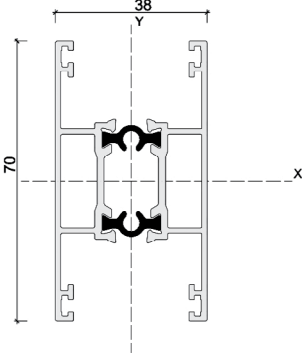
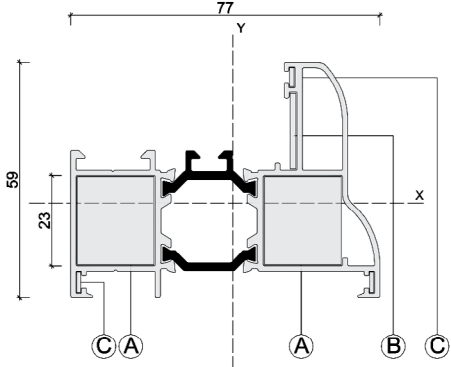
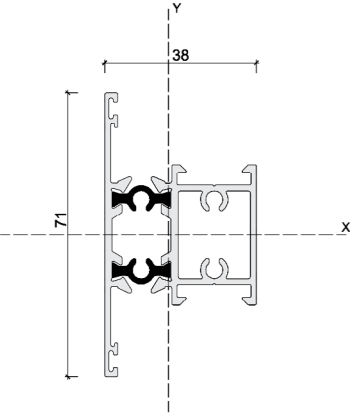
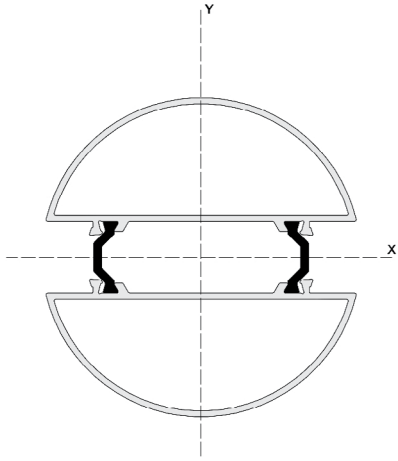
Slide System 77 Series

Profile & Accessories Information

			
I_x : 12.40 cm ⁴	I_y : 8.04 cm ⁴	I_x : 7.53 cm ⁴	I_y : 31.76 cm ⁴
Sash : ALN-455	A: MM 77 	Frame : ALN-470	A: PCP-11 / 26 mm 
Weight: 1068 gr/m	B: PCP-11 / 8 mm 	Weight: 1475 gr/m	B: PCP-11 / 17 mm 
	C: MM 77 		C: MO19(399012) 
			
I_x : 15.44 cm ⁴	I_y : 9.43 cm ⁴	I_x : 8.78 cm ⁴	I_y : 6.21 cm ⁴
Sash : ALN-456	A: MM 77 	Transom : ALN-458	—
Weight: 1163 gr/m	B: PCP-11 / 8 mm 	Weight: 1076 gr/m	—
	C: MM 77 		

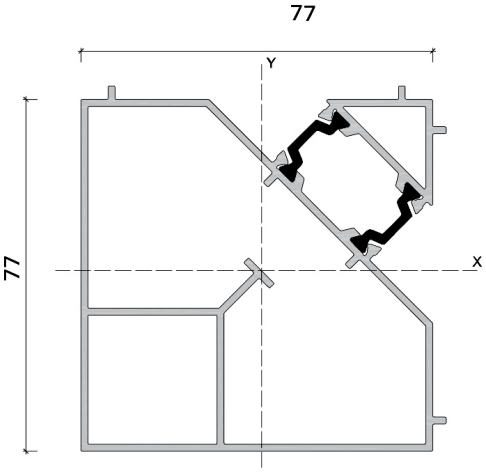
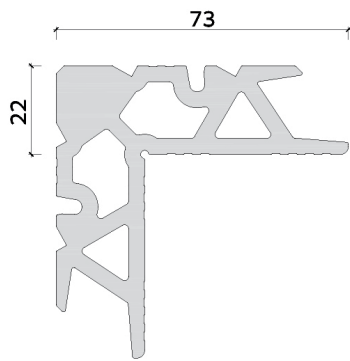
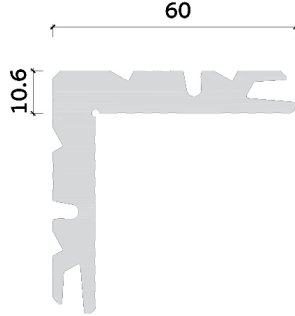
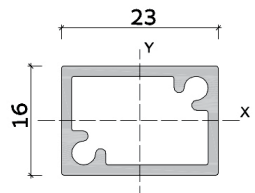
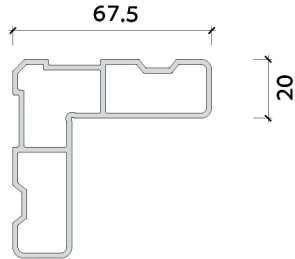
Slide System 77 Series

Profile & Accessories Information

			
I_x : 14.53 cm ⁴	I_y : 9.12 cm ⁴	I_x : 11.62 cm ⁴	I_y : 29.73 cm ⁴
Transom : ALN-459	—	Profile ALN-466	A: PCP-22 / 19 mm 
Weight: 1270 gr/m	—	Weight: 1435 gr/m	B: fuji 2000 
			C: MO 19 
			
I_x : 8.50 cm ⁴	I_y : 7.10 cm ⁴	I_x : 30.79 cm ⁴	I_y : 33.53 cm
Transom : ALN-471	—	Coupling : ALN-414	—
Weight: 1166 gr/m	—	Weight : 1720 gr/m	—

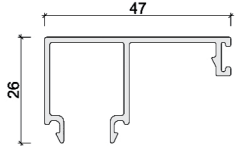
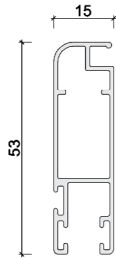
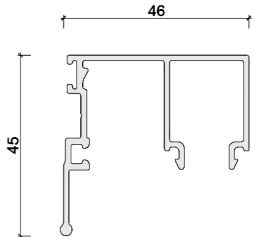
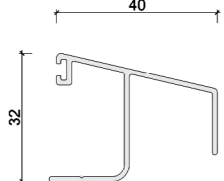
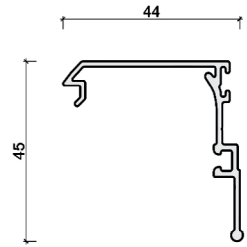
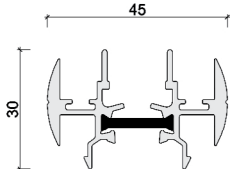
Slide System 77 Series

Profile & Accessories Information

			
I_x: 52.86 cm⁴ Coupling : ALN-467 Weight: 2053 gr/m		Corner joint: PCP-22	Weight : 3718 gr/m
I_y: 52.86 cm⁴ A: - B: -			
		Corner Joint: PCP11	Weight: 2549 gr/m
I_x: - Coupling : ALN-469 Weight: 337 gr/m			
I_y: - A: - B: -		Corner Joint: PCP 20	Weight: 1377 gr/m

Slide System 77 Series

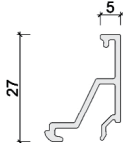
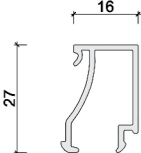
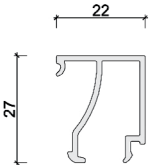
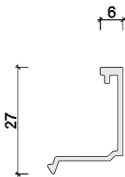
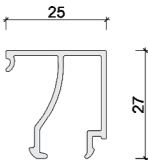
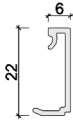
Profile & Accessories Information

			
Cap: ALN-472	Weight: 413 gr/m	Fly screen : ALN-207	Weight: 448 gr/m
			
Cap: ALN-473	Weight: 634 gr/m	Cap : ALN-361	Weight: 370 gr/m
			
Interlock: ALN-457	Weight: 435 gr/m	Adjoining profile : ALN-464	Weight: 749 gr/m



Slide System 77 Series

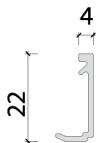
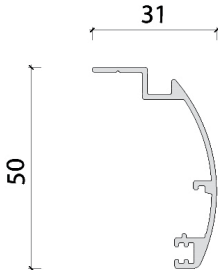
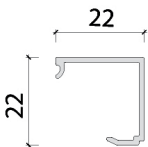
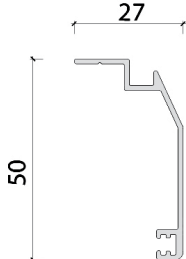
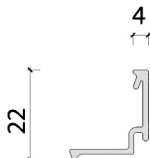
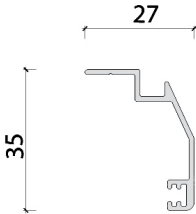
Profile & Accessories Information

			
Glazing beads: ALN-321	Weight :224 gr/m	Glazing beads: ALN-423	Weight :281 gr/m
			
Glazing beads: ALN-323	Weight : 302 gr/m	Glazing beads: ALN-424	Weight :167 gr/m
			
Glazing bead : ALN-421	Weight: 313 gr/m	Glazing bead : ALN-460	Weight: 127 gr/m



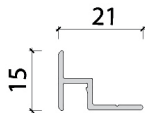
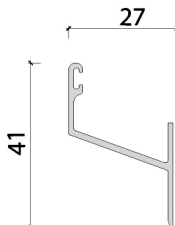
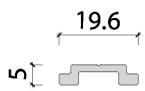
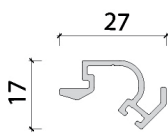
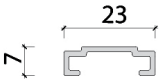
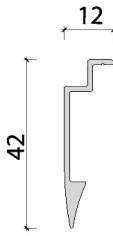
Slide System 77 Series

Profile & Accessories Information

			
Glazing bead : ALN-461	Weight: 119 gr/m	Flange profile: ALN-219	Weight : 362 gr/m
			
Glazing bead : ALN-463	Weight: 178 gr/m	Flange profile: ALN-221	Weight : 302 gr/m
			
Glazing bead : ALN-474	Weight: 170 gr/m	Flange profile: ALN-222	Weight : 254 gr/m

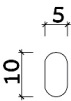
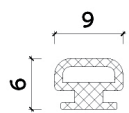
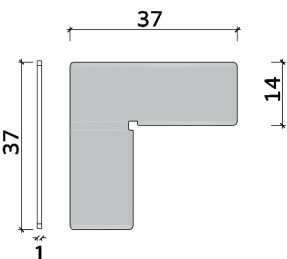
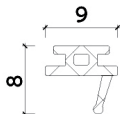
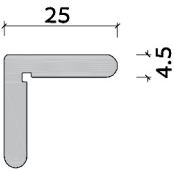
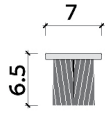
Slide System 77 Series

Profile & Accessories Information

			
Profile : ALN-228	Weight: 135 gr/m	profile: ALN-475	Weight : 275 gr/m
			
Profile : ALN-331	Weight: 140 gr/m	Profile : ALN-429	Weight : 235 gr/m
			
Profile : ALN-364	Weight: 140 gr/m	Profile : ALN-430	Weight : 230 gr/m

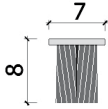
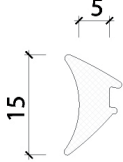
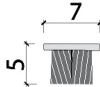
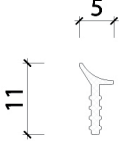
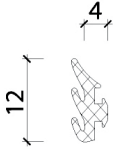
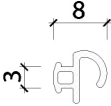
Slide System 77 Series

Profile & Accessories Information

			
Rail : ALN-462	Weight: 119 gr/m	Gasket : MO 60(Jenta)	Weight: 39 gr/m
			
Corner Joint: MM77 399138	Weight: –	Gasket : 51990	Weight: 34 gr/m
			
Corner Joint: MO19 (399012)	Weight: –	PB7-3P-70-650	Weight: –

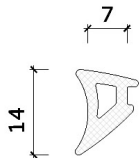
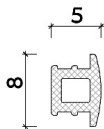
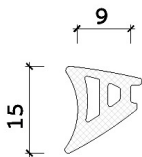
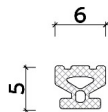
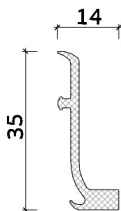
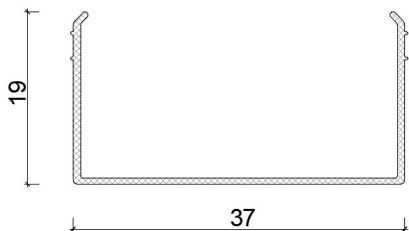
Slide System 77 Series

Profile & Accessories Information

			
PB7-3P-70-800	Weight: –	Gasket: EP-016	Weight : 77 gr/m
			
PB7-3P-70-500	Weight: –	Gasket: EP-015	Weight : 21 gr/m
			
Gasket: MO68	Weight : 38 gr/m	Gasket: EP-018	Weight : 27 gr/m

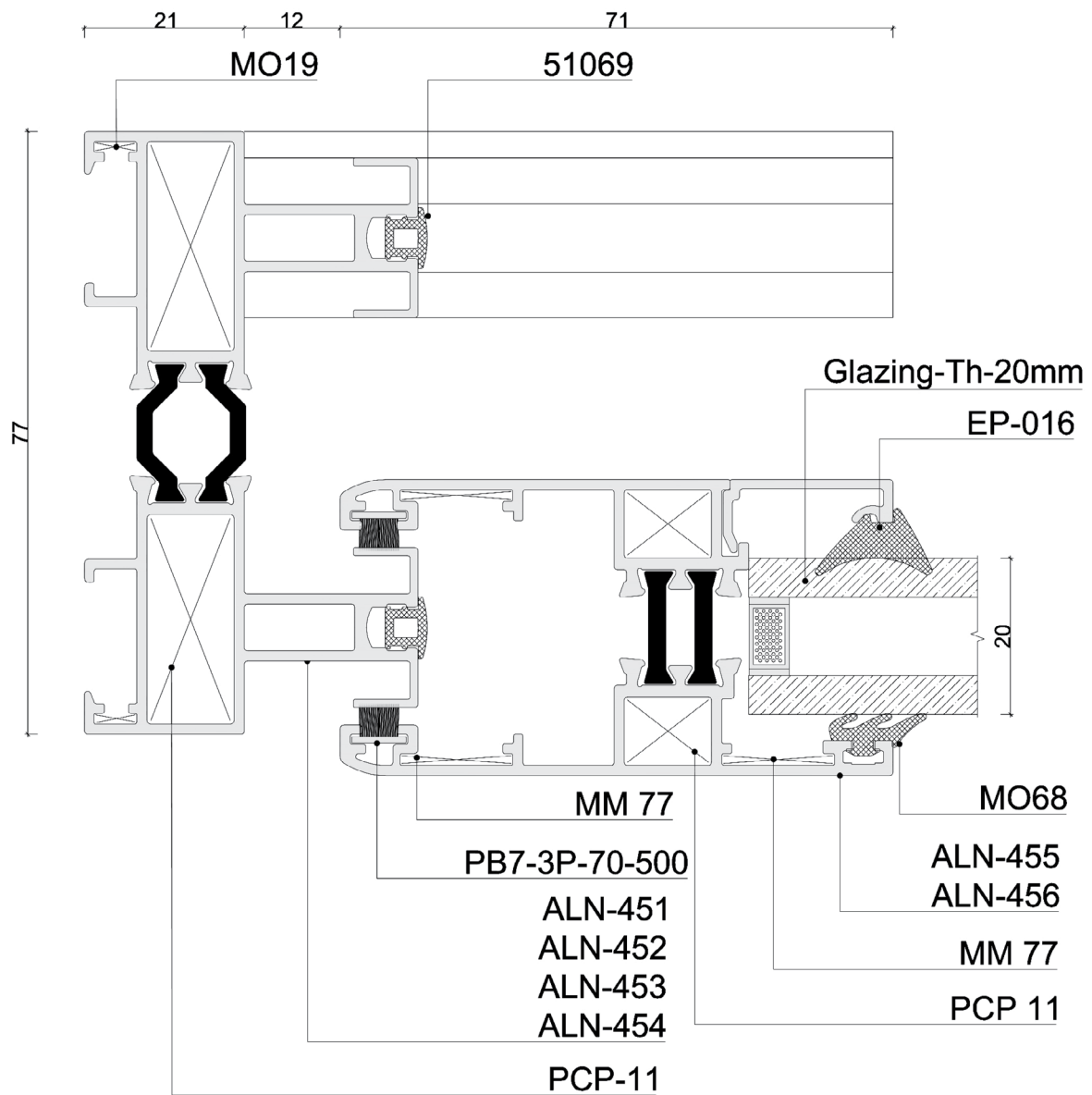
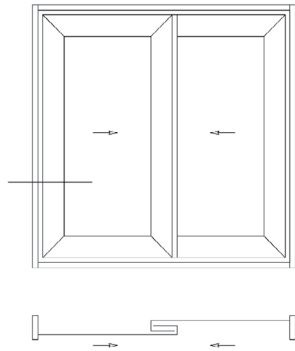
Slide System 77 Series

Profile & Accessories Information

			
Gasket: EP-019	Weight : 61 gr/m	Gasket: 51069	Weight : 27 gr/m
			
Gasket: EP-021	Weight : 80 gr/m	Gasket: MO 60	Weight : 26 gr/m
			
Gasket: MOC 77	Weight : 131gr/m	Gasket: UT 77-51064	Weight : 70 gr/m

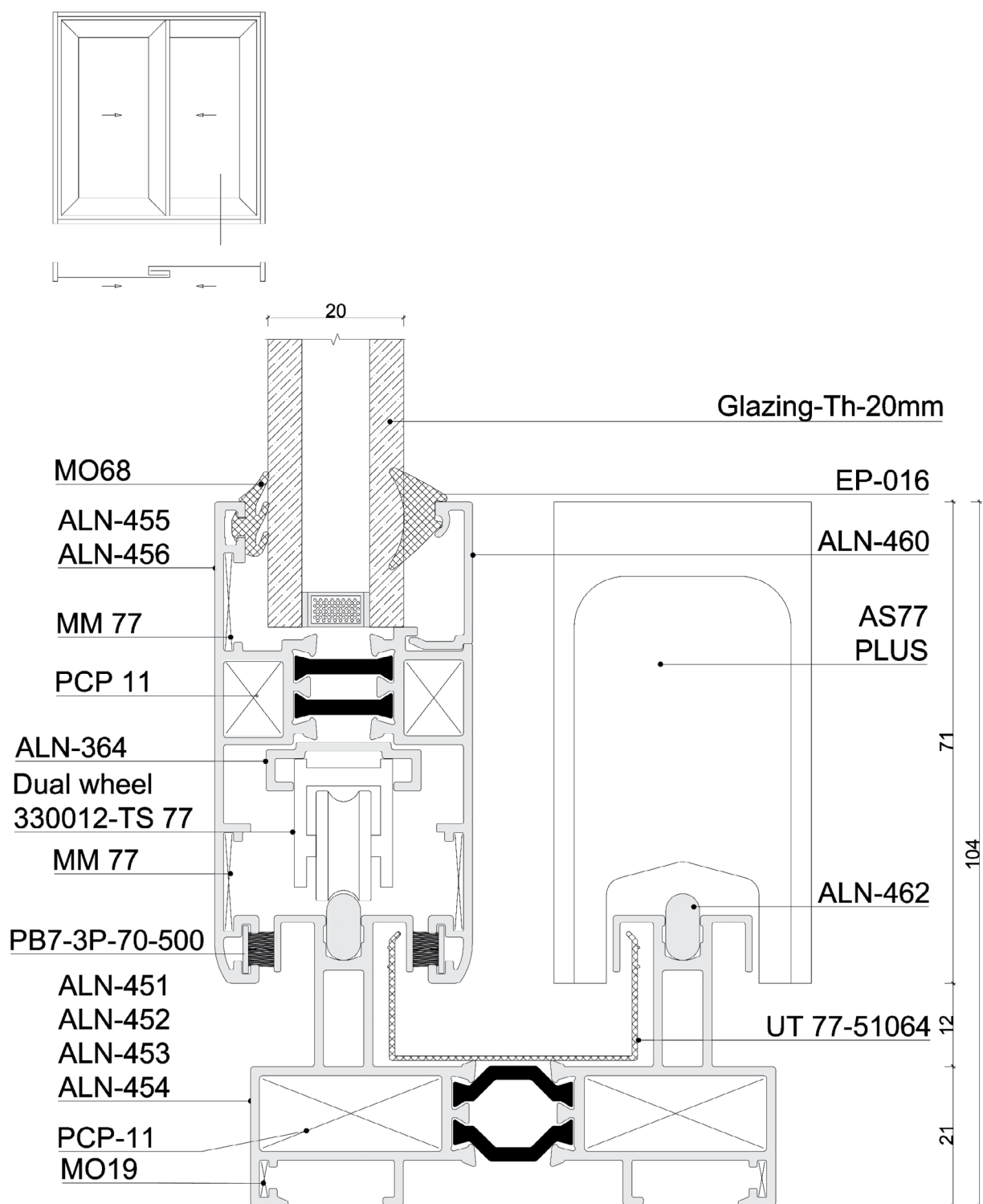
Slide System 77 Series

Fabrication Details



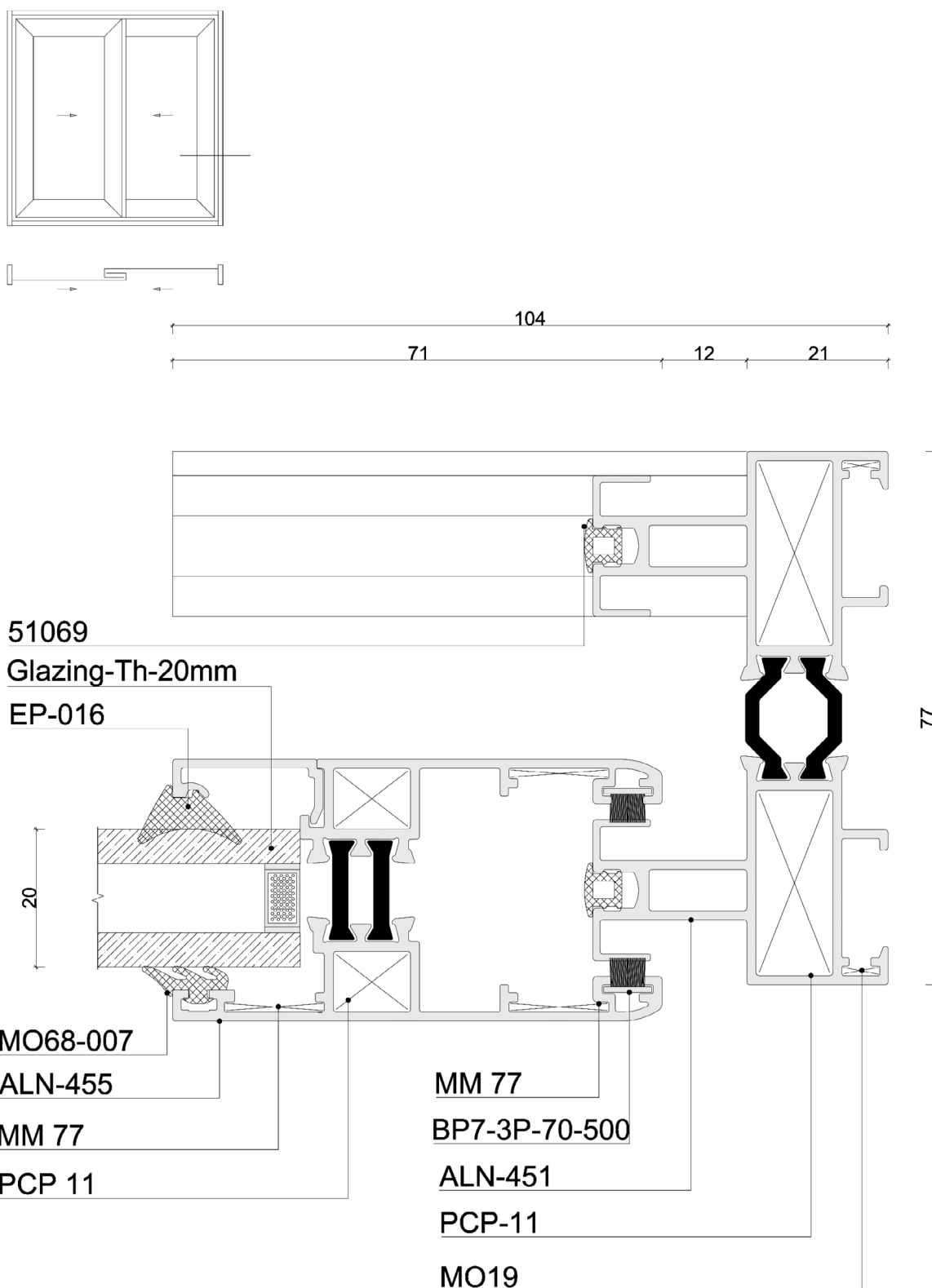
Slide System 77 Series

Fabrication Details



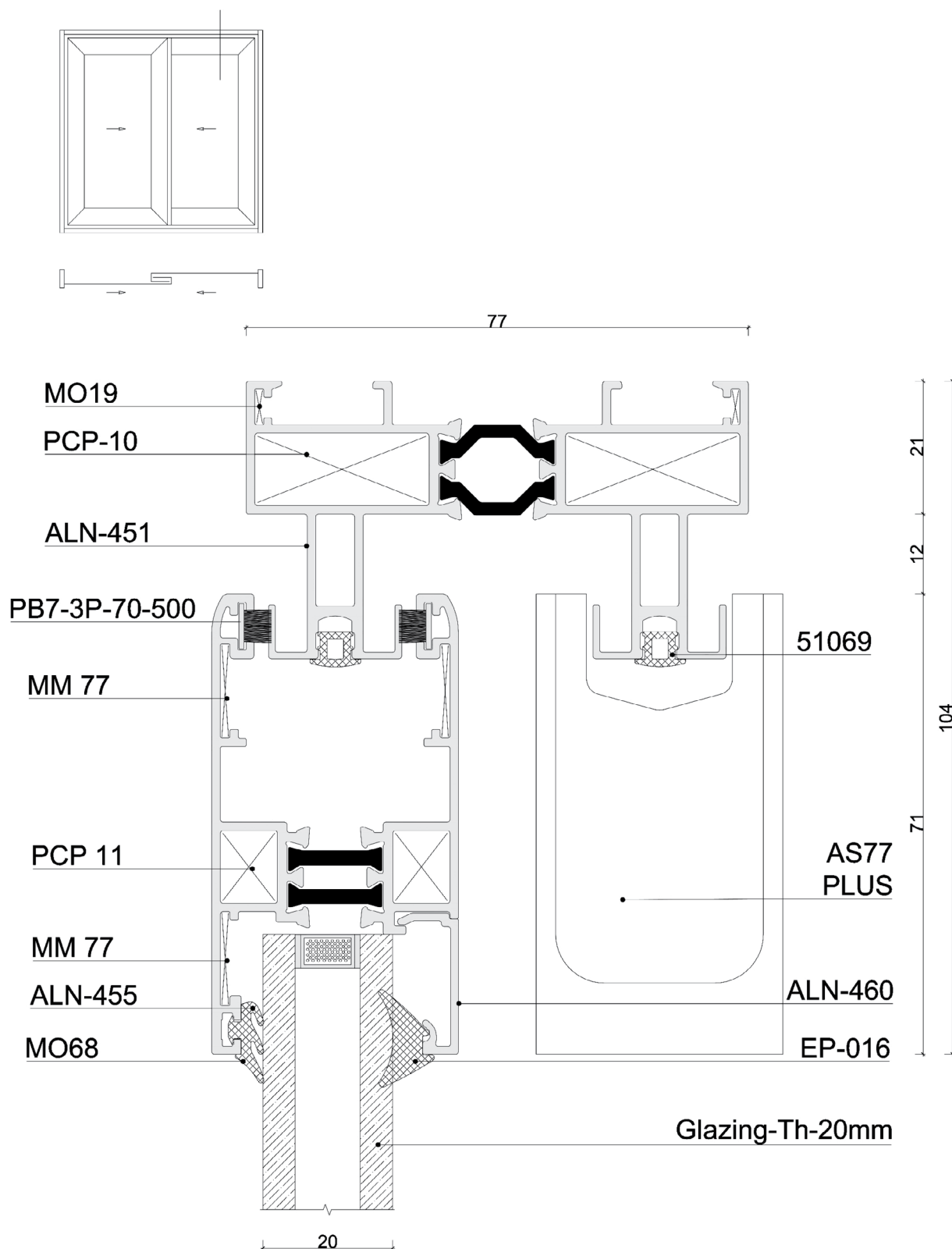
Slide System 77 Series

Fabrication Details



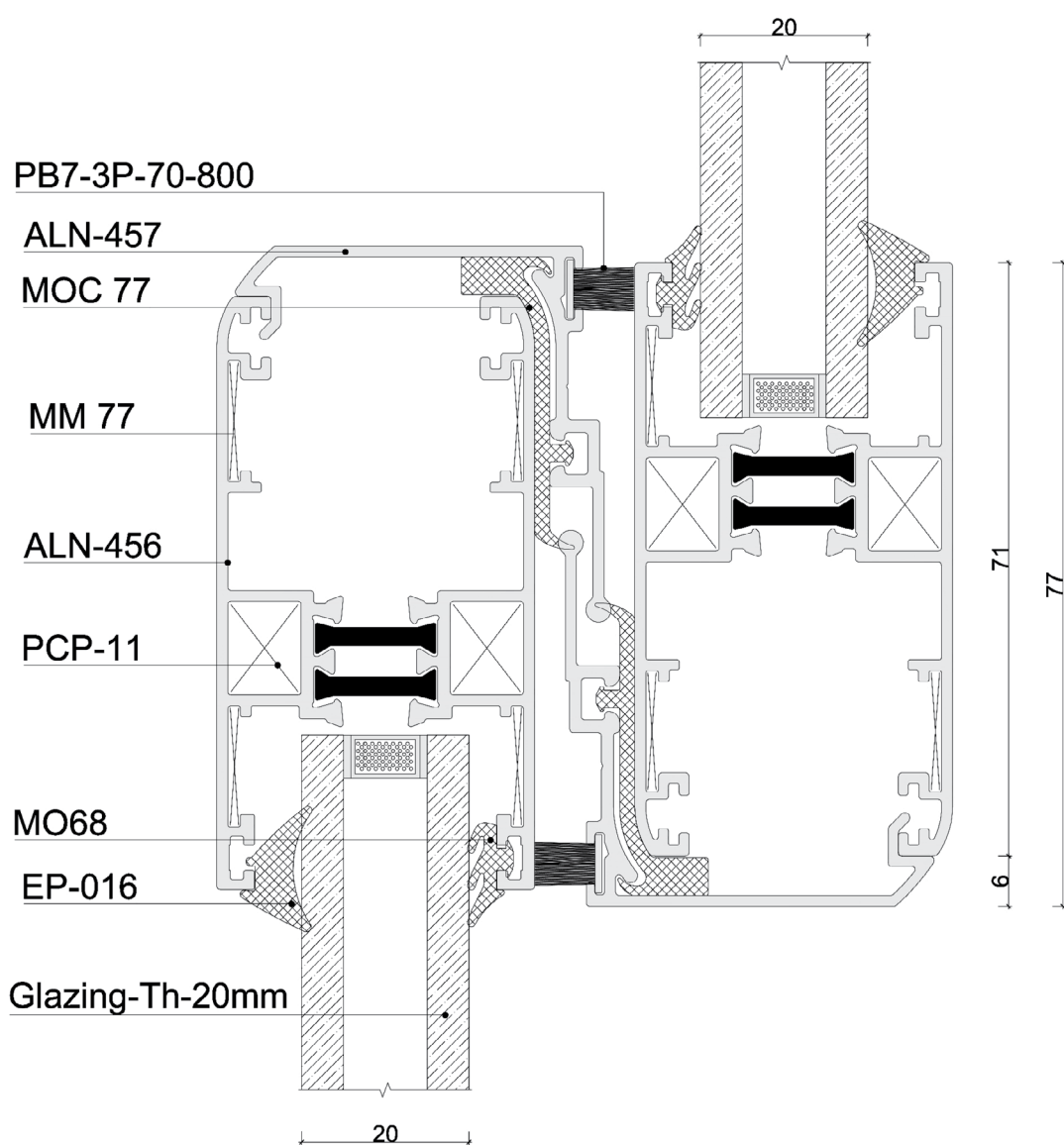
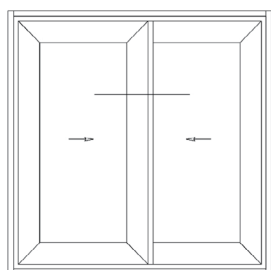
Slide System 77 Series

Fabrication Details



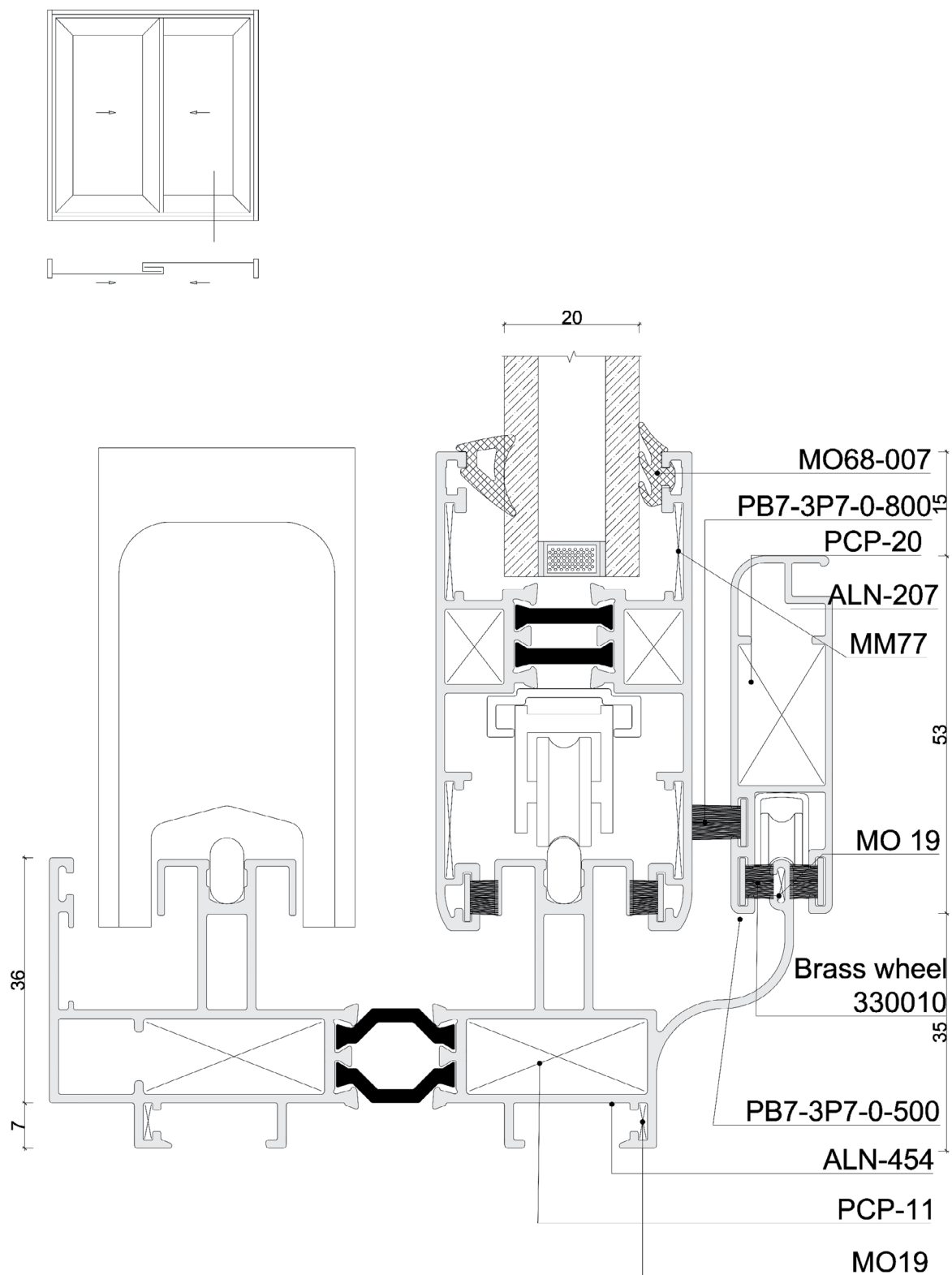
Slide System 77 Series

Fabrication Details



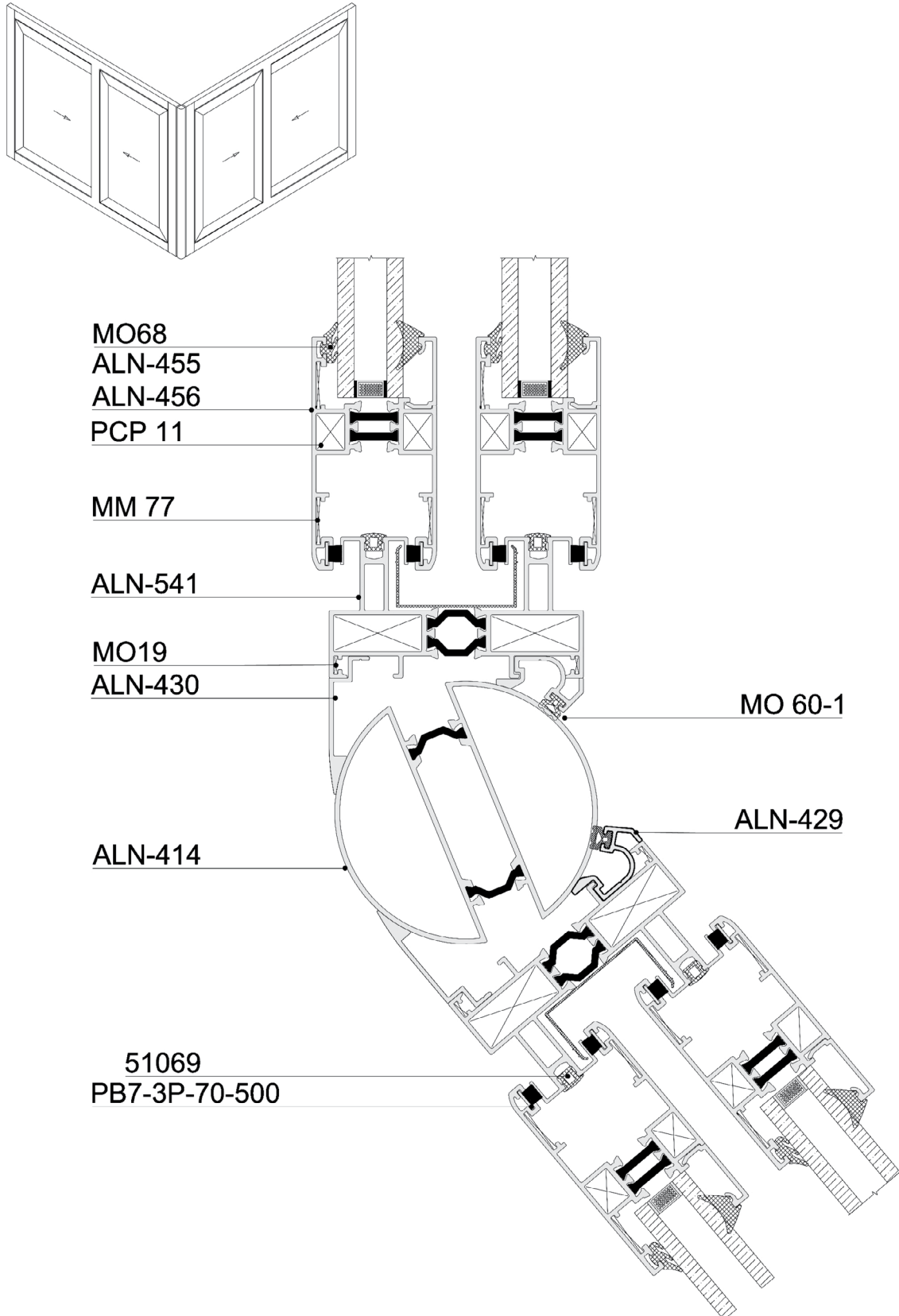
Slide System 77 Series

Fabrication Details



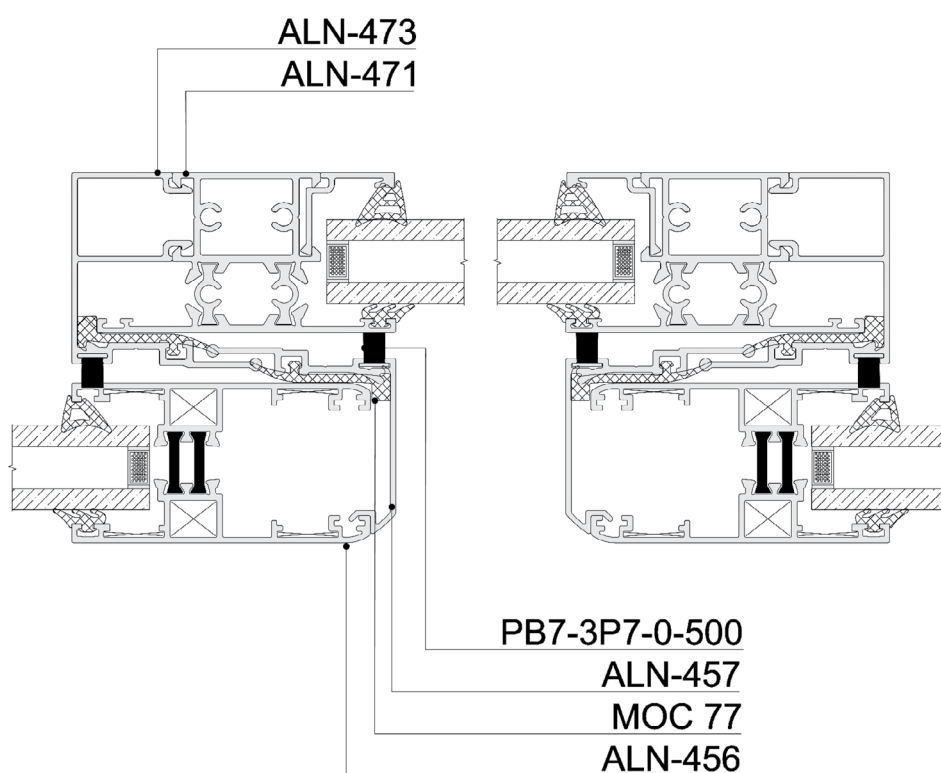
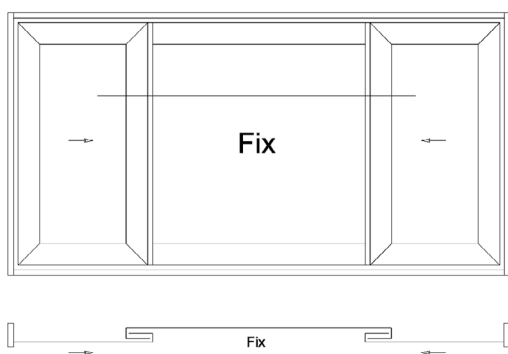
Slide System 77 Series

Fabrication Details



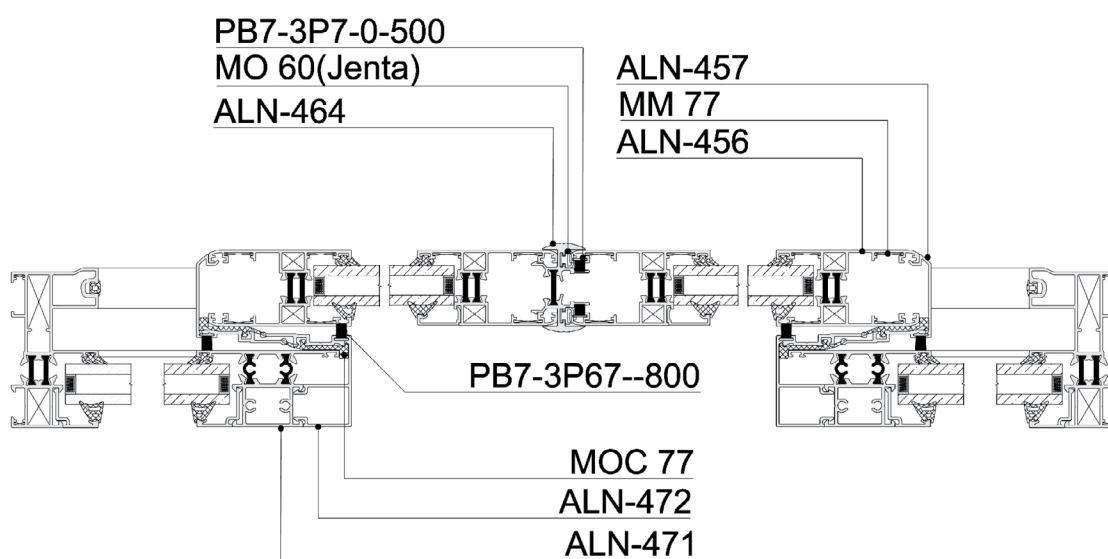
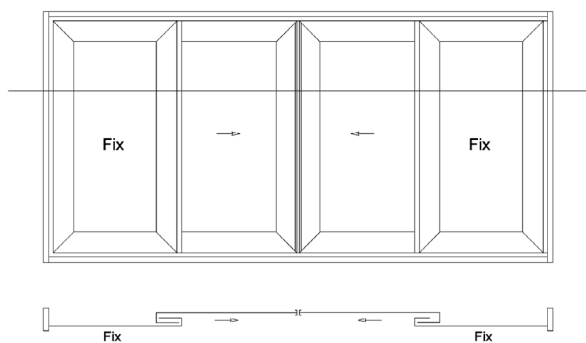
Slide System 77 Series

Fabrication Details



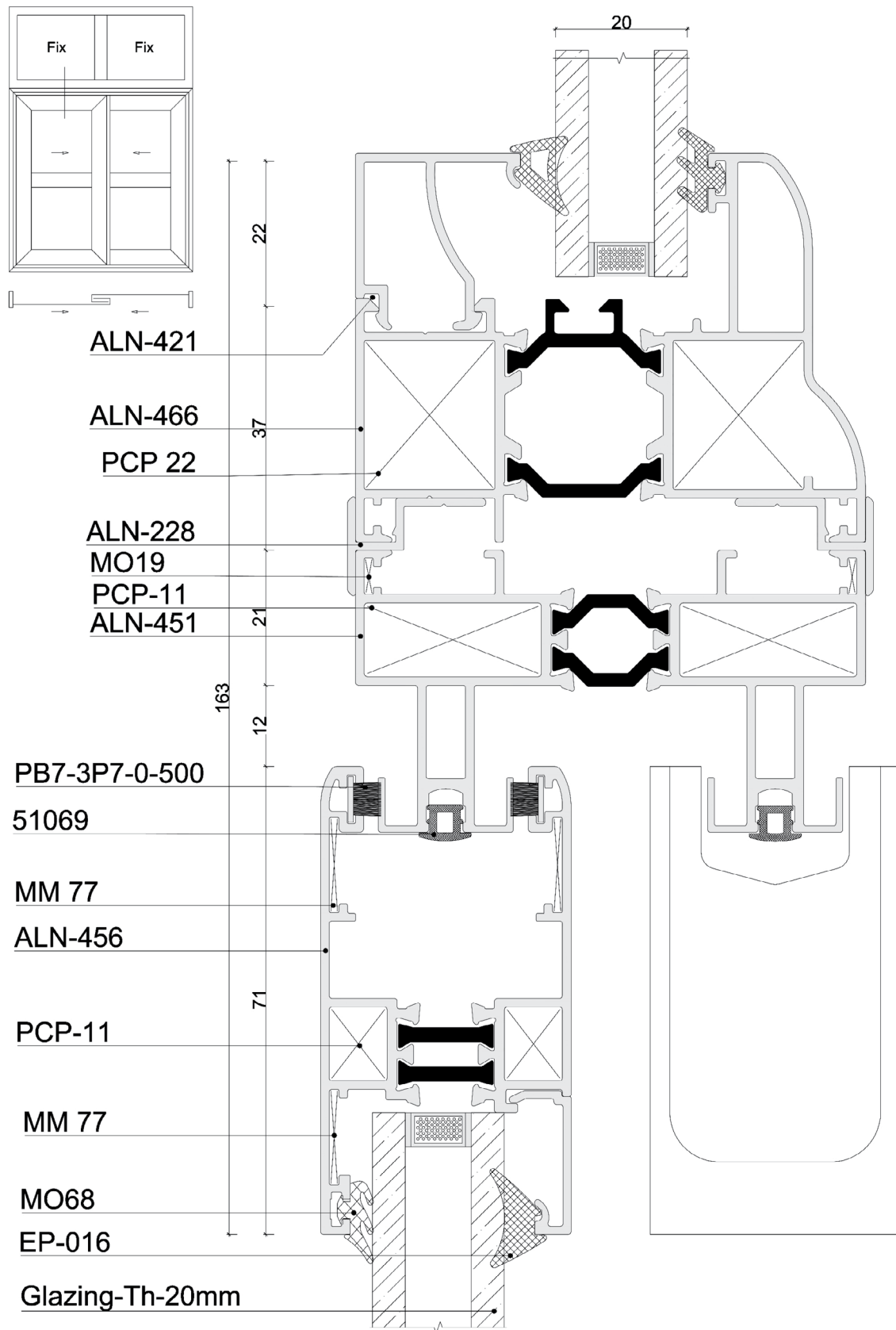
Slide System 77 Series

Fabrication Details



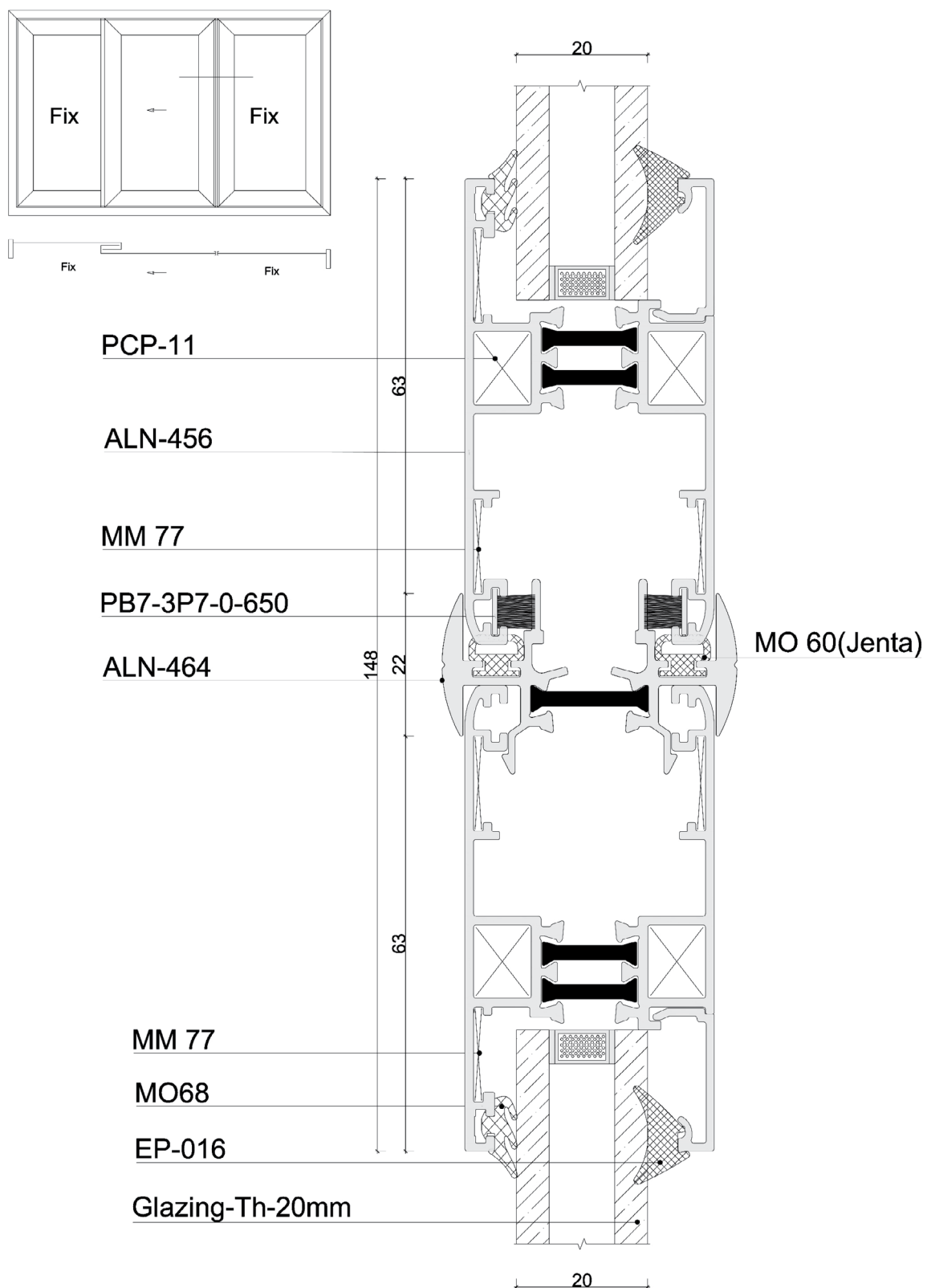
Slide System 77 Series

Fabrication Details



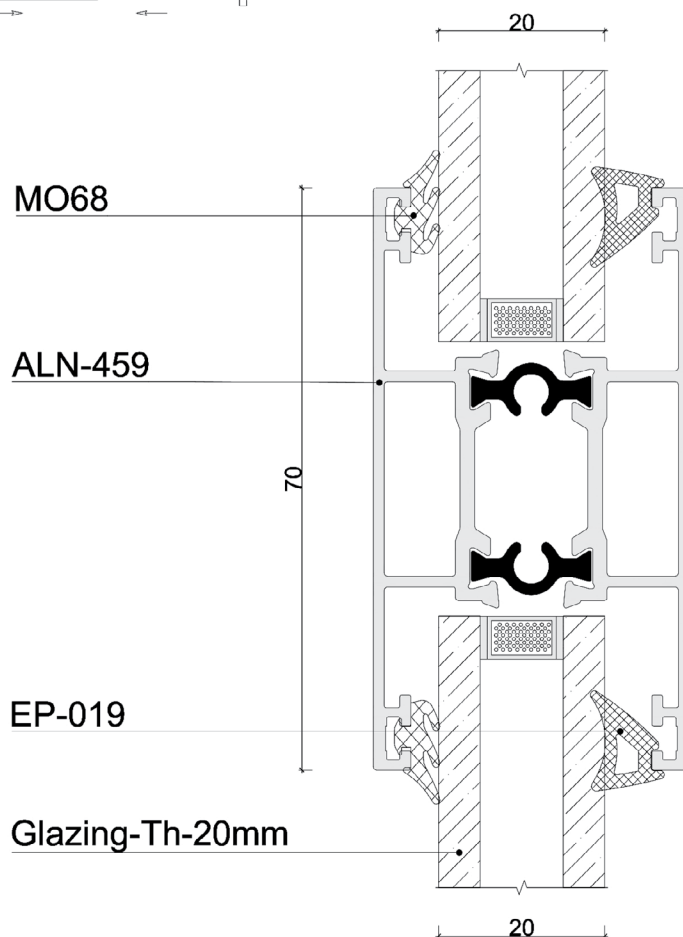
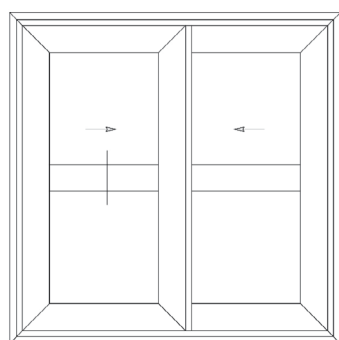
Slide System 77 Series

Fabrication Details



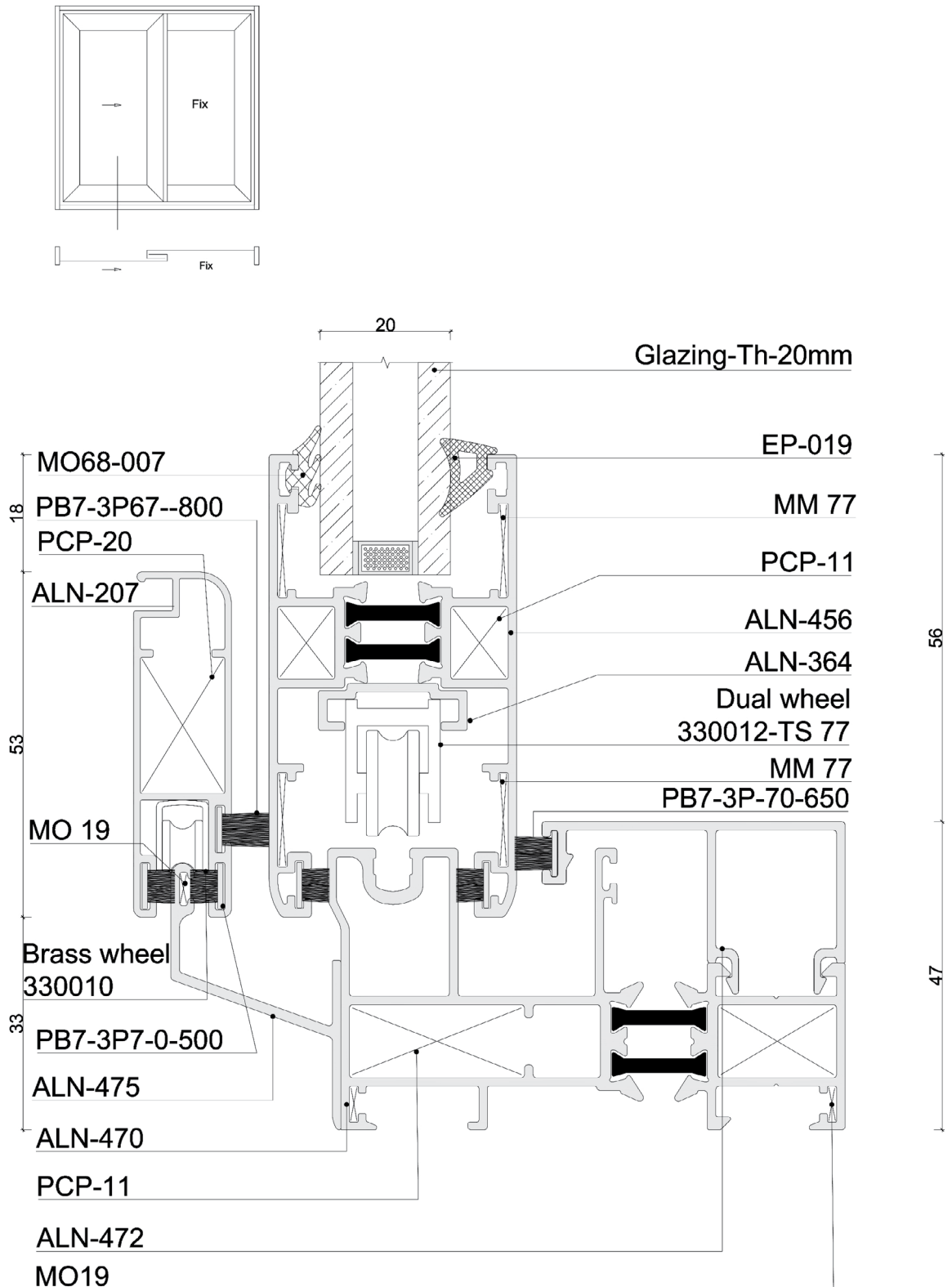
Slide System 77 Series

Fabrication Details



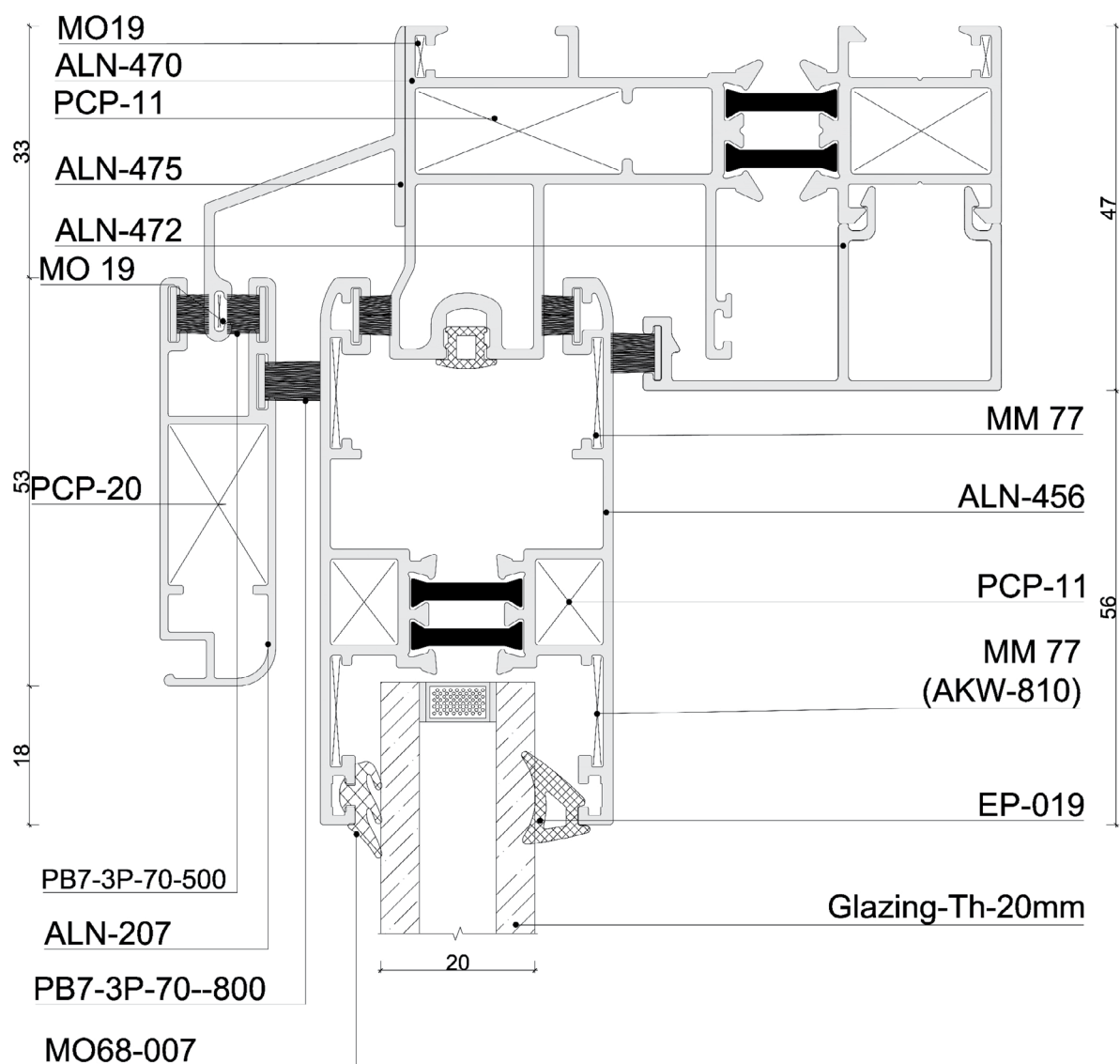
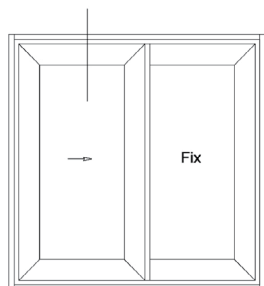
Slide System 77 Series

Fabrication Details



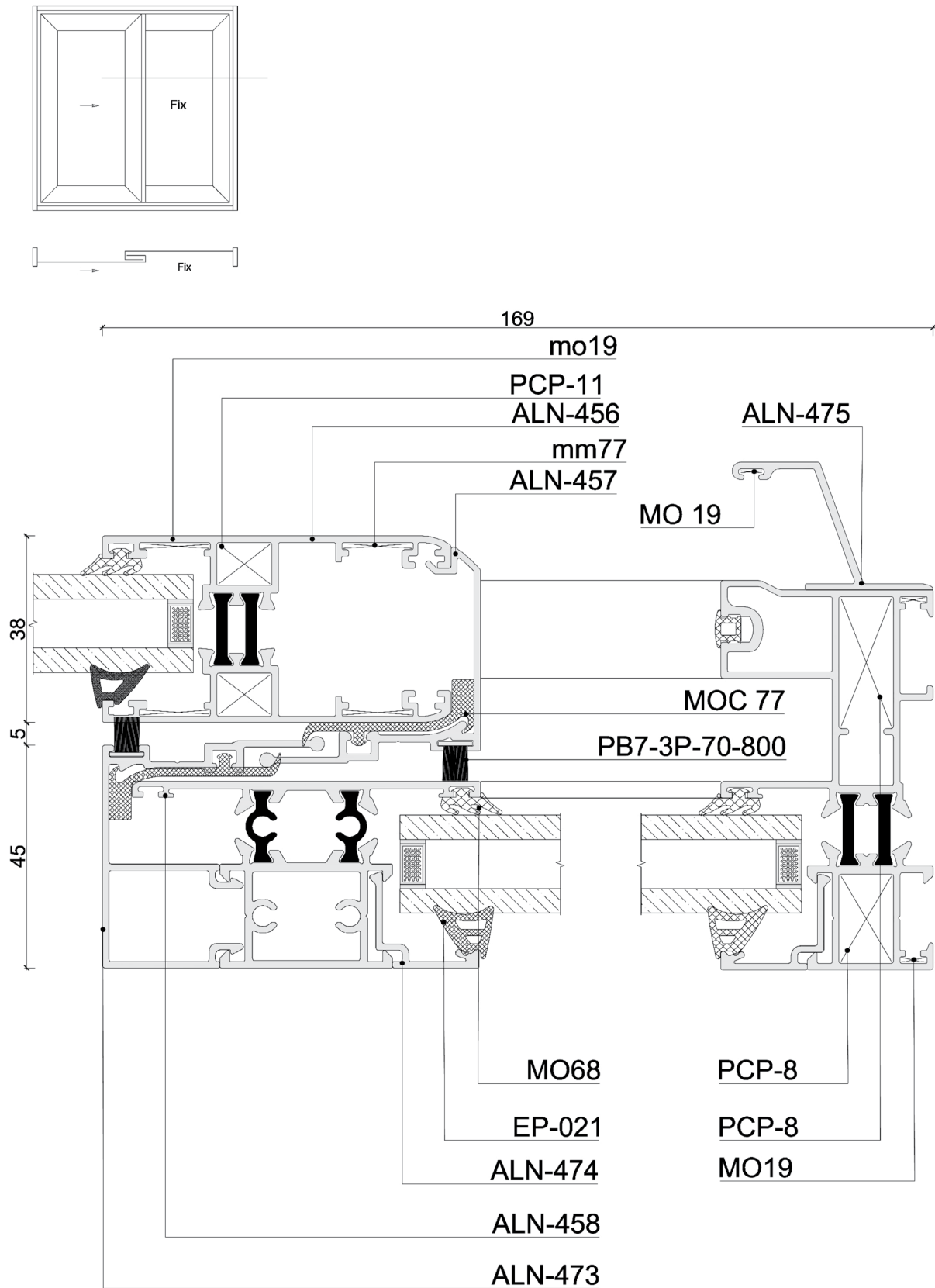
Slide System 77 Series

Fabrication Details



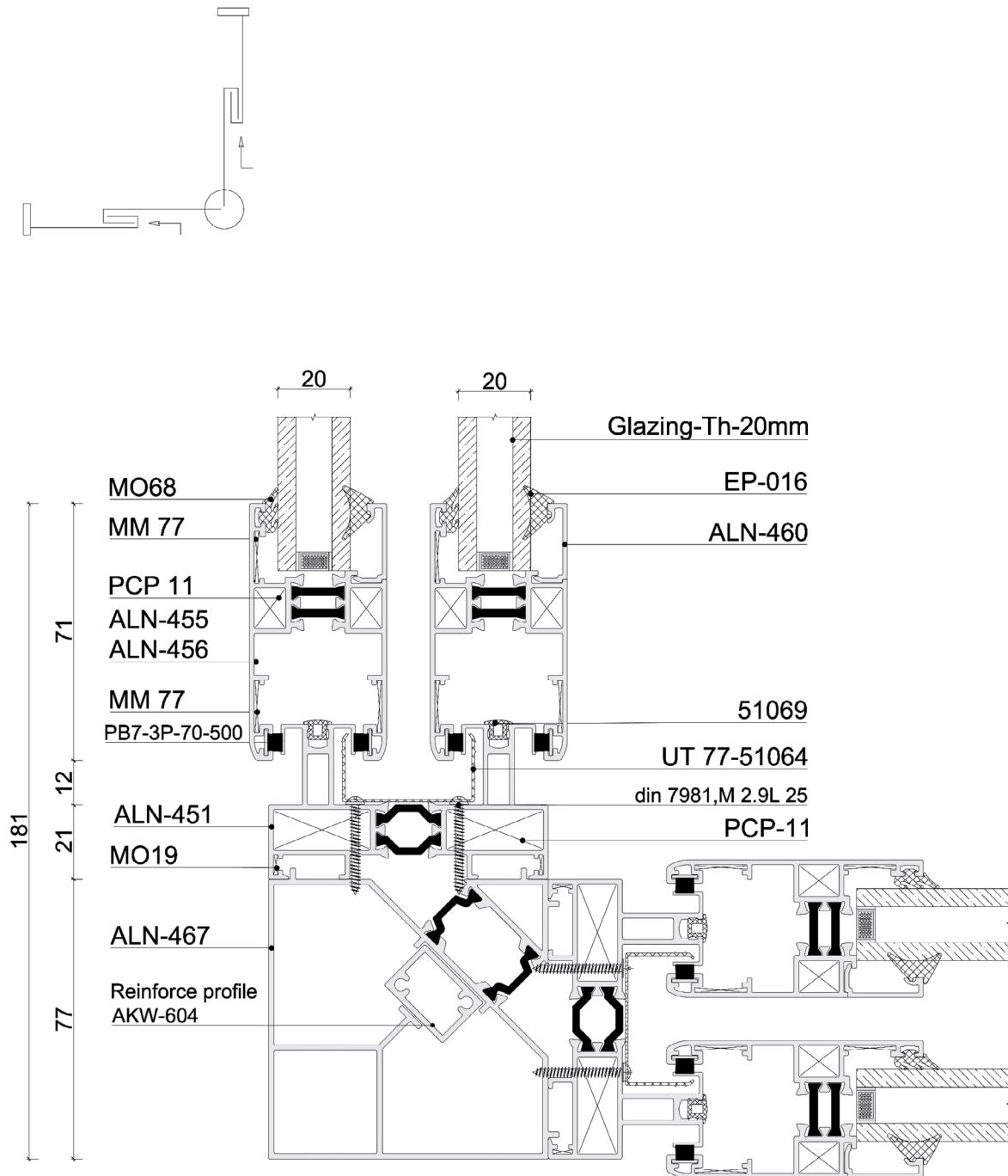
Slide System 77 Series

Fabrication Details



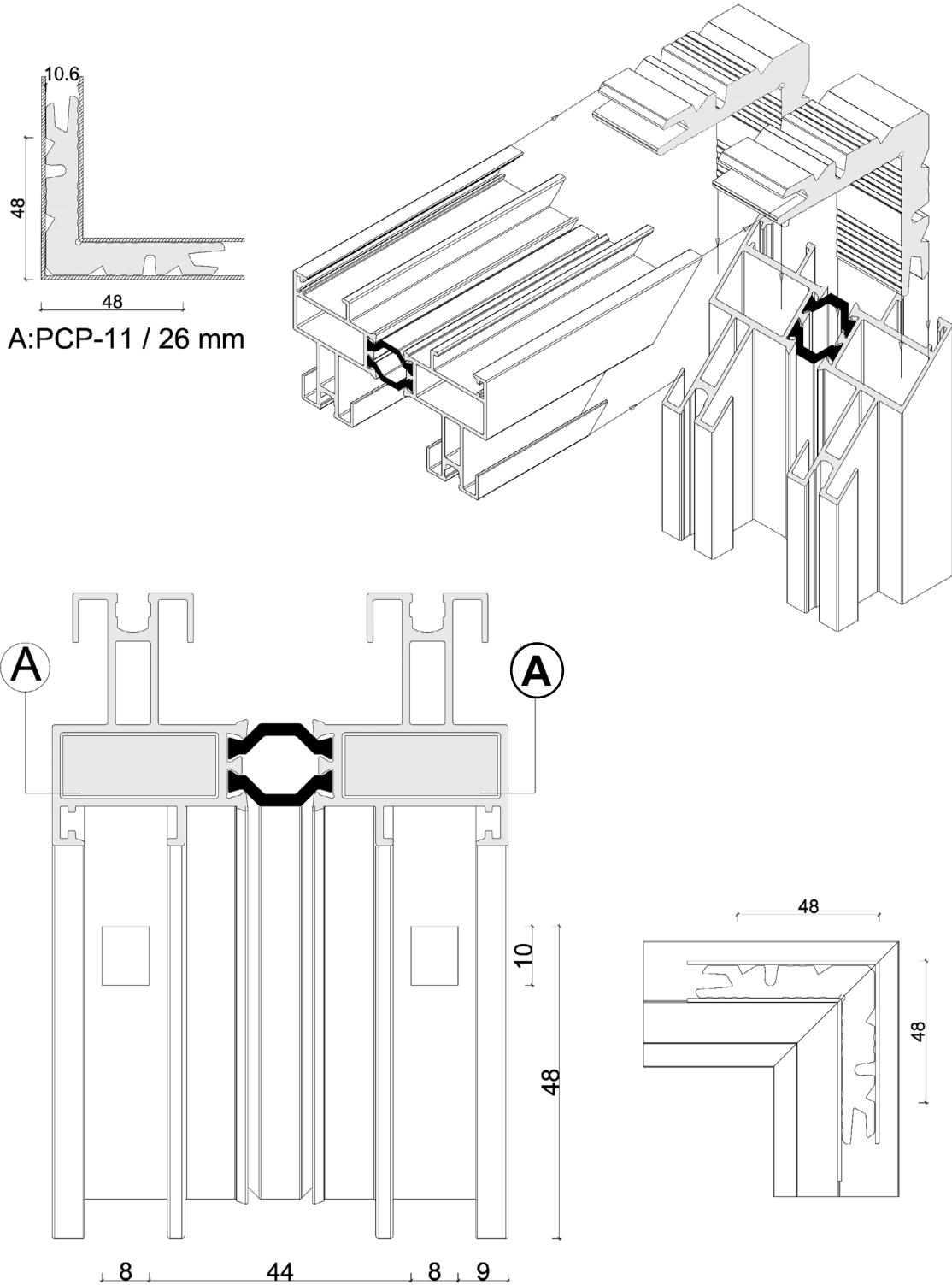
Slide System 77 Series

Fabrication Details



Slide System 77 Series

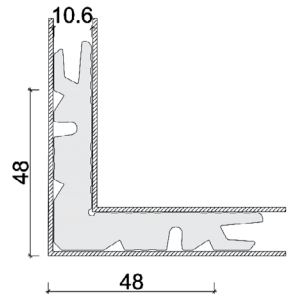
Assembly Drawing
ALN - 451



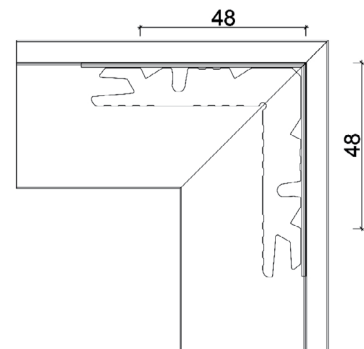
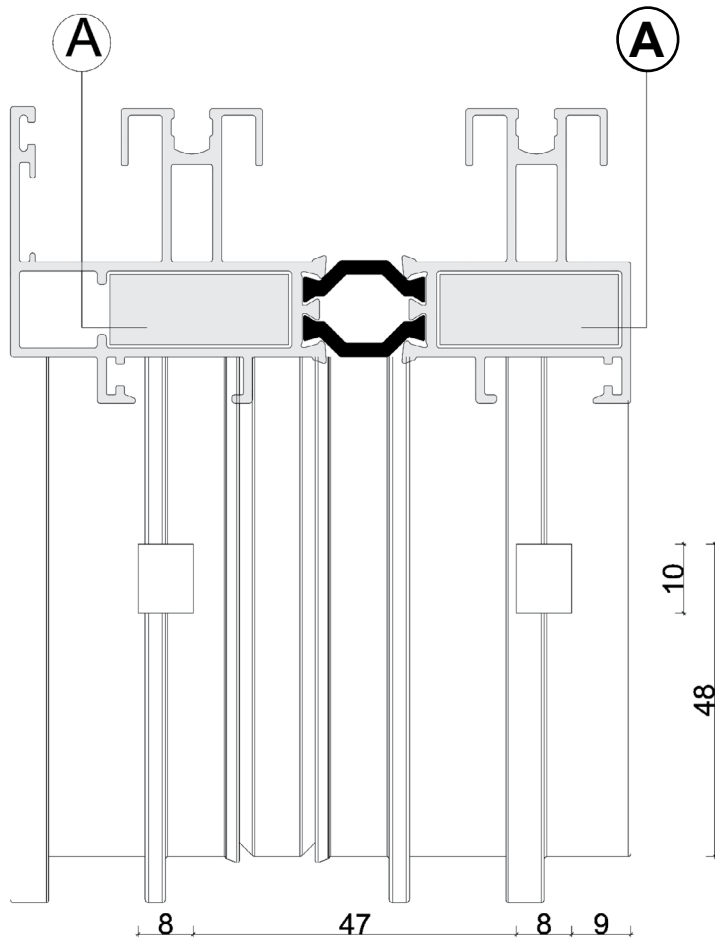
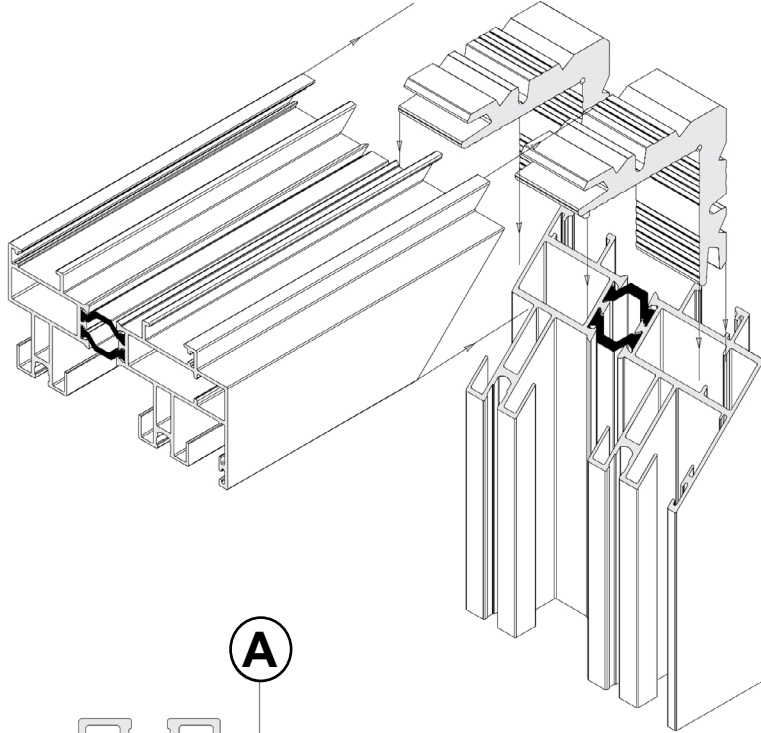
Slide System 77 Series

Assembly Drawing

ALN - 453



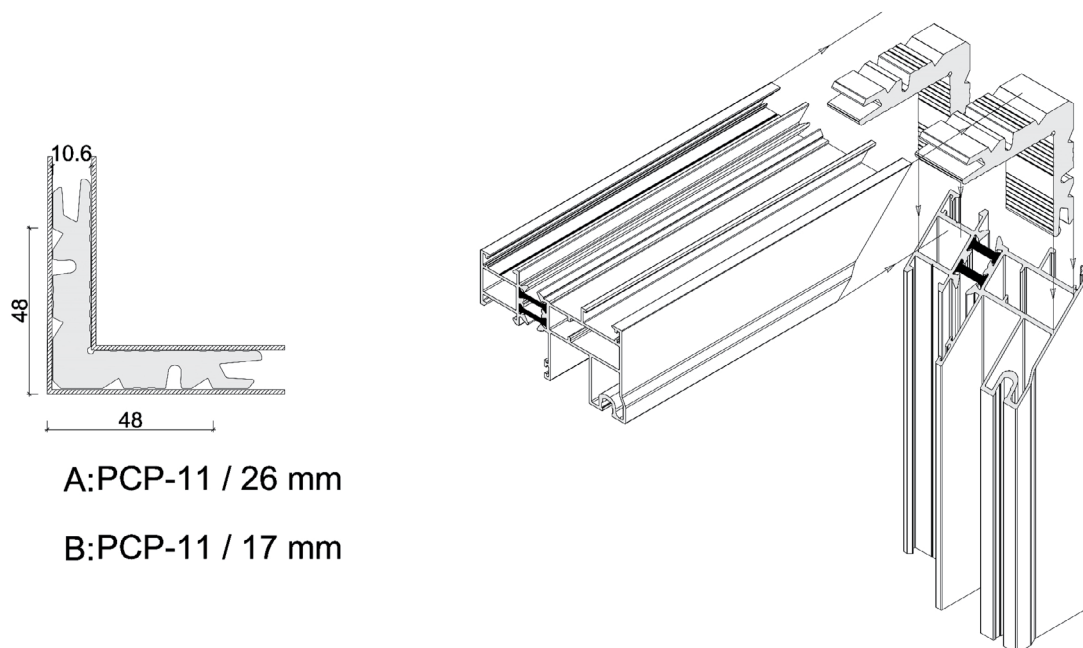
A:PCP-11 / 26 mm



Slide System 77 Series

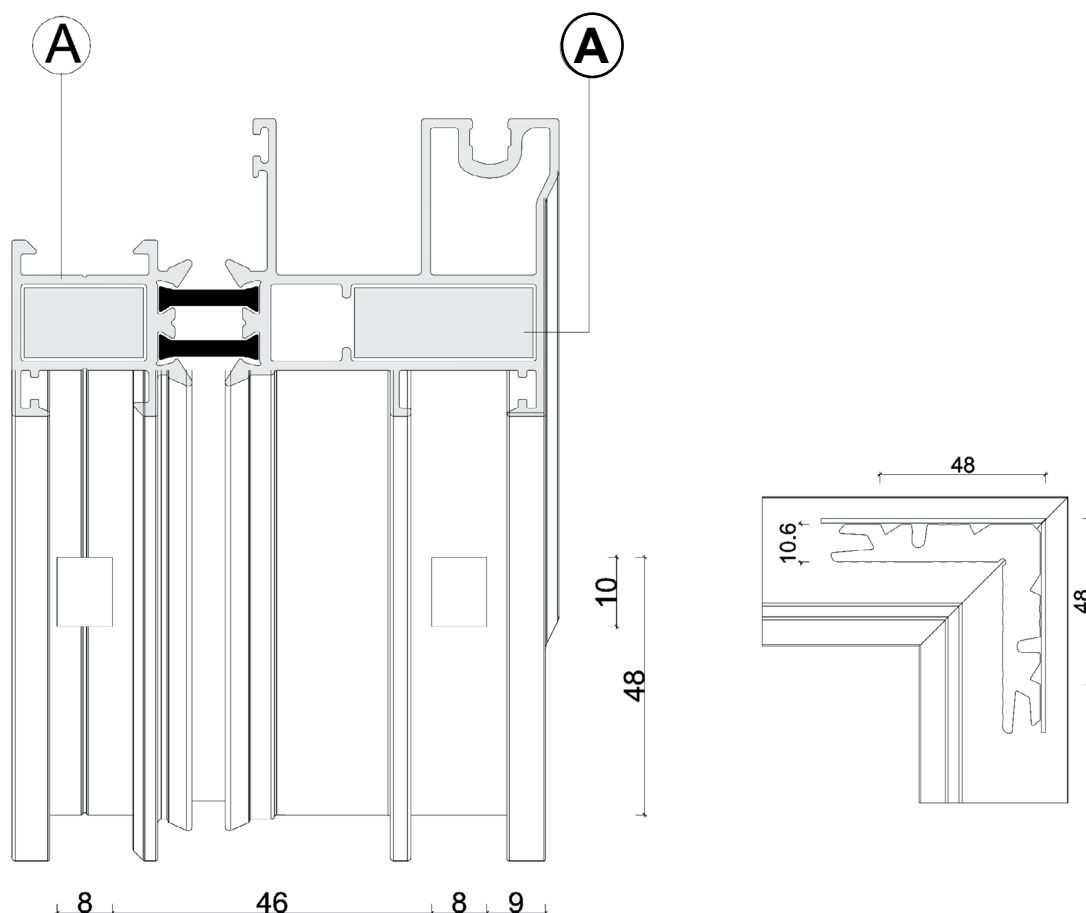
Assembly Drawing

ALN - 470



A:PCP-11 / 26 mm

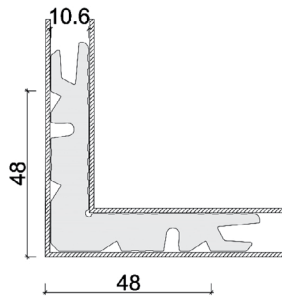
B:PCP-11 / 17 mm



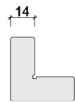
Slide System 77 Series

Assembly Drawing

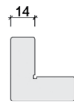
ALN - 455



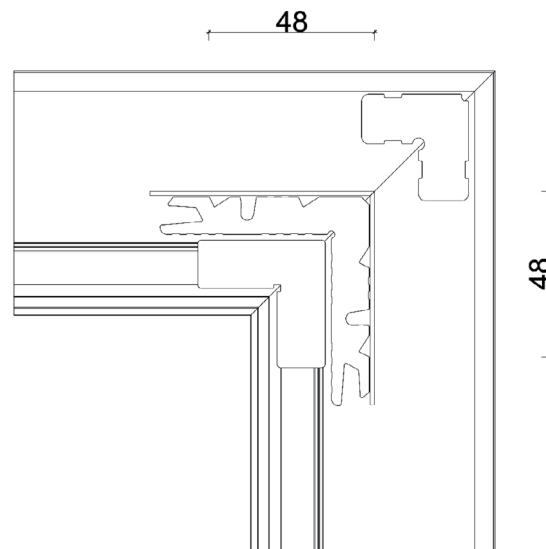
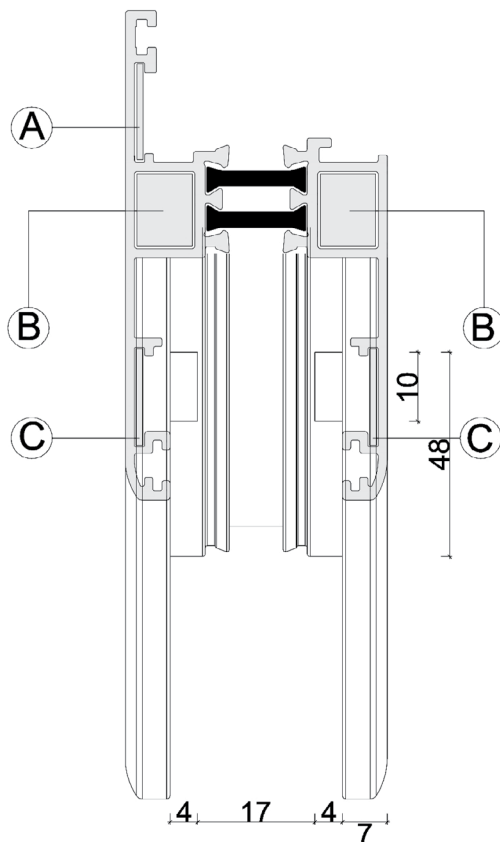
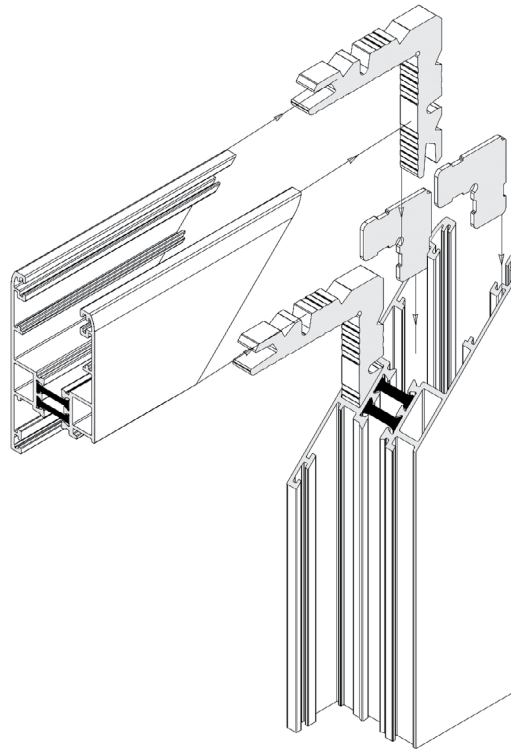
B:PCP-11 / 8 mm



A:MM 77

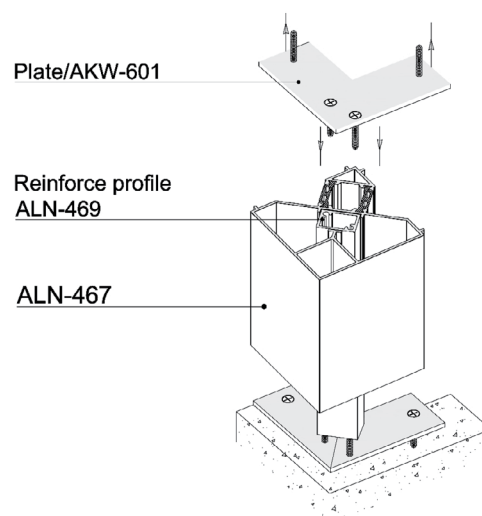
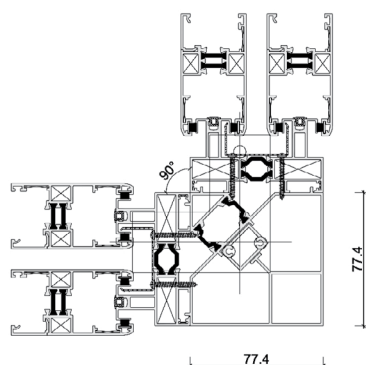
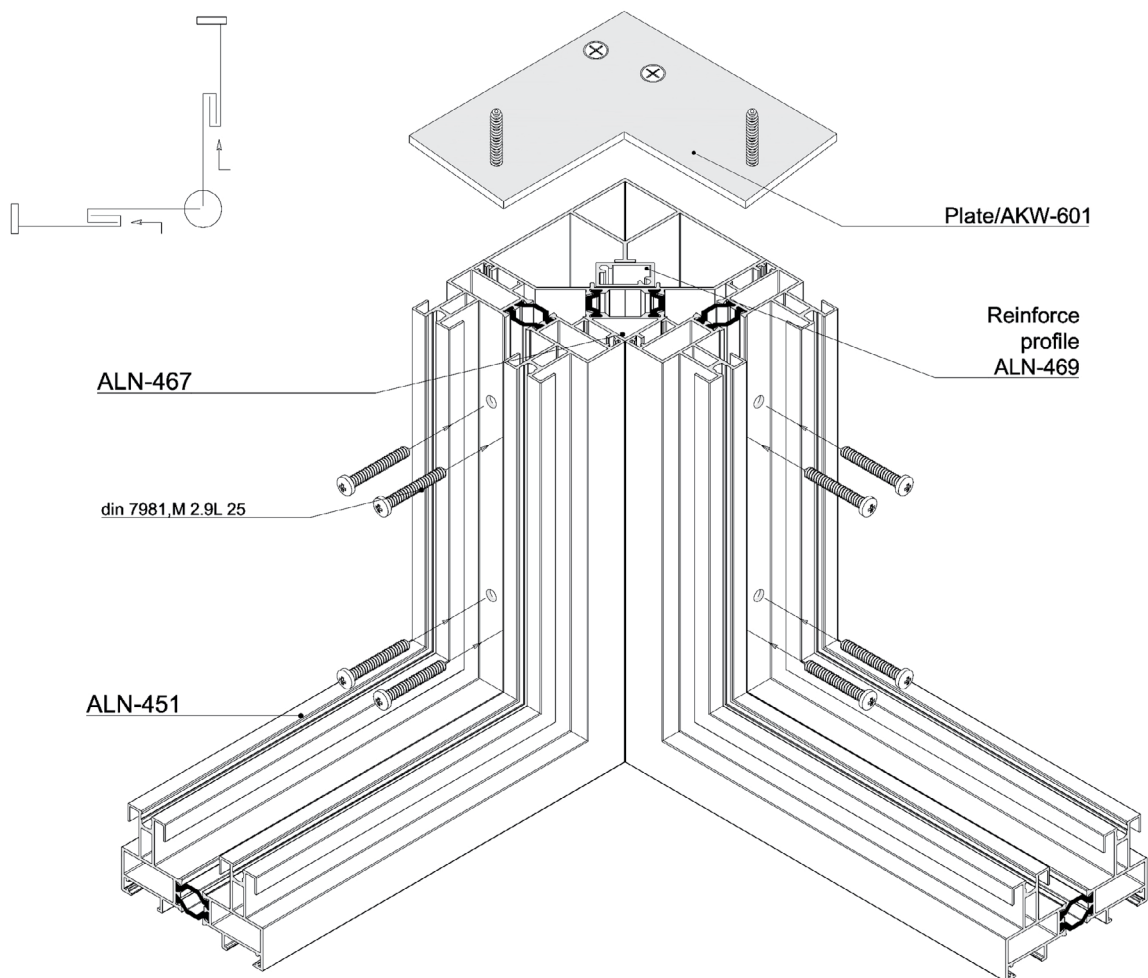


C:MM 77



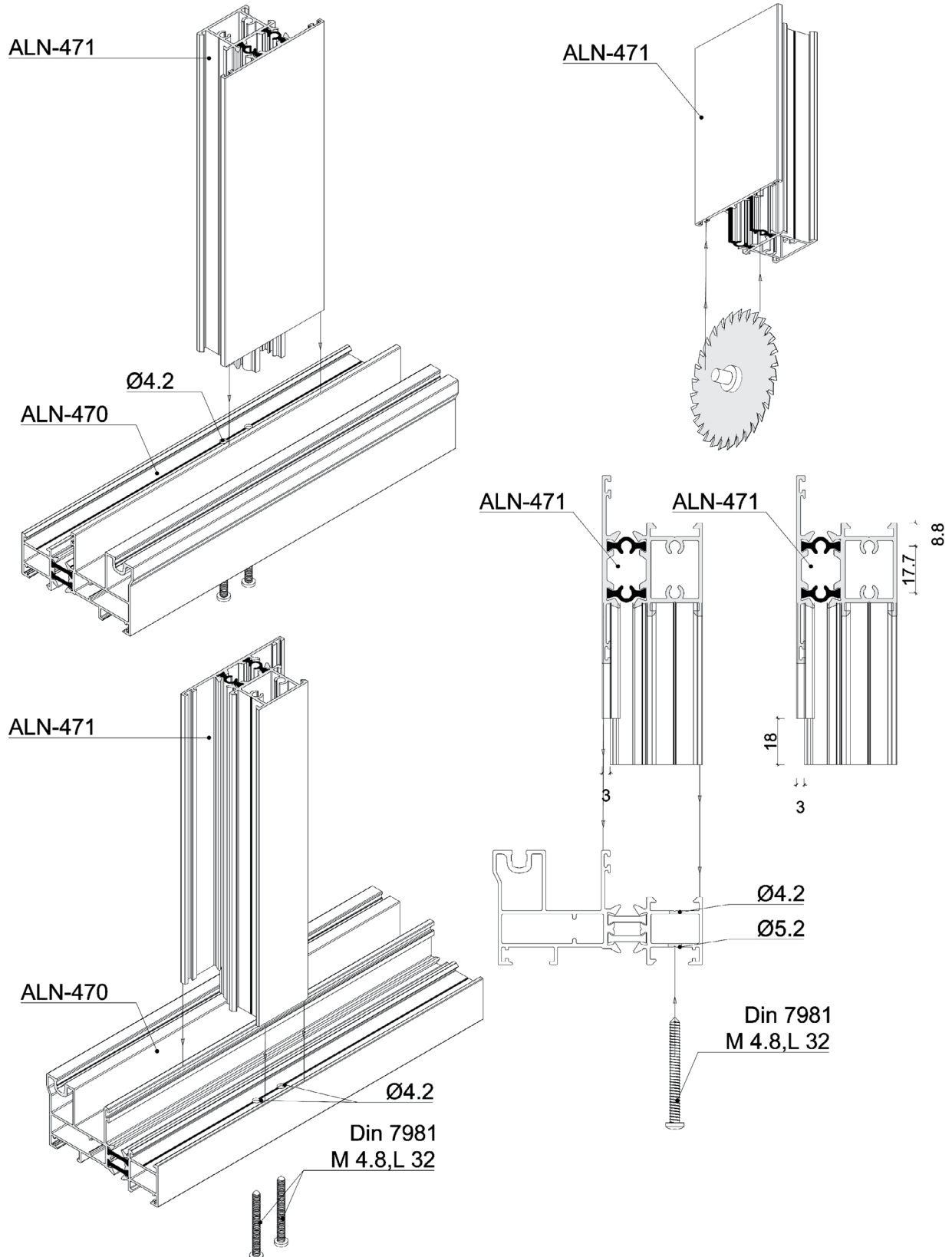
Slide System 77 Series

Assembly Drawing

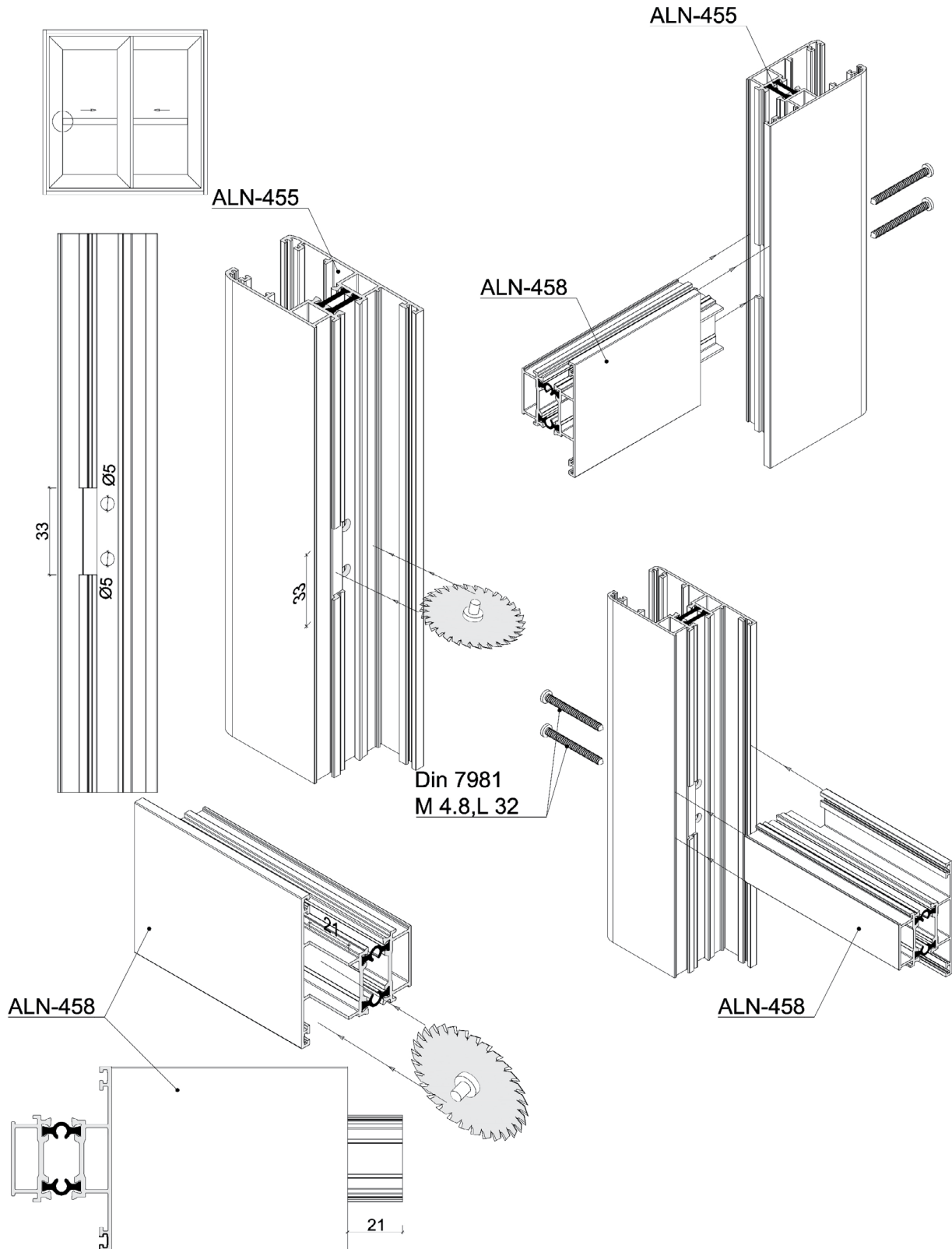


Slide System 77 Series

Assembly Drawing

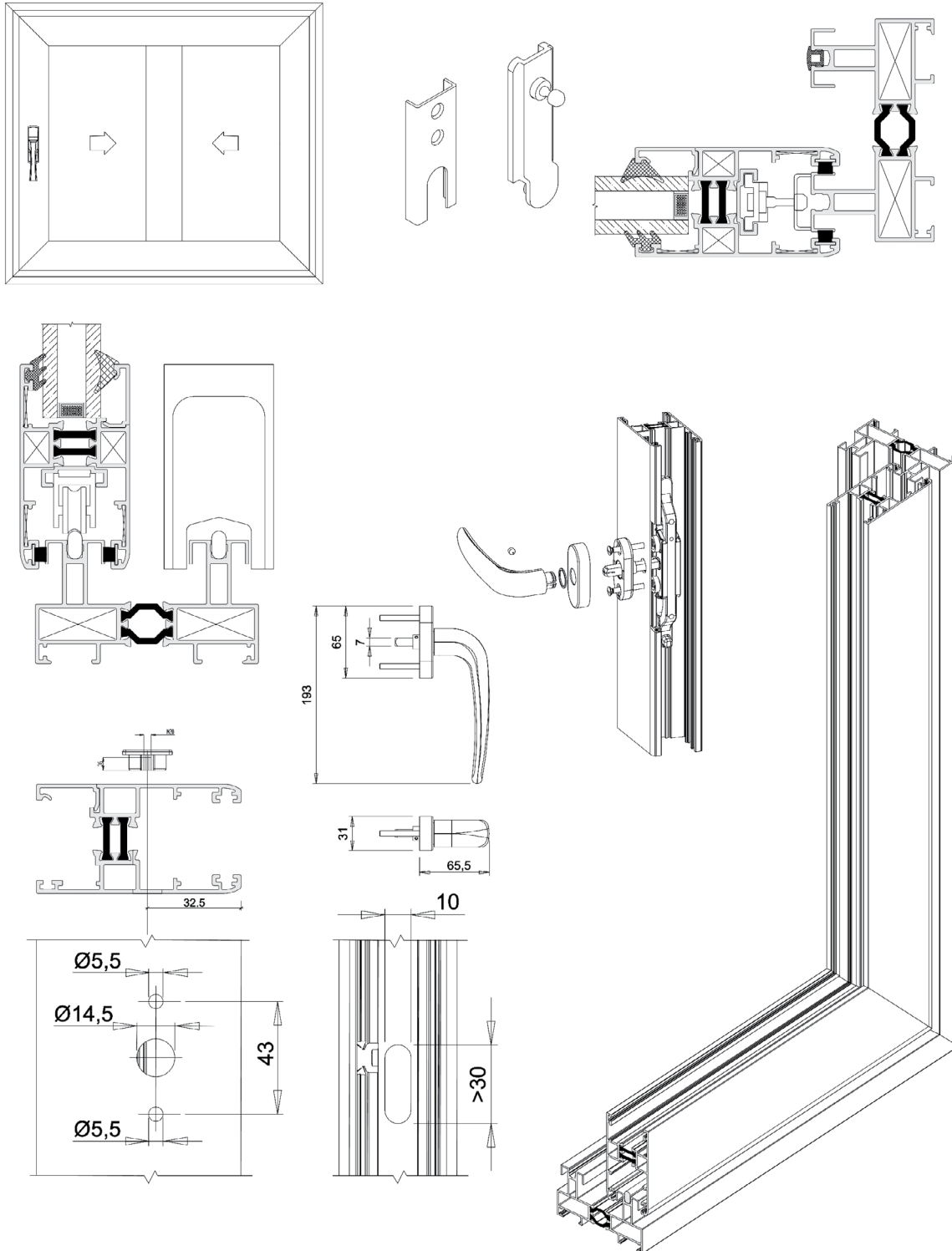


Slide System 77 Series Assembly Drawing



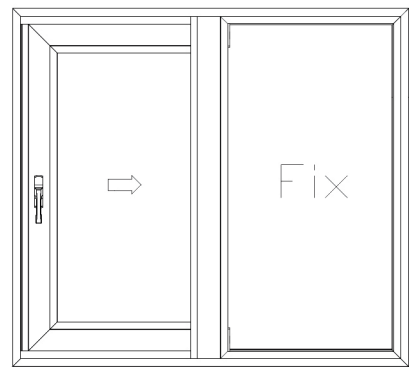
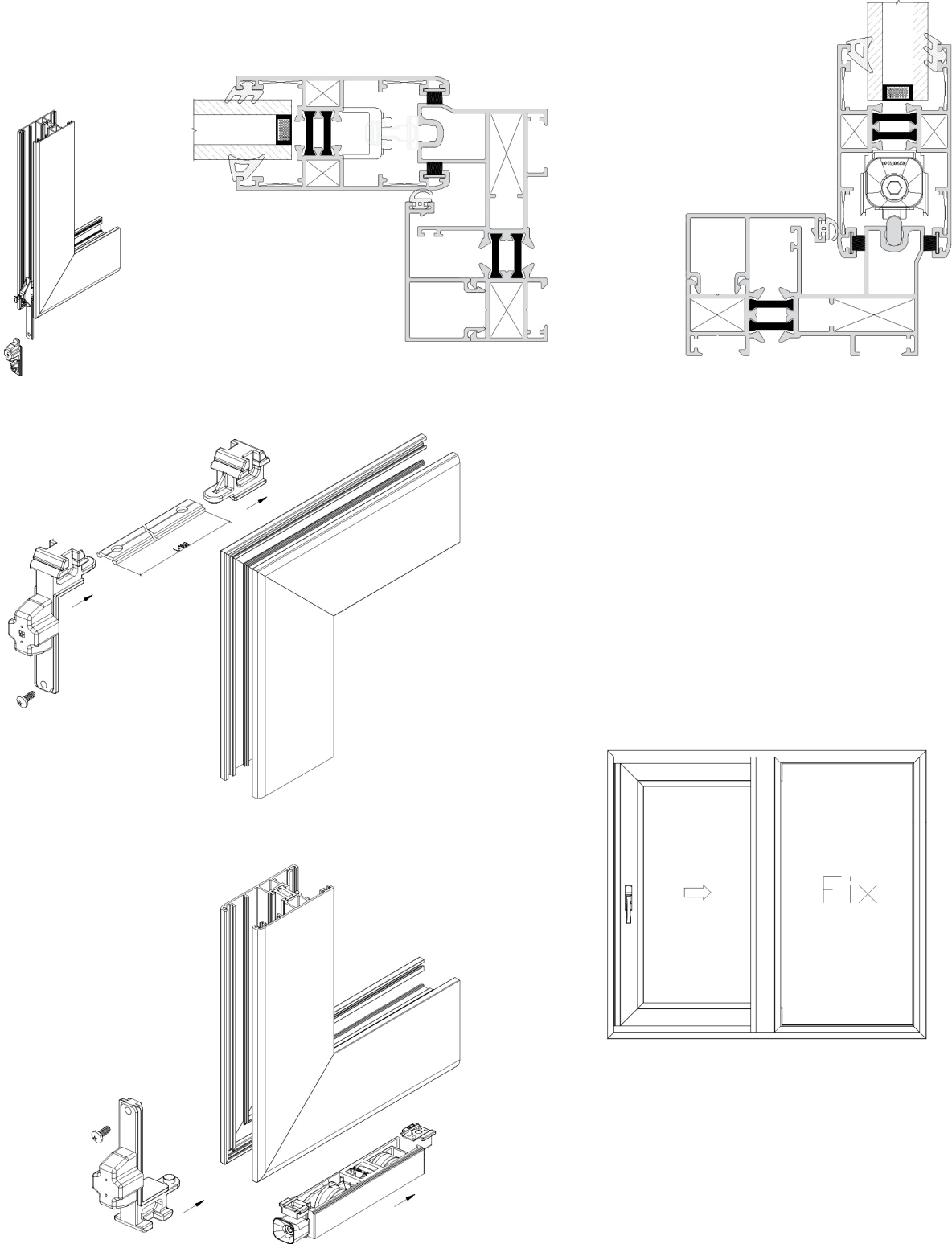
Slide System 77 Series

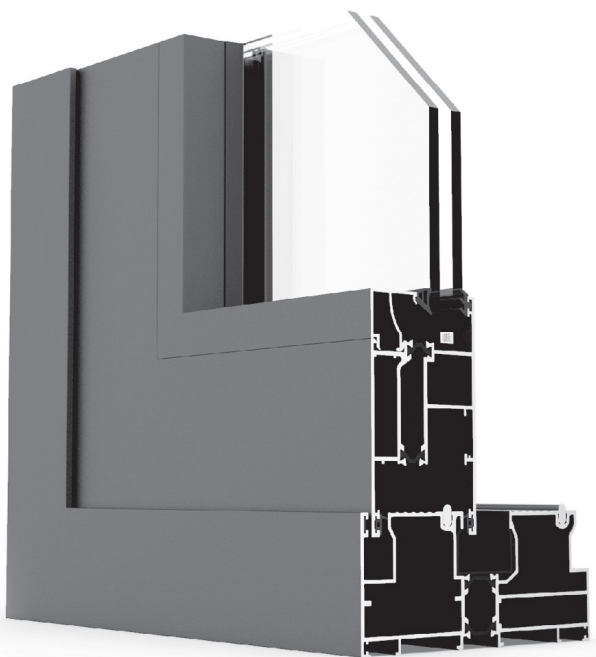
Assembly Drawing



Slide System 77 Series

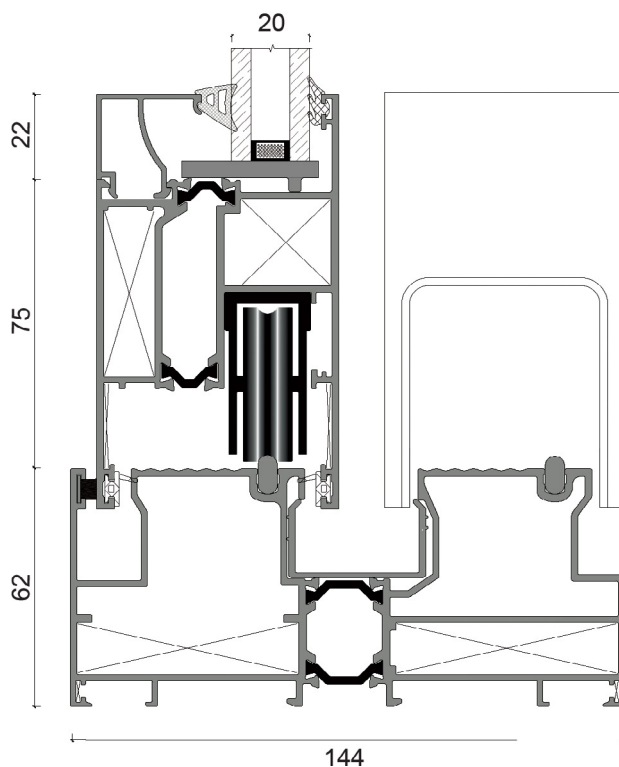
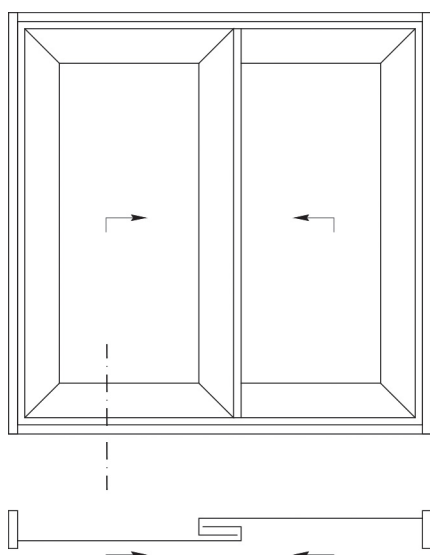
Hardware Installation





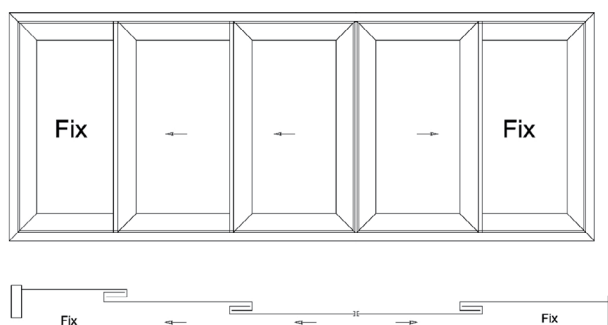
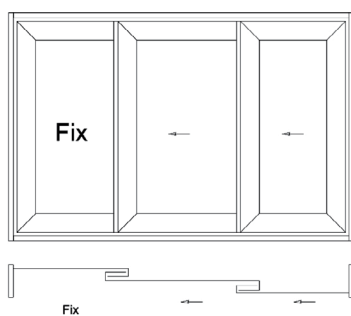
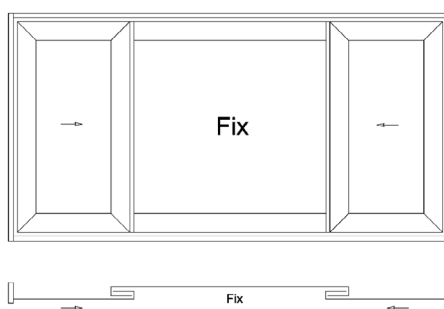
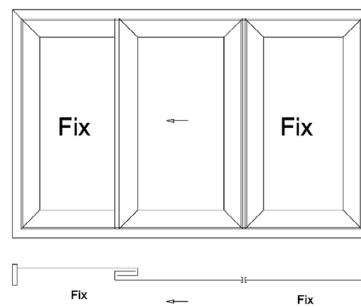
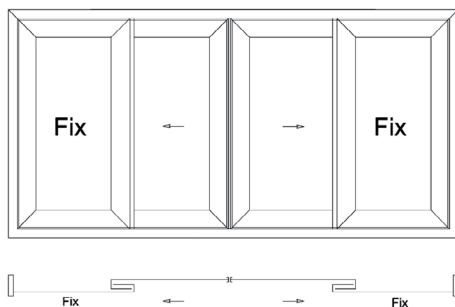
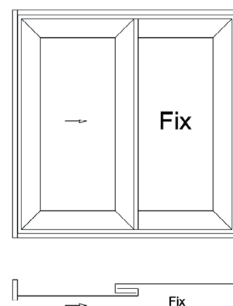
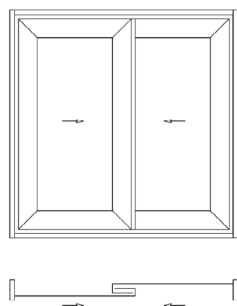
Lift & Slide System 143 Series

- . Profile width: 143 - 218 mm
- . Vent width: 62 mm
- . Wall thickness: 1.6 - 1.7 mm
- . Rubber description: EPDM DIN 7863
- . Glass thickness: 20 - 30 mm
- . Aluminum alloy extrusion: EN AW 6063 T5
- . Isulation bar : Polyamide Width 20 mm
- . Safety drainage system
- . Various typologies



Lift & Slide System 143 Series

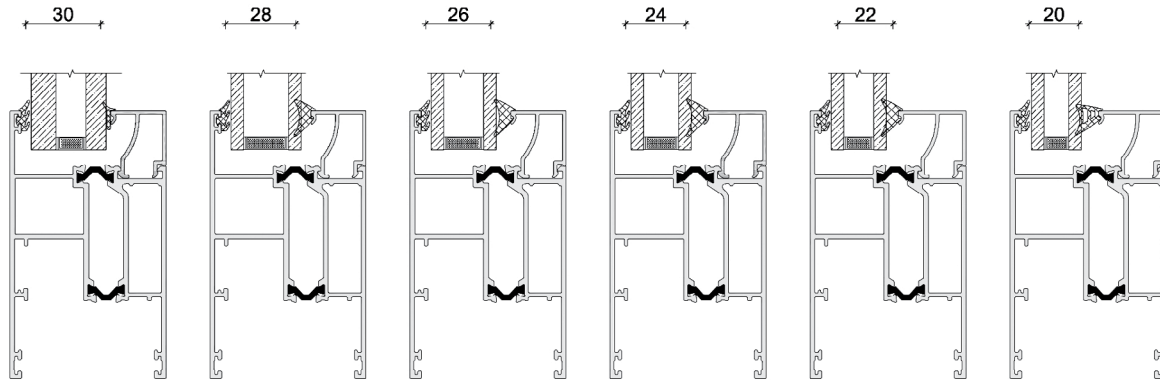
Typologies



Lift & Slide System 143 Series

Glazing Table

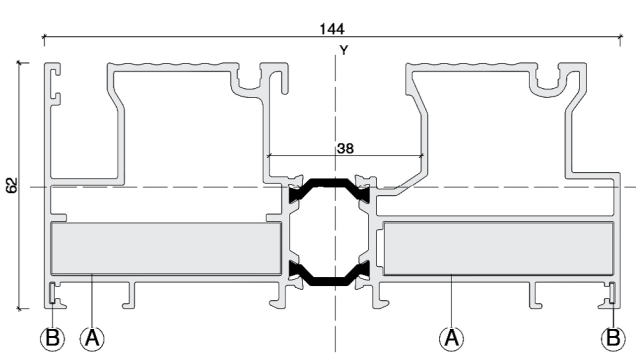
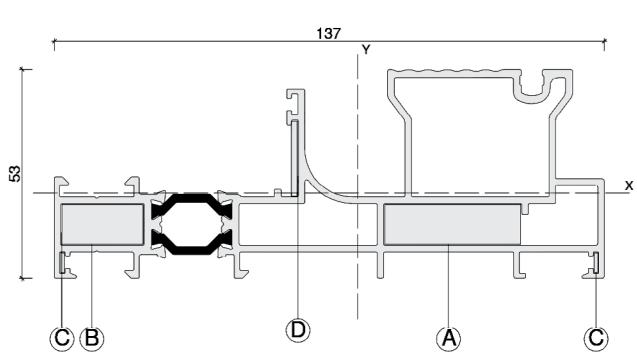
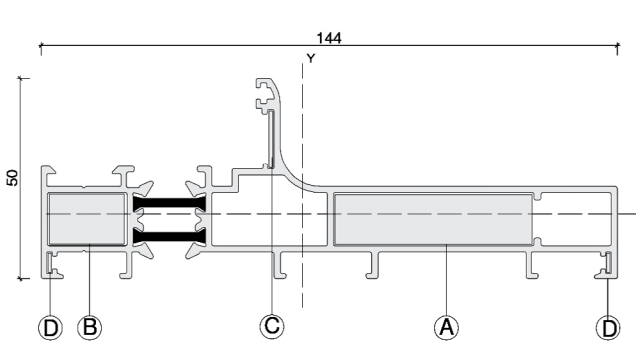
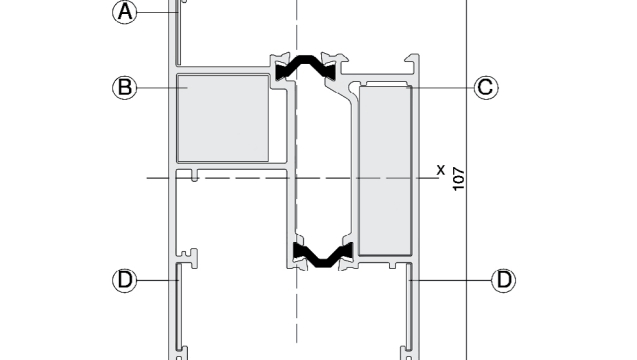
ALN - 484



Glazing Thickness	Gasket Inside	Gasket Outside	Glazing Bead
20 mm	 EP-021	 MO68	 ALN-422
22 mm	 EP-016	 MO68	 ALN-422
24 mm	 EP-016	 MO68	 ALN-421
26 mm	 EP-016	 MO68	 ALN-323
28 mm	 EP-016	 MO68	 ALN-323
30 mm	 EP-015	 MO68	 ALN-323

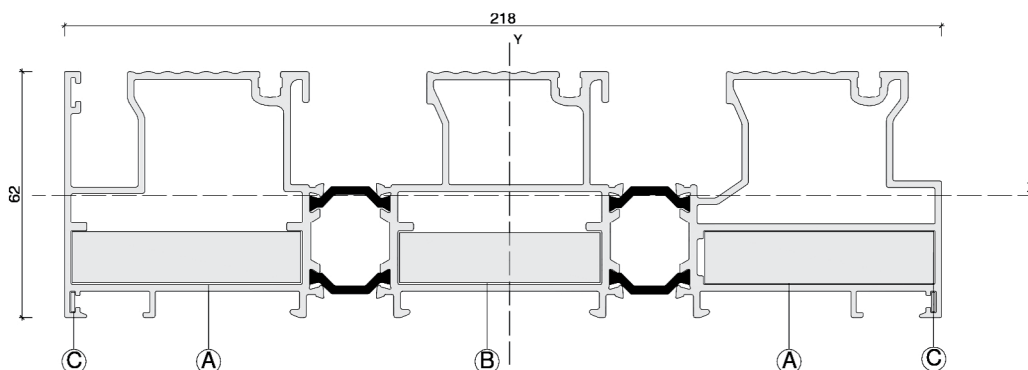
Lift & Slide System 143 Series

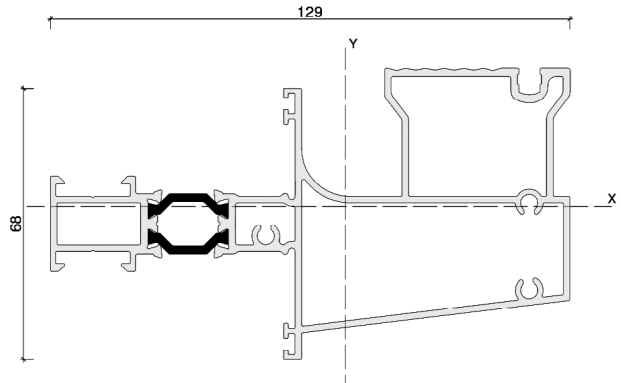
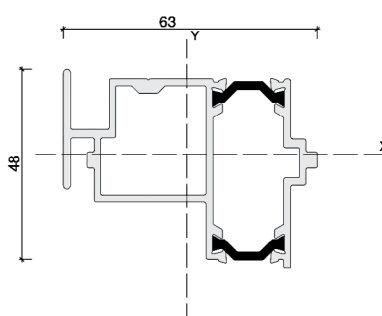
Profile & Accessories Information

			
I_x : 47.26 cm ⁴	I_y : 238.10 cm ⁴	I_x : 20.64 cm ⁴	I_y : 152.73 cm ⁴
Frame : ALN-480	A: PCP-13 / 56.5 mm 	Monorail Frame : ALN-490	A: PCP-10 / 33.5 mm 
Weight: 3220 gr/m	B: MO19(399012) 	Weight: 2540 gr/m	B: PCP-10 / 19.8 mm 
			C: MO19(399012)  D: Fuji2000 
			
I_x : 8.29 cm ⁴	I_y : 139.22 cm ⁴	I_x : 53.13 cm ⁴	I_y : 44.22 cm ⁴
Frame : ALN-482	A: PCP-13 / 49 mm 	Sash : ALN-484	A: Wide plastic-TS 143 370108 
Weight: 2051 gr/m	B: PCP-13 / 19 mm 	Weight: 2272 gr/m	B: PCP-22/22mm 
	C: MM77 		C: PCP-42/12mm 
	D: MO19(399012) 		D: Narrow plastic-TS 143 370107 

Lift & Slide System 143 Series

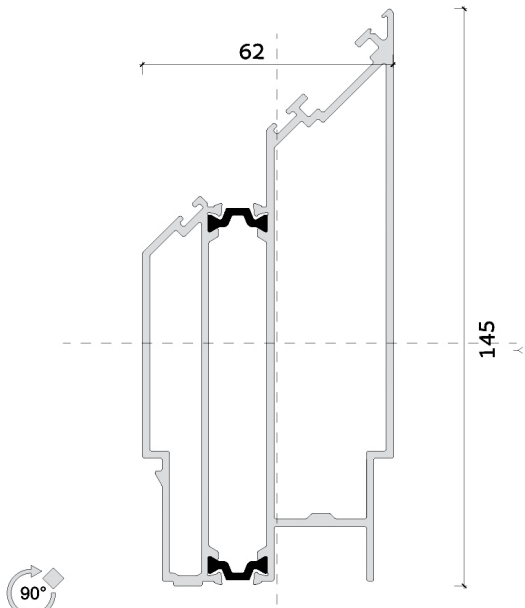
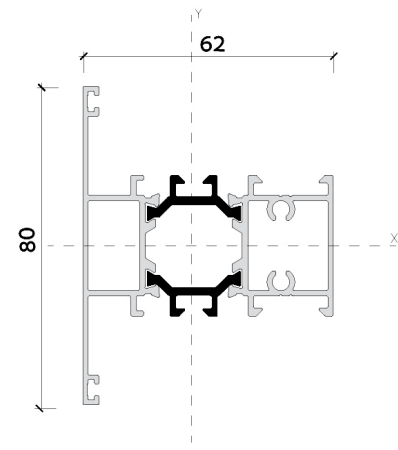
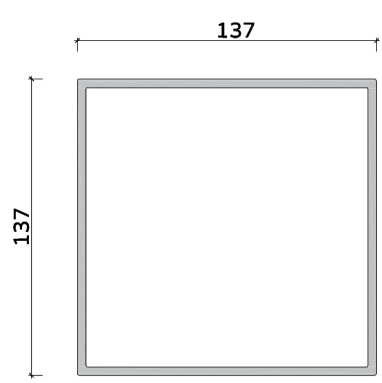
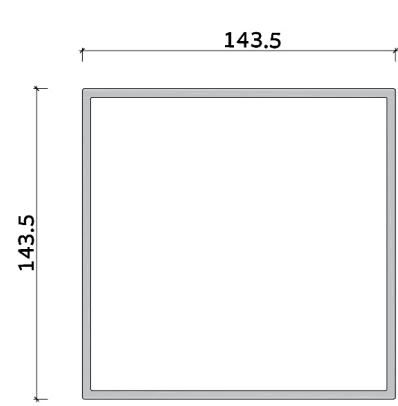
Profile & Accessories Information



I_x : 68.88 cm ⁴		I_y : 757.90 cm ⁴	
Triple rail Frame : ALN-481		A: PCP-13 / 56 mm	
Weight: 4824 gr/m		B: PCP-13 / 49 mm	
		C: MO19(399012)	
			
I_x : 32.16 cm ⁴	I_y : 138.4 cm ⁴	I_x : 8.31 cm ⁴	I_y : 18.56 cm ⁴
Transom : ALN-491	-	Profile : ALN-488	-
Weight: 2591 gr/m	-	Weight: 1387 gr/m	-

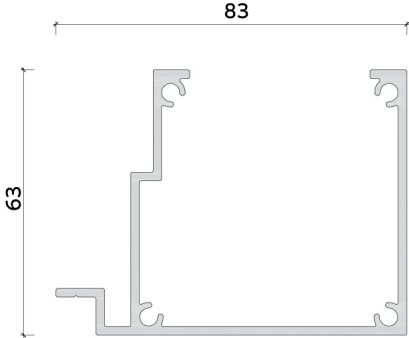
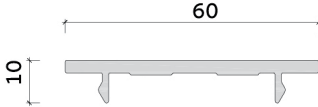
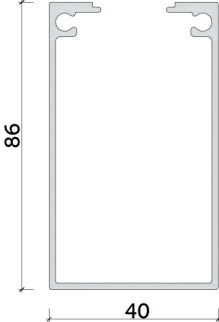
Lift & Slide System 143 Series

Profile & Accessories Information

			
I_x : 51.01 cm ⁴	I_y : 186.49 cm ⁴	I_x : 11.57 cm ⁴	I_y : 22.89 cm ⁴
Corner Profile: ALN-483	-	Transom : ALN-487	-
Weight: 3003 gr/m	-	Weight: 1417 gr/m	-
			
I_x : 51.01 cm ⁴	I_y : 186.49 cm ⁴	I_x : 11.57 cm ⁴	I_y : 22.89 cm ⁴
Profile: ALN-476	-	Profile: ALN-477	-
Weight: 5764 gr/m	-	Weight: 6046 gr/m	-

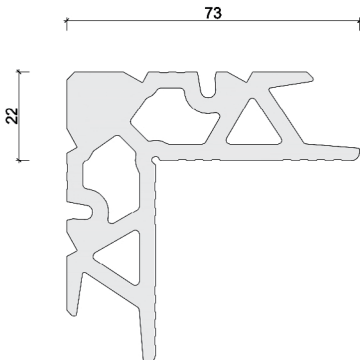
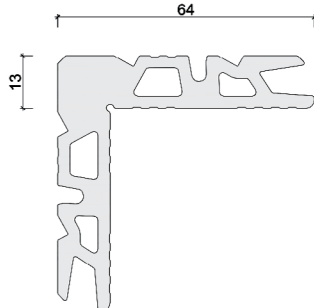
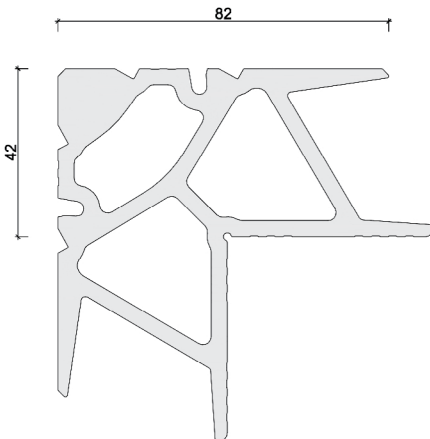
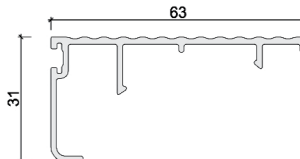
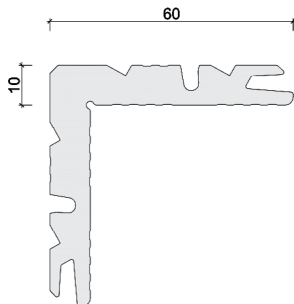
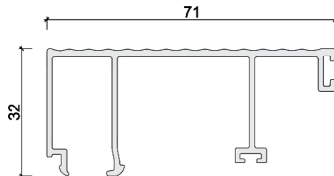
Lift & Slide System 143 Series

Profile & Accessories Information

			
I_x : 51.01 cm ⁴	I_y : 186.49 cm ⁴	I_x : 11.57 cm ⁴	I_y : 22.89 cm ⁴
Gutter :ALN-478	-	Cap : ALN-479	-
Weight: 1393 gr/m	-	Weight: 580 gr/m	-
			
Cap : ALN-496	-	I_x : 20.78 cm ⁴	I_y : 9.71 cm ⁴
Weight: 86 gr/m	-	Profile : ALN-495	-
-	-	Weight: 891 gr/m	-

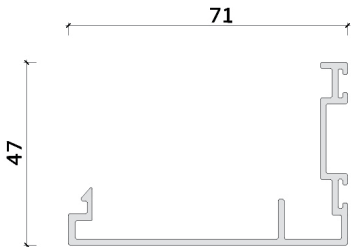
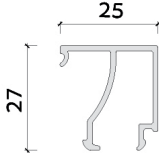
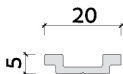
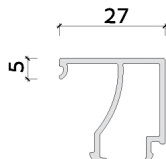
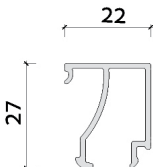
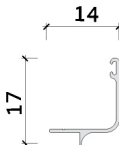
Lift & Slide System 143 Series

Profile & Accessories Information

							
Corner Joint:	PCP-22	Weight :	3718 gr/m	Corner Joint:	PCP-13	Weight:	2673 gr/m
							
Corner :	PCP-42	Weight :	5133 gr/m	Cap:	ALN-486	Weight:	499 gr/m
							
Corner :	PCP-10	Weight :	2454 gr/m	Cap:	ALN-492	Weight:	759 gr/m

Lift & Slide System 143 Series

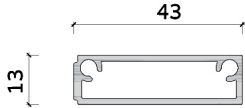
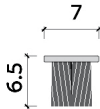
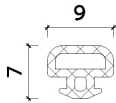
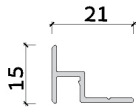
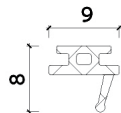
Profile & Accessories Information

			
Cap: ALN-485	Weight: 694 gr/m	Glazing beads: ALN-421	Weight: 321 gr/m
			
Profile : ALN-331	Weight: 139 gr/m	Glazing beads: ALN-422	Weight: 321 gr/m
			
Glazing beads: ALN-323	Weight: 302 gr/m	Profile: ALN-489	Weight: 221 gr/m



Lift & Slide System 143 Series

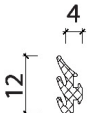
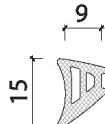
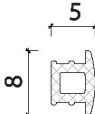
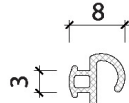
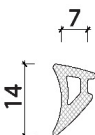
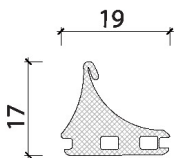
Profile & Accessories Information

			
Profile : ALN-493	Weight: 467 gr/m	PB7-3P-70-650	Weight: –
			
Rail : ALN-462	Weight: 119 gr/m	Gasket : MO 60	Weight: 26 gr/m
			
Profile : ALN-228	Weight: 135 gr/m	Gasket : 51990	Weight: 34 gr/m



Lift & Slide System 143 Series

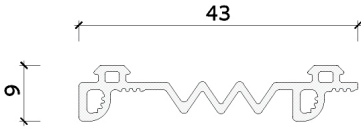
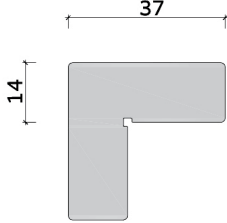
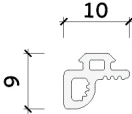
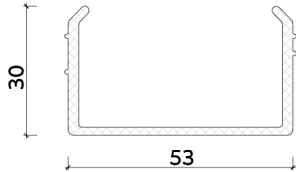
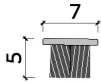
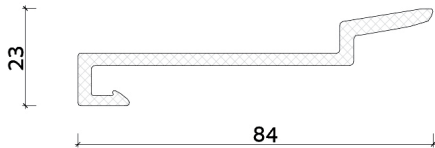
Profile & Accessories Information

			
Gasket: MO68	Weight : 48 gr/m	Gasket: EP-021	Weight : 80 gr/m
			
Gasket : 51069	Weight: 27 gr/m	Gasket: EP-018	Weight : 27 gr/m
			
Gasket: EP-019	Weight : 61 gr/m	Gasket: TH-75/51056	Weight : 161 gr/m



Lift & Slide System 143 Series

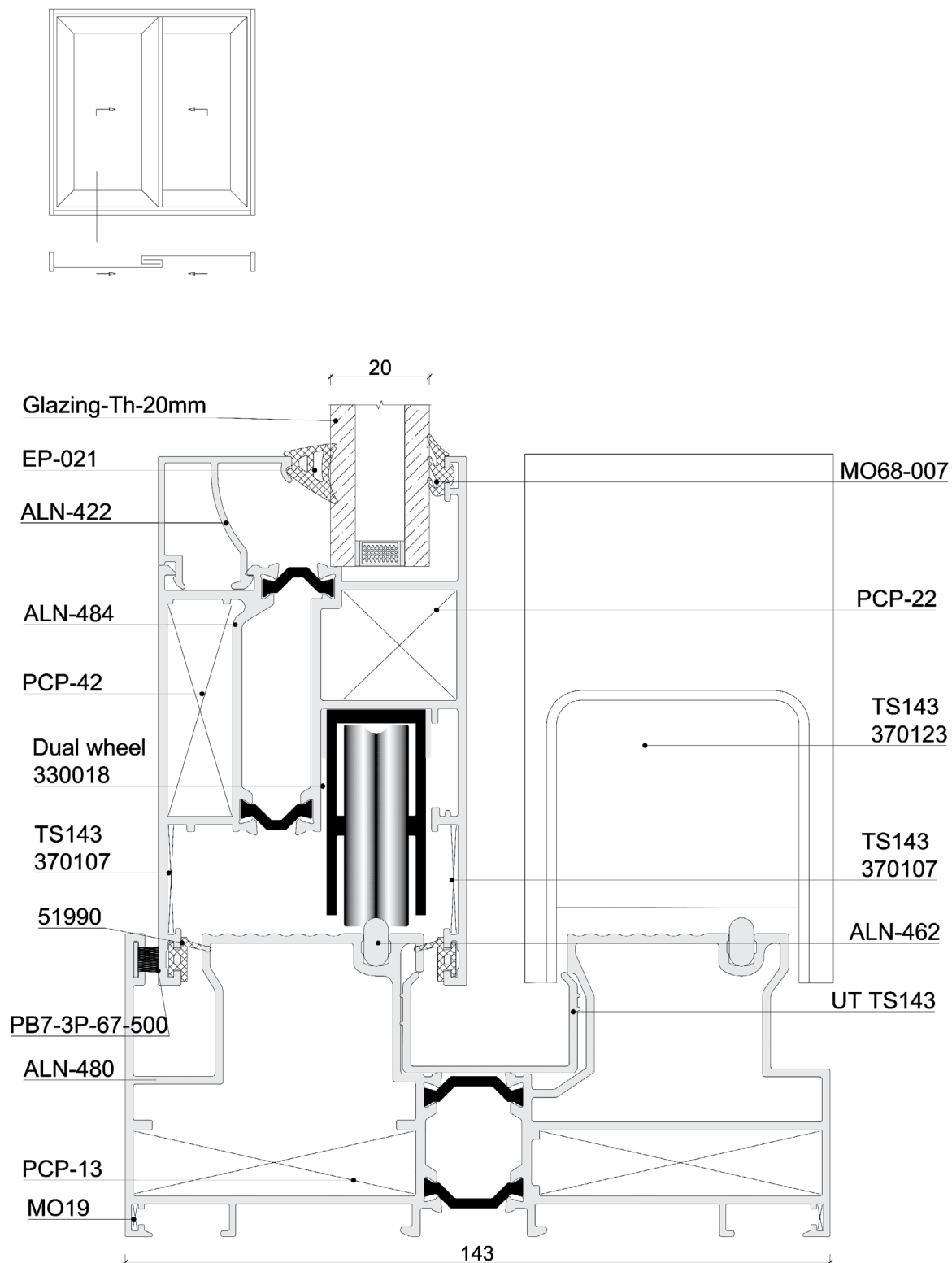
Profile & Accessories Information

			
Gasket: Cornergasket60019	Weight : 134 gr/m	Corner: MM77	Weight: —
			
Gasket: Corner gasket-60018	Weight : 44 gr/m	Gasket : UT TS143	Weight: 318 gr/m
			
PB7-3P-70-500	Weight: —	Gasket : Rubber 20794	Weight: 429 gr/m



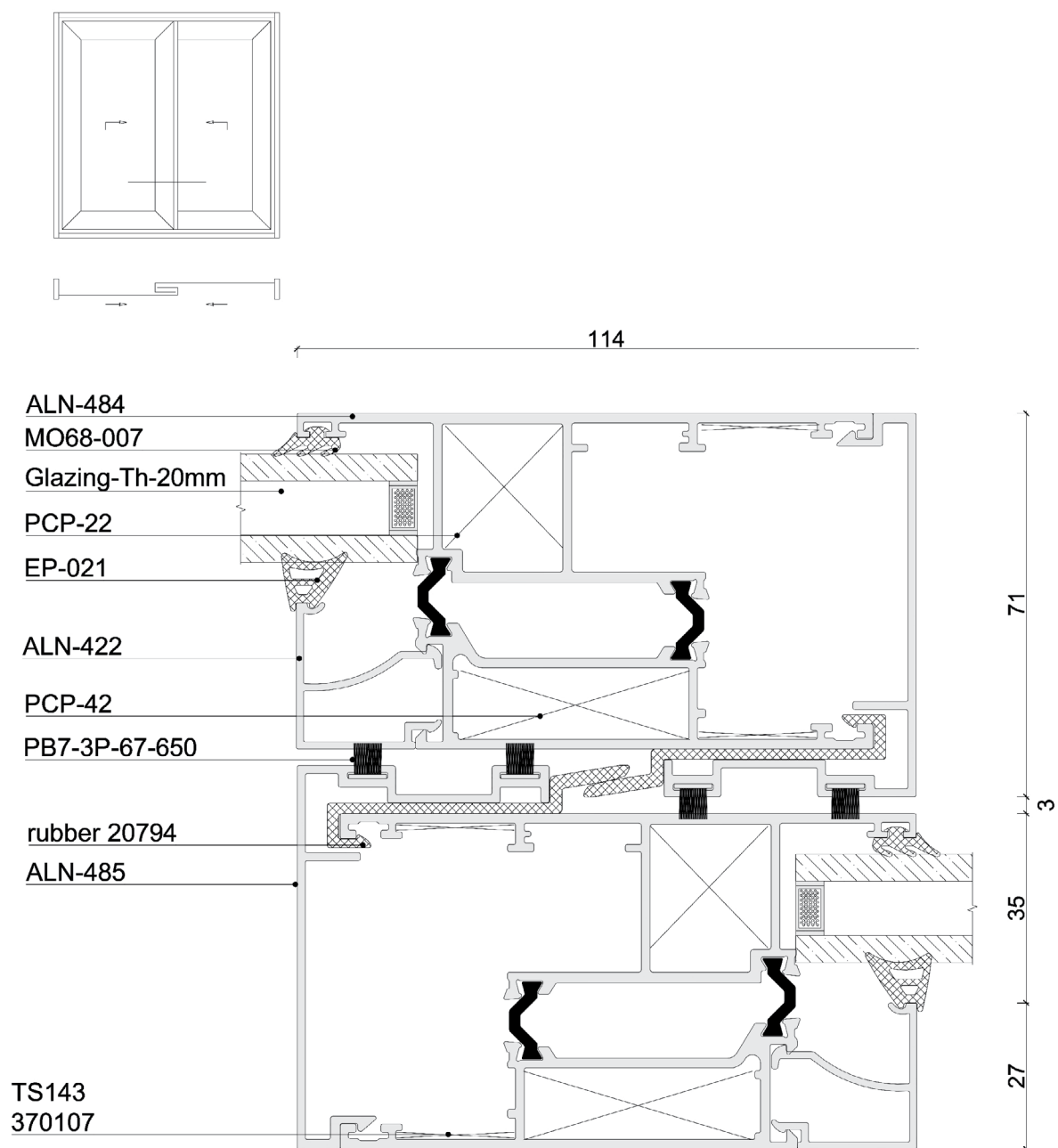
Lift & Slide System 143 Series

Fabrication Details



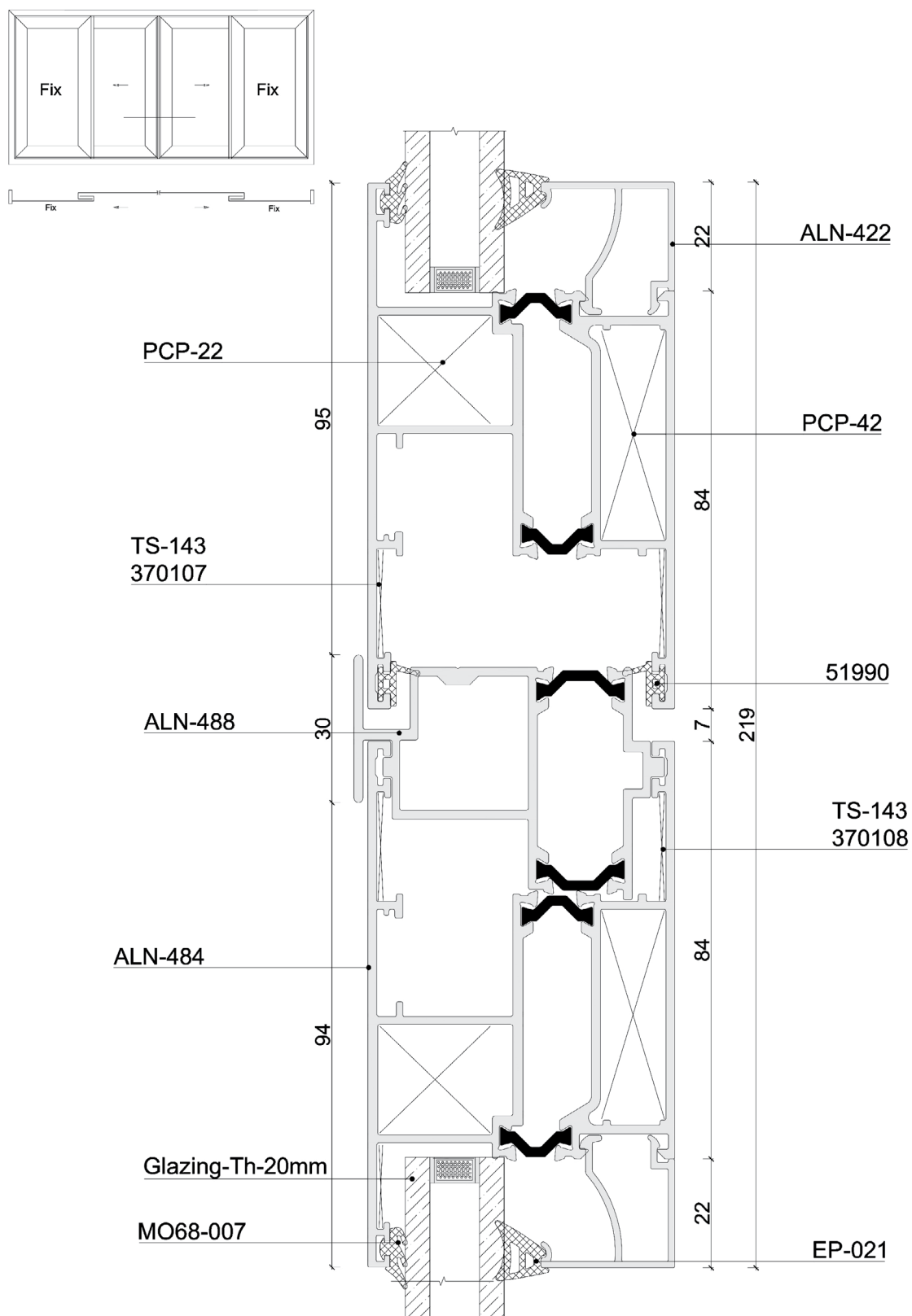
Lift & Slide System 143 Series

Fabrication Details



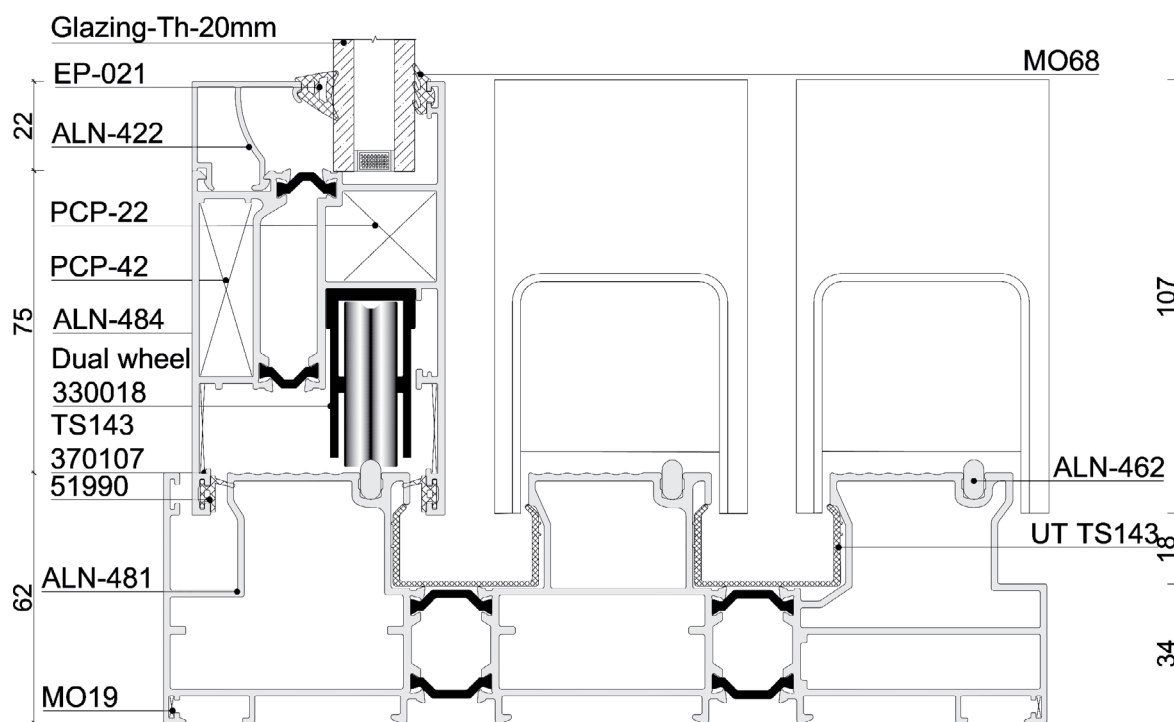
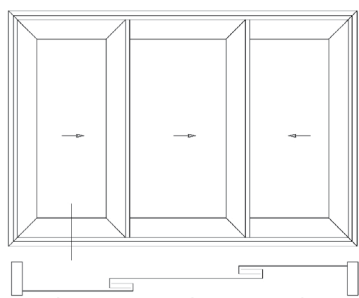
Lift & Slide System 143 Series

Fabrication Details



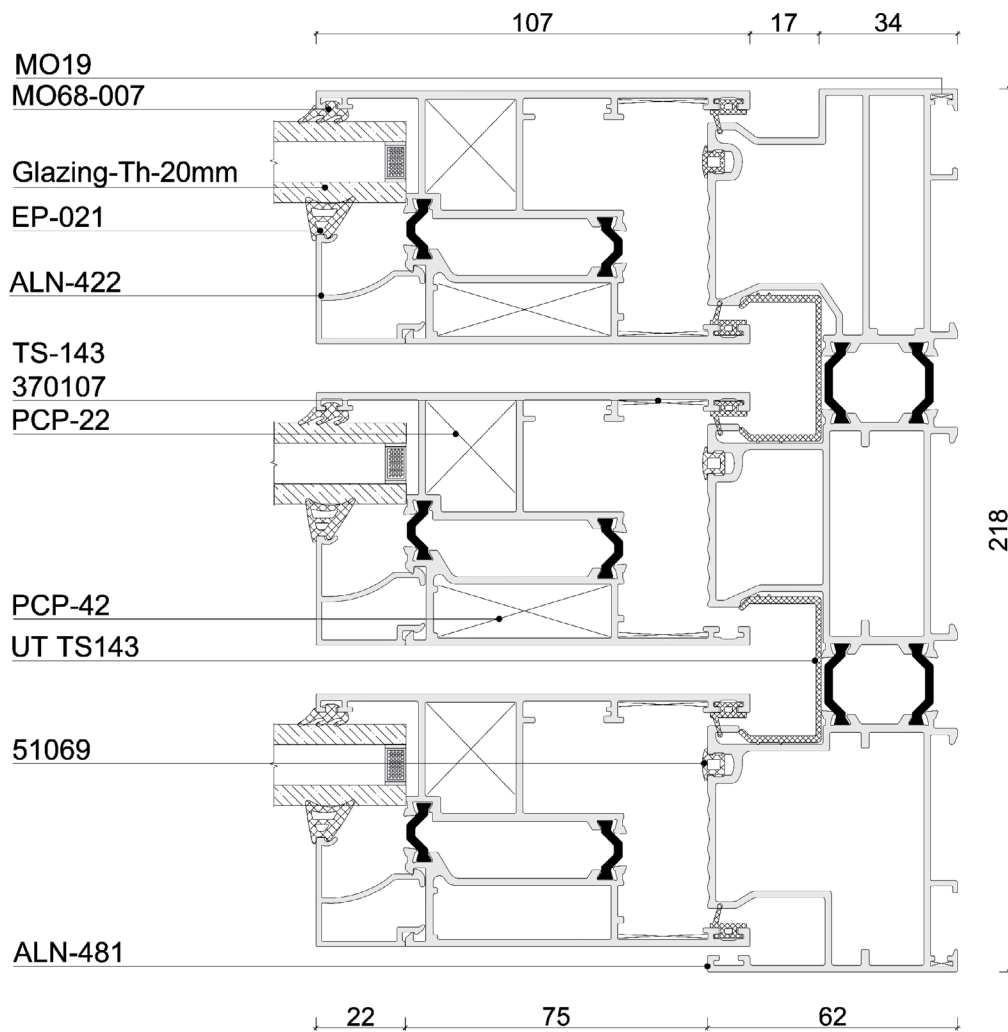
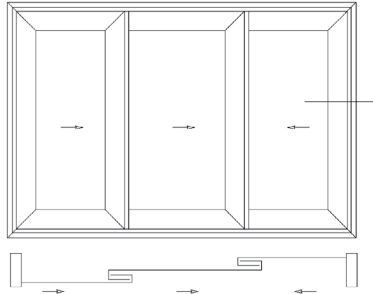
Lift & Slide System 143 Series

Fabrication Details



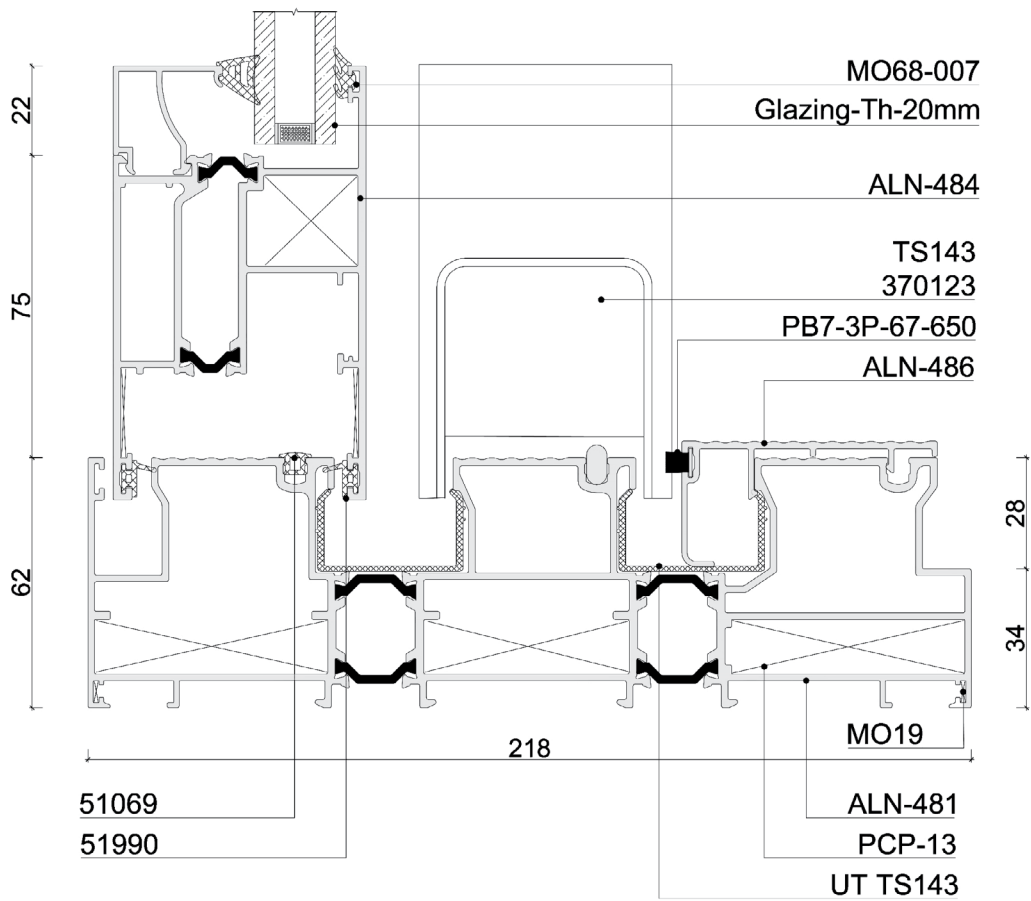
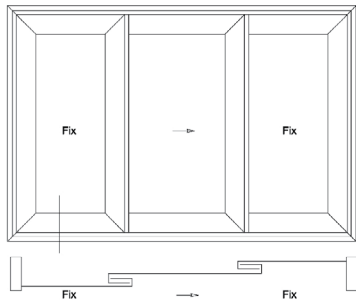
Lift & Slide System 143 Series

Fabrication Details



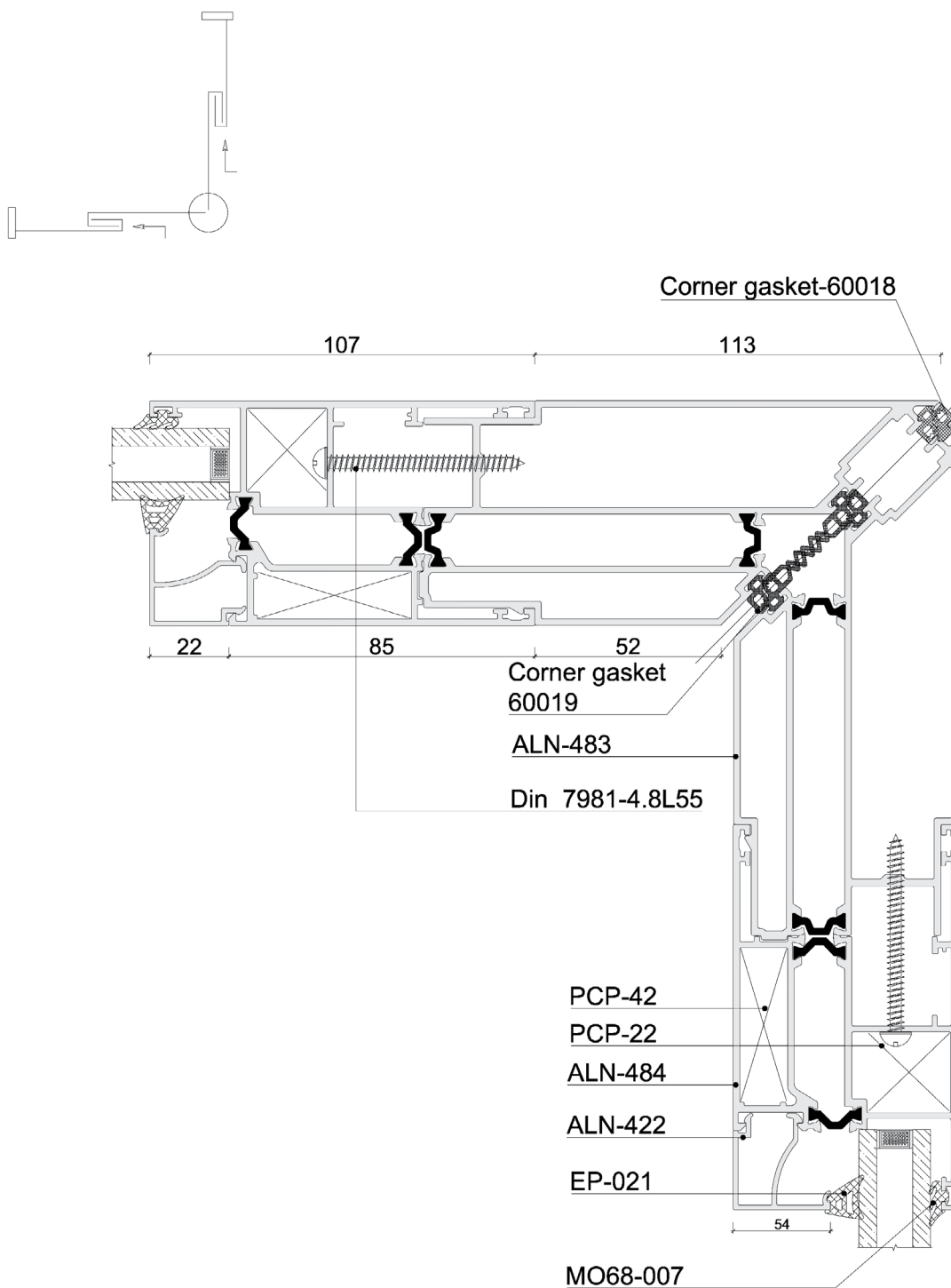
Lift & Slide System 143 Series

Fabrication Details



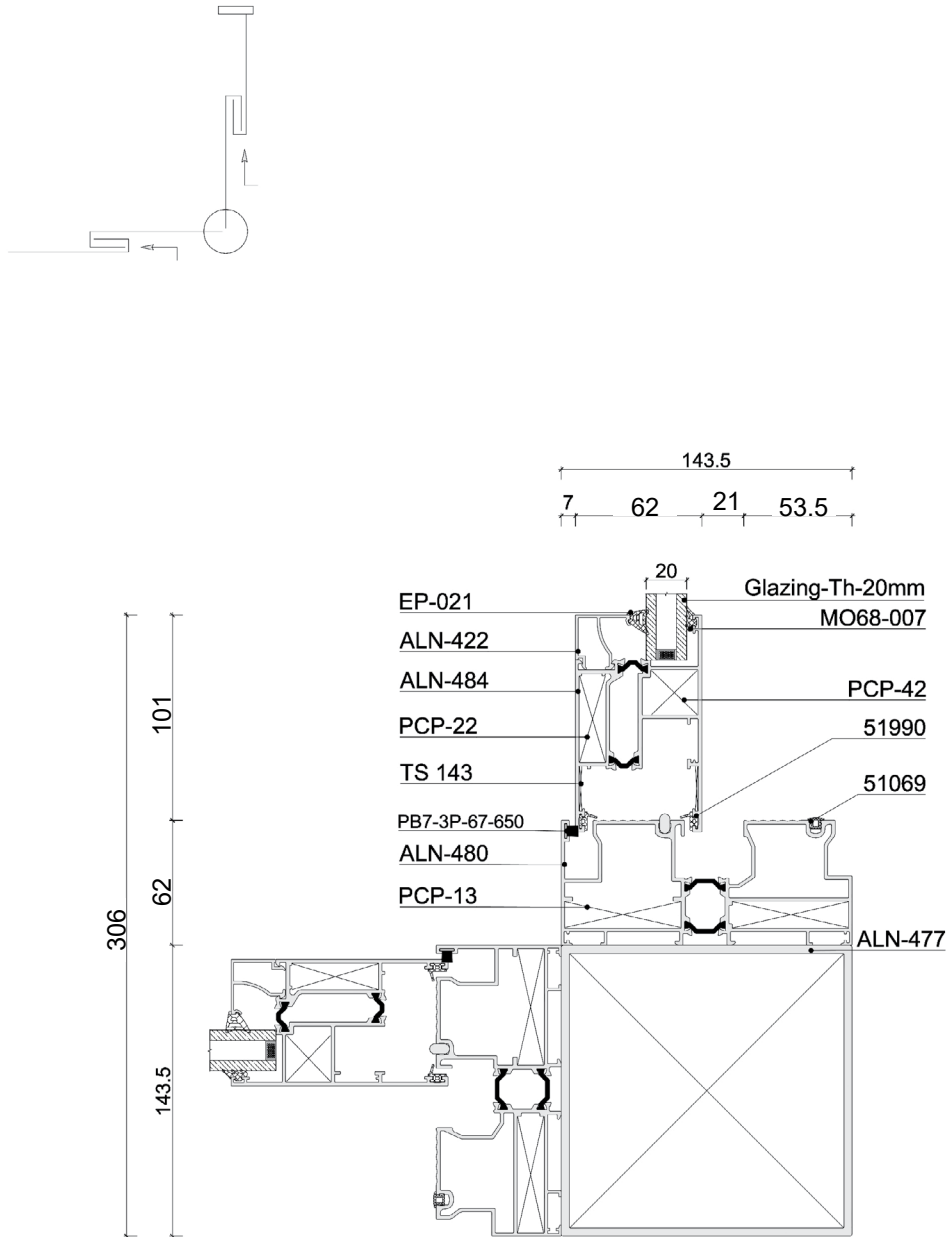
Lift & Slide System 143 Series

Fabrication Details



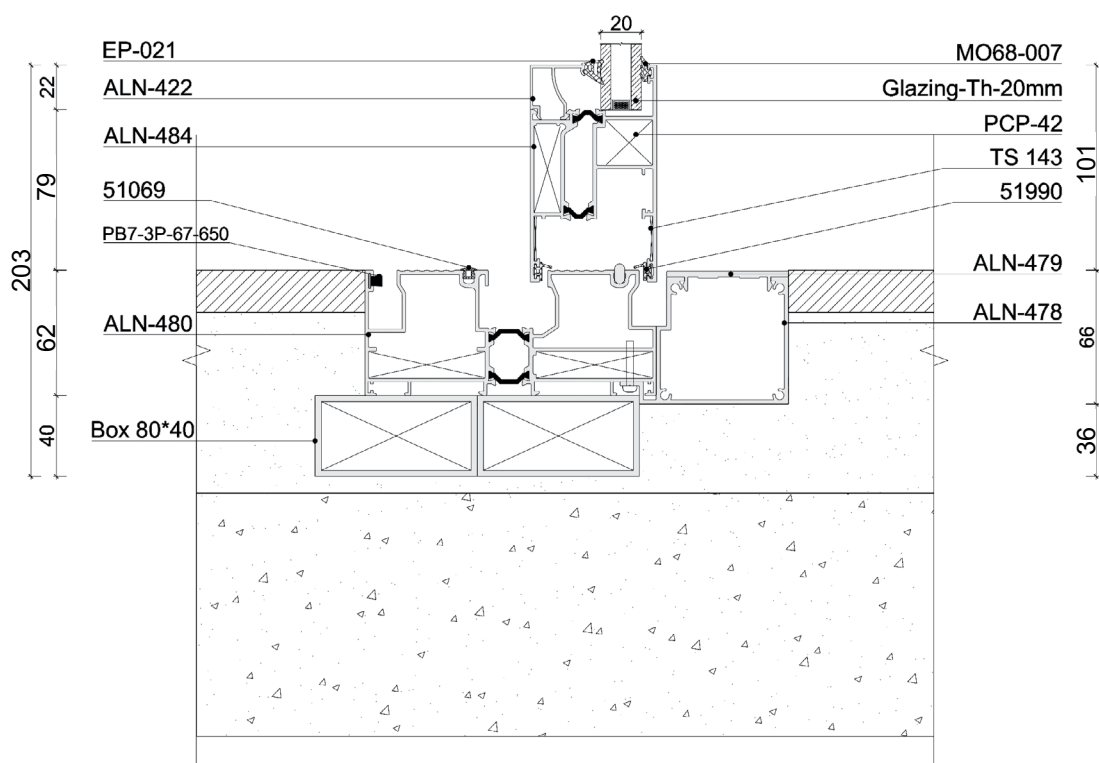
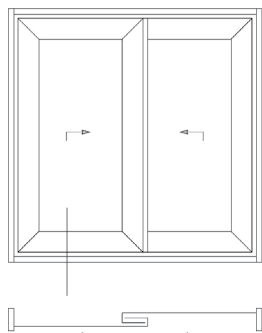
Lift & Slide System 143 Series

Fabrication Details



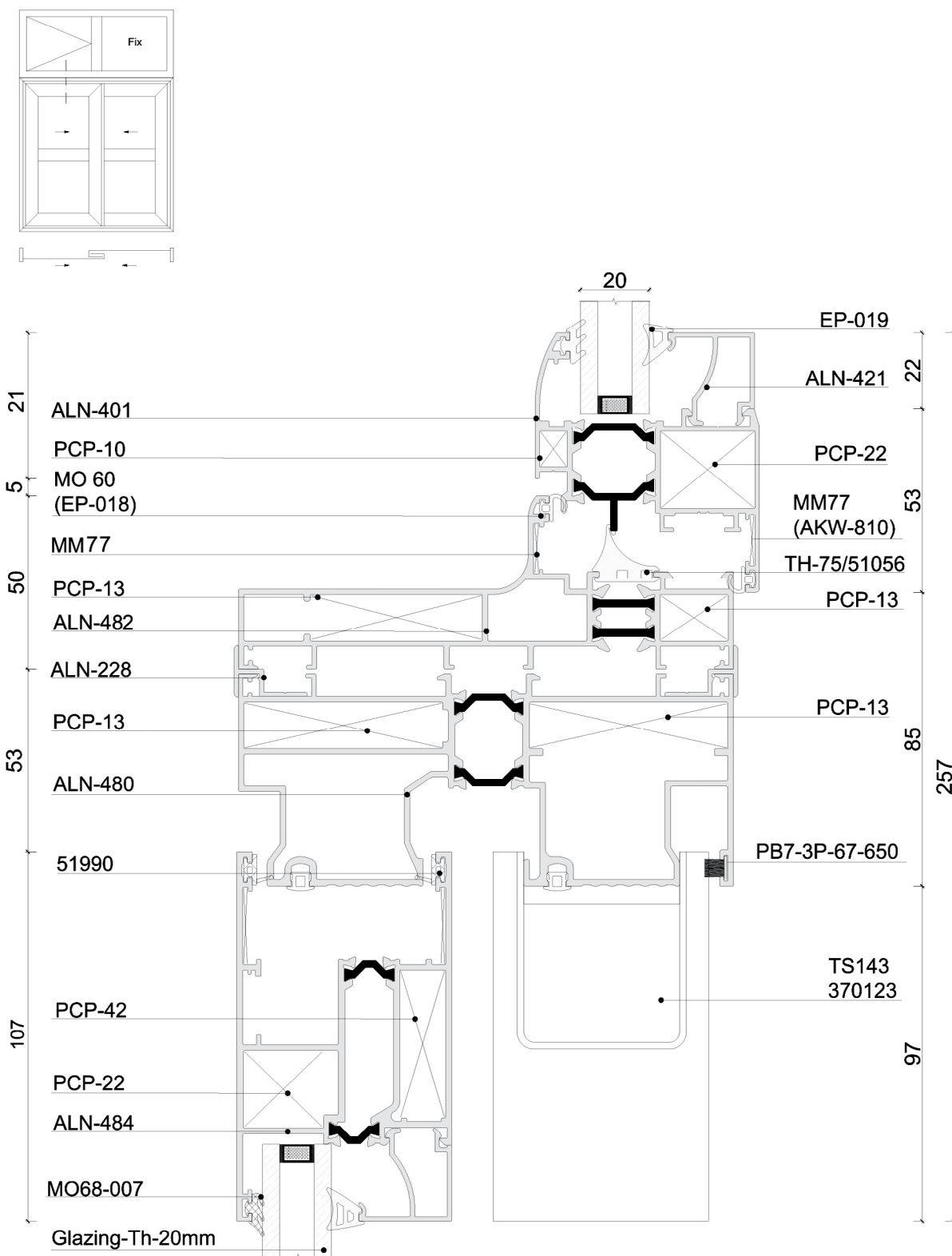
Lift & Slide System 143 Series

Fabrication Details



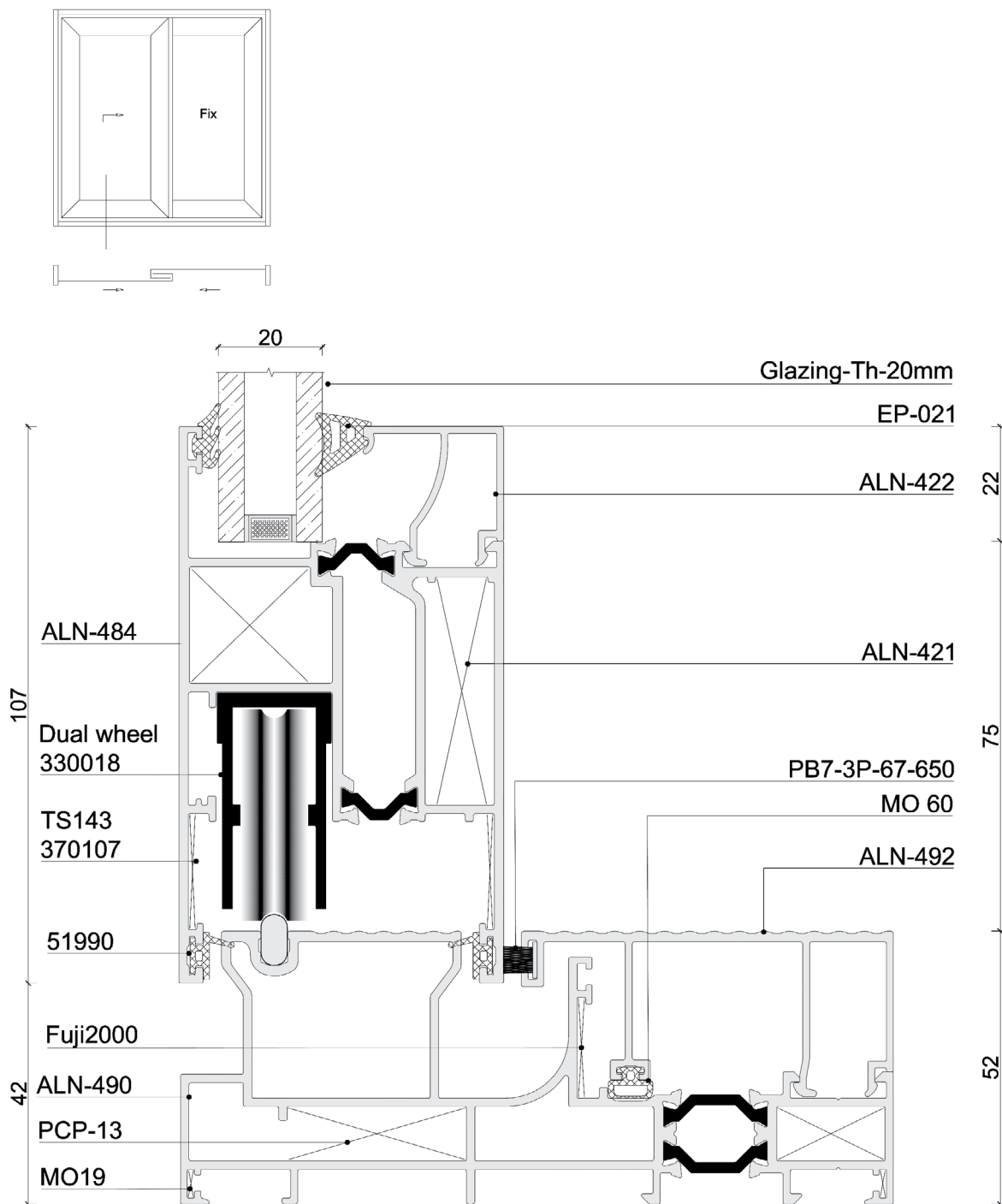
Lift & Slide System 143 Series

Fabrication Details



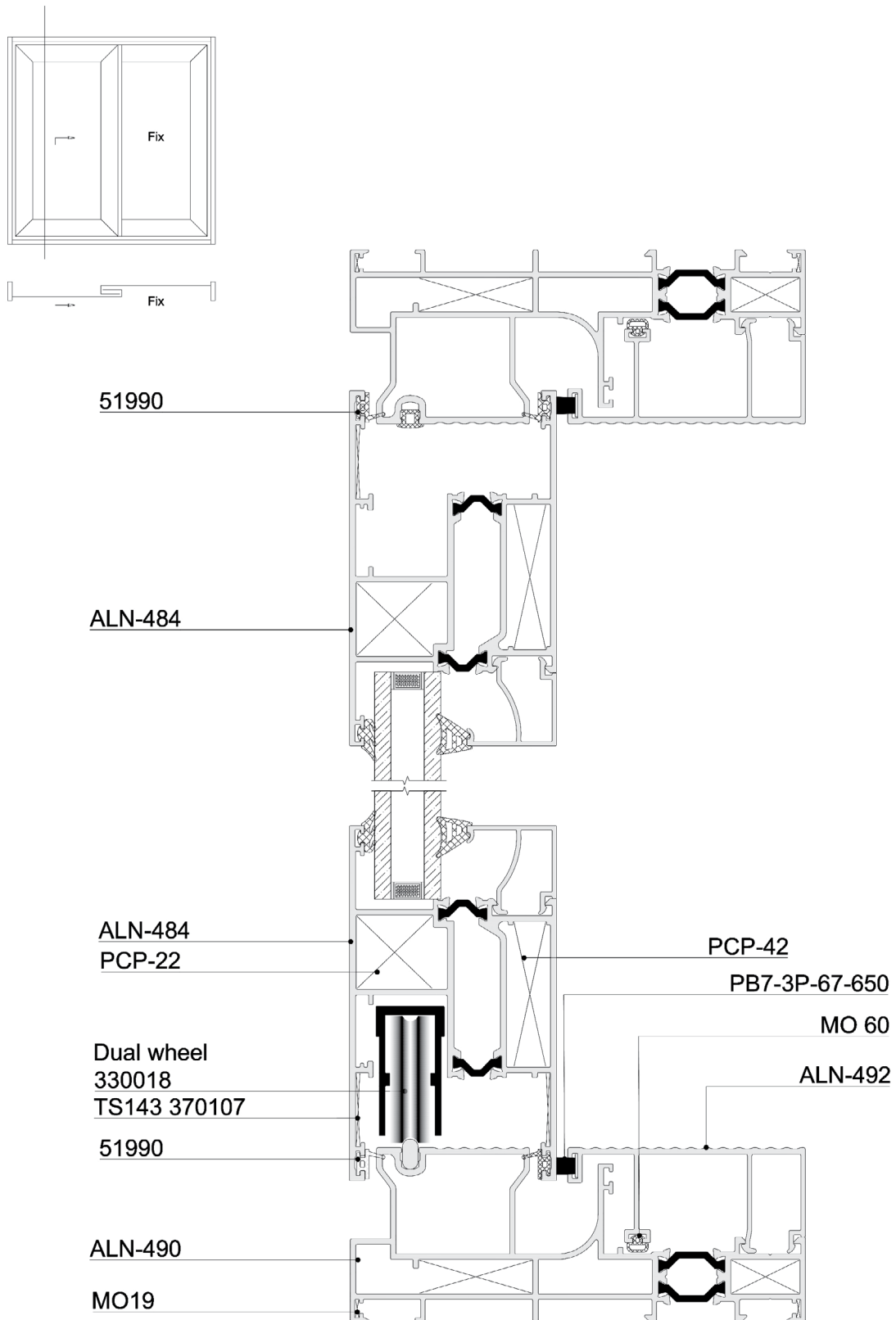
Lift & Slide System 143 Series

Fabrication Details



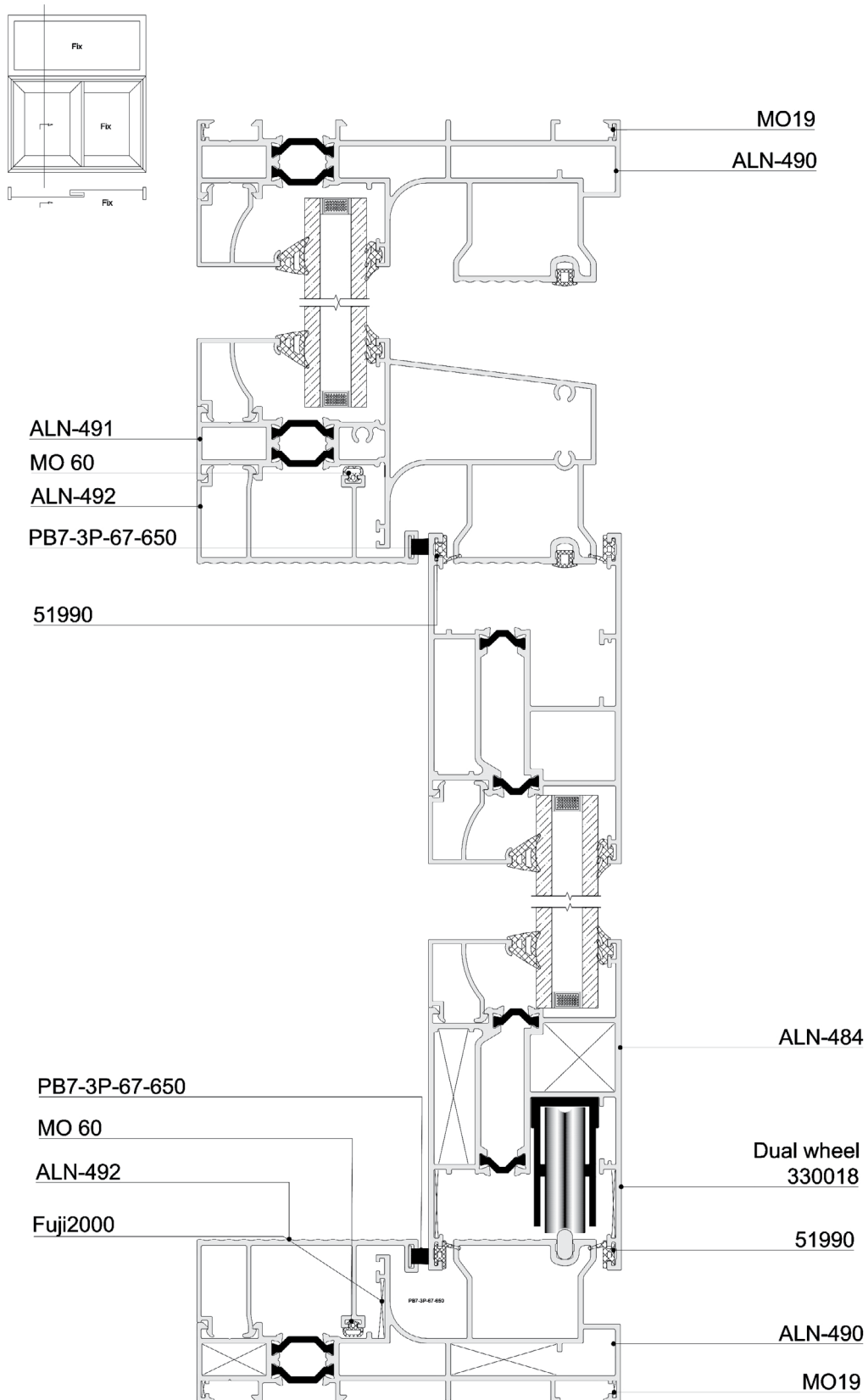
Lift & Slide System 143 Series

Fabrication Details



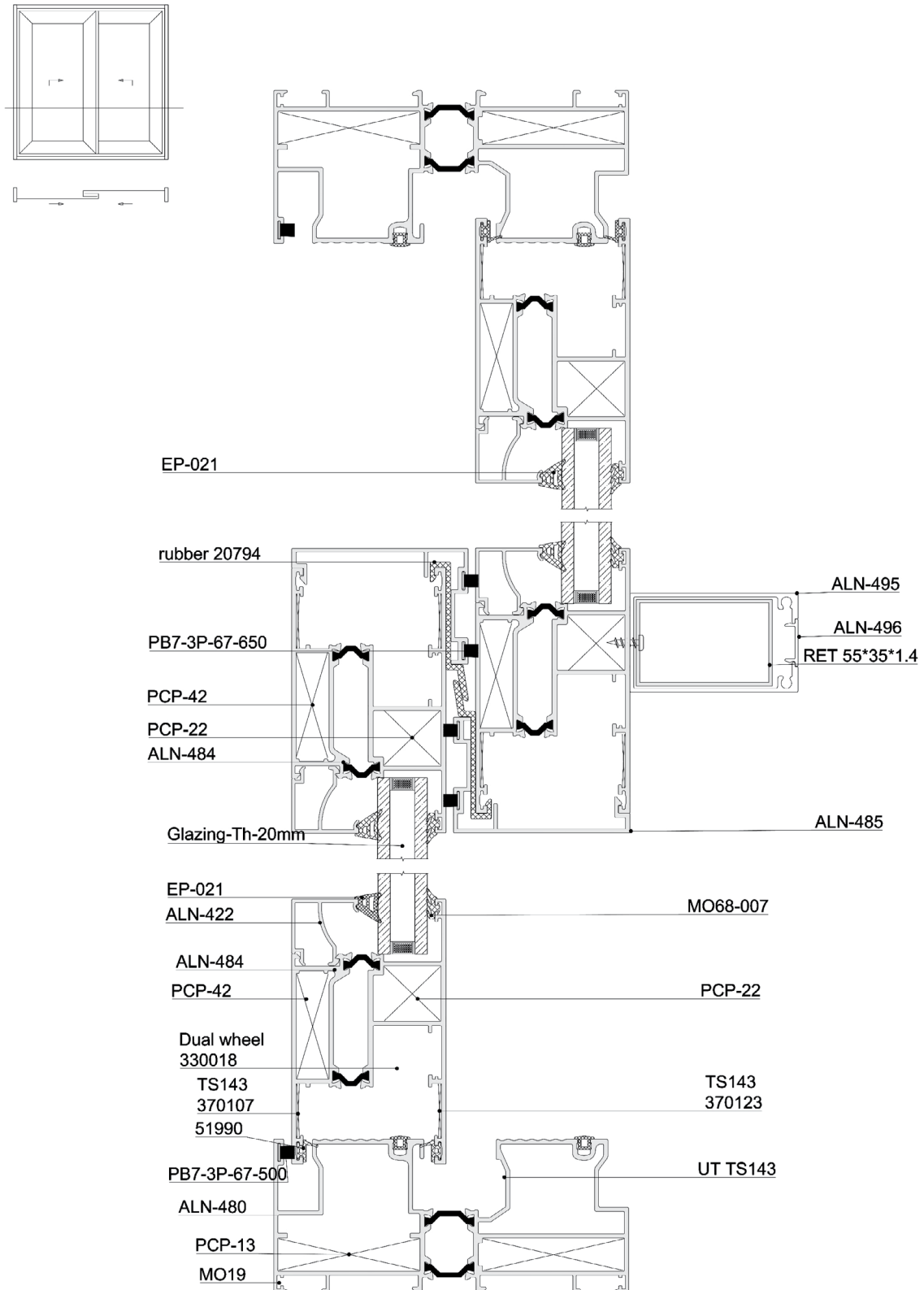
Lift & Slide System 143 Series

Fabrication Details



Lift & Slide System 143 Series

Fabrication Details

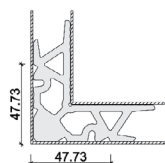


Lift & Slide System 143 Series Assembly Drawing

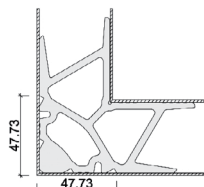
ALN - 484



A: Wide plastic-TS 143
370108



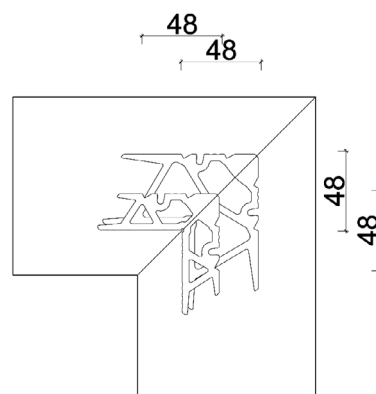
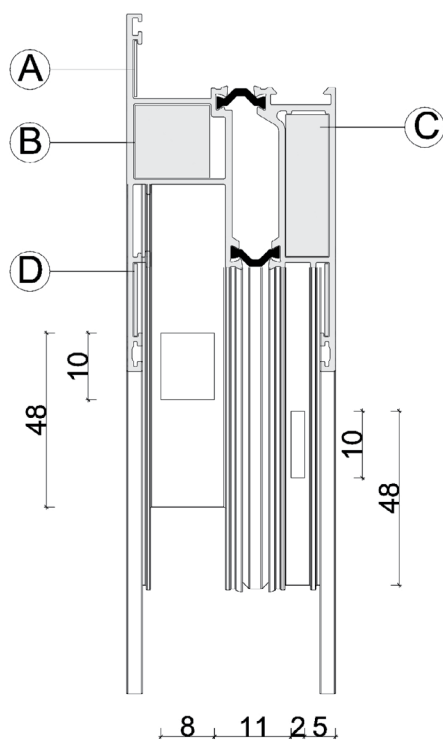
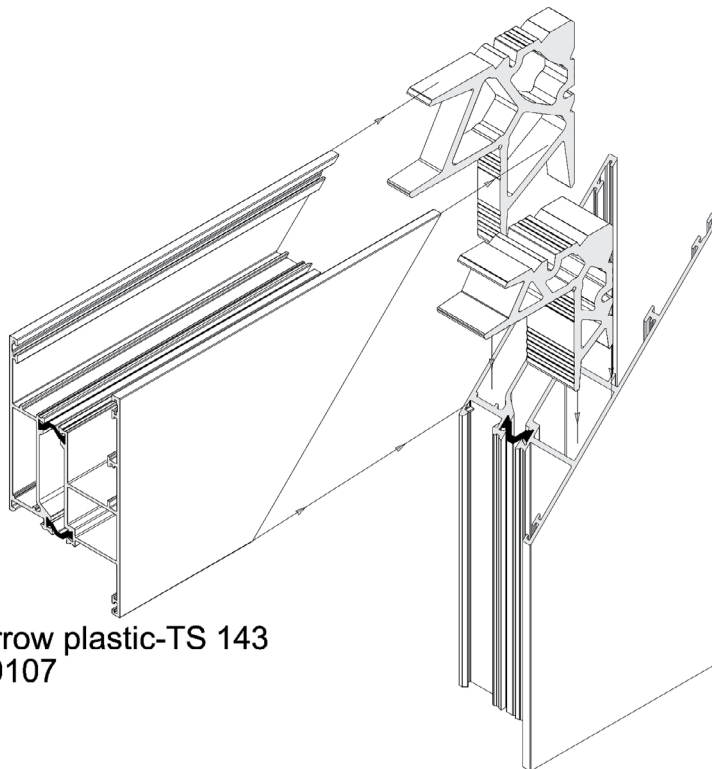
B: PCP-22/22mm



C: PCP-42/12mm



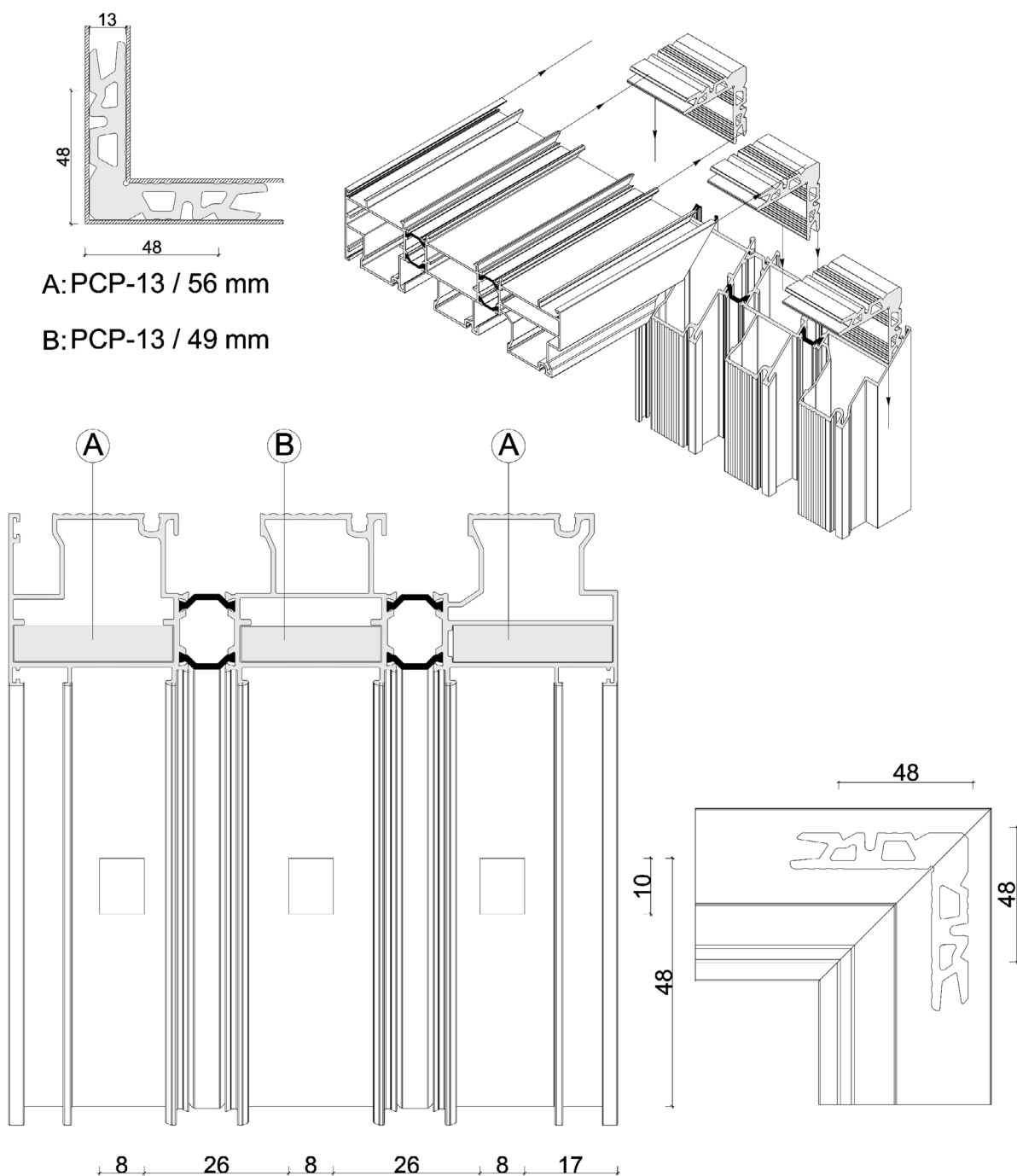
D: Narrow plastic-TS 143
370107



Lift & Slide System 143 Series

Assembly Drawing

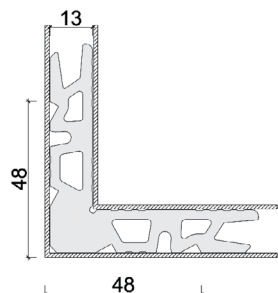
ALN - 481



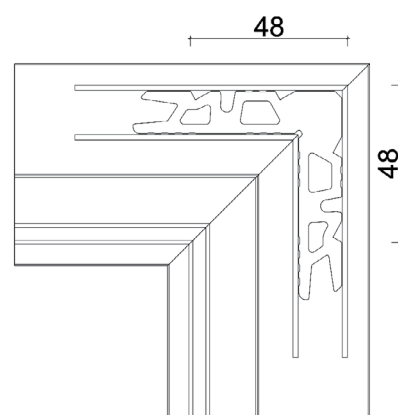
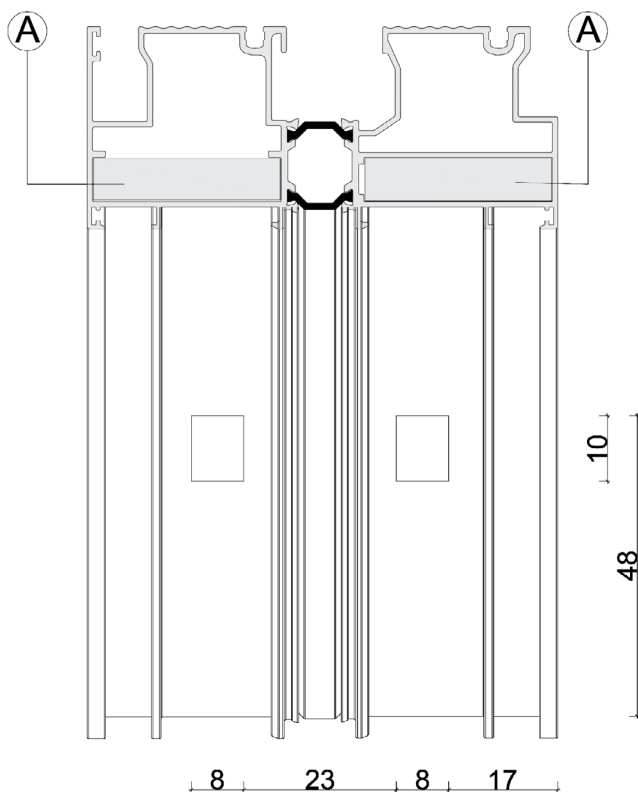
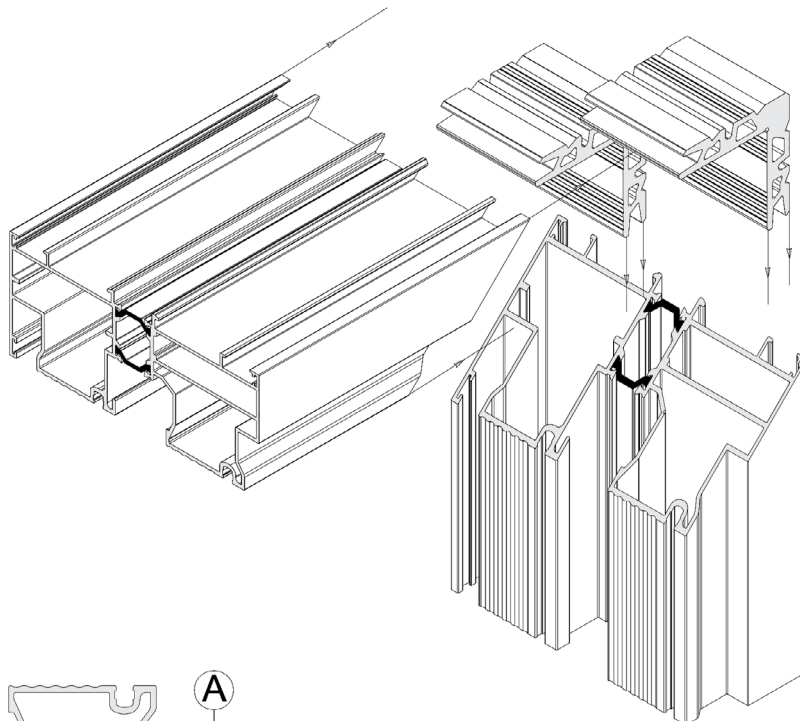
Lift & Slide System 143 Series

Assembly Drawing

ALN - 480



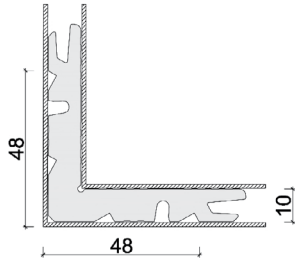
A: PCP-13 / 57 mm



Lift & Slide System 143 Series

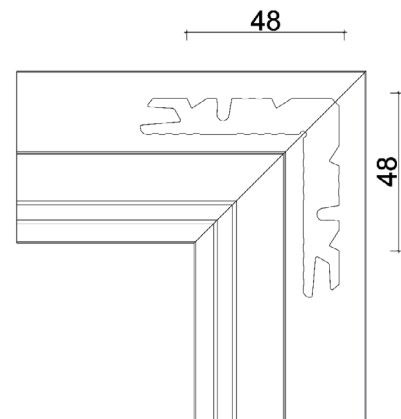
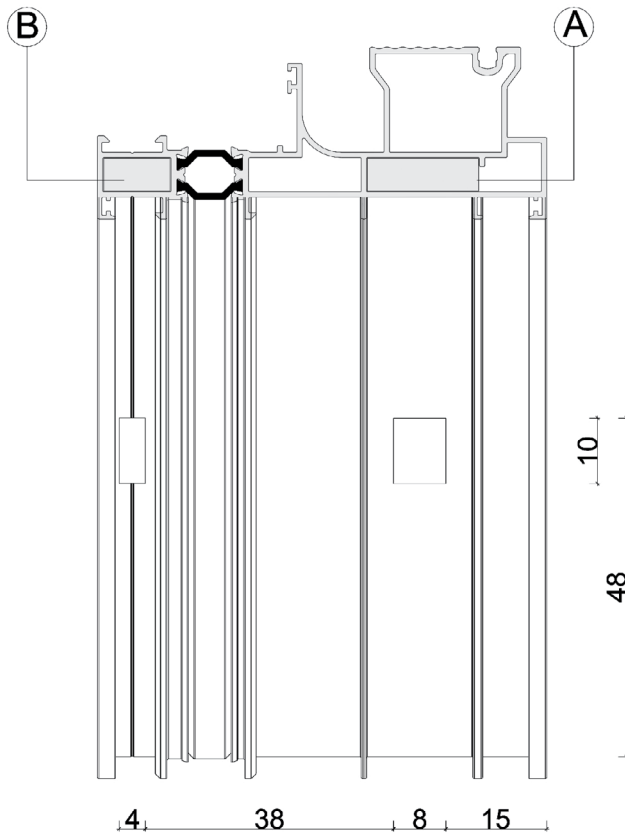
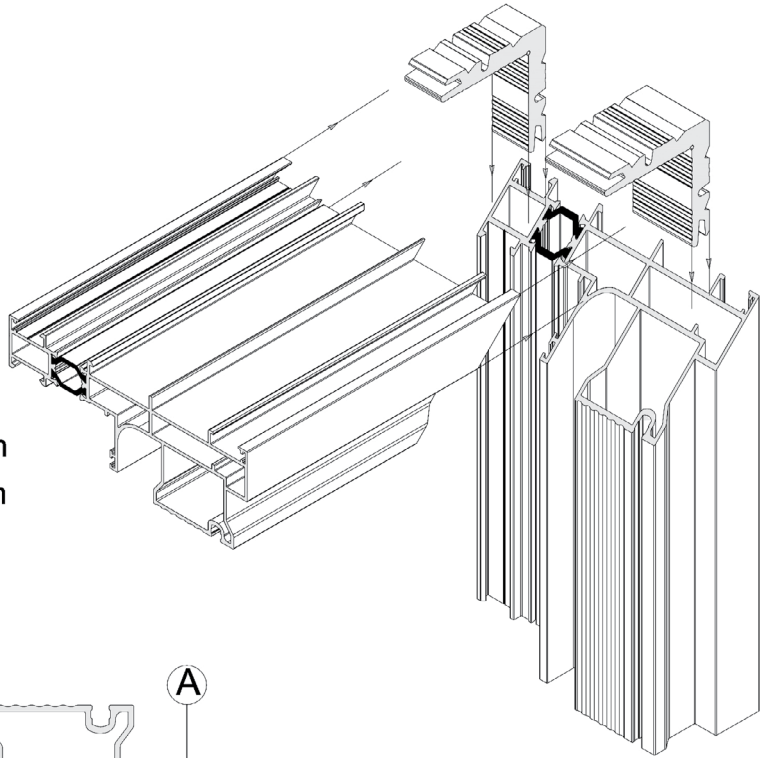
Assembly Drawing

ALN - 490

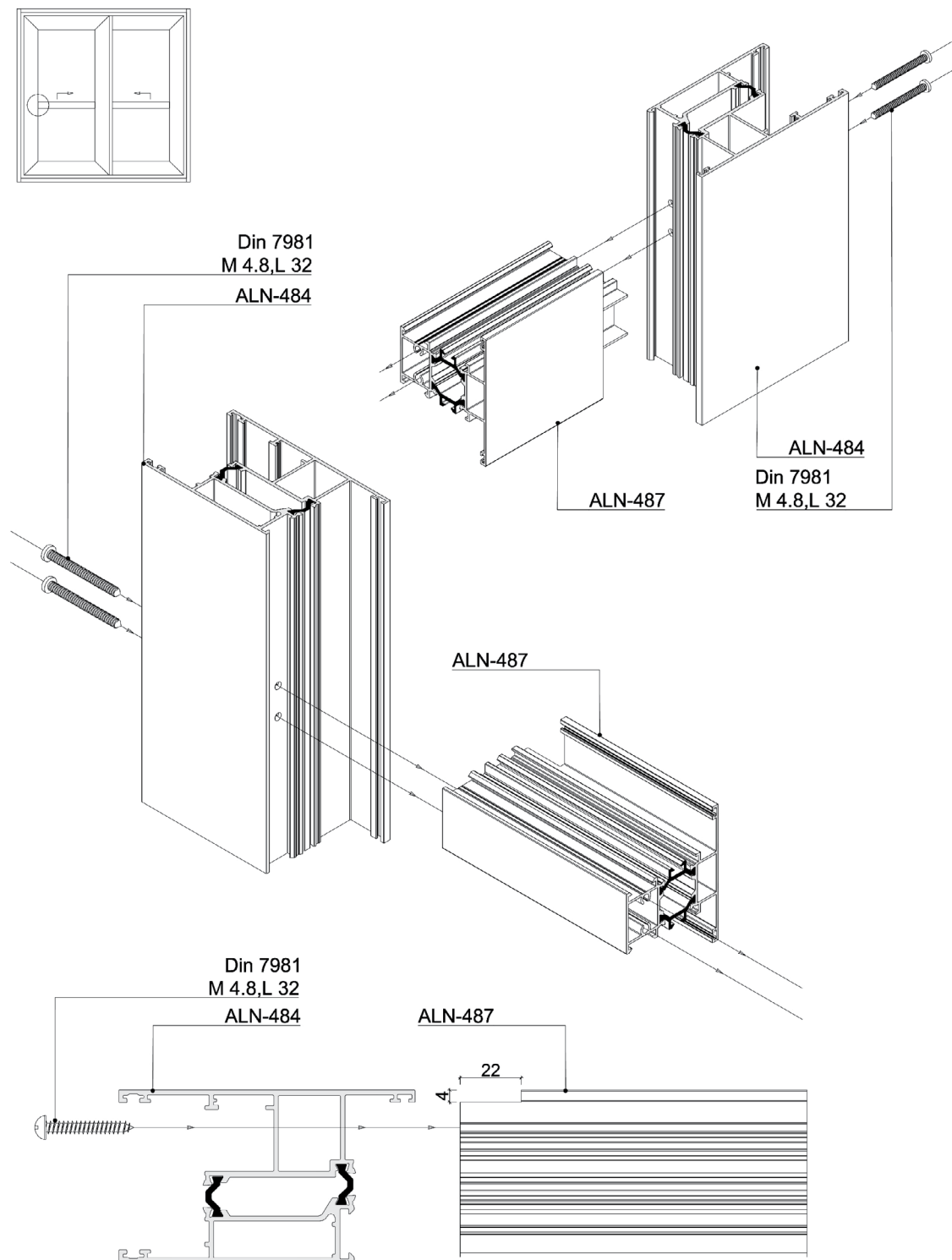


A:PCP-10 / 33.5 mm

B:PCP-10 / 19.8 mm

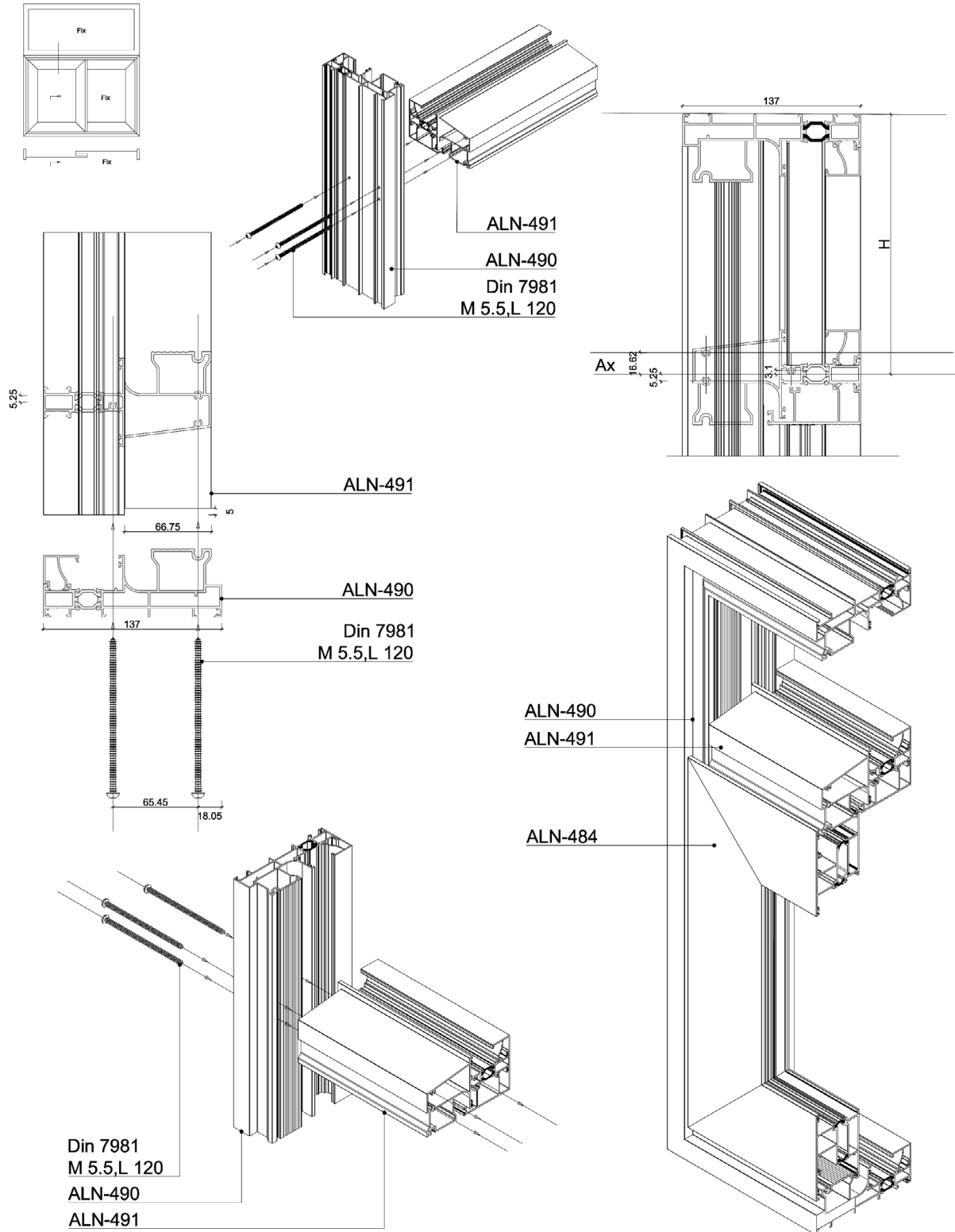


Assembly Drawing



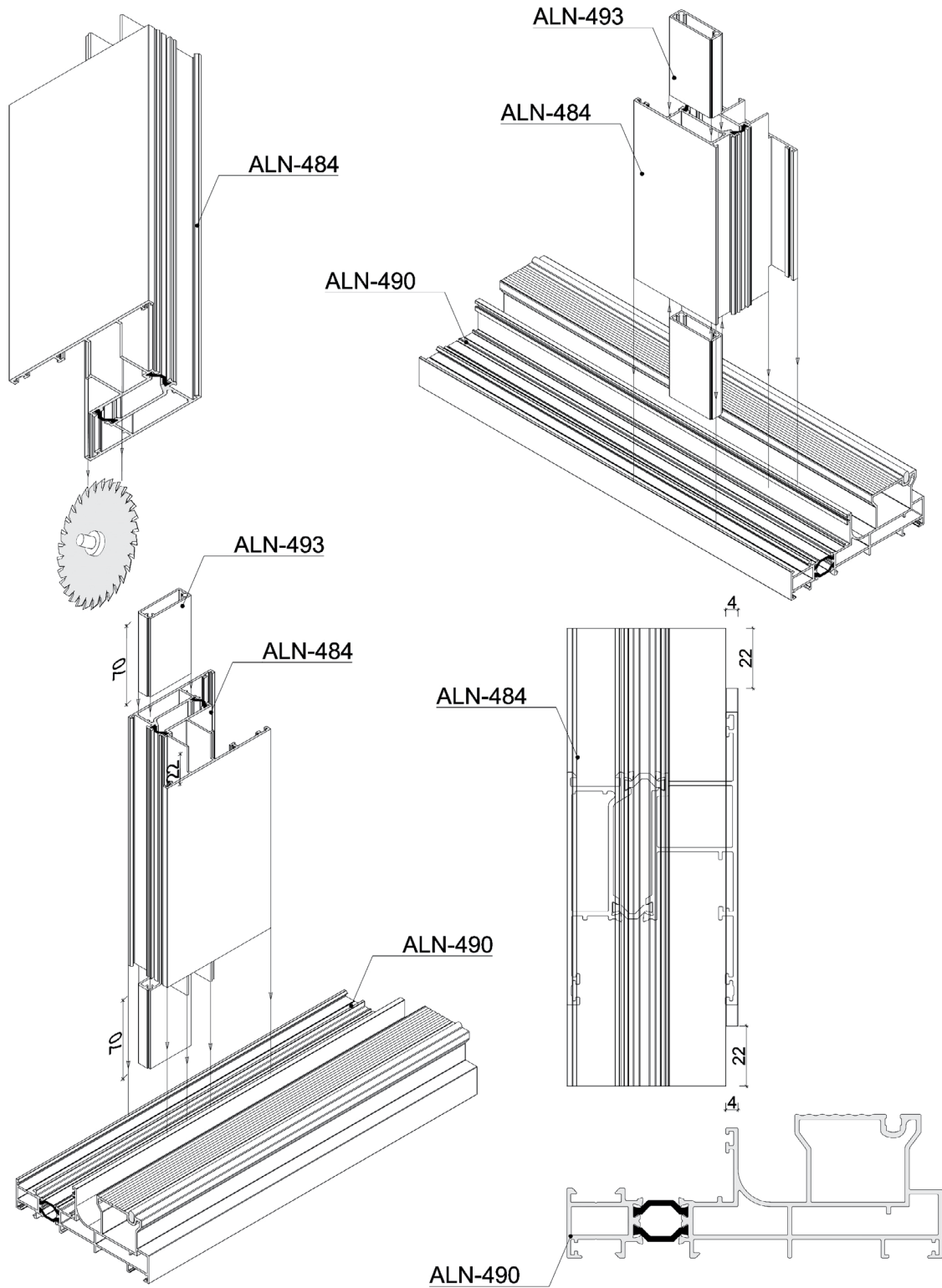
Lift & Slide System 143 Series

Assembly Drawing



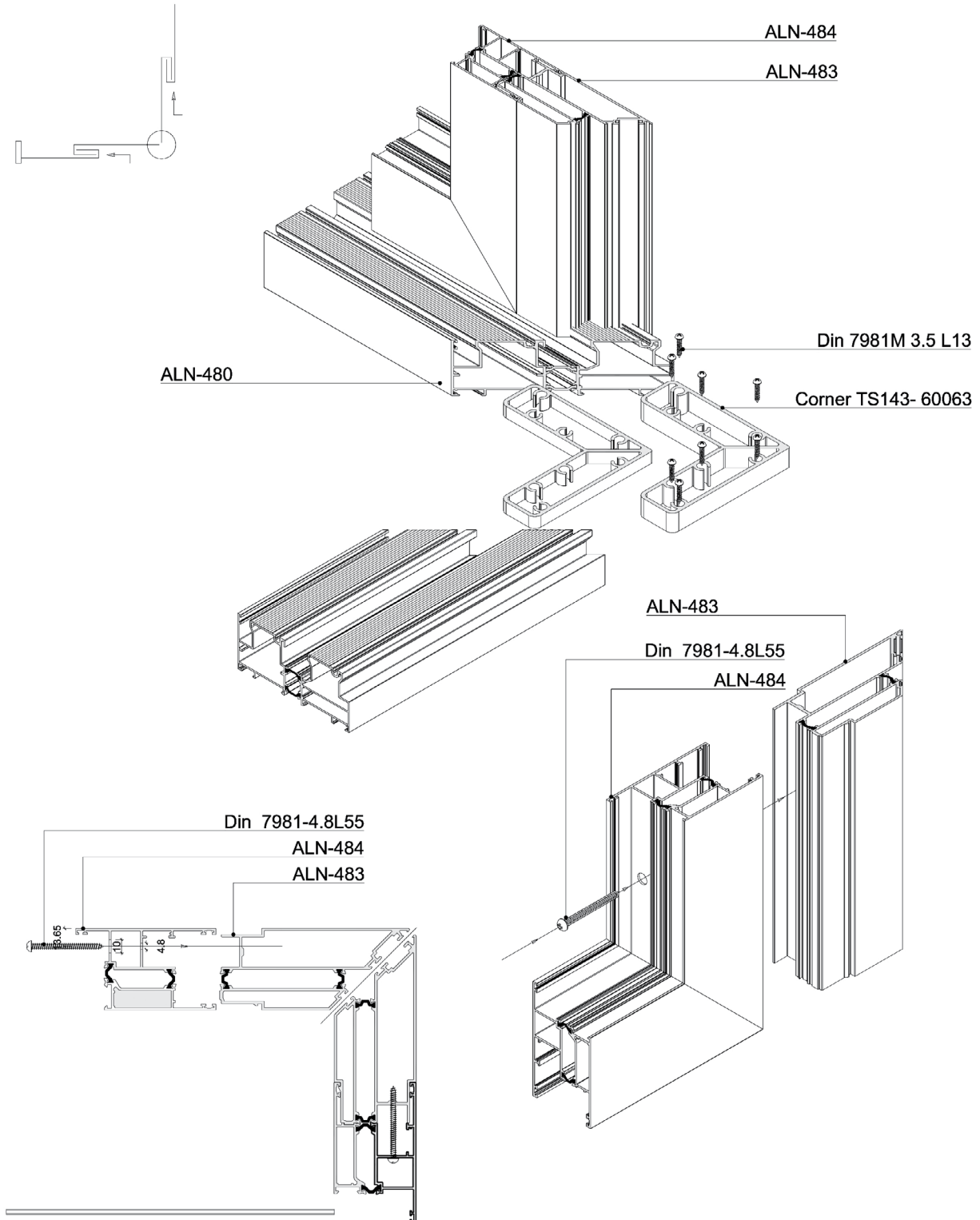
Lift & Slide System 143 Series

Assembly Drawing



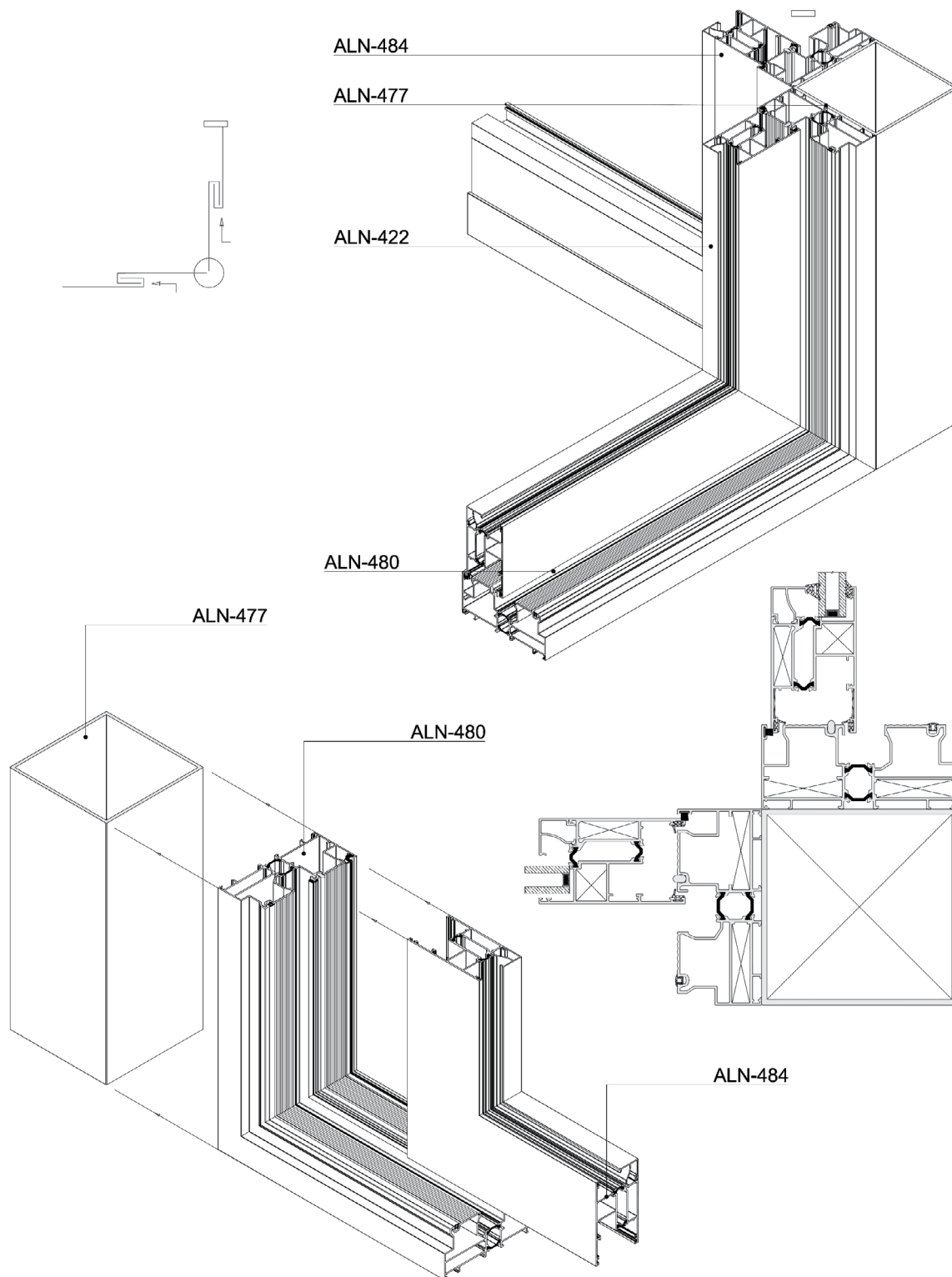
Lift & Slide System 143 Series

Assembly Drawing



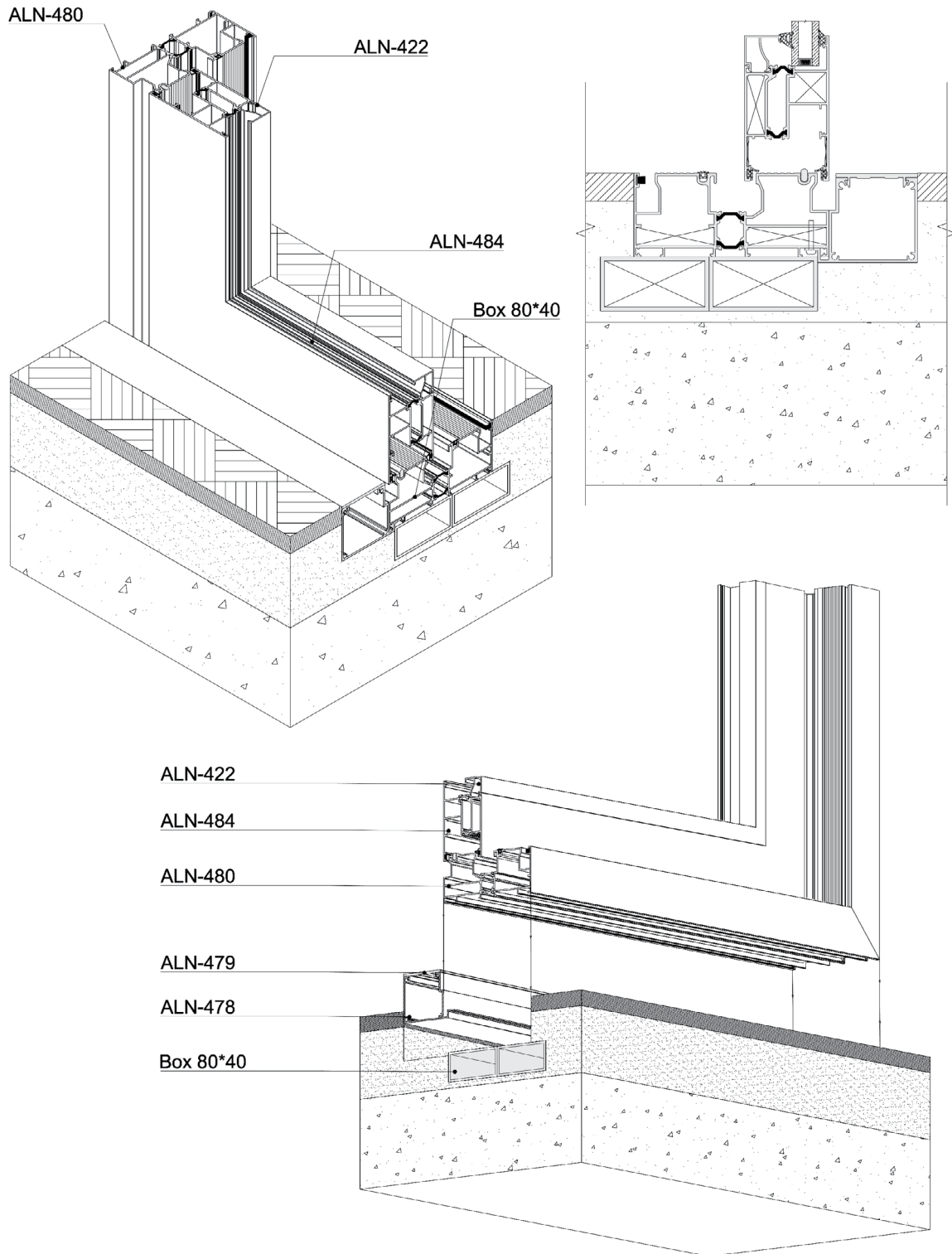
Lift & Slide System 143 Series

Assembly Drawing



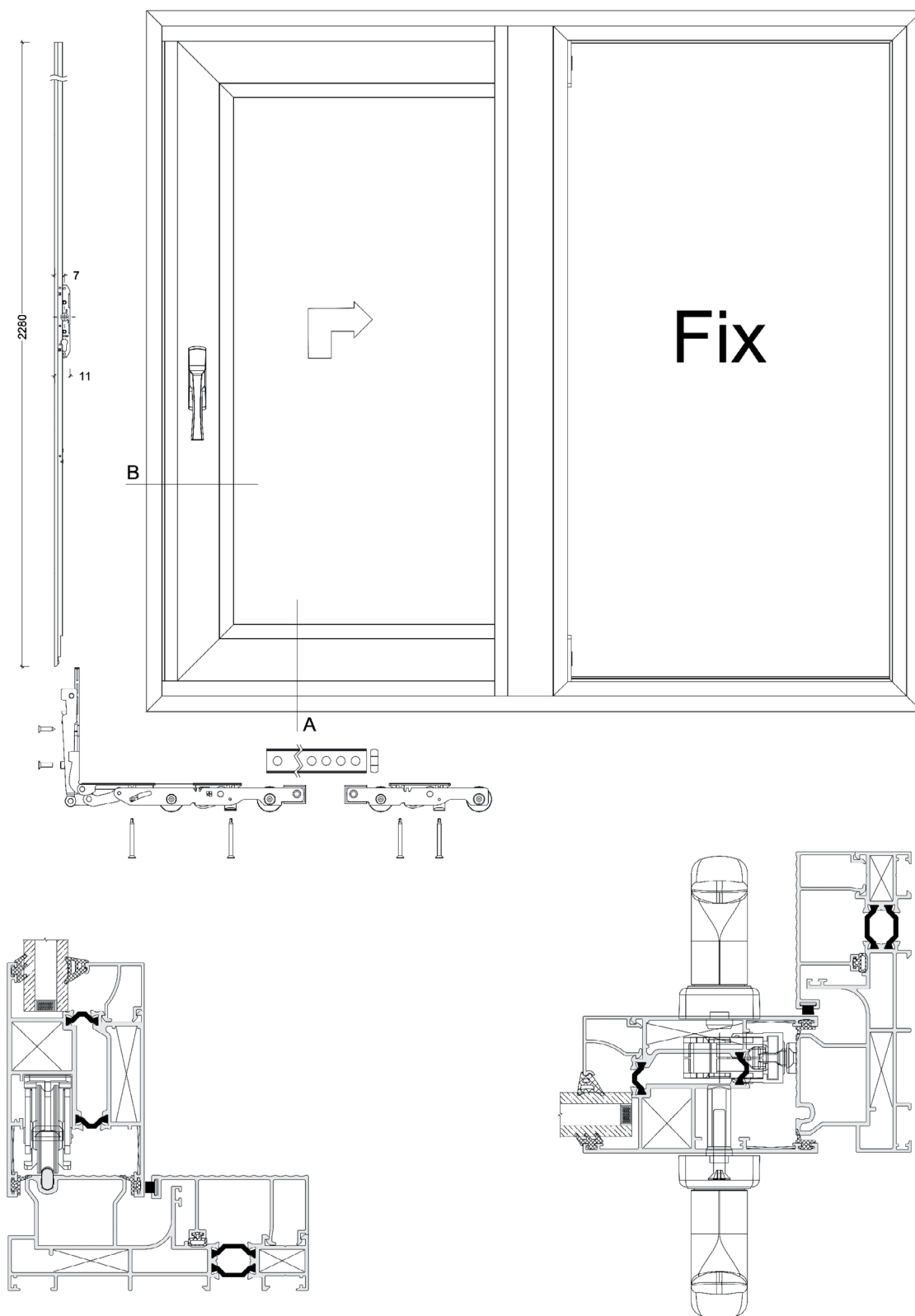
Lift & Slide System 143 Series

Assembly Drawing



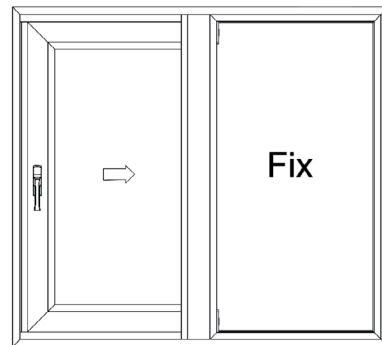
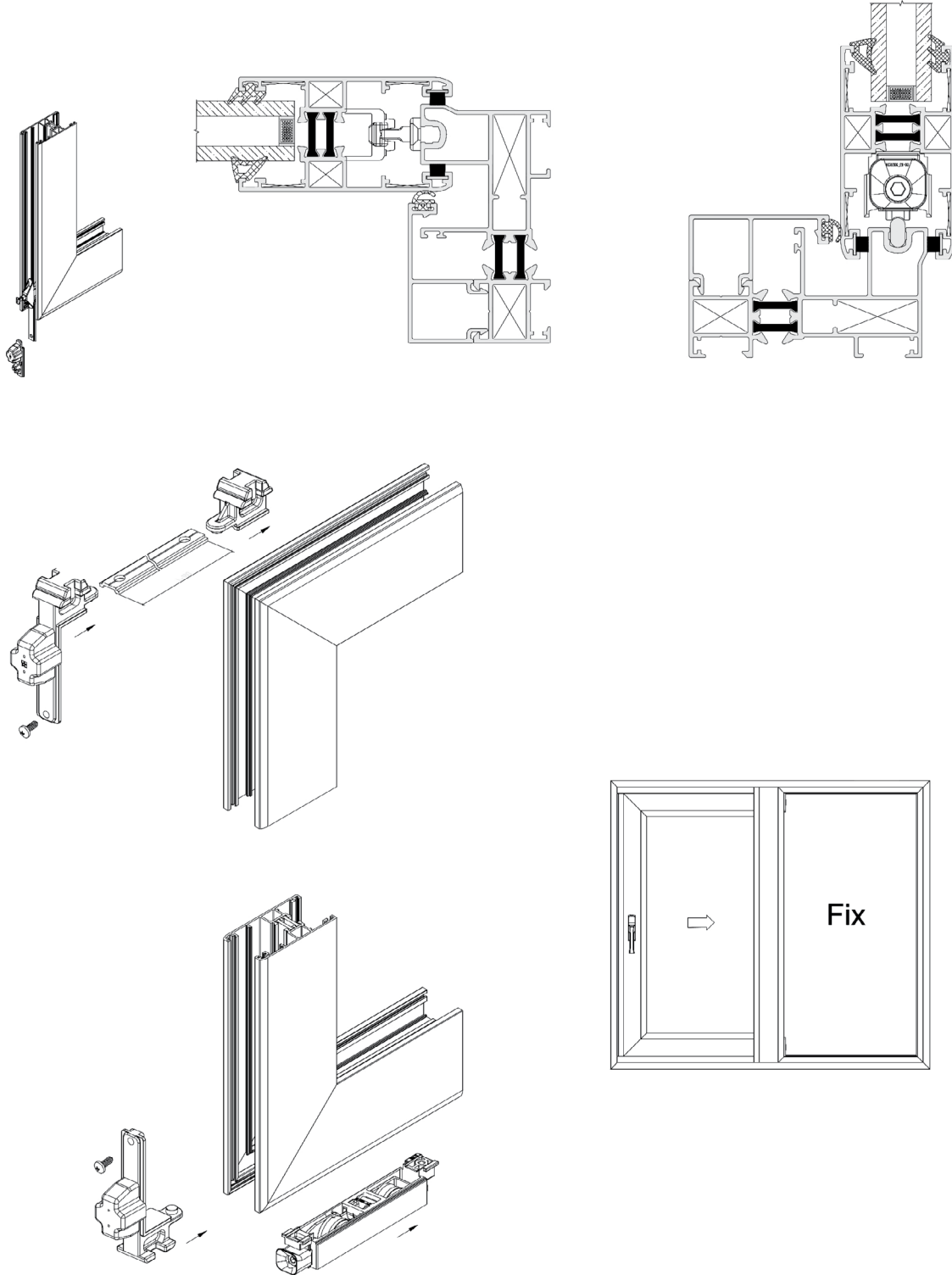
Lift & Slide System 143 Series

Hardware installation



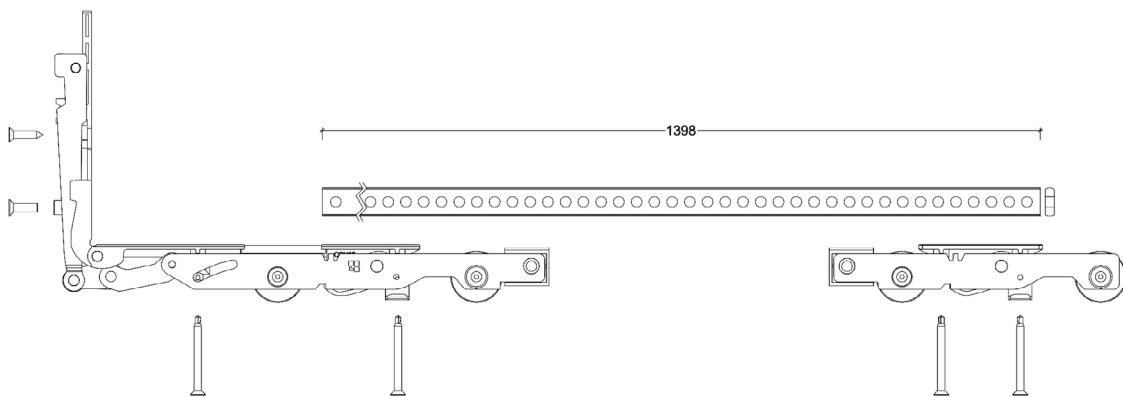
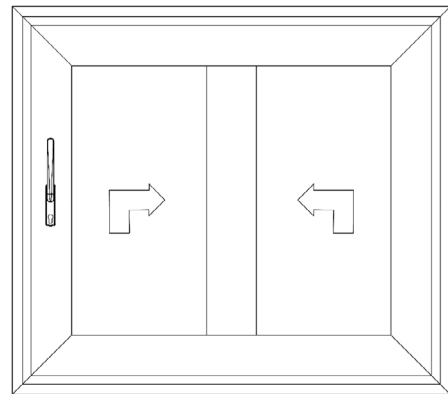
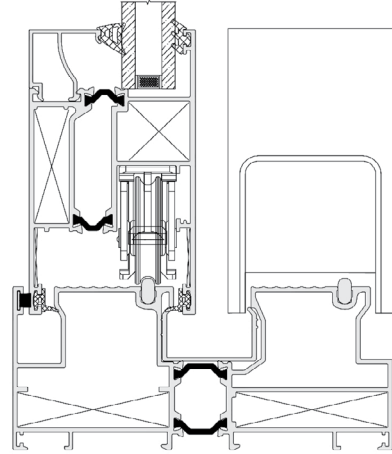
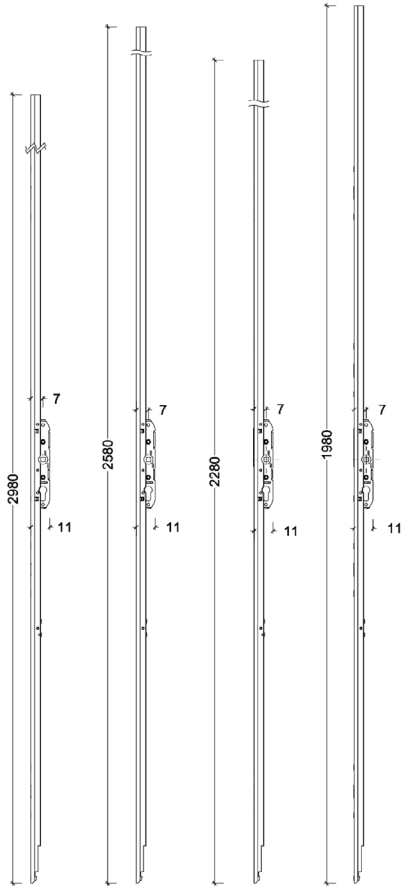
Lift & Slide System 143 Series

Hardware installation



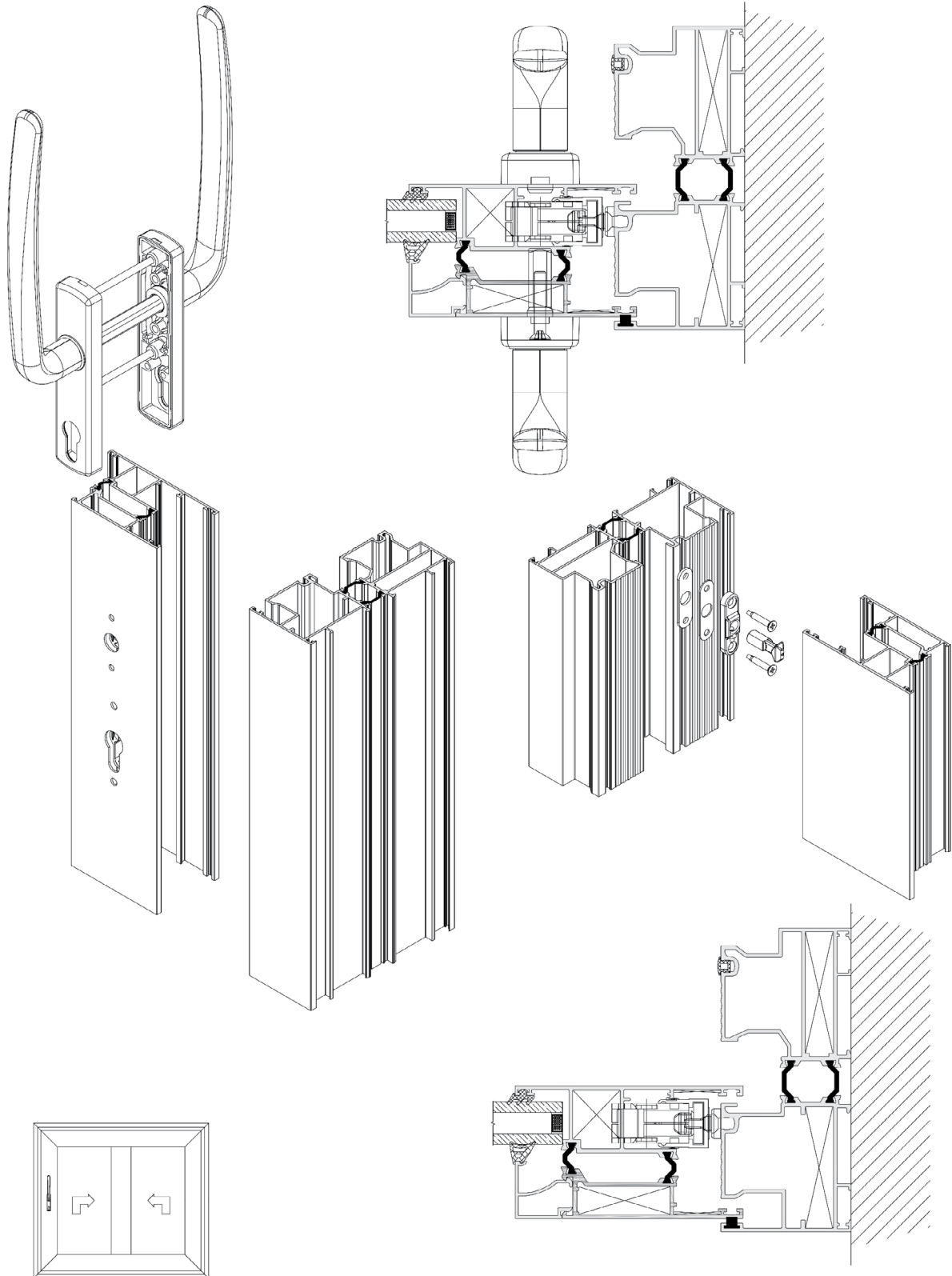
Lift & Slide System 143 Series

Hardware installation



Lift & Slide System 143 Series

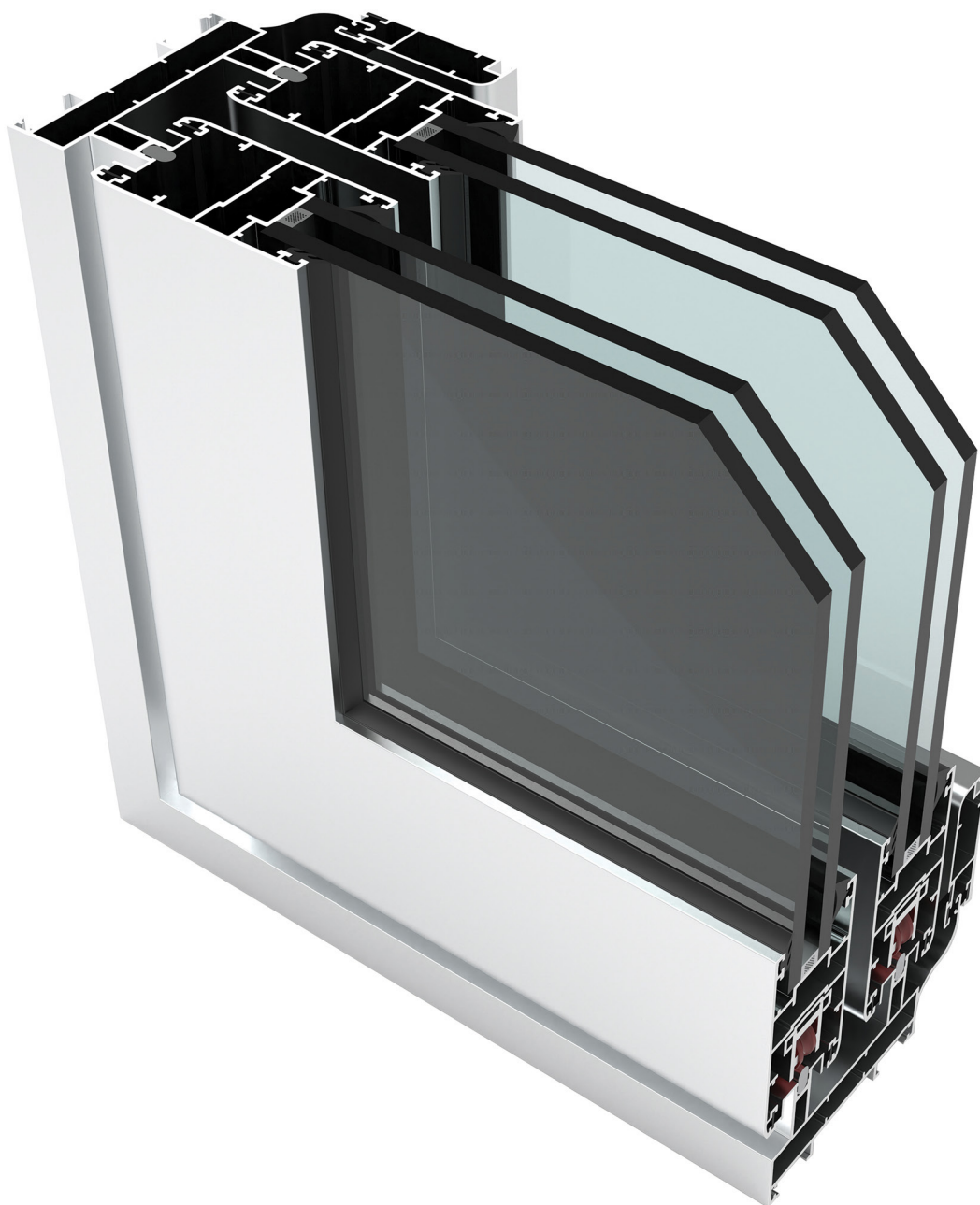
Hardware installation





ALN 300

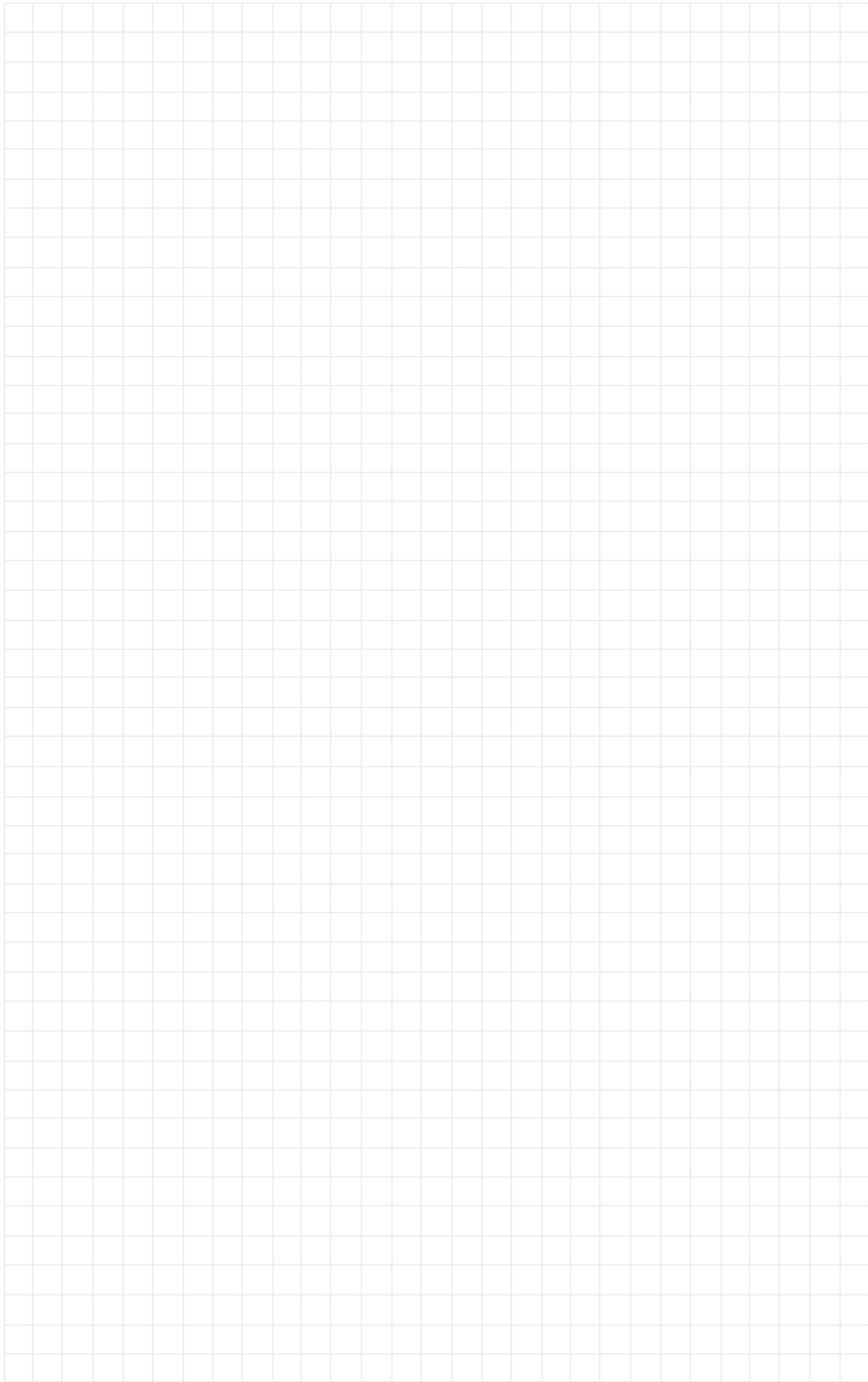
Normal Systems





AKROLL

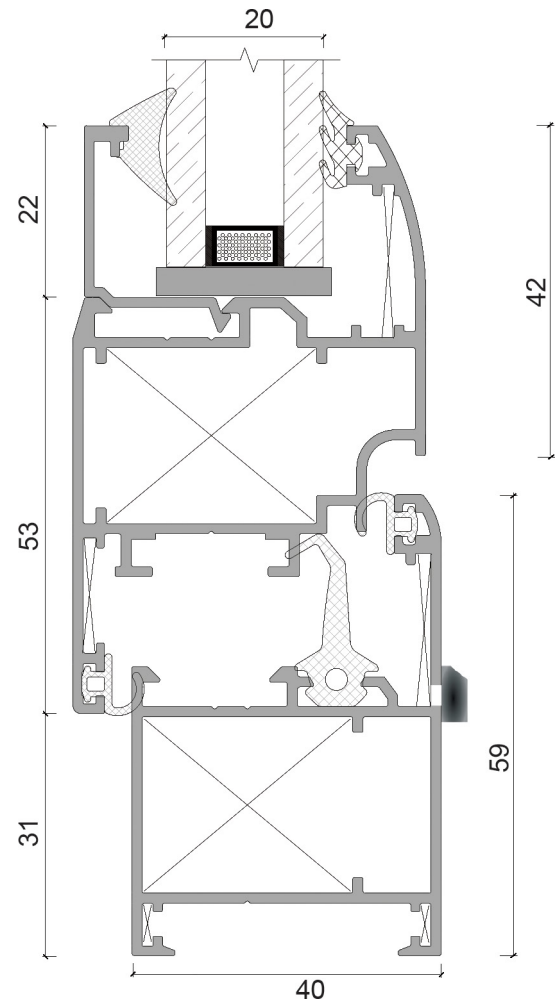
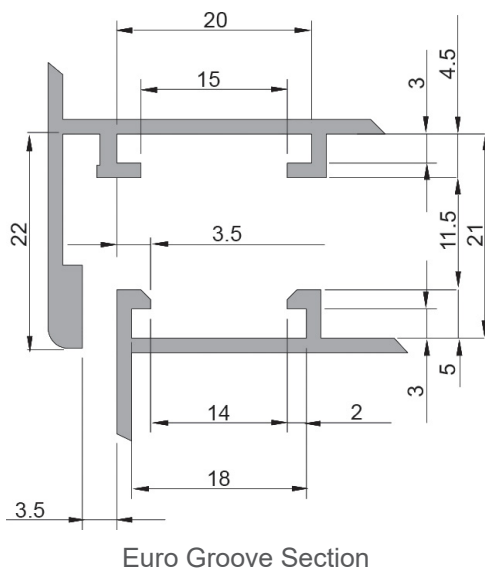
Product of Alumroll Novin Co.





Hinged System 40 Series

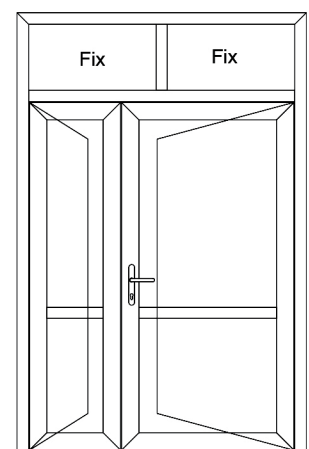
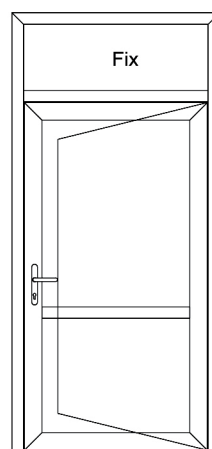
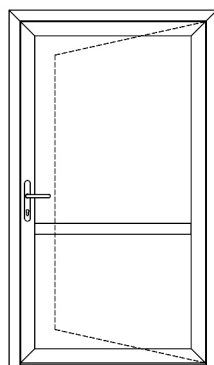
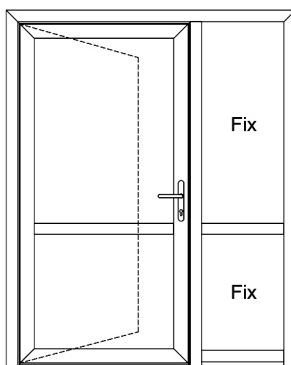
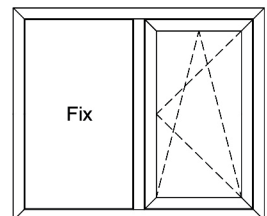
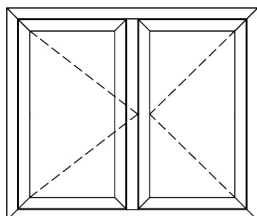
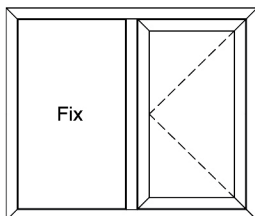
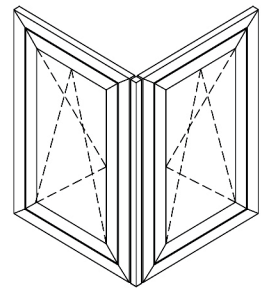
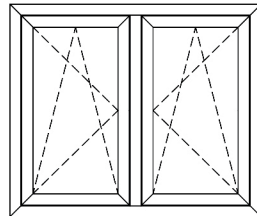
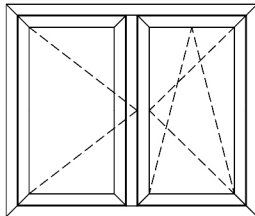
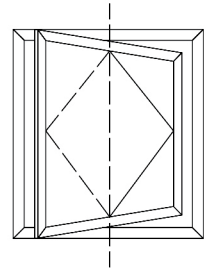
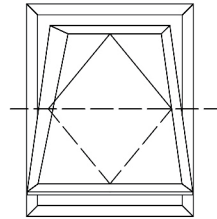
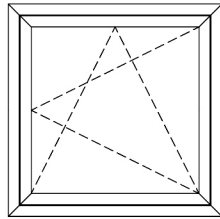
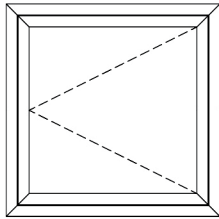
. Profile width:	40 - 77 mm
. Vent width:	45 mm
. Wall thickness:	1.3 - 1.4 mm
. Rubber description:	EPDM DIM 7863
. Glass thickness:	6 - 24 mm
. Aluminum alloy extrusion:	EN AW 6063 T5
. Safety drainage system	
. Various typologies	





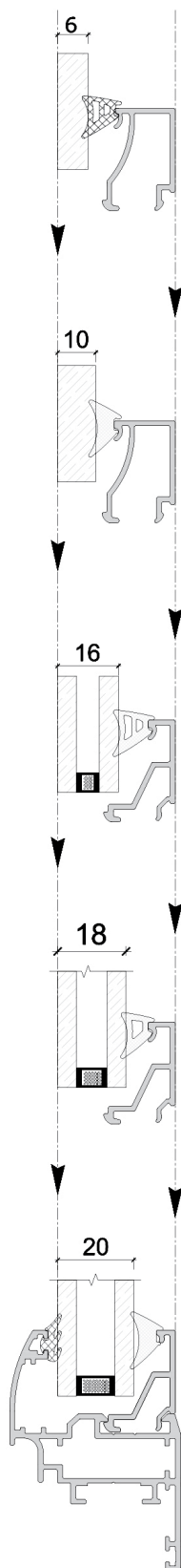
Hinged System 40 Series

Typologies

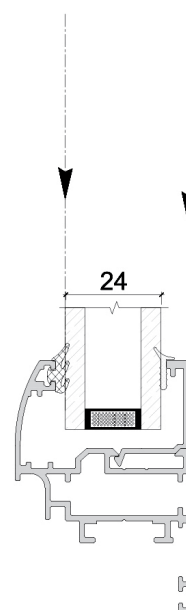
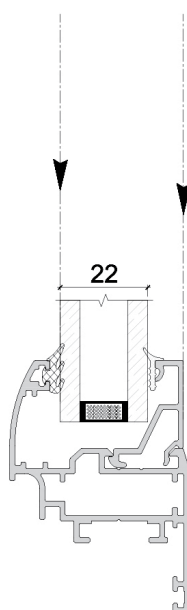


Hinged System 40 Series

Glazing Table

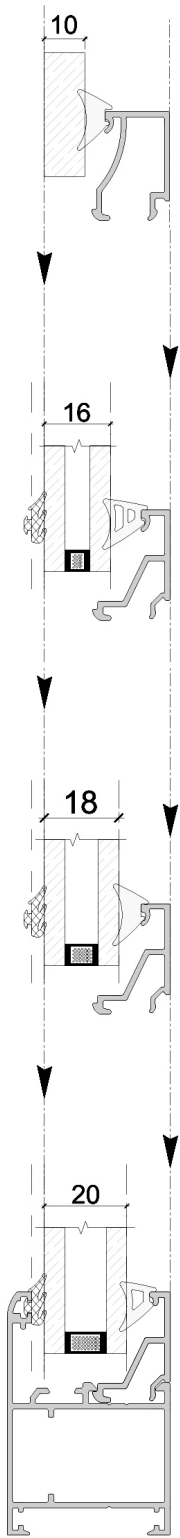


6 mm	 EP-021	 MO68-007	 ALN-423
10 mm	 EP-016	 MO68-007	 ALN-423
16 mm	 EP-021	 MO68-007	 ALN-322
18 mm	 EP-019	 MO68-007	 ALN-322
20 mm	 EP-016	 MO68-007	 ALN-321
22 mm	 EP-015	 MO68-007	 ALN-322
24 mm	 EP-015	 MO68-007	 ALN-424

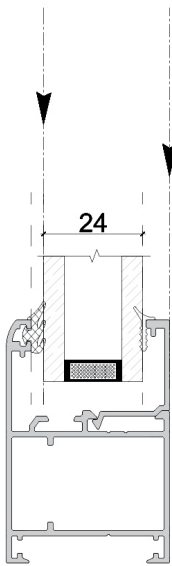
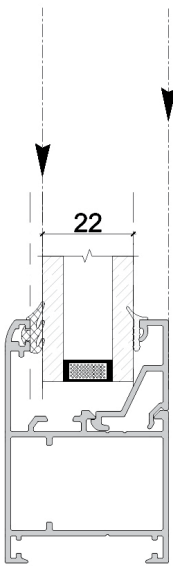


Hinged System 40 Series

Glazing Table

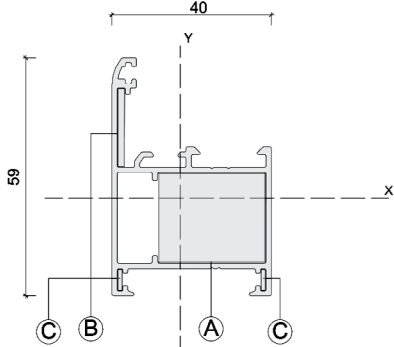
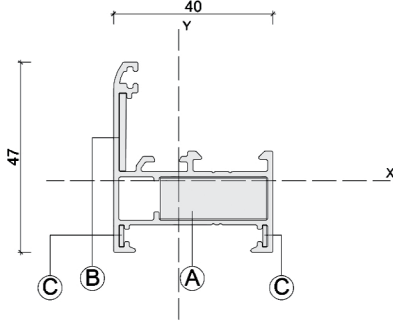
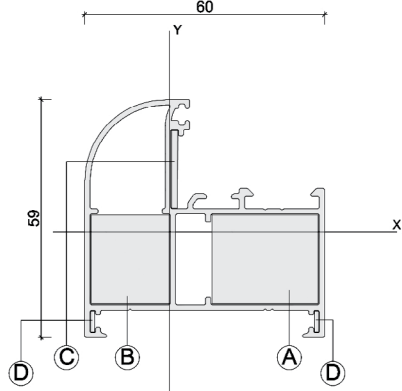
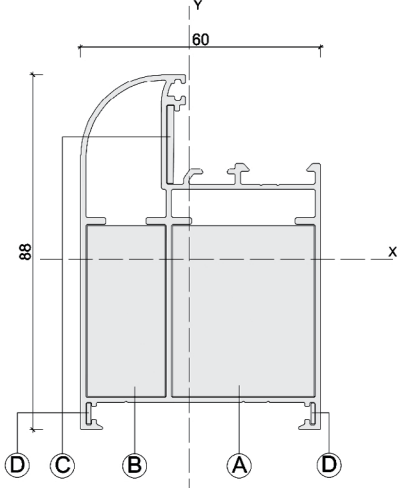


10 mm	 EP-016	 MO68-007	 ALN-423
16 mm	 EP-021	 MO68-007	 ALN-322
18 mm	 EP-016	 MO68-007	 ALN-322
20 mm	 EP-021	 MO68-007	 ALN-321
22 mm	 EP-015	 MO68-007	 ALN-322
24 mm	 EP-015	 MO68-007	 ALN-424



Hinged System 40 Series

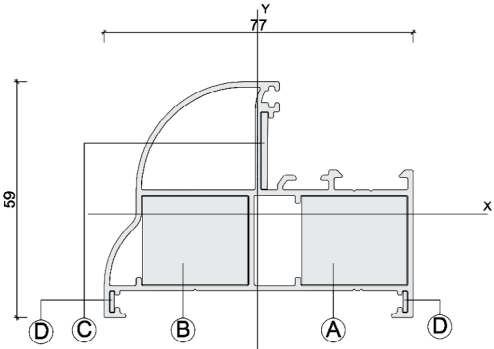
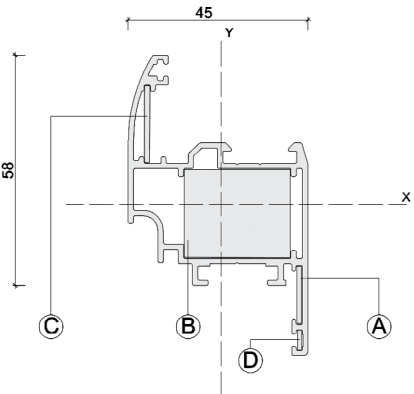
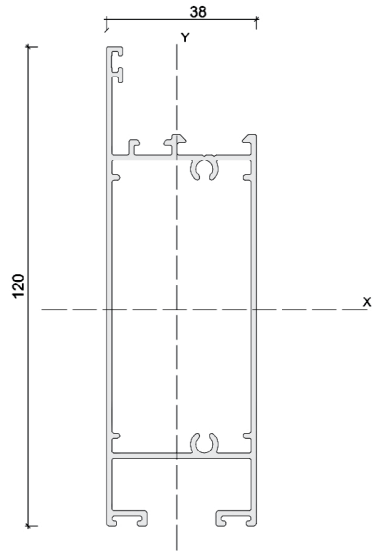
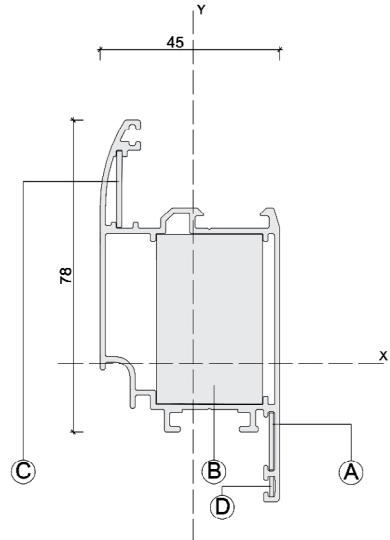
Profile & Accessories Information

			
I_x : 7.25 cm ⁴	I_y : 6.41 cm ⁴	I_x : 3.53 cm ⁴	I_y : 5.23 cm ⁴
Frame : ALN-300	A: PCP-22/26 mm 	Frame : ALN-307	A: PCP-10 / 26 mm 
Weight: 755 gr/m	B: fuji 2000 	Weight: 670 gr/m	B: fuji 2000 
	C: MO 19 		C: MO 19 
			
I_x : 11.53 cm ⁴	I_y : 15.34 cm ⁴	I_x : 37.32 cm ⁴	I_y : 23.52 cm ⁴
Frame : ALN-306	A: PCP-22 / 26 mm 	Frame : ALN-308	A: PCP-42 / 26 mm 
Weight: 1060 gr/m	B: PCP-22 / 19 mm 	Weight: 1475 gr/m	B: PCP-42 / 19 mm 
	C: fuji 2000 		C: fuji 2000 
	D: MO 19 		D: MO 19 



Hinged System 40 Series

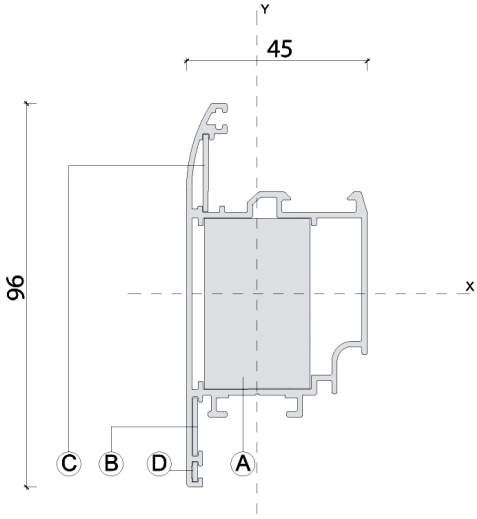
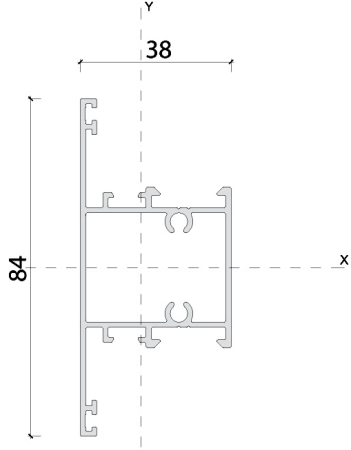
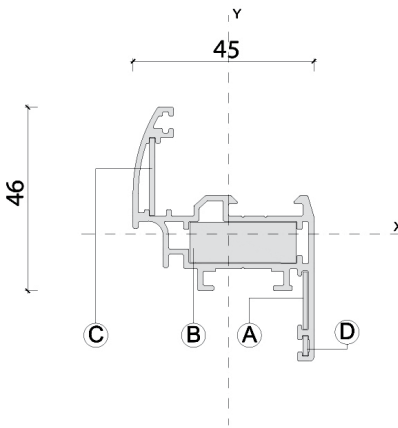
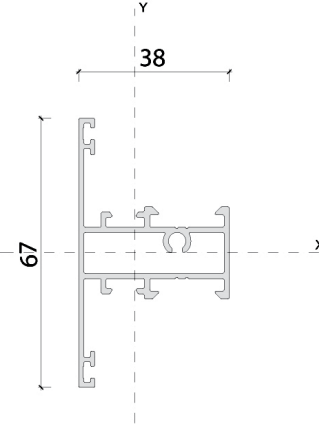
Profile & Accessories Information

			
I_x : 13.29 cm ⁴	I_y : 25.98 cm ⁴	I_x : 11.04 cm ⁴	I_y : 9.55 cm ⁴
Frame : ALN-366	A: PCP-22/26 mm 	Sash : ALN-301	A: MM 77 
Weight: 1250 gr/m	B: PCP-22/26 mm 	Weight: 930 gr/m	B: PCP-22 / 26 mm 
	C: fuji 2000  D: MO 19 		C: fuji 2000  D: MO 19 
			
I_x : 63.82 cm ⁴	I_y : 11.55 cm ⁴	I_x : 25.53 cm ⁴	I_y : 12.08 cm ⁴
Profile : ALN-310	A: –	Sash : ALN-302	A: MM 77 
Weight: 1295 gr/m	B: –	Weight: 1075 gr/m	B: PCP-42 / 26 mm 
			C: fuji 2000  D: MO 19 



Hinged System 40 Series

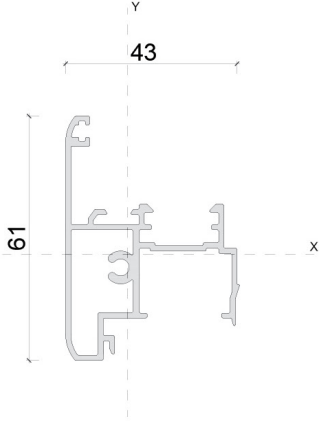
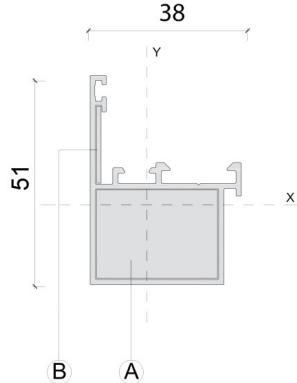
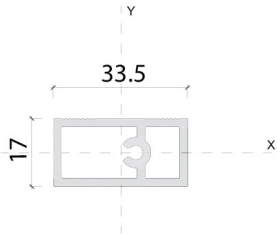
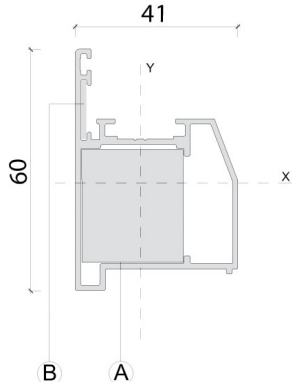
Profile & Accessories Information

			
I_x : 25.54 cm ⁴	I_y : 11.07 cm ⁴	I_x : 13.50 cm ⁴	I_y : 6.71 cm ⁴
Sash : ALN-303	A: PCP-42 / 26 mm  B: MM 77 	Transom : ALN-304	A: –
Weight: 1070 gr/m	C: fuji 2000  D: MO 19 	Weight: 930 gr/m	B: –
			
I_x : 5.88 cm ⁴	I_y : 7.81 cm ⁴	I_x : 5.76 cm ⁴	I_y : 5.03 cm ⁴
Sash : ALN-309	A: MM 77  B: PCP-10 / 26 mm 	Transom : ALN-311	A: –
Weight: 830 gr/m	C: fuji 2000  D: MO 19 	Weight: 770 gr/m	B: –



Hinged System 40 Series

Profile & Accessories Information

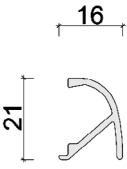
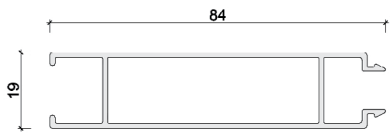
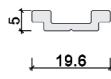
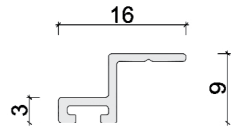
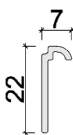
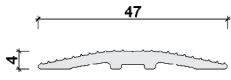
			
I_x : 6.64 cm ⁴	I_y : 6.04 cm ⁴	I_x : 4.73 cm ⁴	I_y : 4.14 cm ⁴
Profile : ALN-305	A: –	Profile : ALN-313	A: PCP-22 / 30 mm 
Weight: 870 gr/m	B: –	Weight: 607 gr/m	B: Fuji2000 
			
I_x : 0.86 cm ⁴	I_y : 2.62 cm ⁴	I_x : 7.69 cm ⁴	I_y : 6.07 cm ⁴
Profile : ALN-312	A: –	Profile : ALN-314	A: PCP-28 / 25 mm 
Weight: 608 gr/m	B: –	Weight: 751 gr/m	B: MM 77 





Hinged System 40 Series

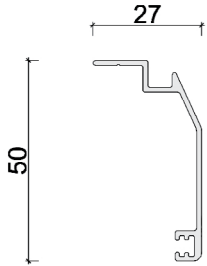
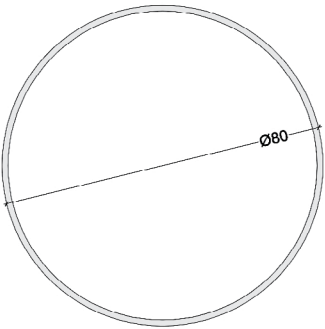
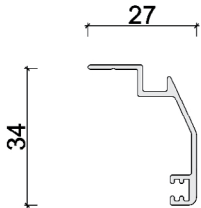
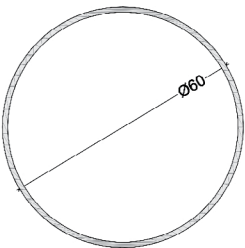
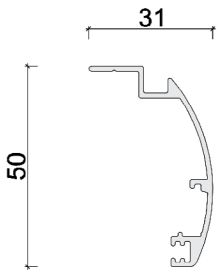
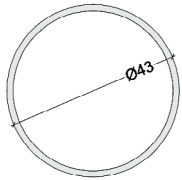
Profile & Accessories Information

			
profile: ALN-229	Weight : 192 gr/m	Profile : ALN-412	Weight : 691 gr/m
			
Profile : ALN-331	Weight : 140 gr/m	profile: ALN-443	Weight : 75.6 gr/m
			
profile: ALN-332	Weight : 113 gr/m	profile: ALN-444	Weight : 344 gr/m



Hinged System 40 Series

Profile & Accessories Information

			
Flange profile: ALN-221	Weight : 302 gr/m	Profile : ALN-328	Weight : 999 gr/m
			
Flange profile: ALN-222	Weight : 254 gr/m	Profile : ALN-215	Weight : 648 gr/m
			
Flange profile: ALN-219	Weight : 362 gr/m	Profile : ALN-329	Weight : 525 gr/m



Hinged System 40 Series

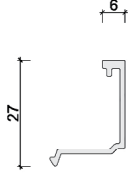
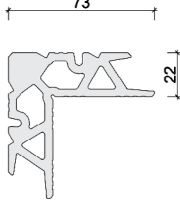
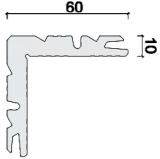
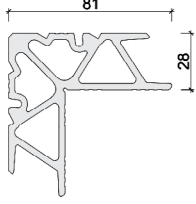
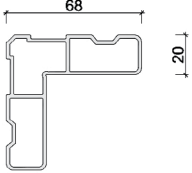
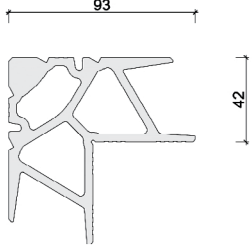
Profile & Accessories Information

Profile : ALN-326	Weight : 613 gr/m	Glazing beads: ALN-321	Weight :224 gr/m
Profile : ALN-225	Weight : 548 gr/m	Glazing beads: ALN-322	Weight :238 gr/m
Profile : ALN-327	Weight : 367 gr/m	Glazing beads: ALN-323	Weight :302 gr/m



Hinged System 40 Series

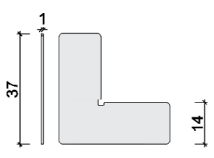
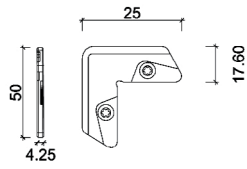
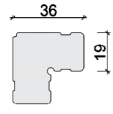
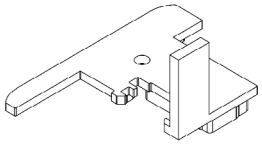
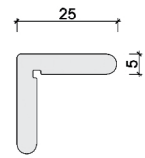
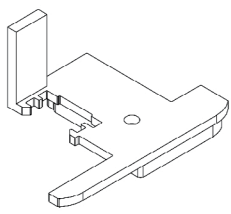
Profile & Accessories Information

			
Glazing beads: ALN-424	Weight : 167 gr/m	Corner joint: PCP-22	Weight : 3718 gr/m ²
			
Corner joint: PCP-10	Weight : 2454 gr/m ²	Corner Joint: PCP-28	Weight : 3429 gr/m ²
			
Corner joint: PCP 20	Weight : 1375 gr/m ²	Corner joint: PCP-42	Weight : 5133 gr/m ²



Hinged System 40 Series

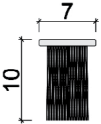
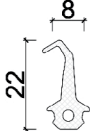
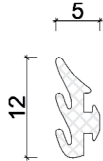
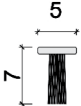
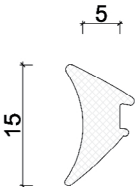
Profile & Accessories Information

			
Corner joint: MM 77	Weight : --	Corner Joint: Fuji 2000	Weight: --
			
Corner joint: AKW-804	Weight : --	ALP-305-01	Weight: --
			
Corner: MO 19	Weight: 583 gr/m	ALP-305-02	Weight: --



Hinged System 40 Series

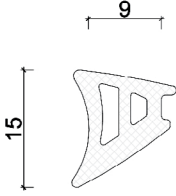
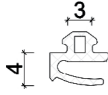
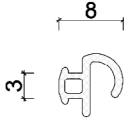
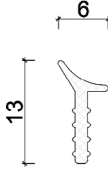
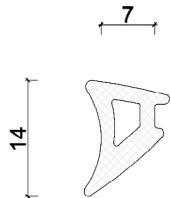
Profile & Accessories Information

			
PB7-3P-70-1000	Weight : —	Gasket: 1015	Weight : 116 gr/m
			
PB7-3P-70-500	Weight: —	Gasket: MO68	Weight : 48 gr/m
			
PB7-3P-50-700	Weight: —	Gasket: EP-016	Weight : 77 gr/m



Hinged System 40 Series

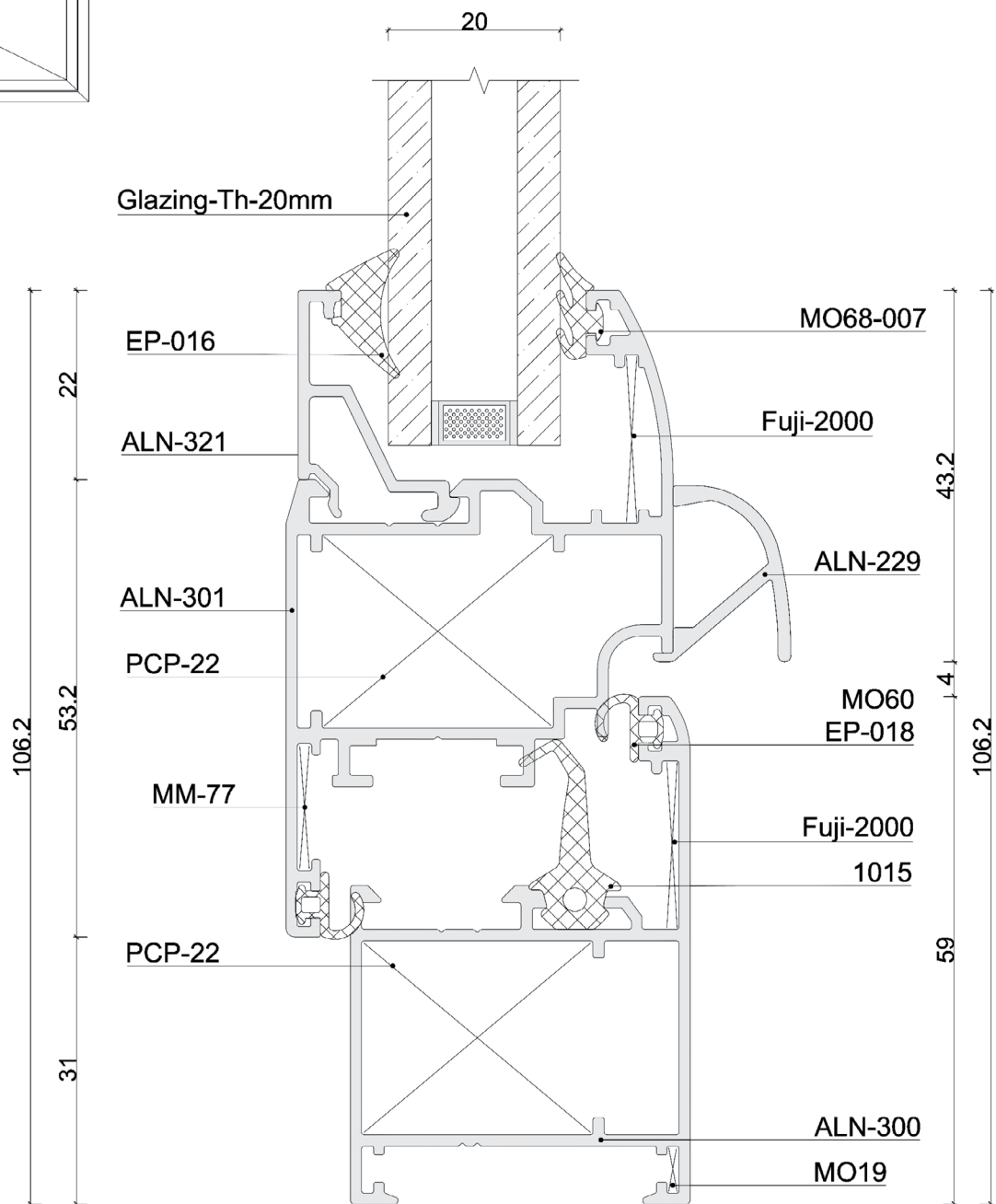
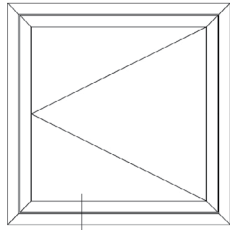
Profile & Accessories Information

			
Gasket: EP-021	Weight : 80 gr/m	Gasket: 3523801	Weight: 35 gr/m
			
Gasket: EP-018	Weight : 27 gr/m	Gasket: EP-015	Weight 21 gr/m
			
Gasket: mo 60	Weight : 26 gr/m	Gasket: EP-019	Weight : 61 gr/m



Hinged System 40 Series

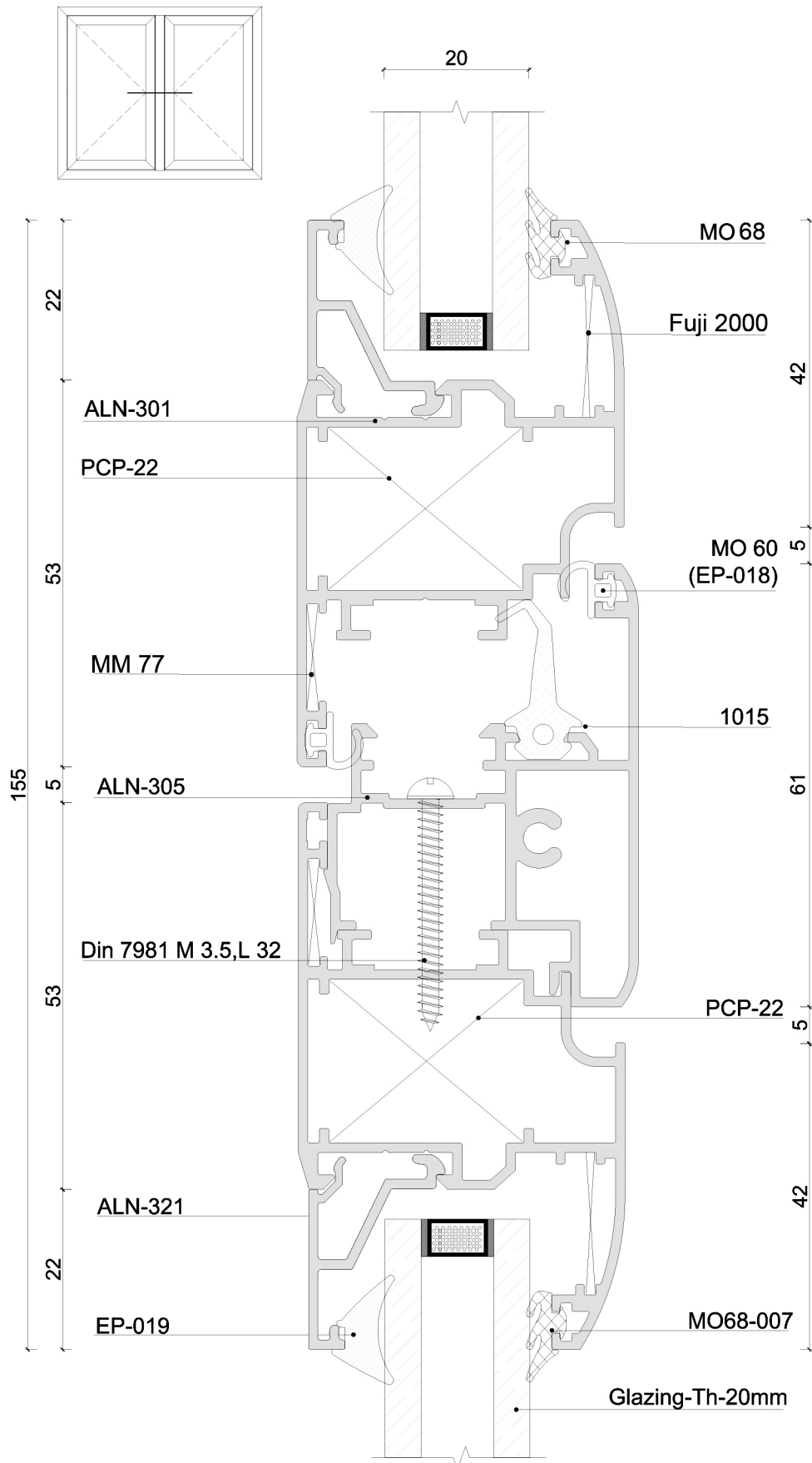
Fabrication Details





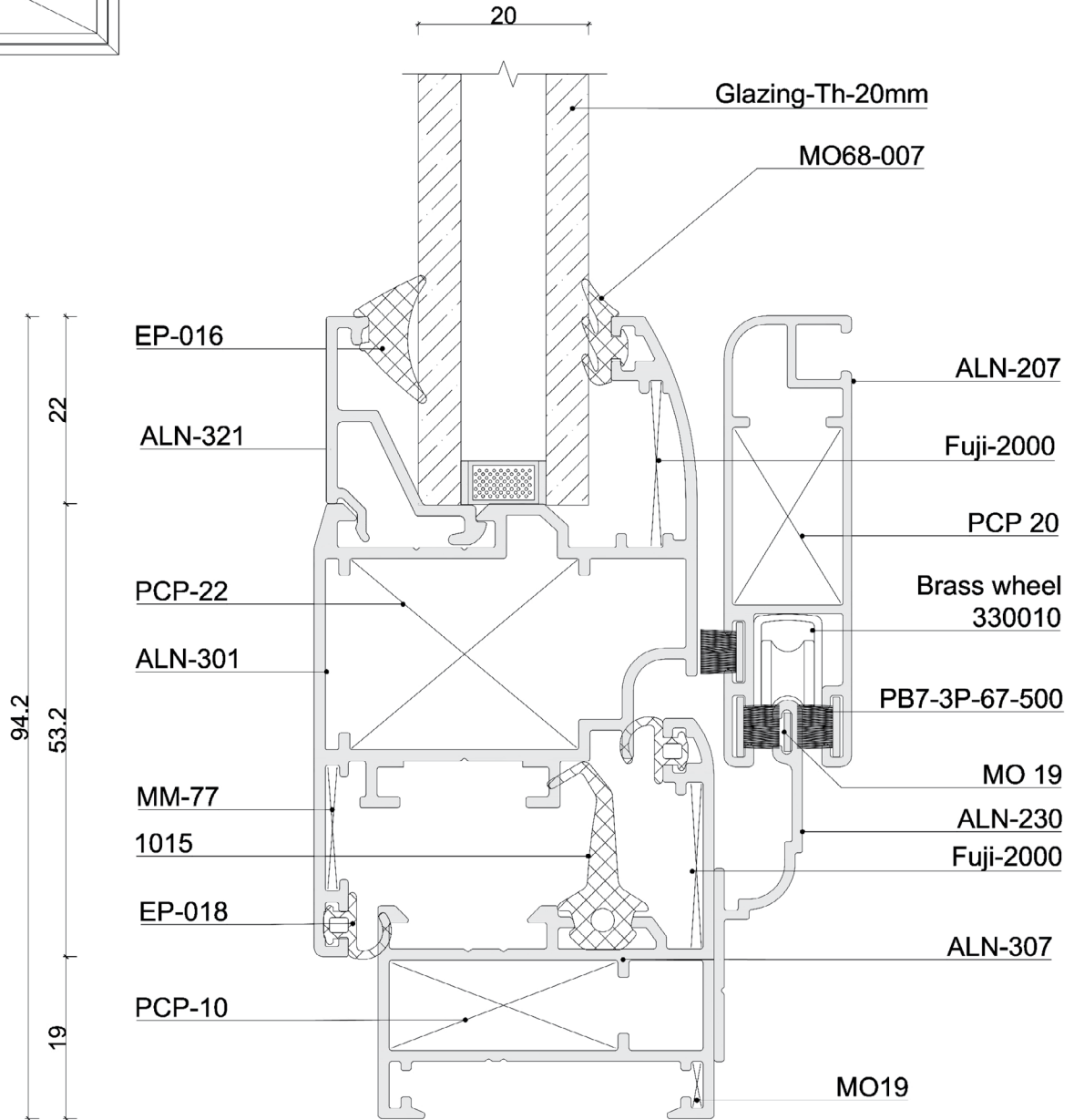
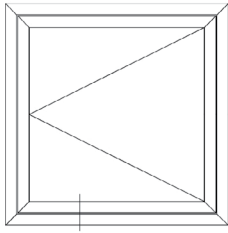
Hinged System 40 Series

Fabrication Details



Hinged System 40 Series

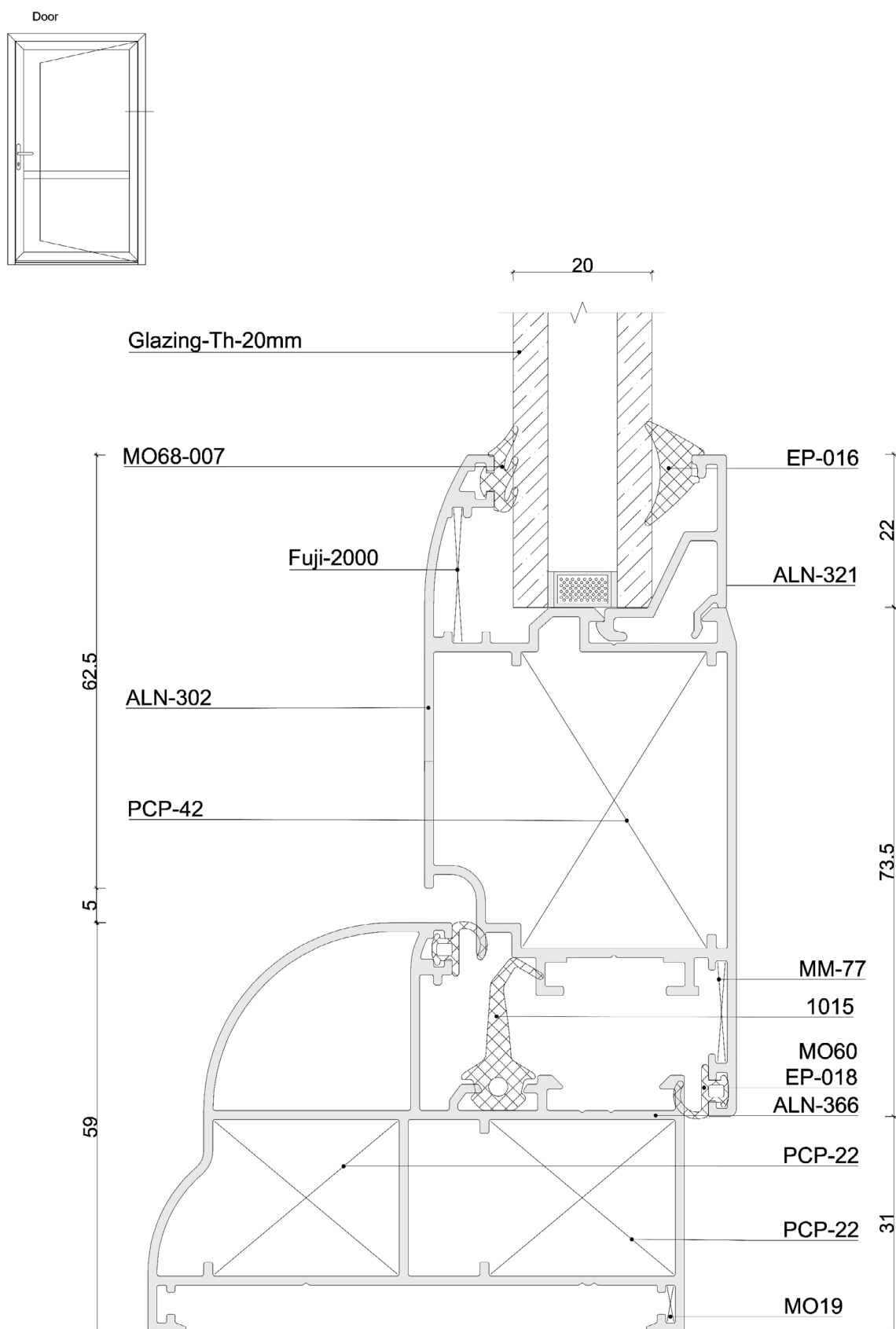
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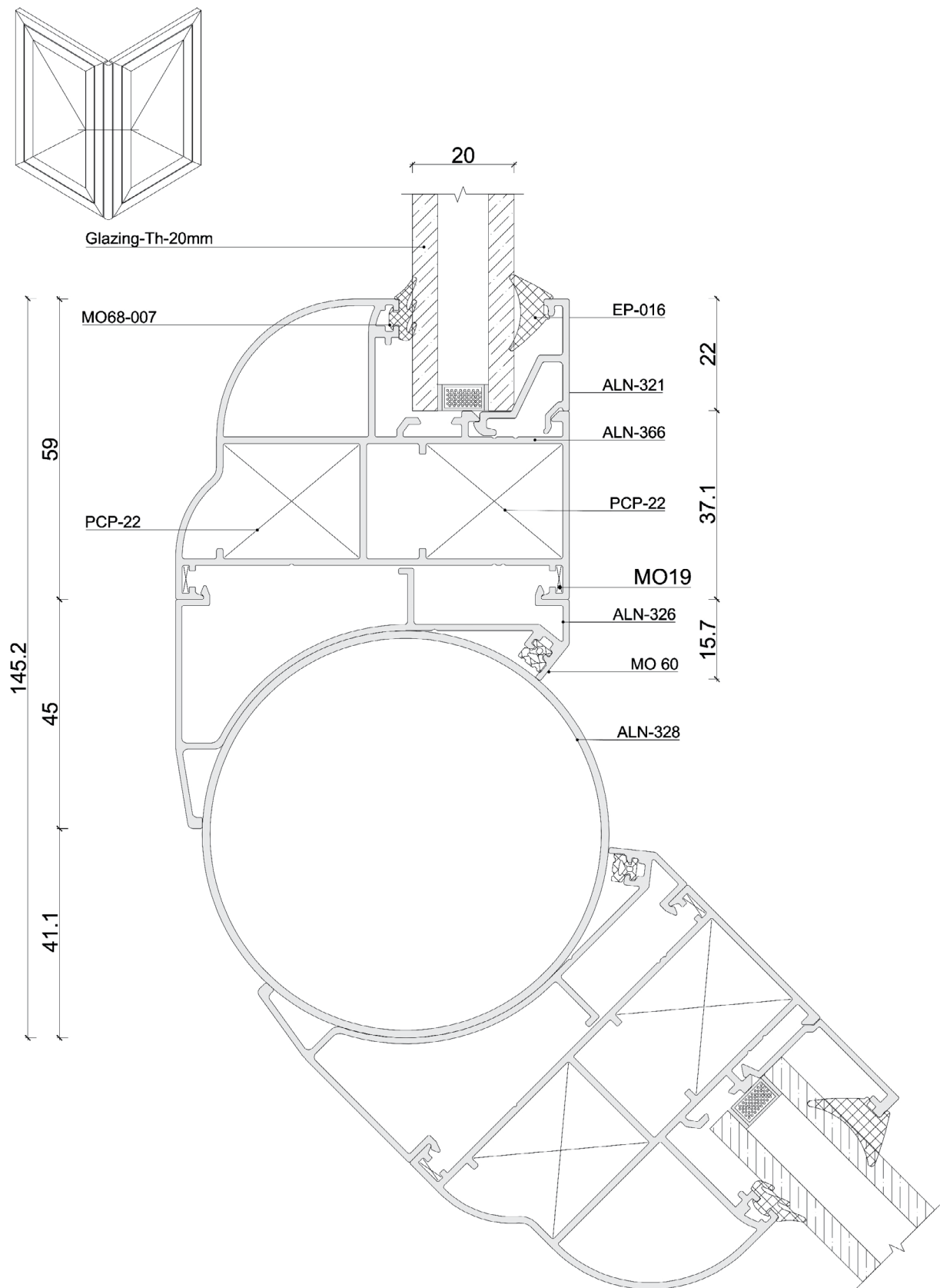
Hinged System 40 Series

Fabrication Details



Hinged System 40 Series

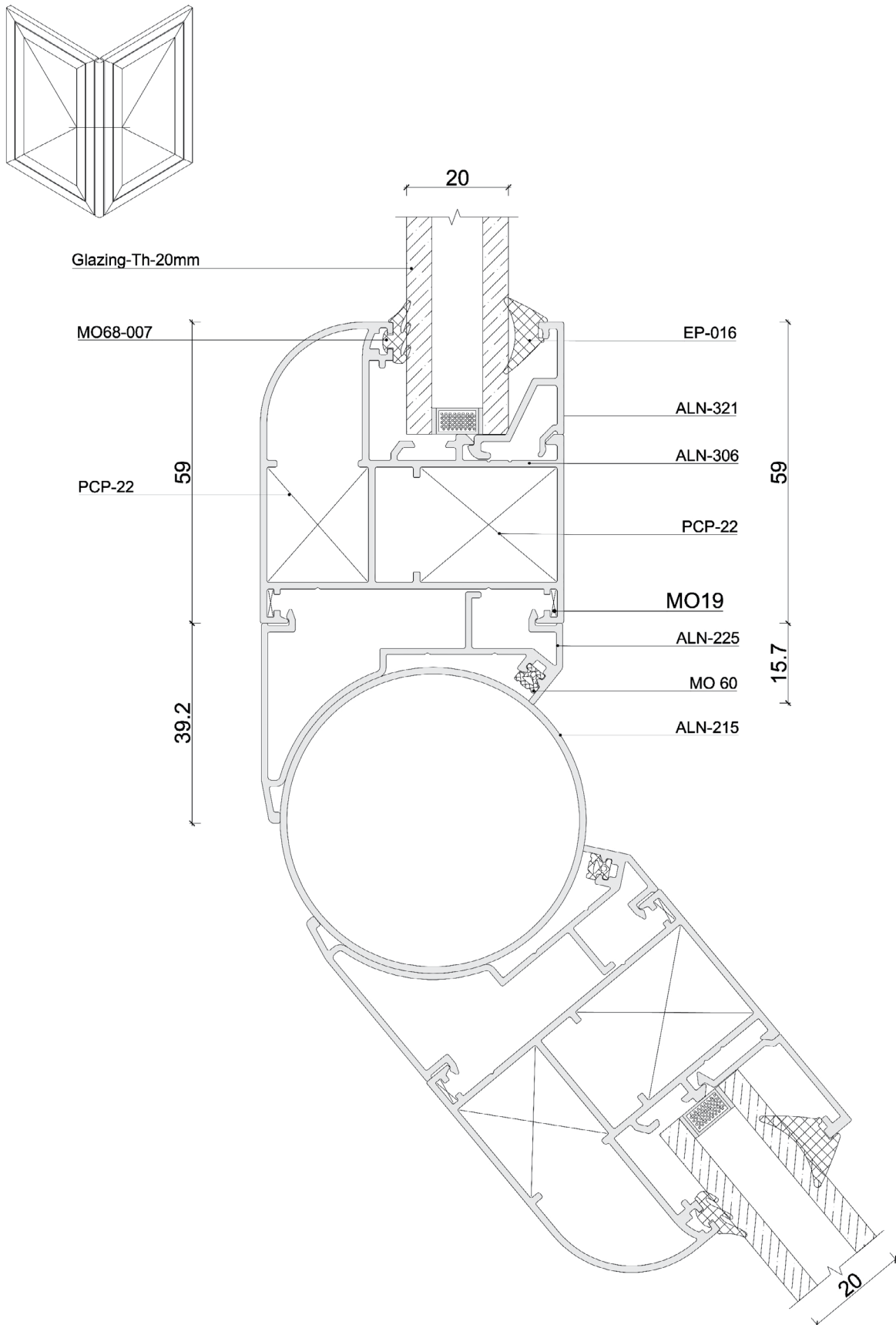
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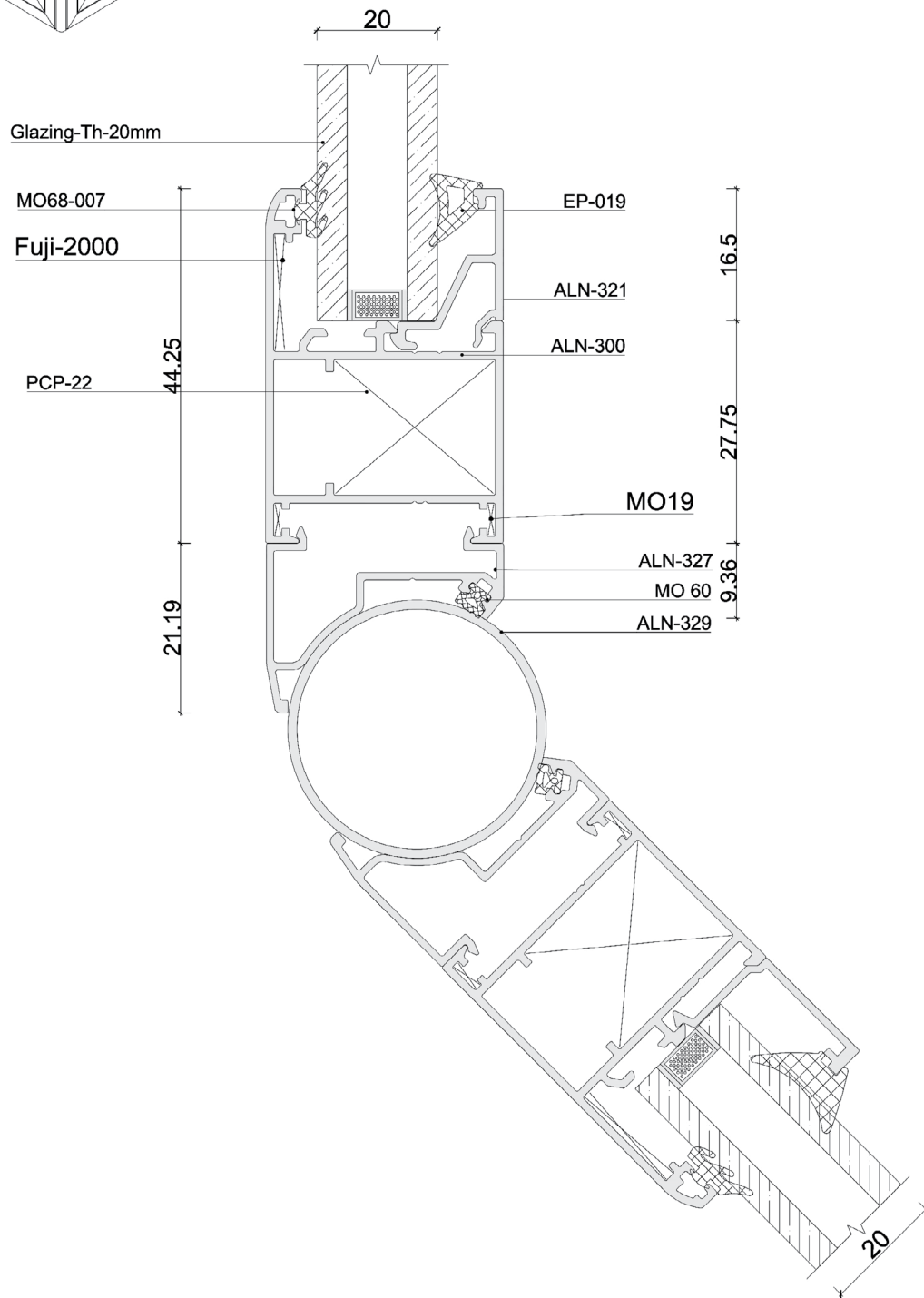
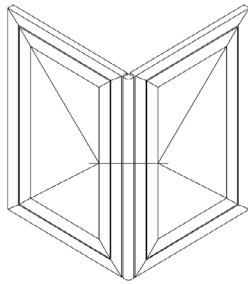
Hinged System 40 Series

Fabrication Details



Hinged System 40 Series

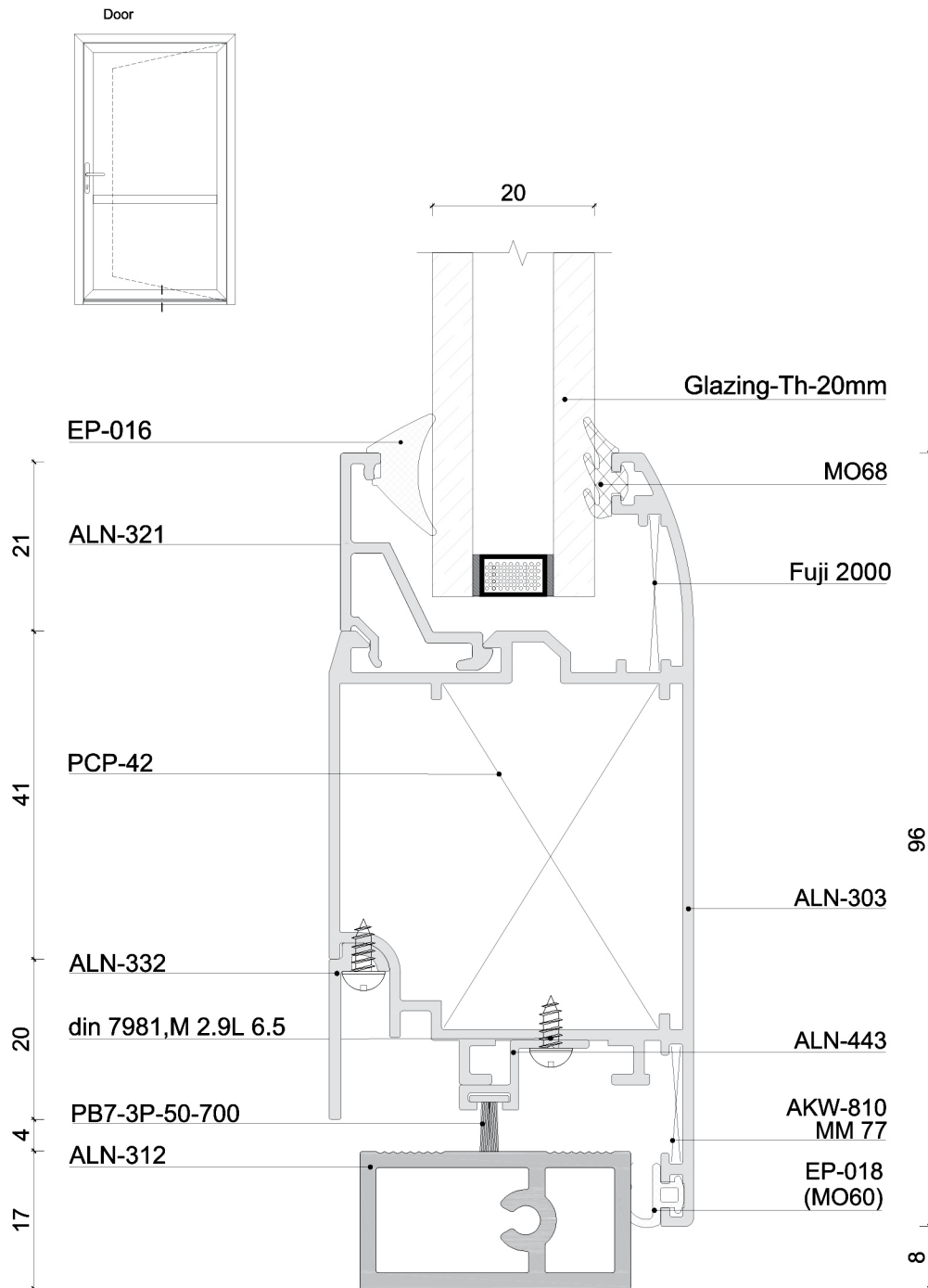
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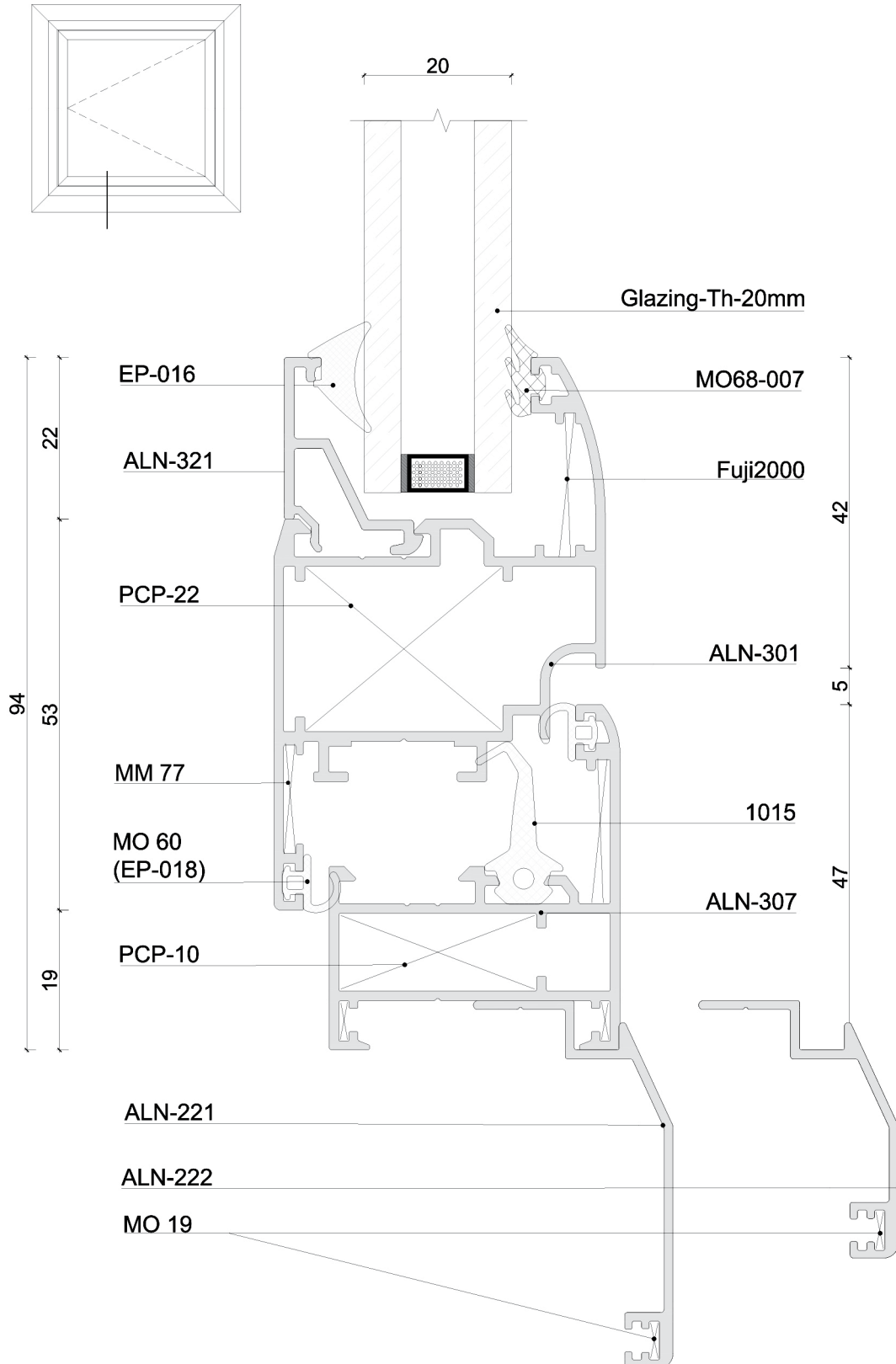
Hinged System 40 Series

Fabrication Details

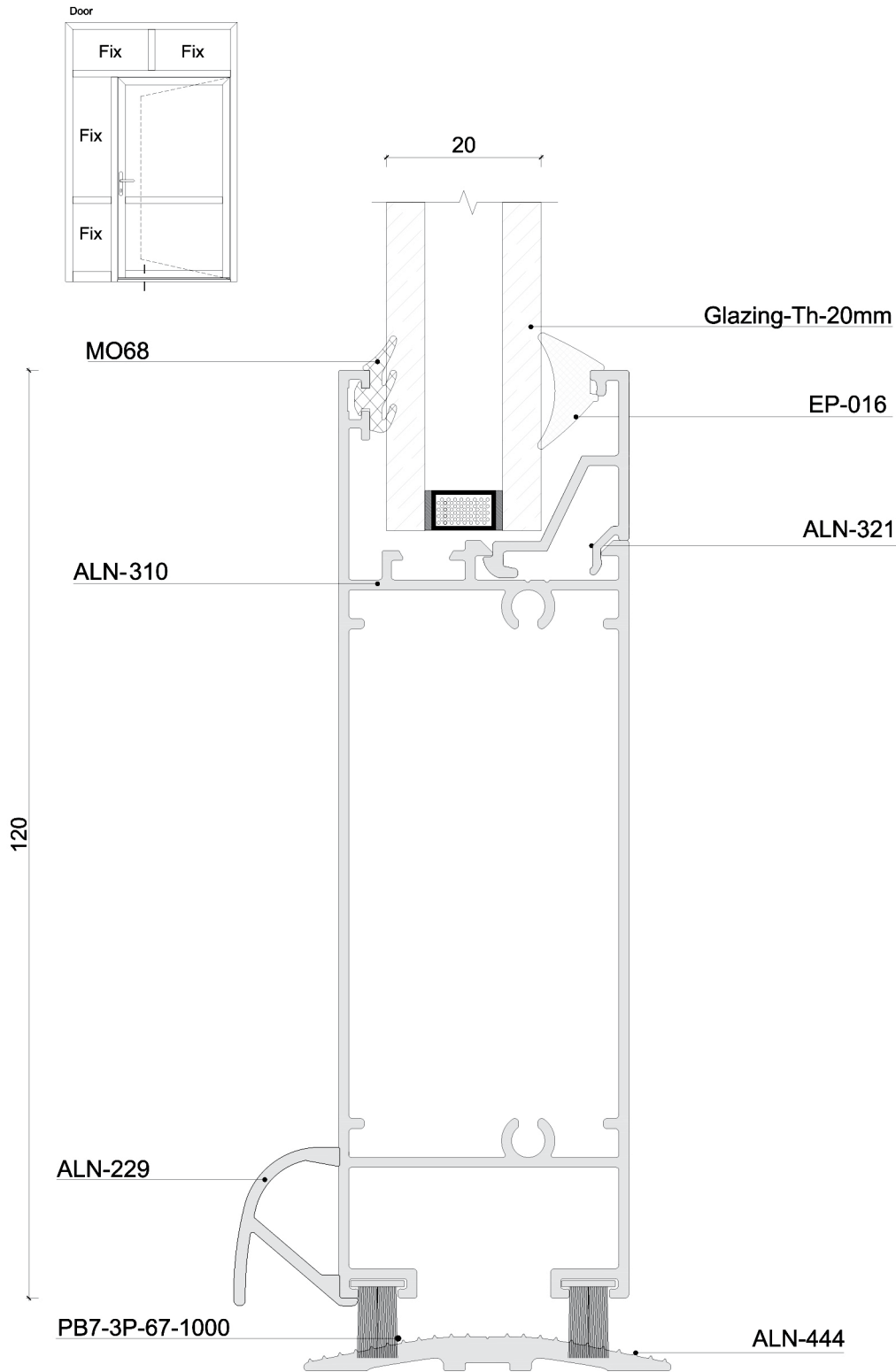


Hinged System 40 Series

Fabrication Details

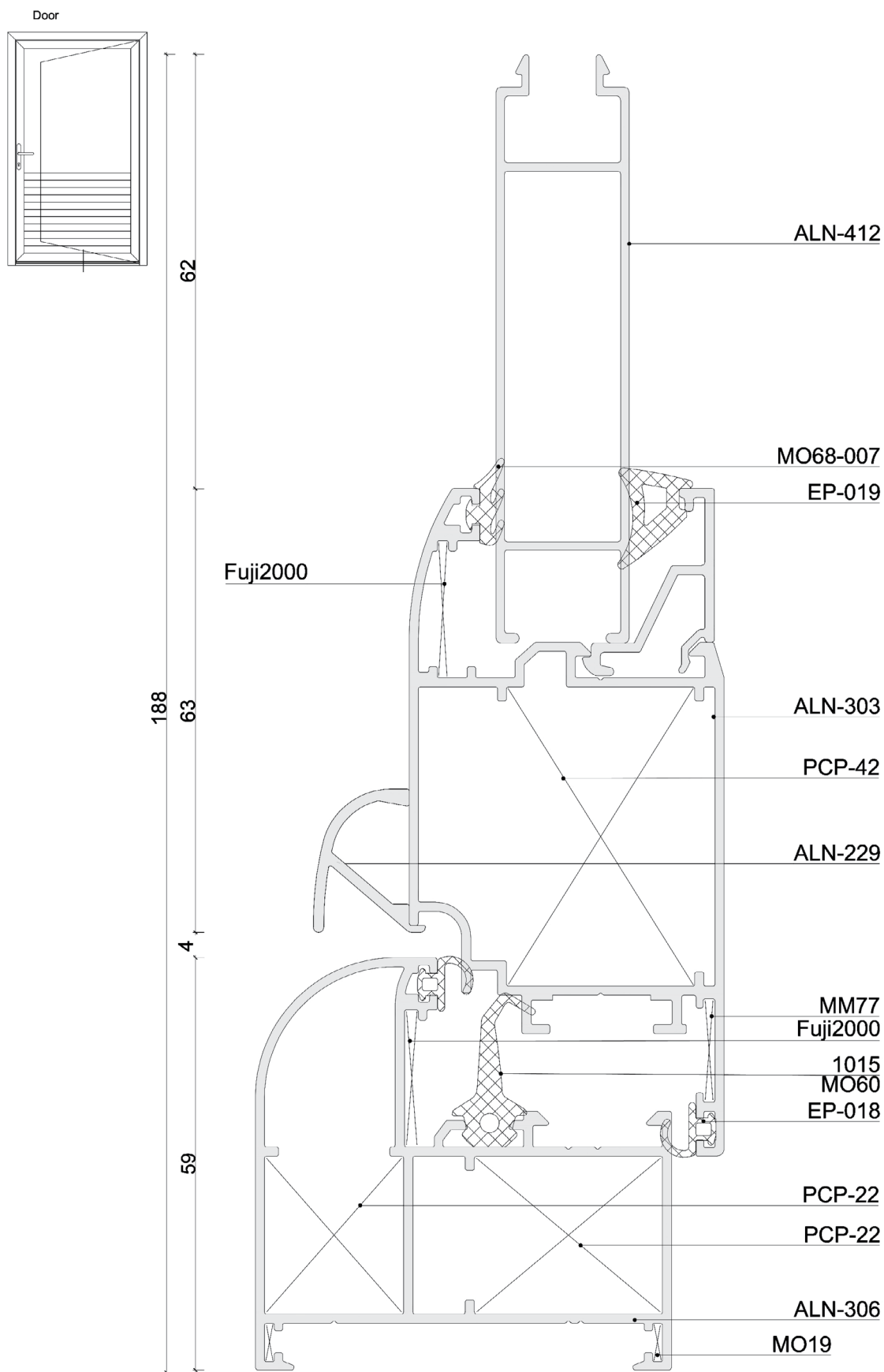


Hinged System 40 Series
Fabrication Details



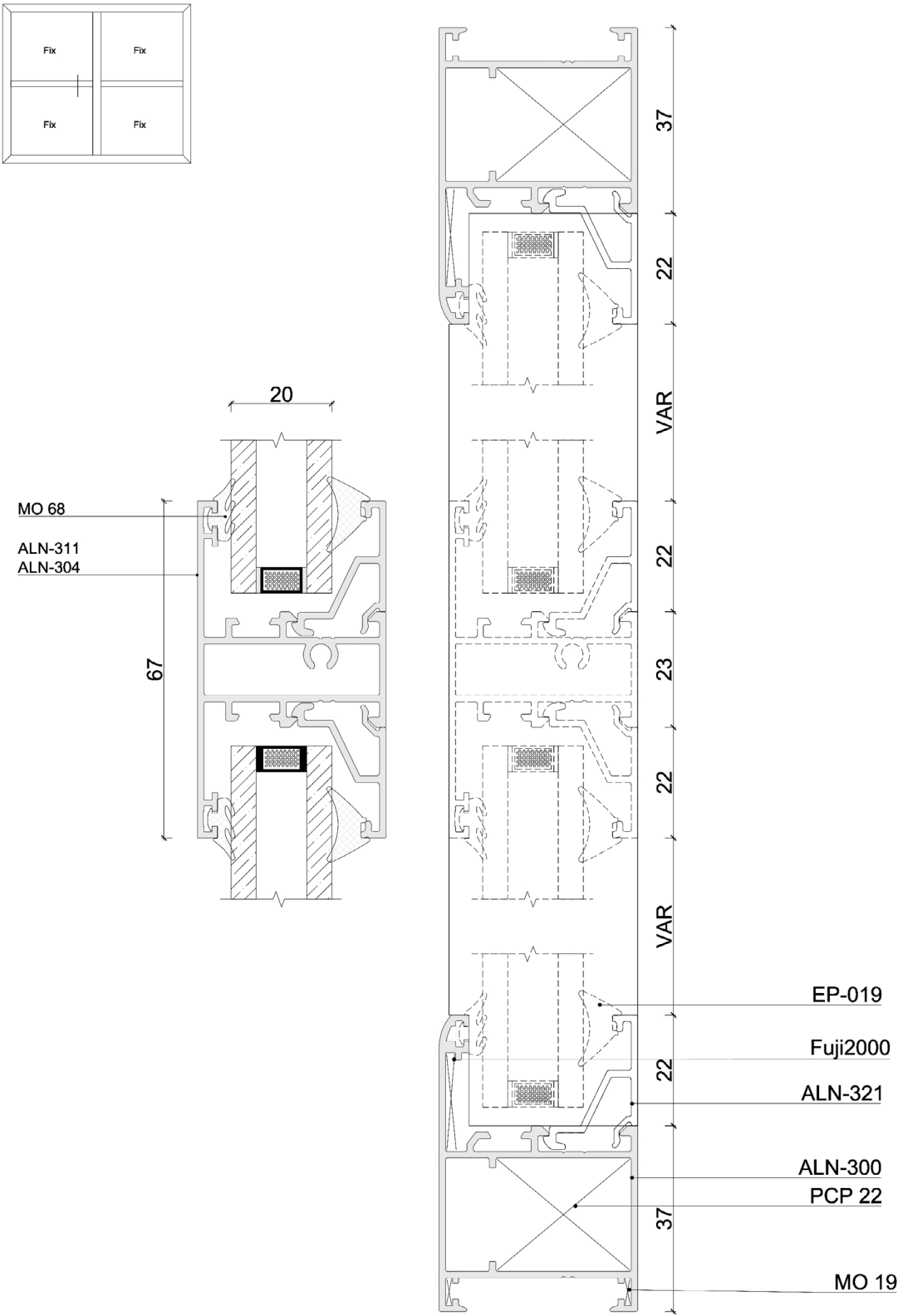
Hinged System 40 Series

Fabrication Details



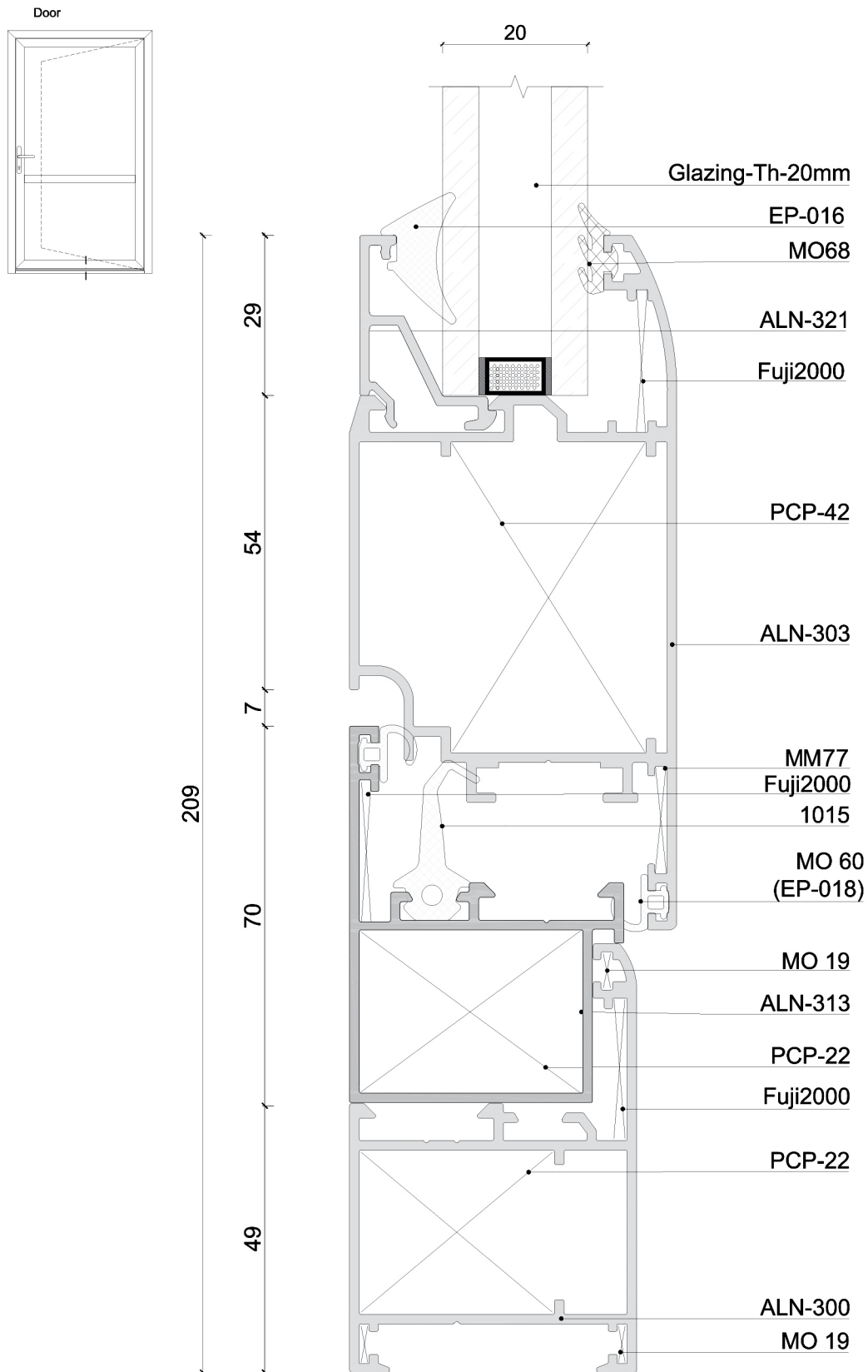
Hinged System 40 Series

Fabrication Details



Hinged System 40 Series

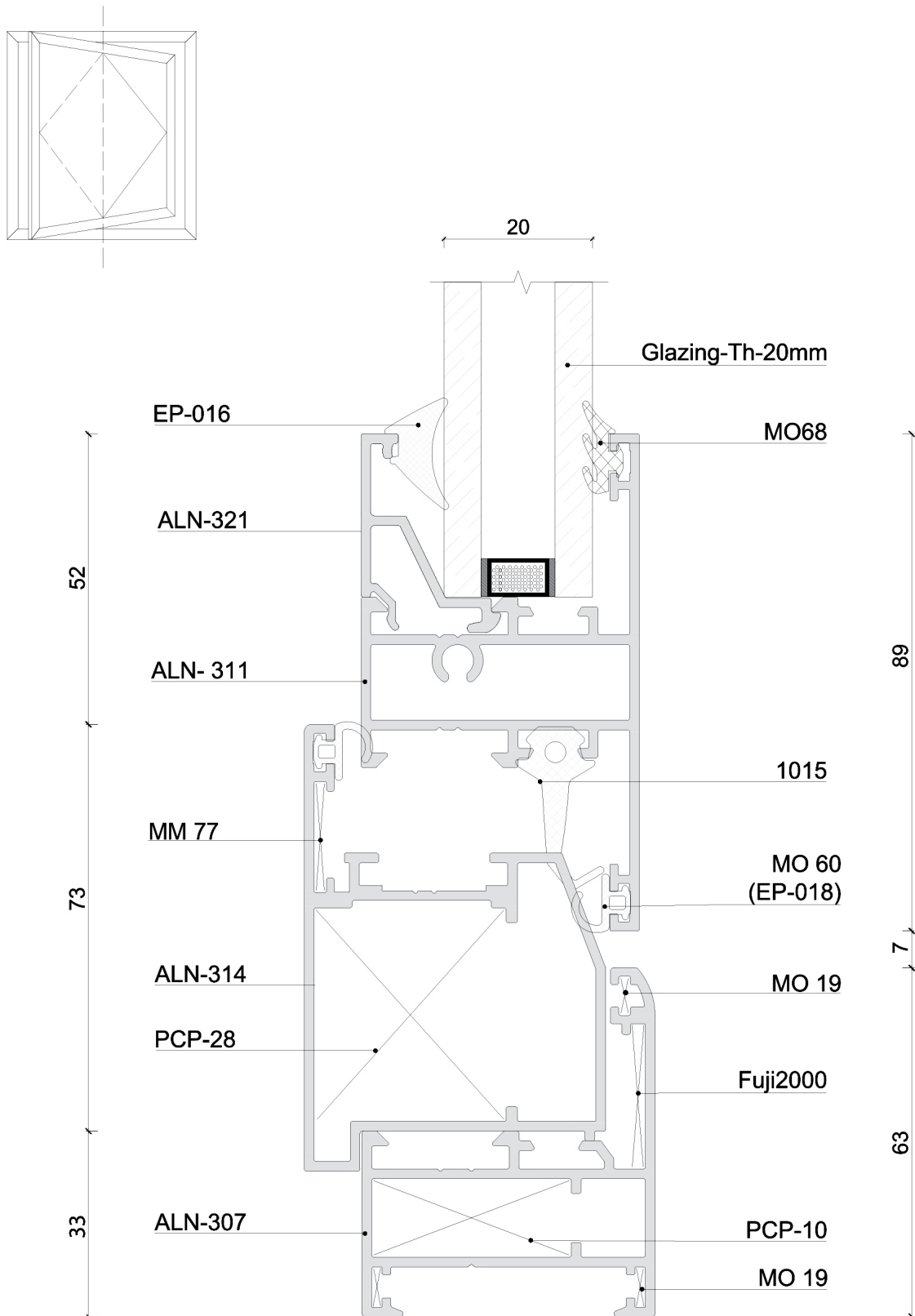
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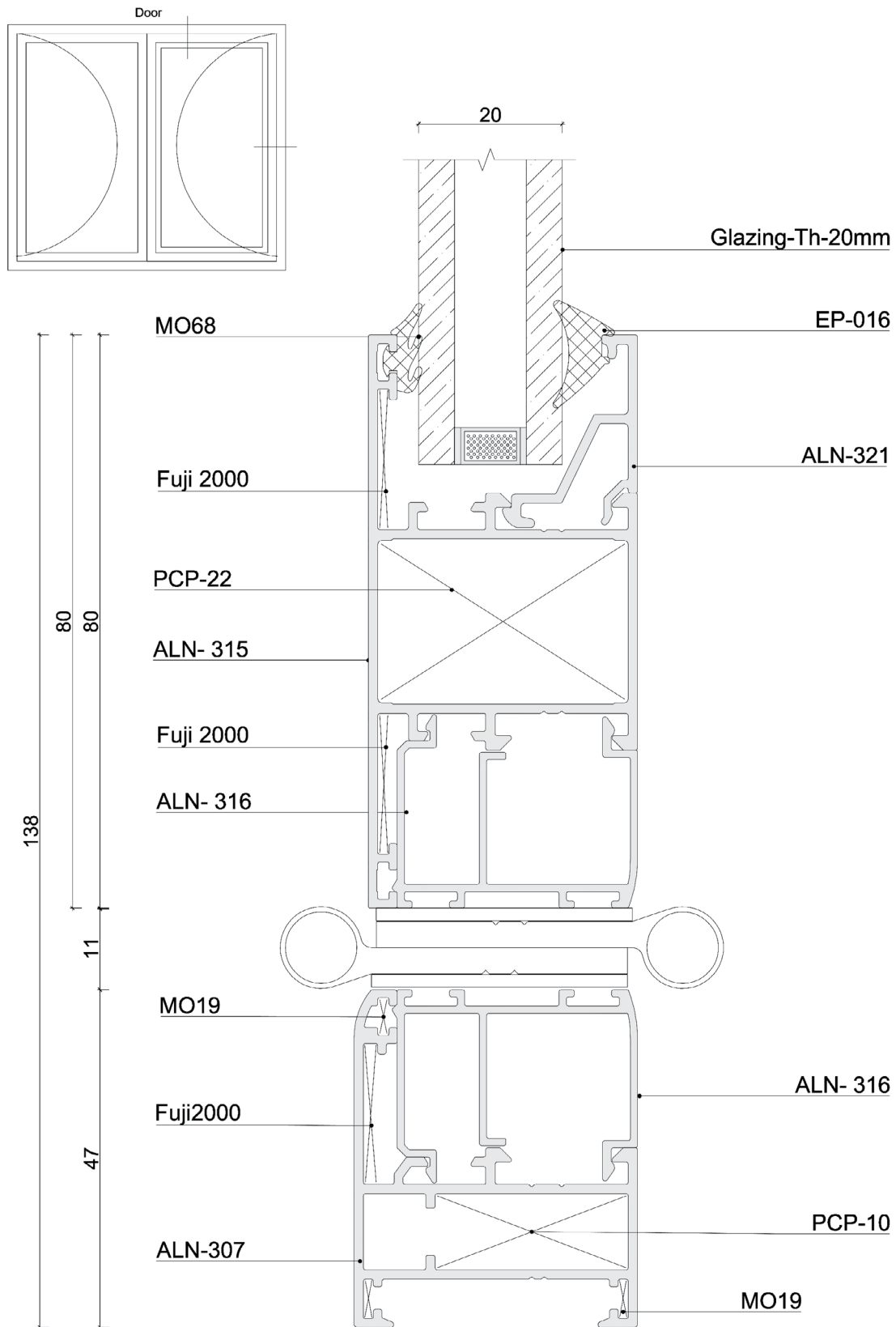
Hinged System 40 Series

Fabrication Details

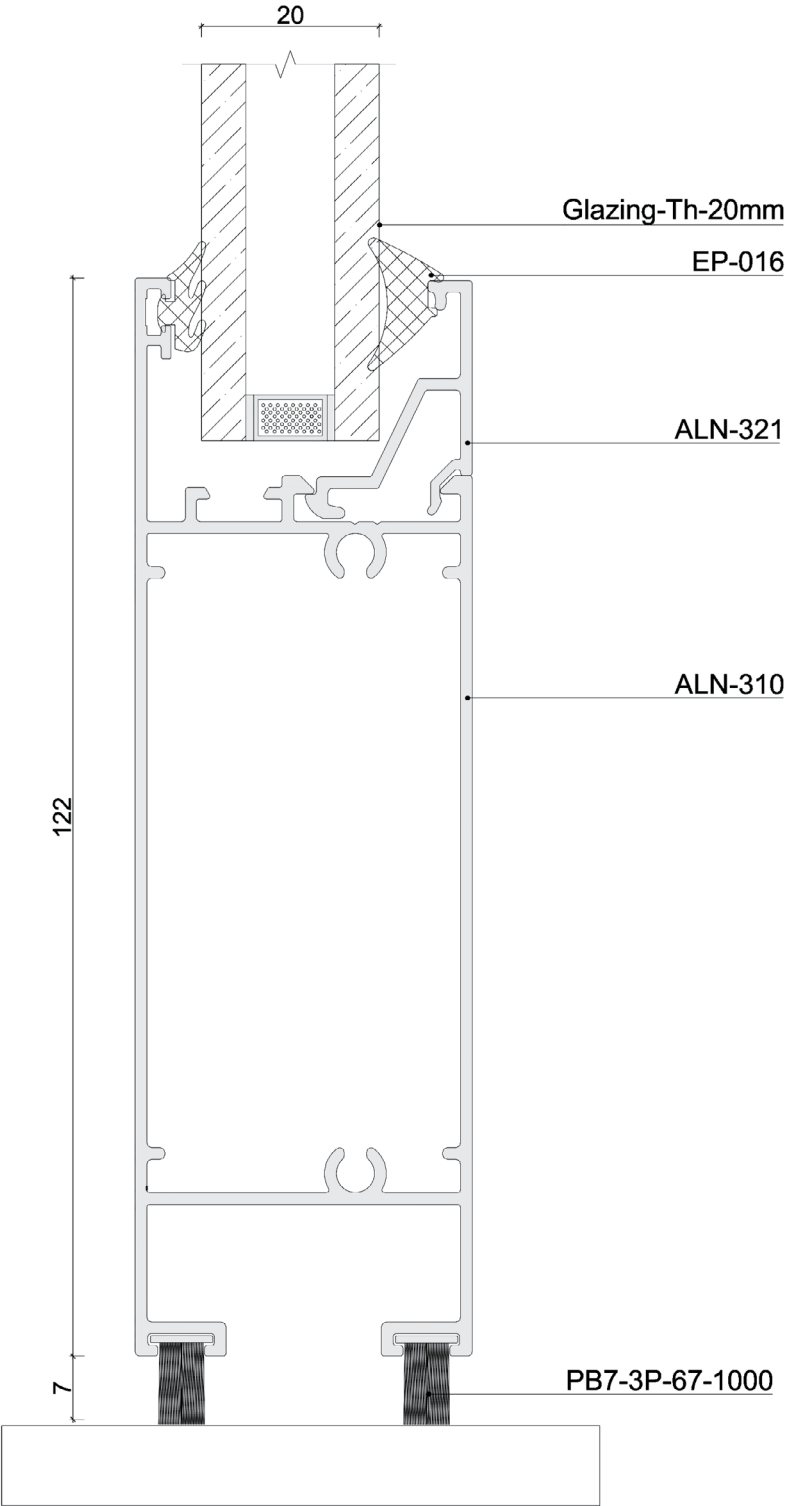
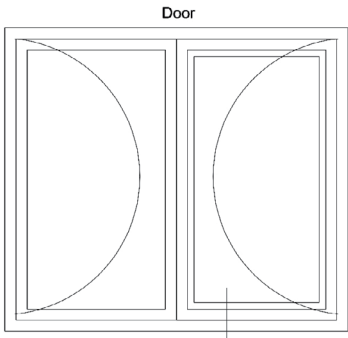


Hinged System 40 Series

Fabrication Details

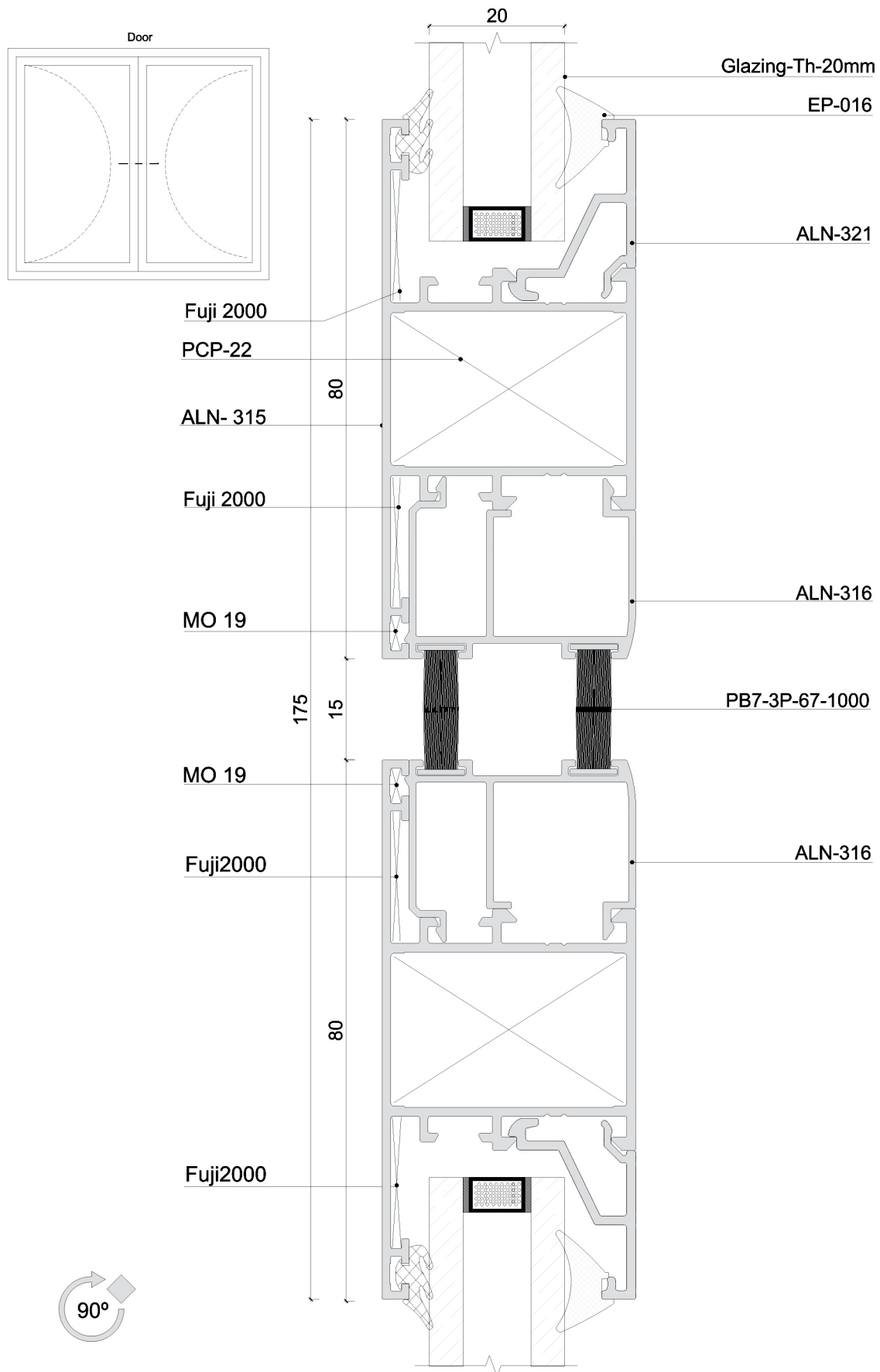


Hinged System 40 Series
Fabrication Details



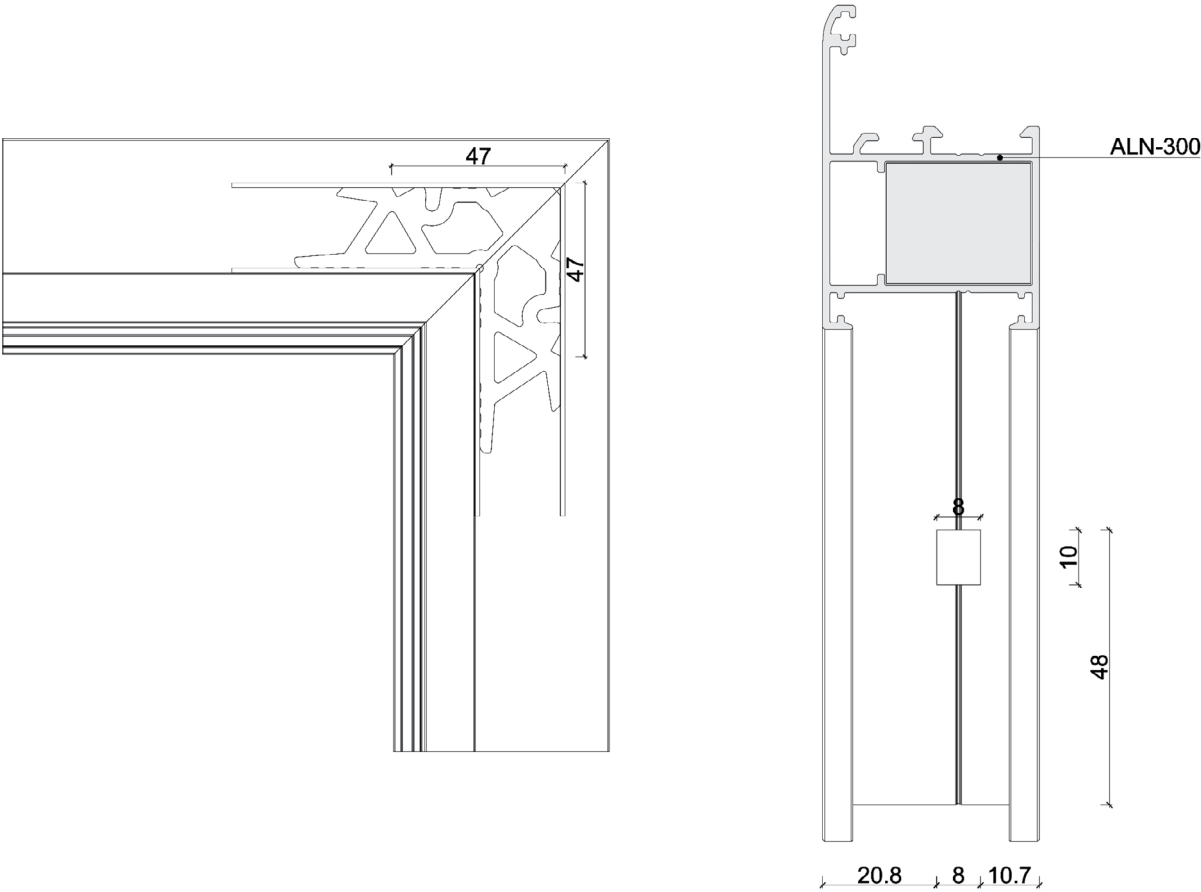
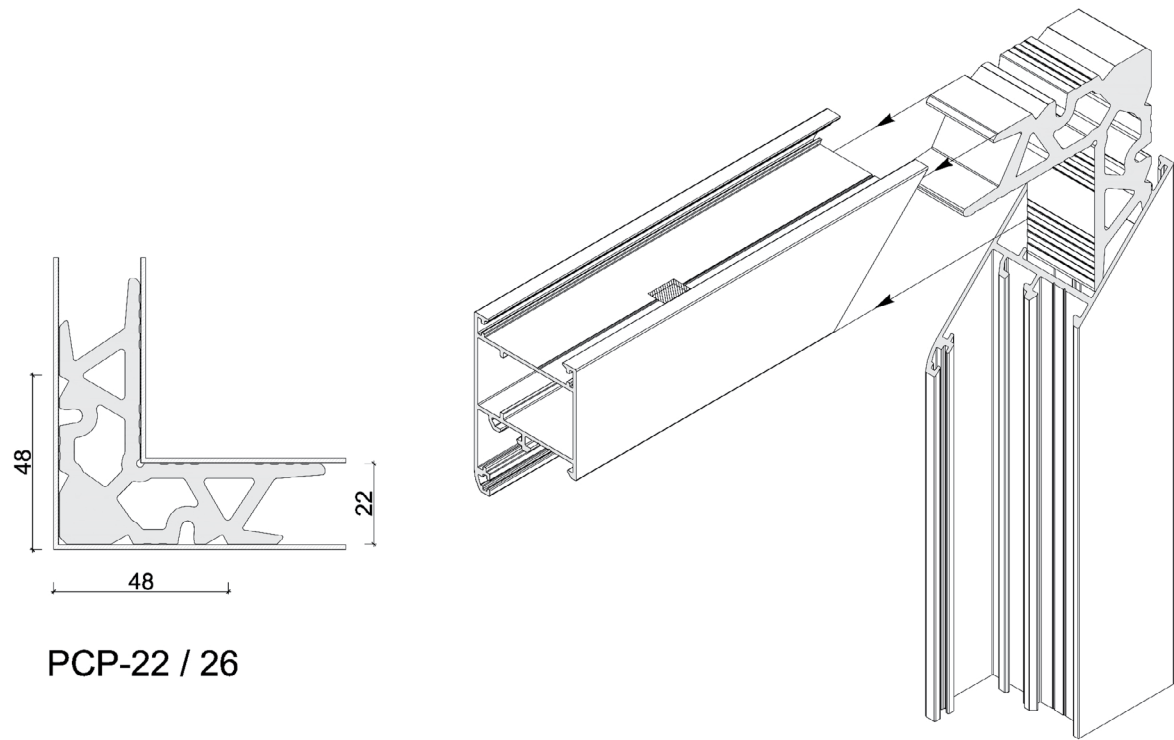
Hinged System 40 Series

Fabrication Details



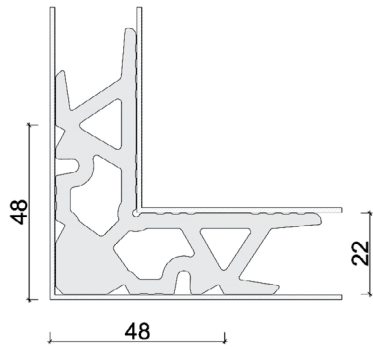


Hinged System 40 Series
Assembly Drawing

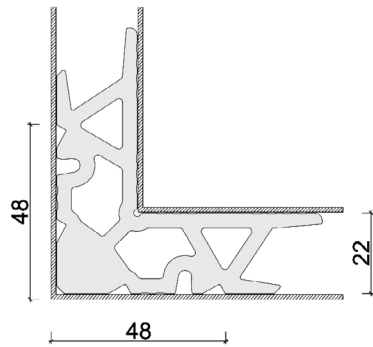


Hinged System 40 Series

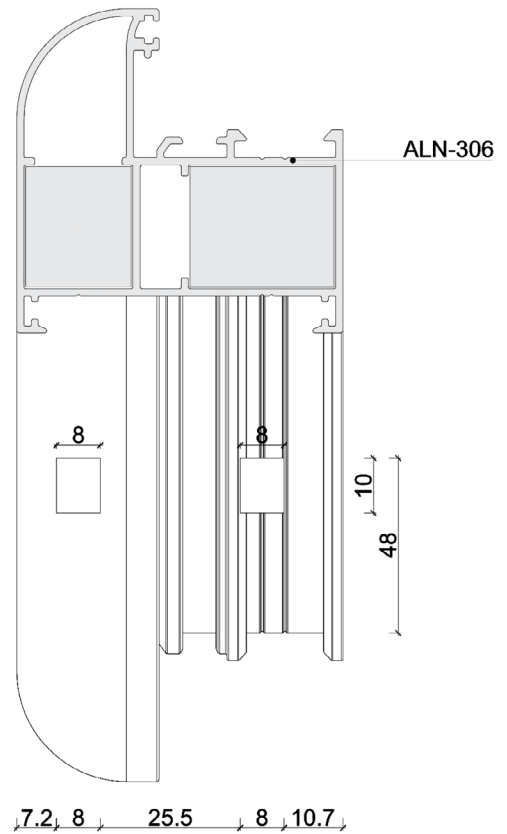
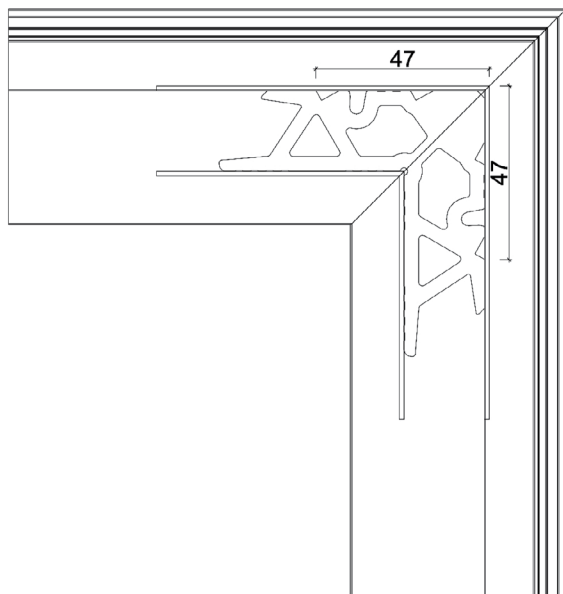
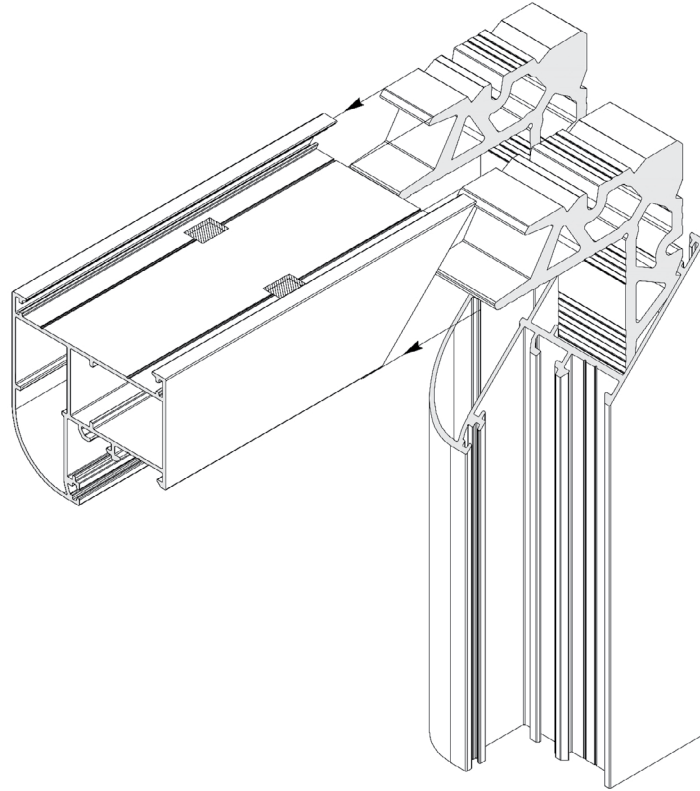
Assembly Drawing



PCP-22 / 26

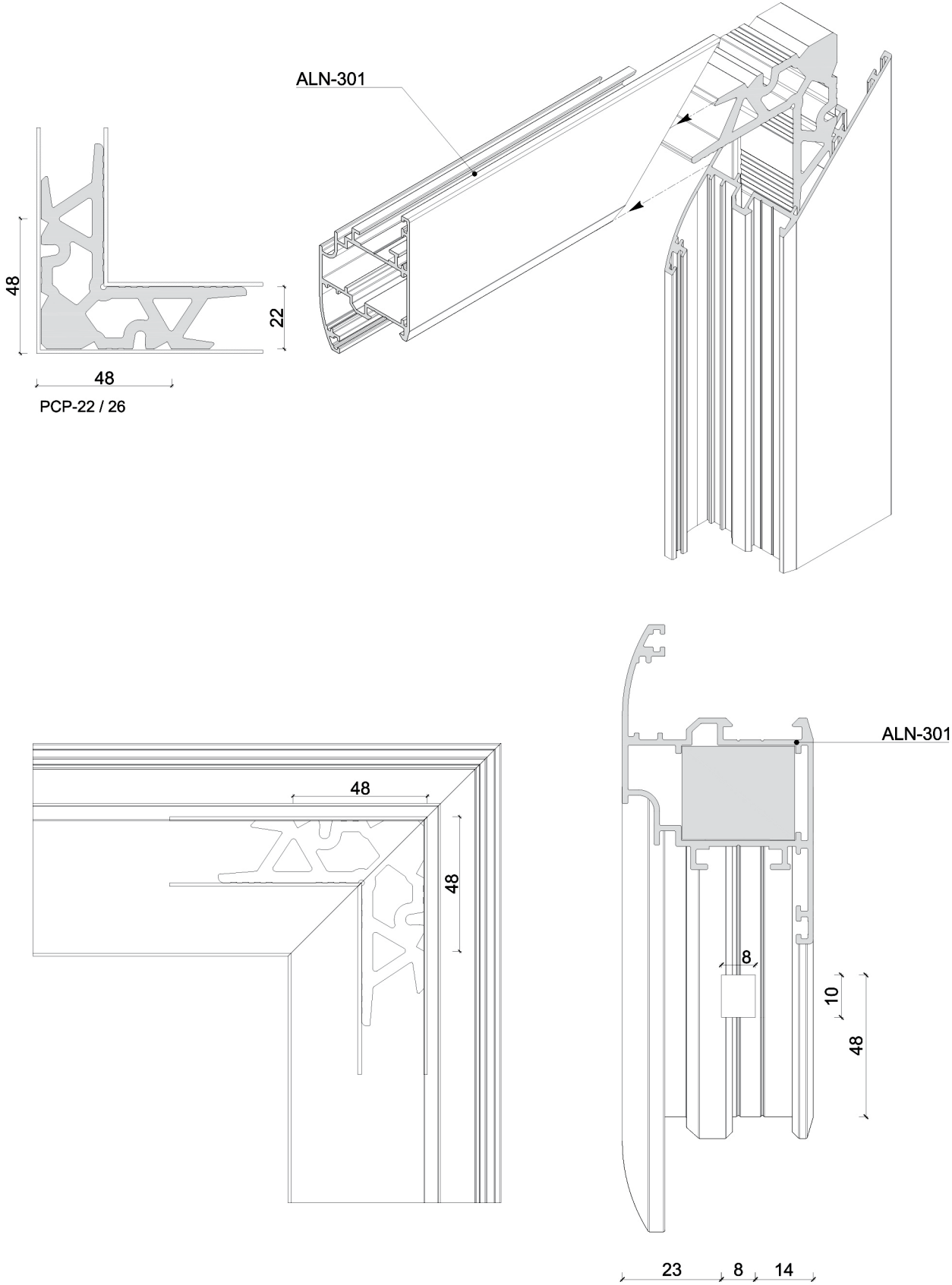


PCP-22 / 19



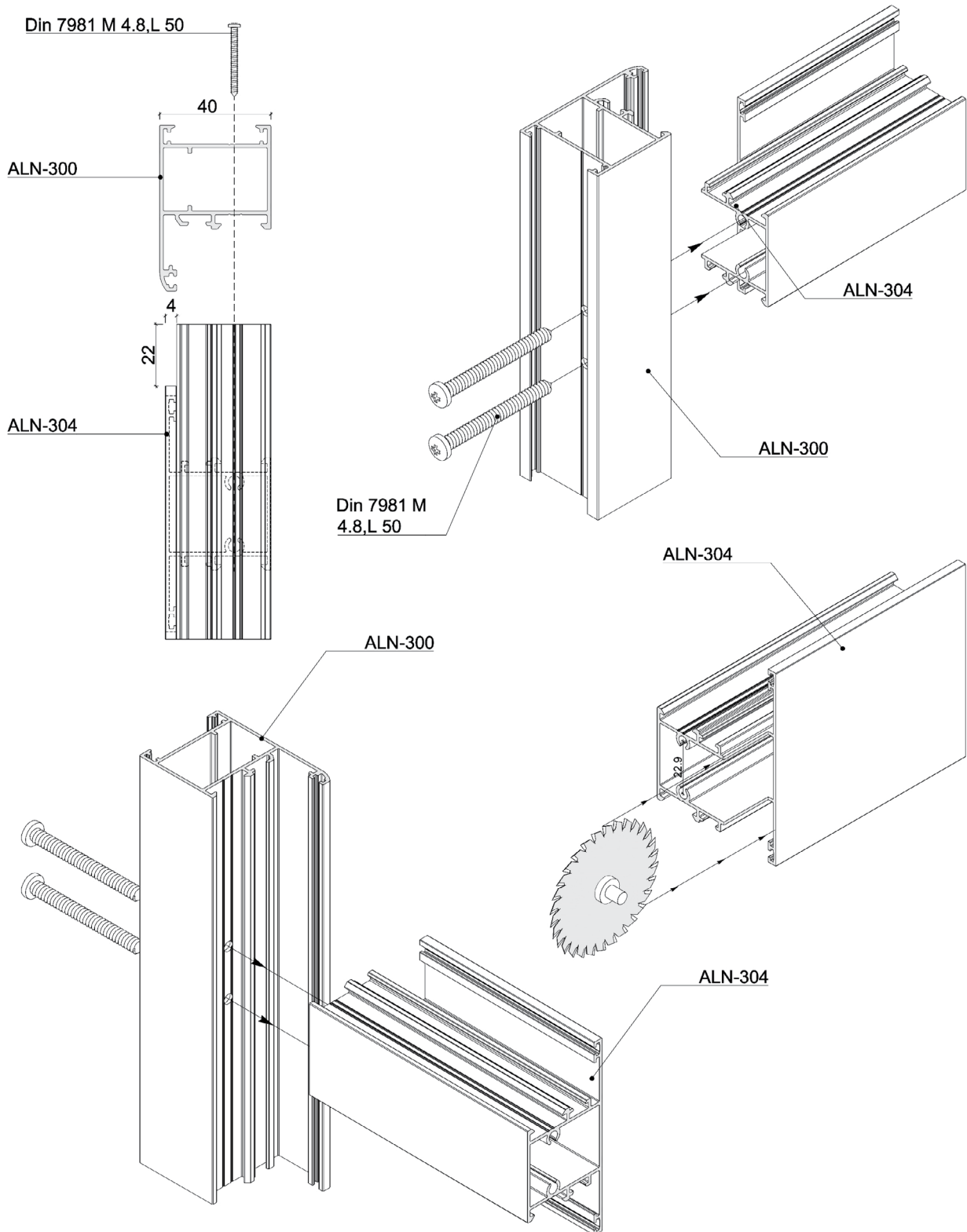


Hinged System 40 Series
Assembly Drawing

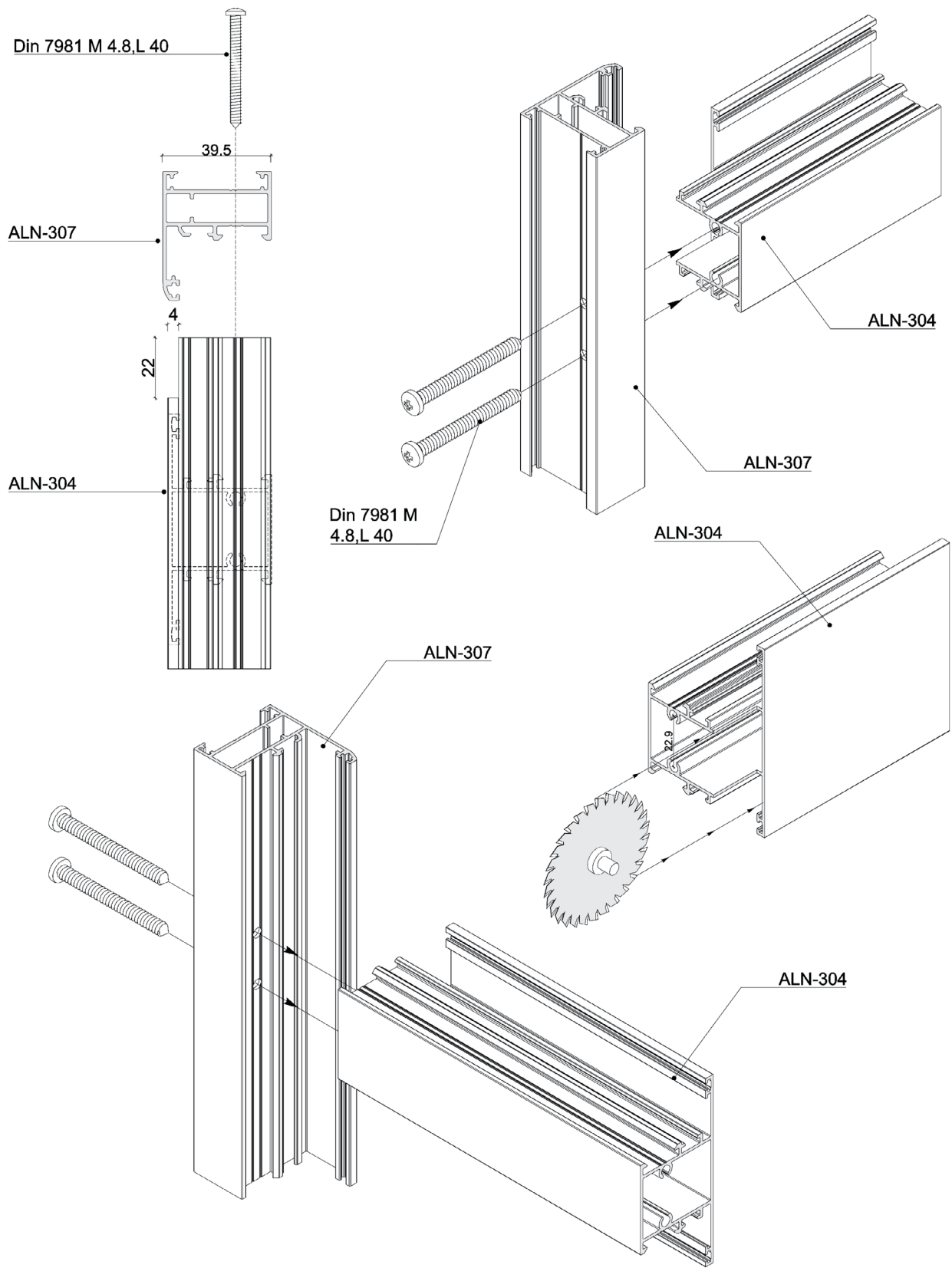


Hinged System 40 Series

Assembly Drawing



Hinged System 40 Series
Assembly Drawing



Hinged System 40 Series

Assembly Drawing



59.5

ALN-306

22

ALN-304

Din 7981 M
4.8,L 50

ALN-304

ALN-306

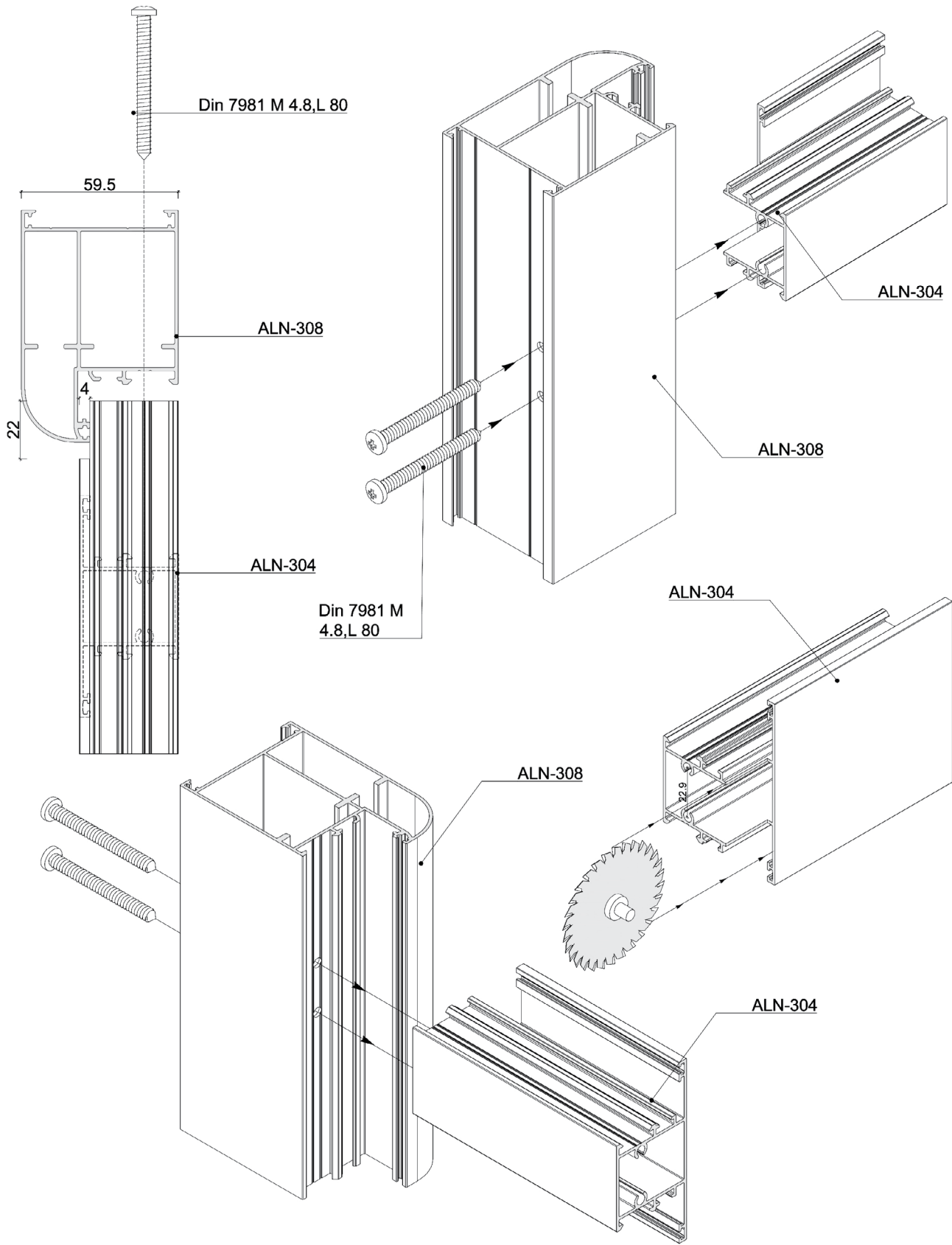
ALN-304

ALN-306

ALN-304

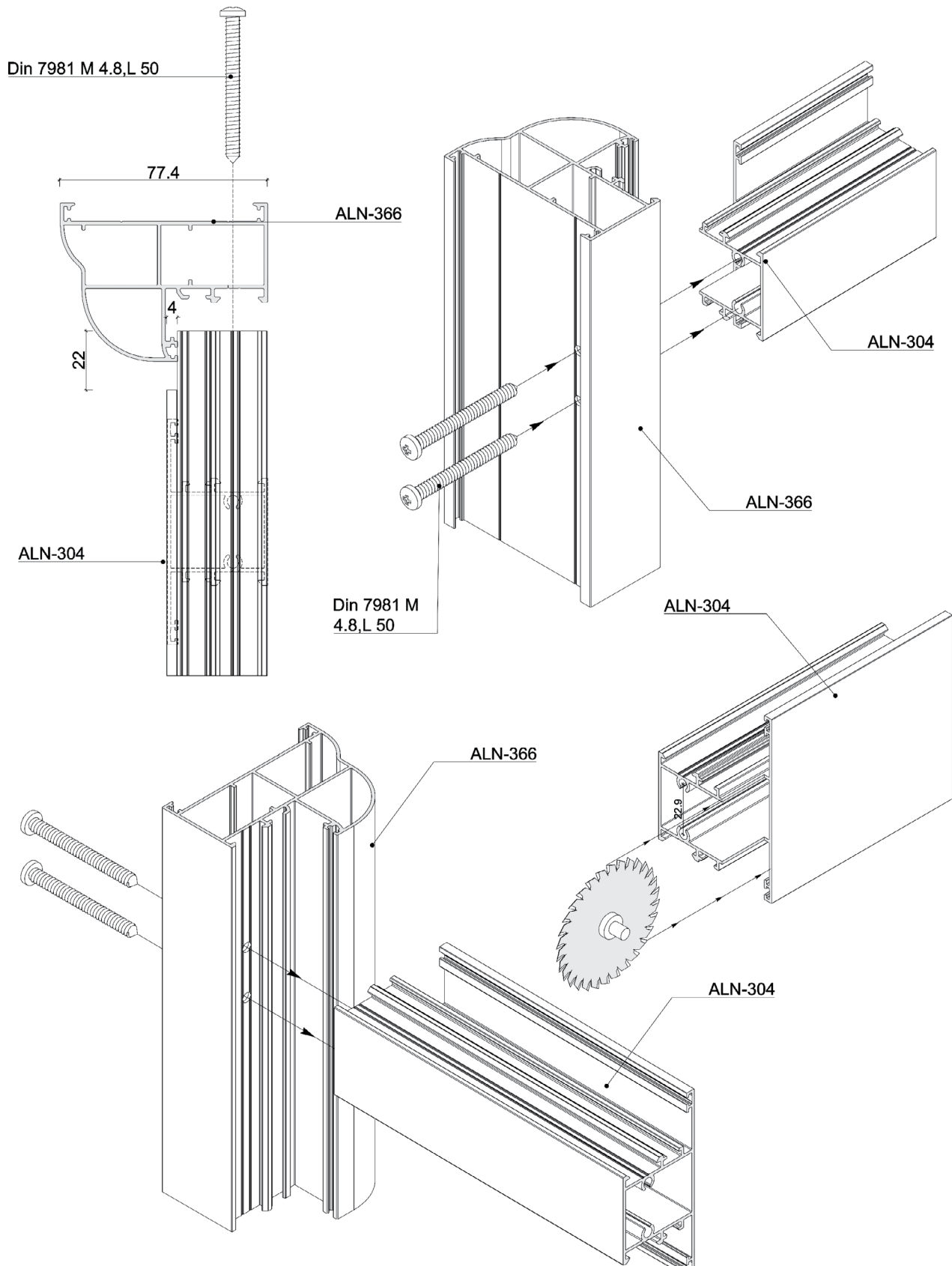


Hinged System 40 Series
Assembly Drawing



Hinged System 40 Series

Assembly Drawing

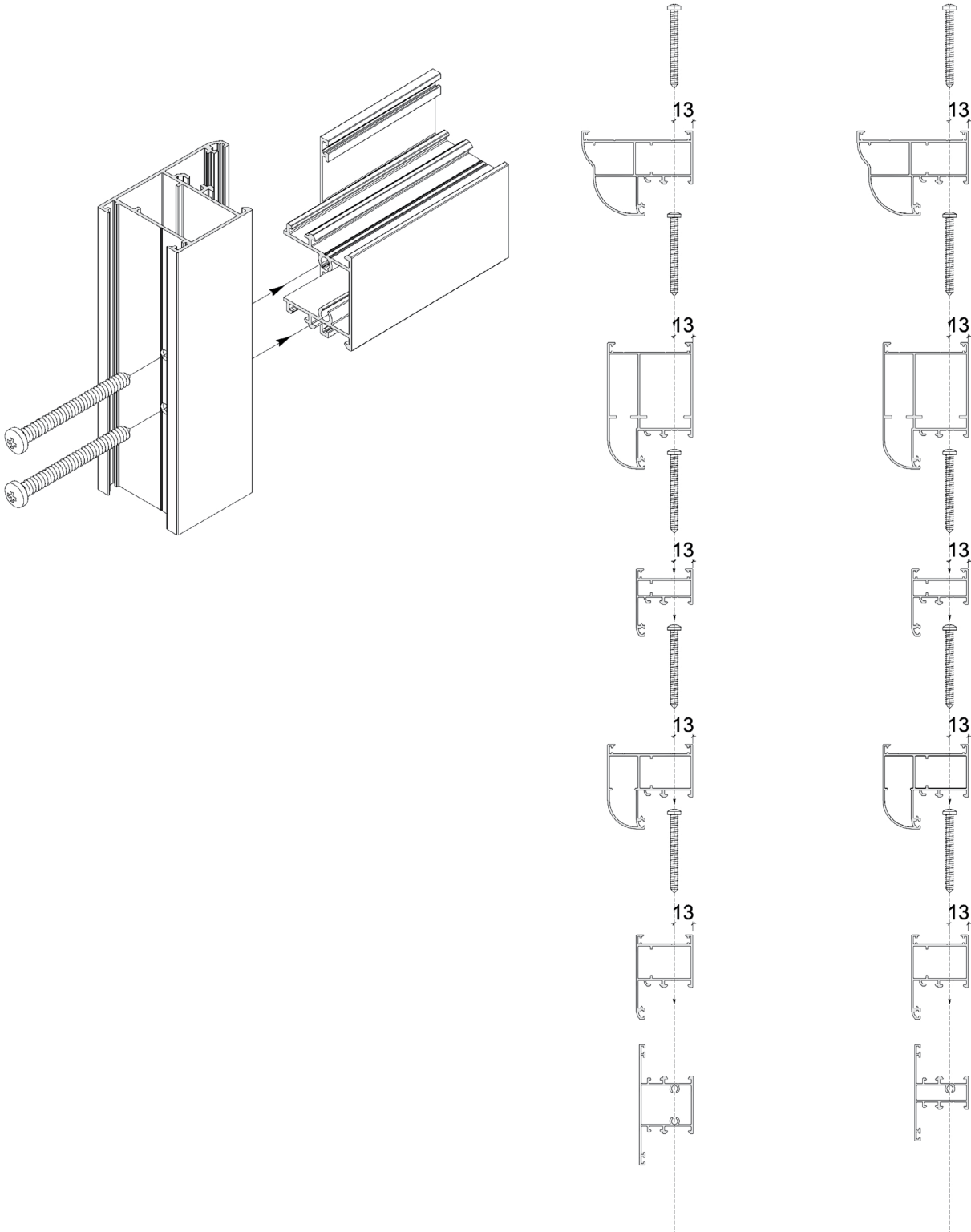




Hinged System 40 Series

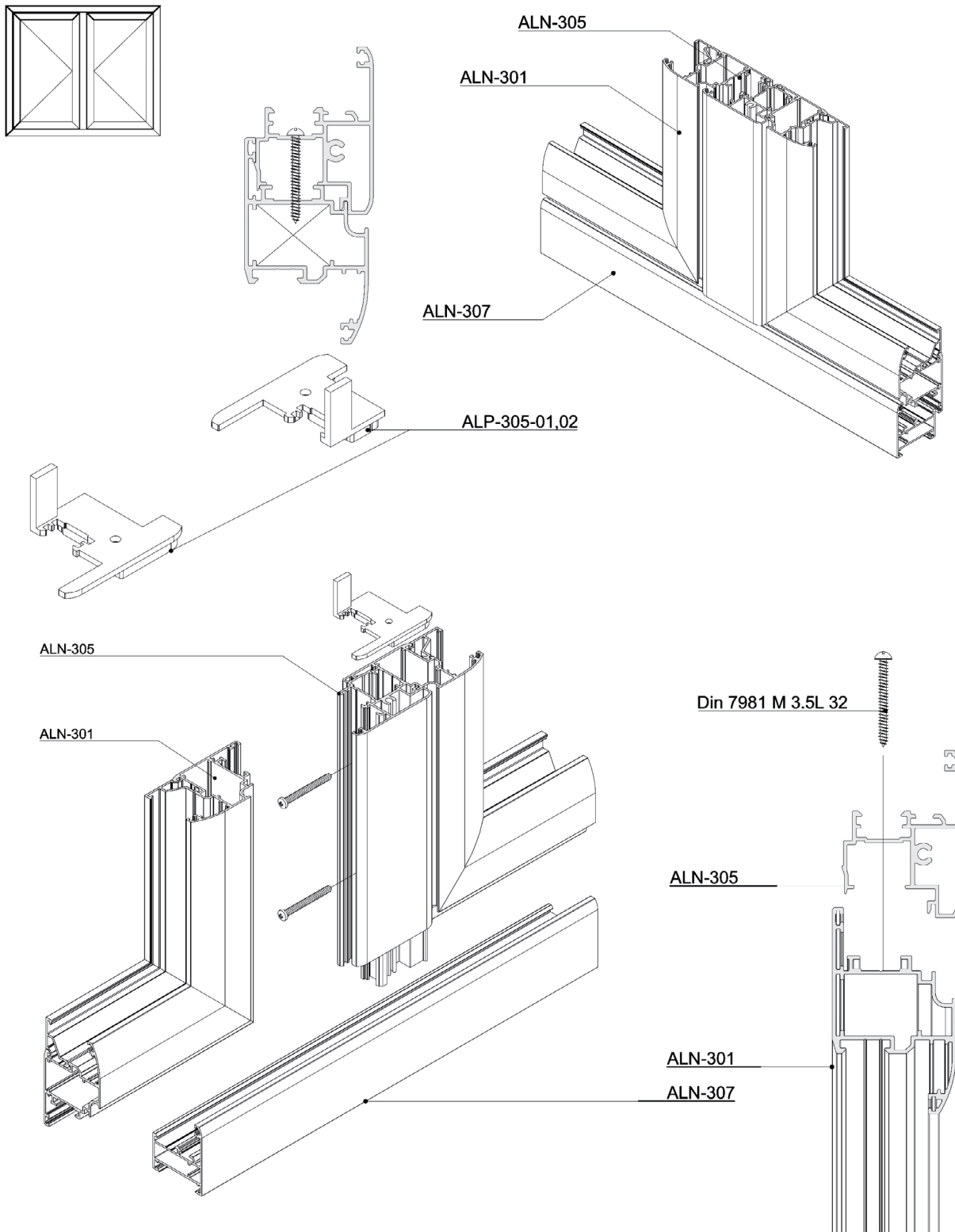
Connection - frame to transom

Connection - frame to transom



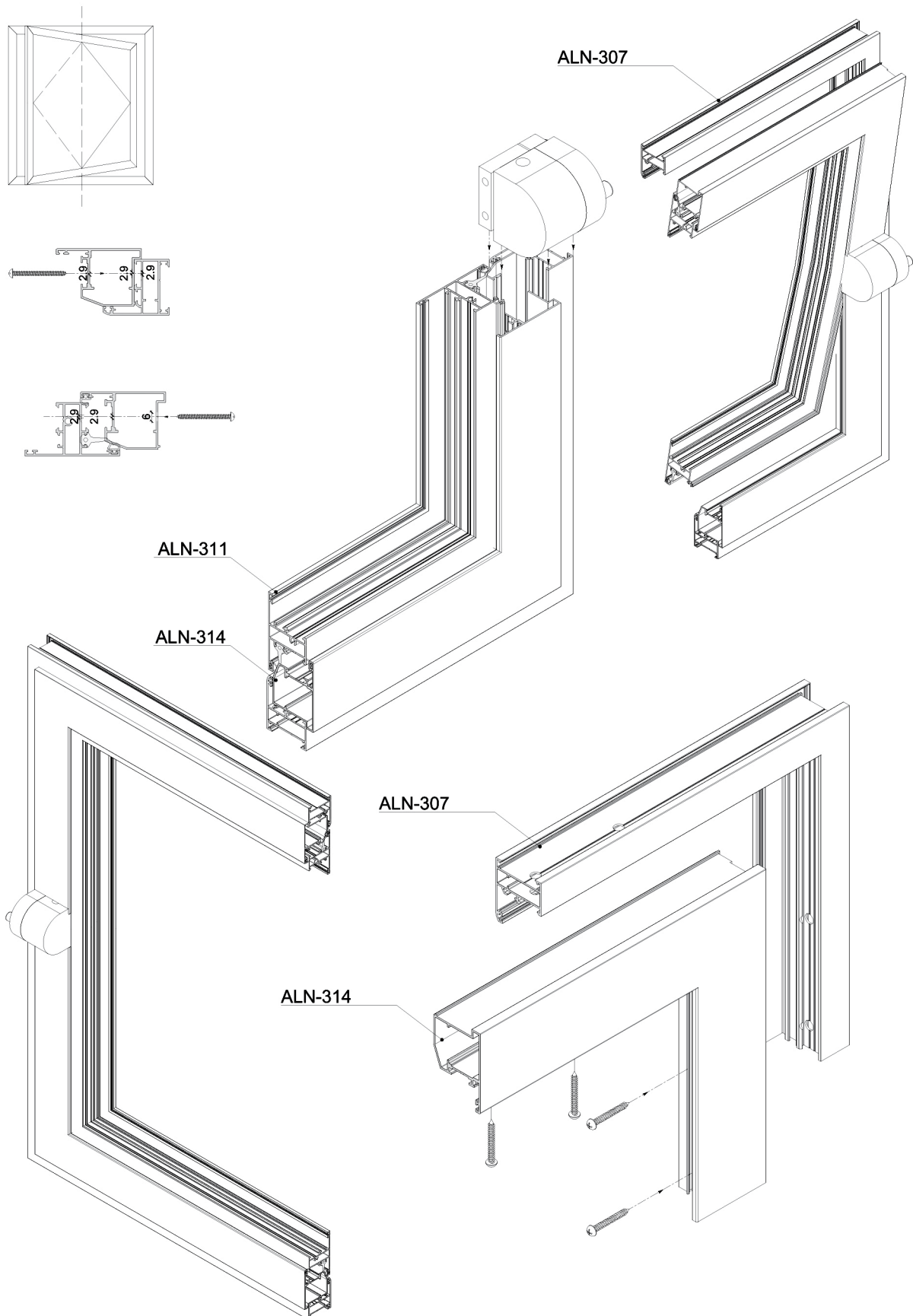
Hinged System 40 Series

Assembly Drawing



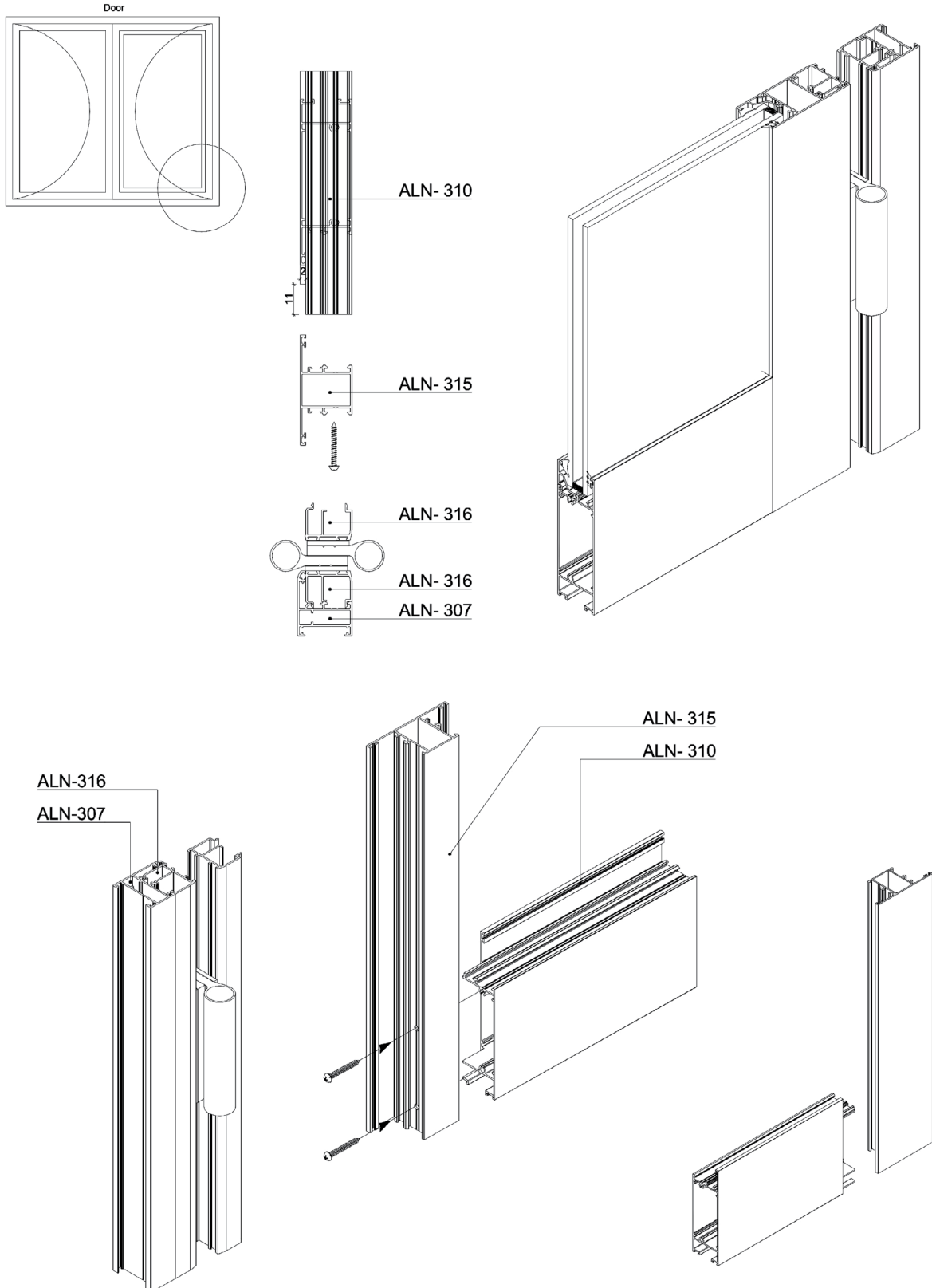


Hinged System 40 Series Assembly Drawing



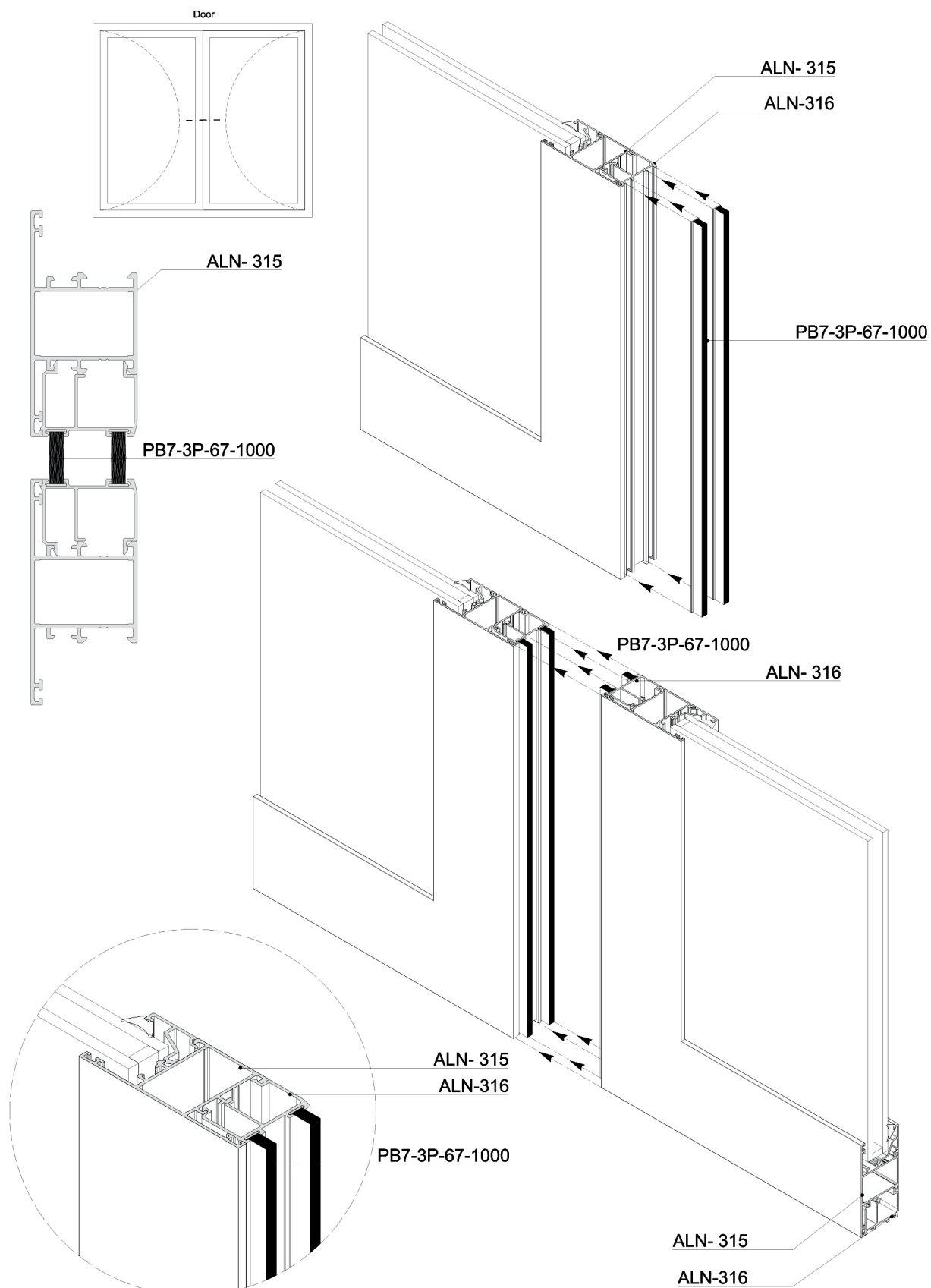
Hinged System 40 Series

Assembly Drawing



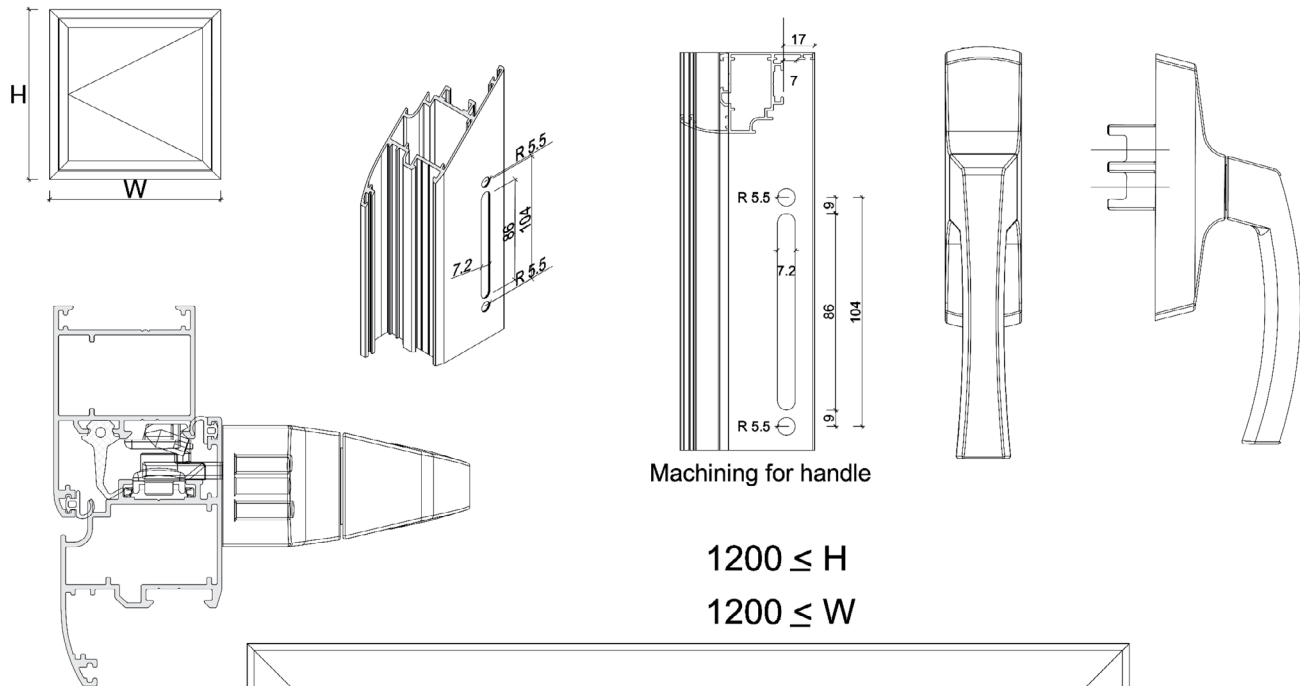


Hinged System 40 Series Assembly Drawing



Hinged System 40 Series

Hardware Installation

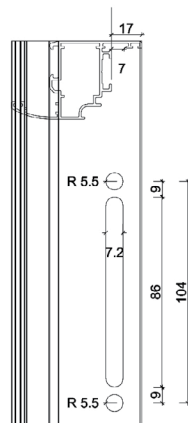
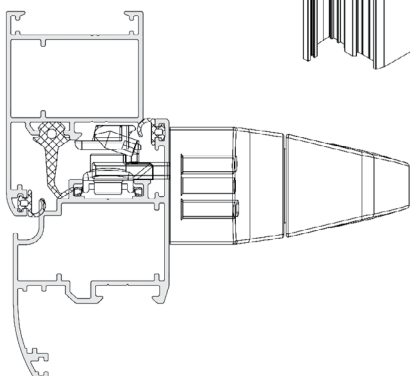
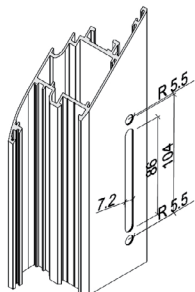
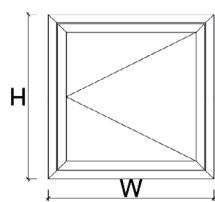


Installation of turn hardware

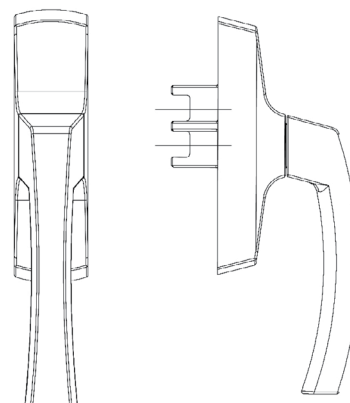


Hinged System 40 Series

Hardware Installation

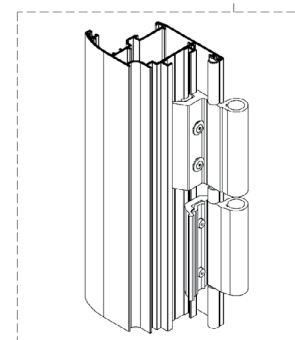
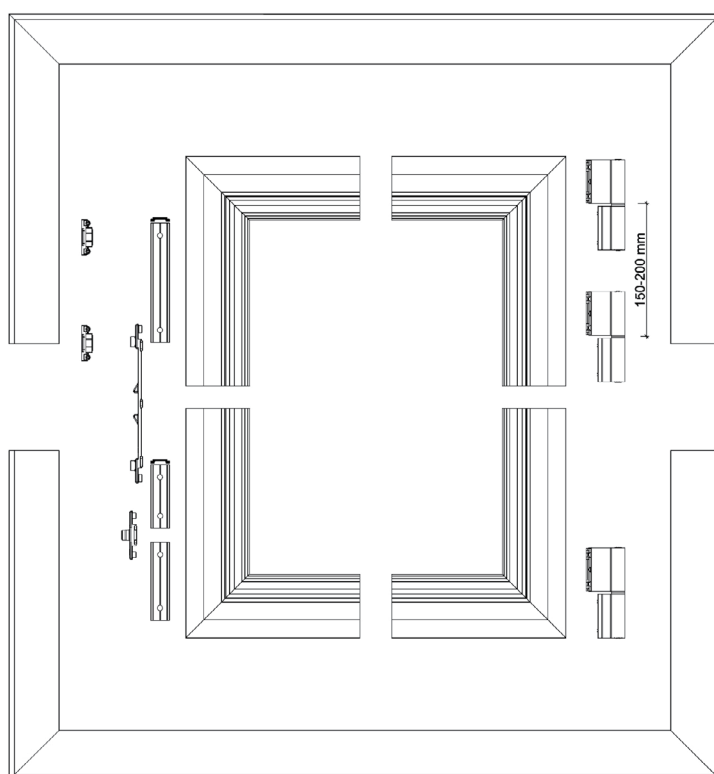
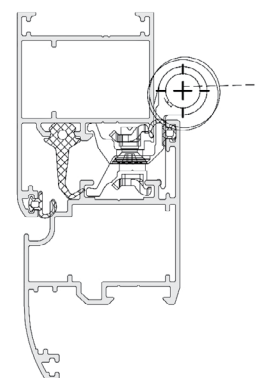


Machining for handle



$$1200 \geq H$$

$$1200 \geq W$$



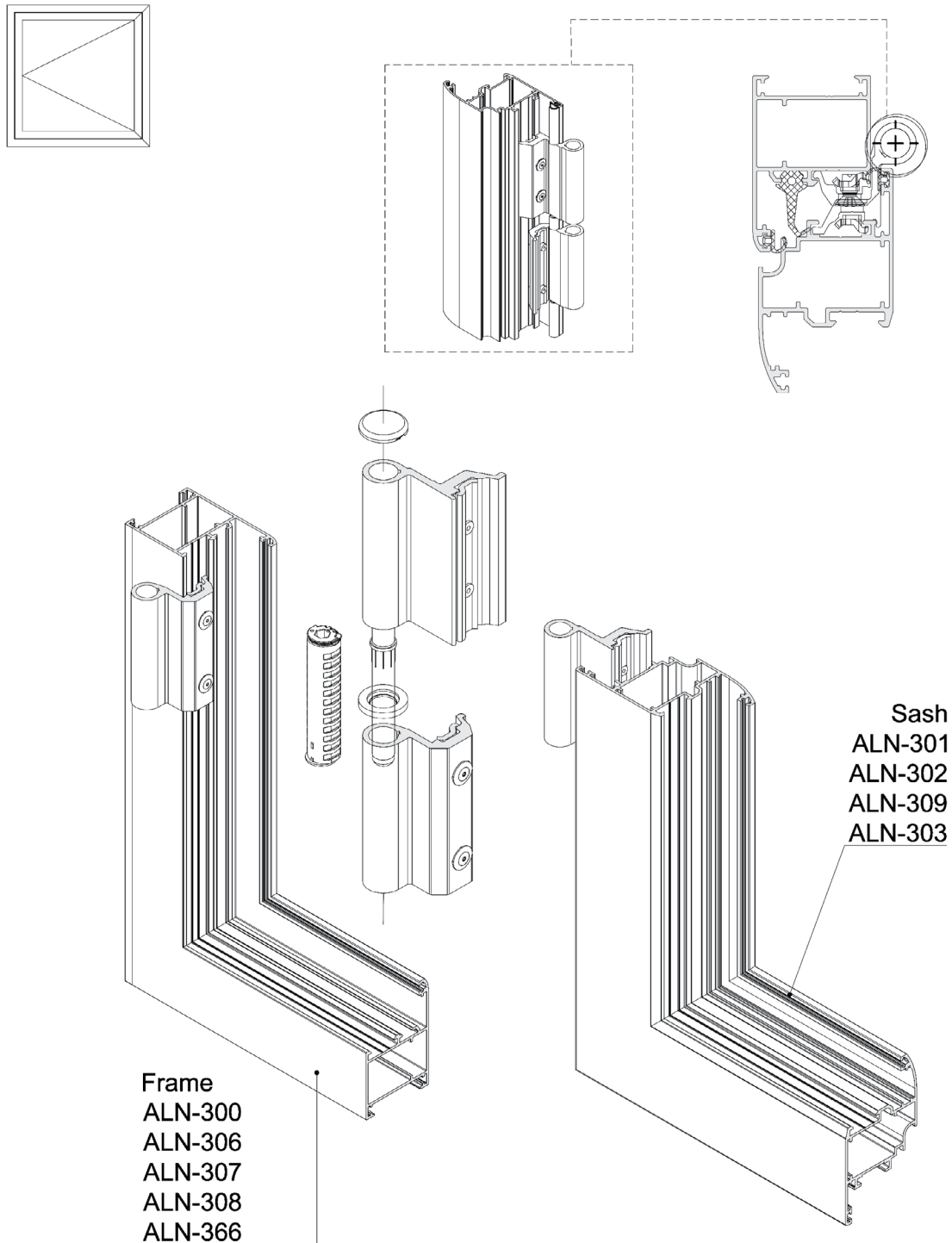
Installation of turn hardware

Installation of turn hardware



Hinged System 40 Series

Hardware Installation



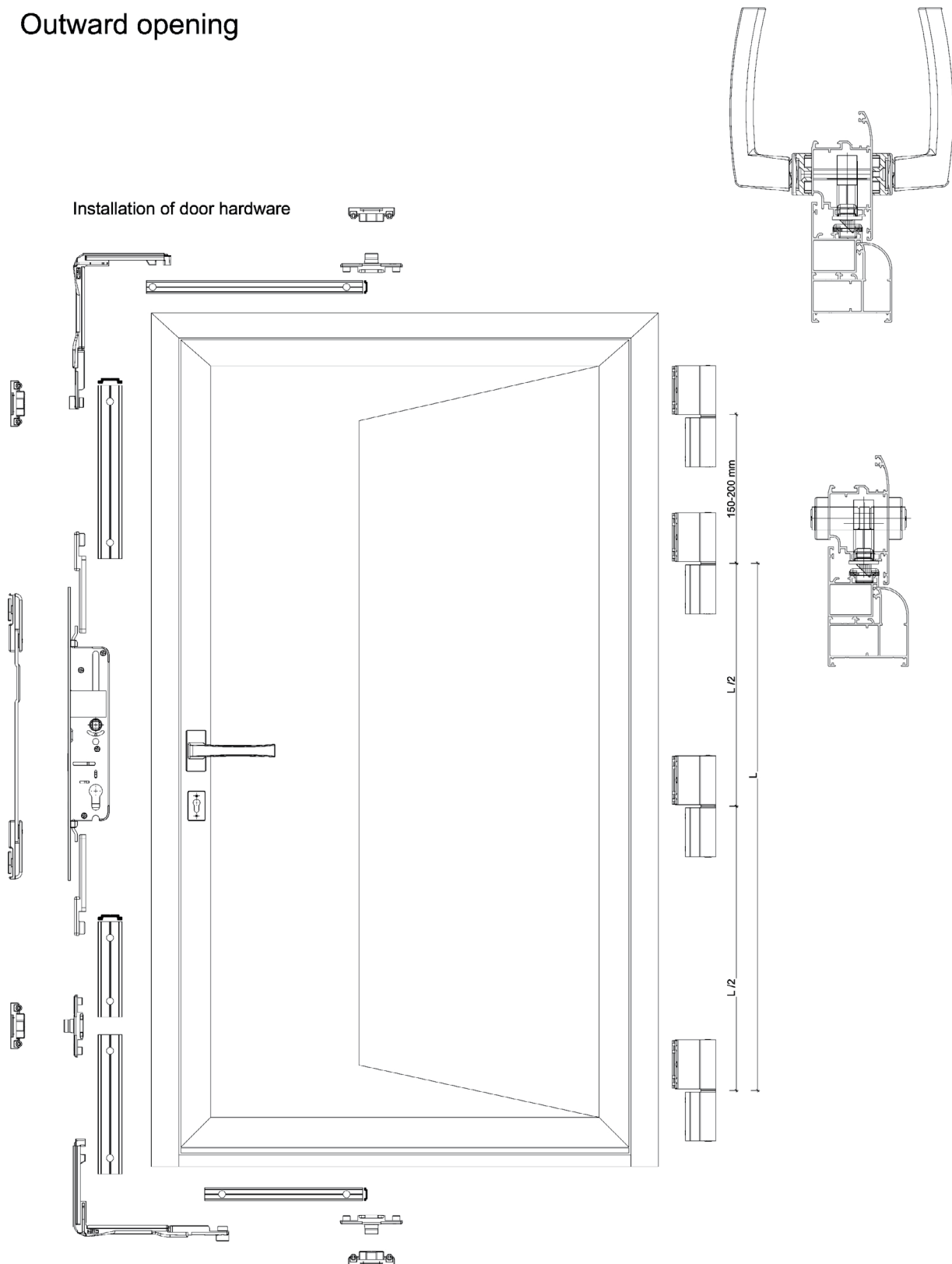
Installation of window hinges



Hinged System 40 Series

Hardware Installation

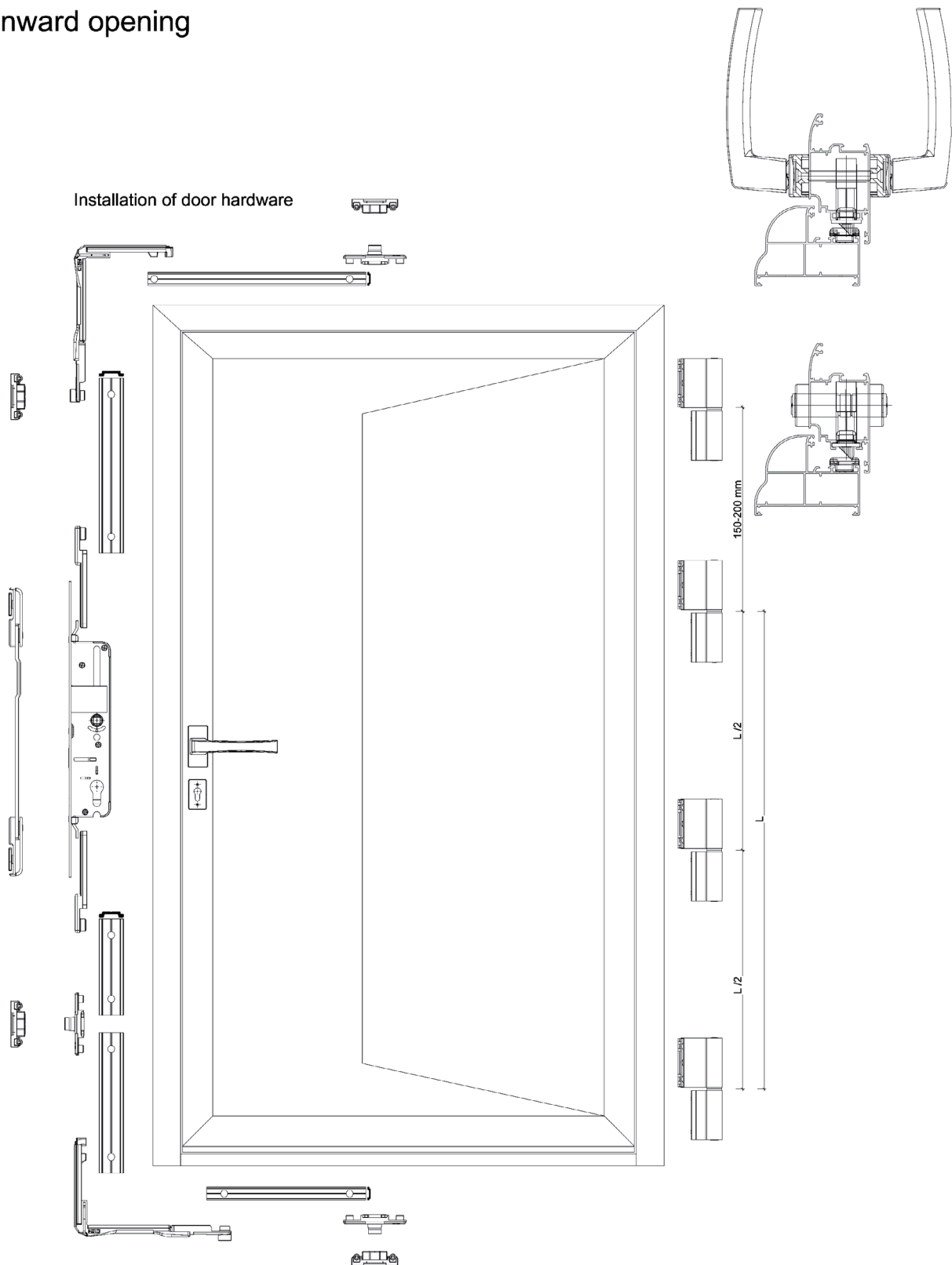
Outward opening



Hinged System 40 Series

Hardware Installation

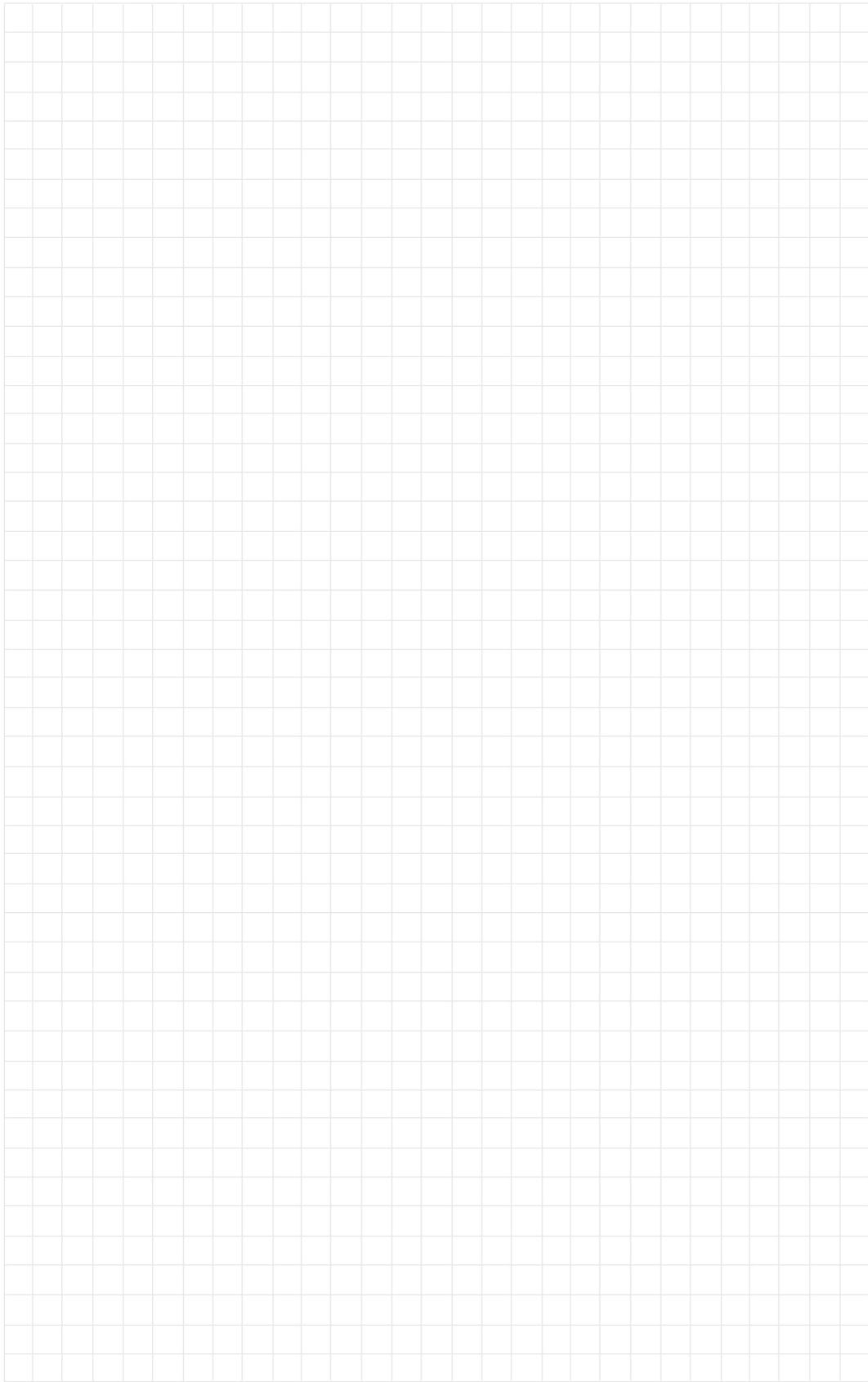
Inward opening

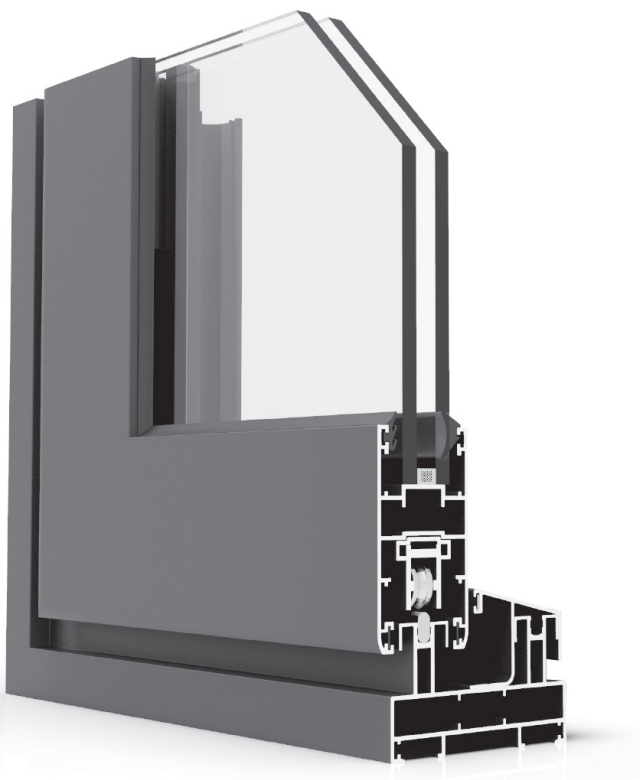




AKROLL

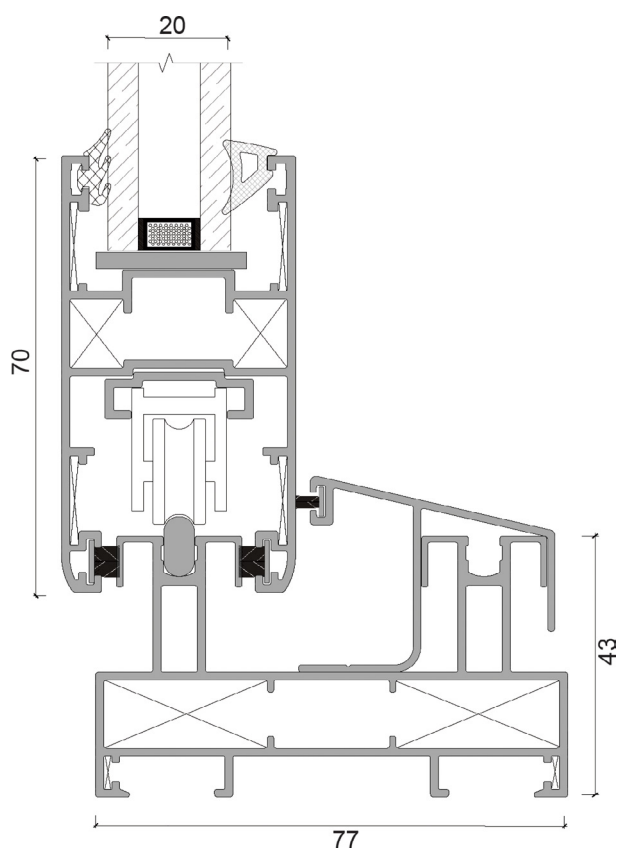
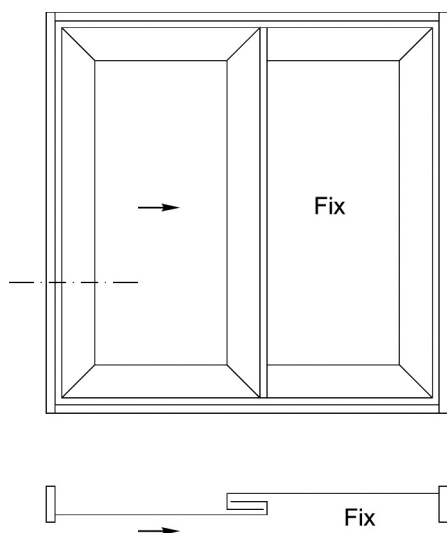
Product of Alumroll Novin Co.





Slide System 77 Series

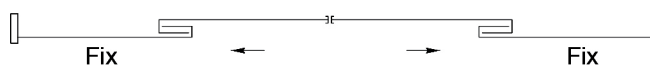
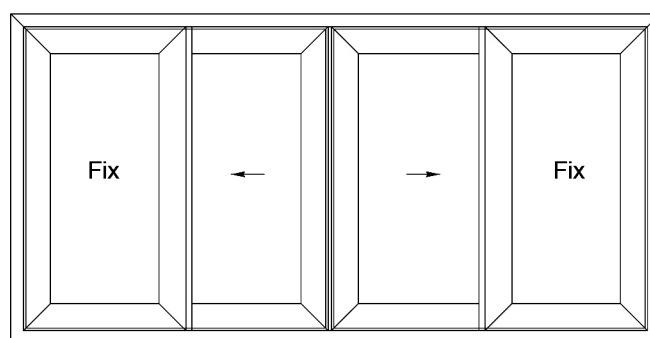
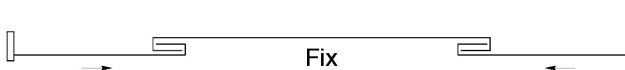
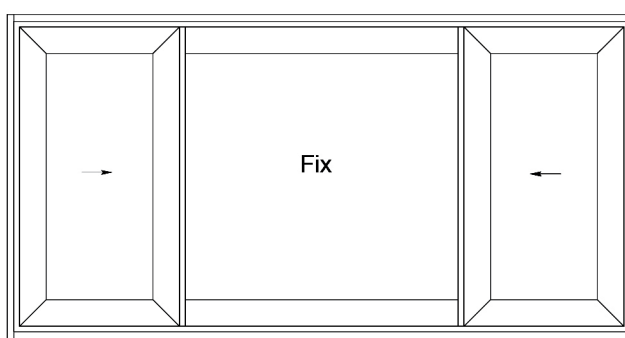
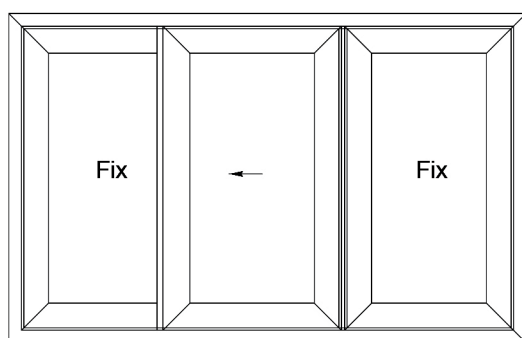
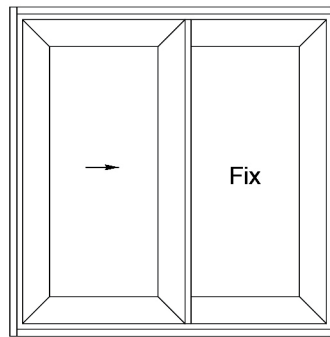
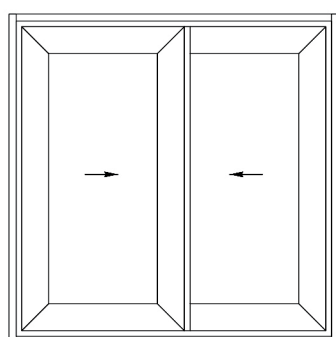
. Profile width:	77 - 110 mm
. Vent width:	38 mm
. Wall thickness:	1.3 - 1.4 mm
. Rubber description:	EPDM DIN 7863
. Glass thickness:	4 - 24 m
. Aluminum alloy extrusion:	EN AW 6063 T5
. Safety drainage system	
. Various typologies	





Slide System 77 Series

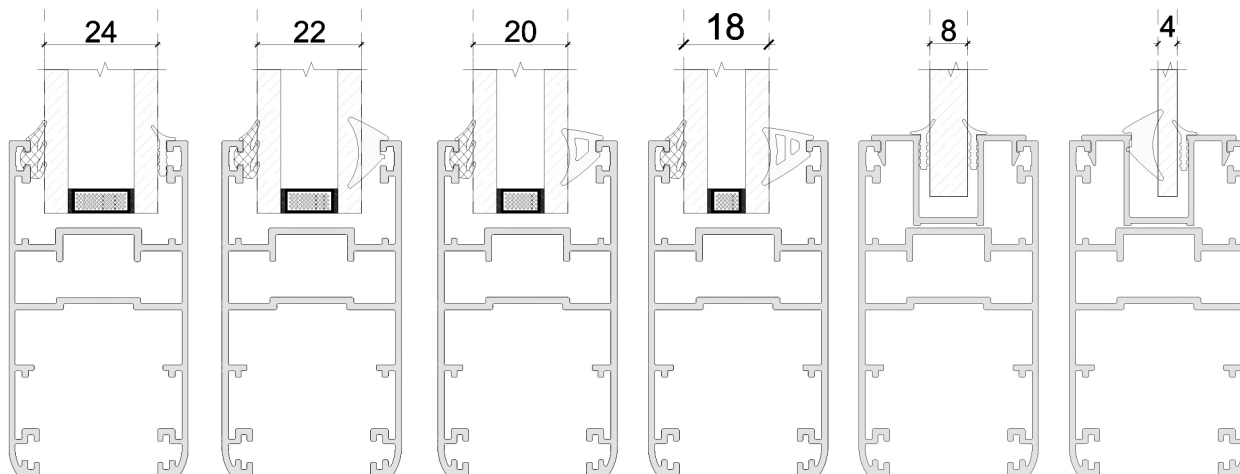
Typologies



Slide System 77 Series

Glazing Table

ALN-356



Glazing Thickness	Gasket Inside	Gasket Outside
18 mm	 EP-021	 MO68
20 mm	 EP-019	 MO68
22 mm	 EP-016	 MO68
24 mm	 EP-015	 MO68

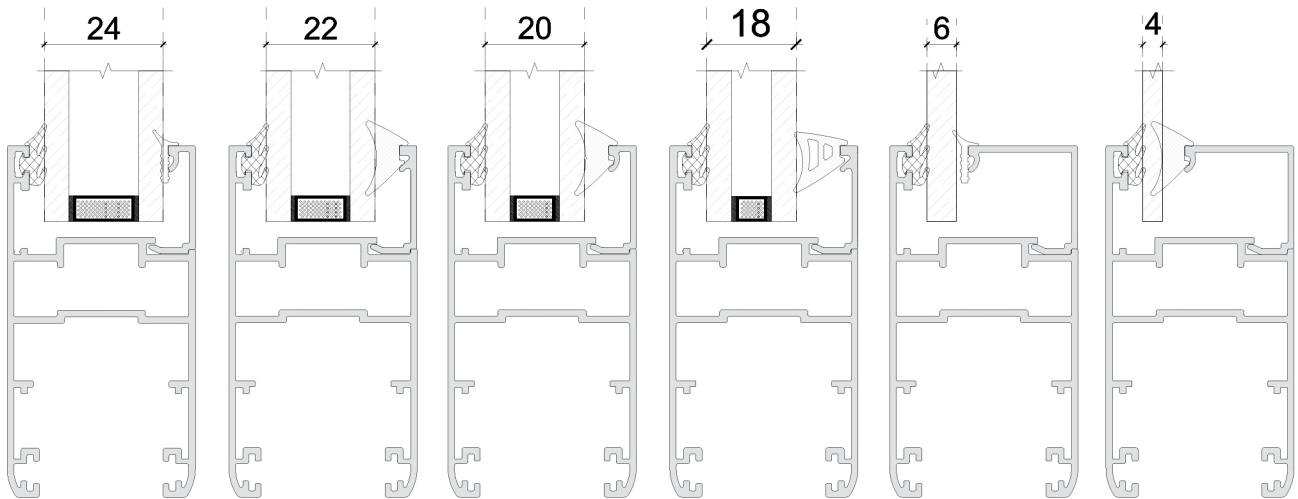
Glazing Thickness	Gasket Inside	Gasket Outside	Glazing Bead
8 mm	 EP-015	 EP-015	 ALN-362
4 mm	 EP-015	 EP-016	 ALN-362



Slide System 77 Series

Glazing Table

ALN-355

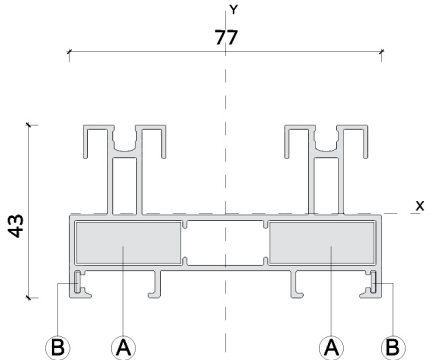
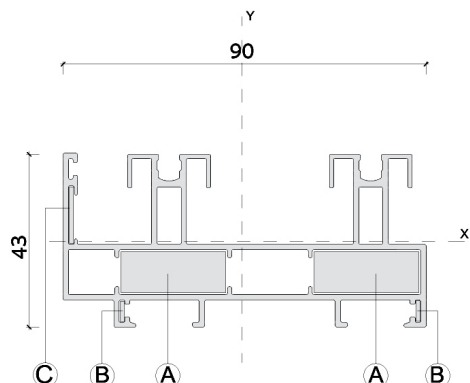
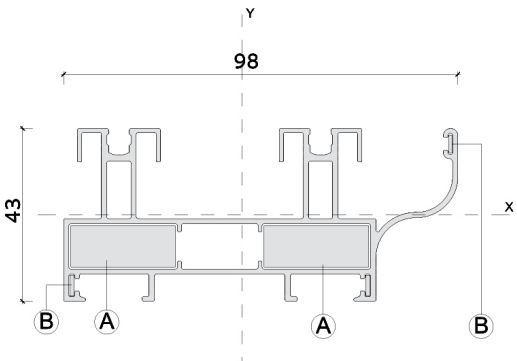
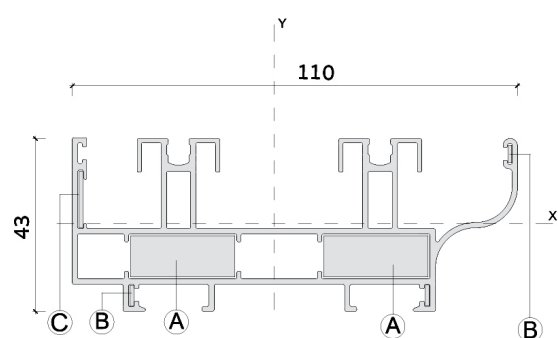


Glazing Thickness	Gasket Inside	Gasket Outside	Glazing Bead
4 mm	 EP-016	 MO68	 ALN-463
6 mm	 EP-015	 MO68	 ALN-463
18 mm	 EP-019	 MO68	 ALN-461
20 mm	 EP-016	 MO68	 ALN-460
22 mm	 EP-016	 MO68	 ALN-461
24 mm	 EP-015	 MO68	 ALN-460



Slide System 77 Series

Profile & Accessories Information

			
I_x : 8.40 cm ⁴	I_y : 32.54 cm ⁴	I_x : 9.04 cm ⁴	I_y : 47.04 cm ⁴
Frame : ALN-351	A: PCP-11 / 26 mm 	Frame : ALN-353	A: PCP-11 / 26 mm 
Weight: 1320 gr/m	B: MO 19 (399012) 	Weight: 1528 gr/m	B: MO 19 (399012) 
			C: MM77 
			
I_x : 8.98 cm ⁴	I_y : 46.66 cm ⁴	I_x : 10.15 cm ⁴	I_y : 67.82 cm ⁴
Frame : ALN-352	A: PCP-11 / 26 mm 	Frame : ALN-354	A: PCP-11 / 26 mm 
Weight: 1477 gr/m	B: MO 19 (399012) 	Weight: 1685 gr/m	B: MO 19 (399012) 
			C: MM77 



Slide System 77 Series

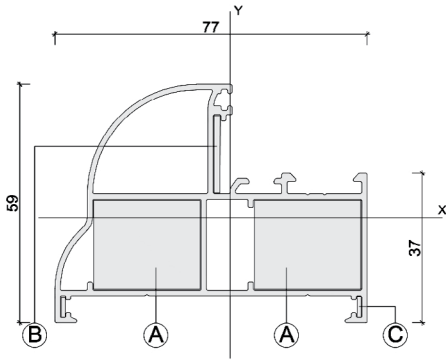
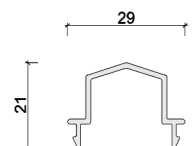
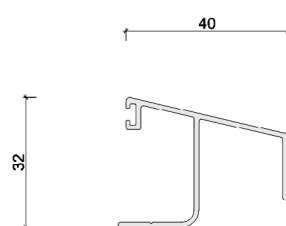
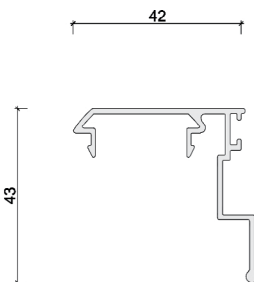
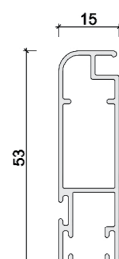
Profile & Accessories Information

I_x : 12.41 cm ⁴	I_y : 7.80 cm ⁴	I_x : 9.27 cm ⁴	I_y : 5.50 cm ⁴
Sash: ALN-355	A: PCP-11 / 8 mm	Transom: ALN-358	—
Weight: 912 gr/m	B: MM77	Weight: 805 gr/m	—
I_x : 15.62 cm ⁴	I_y : 9.26 cm ⁴	I_x : 15.13 cm ⁴	I_y : 8.58 cm ⁴
Sash: ALN-356	A: PCP-11 / 8 mm	Transom: ALN-359	—
Weight: 1029 gr/m	B: MM77	Weight: 1010 gr/m	—



Slide System 77 Series

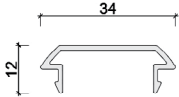
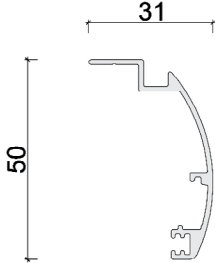
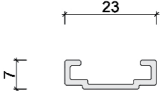
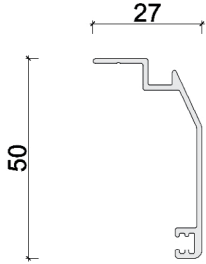
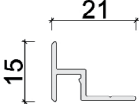
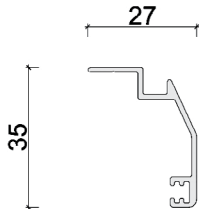
Profile & Accessories Information

																			
		Profile : ALN-360	Weight: 203 gr/m																
<table><tr><td>I_x: 13.29</td><td>cm⁴</td><td>I_y: 25.98</td><td>cm⁴</td></tr><tr><td>Frame :</td><td>ALN-366</td><td>A: PCP-22/26 mm</td><td></td></tr><tr><td>Weight:</td><td>1250 gr/m</td><td>B: fuji 2000</td><td></td></tr><tr><td></td><td></td><td>C: MO19</td><td></td></tr></table>		I_x : 13.29	cm ⁴	I_y : 25.98	cm ⁴	Frame :	ALN-366	A: PCP-22/26 mm		Weight:	1250 gr/m	B: fuji 2000				C: MO19			
I_x : 13.29	cm ⁴	I_y : 25.98	cm ⁴																
Frame :	ALN-366	A: PCP-22/26 mm																	
Weight:	1250 gr/m	B: fuji 2000																	
		C: MO19																	
		Profile : ALN-361	Weight: 370 gr/m																
																			
Cap : ALN-357		Fly screen : ALN-207																	
Weight: 432 gr/m		Weight: 448 gr/m																	



Slide System 77 Series

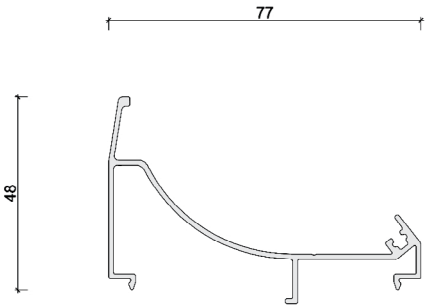
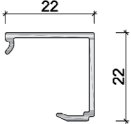
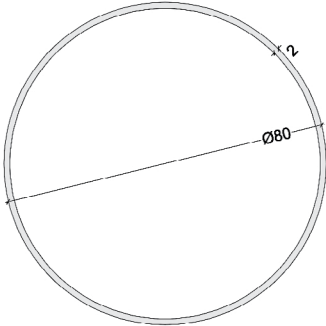
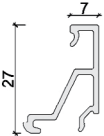
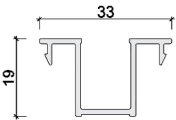
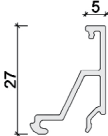
Profile & Accessories Information

			
Profile : ALN-363	Weight: 194 gr/m	Flange profile: ALN-219	Weight : 362 gr/m
			
Profile : ALN-364	Weight: 140 gr/m	Flange profile: ALN-221	Weight : 302 gr/m
			
Profile : ALN-228	Weight: 135 gr/m	Flange profile: ALN-222	Weight : 254 gr/m



Slide System 77 Series

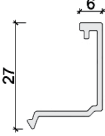
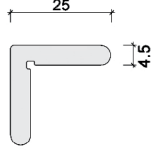
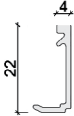
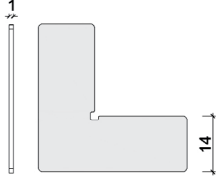
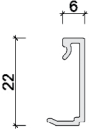
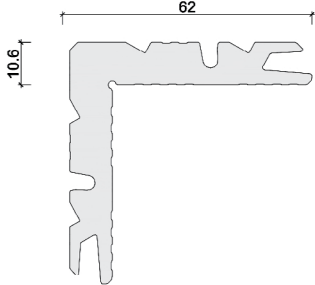
Profile & Accessories Information

			
Profile: ALN-326	Weight : 613 gr/m	Glazing beads: ALN-463	Weight :178 gr/m
			
Profile: ALN-328	Weight : 999 gr/m	Glazing beads: ALN-322	Weight :238 gr/m
			
Glazing beads: ALN-362	Weight :254 gr/m	Glazing beads: ALN-321	Weight :224 gr/m



Slide System 77 Series

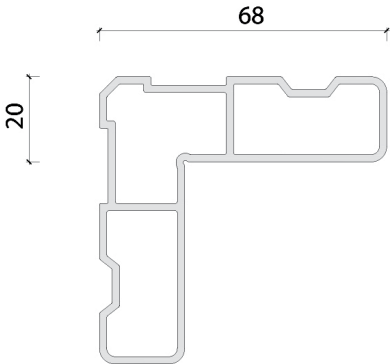
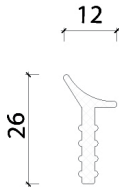
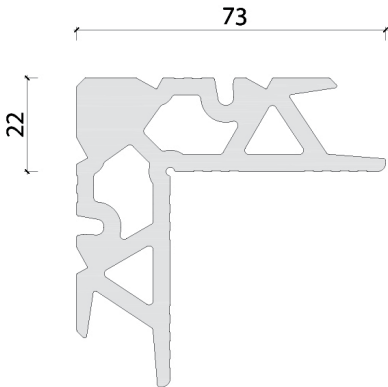
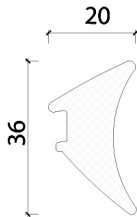
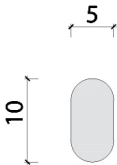
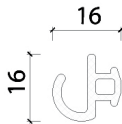
Profile & Accessories Information

			
Glazing beads: ALN-424	Weight : 167 gr/m	Corner joint: MO 19 (5MM/480196)	Weight: _
			
Glazing beads: ALN-461	Weight : 119 gr/m	Corner joint : MM 77	Weight: _
			
Glazing beads: ALN-460	Weight : 127 gr/m	Corner joint : PCP11	Weight: 2549 gr/m



Slide System 77 Series

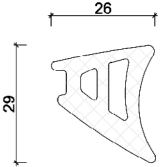
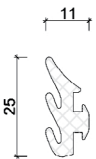
Profile & Accessories Information

			
Corner joint: PCP 20	Weight : 1375 gr/m	Gasket: EP-015	Weight : 21 gr/m
			
Corner joint: PCP-22	Weight : 3718 gr/m	Gasket: EP-016	Weight : 77 gr/m
			
Rail : ALN-462	Weight: 119 gr/m	Gasket: EP-018	Weight : 27 gr/m



Slide System 77 Series

Profile & Accessories Information

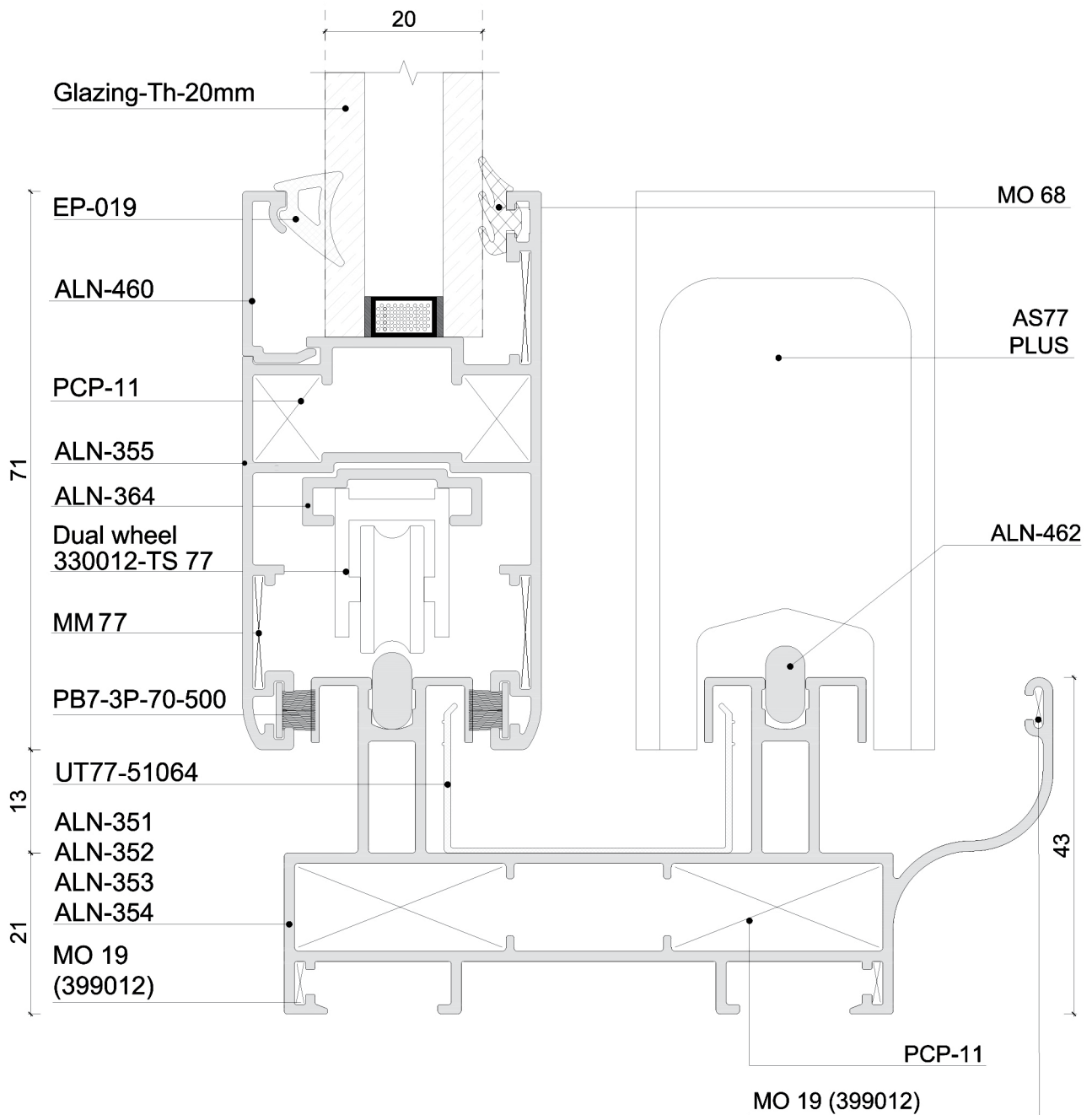
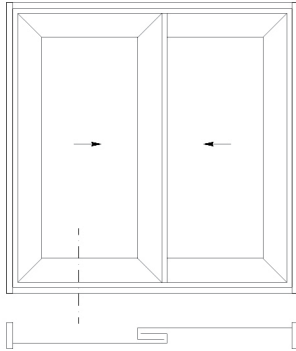
			
Gasket: EP-021	Weight : 80 gr/m	Gasket: PB7-3P-70-500	Weight : —
			
Gasket: MO68	Weight : 46 gr/m	Gasket: PB7-3P-70-800	Weight : —
			
Gasket : MO 60	Weight: 26	Gasket: PB7-3P-50-500	Weight : —





Slide System 77 Series

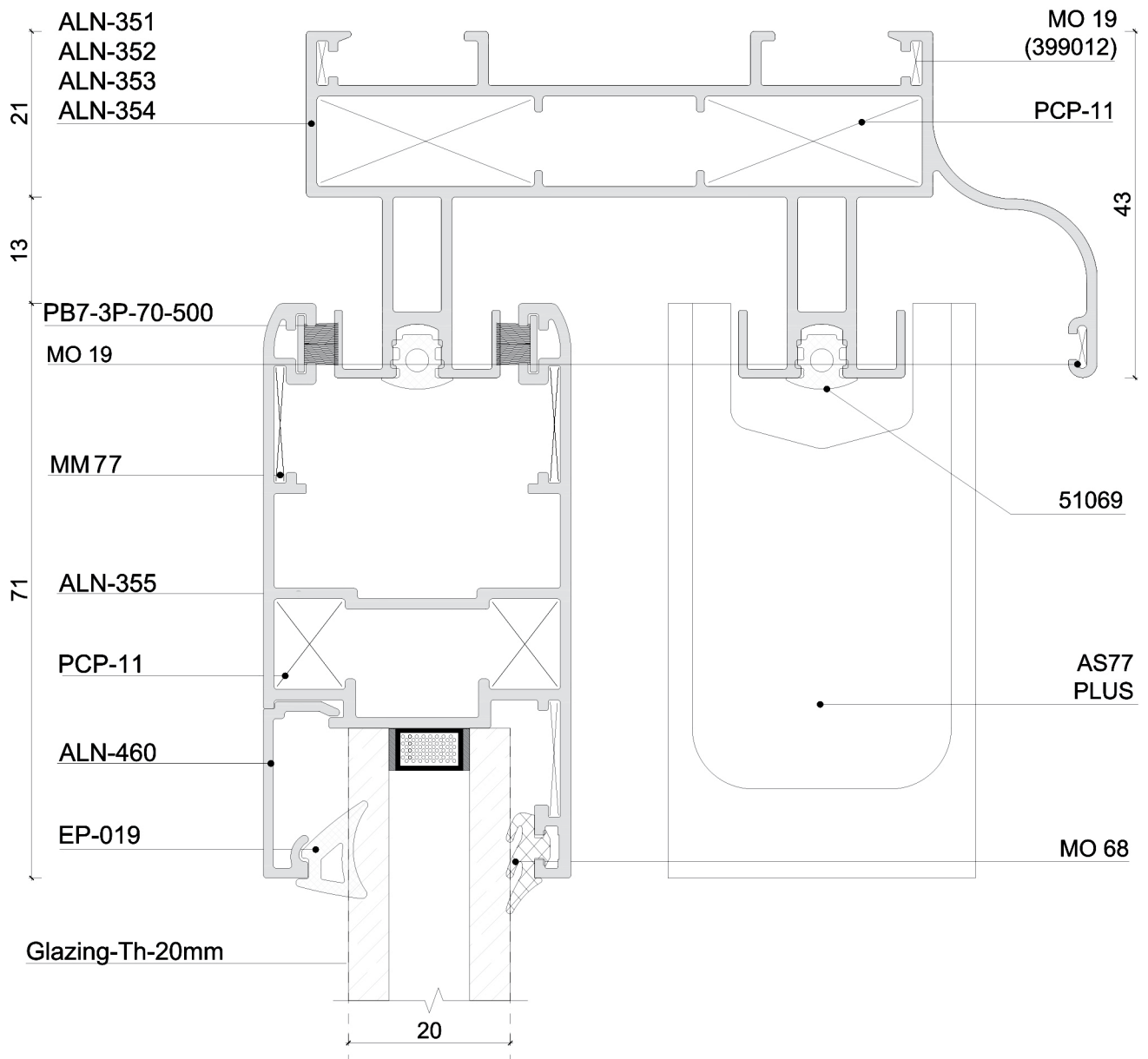
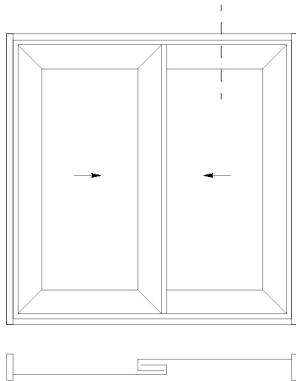
Fabrication Details





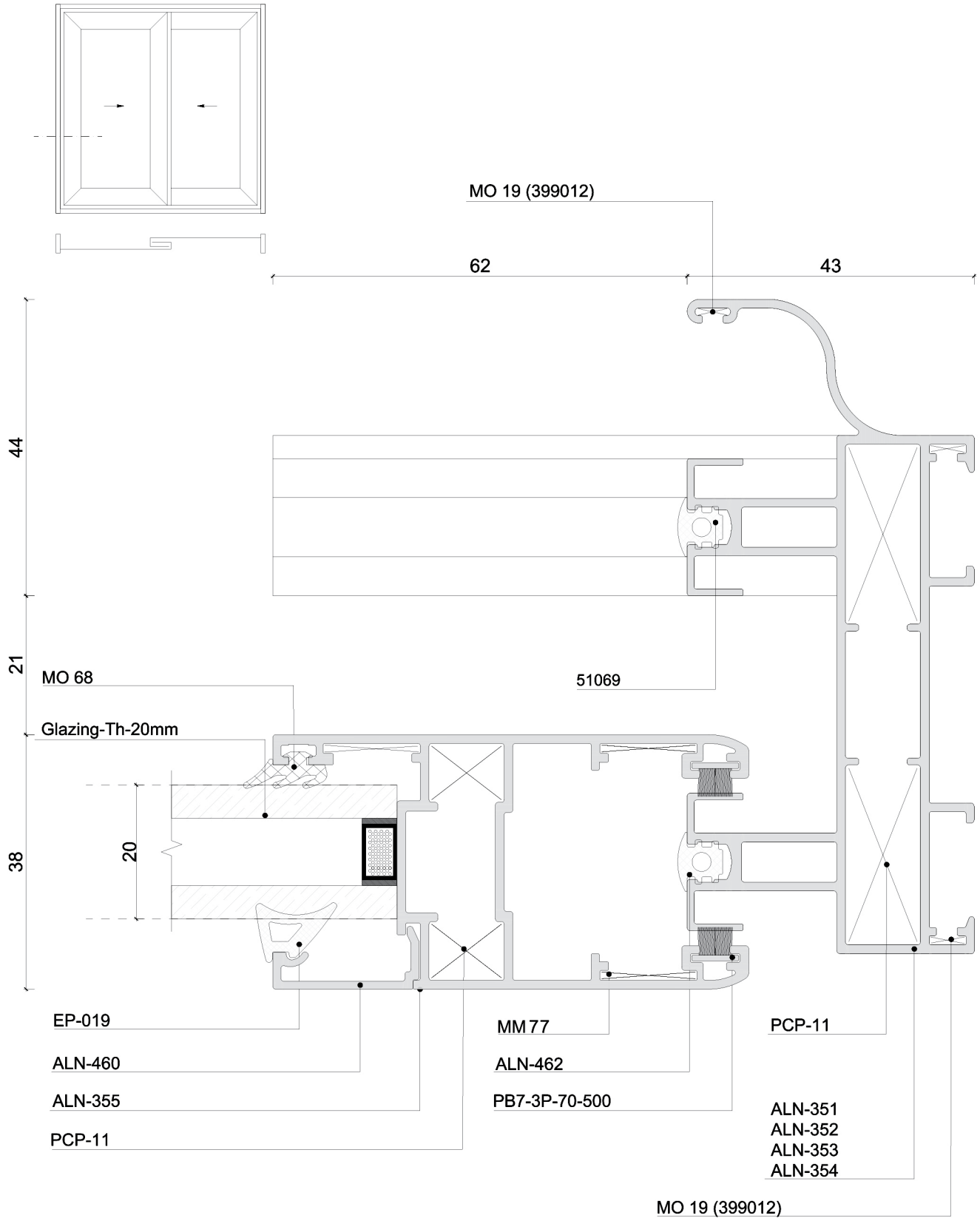
Slide System 77 Series

Fabrication Details



Slide System 77 Series

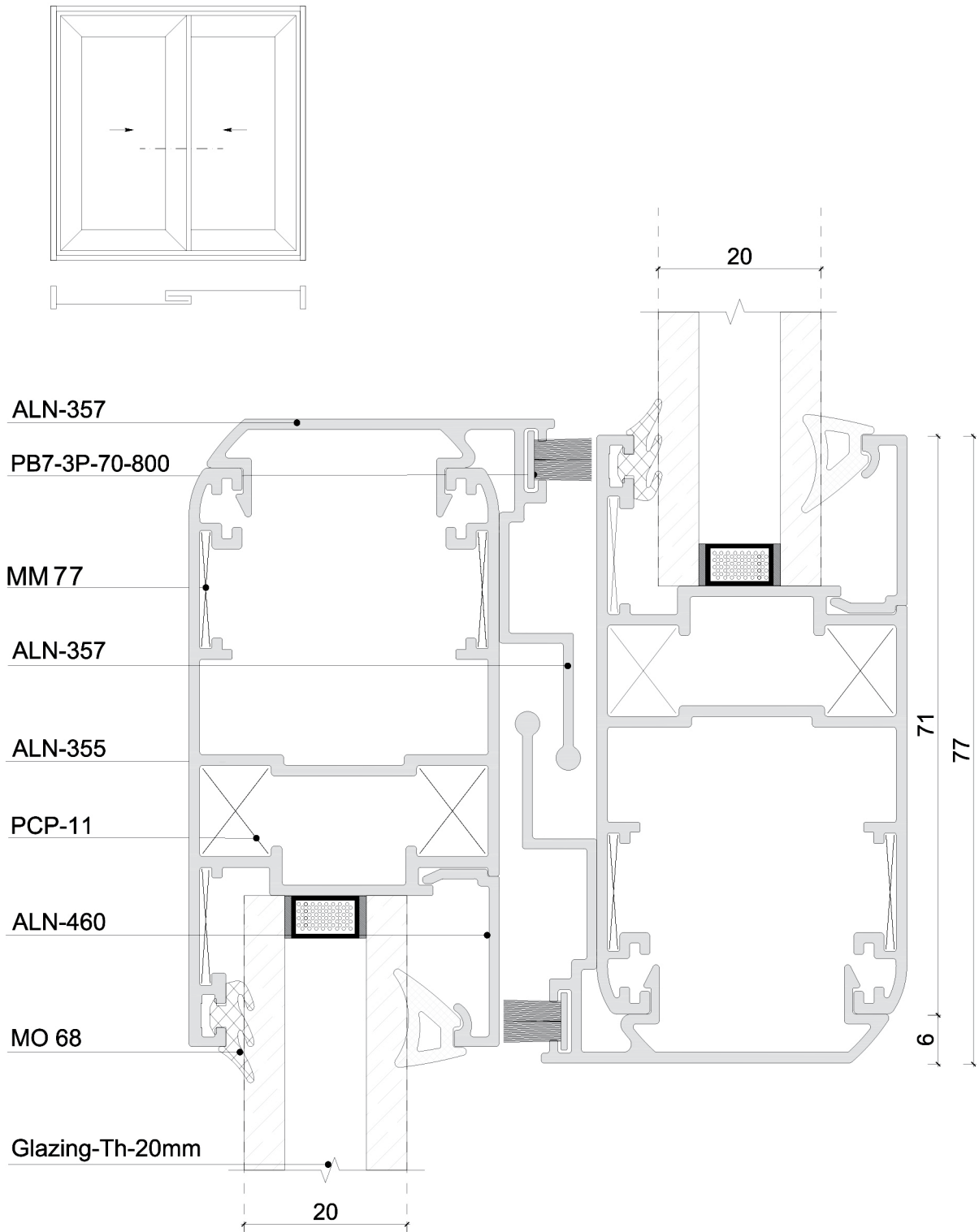
Fabrication Details





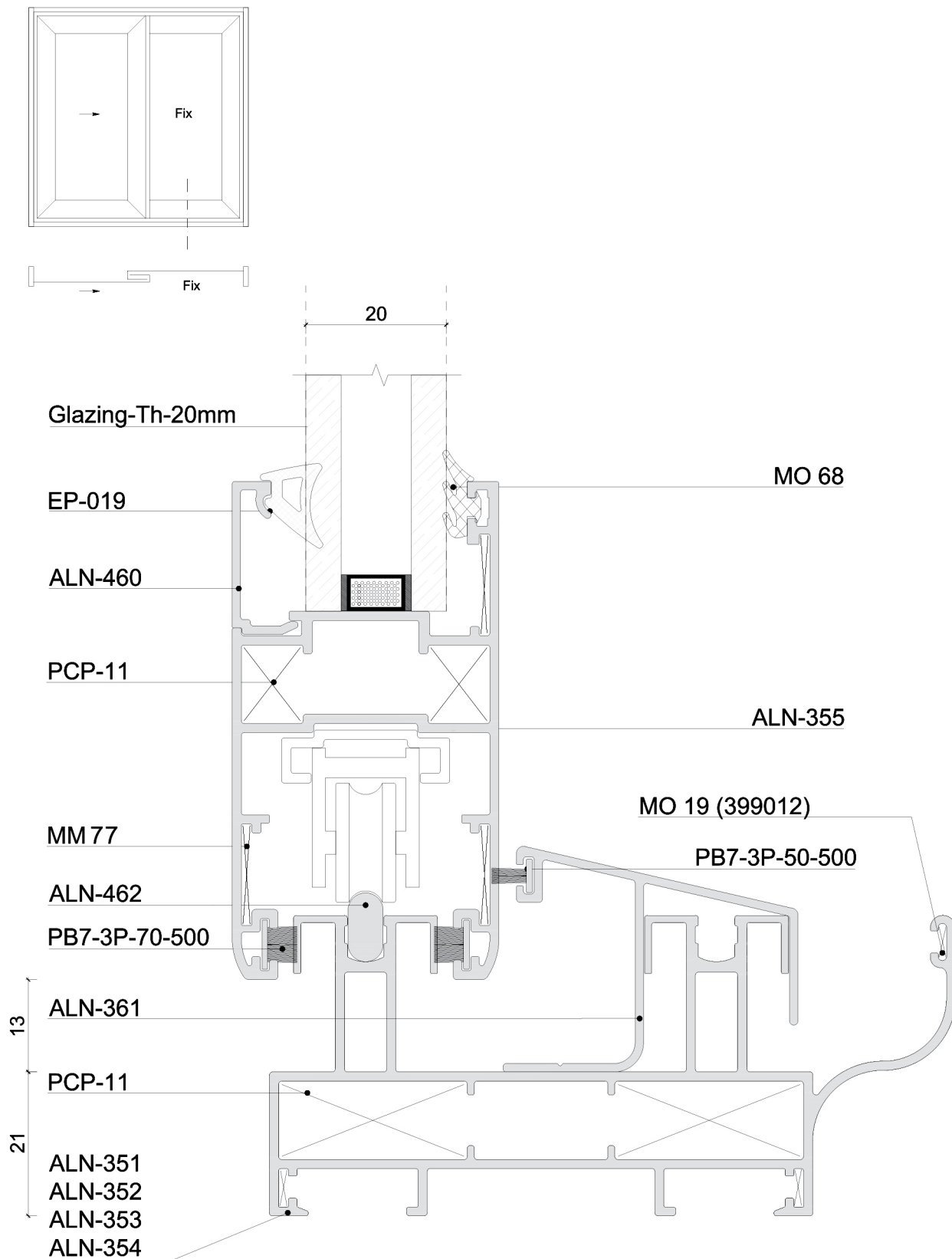
Slide System 77 Series

Fabrication Details



Slide System 77 Series

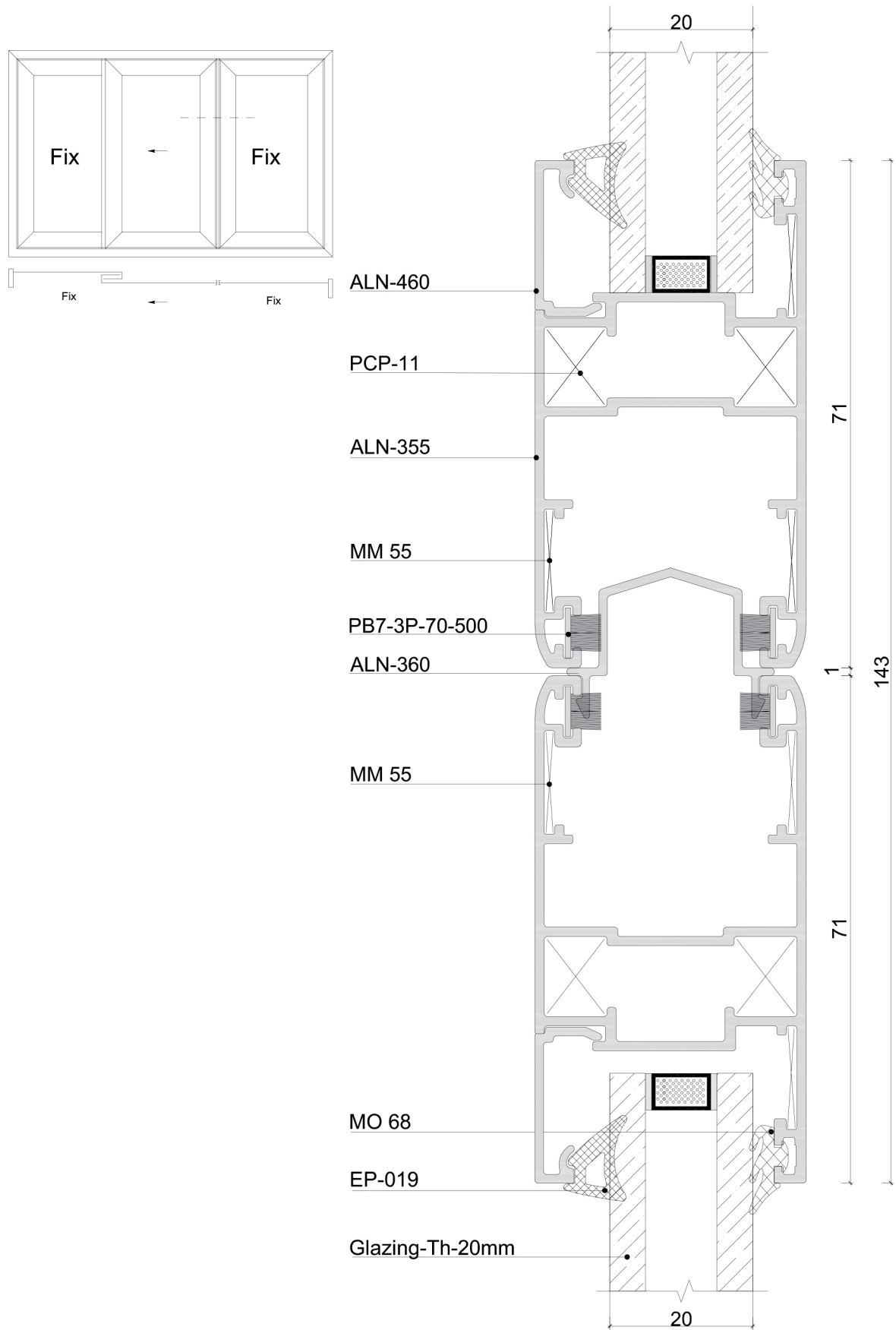
Fabrication Details





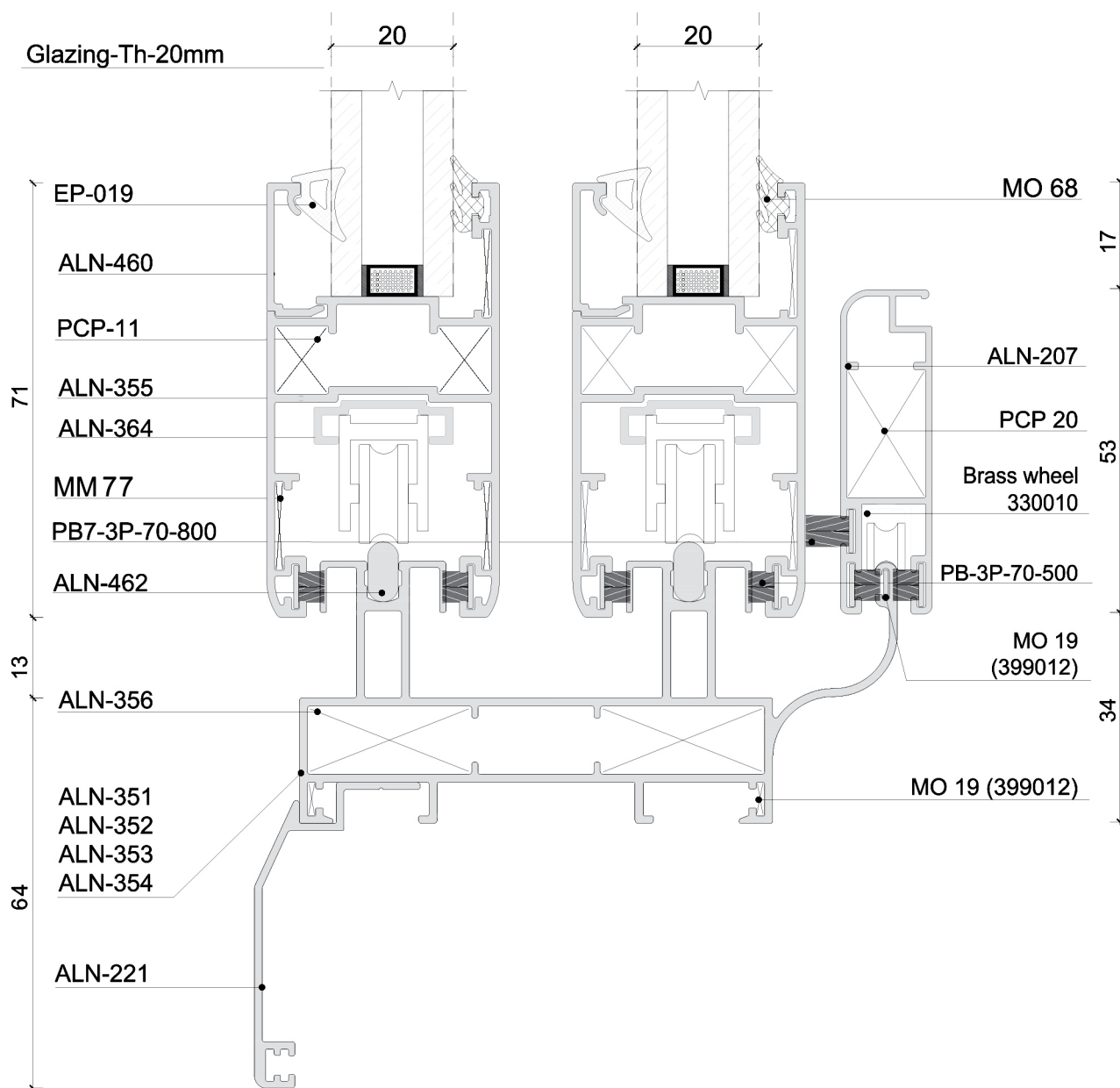
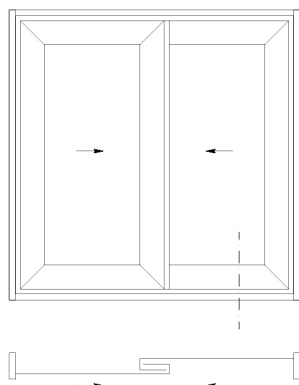
Slide System 77 Series

Fabrication Details



Slide System 77 Series

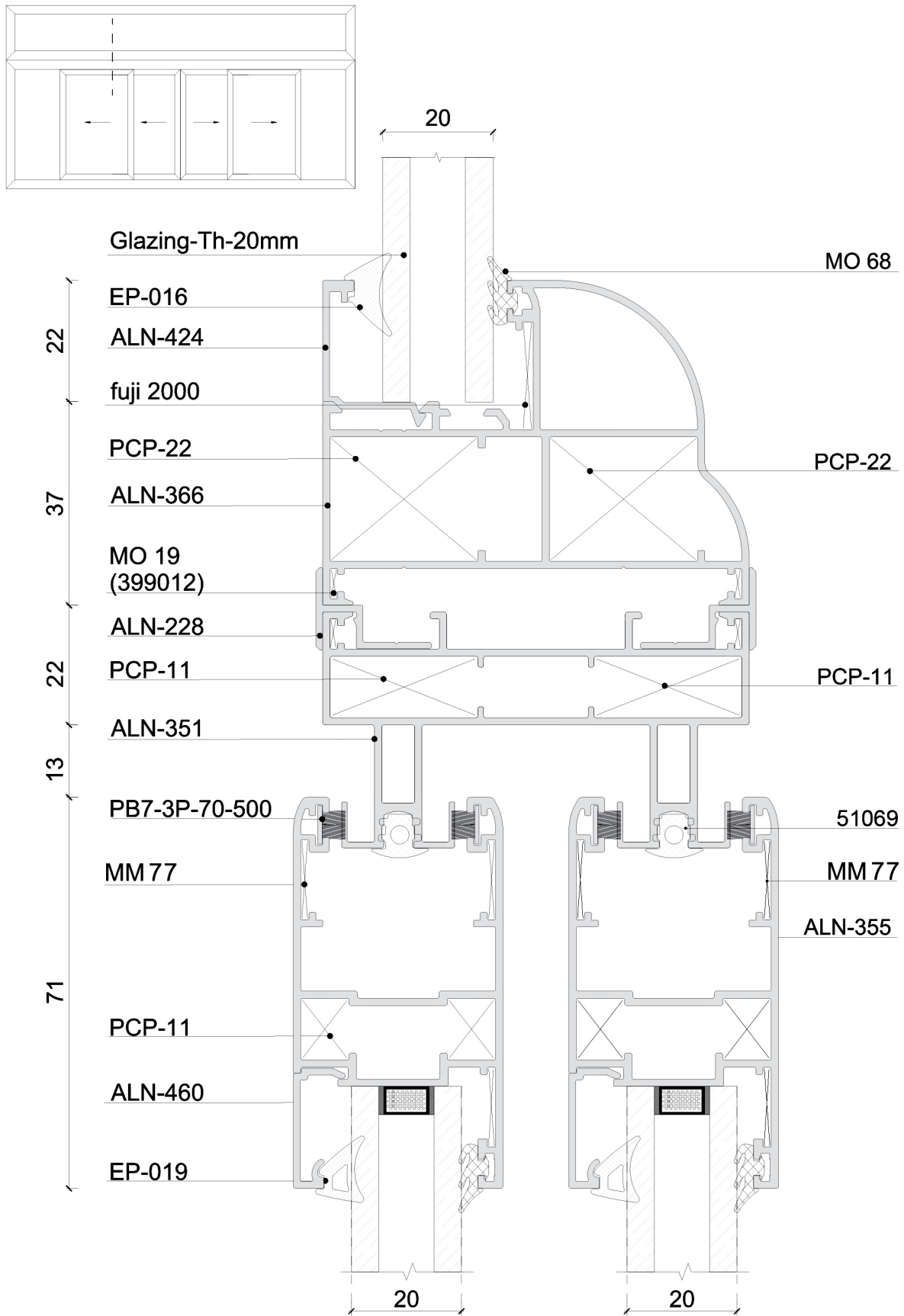
Fabrication Details





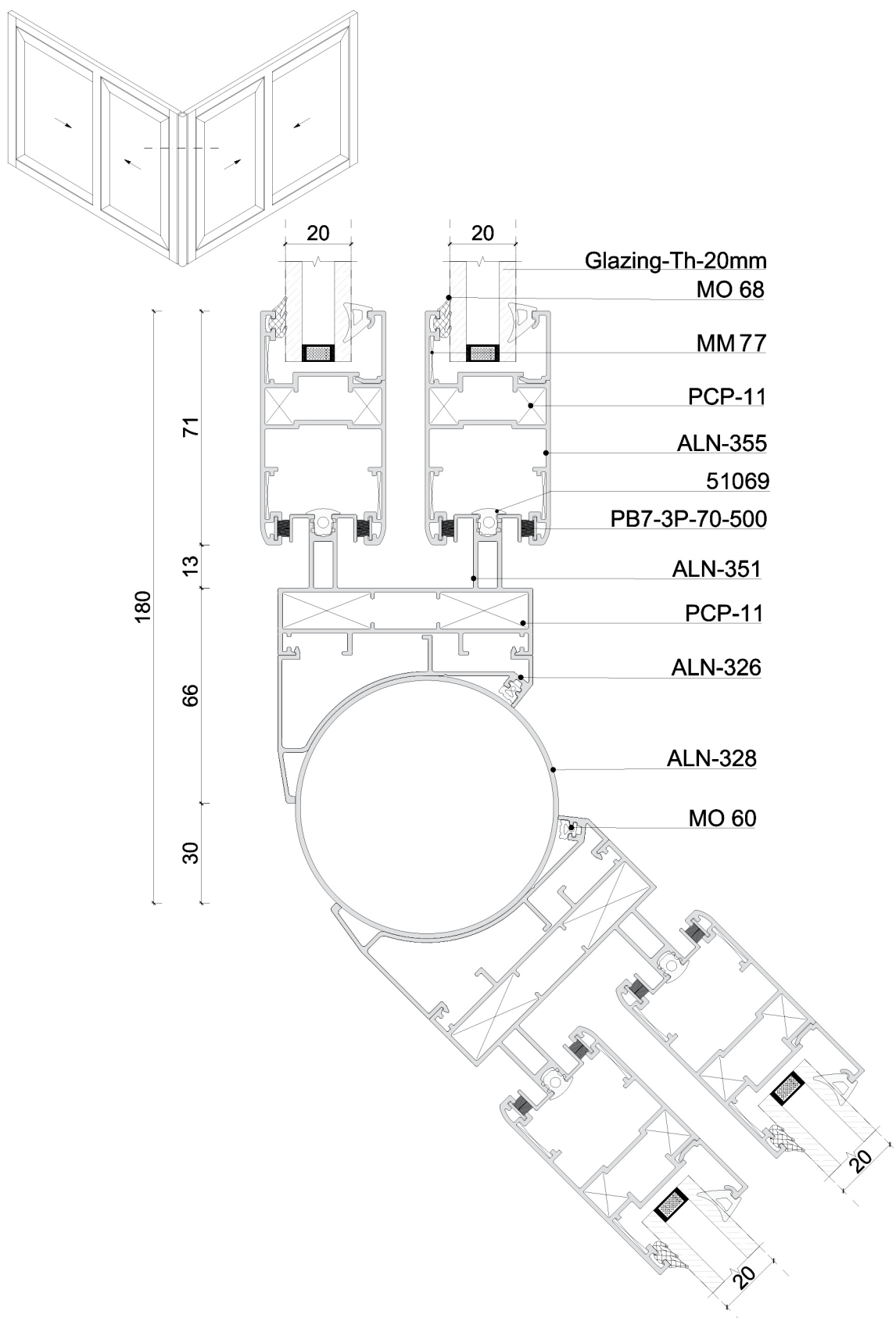
Slide System 77 Series

Fabrication Details



Slide System 77 Series

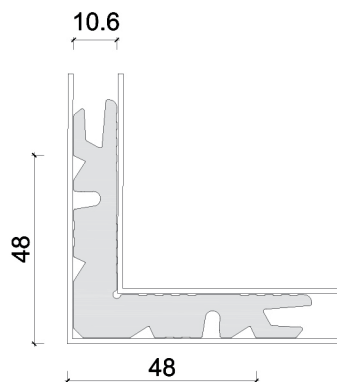
Fabrication Details



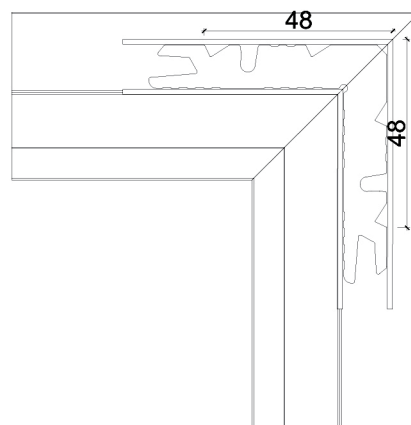
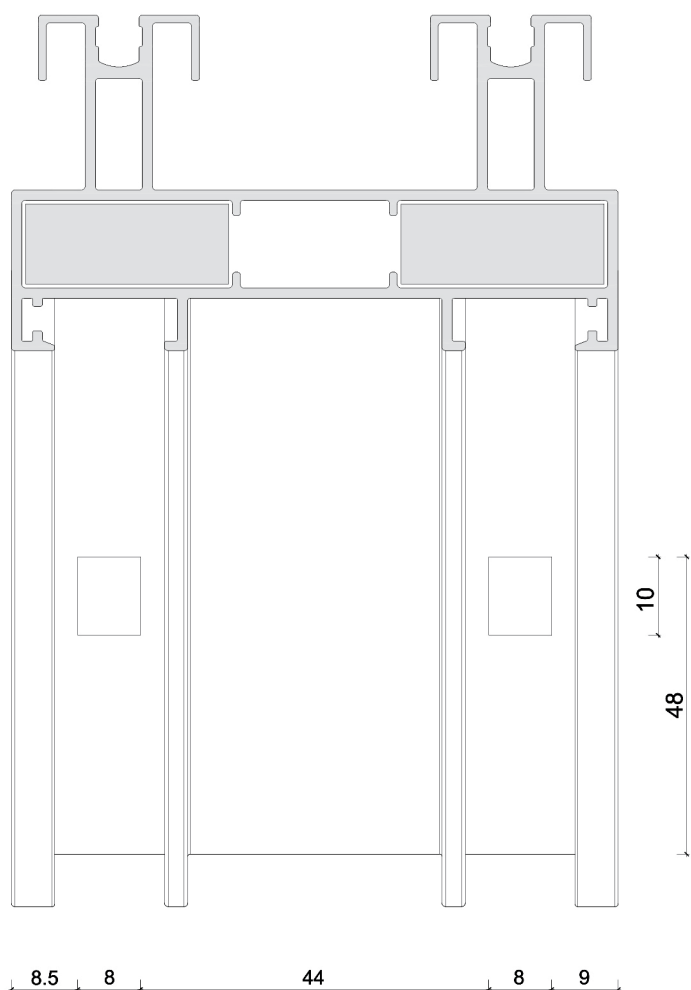
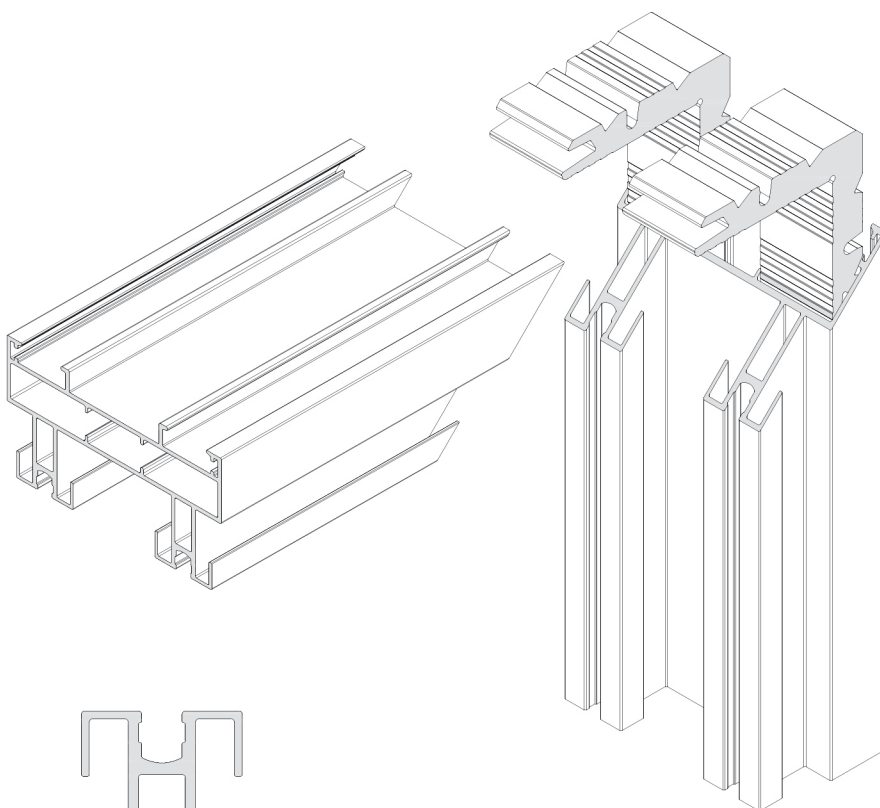


Slide System 77 Series

Assembly Drawing

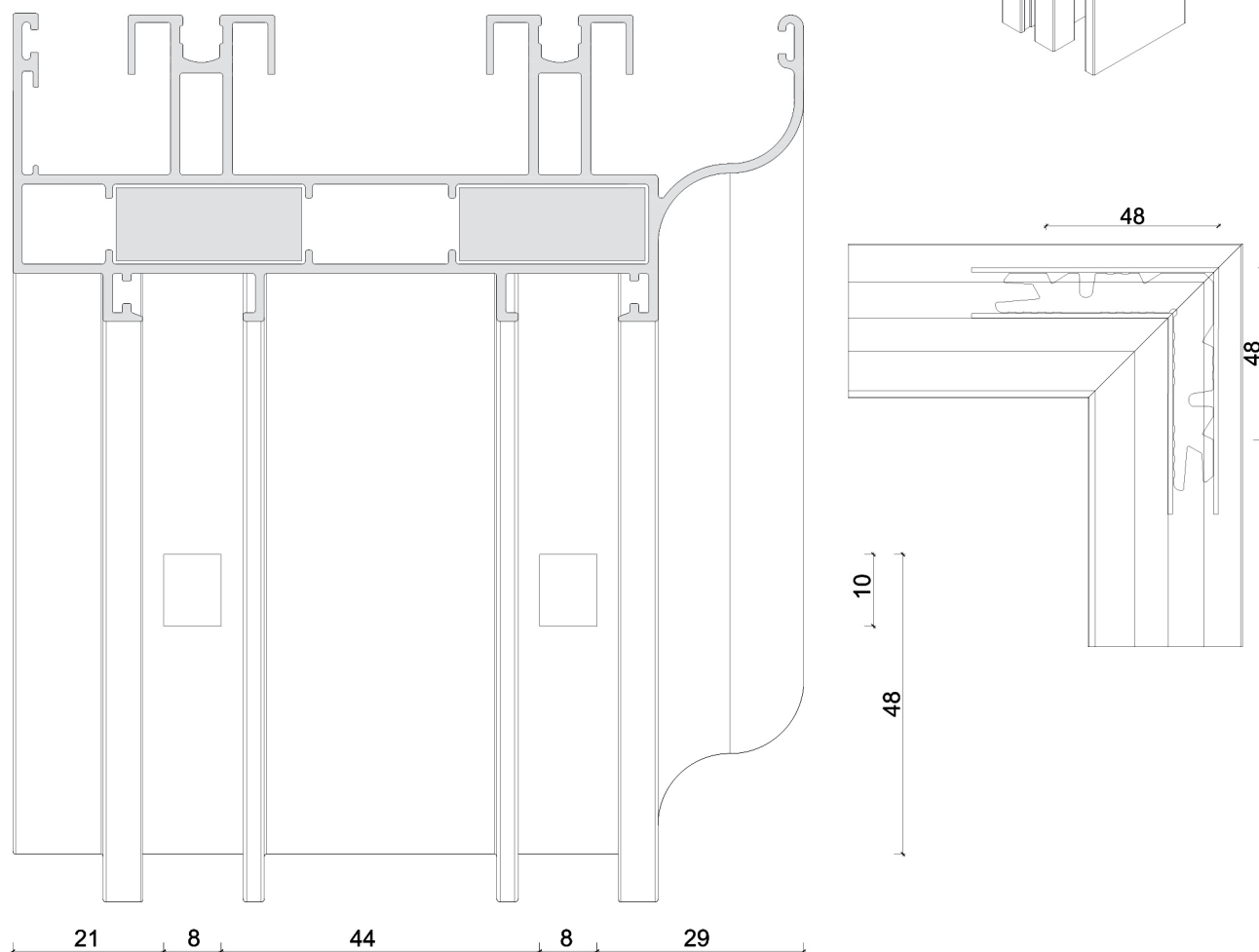
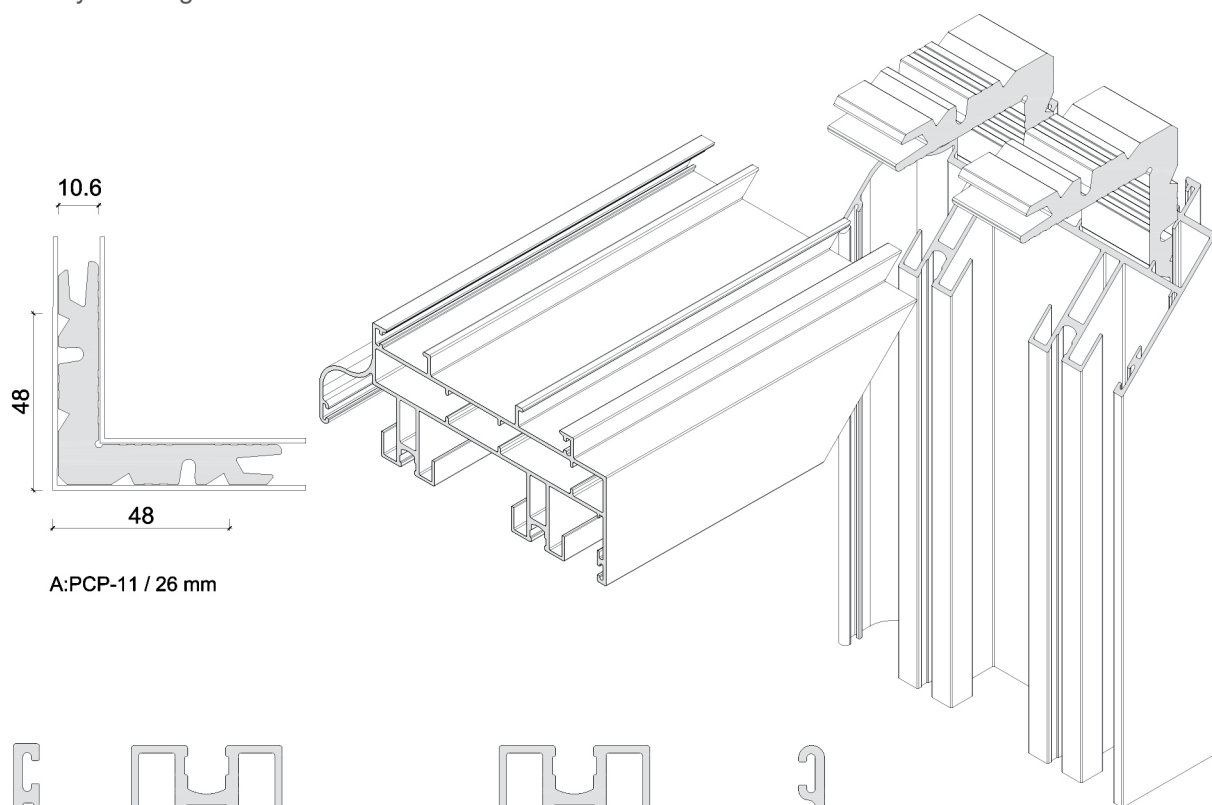


A:PCP-11 / 26 mm



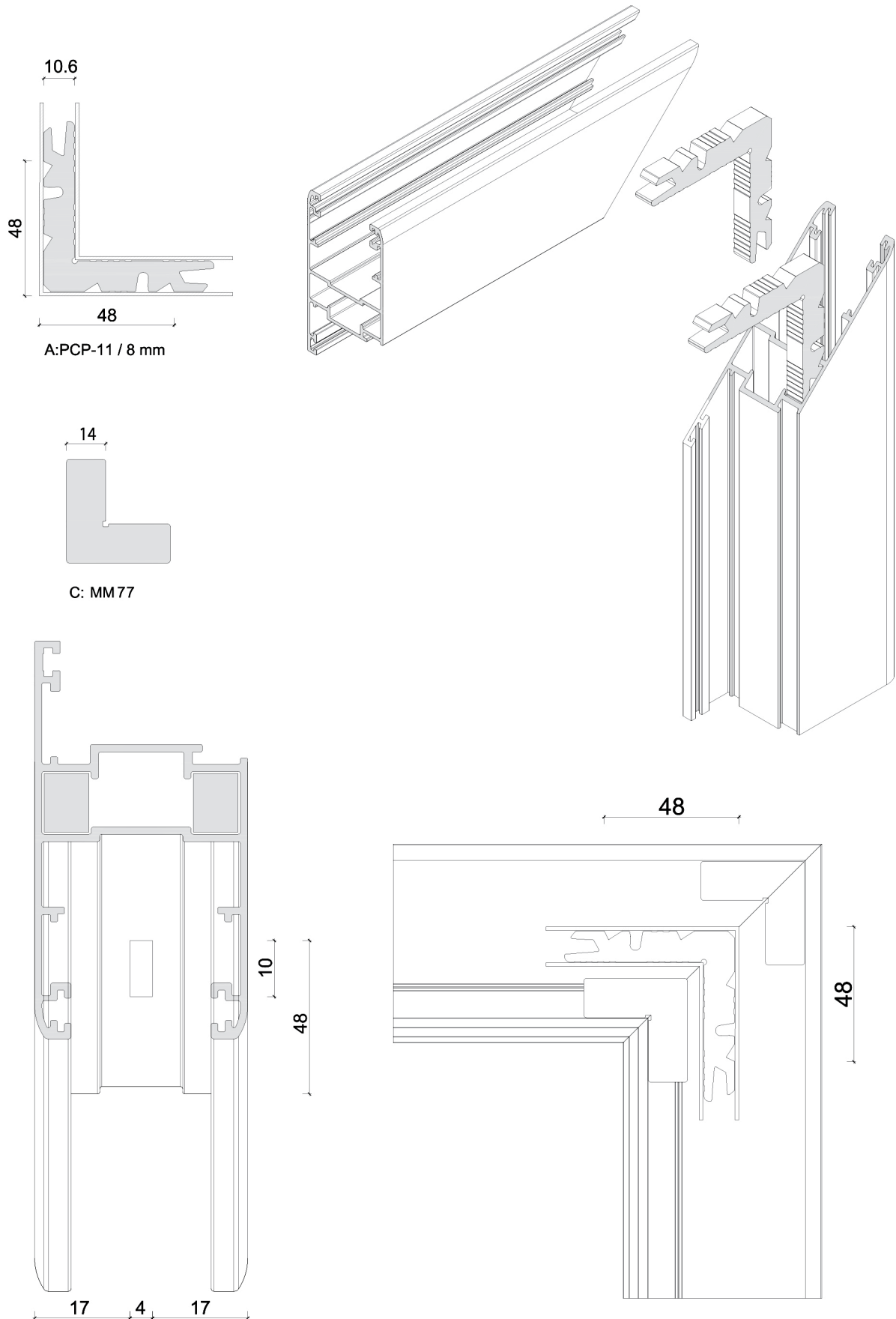
Slide System 77 Series

Assembly Drawing



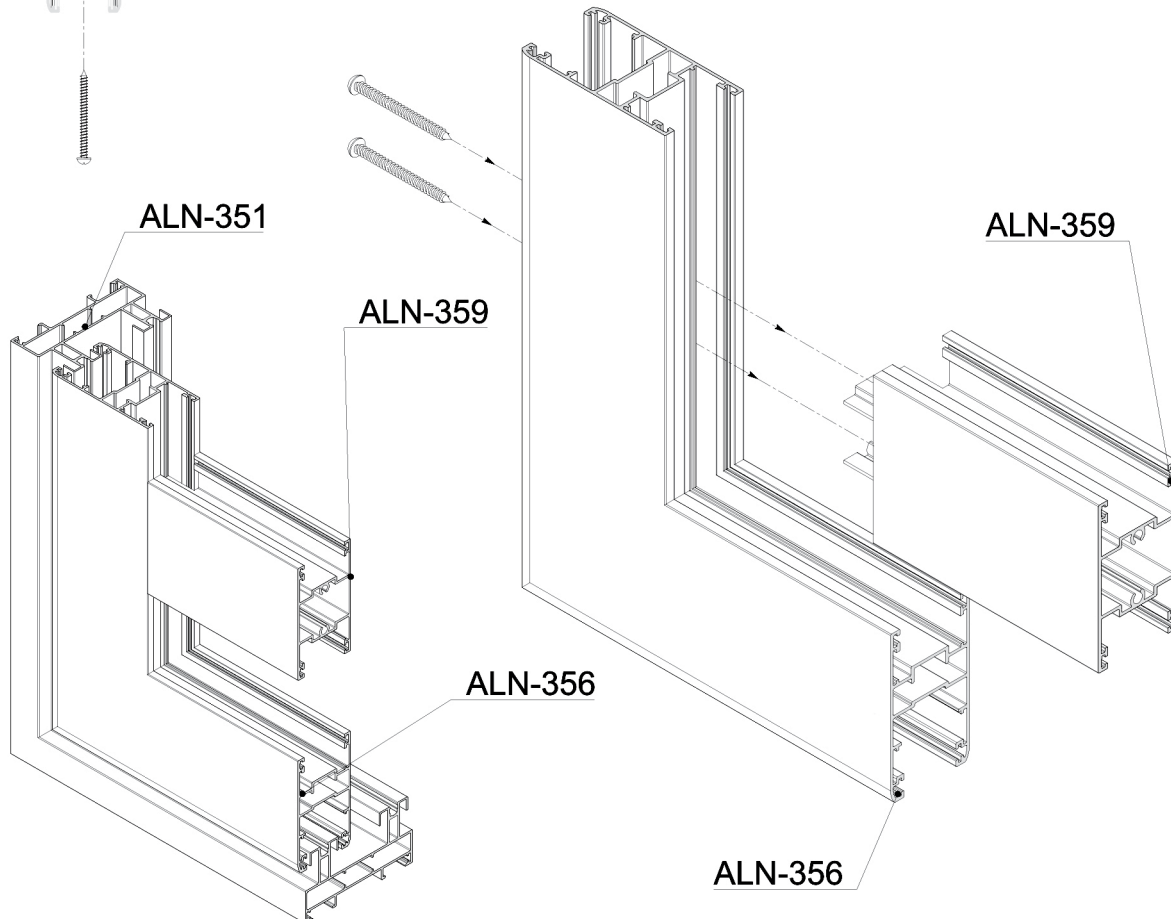
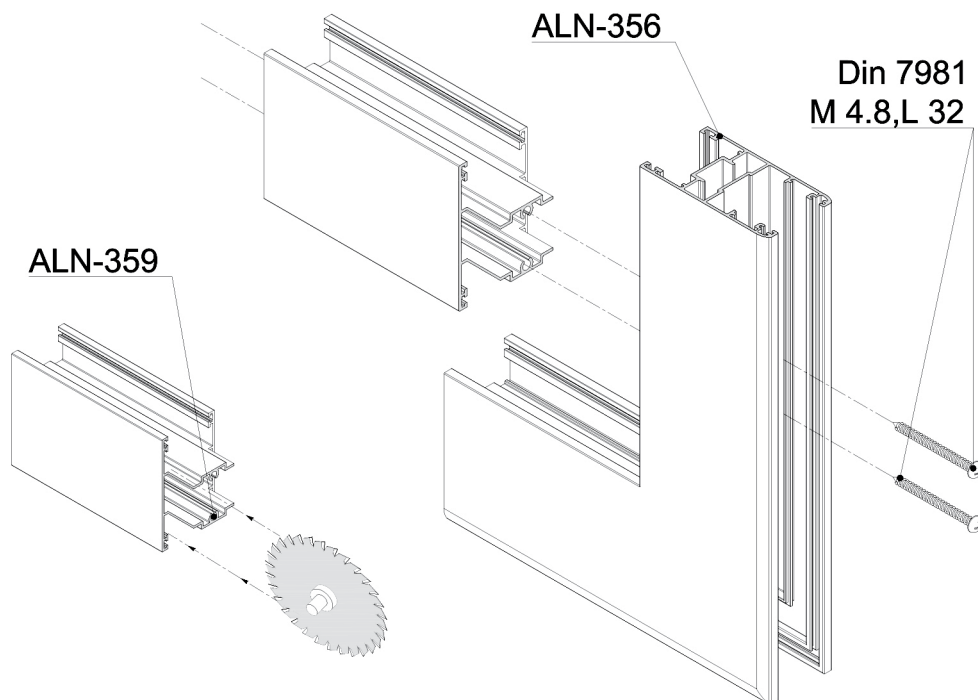
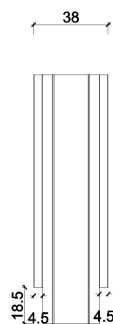
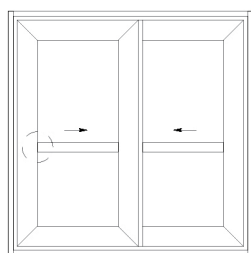


Slide System 77 Series Assembly Drawing



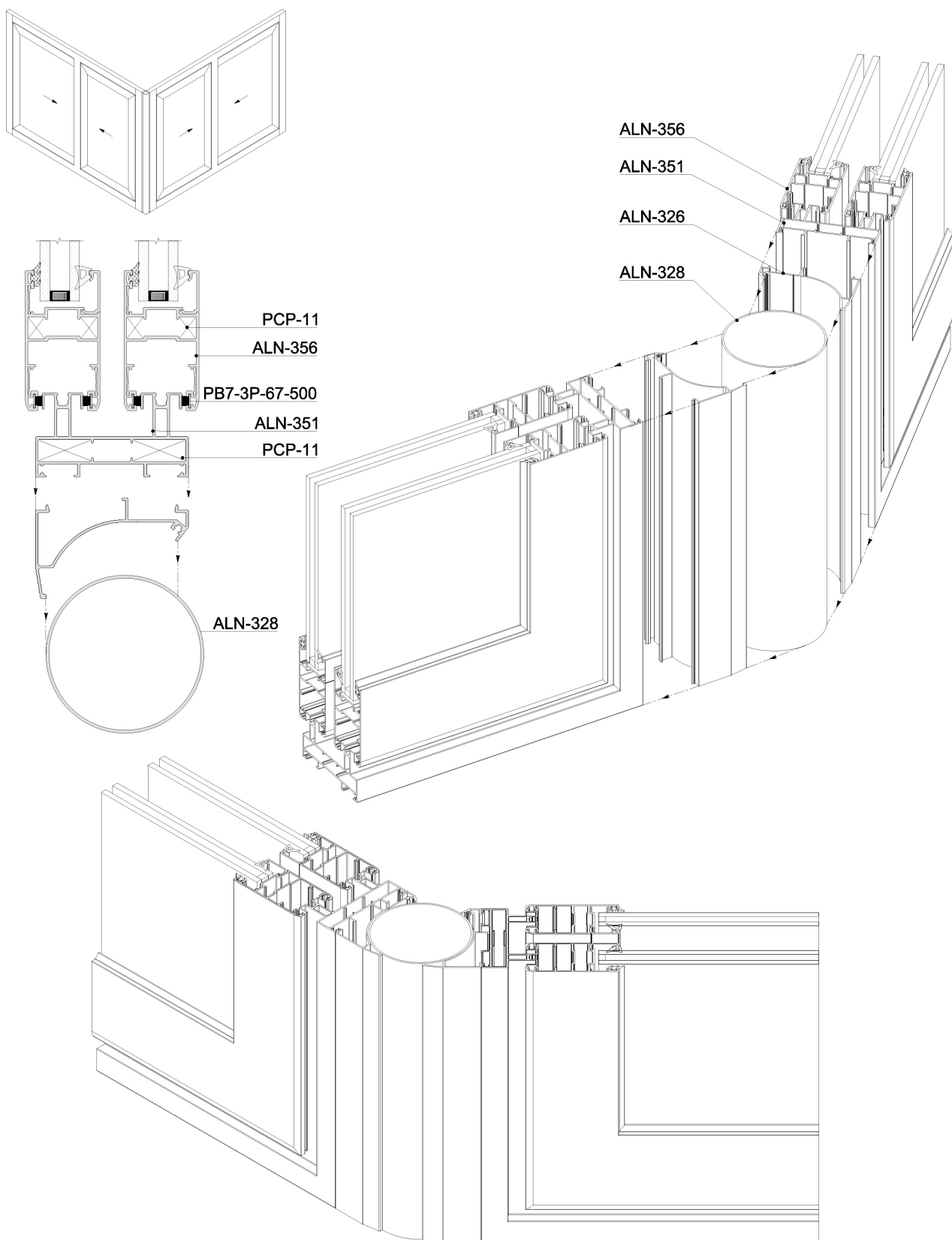
Slide System 77 Series

Assembly Drawing

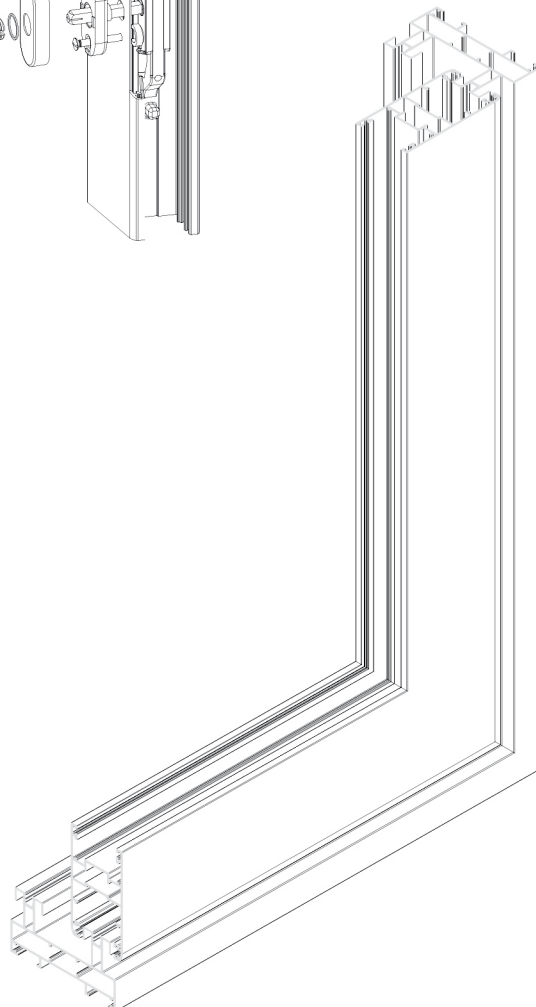




Slide System 77 Series Assembly Drawing



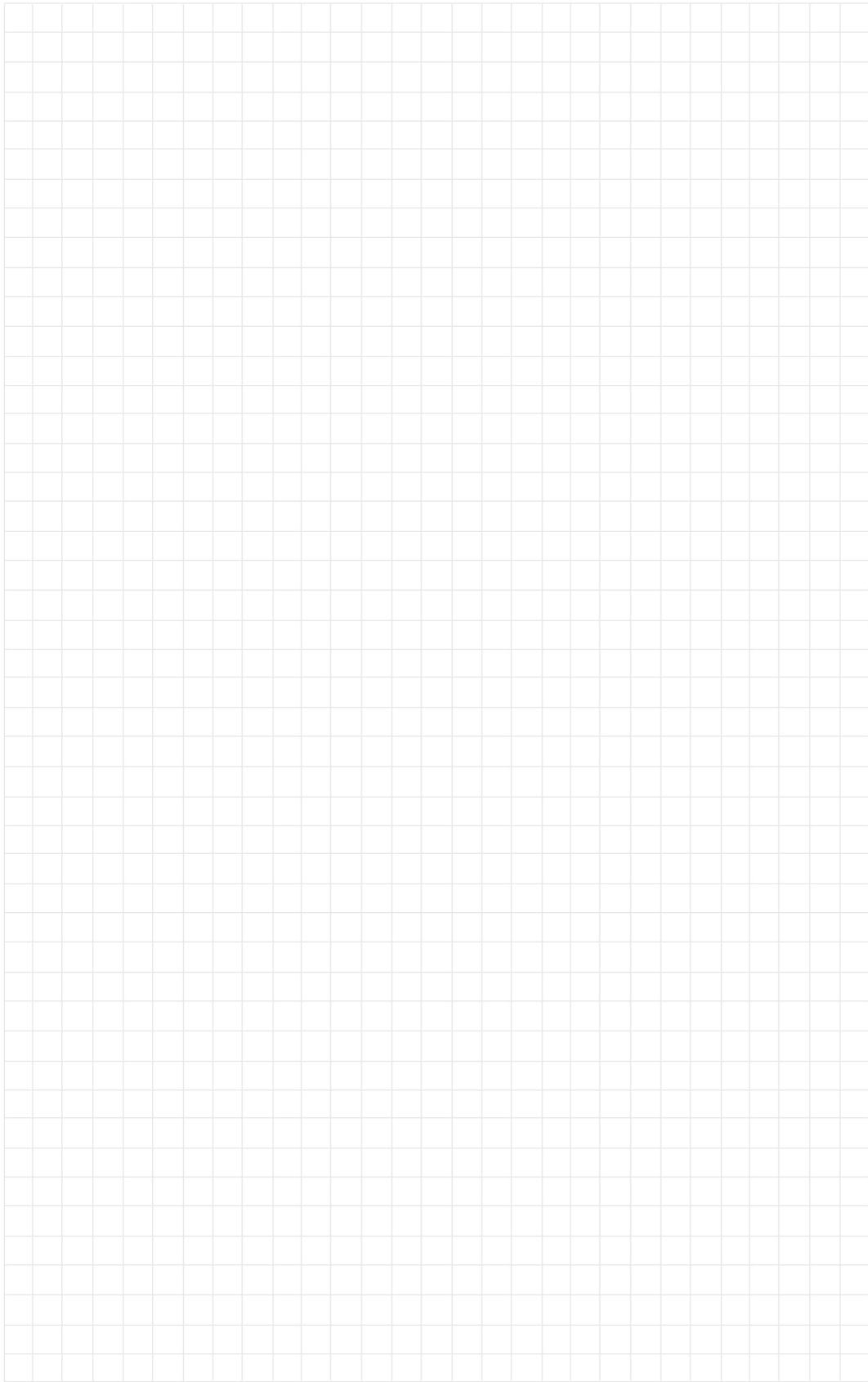
Slide System 77 Series





AKROLL

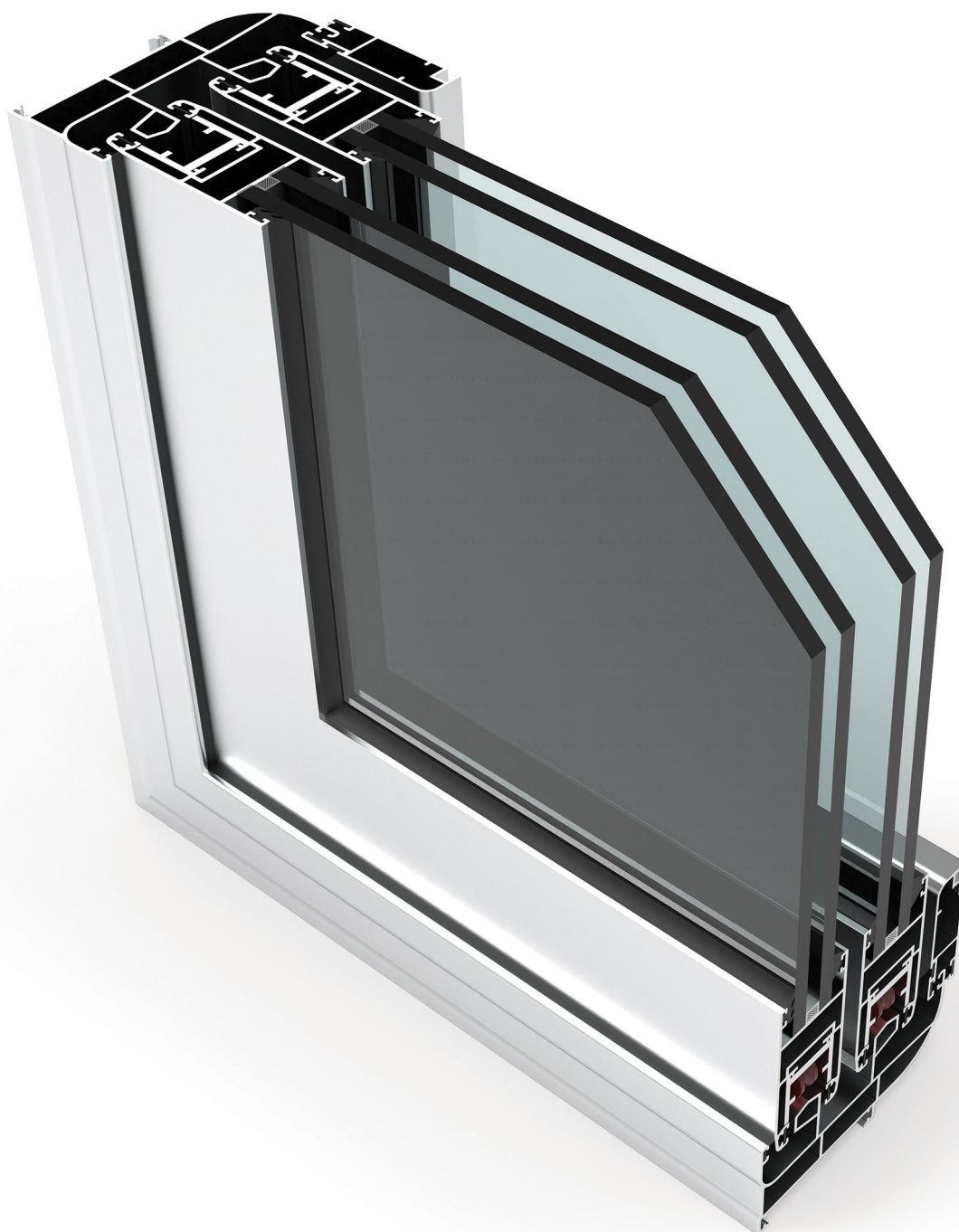
Product of Alumroll Novin Co.





ALN 200

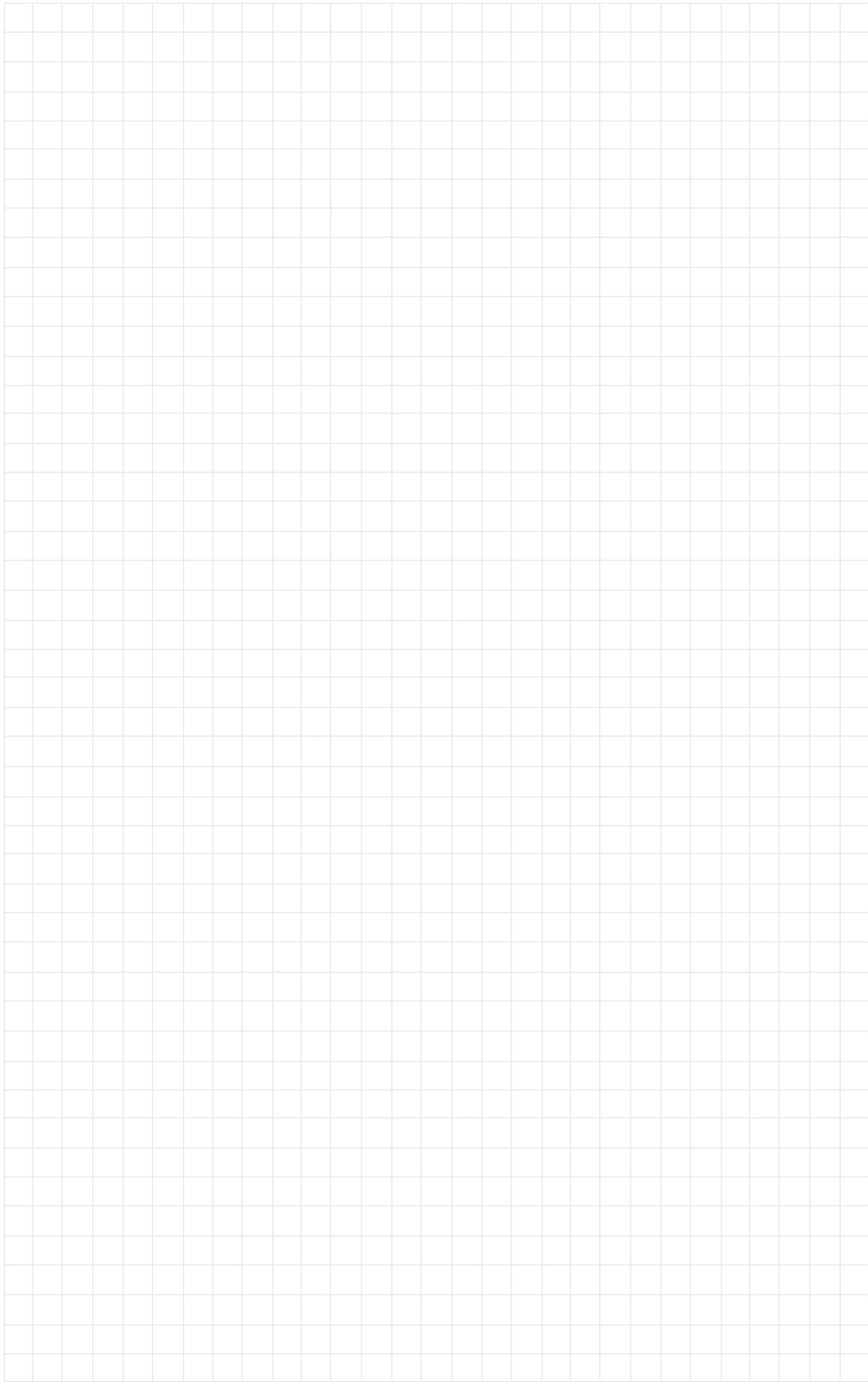
Normal Systems

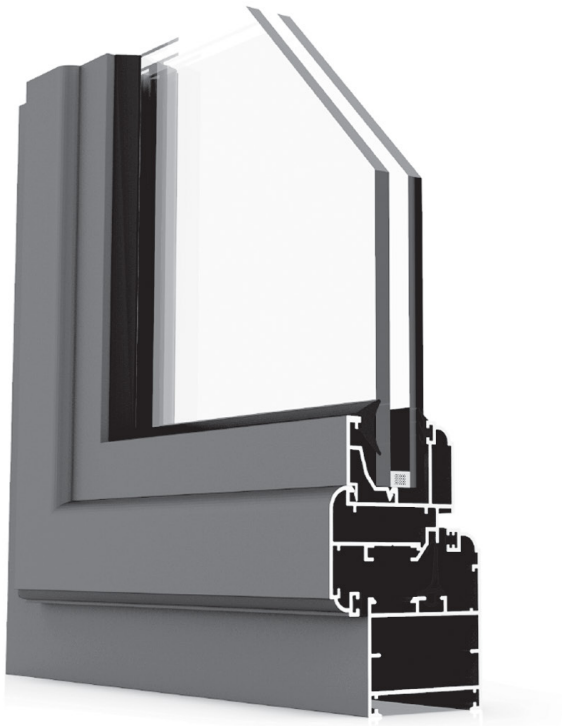




AKROLL

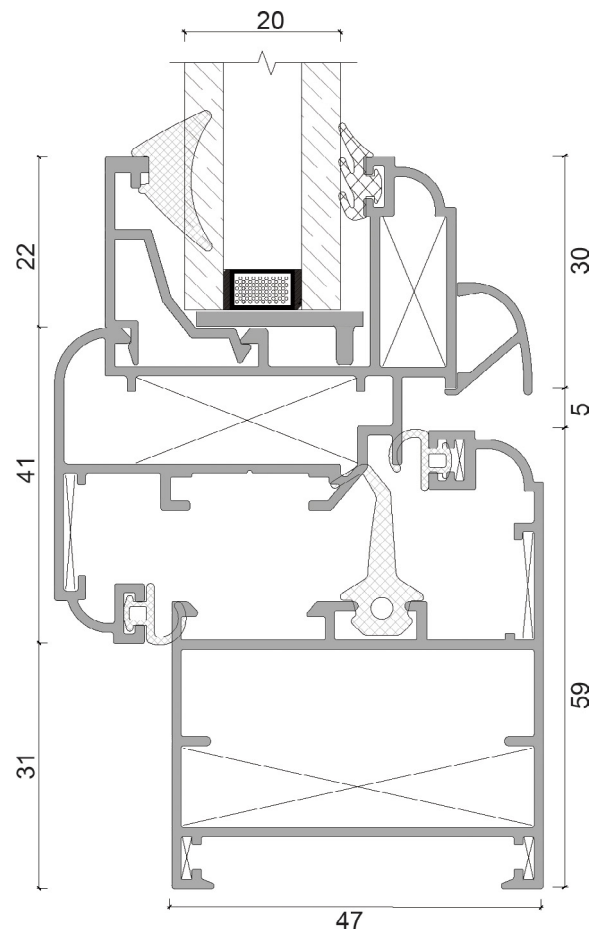
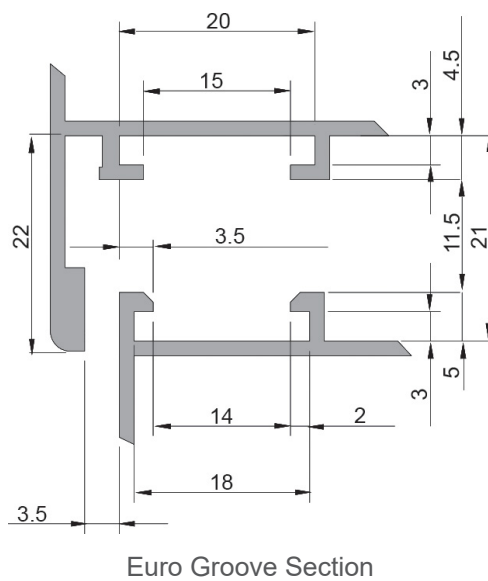
Product of Alumroll Novin Co.





Hinged System 47 & 59 Series

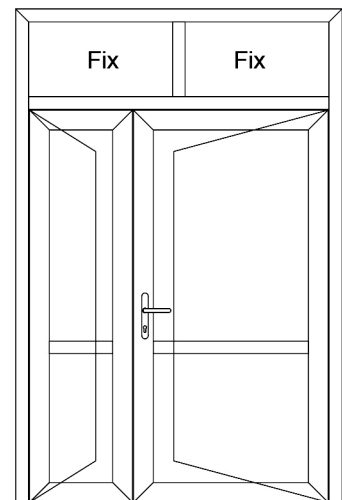
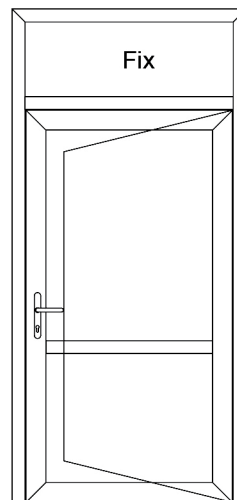
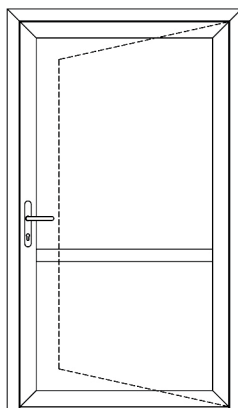
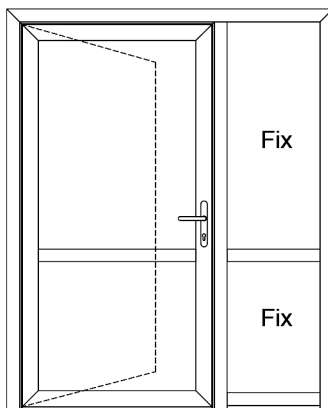
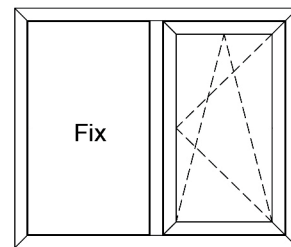
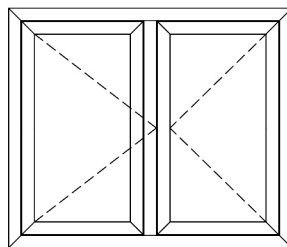
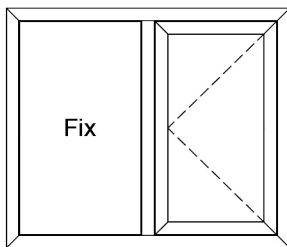
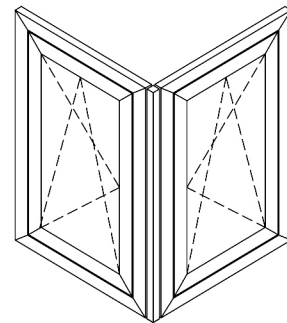
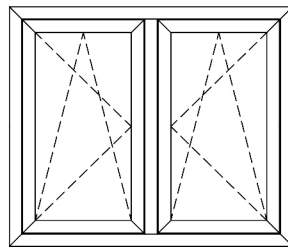
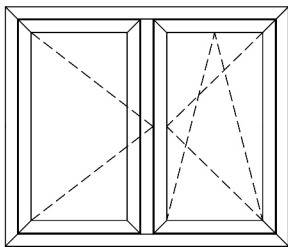
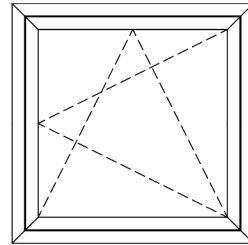
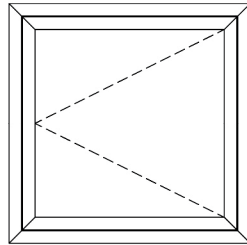
. Profile width:	47,59 mm
. Vent width:	52 mm
. Wall thickness:	1.2 - 1.3 mm
. Rubber description:	EPDM DIN 7863
. Glass thickness:	6 - 22 mm
. Aluminum alloy extrusion:	EN AW 6063 T5
. Safety drainage system	
. Various typologies	





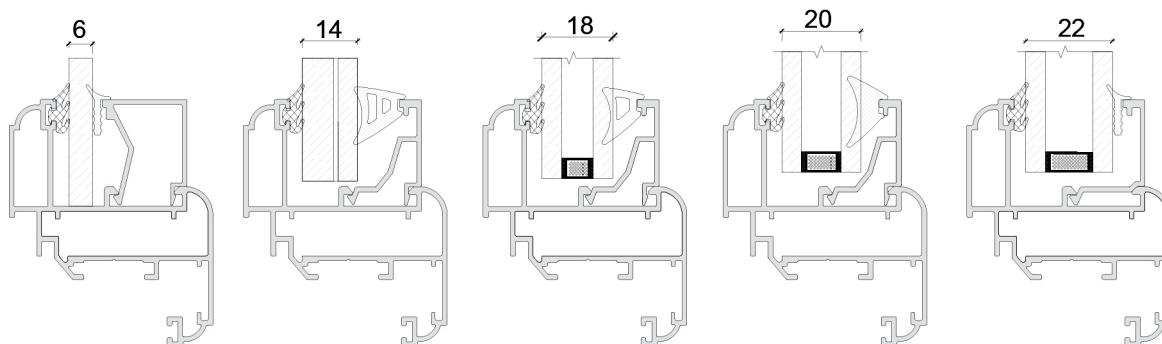
Hinged System 47 & 59 Series

Typologies



Hinged System 47 & 59 Series

Glazing Table

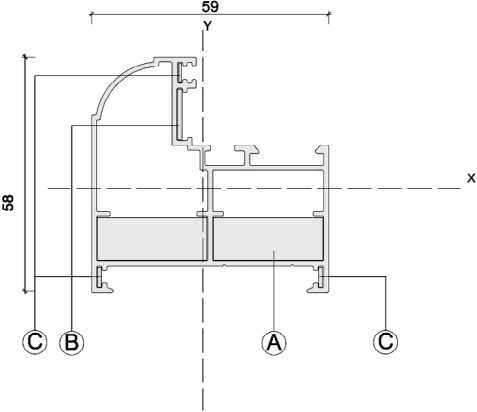
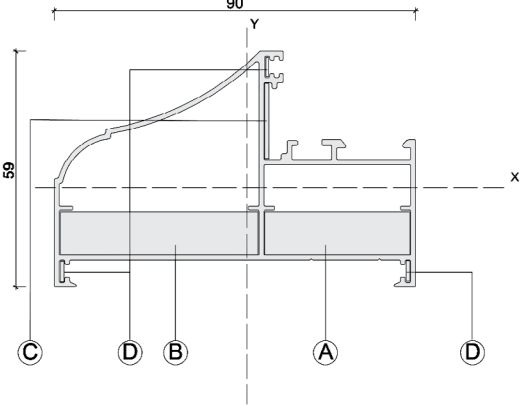
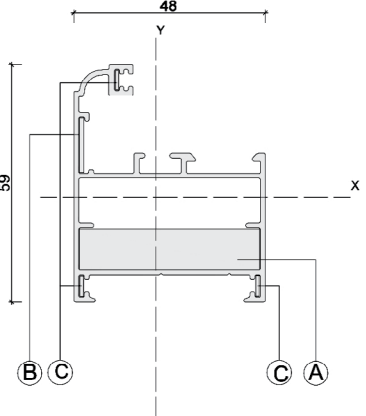
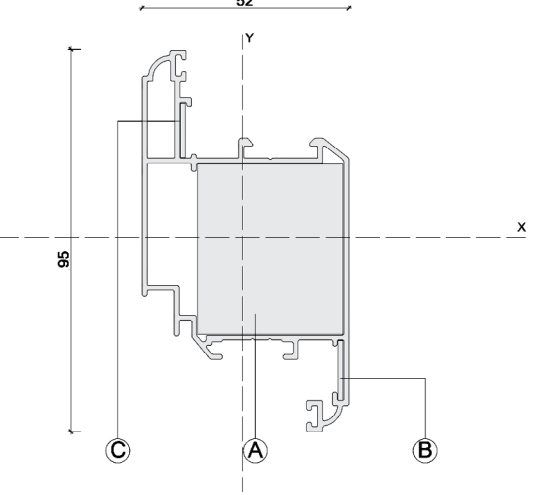


Glazing Thickness	Gasket Inside	Gasket Outside	Glazing Bead
6 mm	 EP-015	 MO68	 ALN-214
14 mm	 EP-021	 MO68	 ALN-213
18 mm	 EP-019	 MO68	 ALN-213
20 mm	 EP-016	 MO68	 ALN-213
22 mm	 EP-016	 MO68	 ALN-424



Hinged System 47 & 59 Series

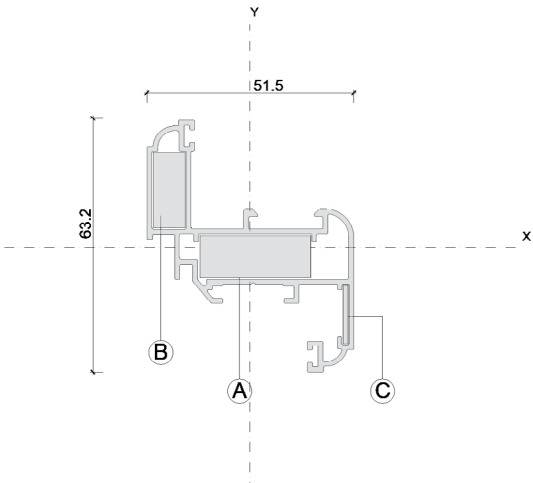
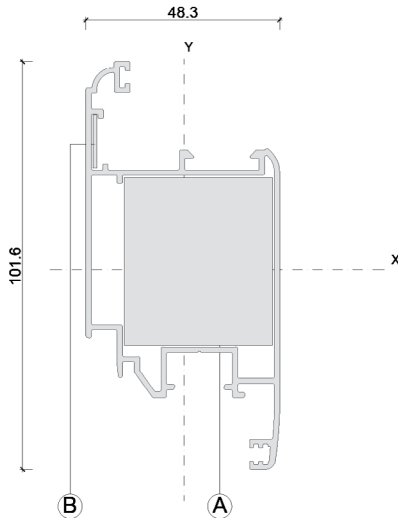
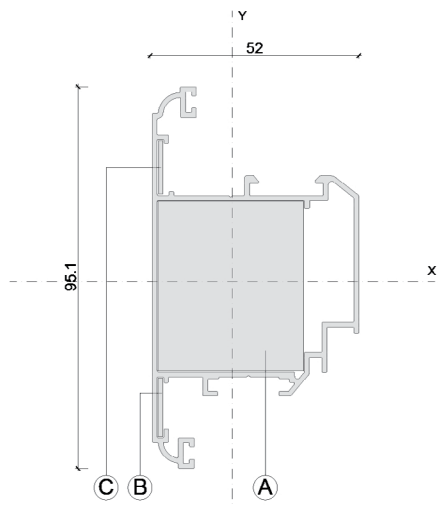
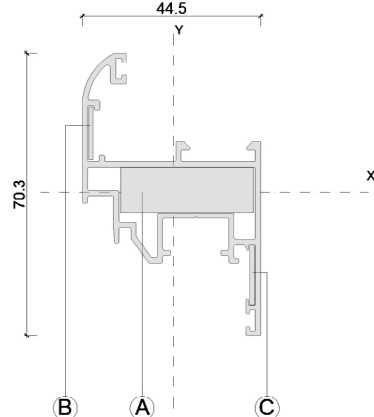
Profile & Accessories Information

			
I_x : 10.93 cm ⁴	I_y : 14.33 cm ⁴	I_x : 11.96 cm ⁴	I_y : 35.26 cm ⁴
Frame : ALN-208	A: PCP-11 / 26 mm  B: fuji 2013  C: MO 19 	Frame : ALN-243	A: PCP-11 / 36 mm  B: PCP-11 / 49 mm  C: fuji 2000  D: MO 19 
Weight: 990 gr/m		Weight: 1170 gr/m	
			
I_x : 8.91 cm ⁴	I_y : 9.71 cm ⁴	I_x : 29.28 cm ⁴	I_y : 15.59 cm ⁴
Frame : ALN-217	A: PCP-10 / 44 mm  B: fuji 2013  D: MO 19 	Sash : ALN-209	A: PCP-42 / 35 mm  B: MM 55  C: fuji 2013 
Weight: 830 gr/m		Weight: 1120 gr/m	



Hinged System 47 & 59 Series

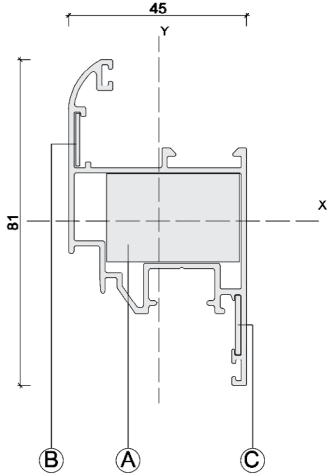
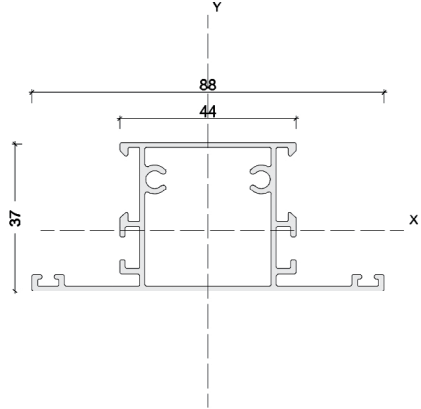
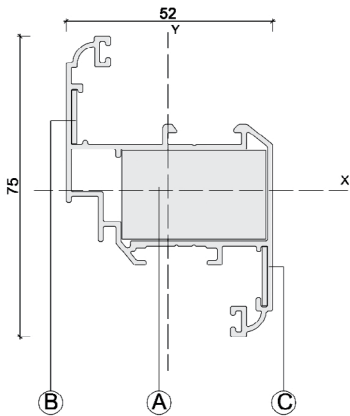
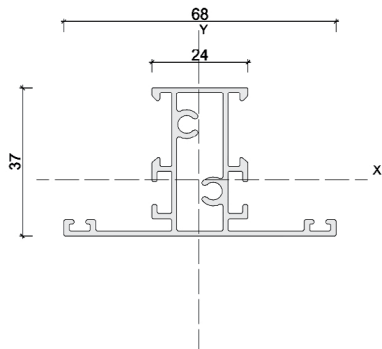
Profile & Accessories Information

			
I_x : 7.43 cm ⁴	I_y : 10.16 cm ⁴	I_x : 33.85 cm ⁴	I_y : 15.12 cm ⁴
Sash : ALN-216	A: PCP-11 / 27 mm  B: PCP-19 / 8 mm 	Transom : ALN-259	A: PCP-42 / 36 mm 
Weight: 880 gr/m	C: MM 55 	Weight: 1180 gr/m	B: fuji 2013 
			
I_x : 27.15 cm ⁴	I_y : 13.75 cm ⁴	I_x : 8.55 cm ⁴	I_y : 8.55 cm ⁴
Sash : ALN-223	A: PCP-42 / 36 mm  B: MM 55 	Sash : ALN-261	A: PCP-11 / 32 mm 
Weight: 1055 gr/m	C: fuji 2013 	Weight: 894 gr/m	B: fuji 2013 
			C: MM 55 



Hinged System 47 & 59 Series

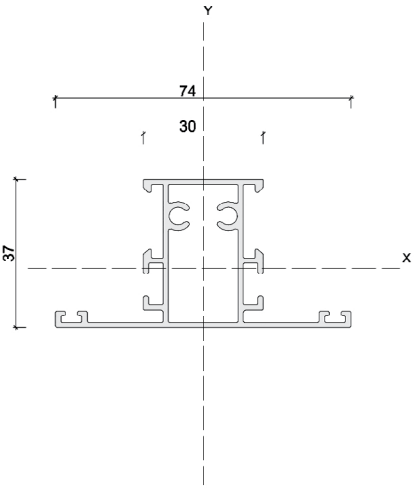
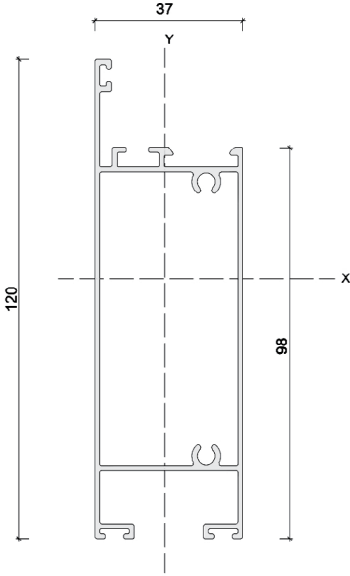
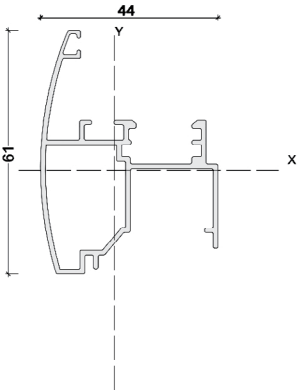
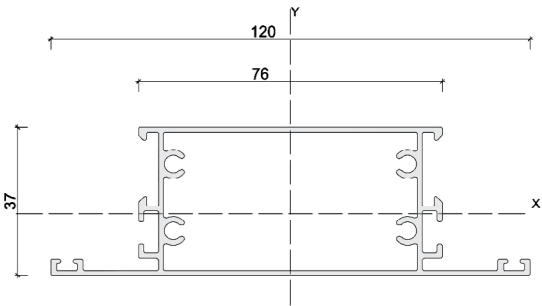
Profile & Accessories Information

			
I_x : 14.33 cm^4	I_y : 9.88 cm^4	I_x : 6.90 cm^4	I_y : 16.10 cm^4
Sash : ALN-262	A: PCP-22 / 32 mm 	Transom : ALN-211	A: -
Weight: 970 gr/m	B: fuji 2013 	Weight: 940 gr/m	B: -
	C: MM 55 		
			
I_x : 12.44 cm^4	I_y : 12.02 cm^4	I_x : 4.96 cm^4	I_y : 6.14 cm^4
Sash: ALN-264	A: PCP-22 / 36 mm 	Transom : ALN-218	A: -
Weight: 926 gr/m	B: fuji 2013 	Weight: 813 gr/m	B: -
	C: MM 55 		



Hinged System 47 & 59 Series

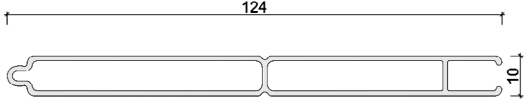
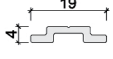
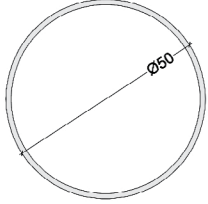
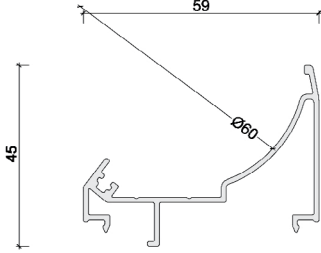
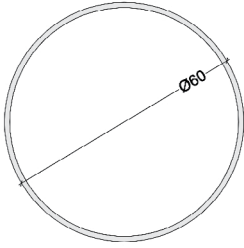
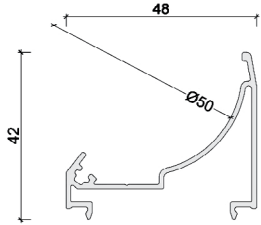
Profile & Accessories Information

			
I_x : 5.77 cm ⁴	I_y : 8.47 cm ⁴	I_x : 10.56 cm ⁴	I_y : 60.90 cm ⁴
Transom : ALN-248	A: -	Profile : ALN-235	A: -
Weight: 851 gr/m	B: -	Weight: 1212 gr/m	B: -
			
I_x : 5.53 cm ⁴	I_y : 5.77 cm ⁴	I_x : 9.51 cm ⁴	I_y : 49.88 cm ⁴
Profile : ALN-210	A: -	Transom : ALN-245	A: -
Weight: 700 gr/m	B: -	Weight: 1242 gr/m	B: -



Hinged System 47 & 59 Series

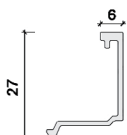
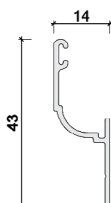
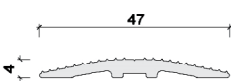
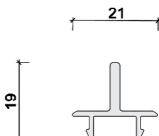
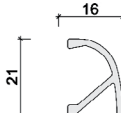
Profile & Accessories Information

			
Profile : ALN-212	Weight : 870 gr/m	Profile : ALN-224	Weight : 110 gr/m
			
Profile : ALN-227	Weight : 540 gr/m	Profile : ALN-225	Weight : 548 gr/m
			
Profile : ALN-215	Weight : 648 gr/m	Profile : ALN-226	Weight : 456 gr/m



Hinged System 47 & 59 Series

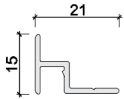
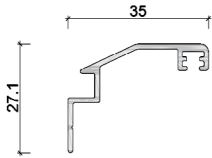
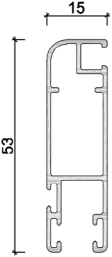
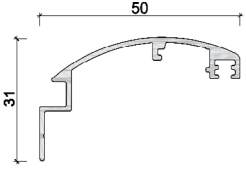
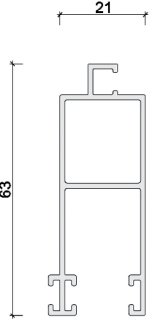
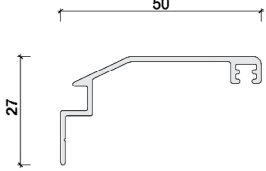
Profile & Accessories Information

			
Glazing beads: ALN-424	Weight : 169 gr/m	Profile : ALN-257	Weight : 149 gr/m
			
Profile : ALN-230	Weight : 200 gr/m	Profile : ALN-444	Weight : 344 gr/m
			
Profile : ALN-241	Weight : 194 gr/m	Drainage :ALN-229	Weight : 190 gr/m



Hinged System 47 & 59 Series

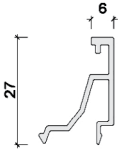
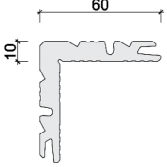
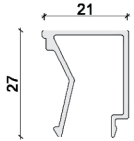
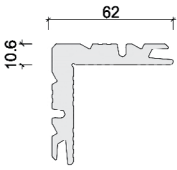
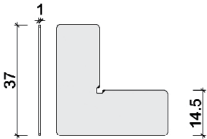
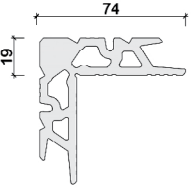
Profile & Accessories Information

			
Profile : ALN-228	Weight : 135 gr/m	Flange profile: ALN-222	Weight : 255 gr/m
			
Fly screen : ALN-207	Weight: 448 gr/m	Flange profile: ALN-219	Weight : 360 gr/m
			
Fly screen : ALN-220	Weight: 626 gr/m	Flange profile: ALN-221	Weight : 300 gr/m



Hinged System 47 & 59 Series

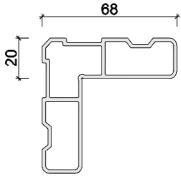
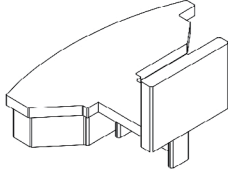
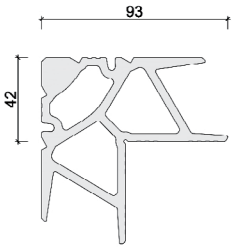
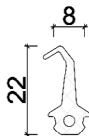
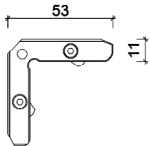
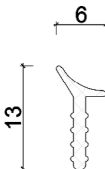
Profile & Accessories Information

			
Glazing beads: ALN-213	Weight : 210 gr/m	Corner joint: PCP-10	Weight : 2455 gr/m
			
Glazing beads: ALN-214	Weight : 262 gr/m	Corner joint: PCP-11	Weight : 2550 gr/m
			
Corner Joint: mm55	Weight : -	Corner: PCP 19	Weight : 3499 gr/m



Hinged System 47 & 59 Series

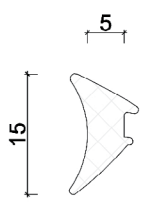
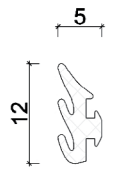
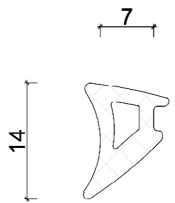
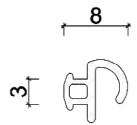
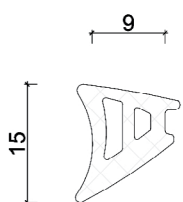
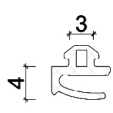
Profile & Accessories Information

			
Corner: PCP 20	Weight : 1375 gr/m	Cap : MO 97	Weight : –
			
Corner joint: PCP-42	Weight : 5130 gr/m ²	Gasket: 1015	Weight : –
			
Corner Joint: Fuji 2013	Weight :–	Gasket: EP-015	Weight :21 gr/m



Hinged System 47 & 59 Series

Profile & Accessories Information

			
Gasket: EP-016	Weight : 77 gr/m	Gasket: MO68	Weight : –
			
Gasket: EP-019	Weight : 61 gr/m	Gasket: EP-018	Weight : 27 gr/m
			
Gasket: EP-021	Weight : 80 gr/m	Gasket: 3523801	Weight : 40 gr/m

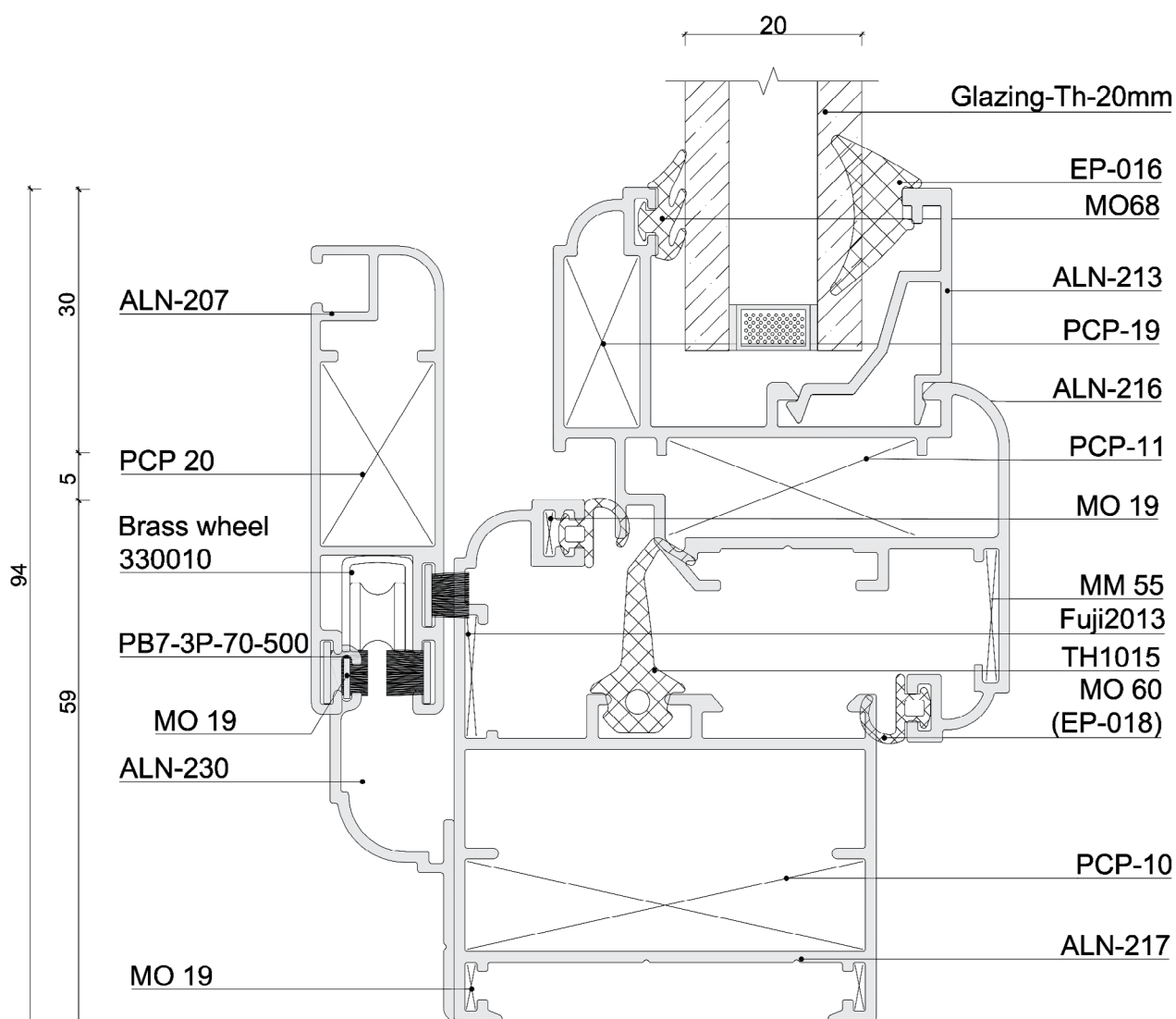
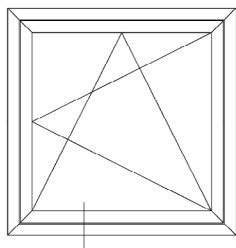
Hinged System 47 & 59 Series

Profile & Accessories Information

			
PB7-3P-70-500	Weight: —		
			
Gasket: mo 60	Weight :26 gr		

Hinged System 47 & 59 Series

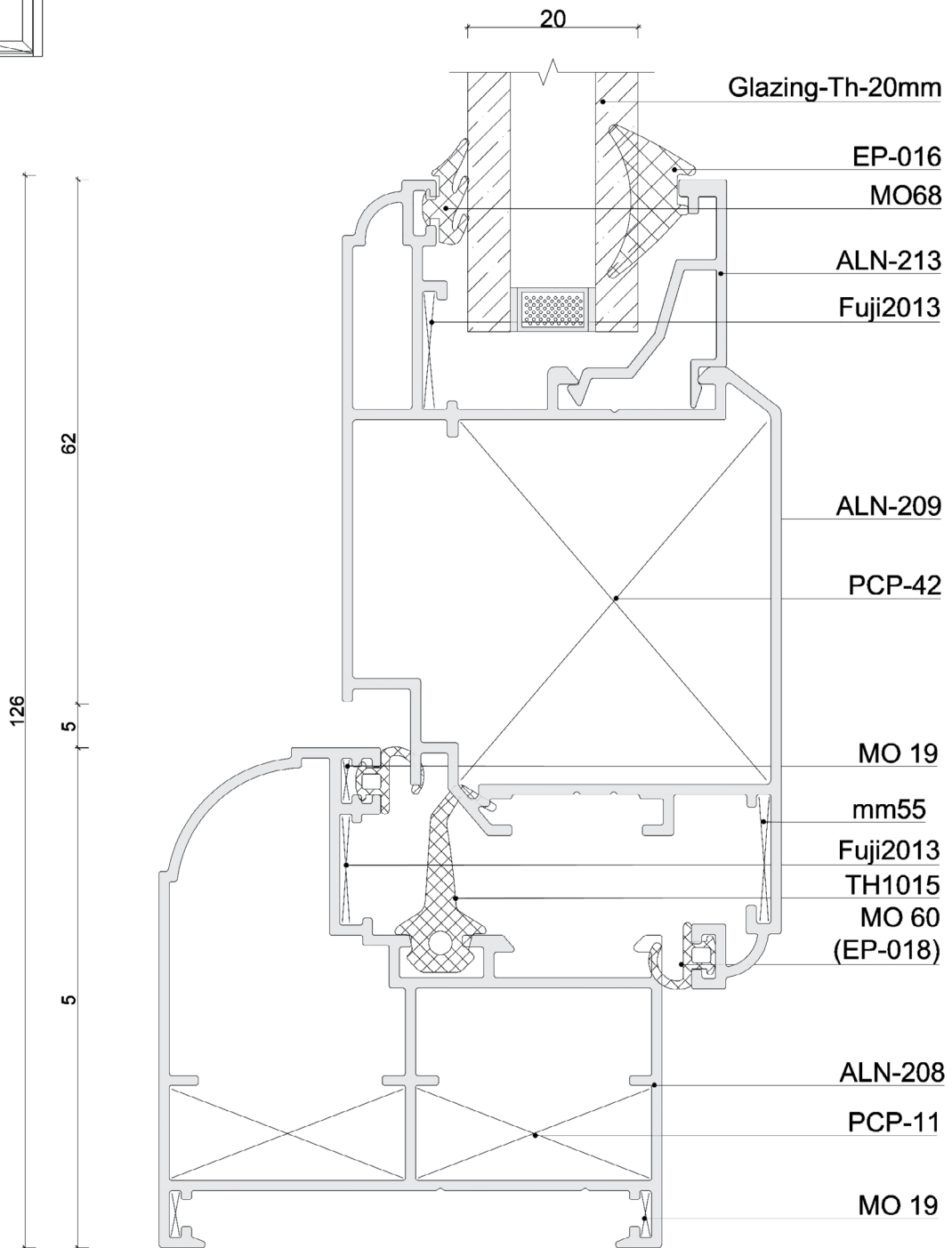
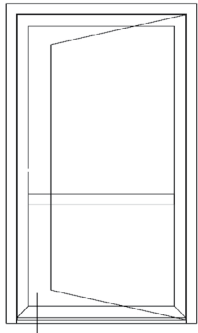
Fabrication Details





Hinged System 47 & 59 Series

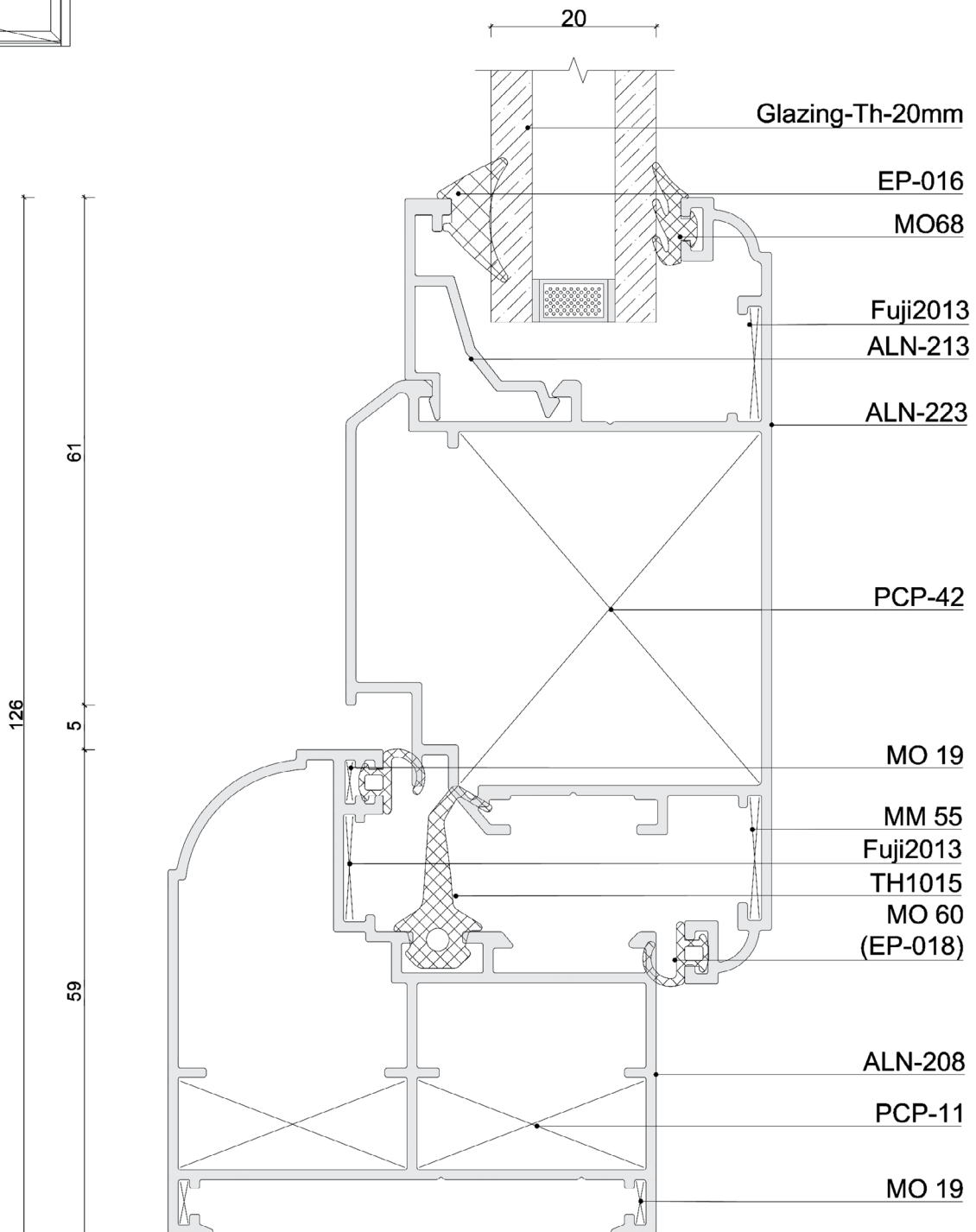
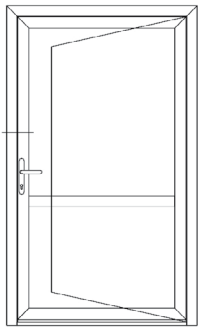
Fabrication Details



Hinged System 47 & 59 Series

Fabrication Details

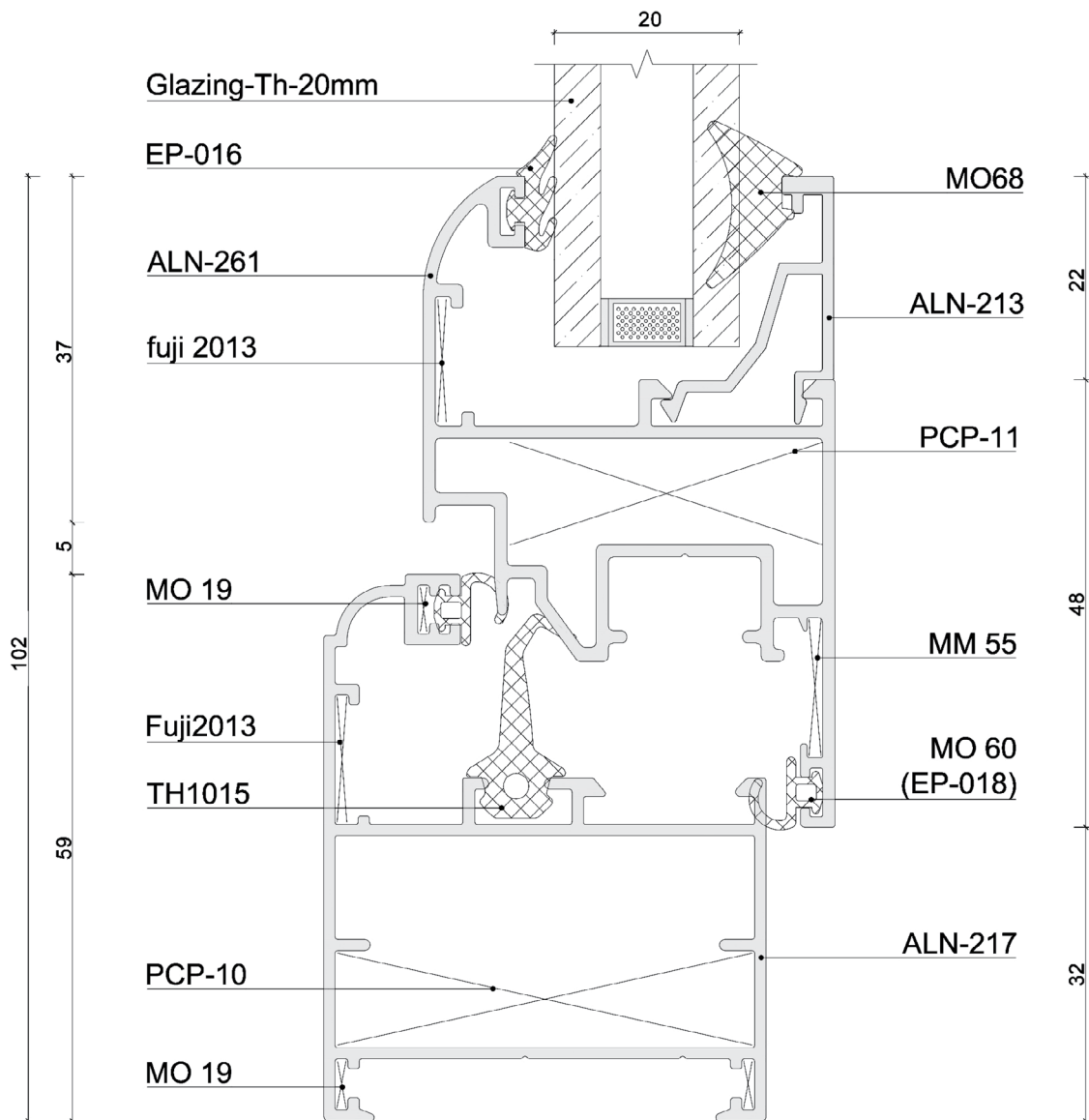
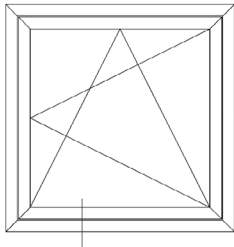
Door





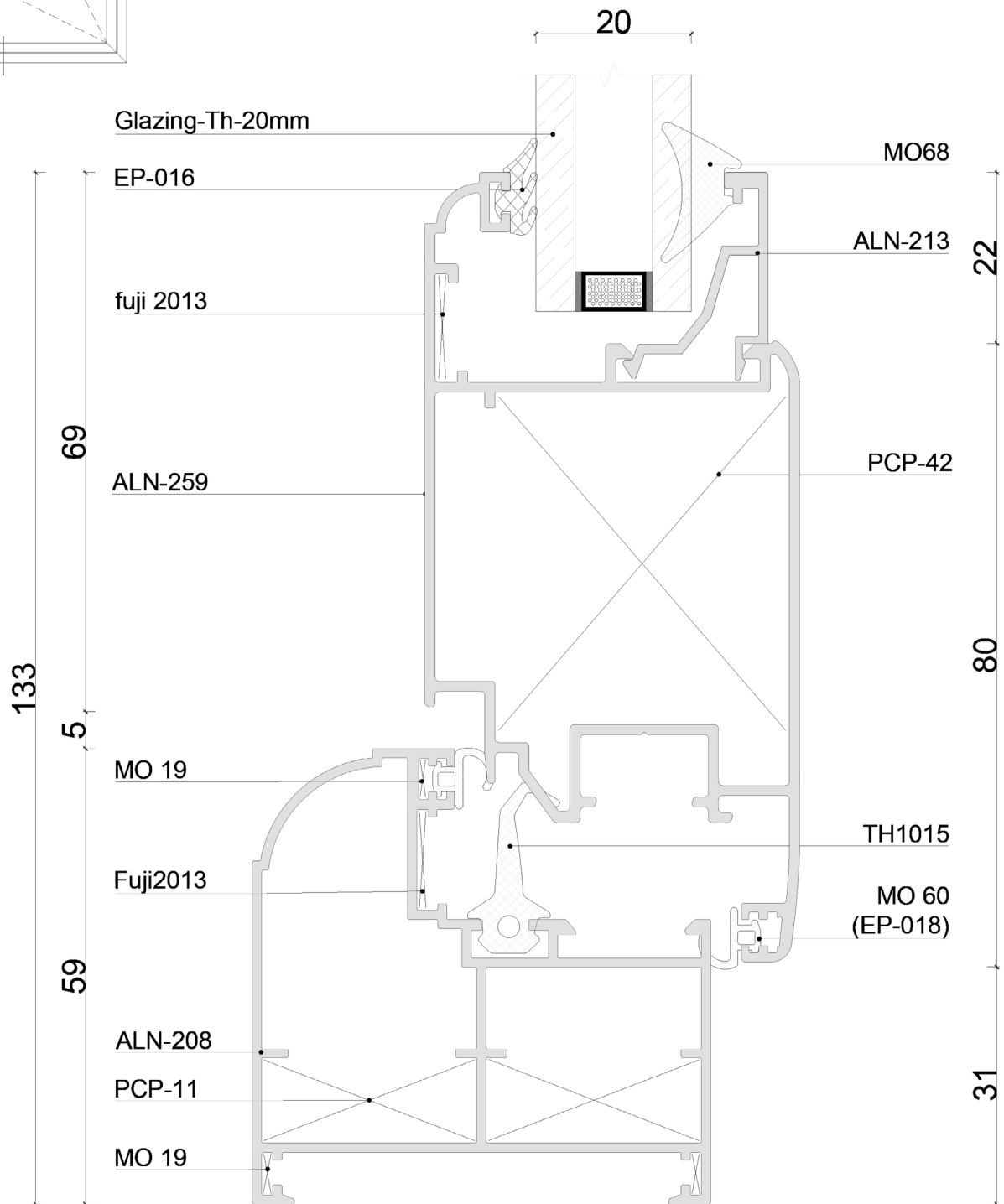
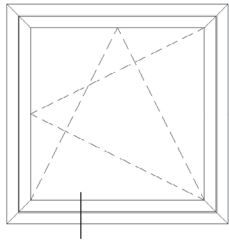
Hinged System 47 & 59 Series

Fabrication Details



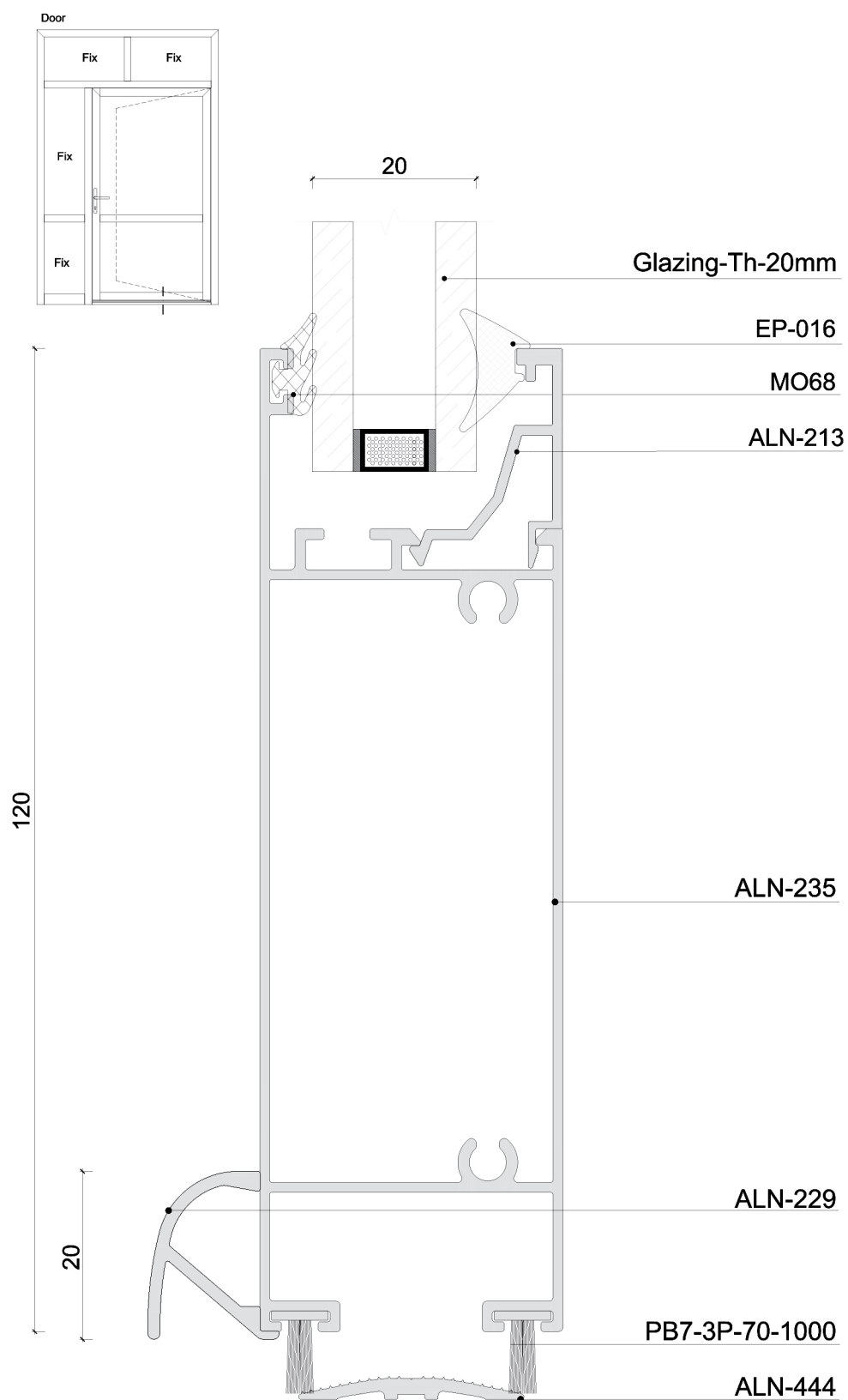
Hinged System 47 & 59 Series

Fabrication Details



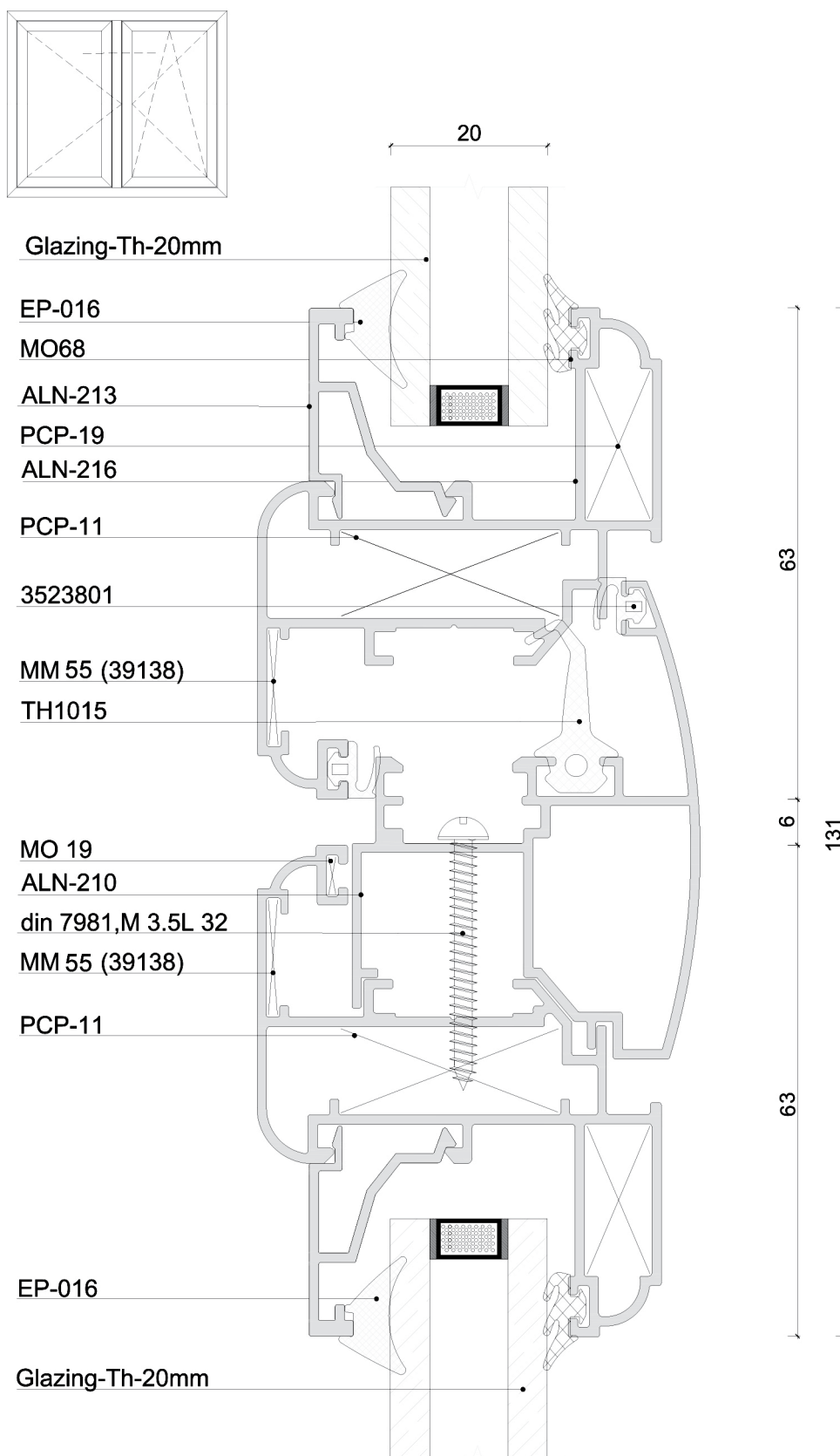


Hinged System 47 & 59 Series Fabrication Details



Hinged System 47 & 59 Series

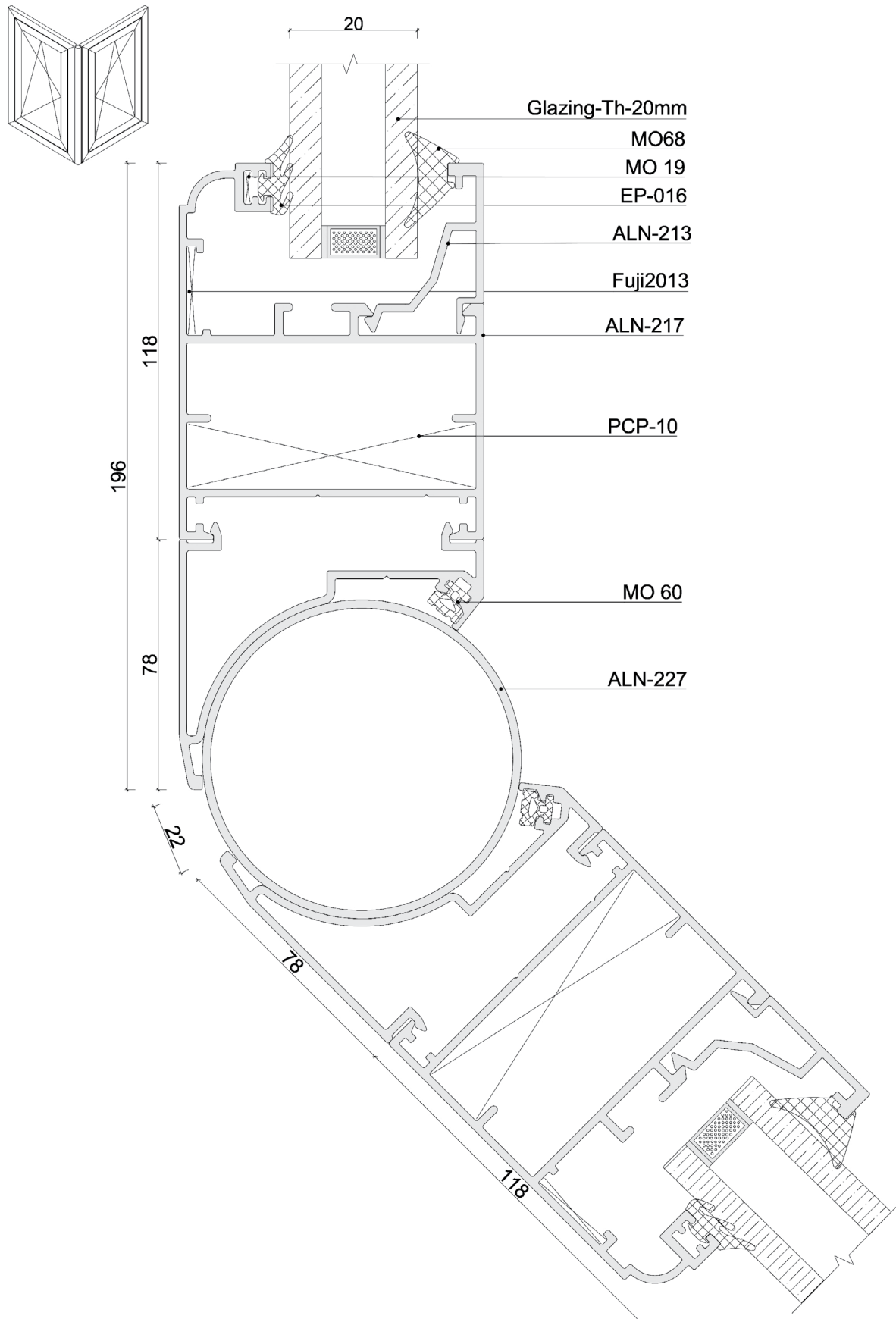
Fabrication Details





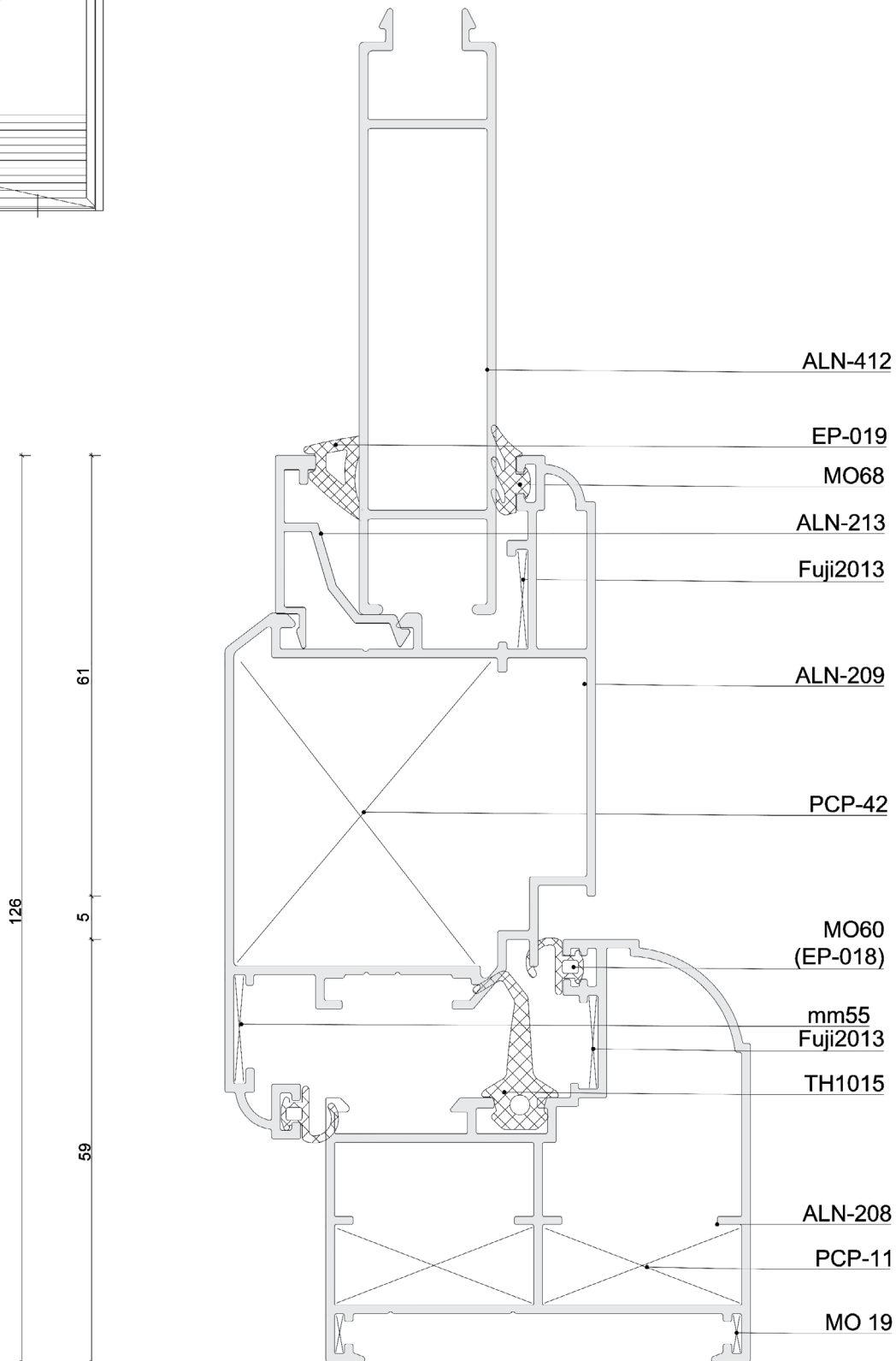
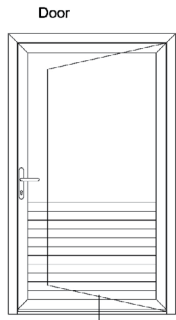
Hinged System 47 & 59 Series

Fabrication Details



Hinged System 47 & 59 Series

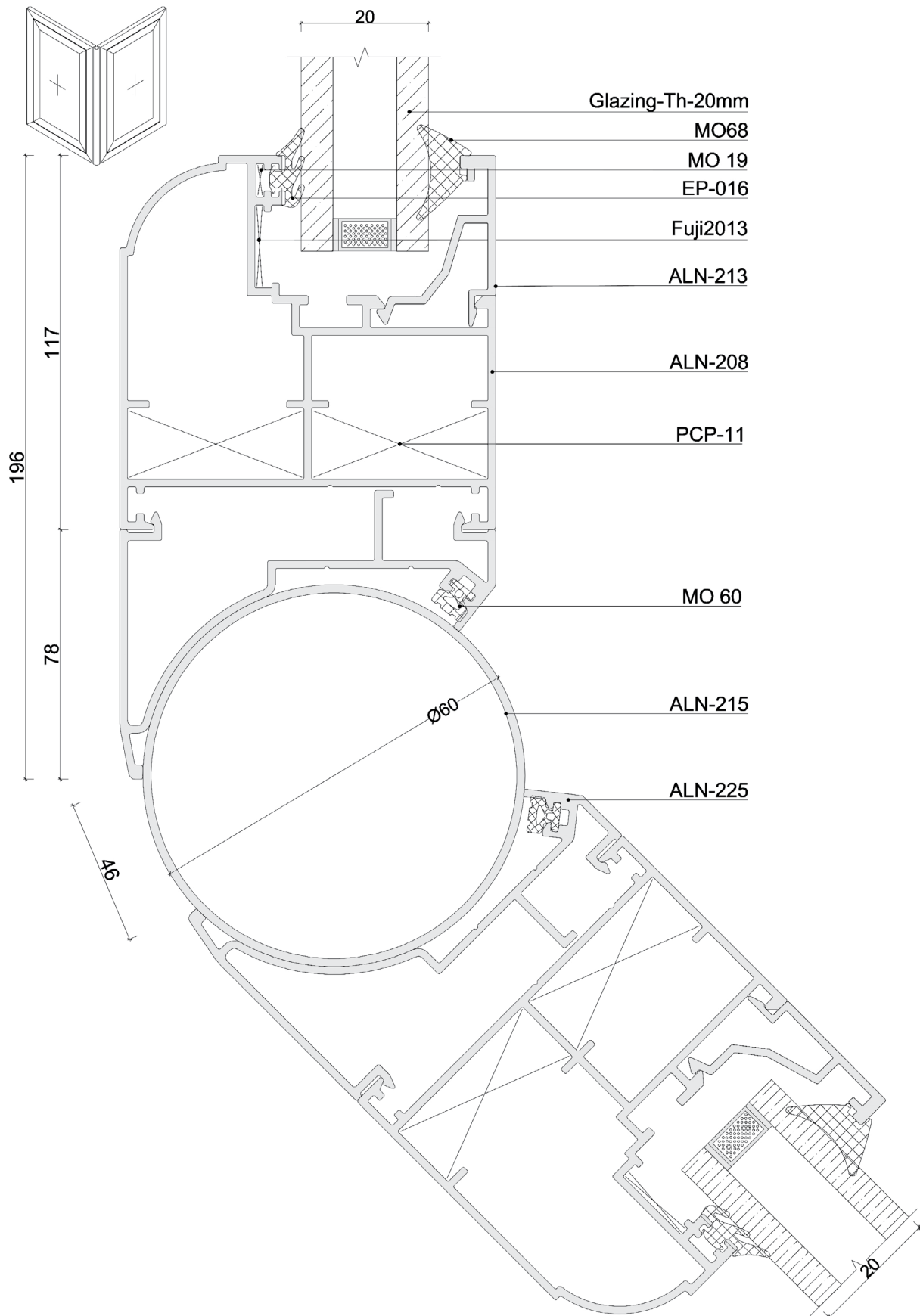
Fabrication Details





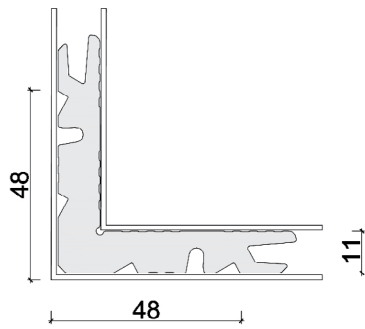
Hinged System 47 & 59 Series

Fabrication Details

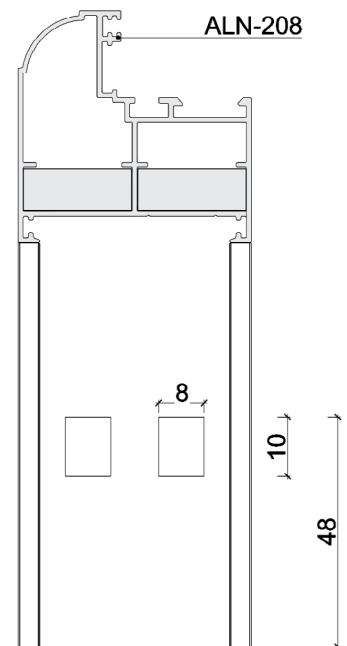
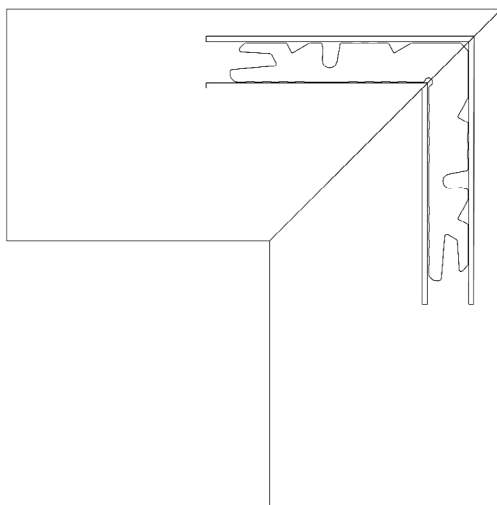
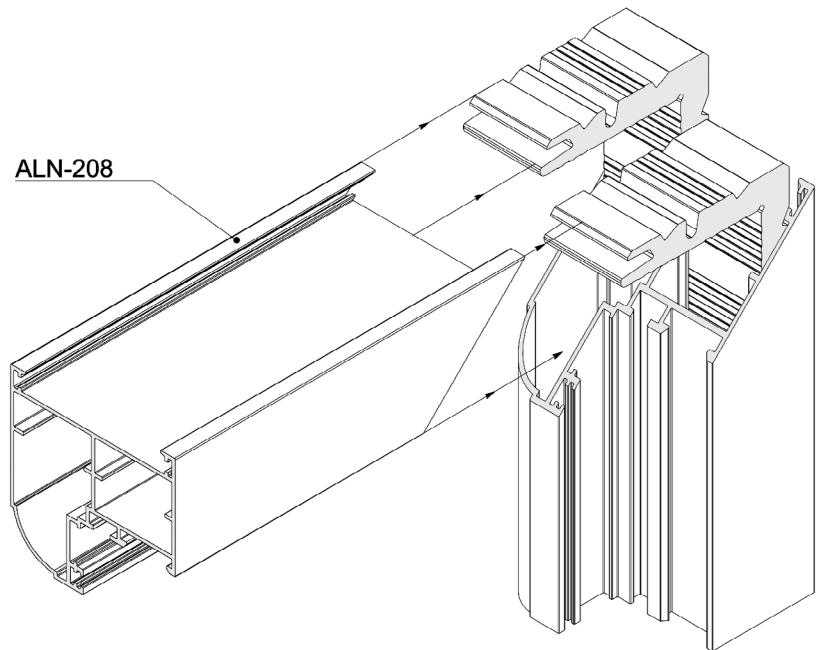


Hinged System 47 & 59 Series

Assembly Drawing

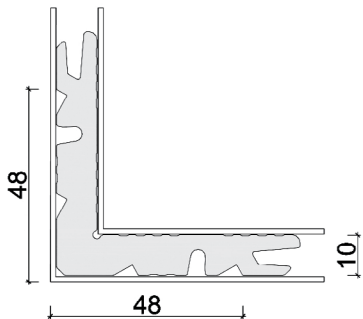


PCP-11 / 26 mm

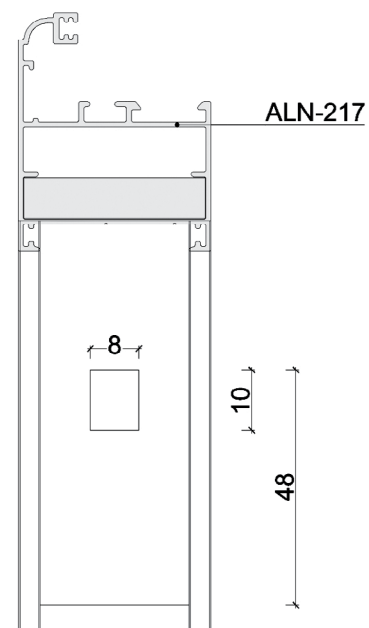
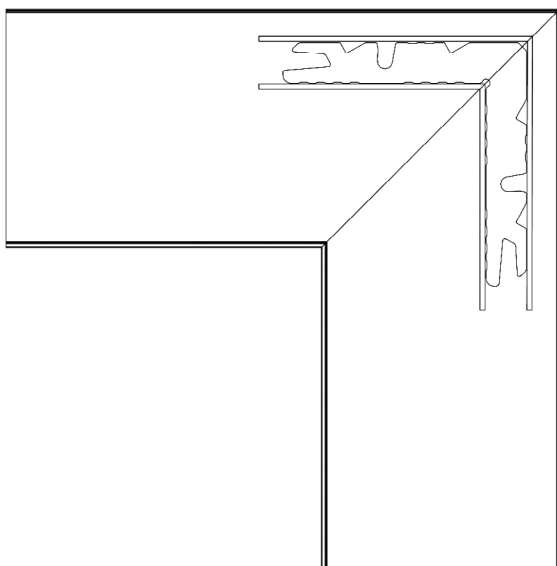
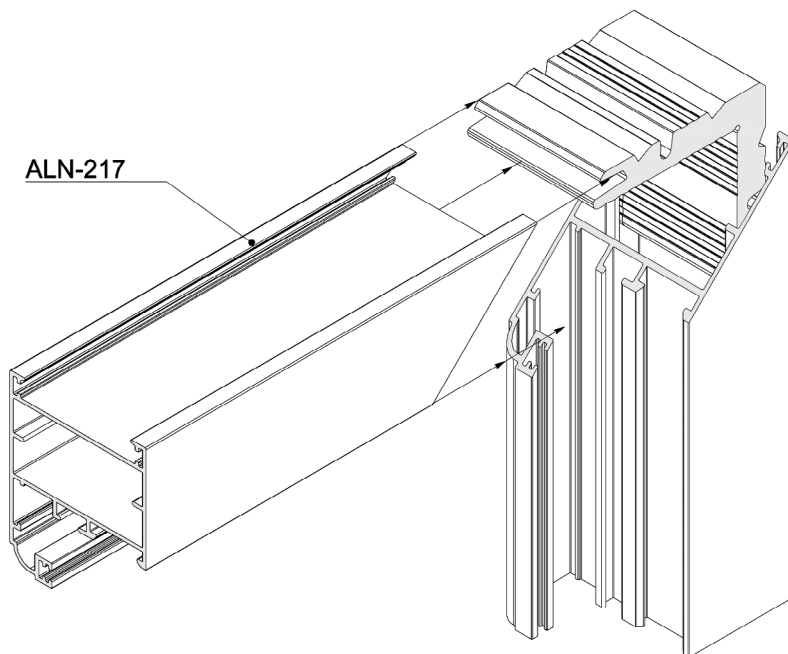


Hinged System 47 & 59 Series Assembly Drawing

ALN-217



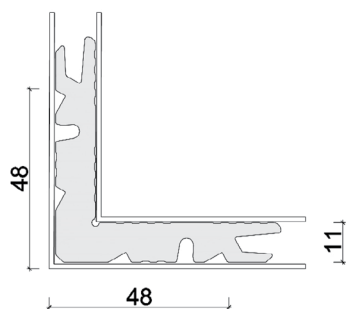
PCP-10 / 44 mm



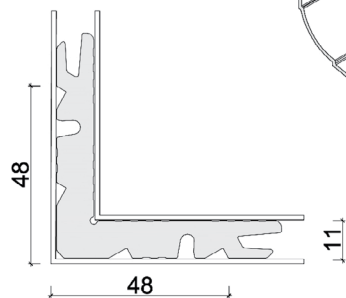
Hinged System 47 & 59 Series

Assembly Drawing

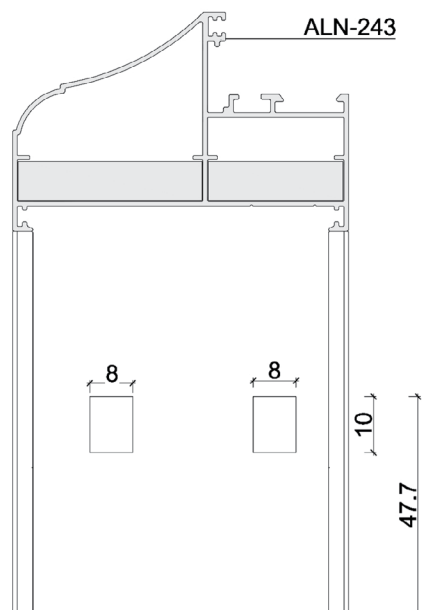
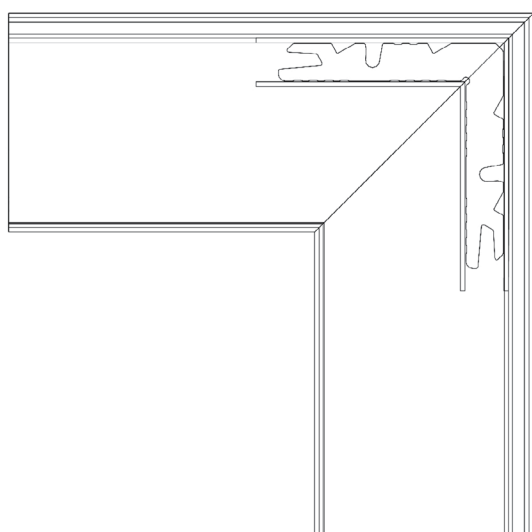
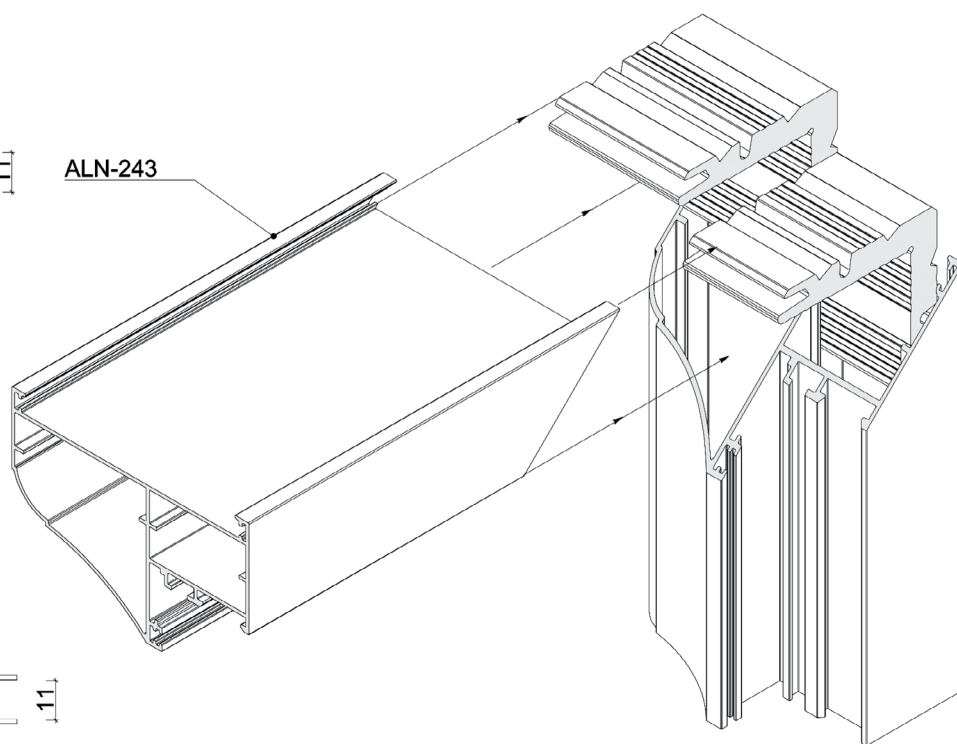
ALN-243



PCP-11 / 36 mm

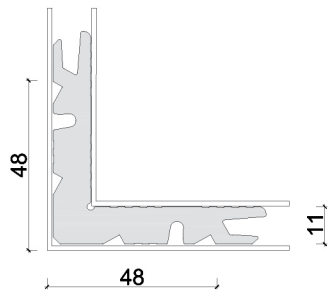


PCP-11 / 49 mm

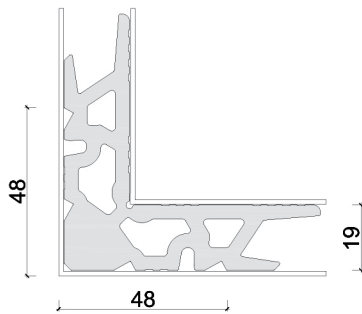




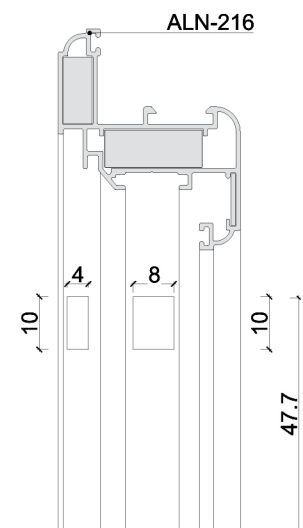
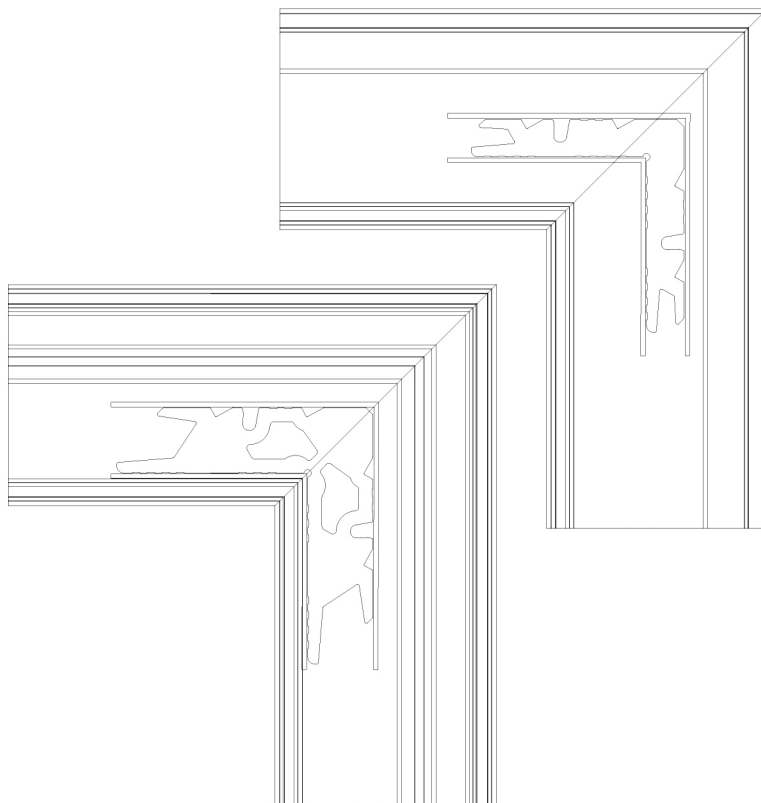
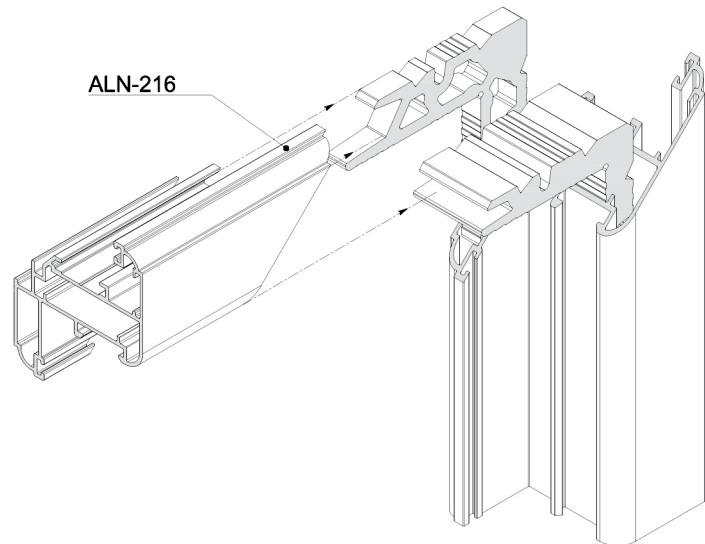
Hinged System 47 & 59 Series Assembly Drawing



PCP-11 / 27 mm

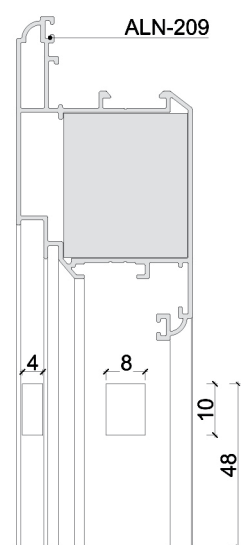
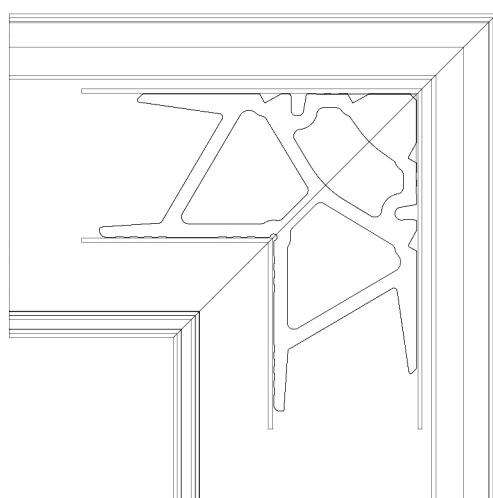
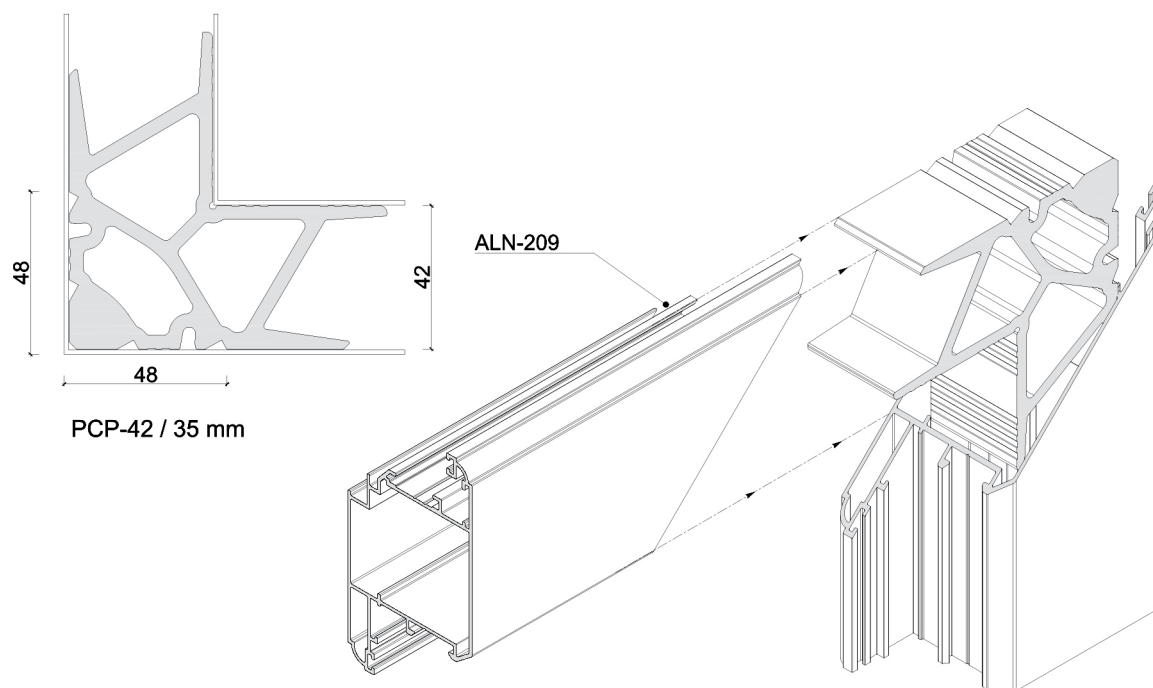


PCP-19 / 8 mm



Hinged System 47 & 59 Series

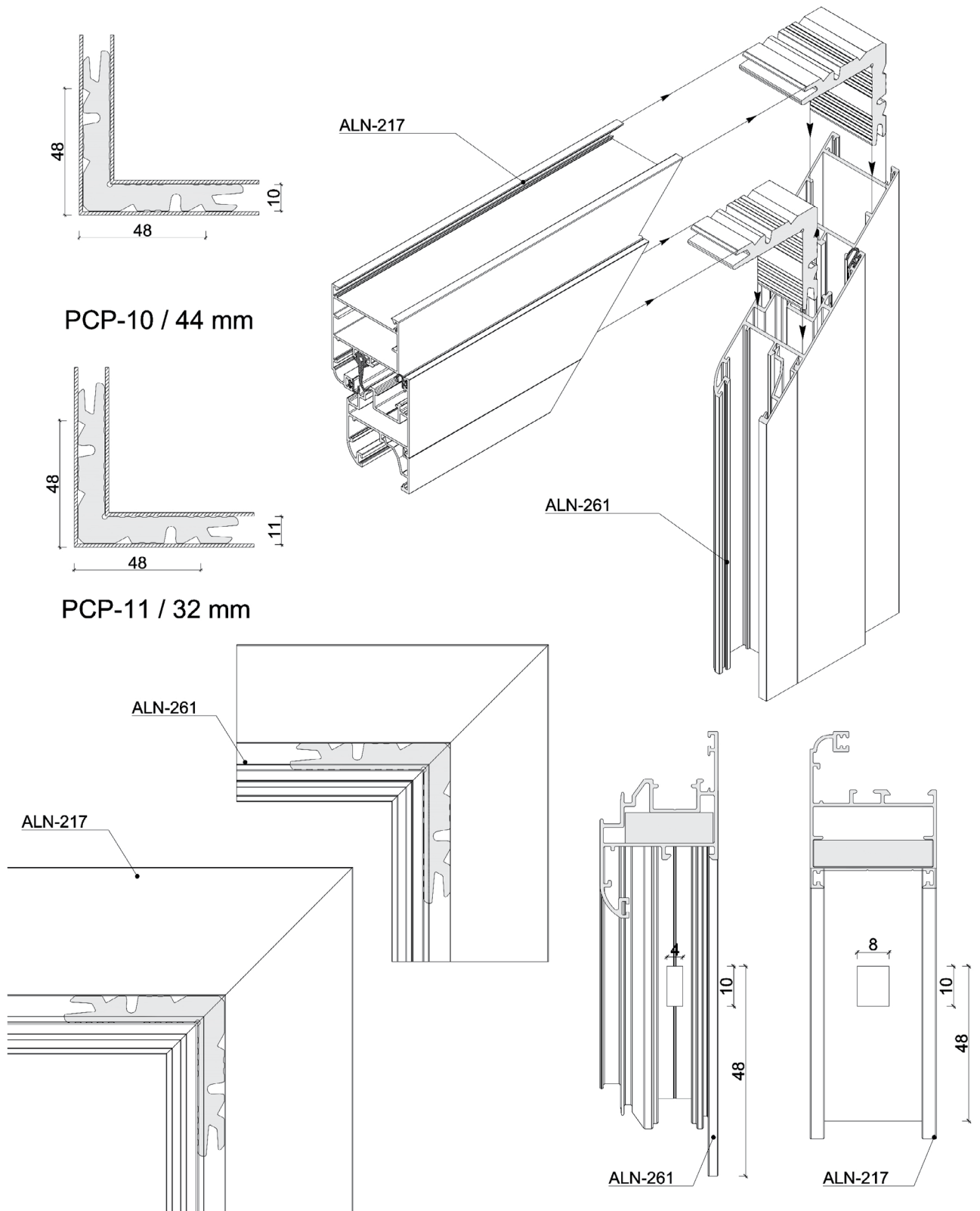
Assembly Drawing





Hinged System 47 & 59 Series

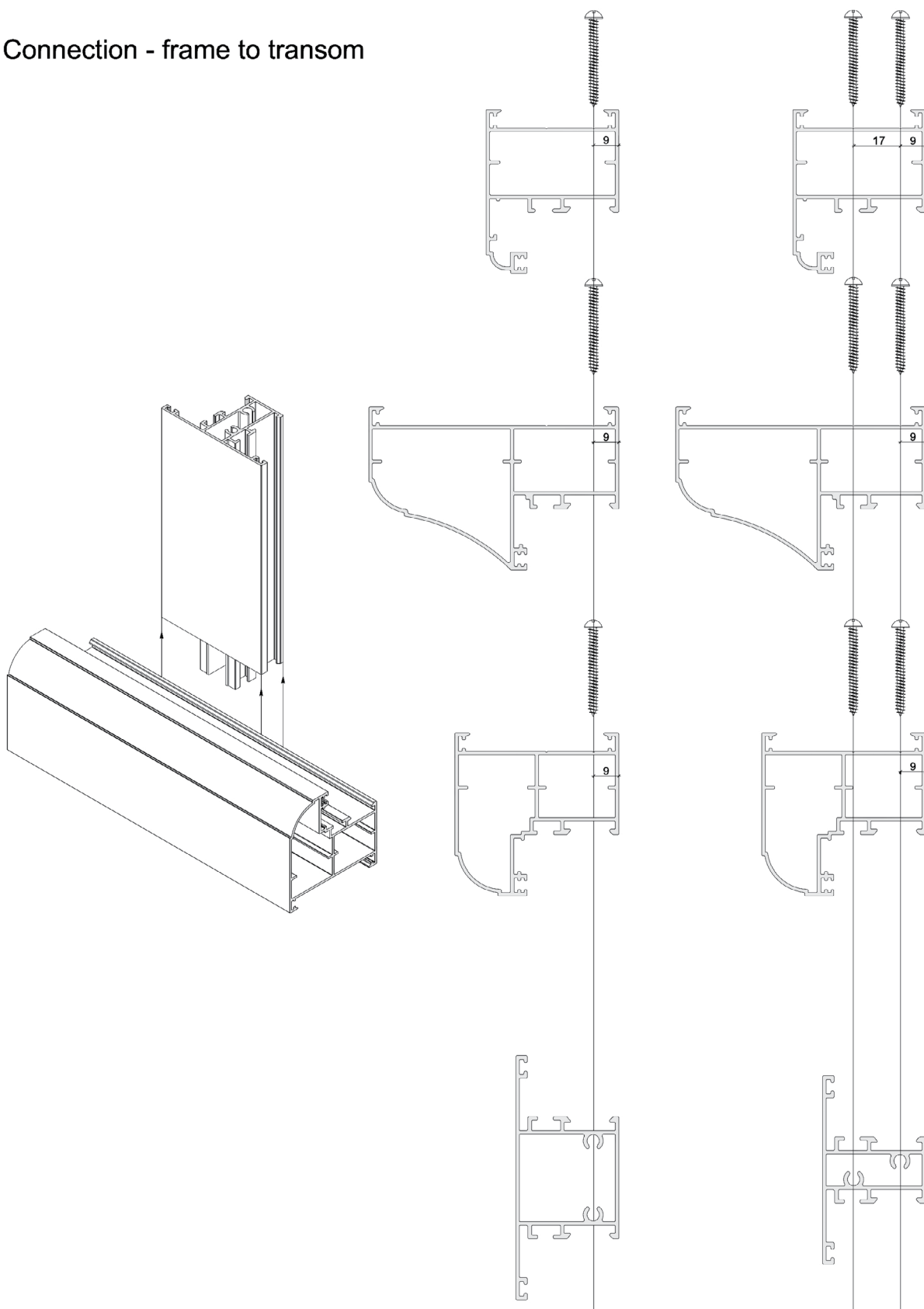
Assembly Drawing



Hinged System 47 & 59 Series

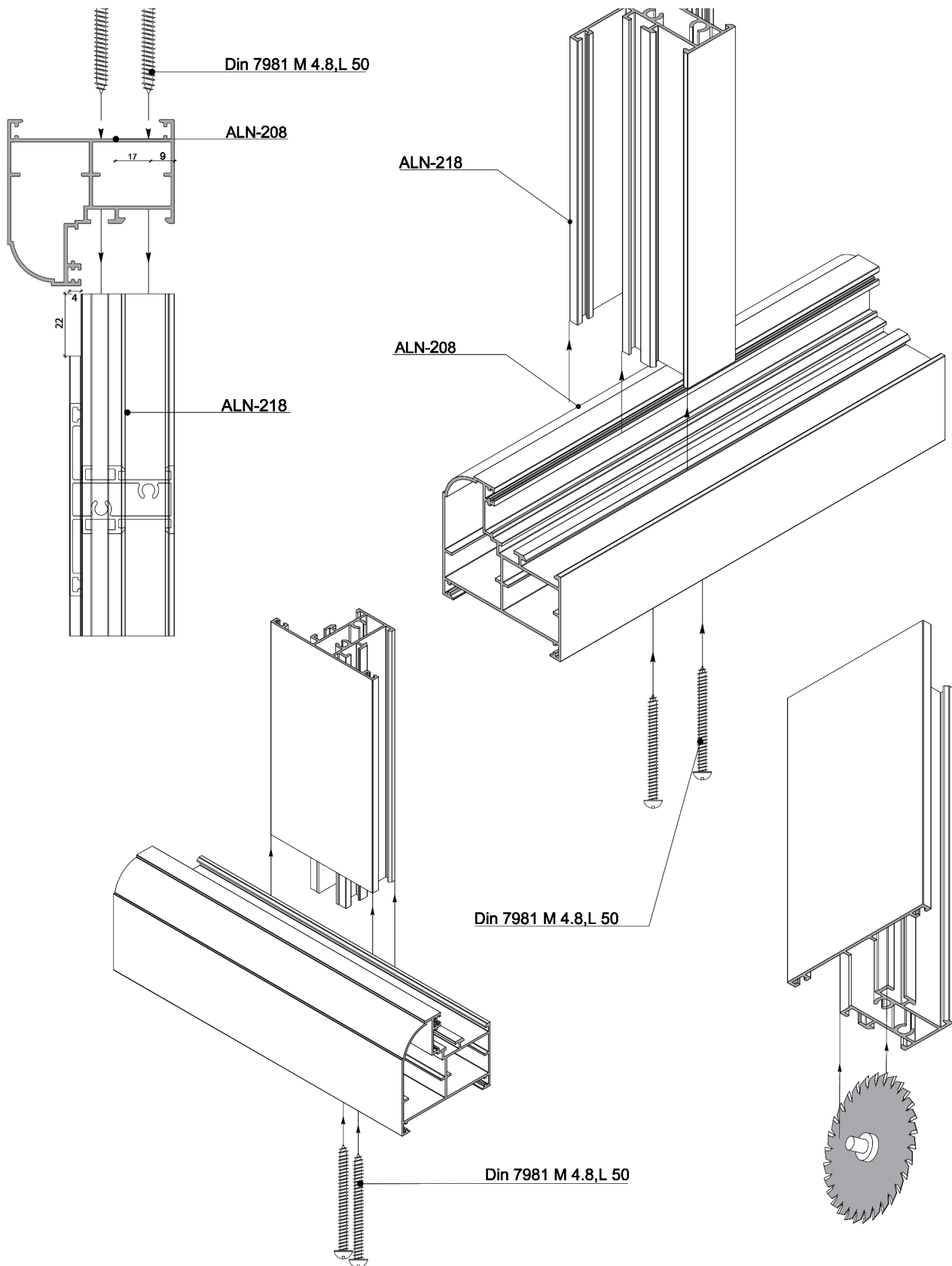
Assembly Drawing

Connection - frame to transom



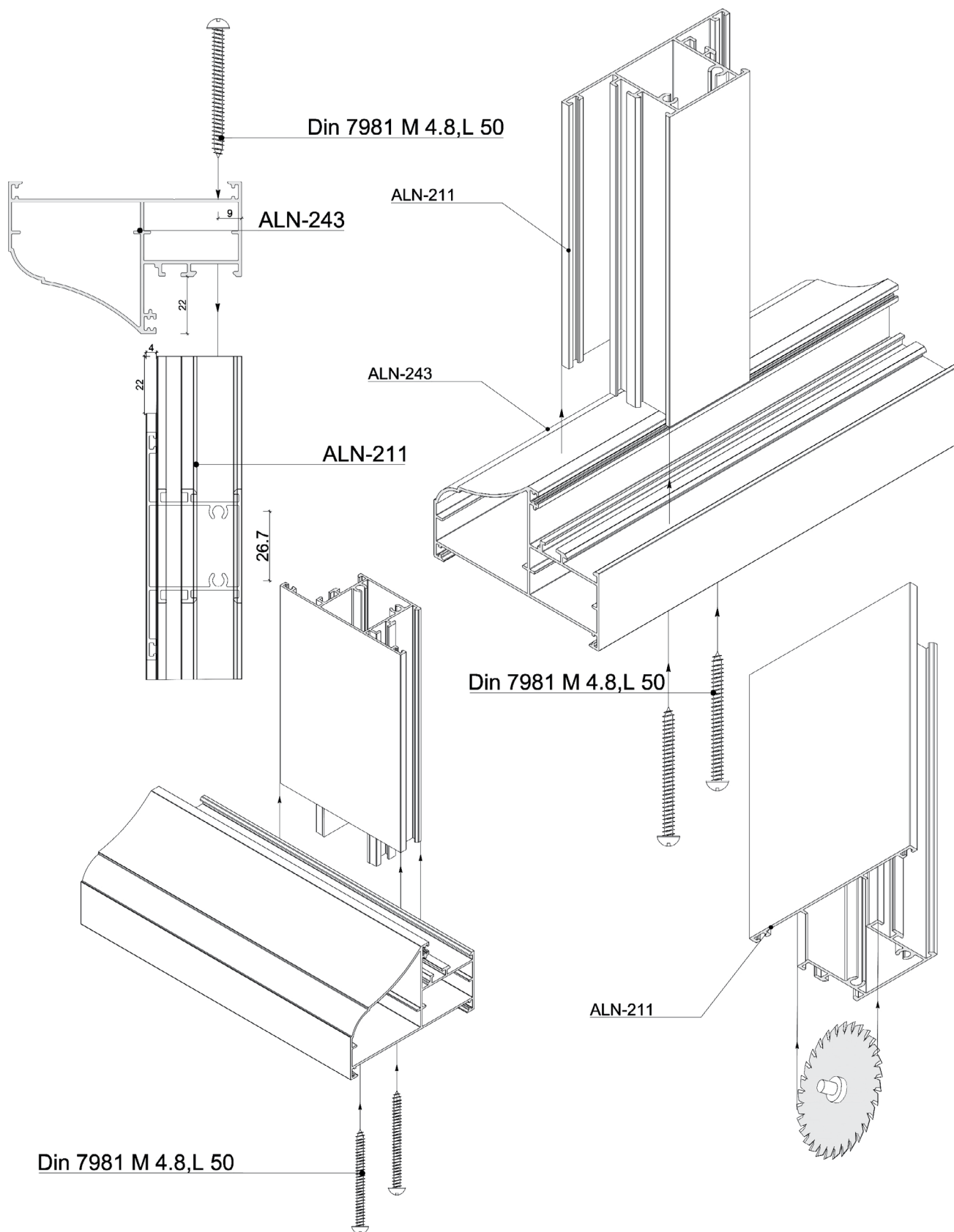


Hinged System 47 & 59 Series Assembly Drawing



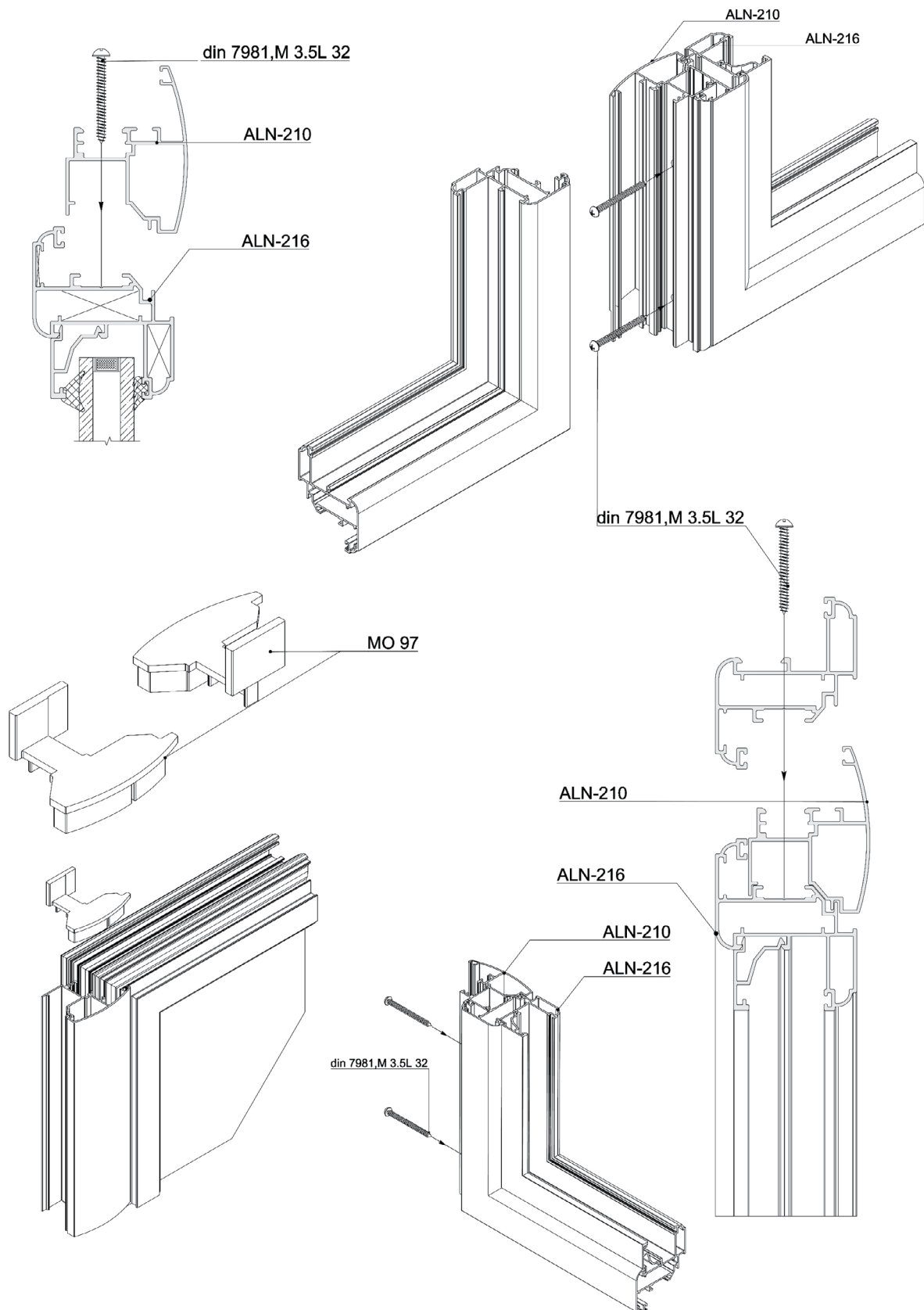
Hinged System 47 & 59 Series

Assembly Drawing



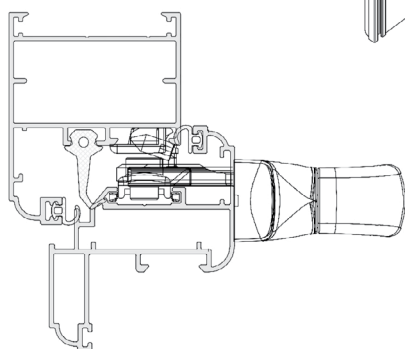
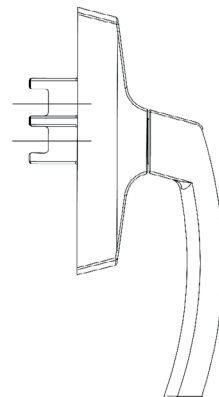
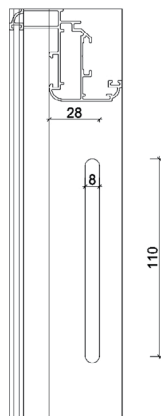
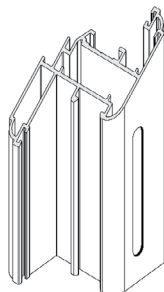
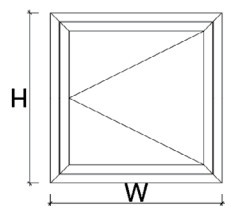


Hinged System 47 & 59 Series Assembly Drawing



Hinged System 47 & 59 Series

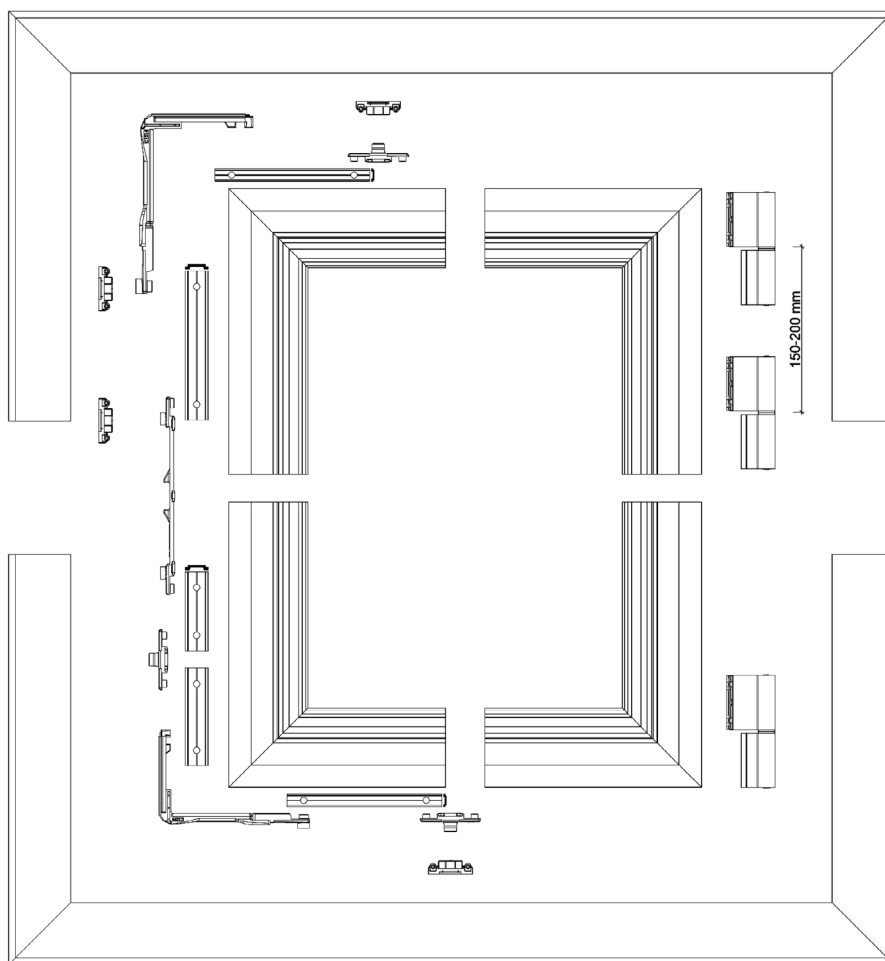
Hardware Installation



Machining for handle

$$1200 \leq H$$

$$1200 \leq W$$

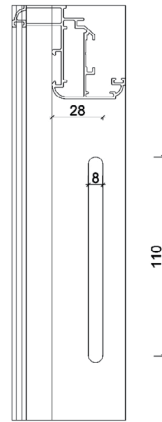
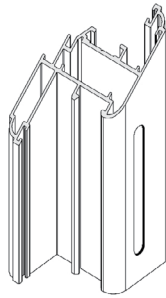
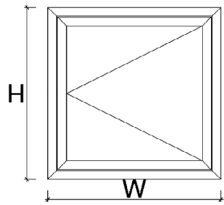


Installation of turn hardware

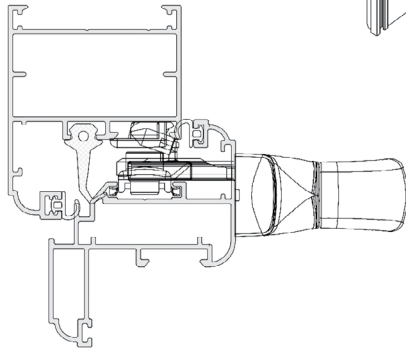
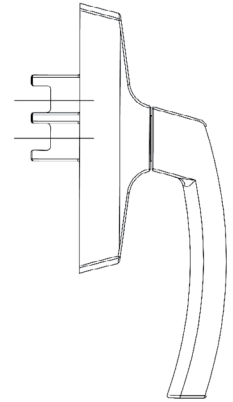


Hinged System 47 & 59 Series

Hardware Installation

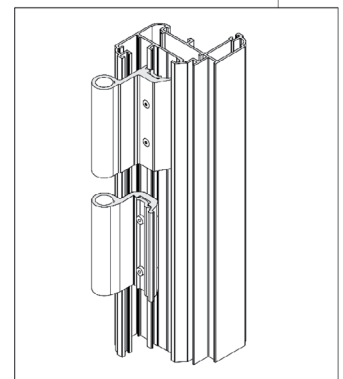
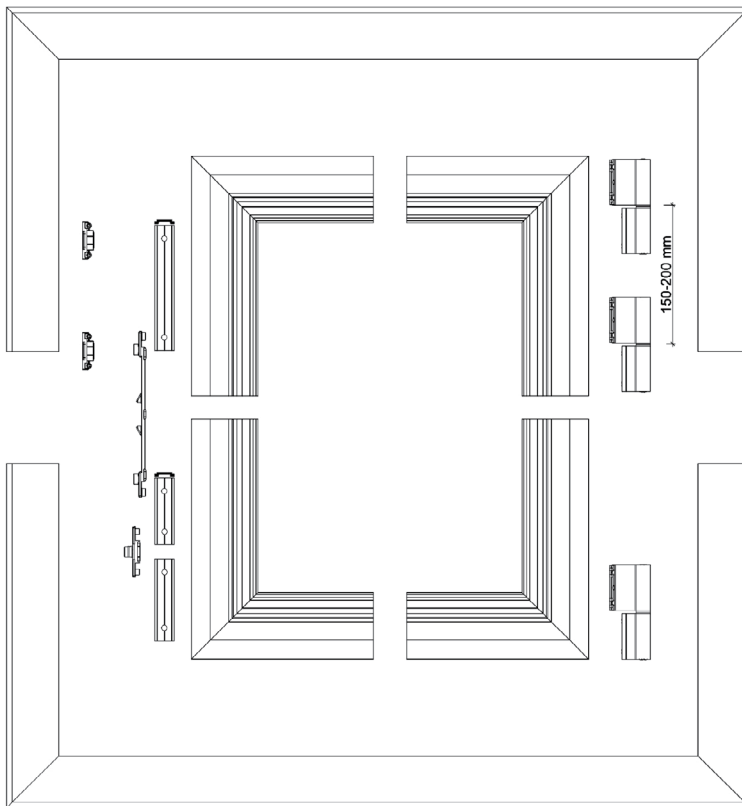
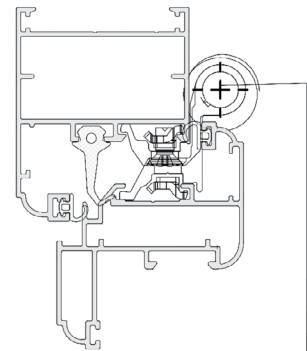


Machining for handle



$$1200 \geq H$$

$$1200 \geq W$$

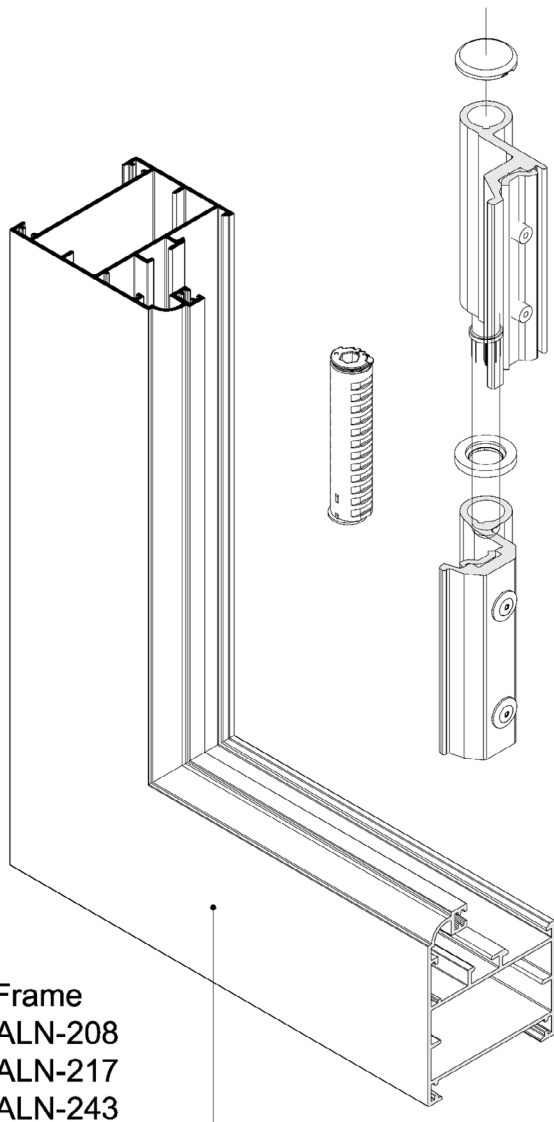
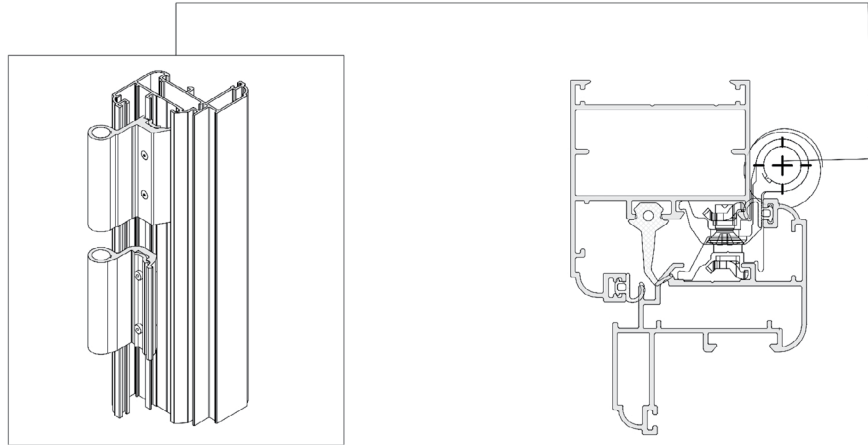
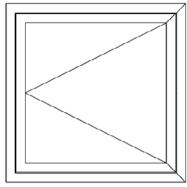


Installation of turn hardware

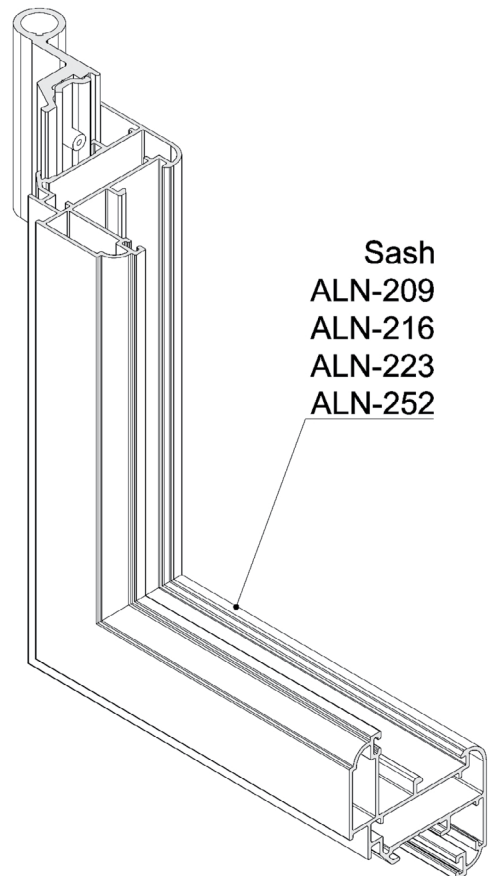


Hinged System 47 & 59 Series

Hardware Installation



Frame
ALN-208
ALN-217
ALN-243



Sash
ALN-209
ALN-216
ALN-223
ALN-252

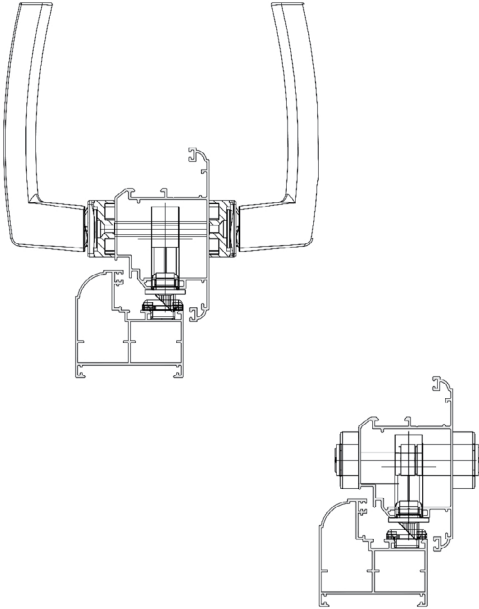
Installation of window hinges



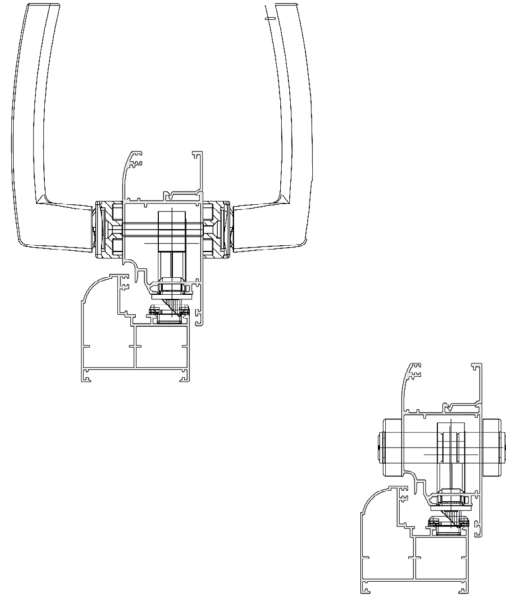
Hinged System 47 & 59 Series

Hardware Installation

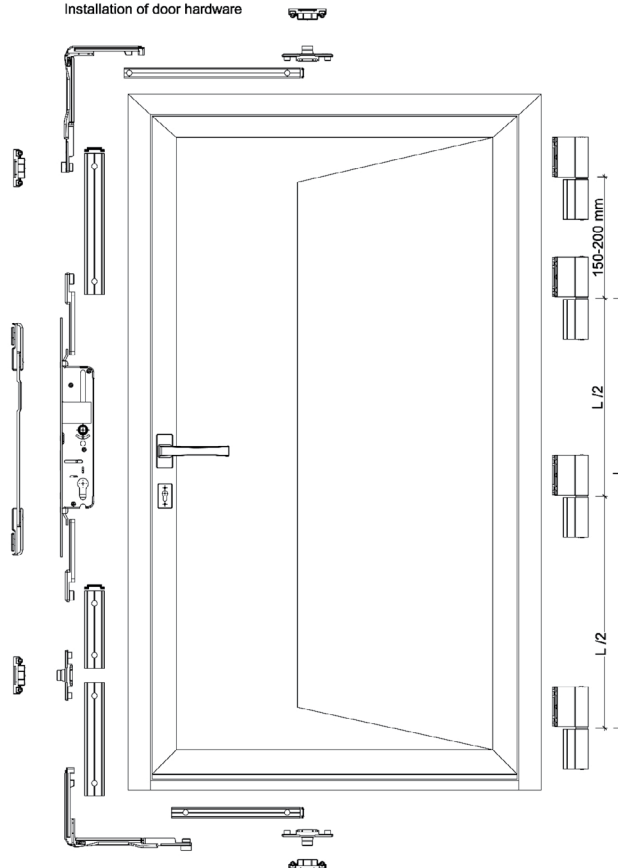
Outward opening

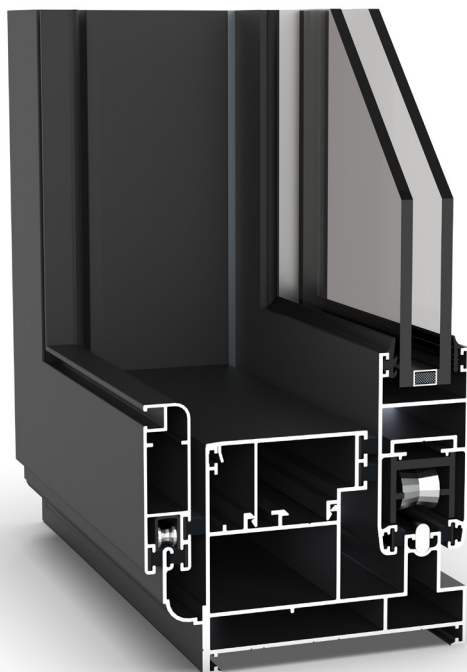


Inward opening



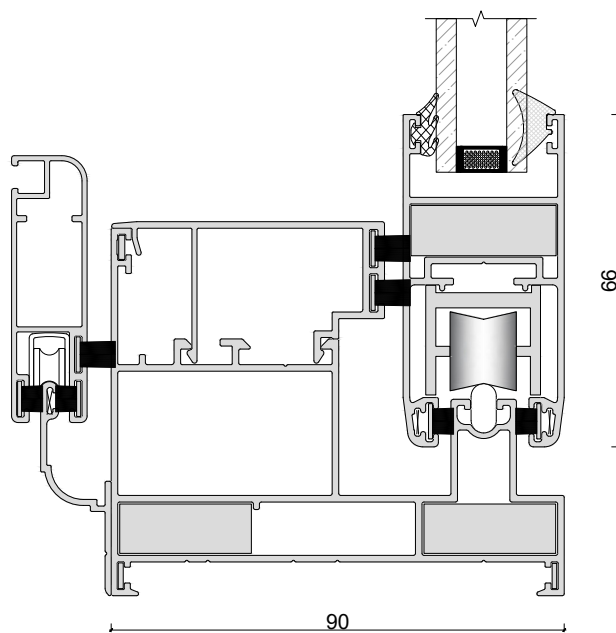
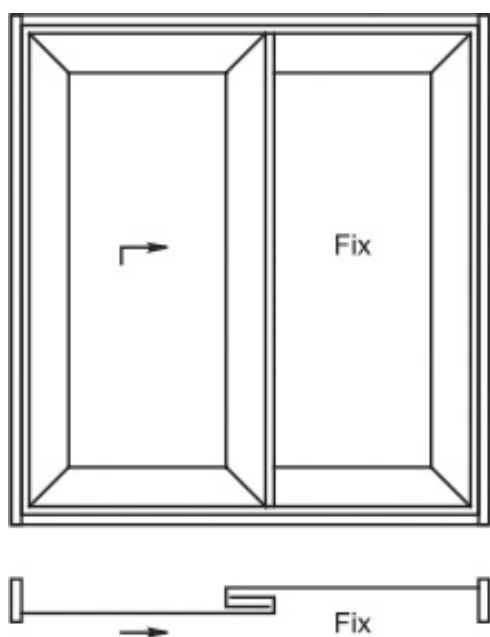
Installation of door hardware





Monorail Sliding System 90 Series

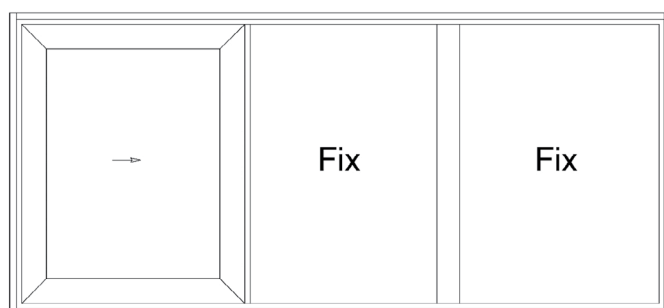
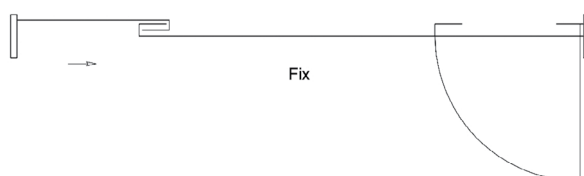
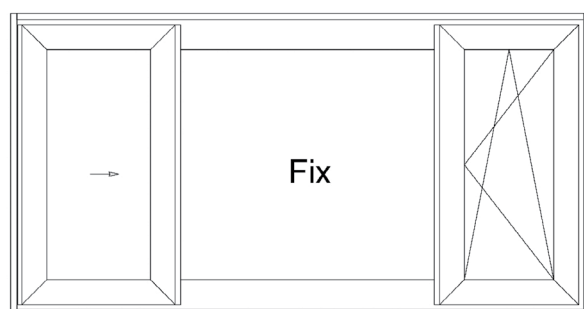
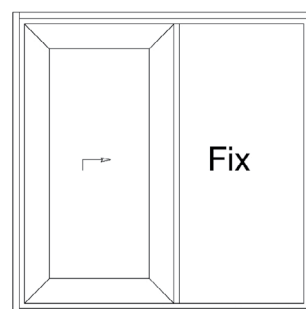
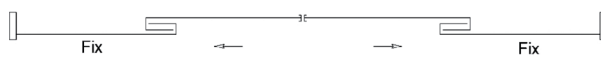
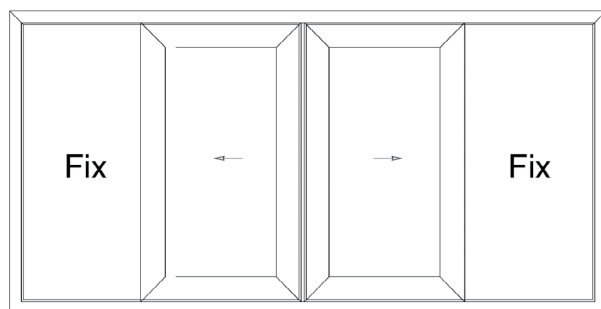
- . Profile width: 90 mm
- . Vent width: 32 mm
- . Rubber description: EPDM DIN 7863
- . Glass thickness: 8 -14 -16 -18 mm
- . Aluminum alloy extrusion: EN AW 6063 T5
- . Safety drainage system
- . Various typologies





Monorail Sliding System 90 Series

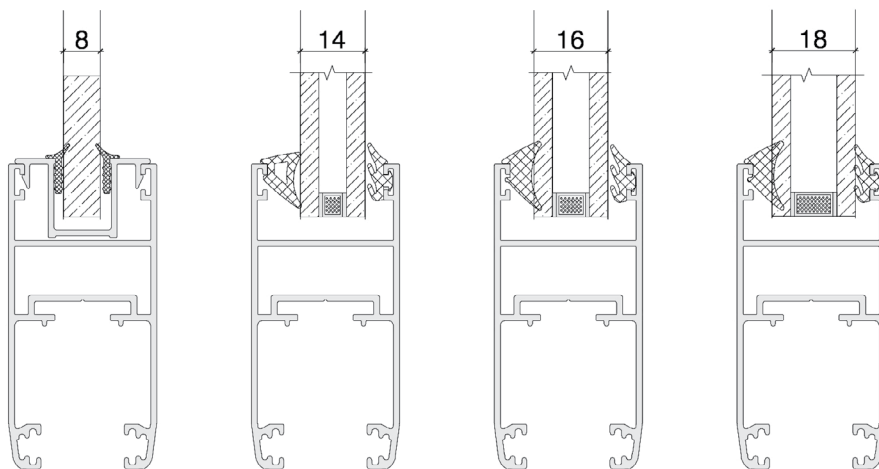
Typologies



Monorail Sliding System 90 Series

Glazing Table

ALN - 203

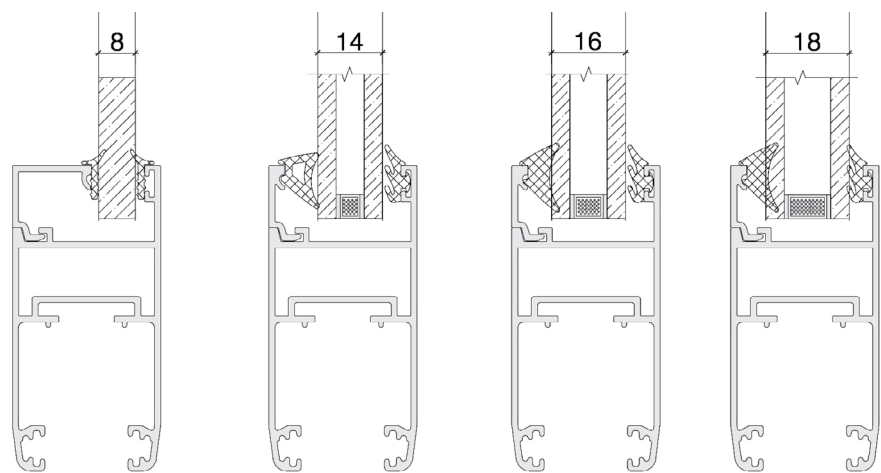


Glazing Thickness	Gasket Inside	Gasket Outside
8 mm	 EP-015	 EP-015
14 mm	 EP-019	 MO68
16 mm	 EP-016	 MO68
18 mm	 EP-016	 MO68

Monorail Sliding System 90 Series

Glazing Table

ALN - 231

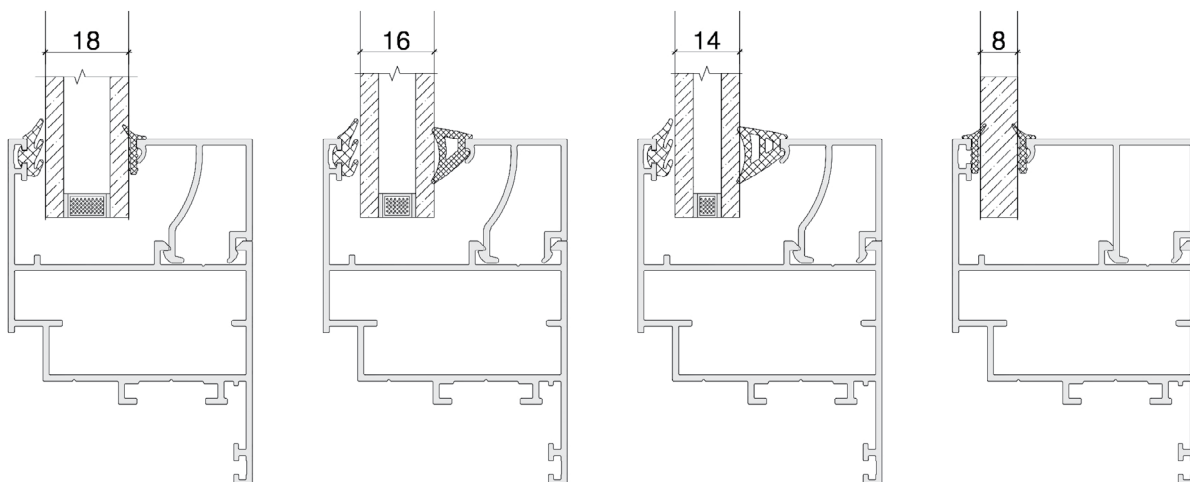


Glazing Thickness	Gasket Inside	Gasket Outside	Glazing Bead
8 mm	 EP-015	 EP-015	 ALN-234
14 mm	 EP-019	 MO68	 ALN-233
16 mm	 EP-016	 MO68	 ALN-233
18 mm	 EP-016	 MO68	 ALN-233

Monorail Sliding System 90 Series

Glazing Table

ALN - 276



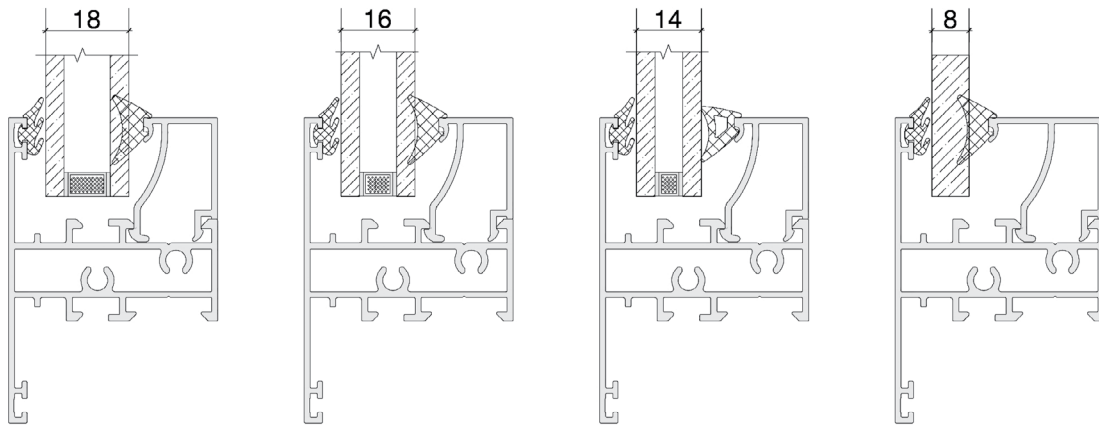
Glazing Thickness	Gasket Inside	Gasket Outside	Glazing Bead
8 mm	 EP-015	 EP-015	 ALN-497
14 mm	 EP-021	 MO68	 ALN-323
16 mm	 EP-016	 MO68	 ALN-323
18 mm	 EP-015	 MO68	 ALN-421



Monorail Sliding System 90 Series

Glazing Table

ALN - 274



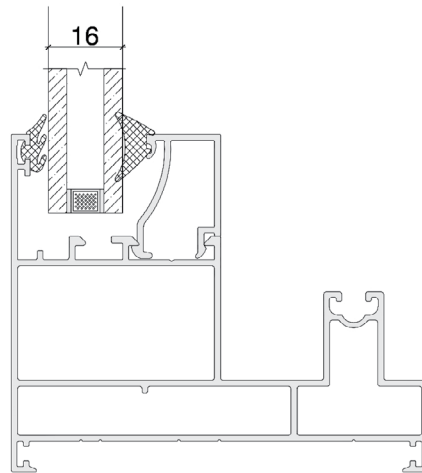
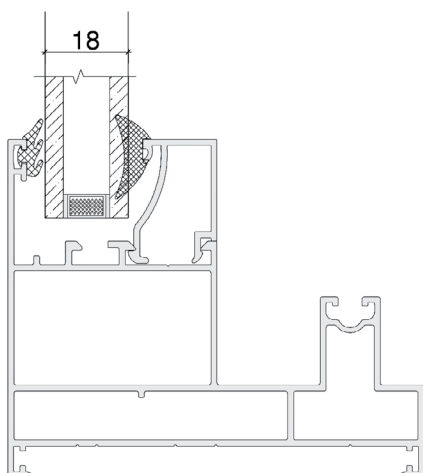
Glazing Thickness	Gasket Inside	Gasket Outside	Glazing Bead
8 mm	 EP-016	 MO68	 ALN-421
14 mm	 EP-019	 MO68	 ALN-423
16 mm	 EP-016	 MO68	 ALN-423
18 mm	 EP-016	 MO68	 ALN-423



Monorail Sliding System 90 Series

Glazing Table

ALN - 271



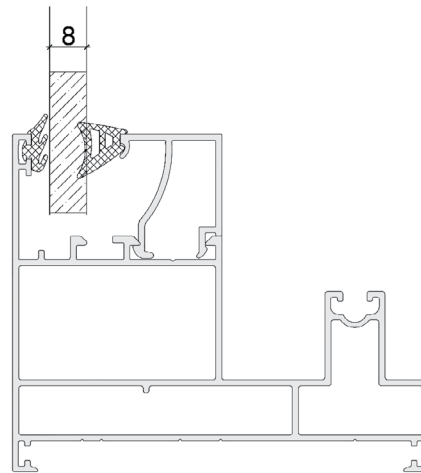
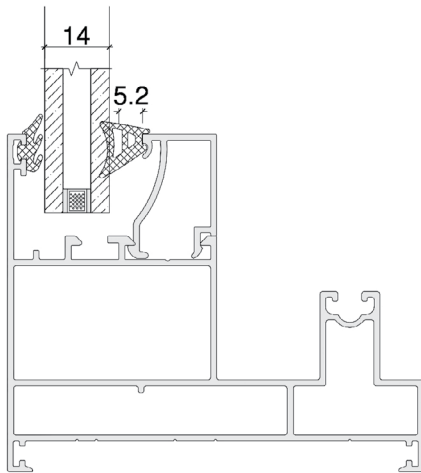
Glazing Thickness	Gasket Inside	Gasket Outside	Glazing Bead
8 mm	 EP-021	 MO68	 ALN-323
14 mm	 EP-019	 MO68	 ALN-423
16 mm	 EP-016	 MO68	 ALN-423
18 mm	 1008/Gasket 3 mm	 MO68	 ALN-423



Monorail Sliding System 90 Series

Glazing Table

ALN - 271

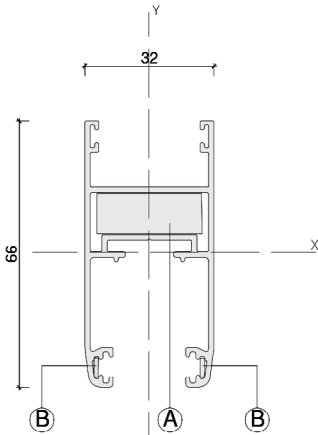
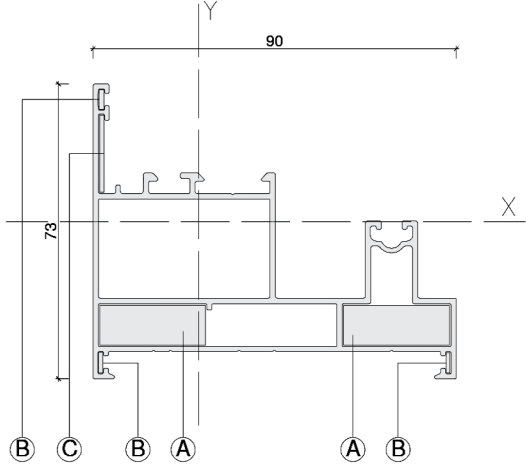
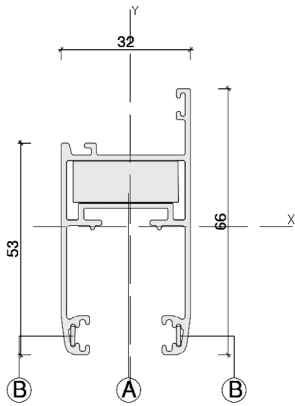
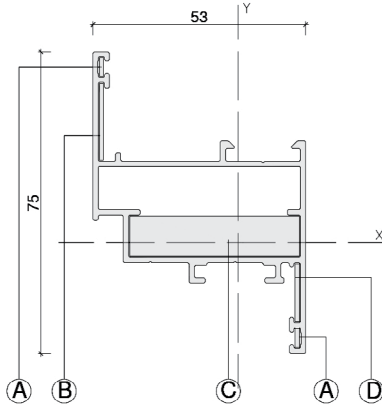


Glazing Thickness	Gasket Inside	Gasket Outside	Glazing Bead
8 mm	 EP-021	 MO68	 ALN-323
14 mm	 EP-021	 MO68	 ALN-423
16 mm	 EP-016	 MO68	 ALN-423
18 mm	 EP-015	 MO68	 ALN-423



Monorail Sliding System 90 Series

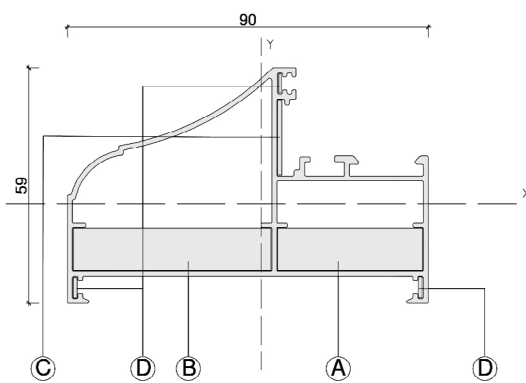
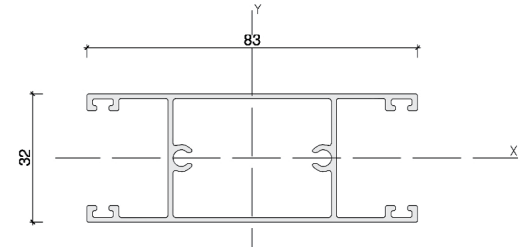
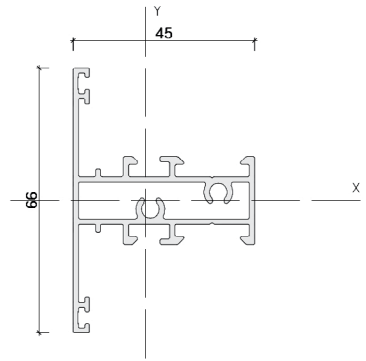
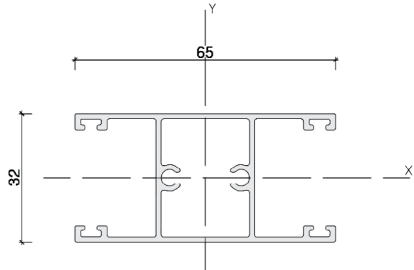
Profile & Accessories Information

			
I_x : 11.20 cm ⁴	I_y : 5.52 cm ⁴	I_x : 17.90 cm ⁴	I_y : 51.05 cm ⁴
Sash : ALN-203	A: PCP-10 / 26 mm 	Frame : ALN-271	A: PCP-10 / 26 mm 
Weight: 872 gr/m	B: MO19 	Weight: 1537 gr/m	B: MO19 
			C: fuji 2000 
			
I_x : 9.64 cm ⁴	I_y : 5.01 cm ⁴	I_x : 9.75 cm ⁴	I_y : 13.54 cm ⁴
Sash : ALN-231	A: PCP-10 / 26 mm 	Sash : ALN-276	A: MO19 
Weight: 832 gr/m	B: MO19 	Weight: 912 gr/m	B: fuji 2000 
			C: PCP-10 / 42 mm 
			D: MM 77 



Monorail Sliding System 90 Series

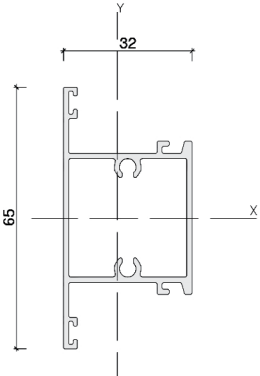
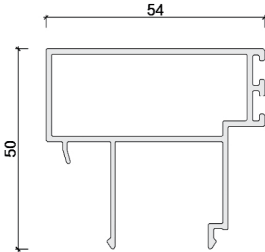
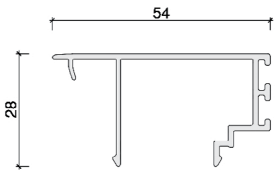
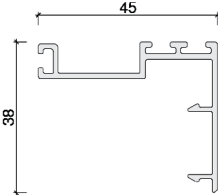
Profile & Accessories Information

			
I_x : 11.96 cm ⁴	I_y : 35.26 cm ⁴	I_x : 6.03 cm ⁴	I_y : 21.30 cm ⁴
Frame : ALN-243	A: PCP-11 / 36 mm  B: PCP-11 / 49 mm 	Transom : ALN-202	—
Weight: 1170 gr/m	C: fuji 2000  D: MO 19 	Weight: 918 gr/m	—
			
I_x : 9.75 cm ⁴	I_y : 13.54 cm ⁴	I_x : 5.03 cm ⁴	I_y : 10.37 cm ⁴
Transom : ALN-274	—	Transom : ALN-240	—
Weight: 912 gr/m	—	Weight: 805 gr/m	—



Monorail Sliding System 90 Series

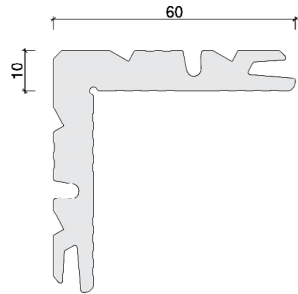
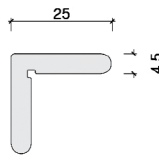
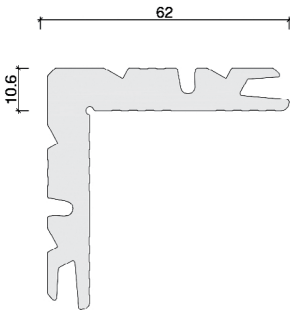
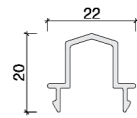
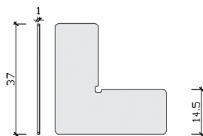
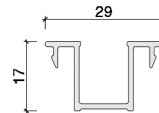
Profile & Accessories Information

			
x: 7.46 cm ⁴	I _y : 3.94 cm ⁴		
Transom : ALN-232	—		
Weight: 721 gr/m	—	Profile: ALN-273	Weight : 759 gr/m
			
Profile: ALN-272	Weight : 451 gr/m	Profile: ALN-275	Weight : 424 gr/m



Monorail Sliding System 90 Series

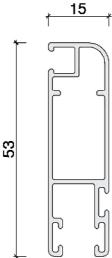
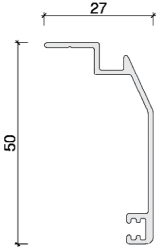
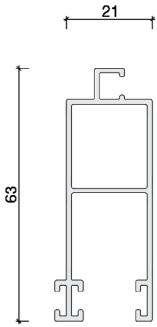
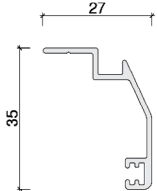
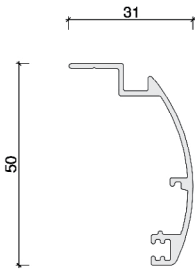
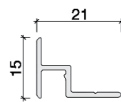
Profile & Accessories Information

			
Corner joint: PCP-10	Weight : 2454 gr/m	Corner : MO 19 399012	Weight: 533 gr/m
			
Corner joint: PCP-11	Weight : 2549 gr/m	Profile : ALN-205	Weight: 176 gr/m
			
Corner joint: MM77	Weight : -	Profile : ALN-206	Weight: 232 gr/m



Monorail Sliding System 90 Series

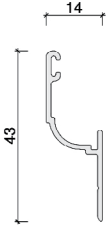
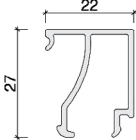
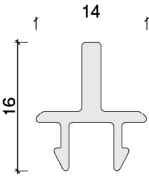
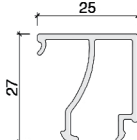
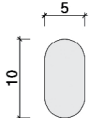
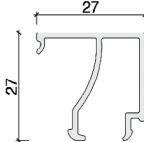
Profile & Accessories Information

			
Fly screen : ALN-207	Weight: 448 gr/m	Flange profile: ALN-221	Weight : 300 gr/m
			
Fly screen : ALN-220	Weight: 626 gr/m	Flange profile: ALN-222	Weight : 254 gr/m
			
Flange profile: ALN-219	Weight : 362 gr/m	Profile : ALN-228	Weight: 135 gr/m



Monorail Sliding System 90 Series

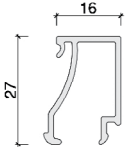
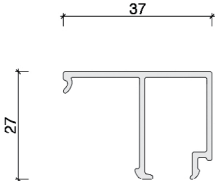
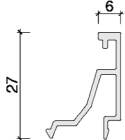
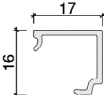
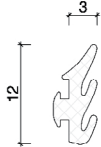
Profile & Accessories Information

			
Fly screen: ALN-230	Weight : 200 gr/m	Glazing bead: ALN-323	Weight : 302 gr/m
			
Profile : ALN-257	Weight: 149 gr/m	Glazing bead: ALN-421	Weight : 313 gr/m
			
Rail : ALN-462	Weight: 119 gr/m	Glazing bead: ALN-422	Weight : 321 gr/m



Monorail Sliding System 90 Series

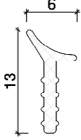
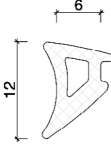
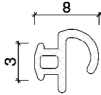
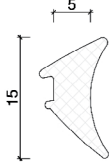
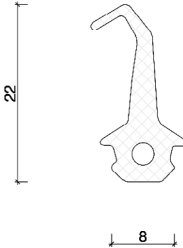
Profile & Accessories Information

			
Glazing bead: ALN-423	Weight : 281 gr/m	Glazing bead: ALN-497	Weight : 350 gr/m
			
Glazing bead : ALN-233	Weight: 95 gr/m	Glazing bead: ALN-213	Weight : 211 gr/m
			
Glazing bead : ALN-234	Weight: 143 gr/m	Gasket: MO68	Weight : 46 gr/m



Monorail Sliding System 90 Series

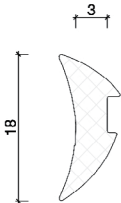
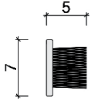
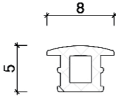
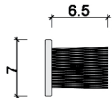
Profile & Accessories Information

			
Gasket: EP-015	Weight : 21 gr/m	Gasket: EP-019	Weight: 61 gr/m
			
Gasket: EP-018	Weight : 27 gr/m	Gasket: EP-021	Weight: 78 gr/m
			
Gasket: EP-016	Weight : 77 gr/m	Gasket: TH1015	Weight : -



Monorail Sliding System 90 Series

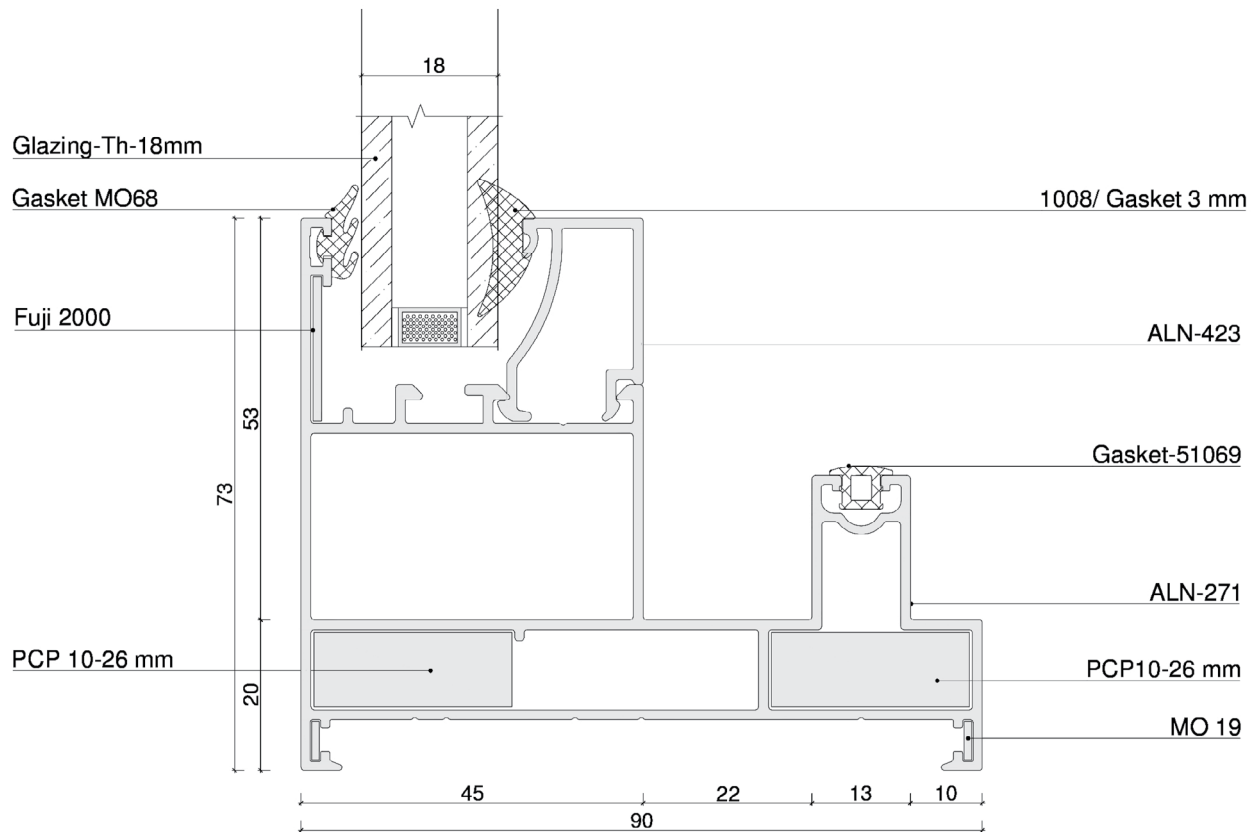
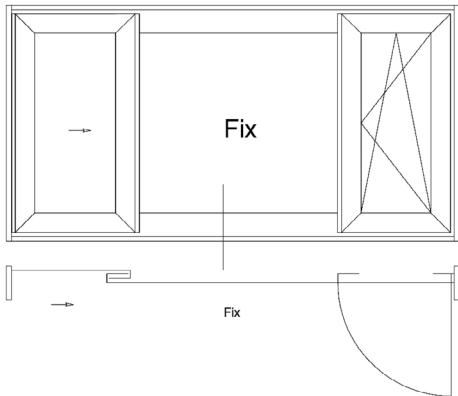
Profile & Accessories Information

			
Gasket: 1008/Gasket 3mm Weight : -		Gasket: PB7-3P-70-500	Weight :
			
Gasket: 51069	Weight : -		
			
Gasket: PB7-3P-70-650	Weight : -		



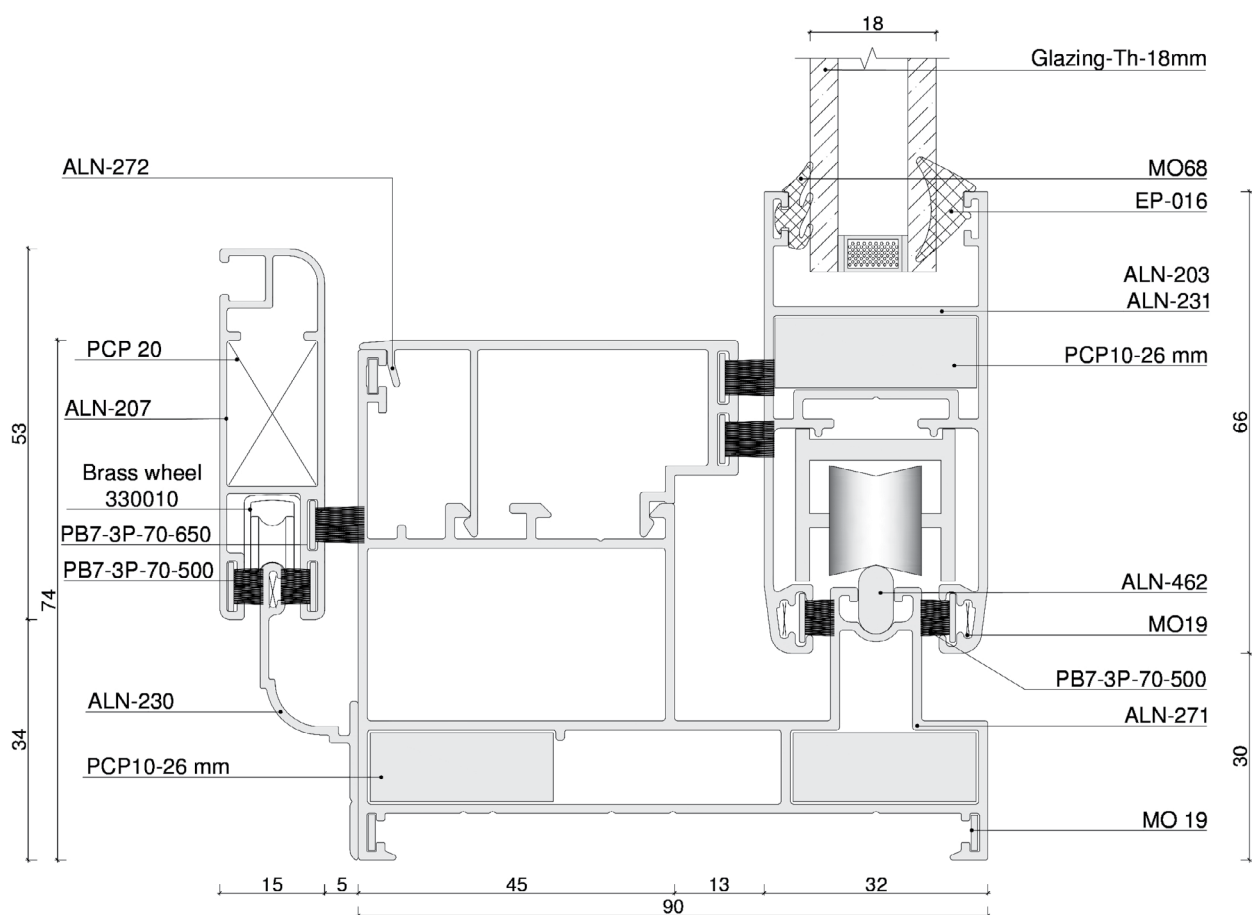
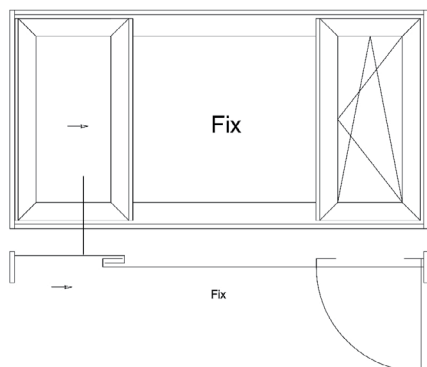
Monorail Sliding System 90 Series

Fabrication Details



Monorail Sliding System 90 Series

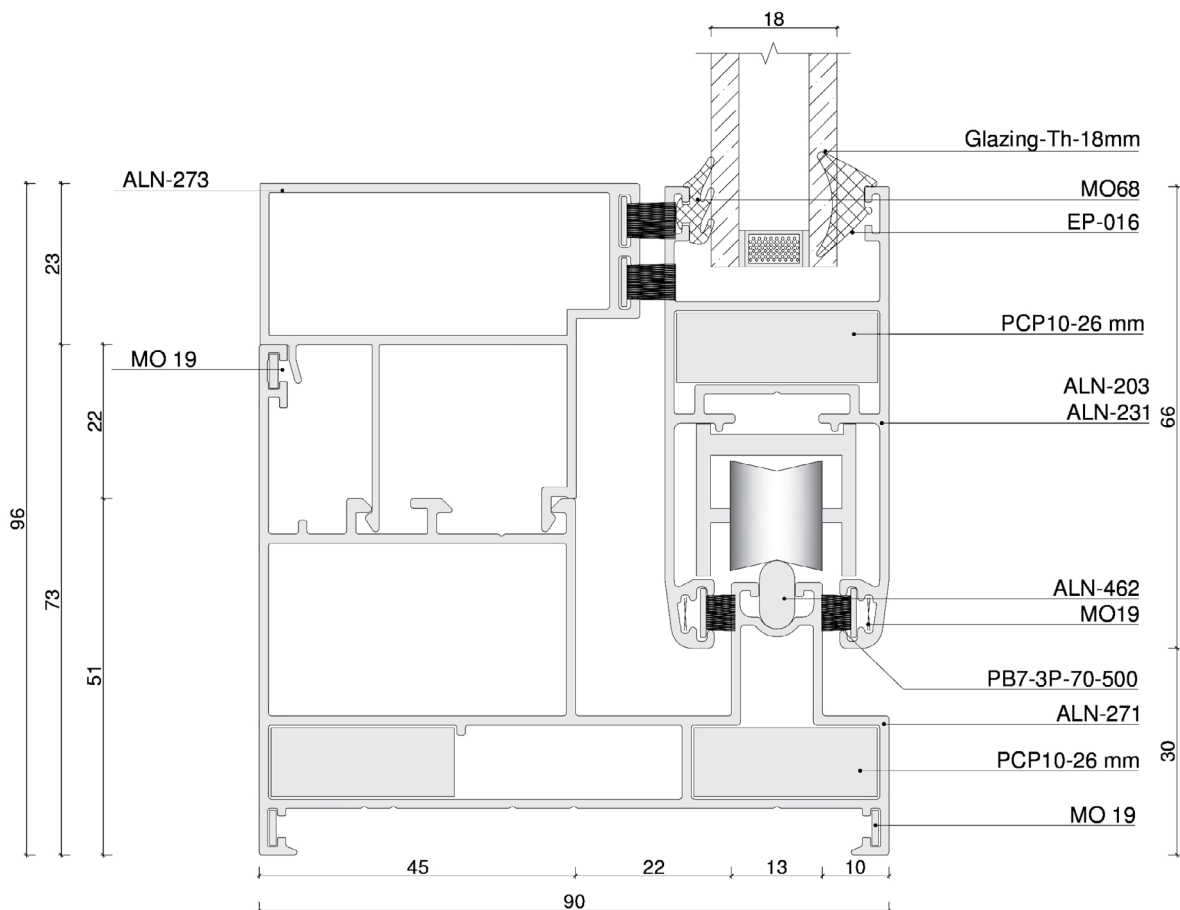
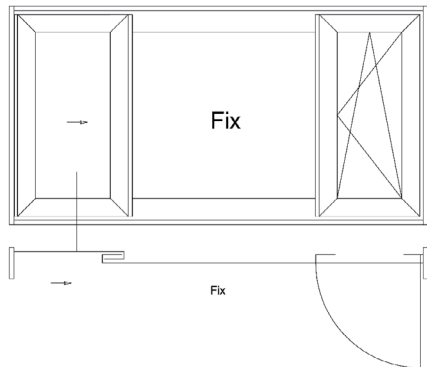
Fabrication Details





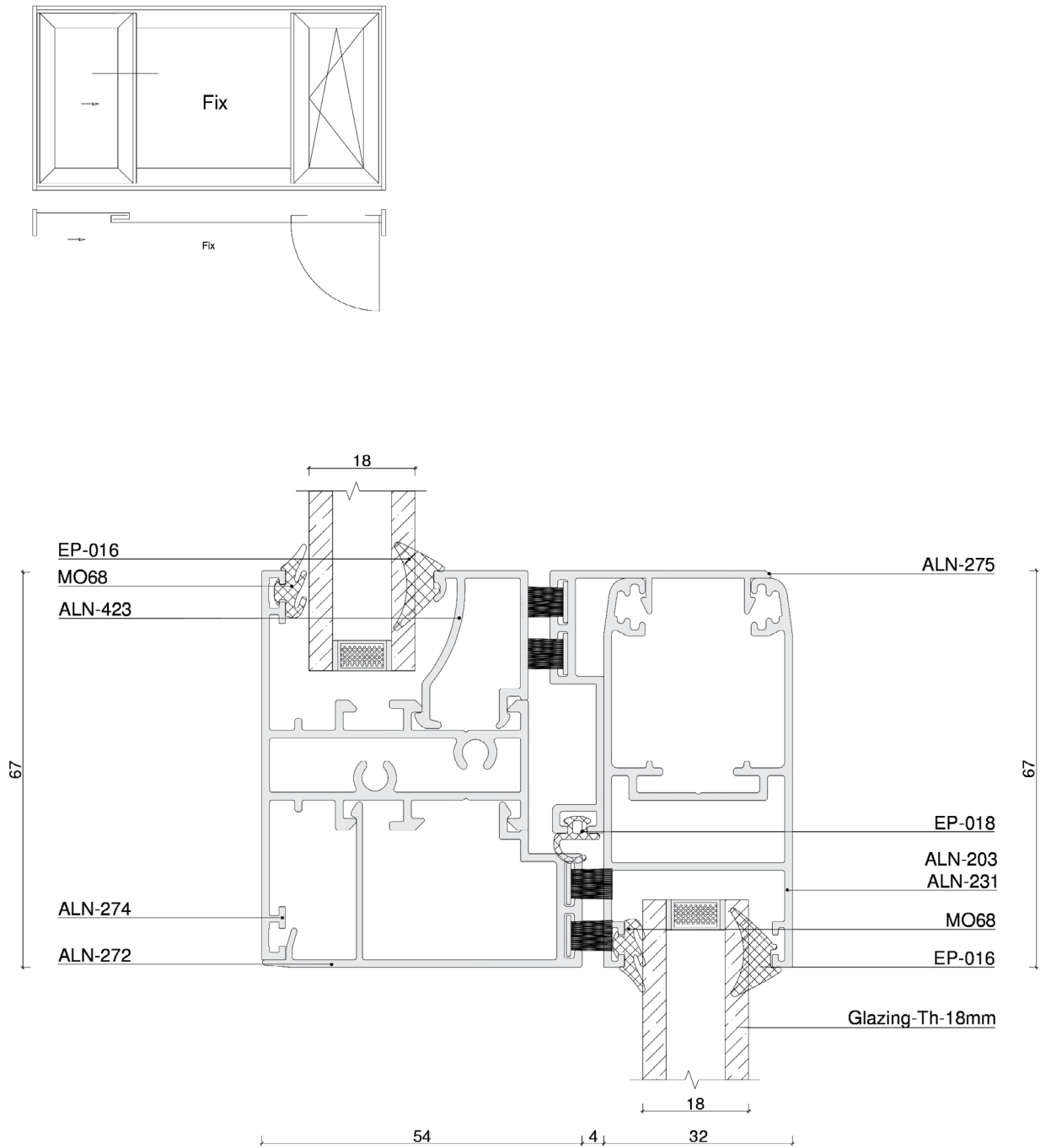
Monorail Sliding System 90 Series

Fabrication Details



Monorail Sliding System 90 Series

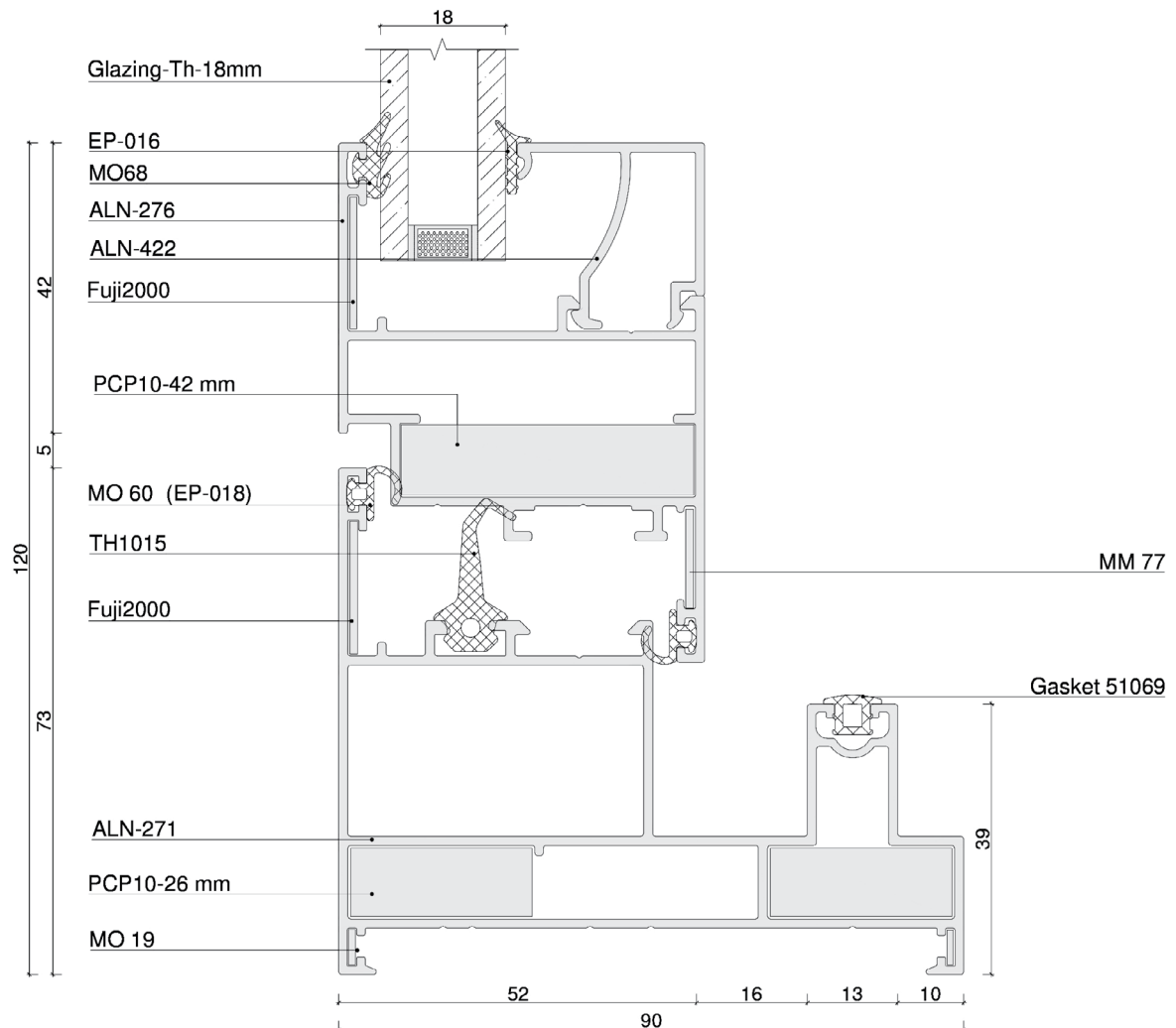
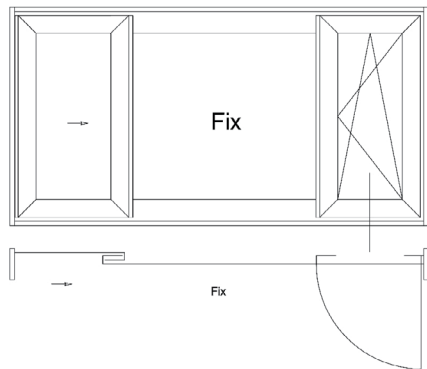
Fabrication Details





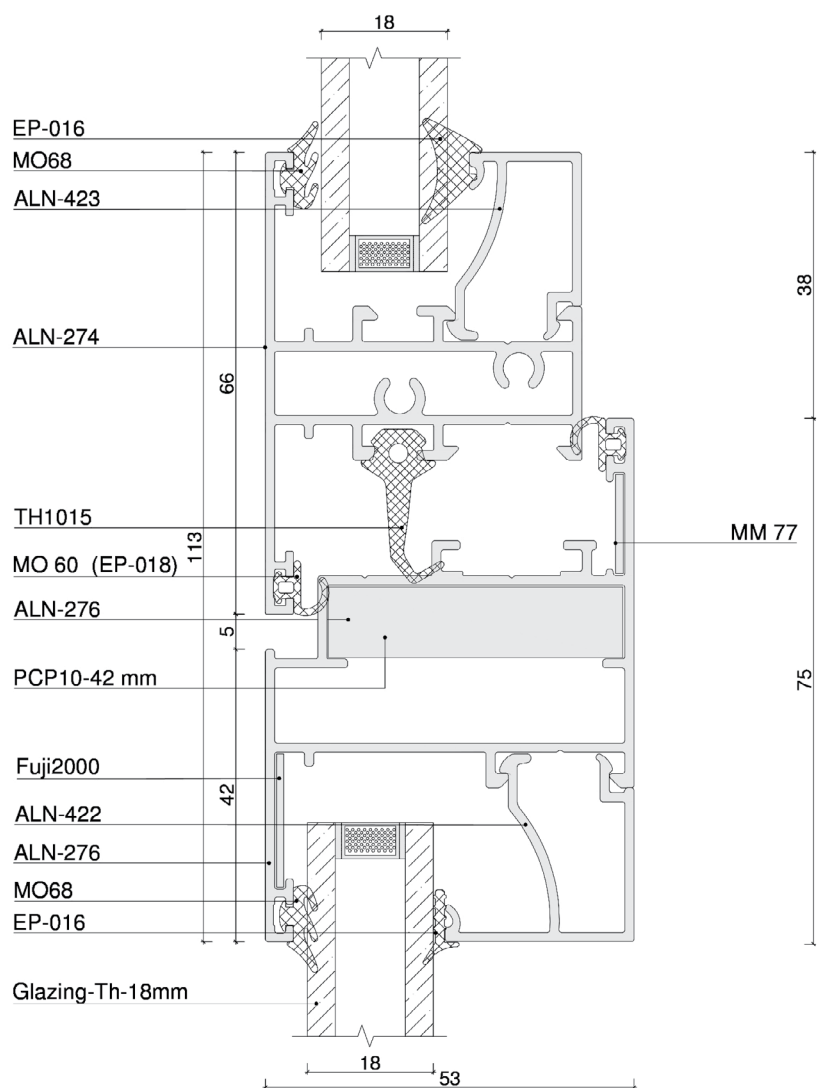
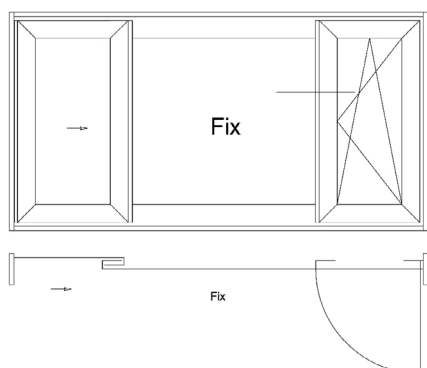
Monorail Sliding System 90 Series

Fabrication Details



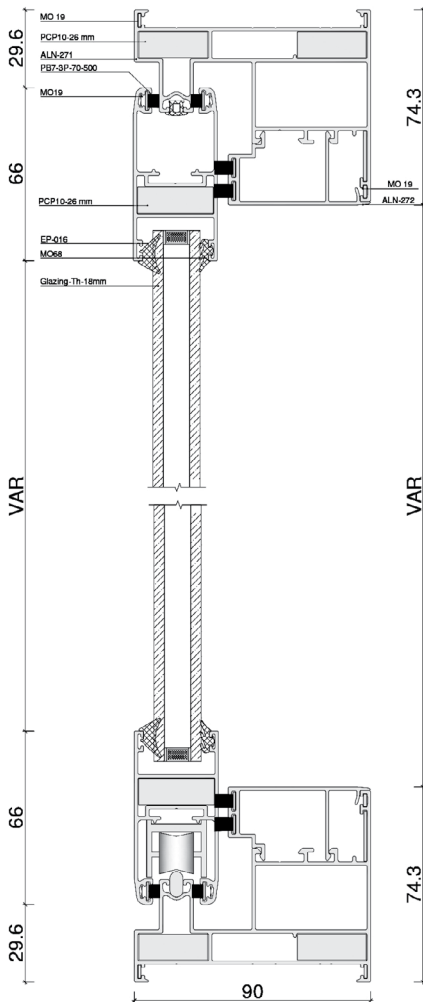
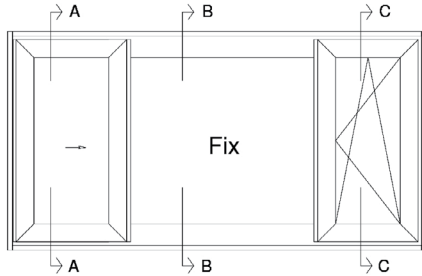
Monorail Sliding System 90 Series

Fabrication Details

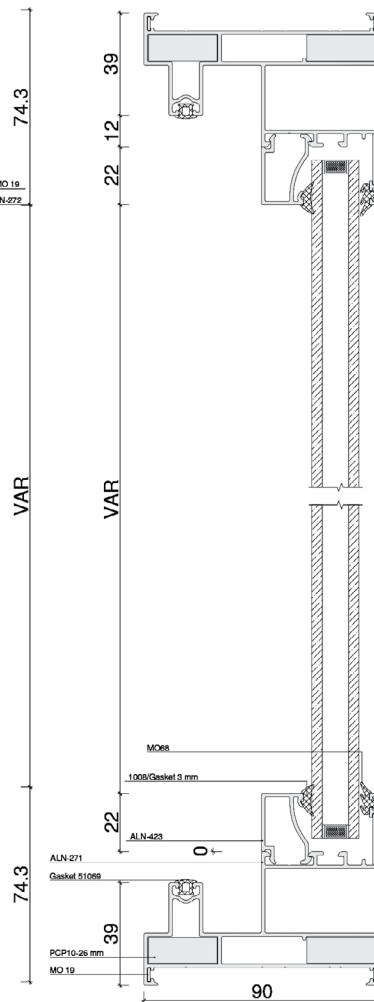




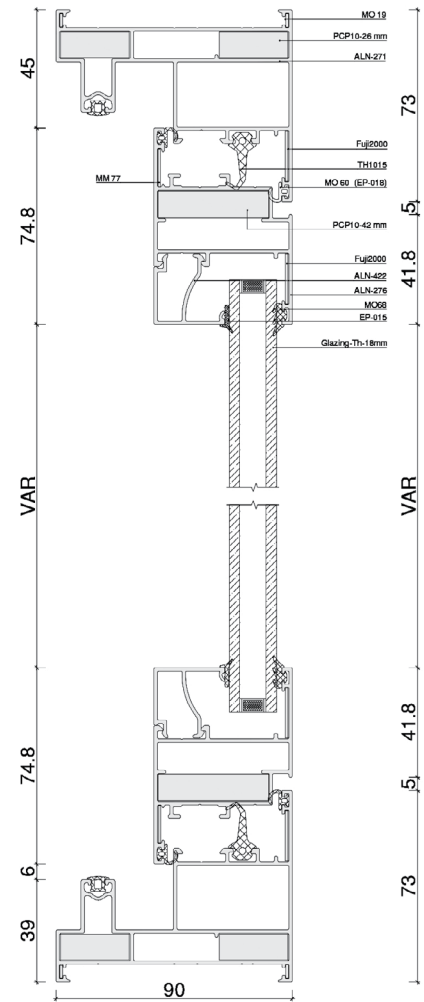
Monorail Sliding System 90 Series Fabrication Details



Section A-A



Section B-B

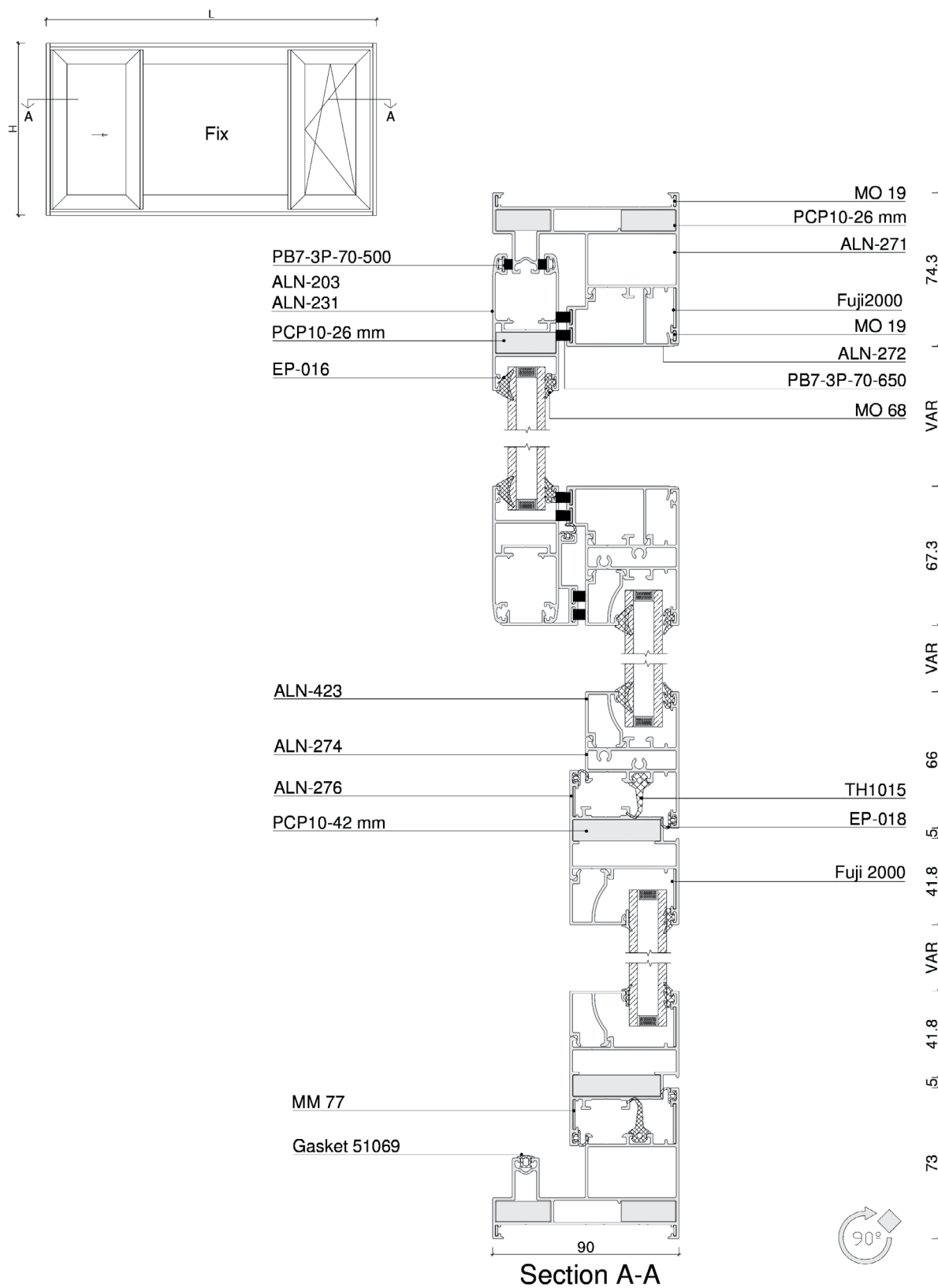


Section C-C



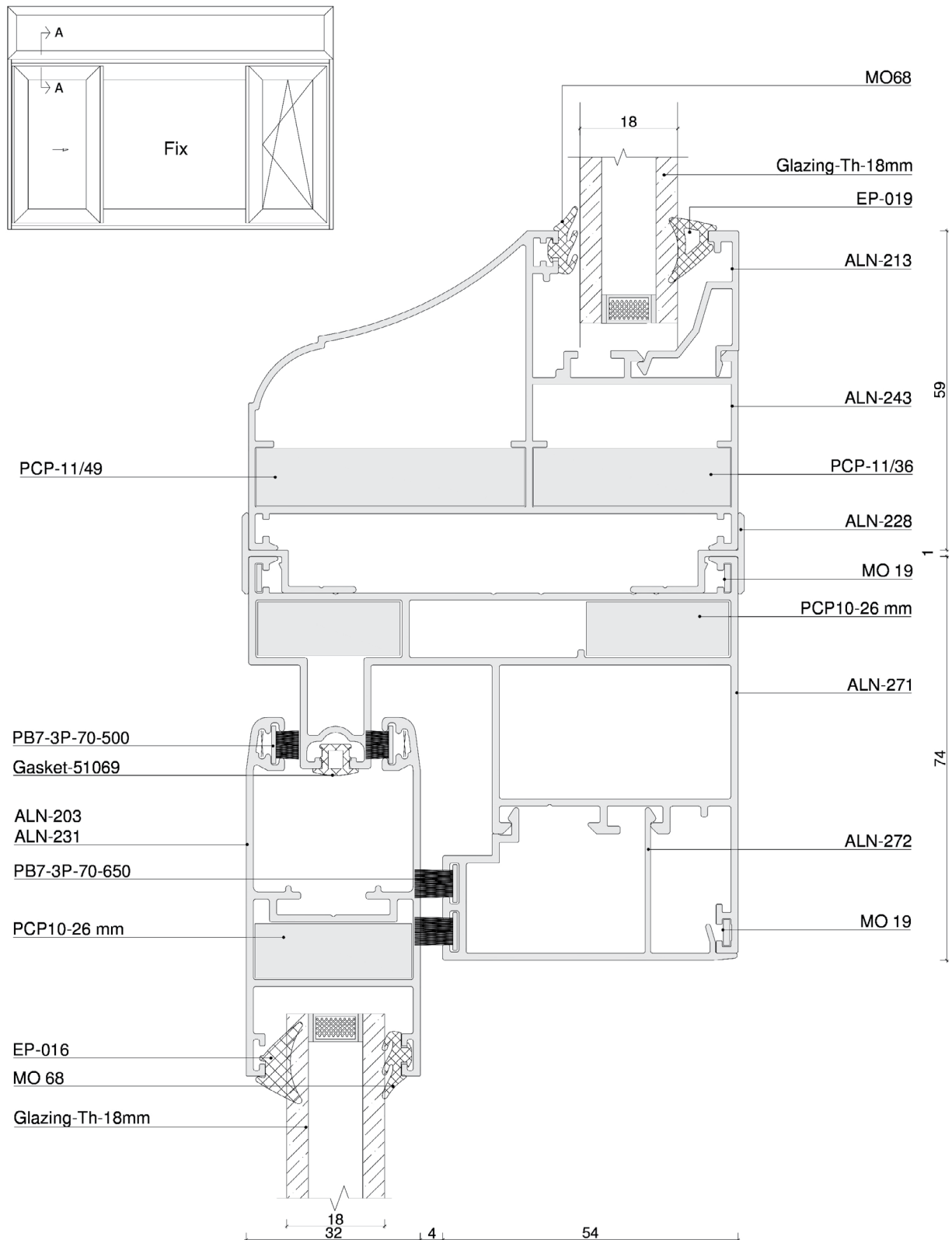
Monorail Sliding System 90 Series

Fabrication Details



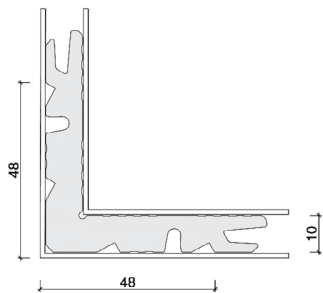


Monorail Sliding System 90 Series Fabrication Details

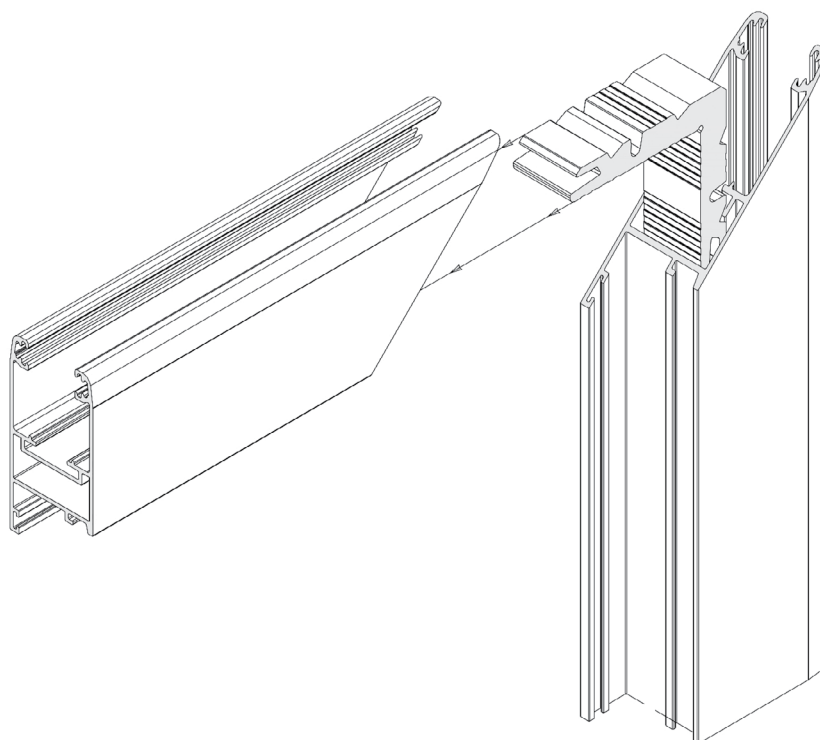


Monorail Sliding System 90 Series

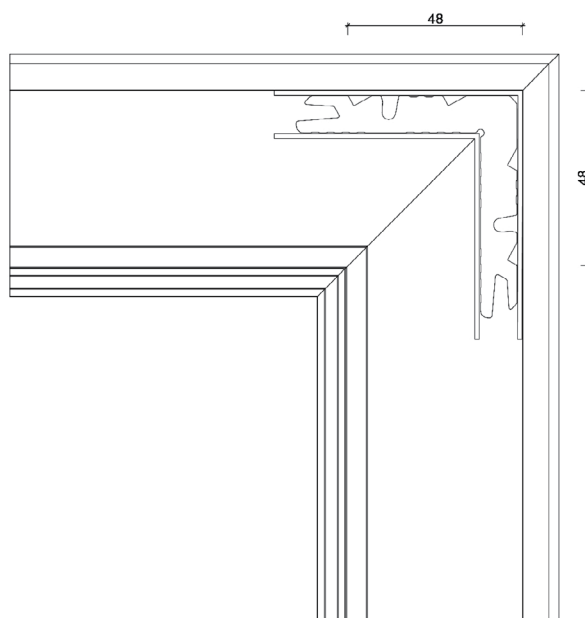
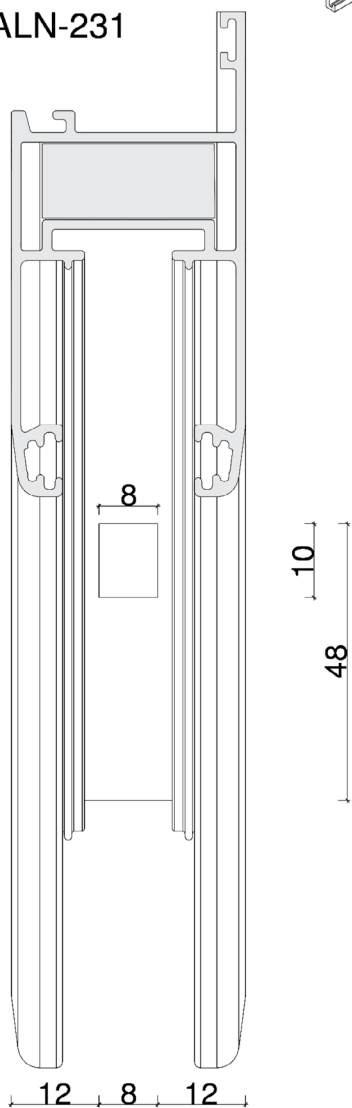
Assembly Drawing



A:PCP-10 / 26 mm

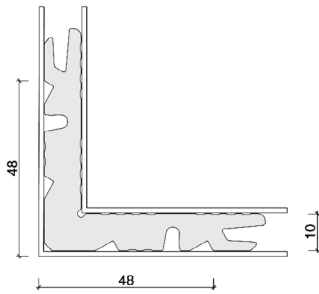


ALN-231

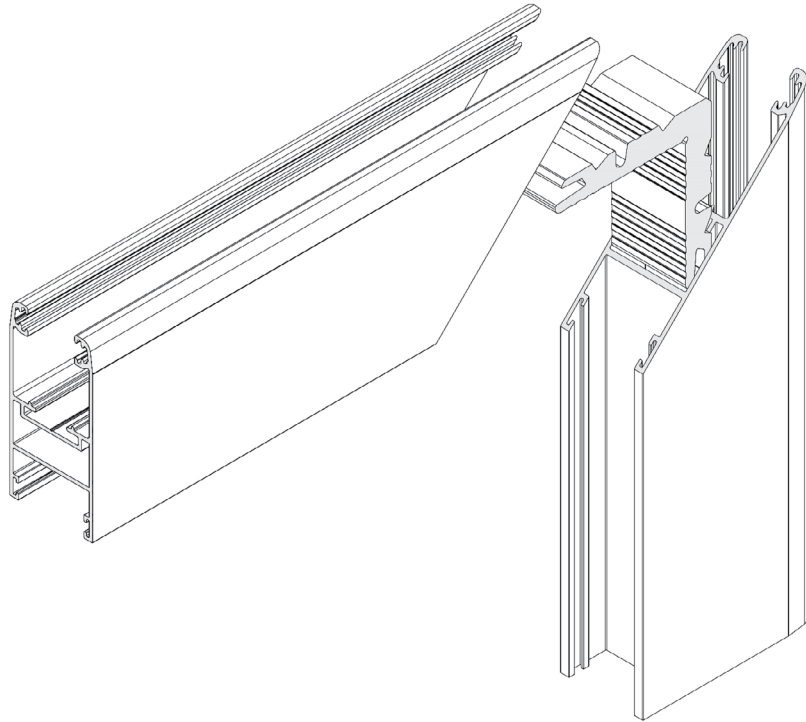




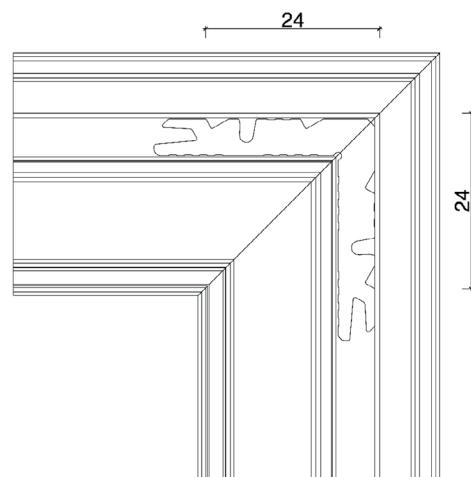
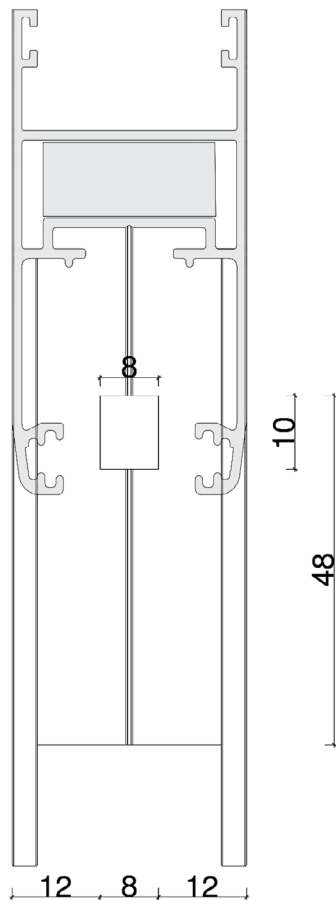
Monorail Sliding System 90 Series Assembly Drawing



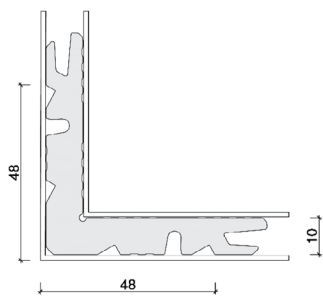
A:PCP-10 / 26 mm



ALN-203

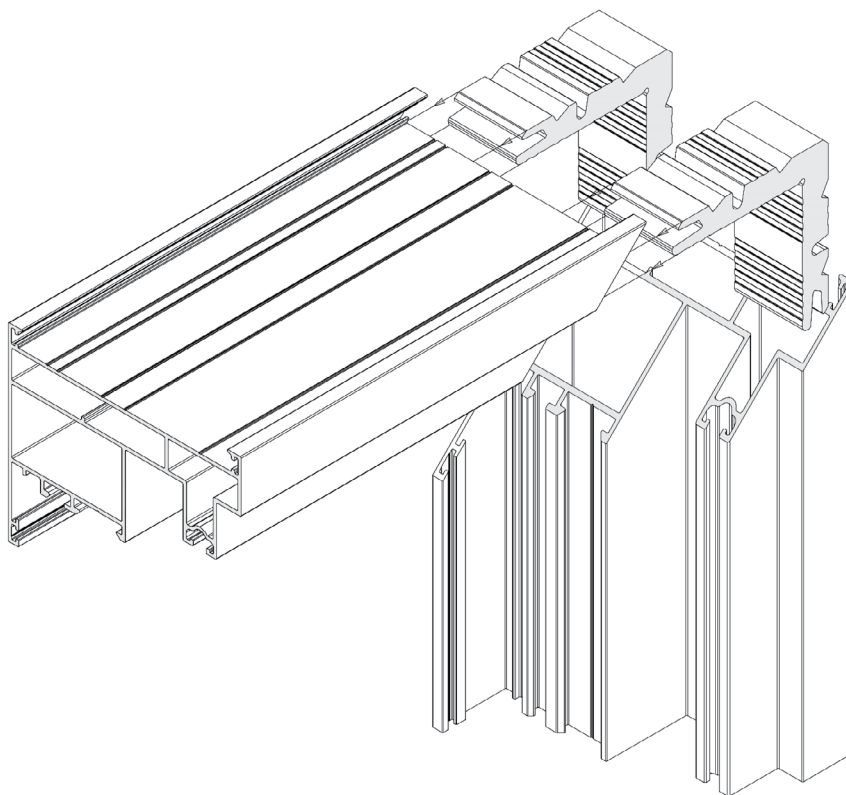


Monorail Sliding System 90 Series Assembly Drawing

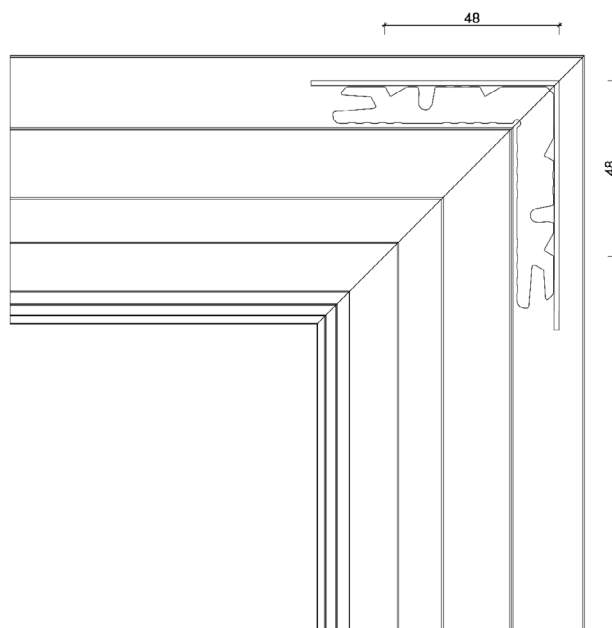
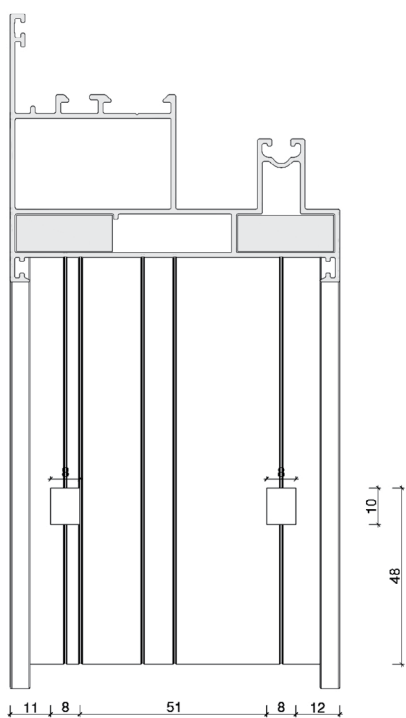


A:PCP-10 / 26 mm

A:PCP-10 / 26 mm

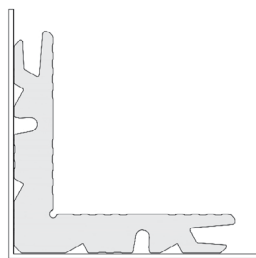


ALN-271



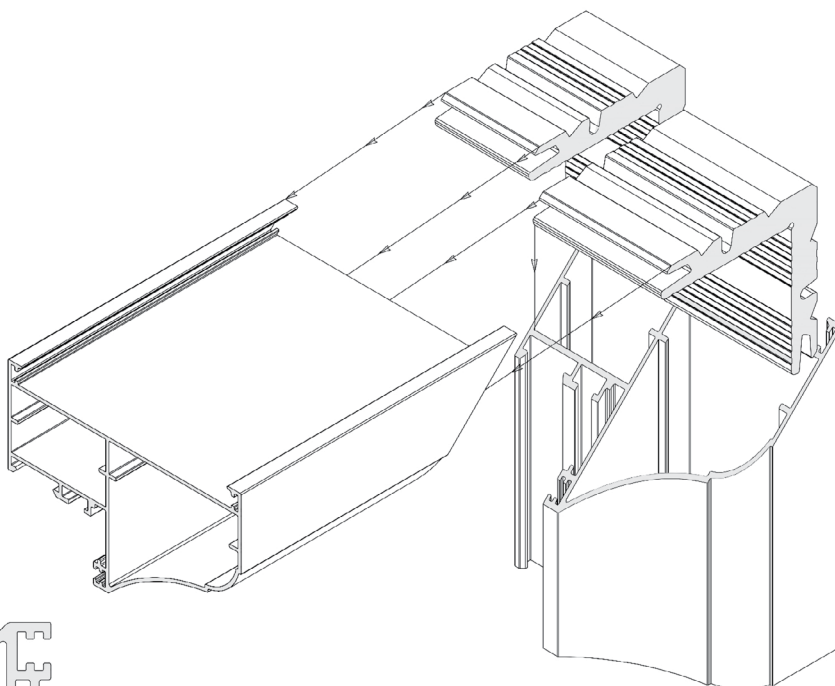


Monorail Sliding System 90 Series Assembly Drawing

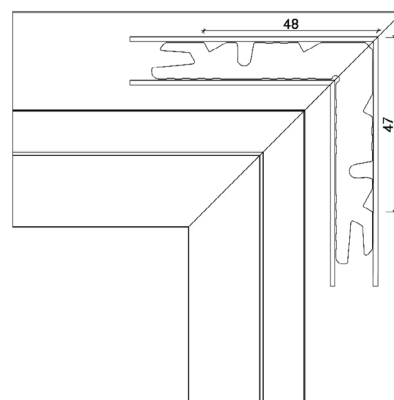
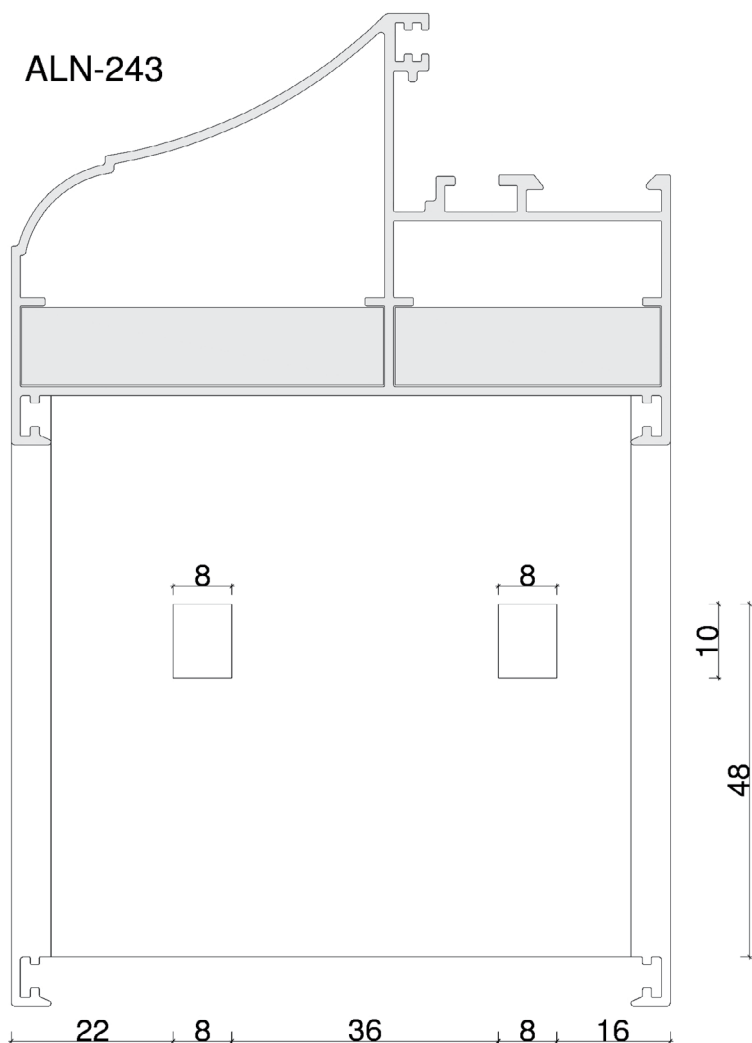


A:PCP-11 / 36 mm

B:PCP-11 / 49 mm

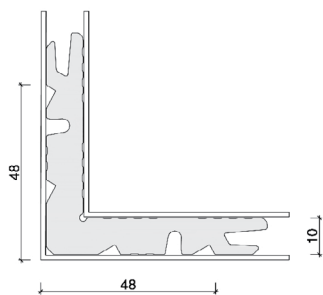


ALN-243

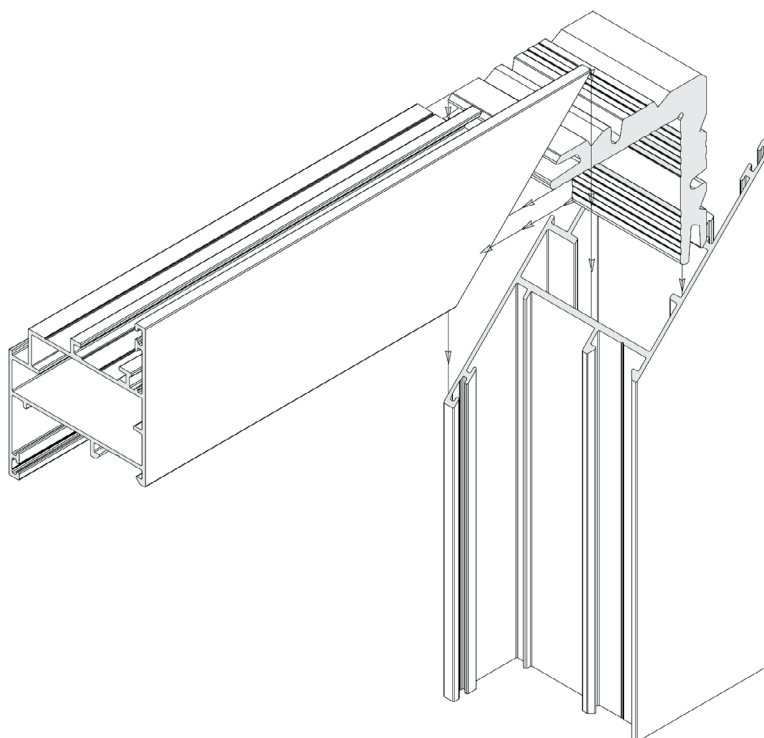


Monorail Sliding System 90 Series

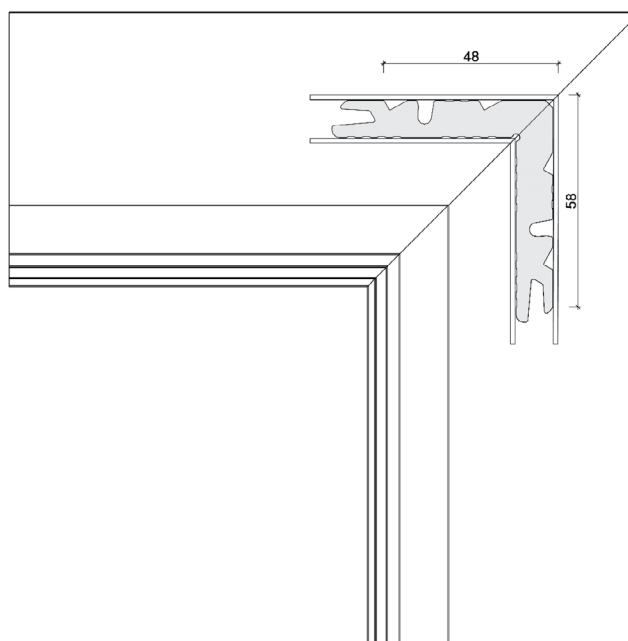
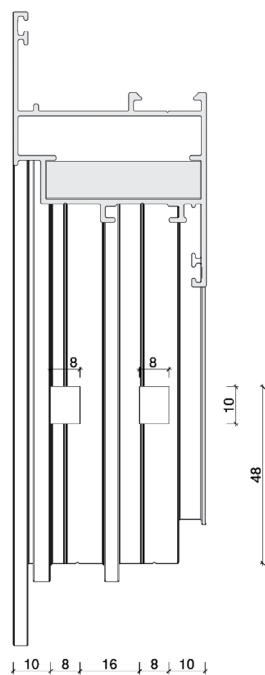
Assembly Drawing



A:PCP-10 / 42 mm

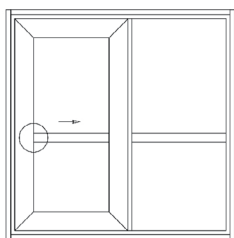


ALN-276



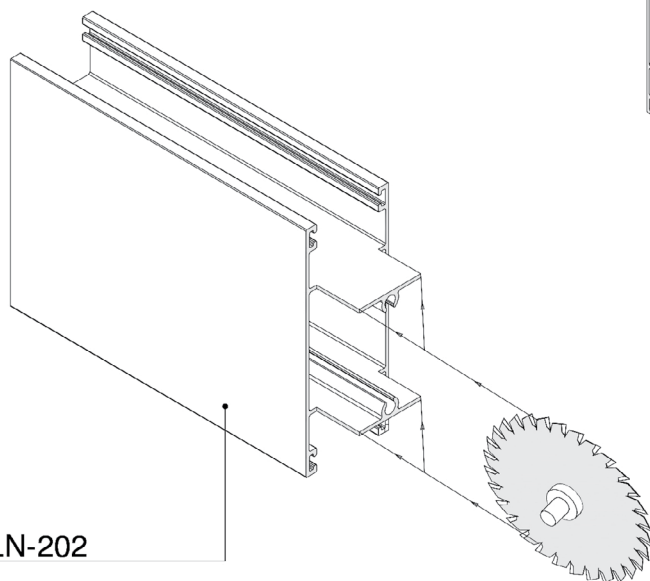
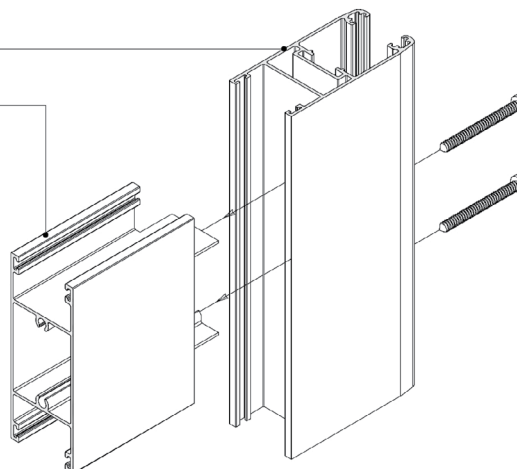


Monorail Sliding System 90 Series Assembly Drawing



ALN-203

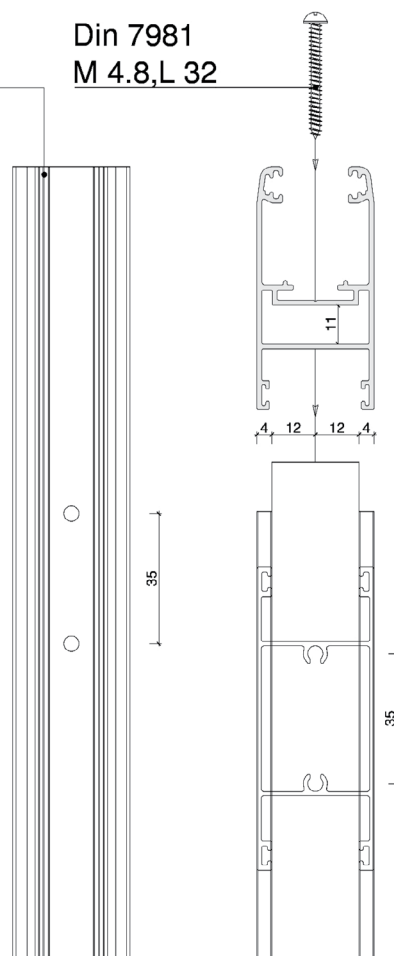
ALN-202



ALN-202

ALN-203

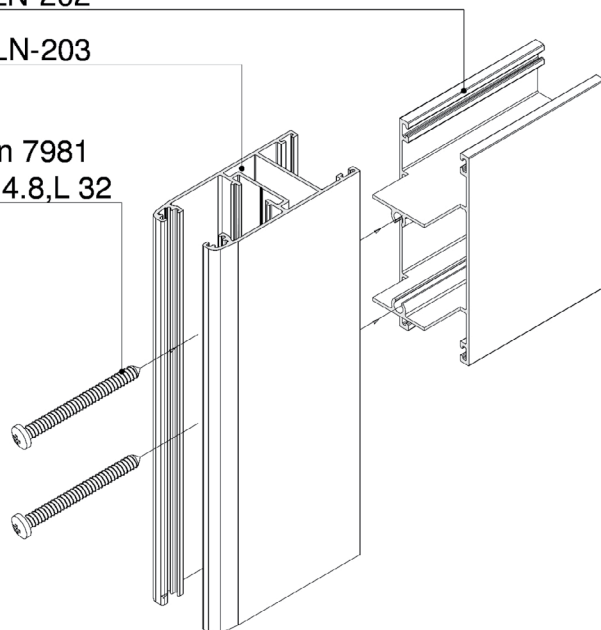
Din 7981
M 4.8,L 32



ALN-202

ALN-203

Din 7981
M 4.8,L 32



Monorail Sliding System 90 Series

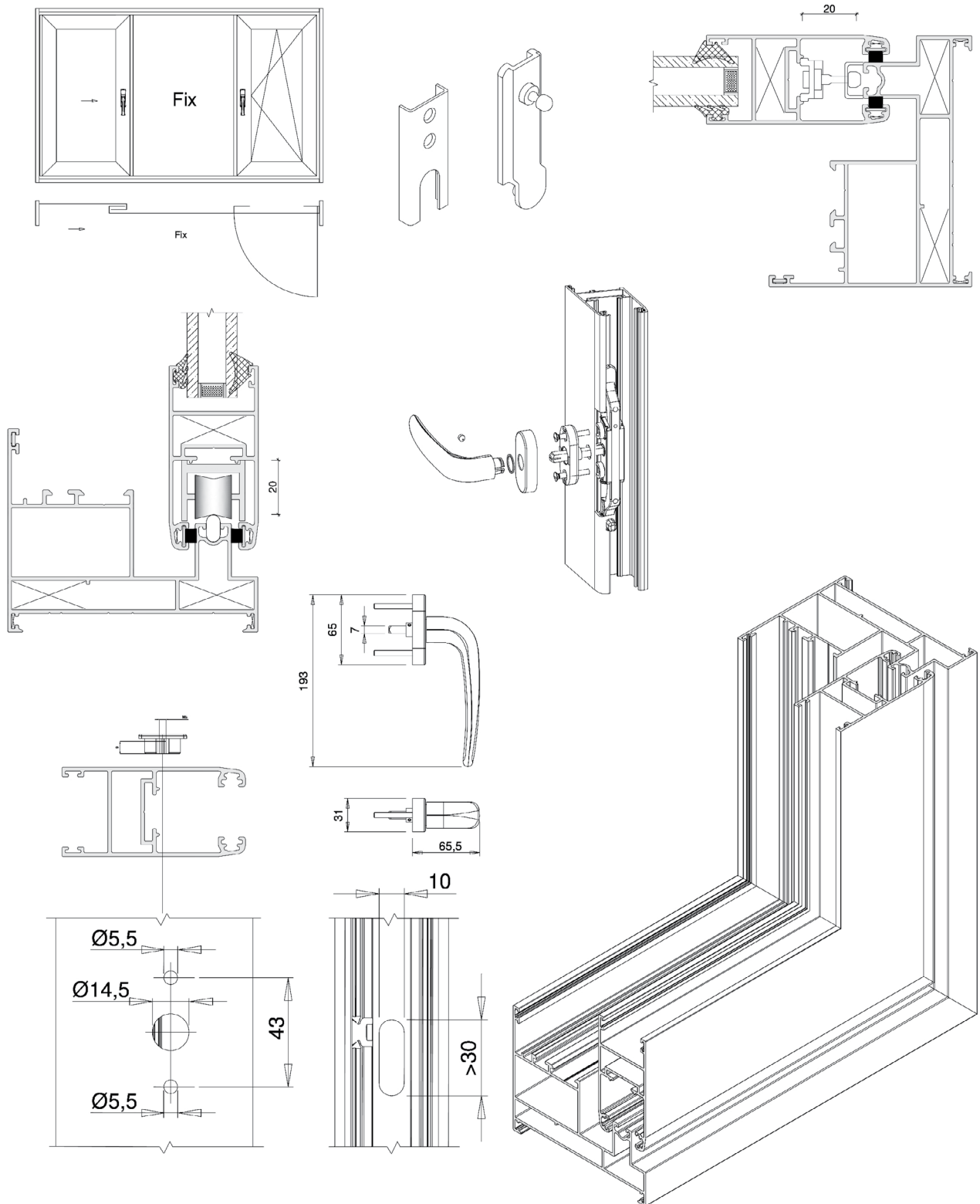
Assembly Drawing





Monorail Sliding System 90 Series

Hardware Installation



Monorail Sliding System 90 Series

Hardware Installation

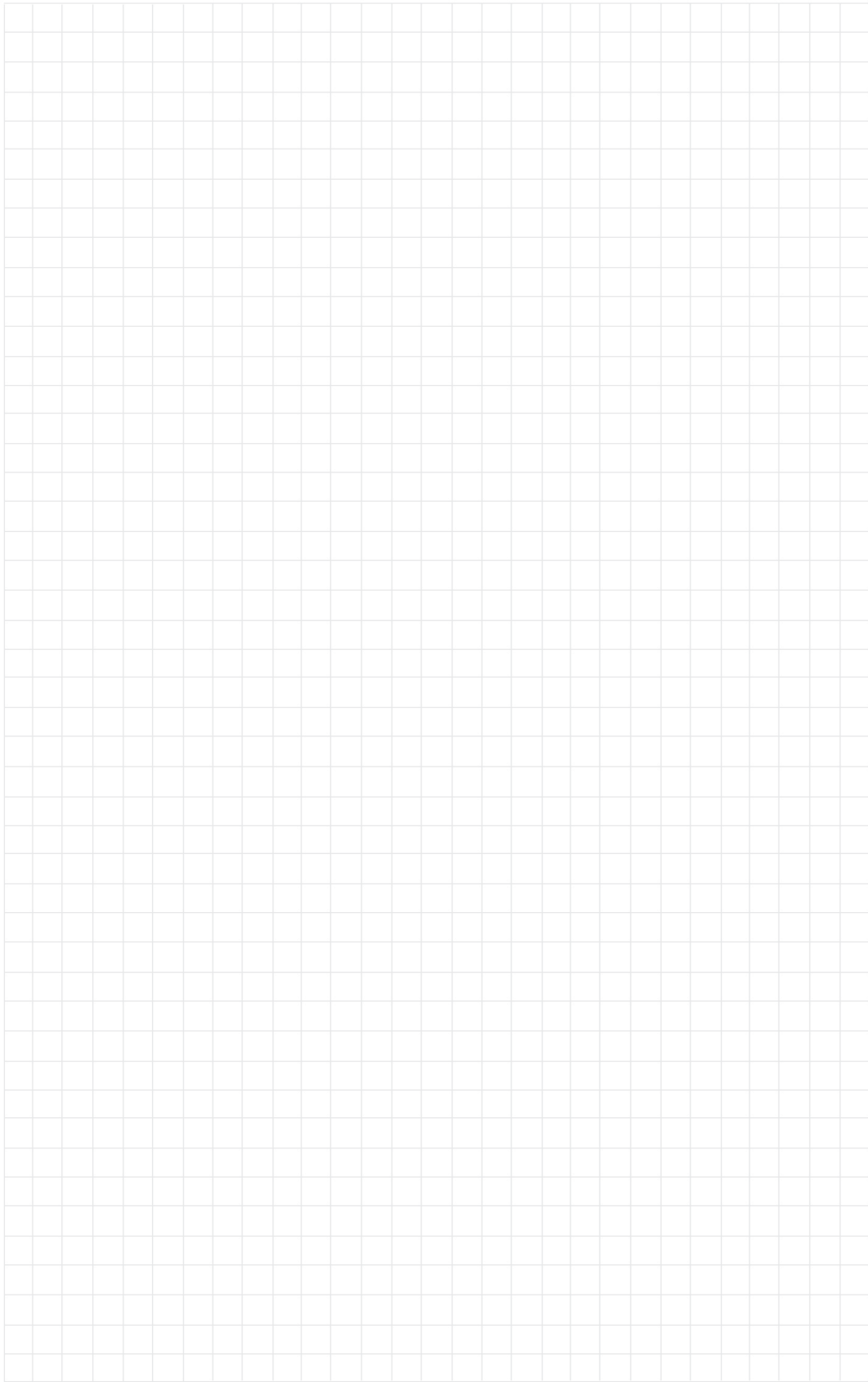


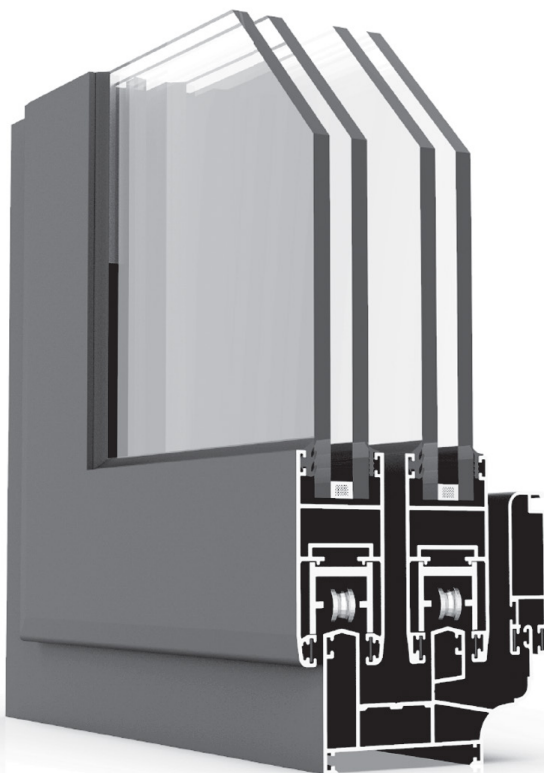
Installation of window hinges



AKROLL

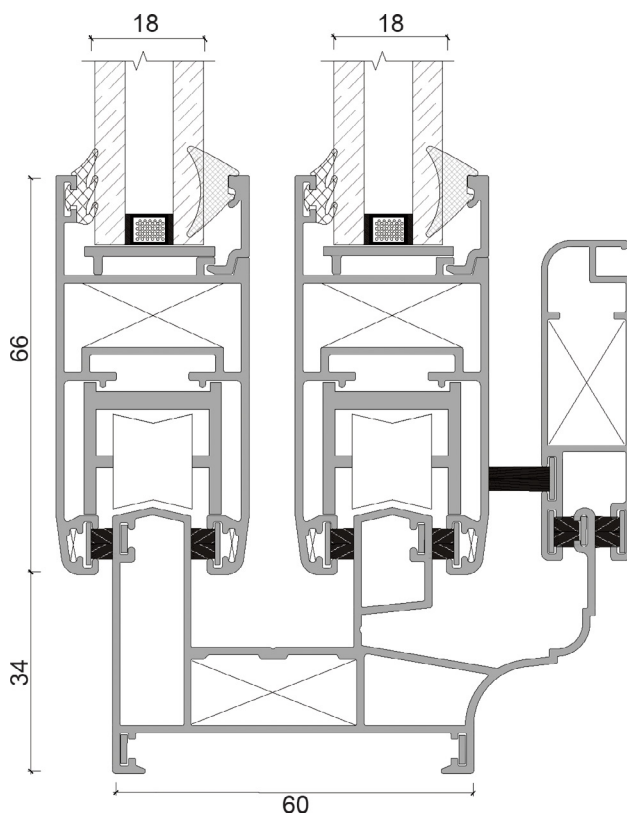
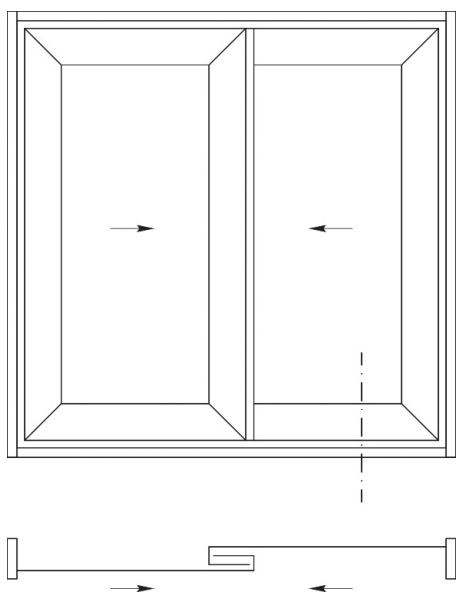
Product of Alumroll Novin Co.





Slide System 60 Series

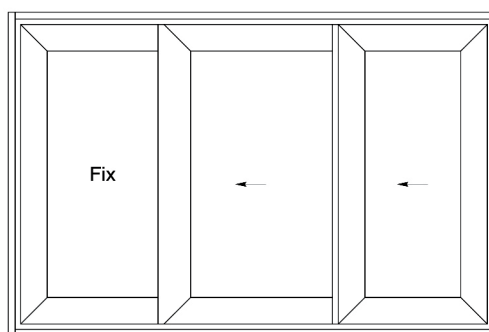
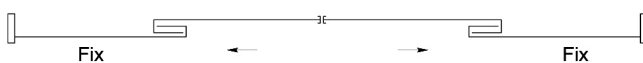
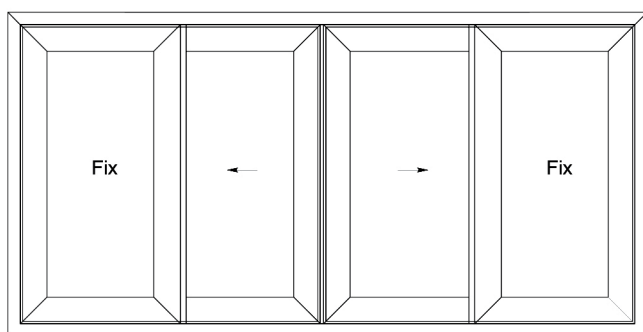
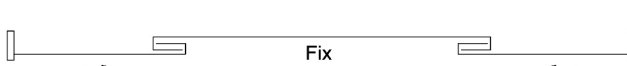
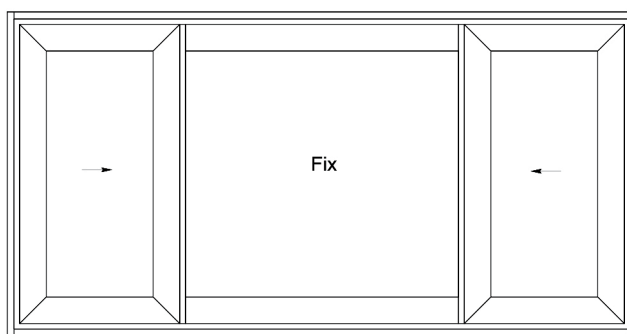
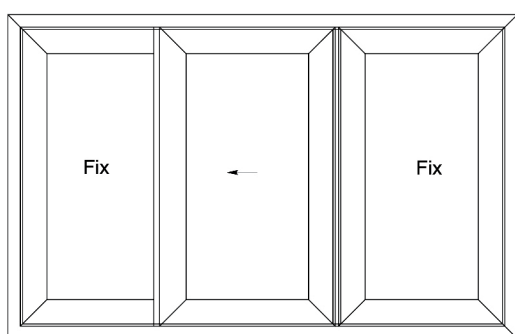
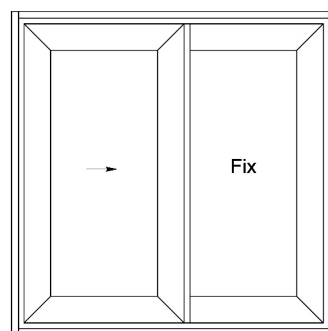
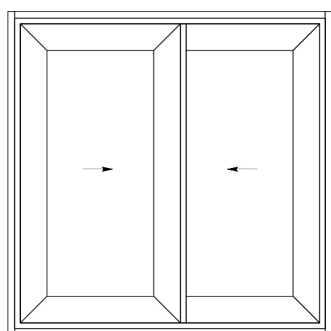
. Profile width:	60 - 100 mm
. Vent width:	32 mm
. Wall thickness:	1.2 -1.3 mm
. Rubber description:	EPDM DIN 7863
. Glass thickness:	6 - 20 m
. Aluminum alloy extrusion:	EN AW 6063 T5
. Safety drainage system	
. Various typologies	





Slide System 60 Series

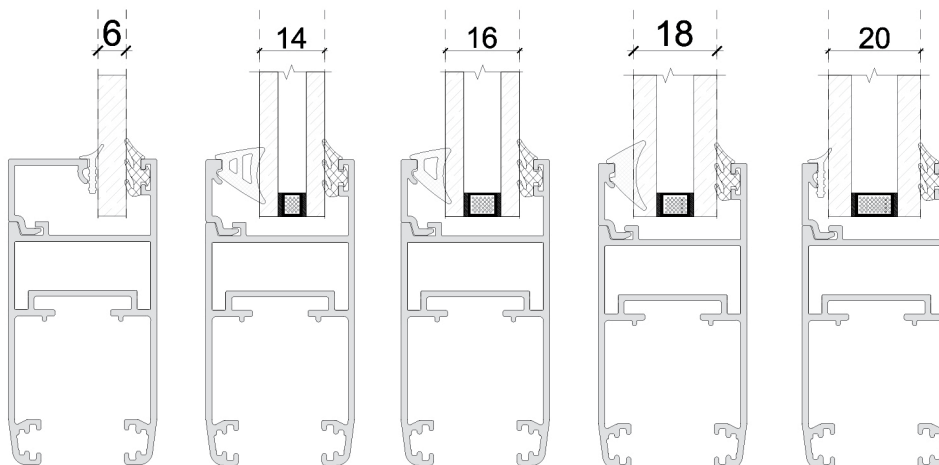
Typologies



Slide System 60 Series

Glazing Table

ALN-231



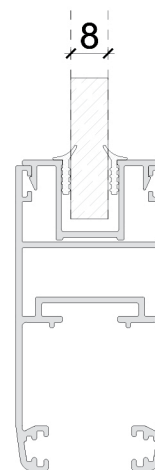
Glazing Thickness	Gasket Inside	Gasket Outside	Glazing Bead
6 mm	1.9 EP-015	 MO68	 ALN-234
14 mm	7.5 EP-021	 MO68	 ALN-233
16 mm	5.5 EP-019	 MO68	 ALN-233
18 mm	4.5 EP-016	 MO68	 ALN-233
20 mm	1.9 EP-015	 MO68	 ALN-233

Slide System 60 Series

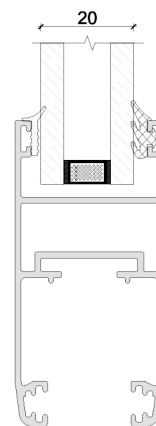
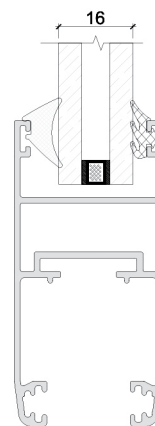
Glazing Table

ALN-203
ALN-236

Glazing Thickness	Gasket Inside	Gasket Inside	Glasing Adapter
8 mm	1.9  EP-015	1.9  EP-015	 ALN-206

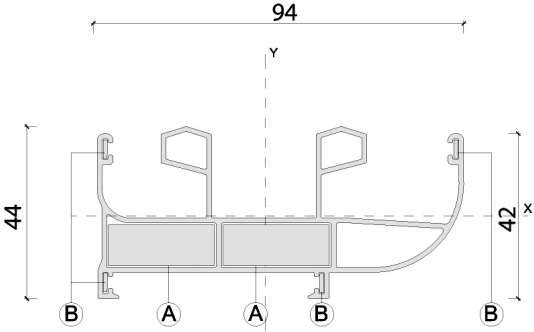
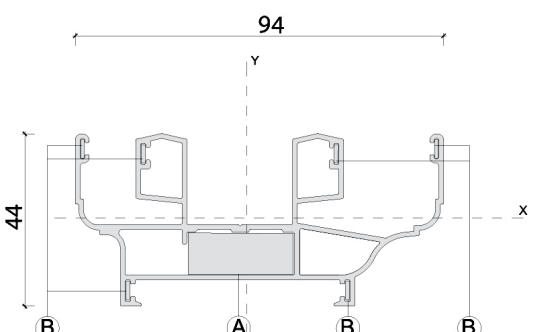
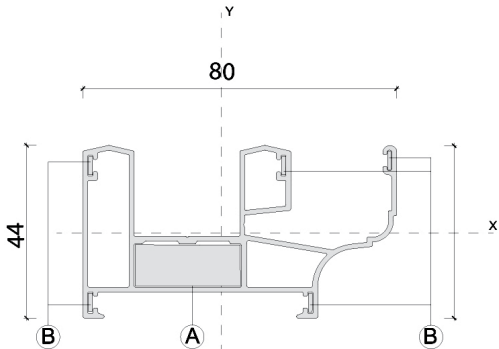
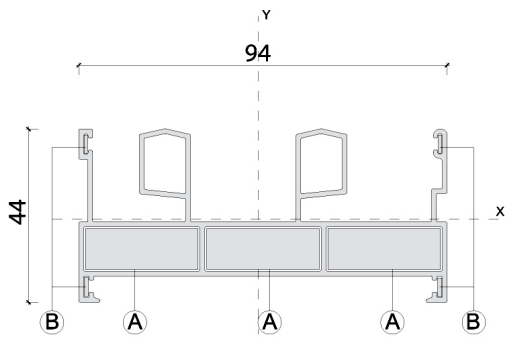


Glazing Thickness	Gasket Inside	Gasket Outside
16 mm	4.5  EP-016	 MO68
20 mm	1.9  EP-015	 MO68



Slide System 60 Series

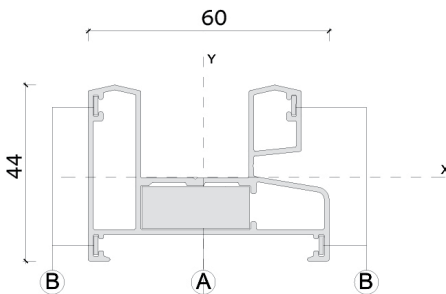
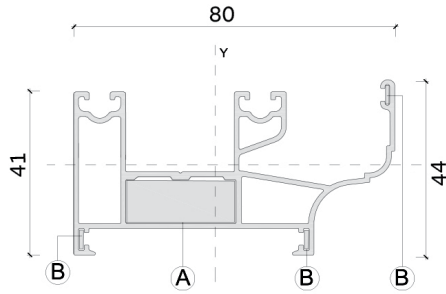
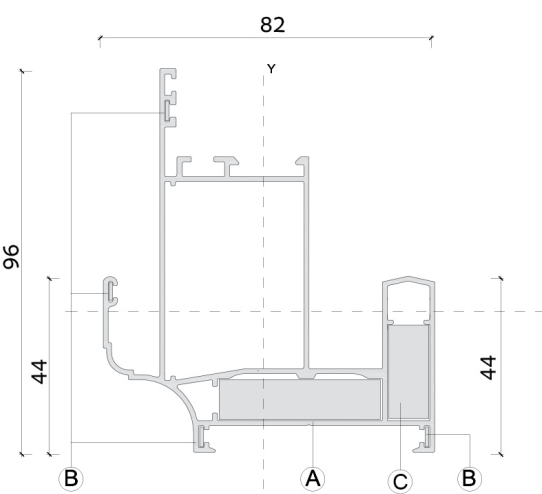
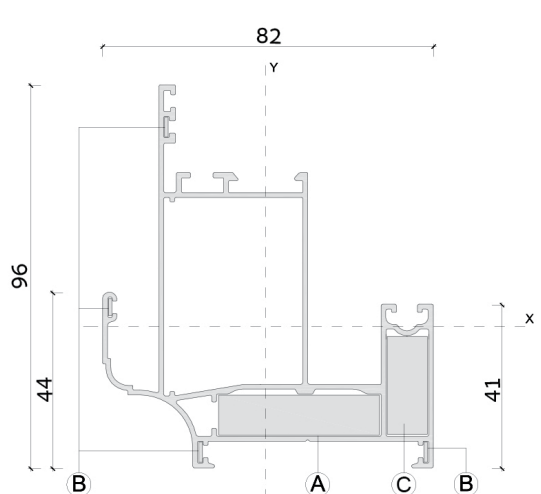
Profile & Accessories Information

			
$I_x: 7.45 \text{ cm}^4$	$I_y: 40.72 \text{ cm}^4$	$I_x: 7.45 \text{ cm}^4$	$I_y: 37.62 \text{ cm}^4$
Frame : ALN-200	A: PCP-11/27 mm 	Frame : ALN-237	A: PCP-10 / 26 mm 
Weight: 1323 gr/m	B: MO19 	Weight: 1350 gr/m	B: MO19 
			
$I_x: 6.85 \text{ cm}^4$	$I_y: 26.36 \text{ cm}^4$	$I_x: 8.19 \text{ cm}^4$	$I_y: 50.67 \text{ cm}^4$
Frame : ALN-201	A: PCP-10 / 26 mm 	Frame : ALN-238	A: PCP-11/29 mm 
Weight: 1172 gr/m	B: MO19 	Weight: 1428 gr/m	B: MO19 



Slide System 60 Series

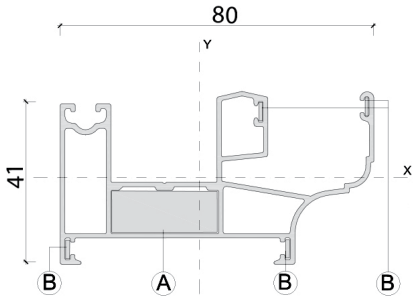
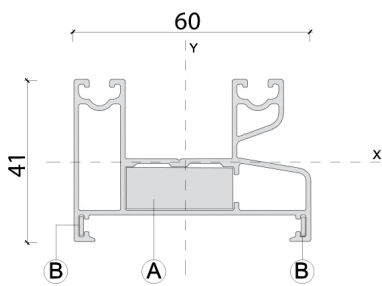
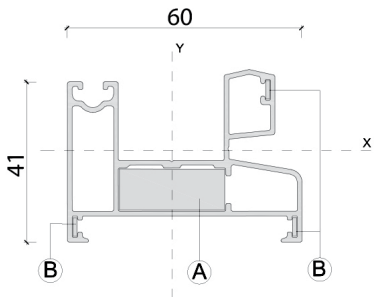
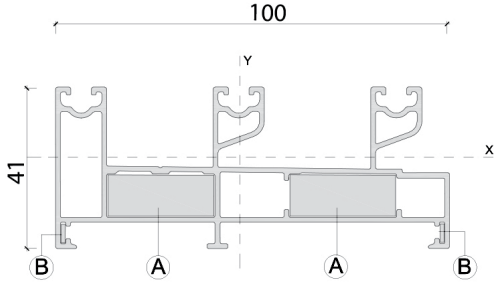
Profile & Accessories Information

			
I_x : 6.05 cm ⁴	I_y : 15.15 cm ⁴	I_x : 6.07 cm ⁴	I_y : 26.09 cm ⁴
Frame: ALN-239	A: PCP-10 / 26 mm 	Frame: ALN-249	A: PCP-10 / 26 mm 
Weight: 983 gr/m	B: MO19 	Weight: 1166 gr/m	B: MO19 
			
I_x : 39.18 cm ⁴	I_y : 38.59 cm ⁴	I_x : 39.11 cm ⁴	I_y : 38.40 cm ⁴
Monorail Frame: ALN-246	A: PCP-10 / 40 mm 	Monorail Frame: ALN-253	A: PCP-10 / 40 mm 
	B: MO19 		B: MO19 
Weight: 1620 gr/m	C: PCP- 24 / 10 mm	Weight: 1620 gr/m	C: PCP- 24 / 10 mm



Slide System 60 Series

Profile & Accessories Information

			
I_x : 6.19 cm ⁴	I_y : 25.28 cm ⁴	I_x : 5.25 cm ⁴	I_y : 14.82 cm ⁴
Frame : ALN-254	A: PCP-10 / 26 mm 	Frame : ALN-256	A: PCP-10 / 26 mm 
Weight: 1107 gr/m	B: MO19 	Weight: 977 gr/m	B: MO19 
			
I_x : 5.66 cm ⁴	I_y : 15.04 cm ⁴	I_x : 8.03 cm ⁴	I_y : 58.69 cm ⁴
Frame : ALN-255	A: PCP-10 / 26 mm 	Triplerail Frame: ALN- 258	A: PCP-10 / 26 mm 
Weight: 983 gr/m	B: MO19 	Weight: 1536 gr/m	B: MO19 



Slide System 60 Series

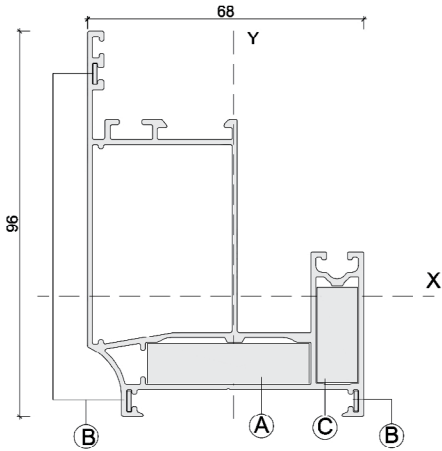
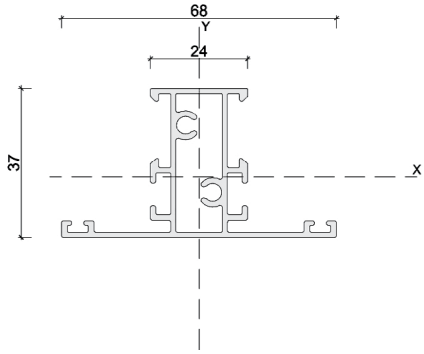
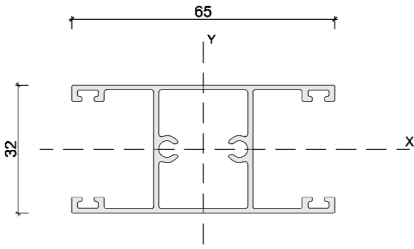
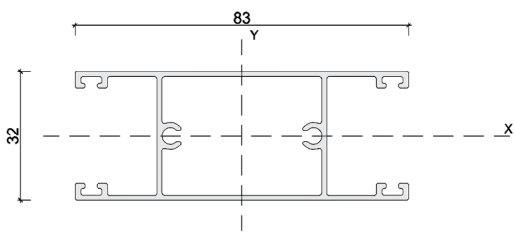
Profile & Accessories Information

I_x : 11.20 cm ⁴	I_y : 5.52 cm ⁴	I_x : 11.18 cm ⁴	I_y : 5.34 cm ⁴
Sash : ALN-203	A: PCP-10 / 26 mm	Sash : ALN-236	A: PCP-10 / 26 mm
Weight: 872 gr/m	B: MO19	Weight: 867 gr/m	B: MO19
I_x : 9.64 cm ⁴	I_y : 5.01 cm ⁴	I_x : 35.77 cm ⁴	I_y : 7.59 cm ⁴
Sash : ALN-231	A: PCP-10 / 26 mm	Sash : ALN-260	A: PCP-22 / 28 mm
Weight: 832 gr/m	B: MO19	Weight: 1179 gr/m	B: MO19



Slide System 60 Series

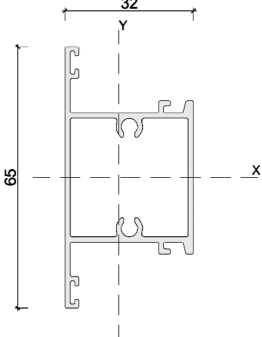
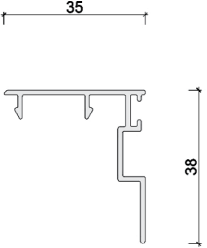
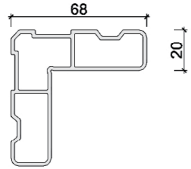
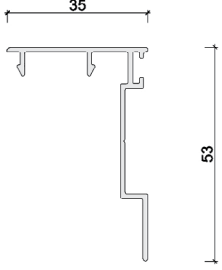
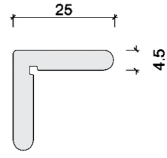
Profile & Accessories Information

			
I_x : 38.55 cm ⁴	I_y : 31.08 cm ⁴	I_x : 4.96 cm ⁴	I_y : 6.14 cm ⁴
Monorail Frame : ALN-265	A: PCP-10 / 40 mm 	Transom : ALN-218	—
Weight: 1490 gr/m	B: M019  C: PCP-24 / 10 mm	Weight: 813 gr/m	—
			
I_x : 5.03 cm ⁴	I_y : 10.37 cm ⁴	I_x : 6.03 cm ⁴	I_y : 21.30 cm ⁴
Transom : ALN-240	—	Transom : ALN-202	—
Weight: 805 gr/m	—	Weight: 918 gr/m	—



Slide System 60 Series

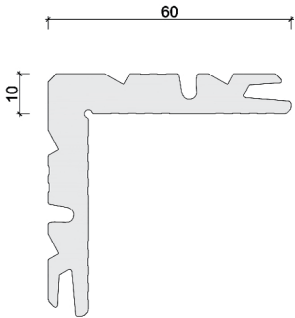
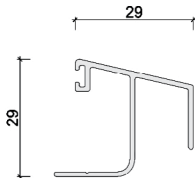
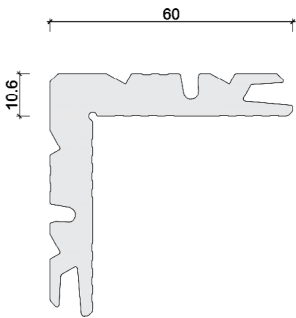
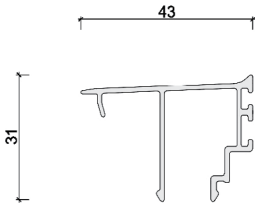
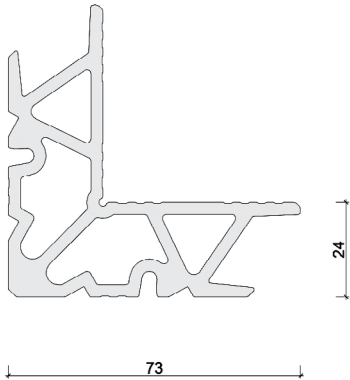
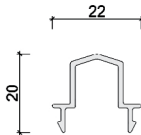
Profile & Accessories Information

			
		Cap : ALN-204	Weight : 313 gr/m
I_x : 7.46 cm ⁴	I_y : 3.94 cm ⁴		
Transom : ALN-232	—		
Weight: 721 gr/m	—	Corner Joint: PCP 20	Weight: 1375 gr/m
			
Cap : ALN-263	Weight : 363 gr/m	Corner : MO 19 399012	Weight: 533 gr/m



Slide System 60 Series

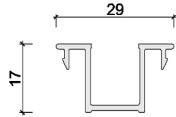
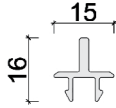
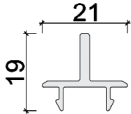
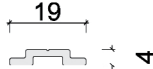
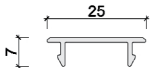
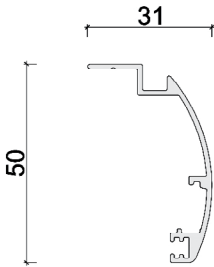
Profile & Accessories Information

			
Corner : PCP10	Weight: 2454 gr/m	Cap : ALN-244	Weight: 319 gr/m
			
Corner : PCP11	Weight: 2549 gr/m	Cap : ALN-247	Weight: 386 gr/m
			
Corner: PCP-24	Weight : 3918 gr/m	Profile : ALN-205	Weight: 176 gr/m



Slide System 60 Series

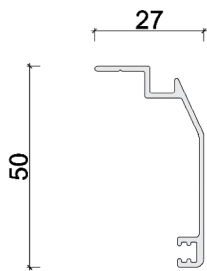
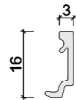
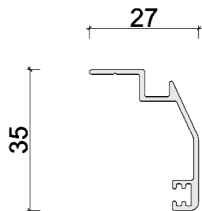
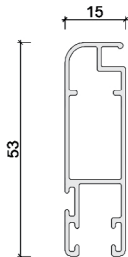
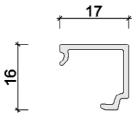
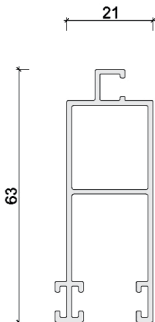
Profile & Accessories Information

			
Profile : ALN-206	Weight: 232 gr/m	Profile : ALN-257	Weight: 149 gr/m
			
Profile : ALN-241	Weight: 194 gr/m	Profile : ALN-224	Weight: 113 gr/m
			
Profile : ALN-242	Weight: 116 gr/m	Flange profile: ALN-219	Weight : 362 gr/m



Slide System 60 Series

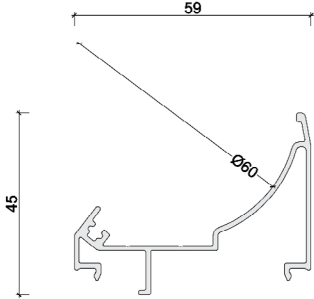
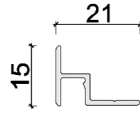
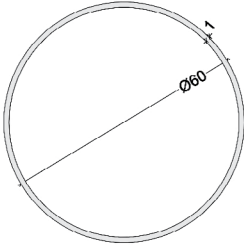
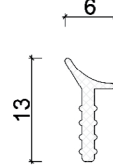
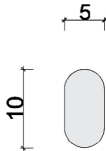
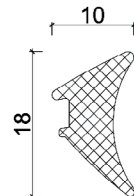
Profile & Accessories Information

			
Flange profile: ALN-221	Weight : 302 gr/m	Glazing bead : ALN-233	Weight: 95 gr/m
			
Flange profile: ALN-222	Weight : 254 gr/m	Fly screen : ALN-207	Weight: 443 gr/m
			
Glazing bead : ALN-234	Weight: 143 gr/m	Fly screen : ALN-220	Weight: 626 gr/m



Slide System 60 Series

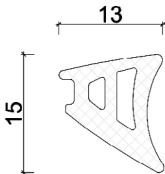
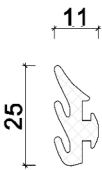
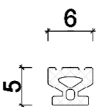
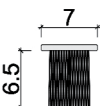
Profile & Accessories Information

			
Profile: ALN-225	Weight : 548 gr/m	Profile : ALN-228	Weight: 135 gr/m
			
Profile: ALN-215	Weight : 642 gr/m	Gasket: EP-015	Weight : 21 gr/m
			
Rail : ALN-462	Weight: 119 gr/m	Gasket: EP-016	Weight : 77 gr/m



Slide System 60 Series

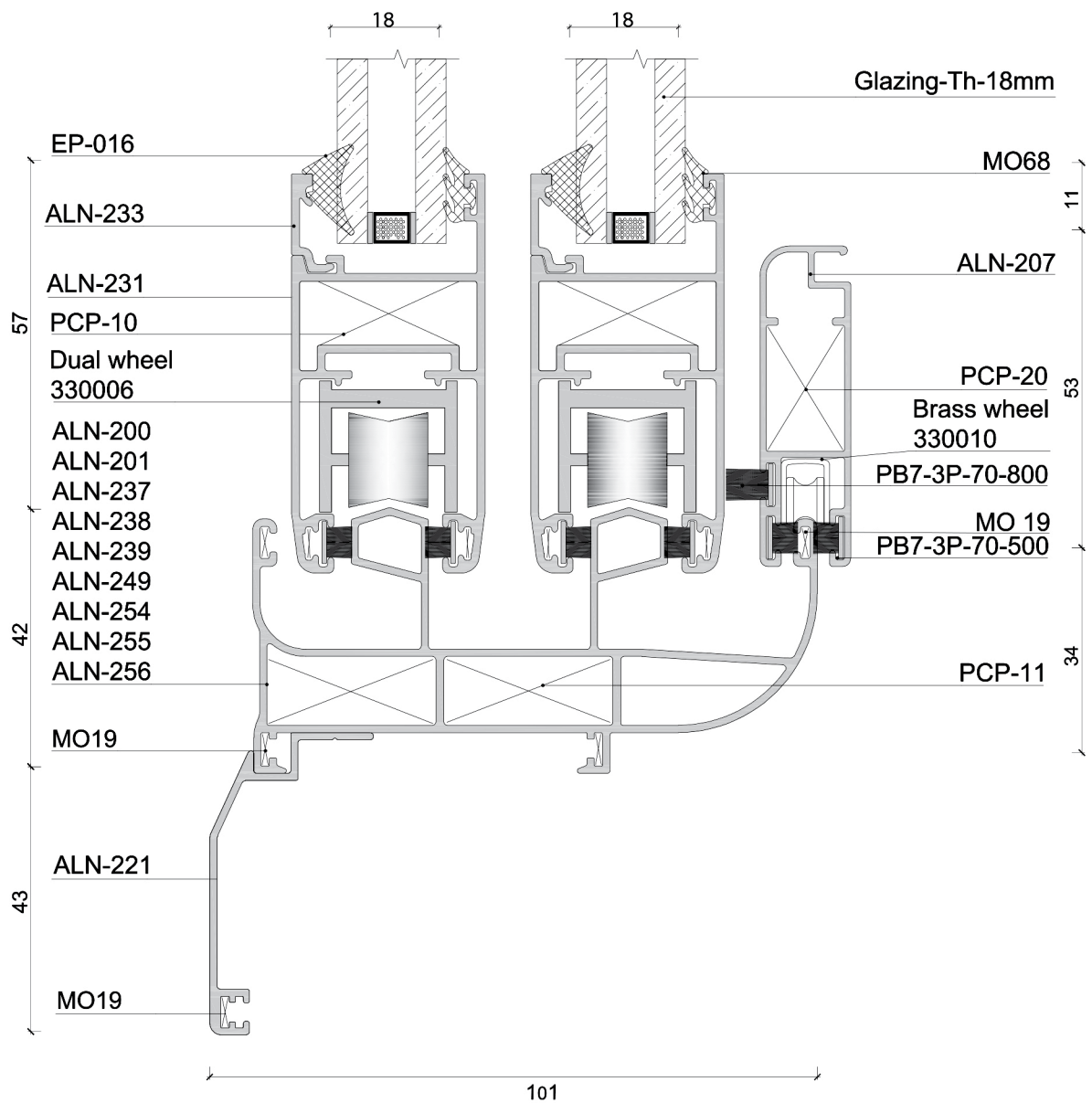
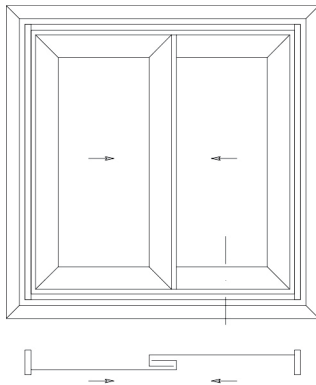
Profile & Accessories Information

			
Gasket: EP-021	Weight : 80 gr/m	Gasket: PB7-3P-70-500	Weight : —
			
Gasket: MO68	Weight : 46 gr/m	Gasket: MO60-1	Weight : _
			
Gasket: PB7-3P-70-650	Weight : —		



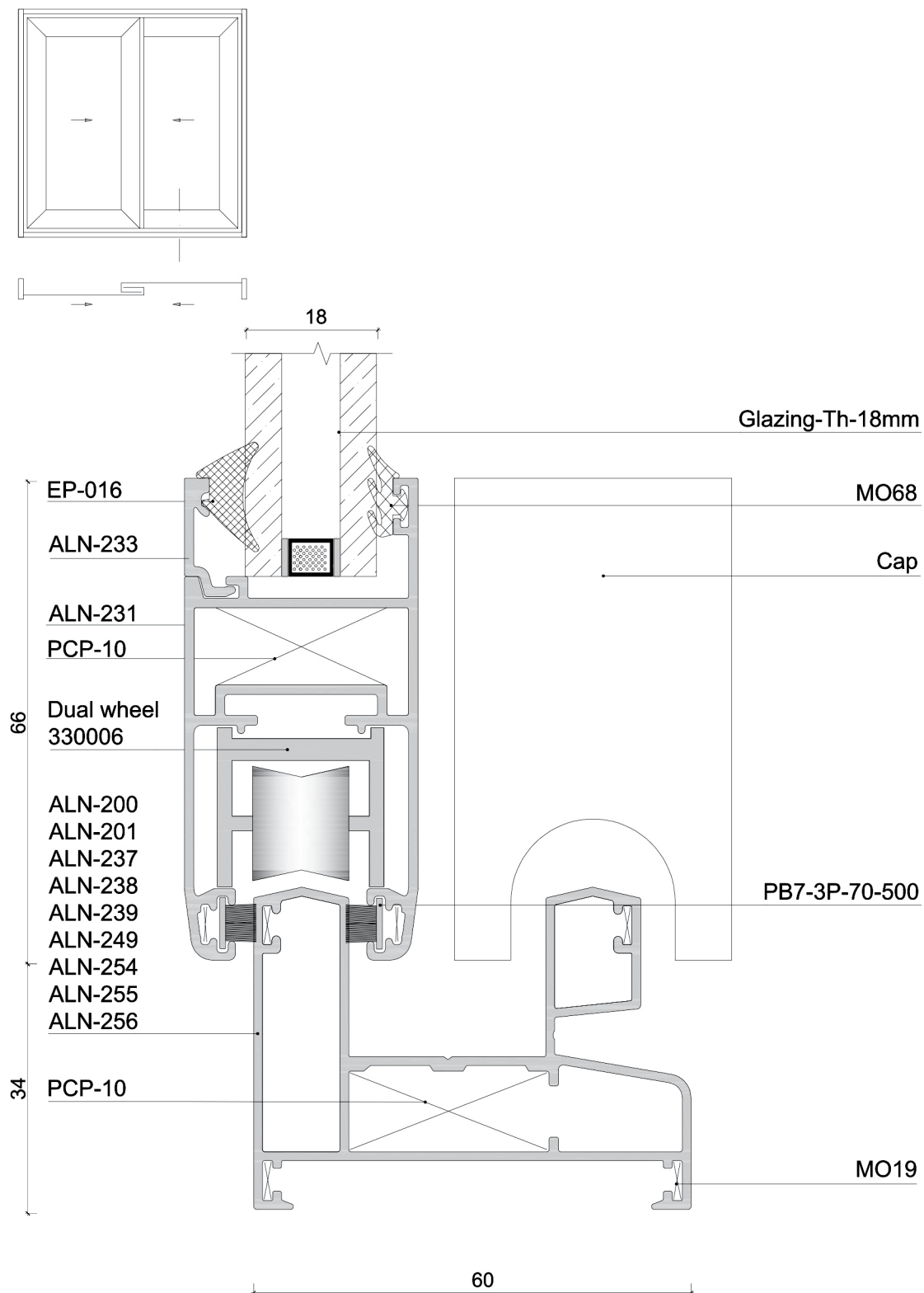
Slide System 60 Series

Fabrication Details



Slide System 60 Series

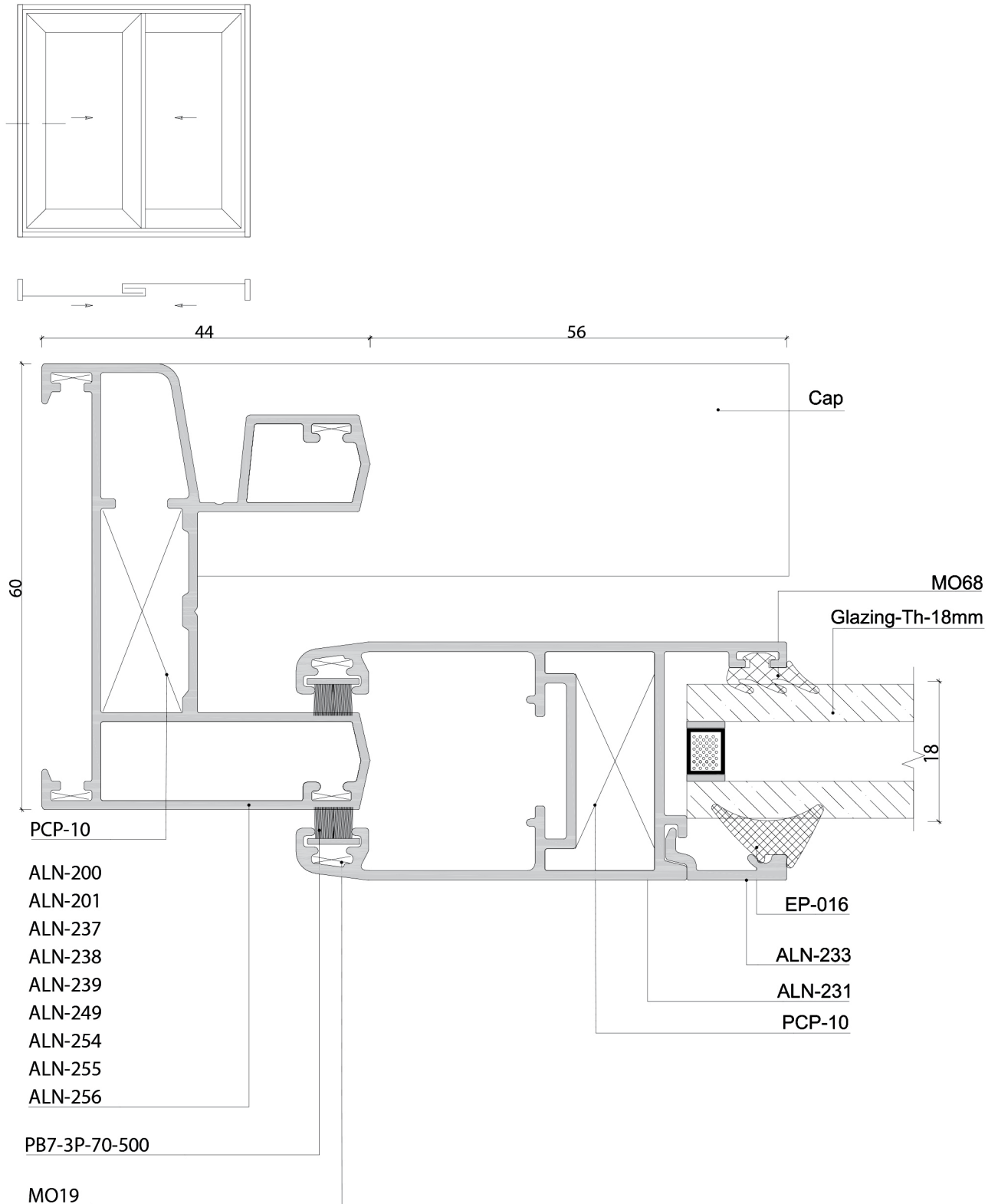
Fabrication Details





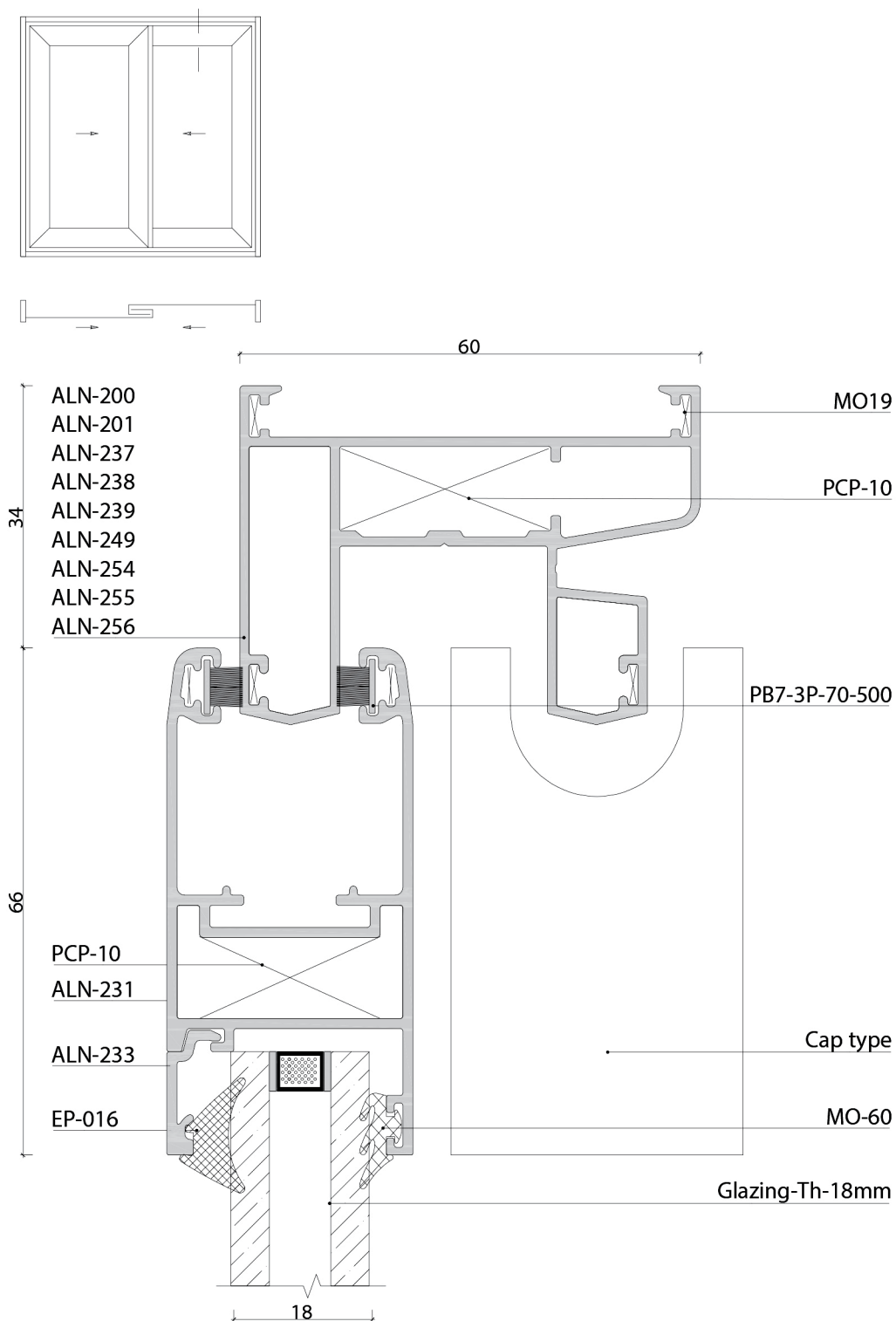
Slide System 60 Series

Fabrication Details



Slide System 60 Series

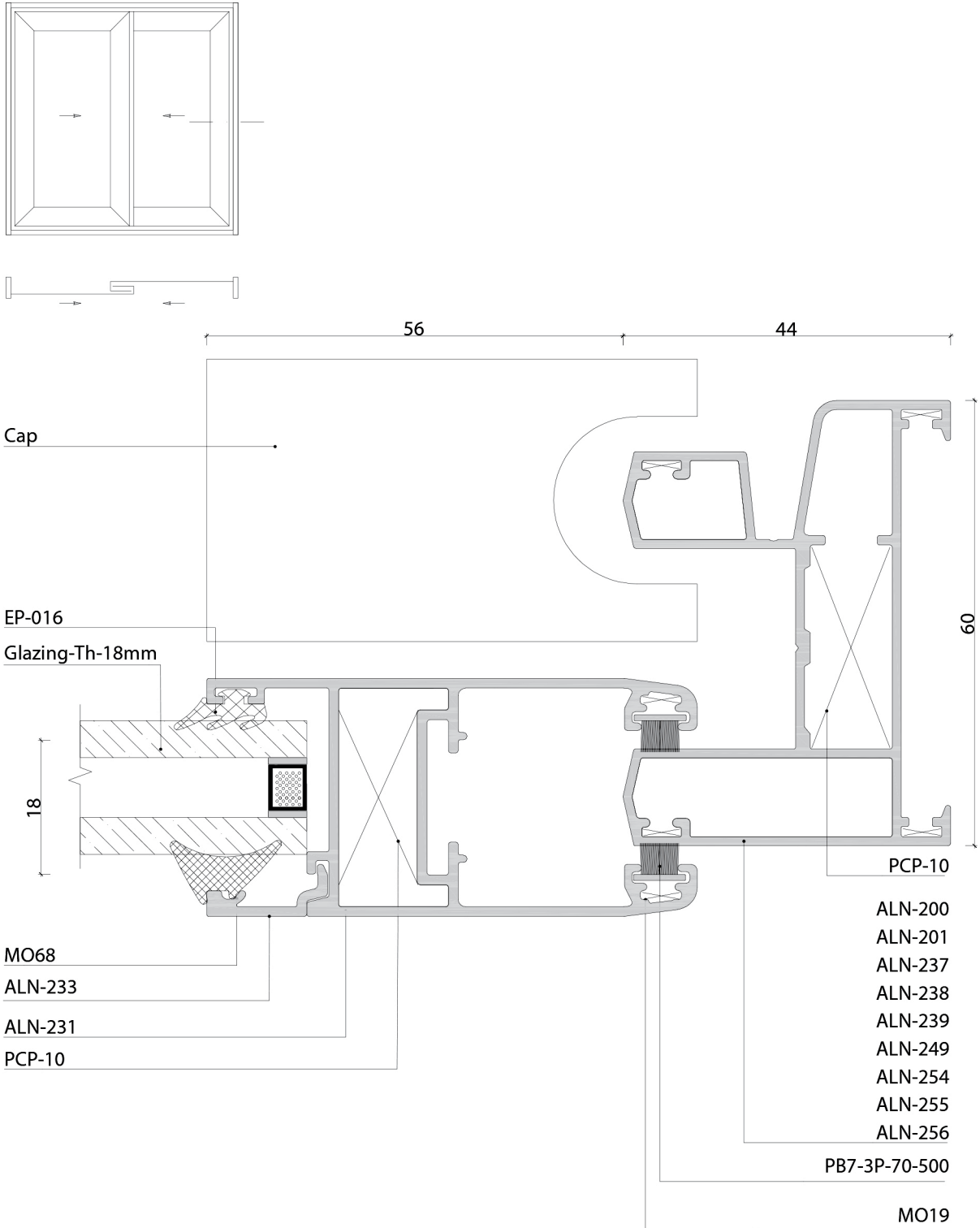
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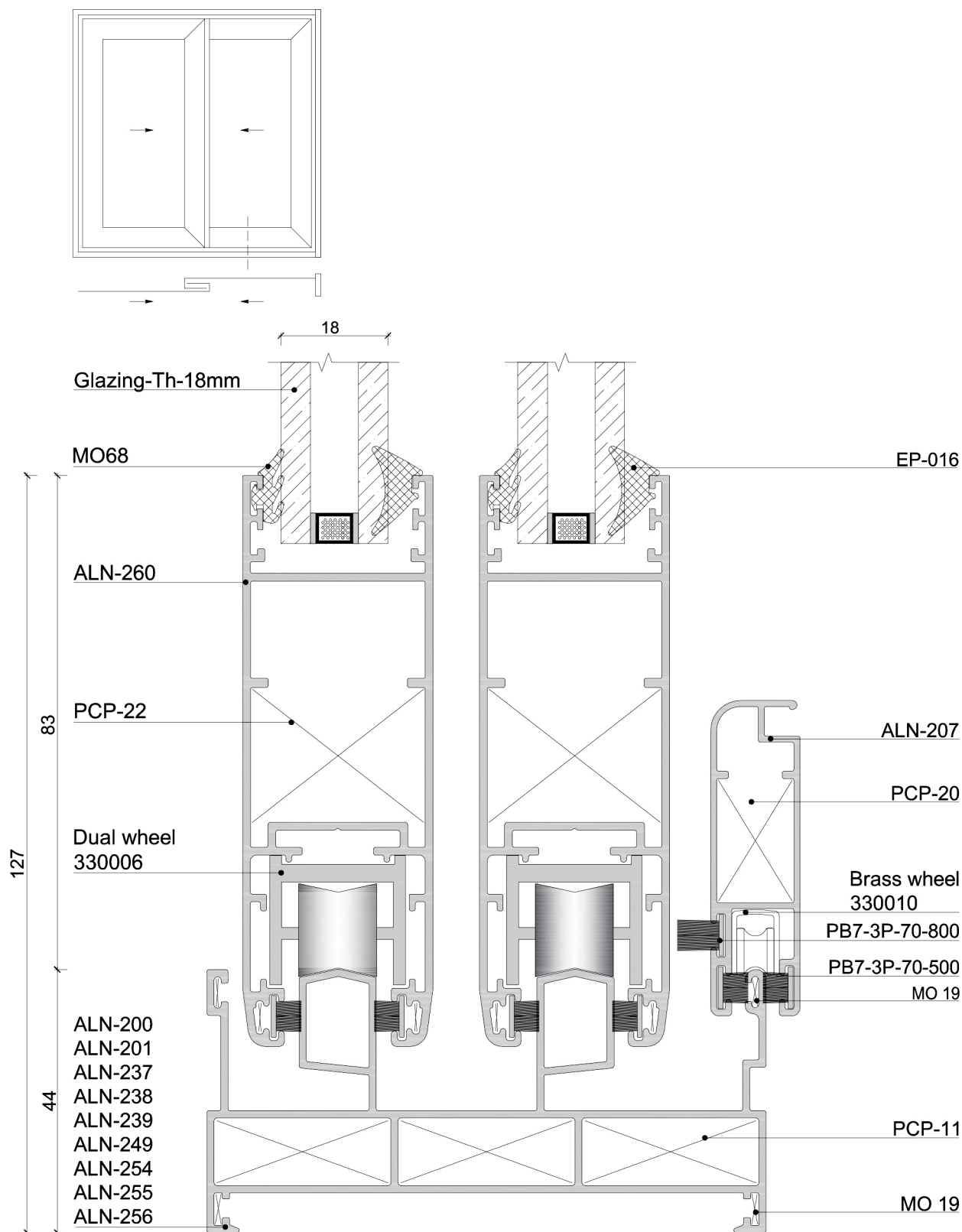
Slide System 60 Series

Fabrication Details



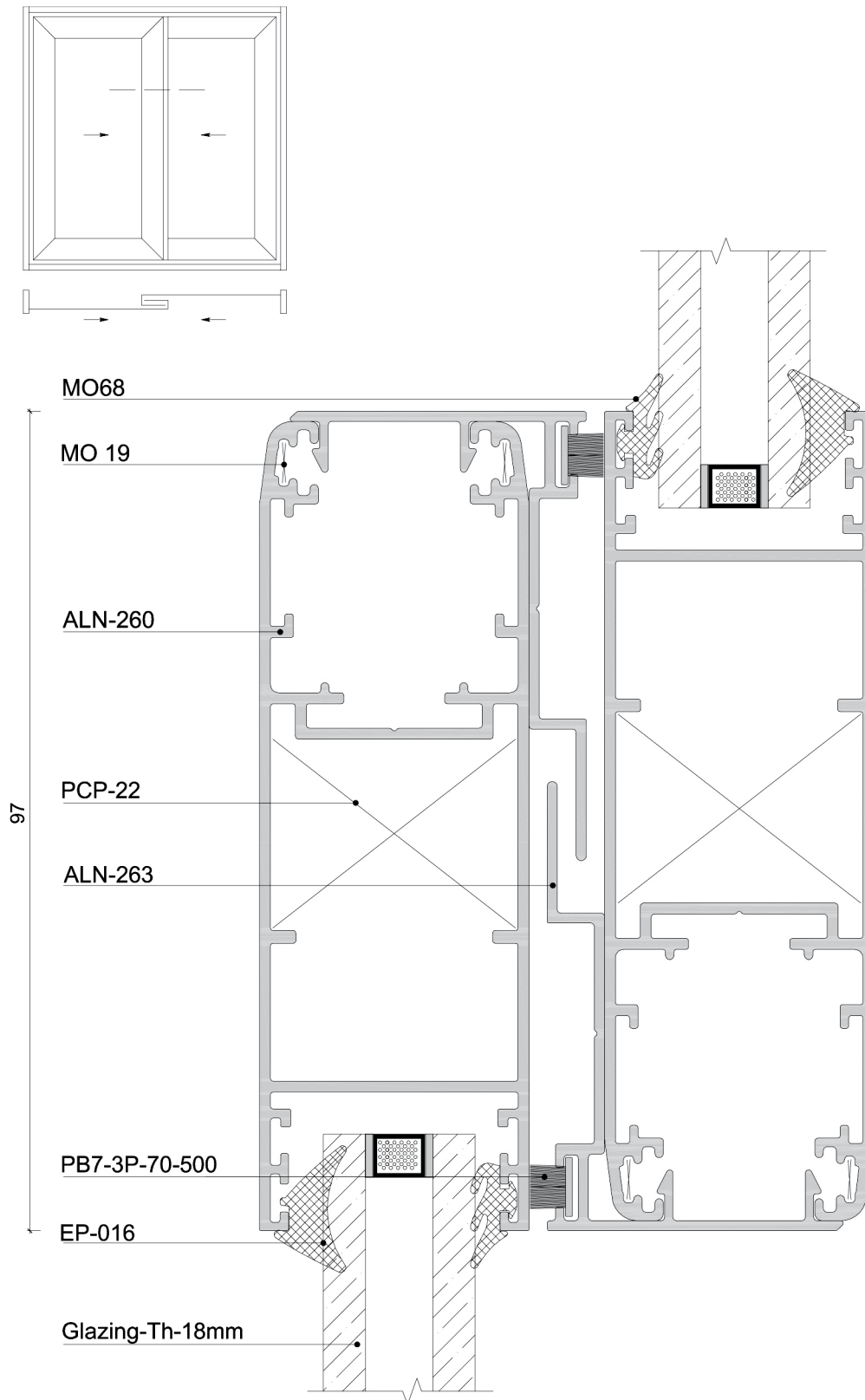
Slide System 60 Series

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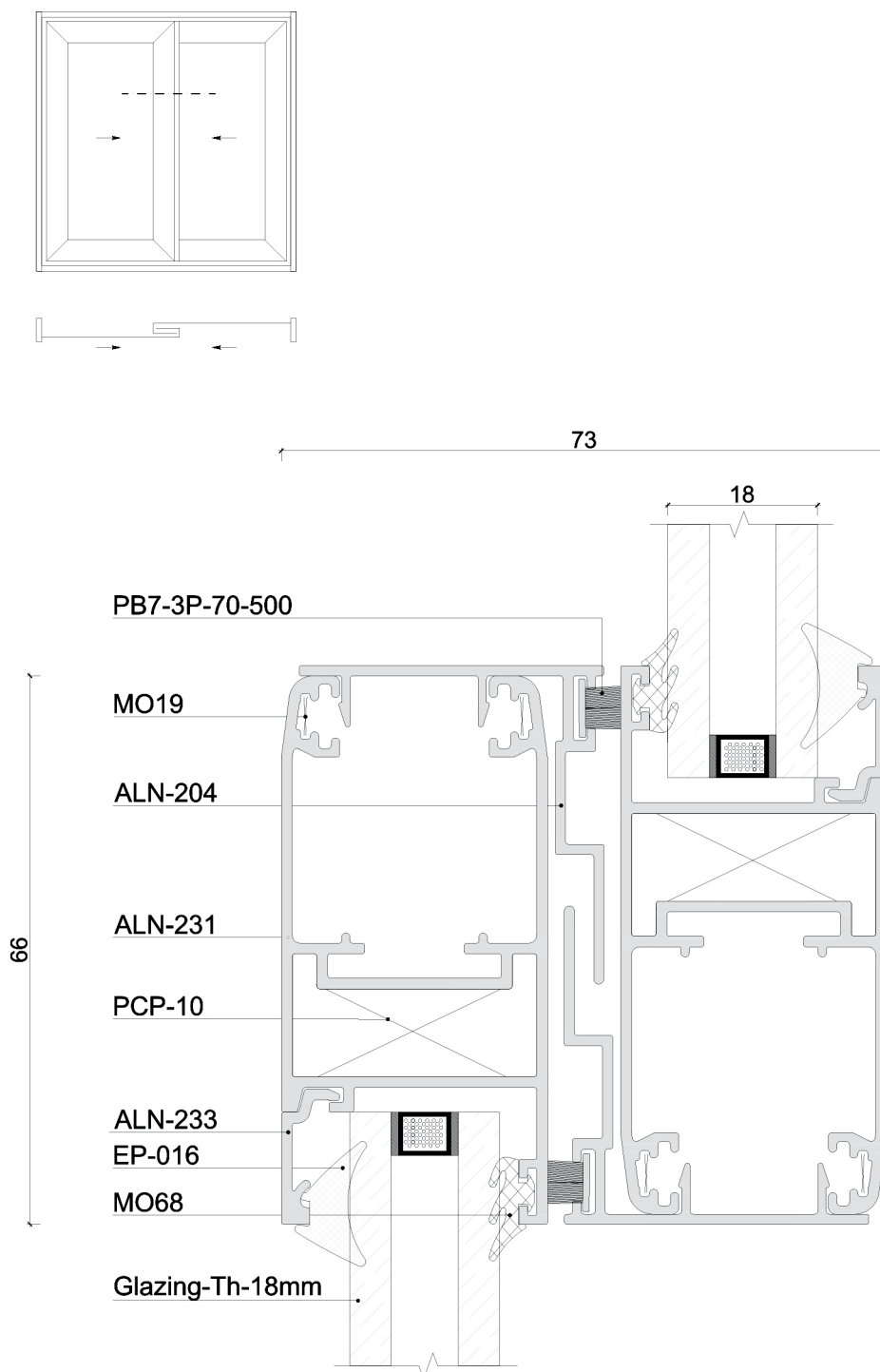


Slide System 60 Series Fabrication Details



Slide System 60 Series

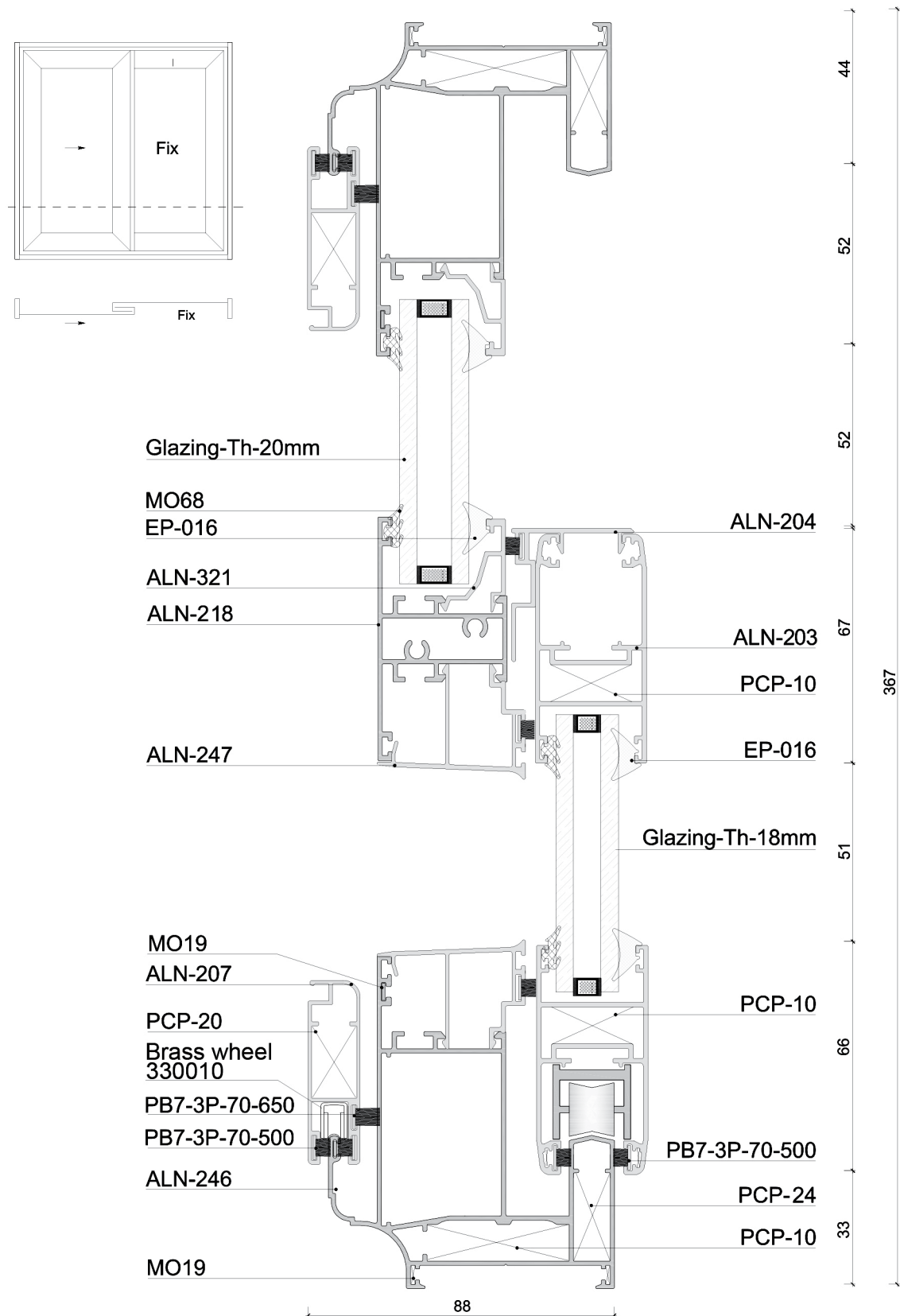
Fabrication Details





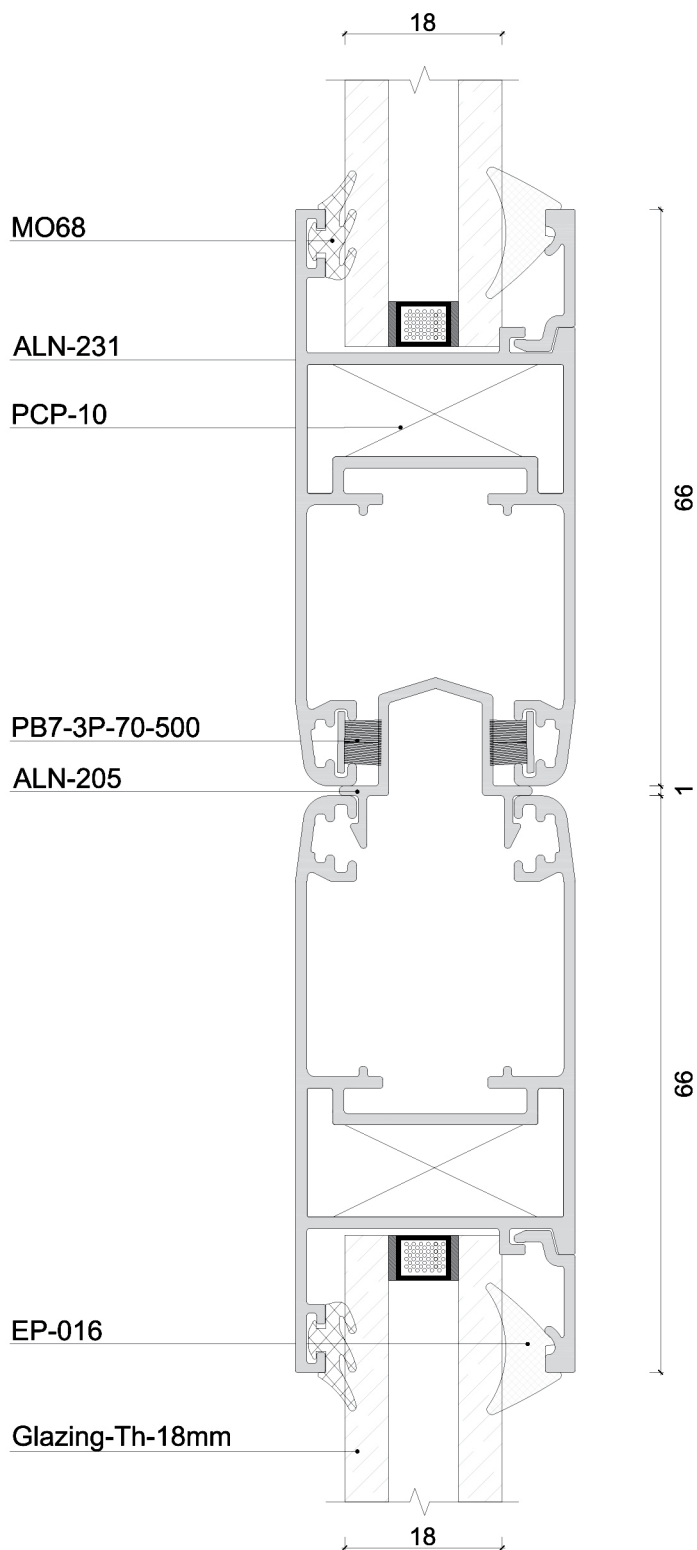
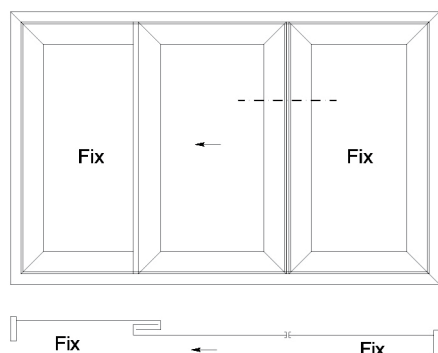
Slide System 60 Series

Fabrication Details



Slide System 60 Series

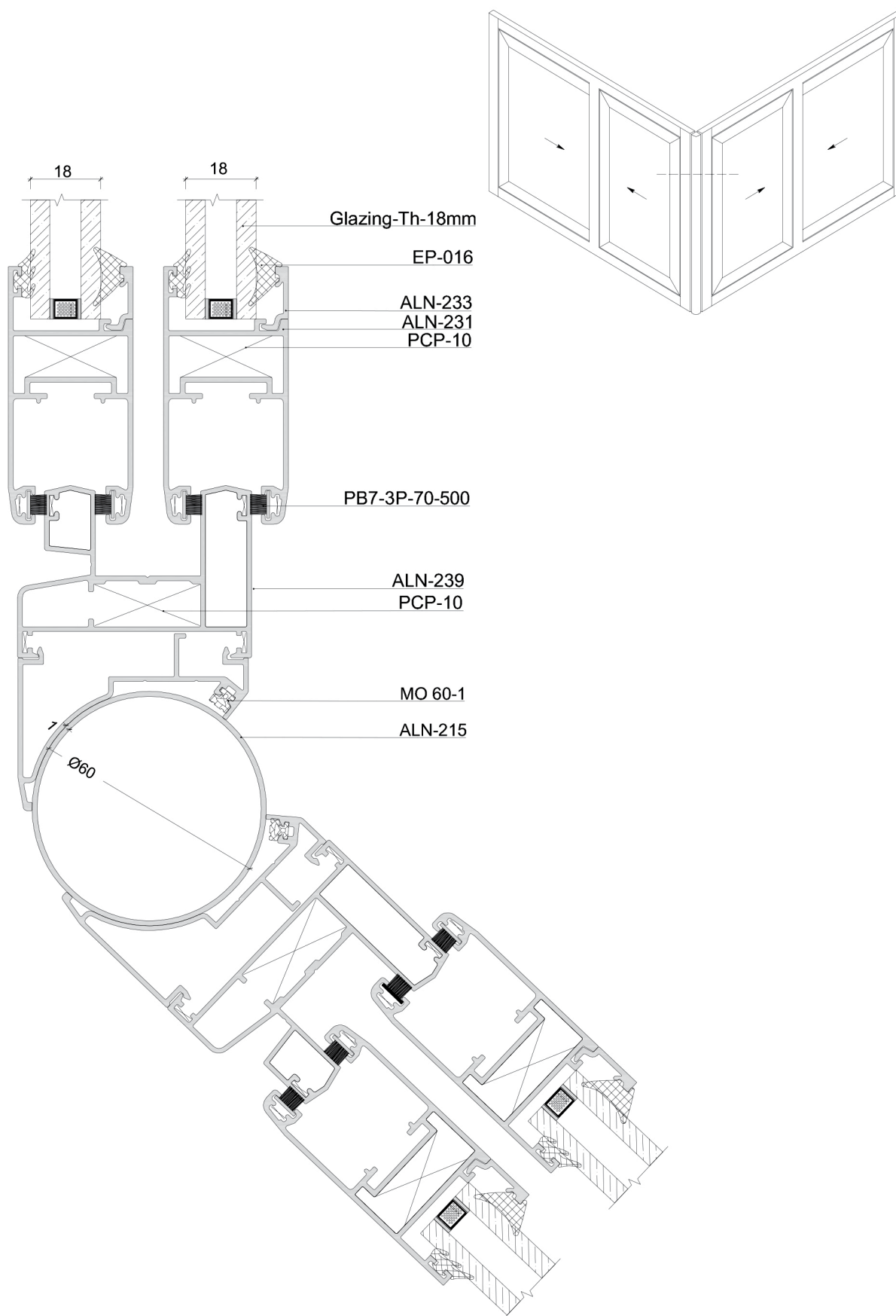
Fabrication Details





Slide System 60 Series

Fabrication Details

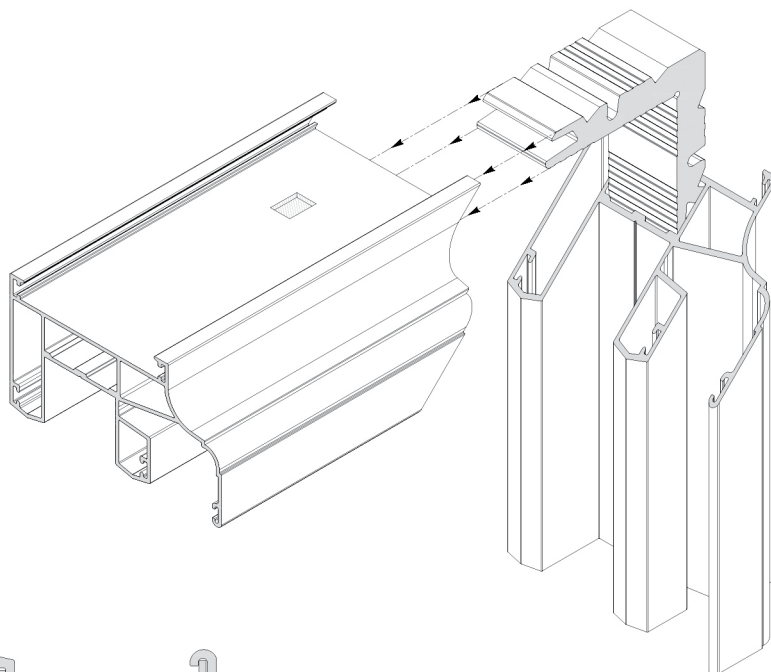


Slide System 60 Series

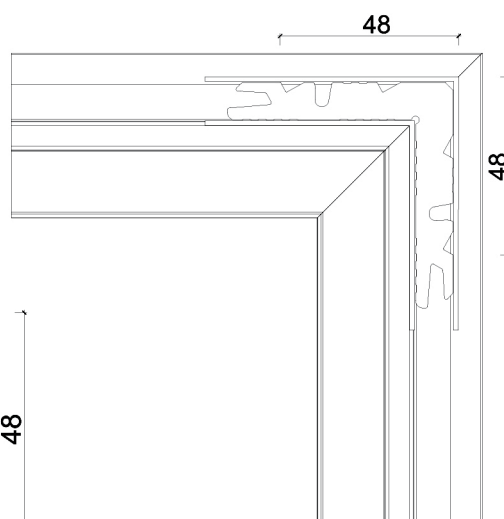
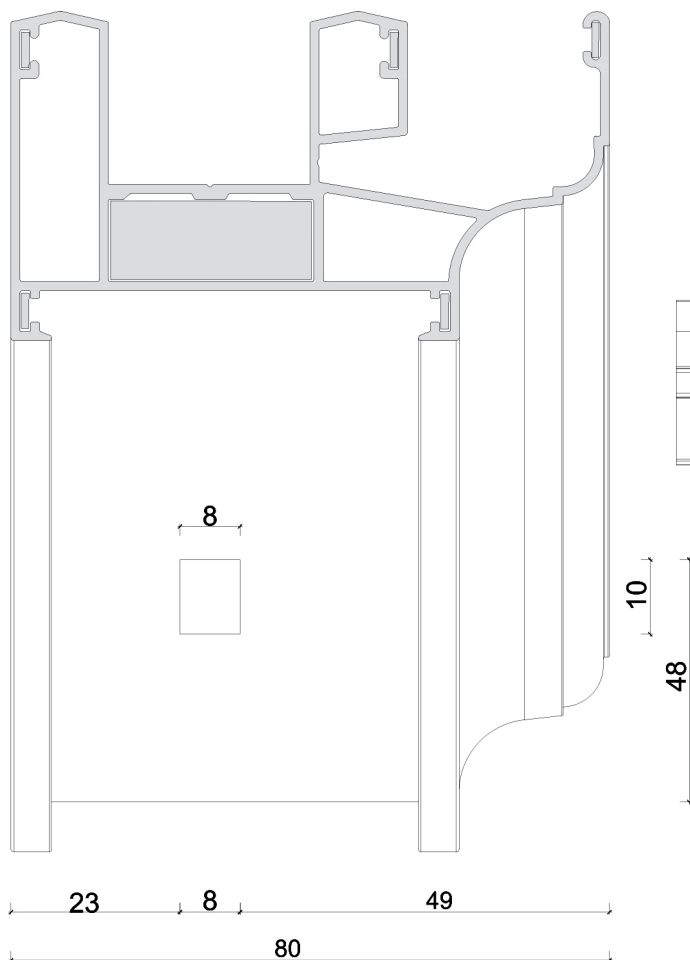
Assembly Drawing



A:PCP-10 / 26 mm



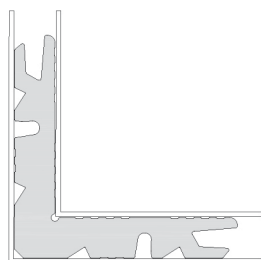
ALN-201



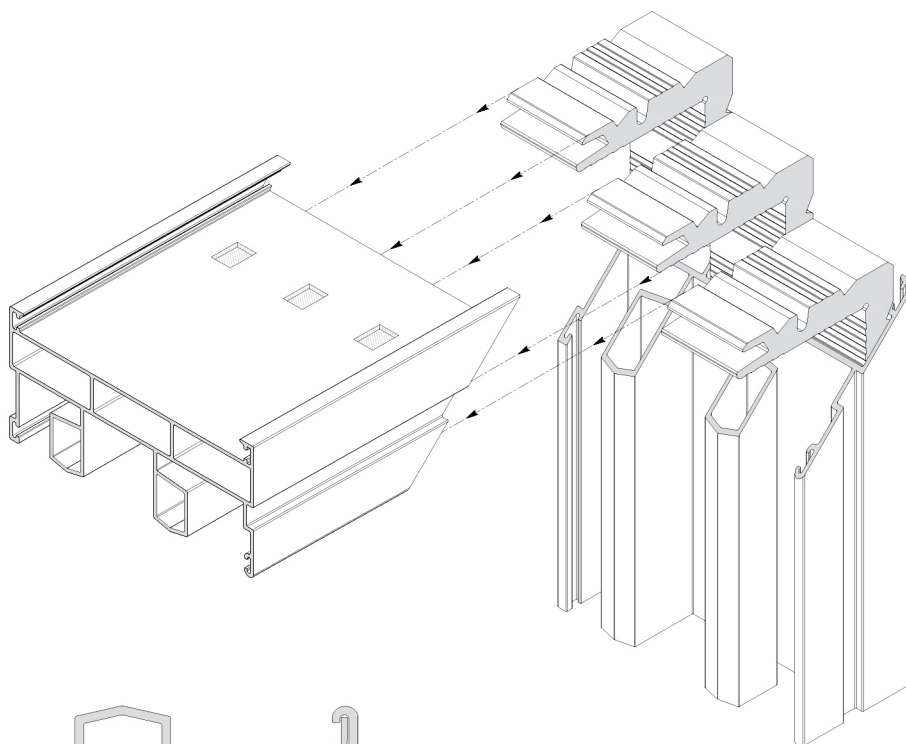


Slide System 60 Series

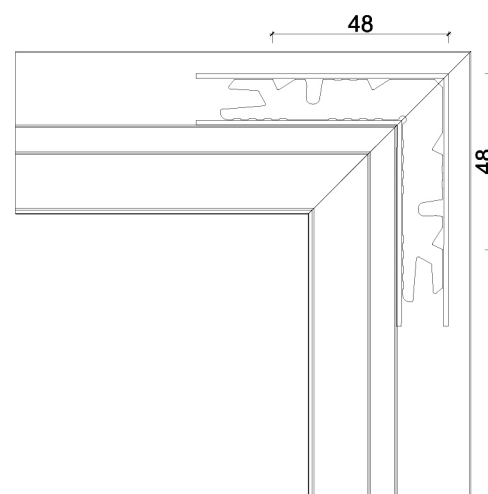
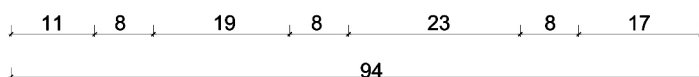
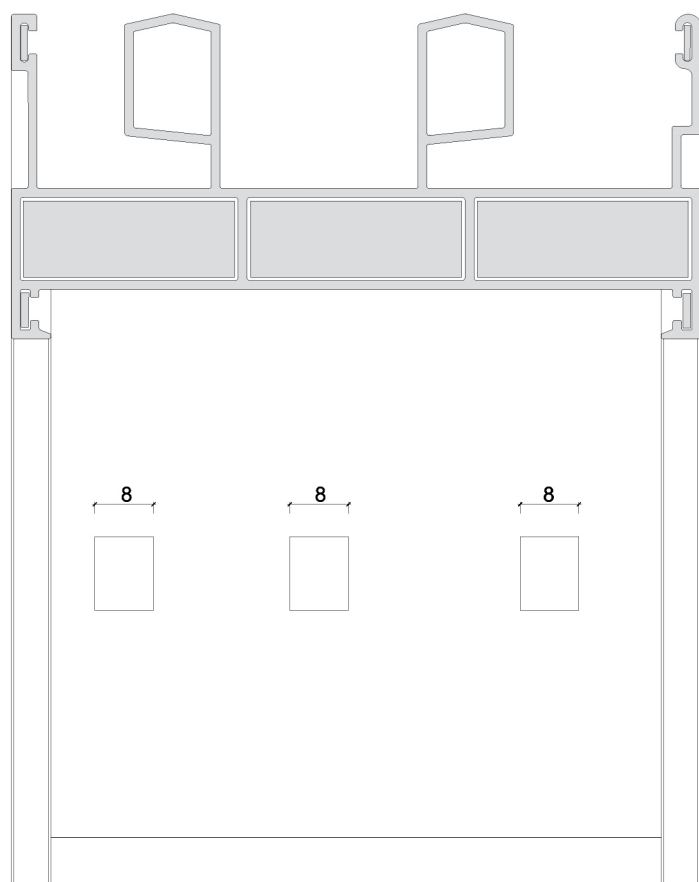
Assembly Drawing



A:PCP-11 / 29 mm

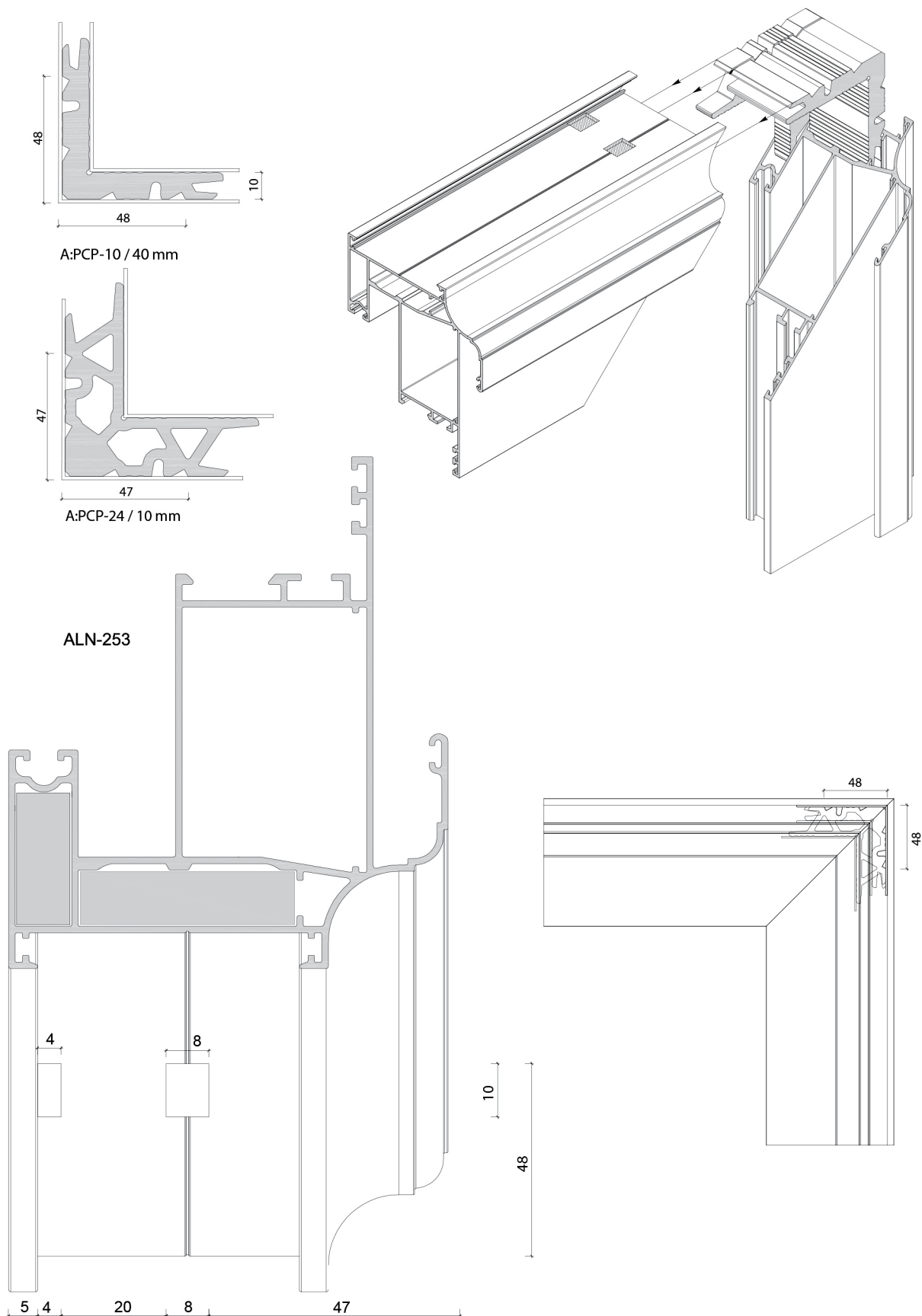


ALN-238



Slide System 60 Series

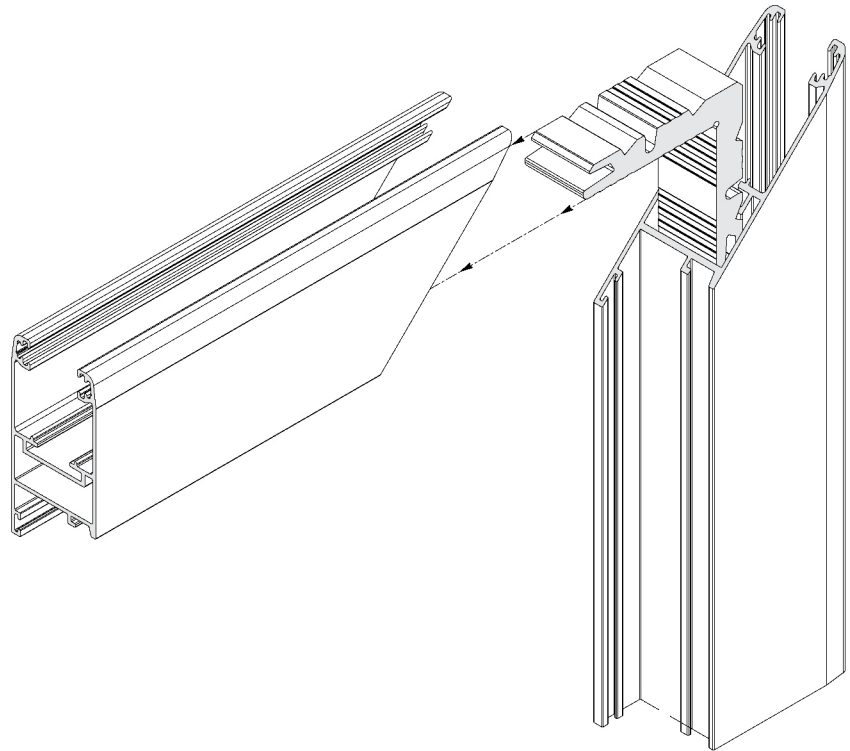
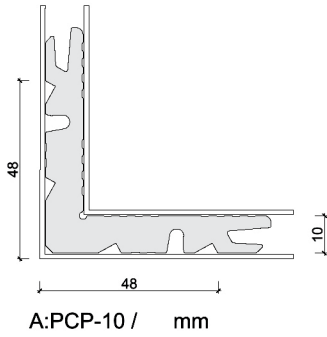
Assembly Drawing



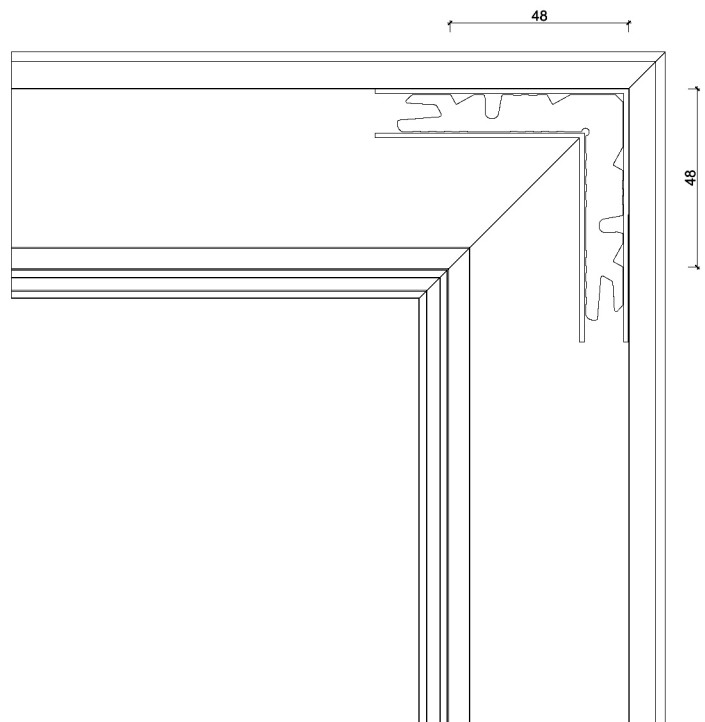
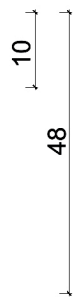
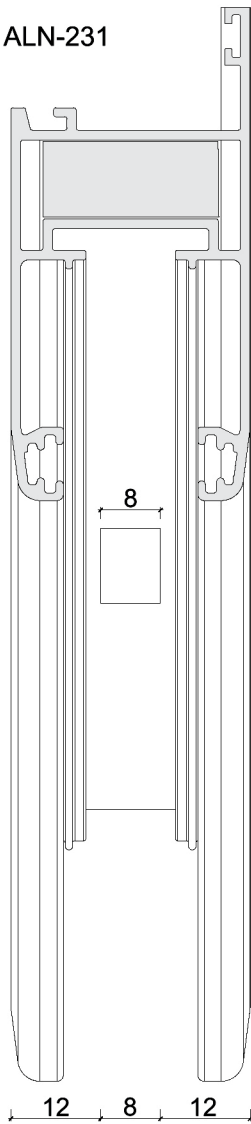


Slide System 60 Series

Assembly Drawing

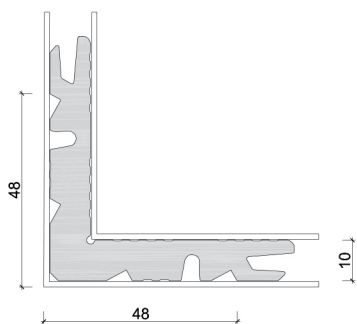


ALN-231



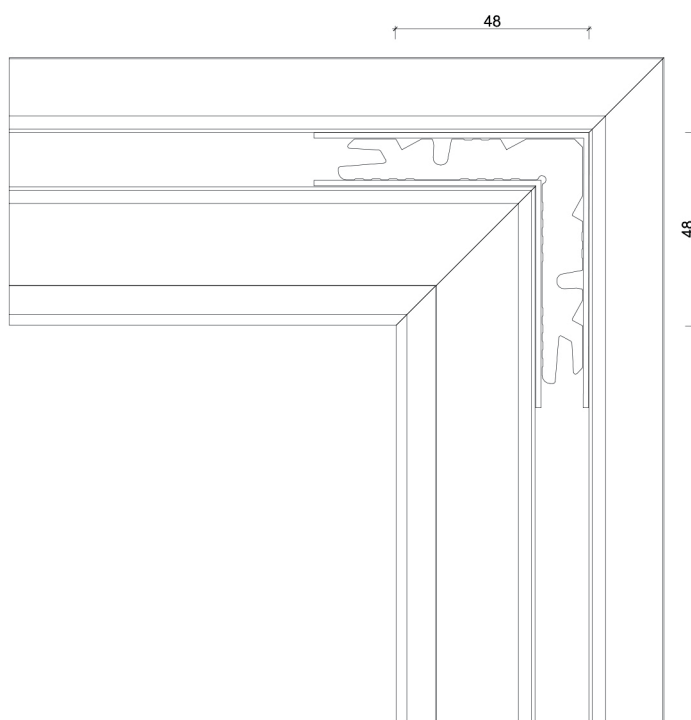
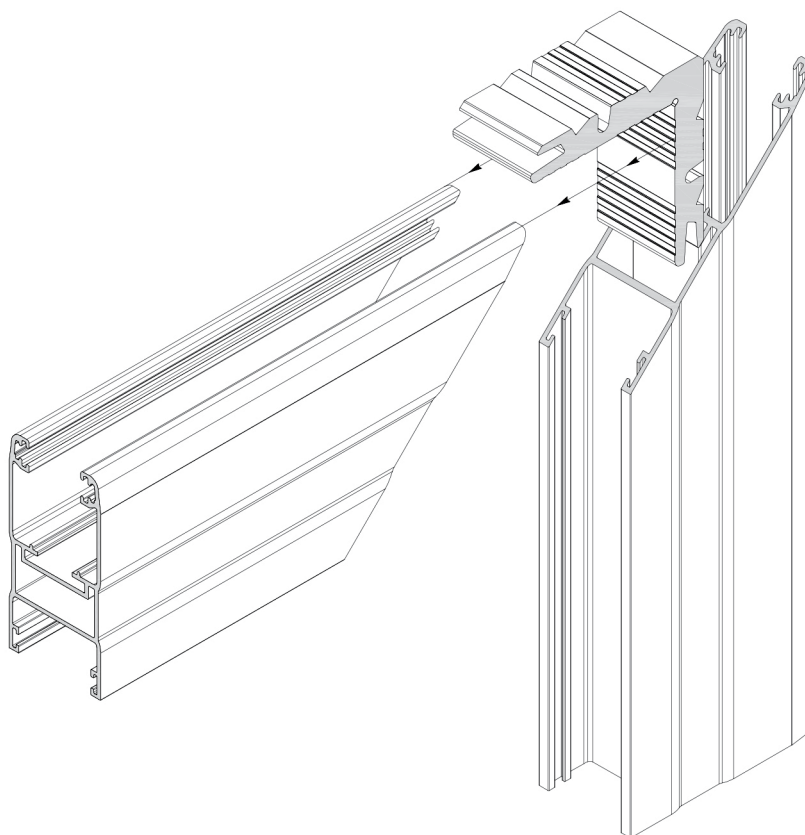
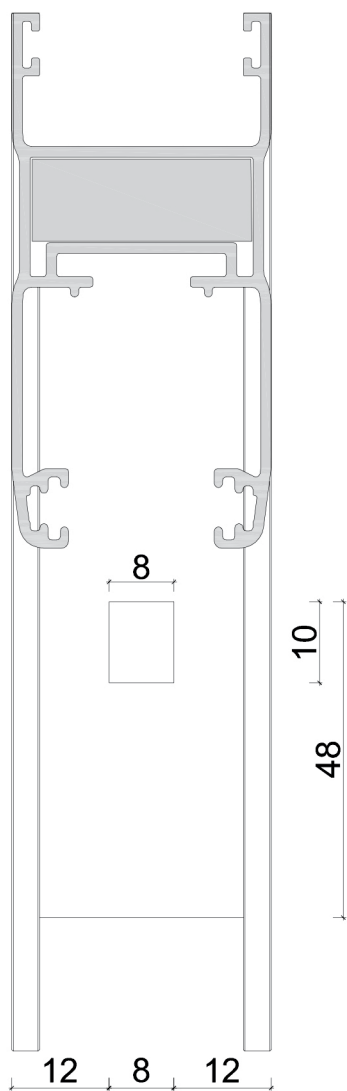
Slide System 60 Series

Assembly Drawing



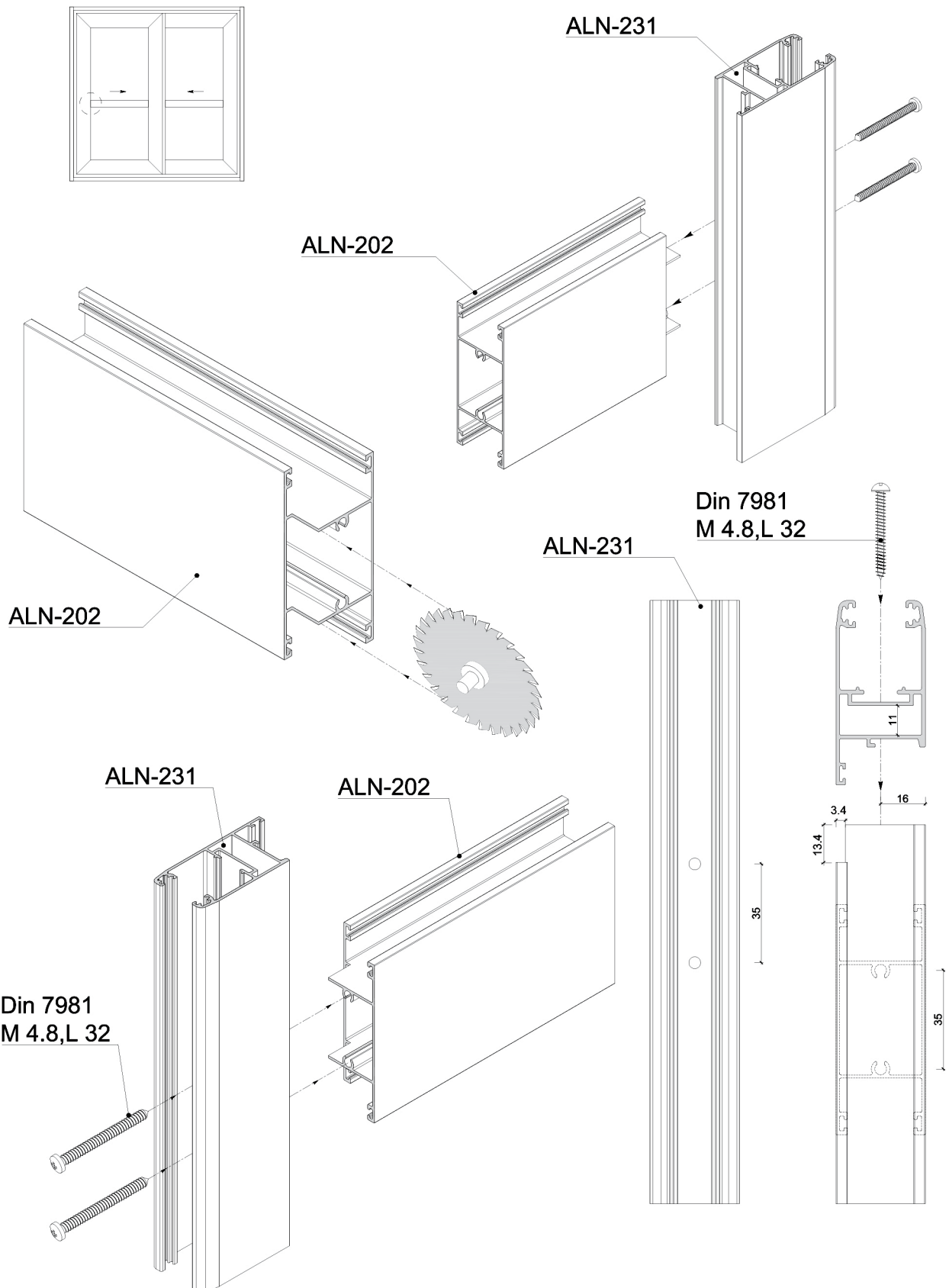
A:PCP-10 / 26 mm

ALN-236



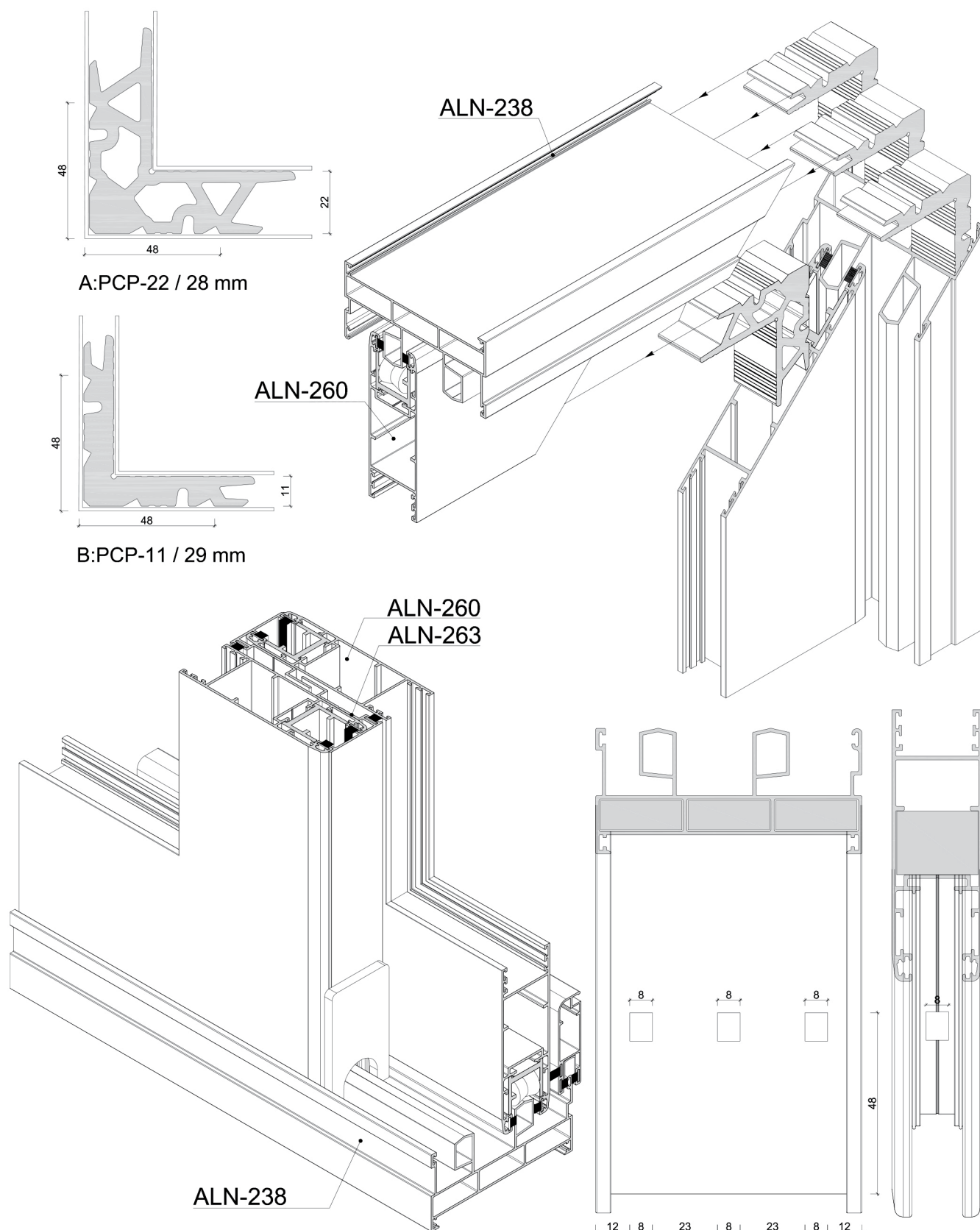


Slide System 60 Series Assembly Drawing



Slide System 60 Series

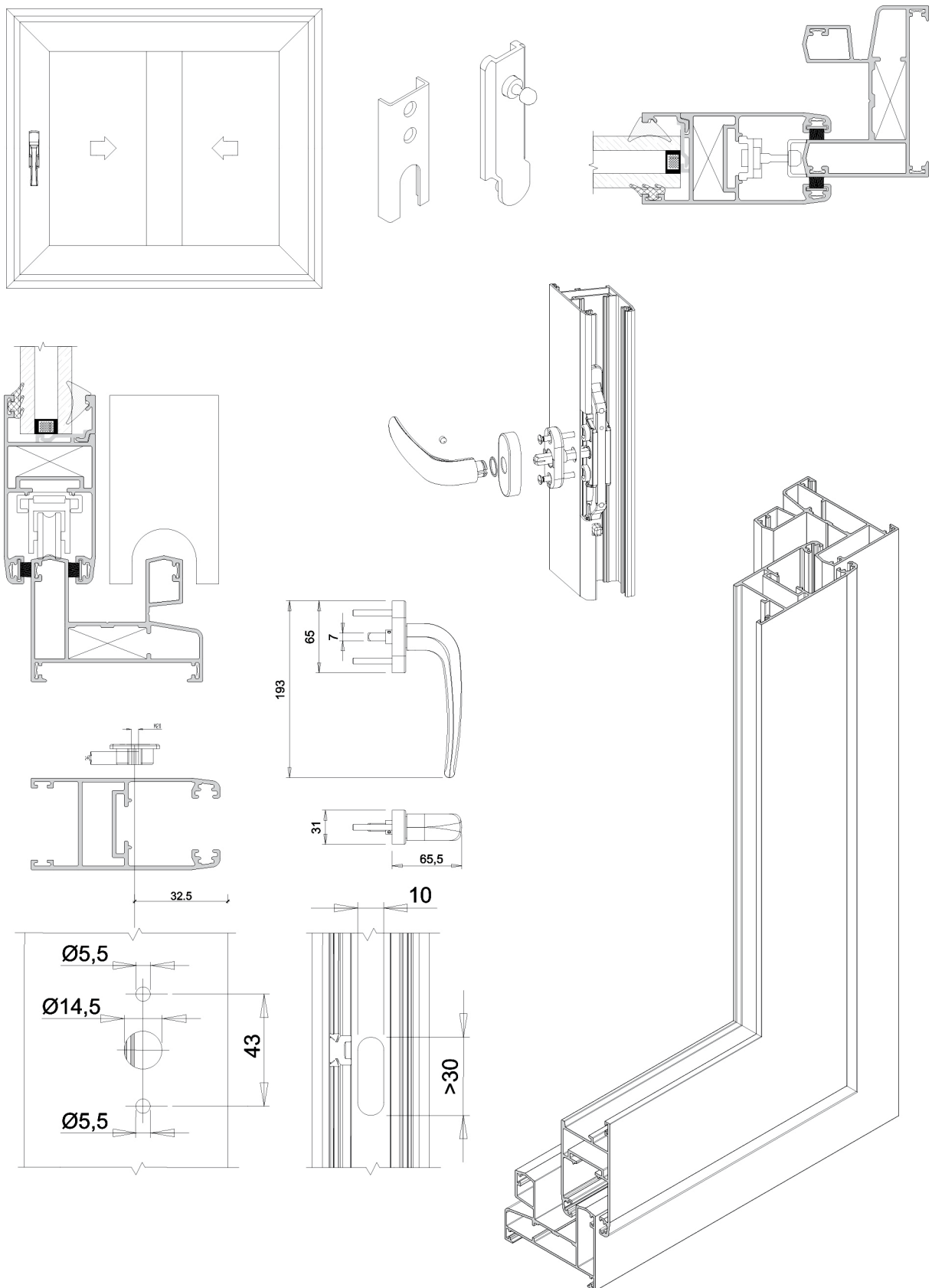
Assembly Drawing





Slide System 60 Series

Hardware Installation





ALN 100

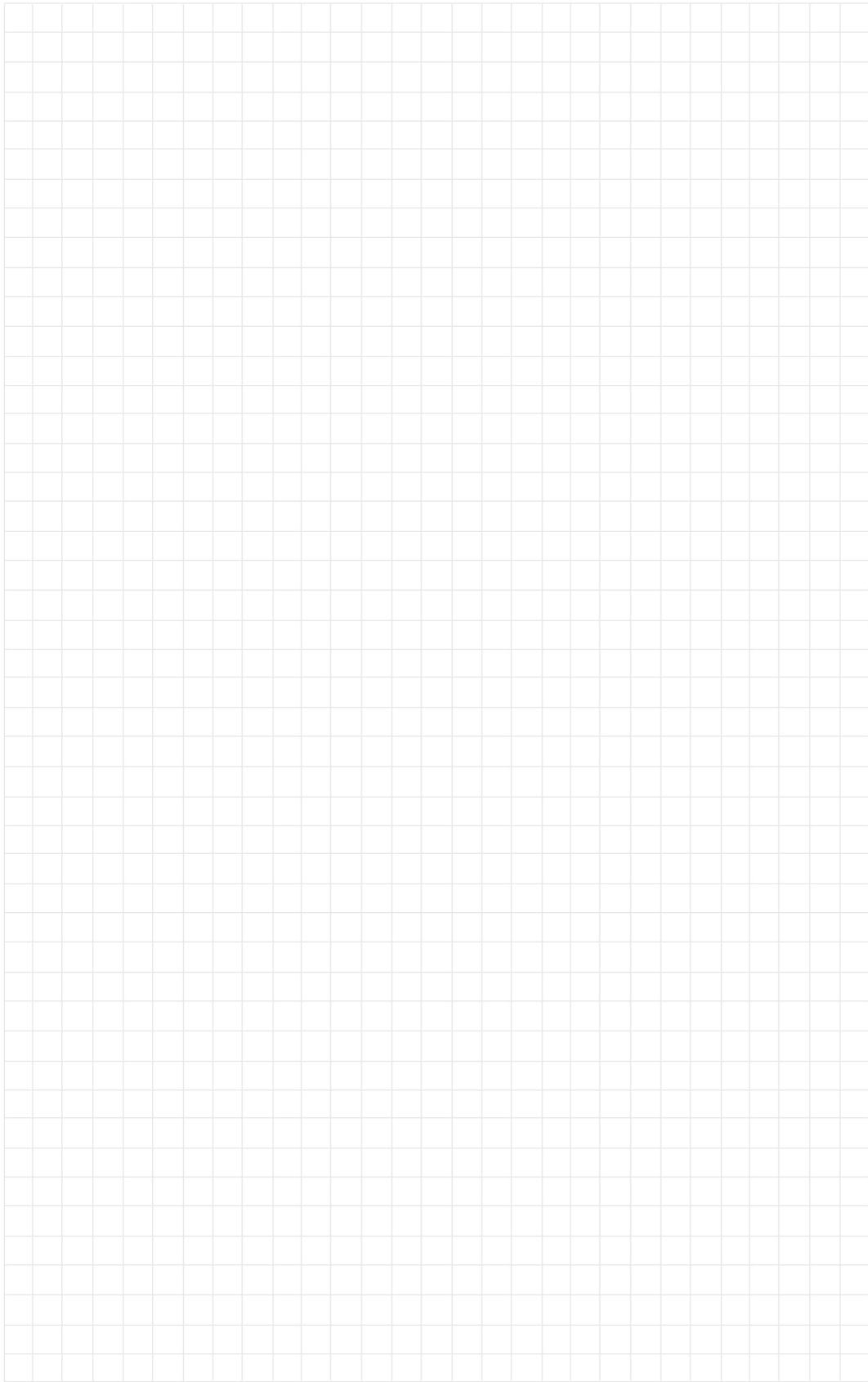
Normal Systems

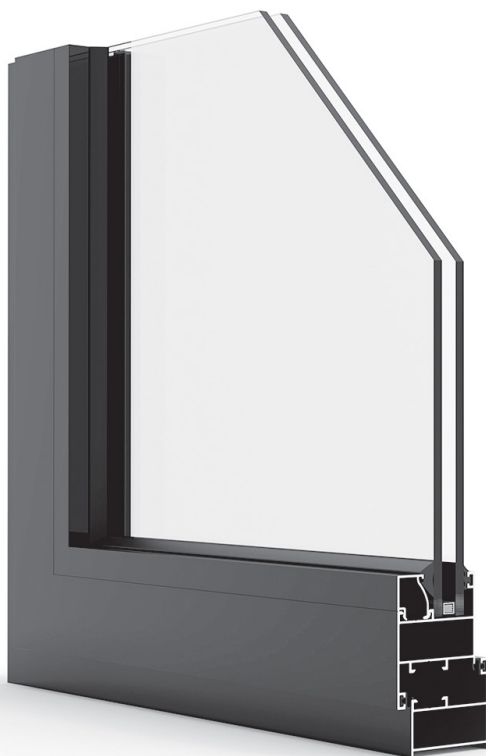




AKROLL

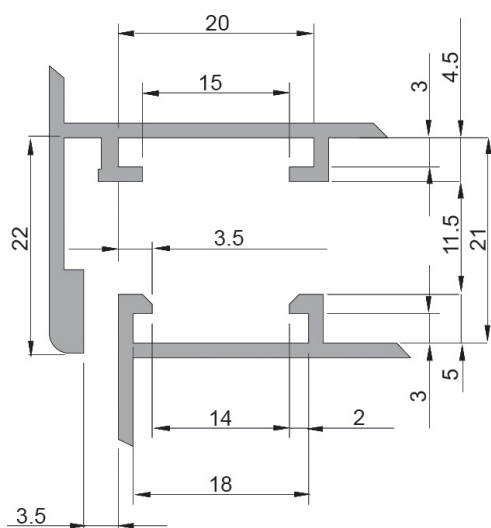
Product of Alumroll Novin Co.



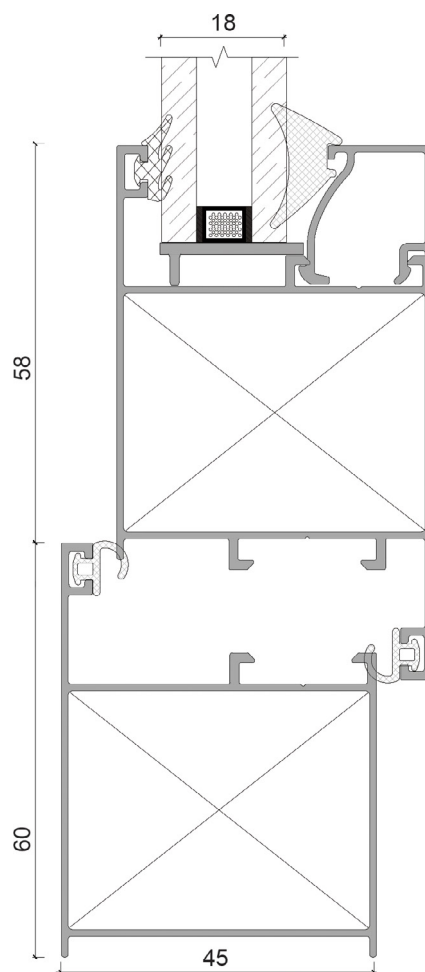


Light Hinged System 45 Series

. Profile width:	45 mm
. Vent width:	45 mm
. Wall thickness:	1 -1.1 mm
. Rubber description:	EPDM DIN 7863
. Glass thickness:	6 - 18 m
. Aluminum alloy extrusion:	EN AW 6063 T5
. Safety drainage system	
. Various typologies	



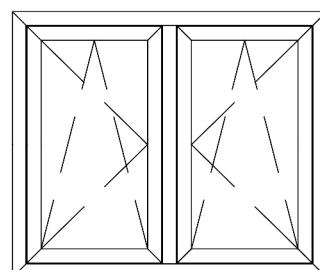
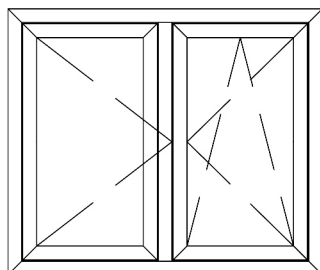
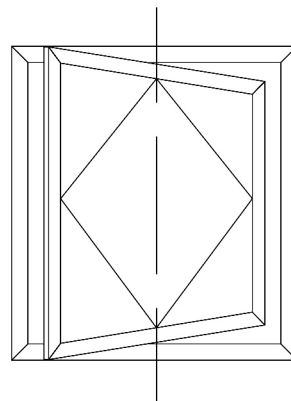
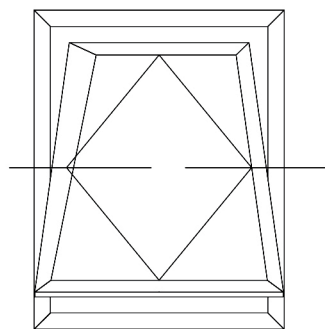
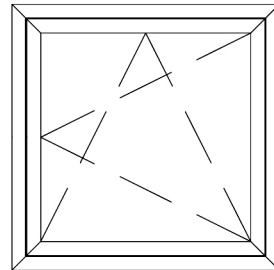
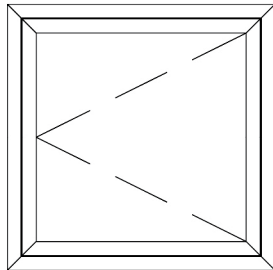
Euro Groove Section





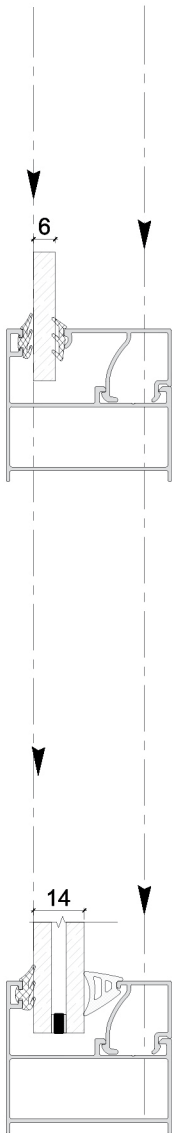
Light Hinged System 45 Series

Typologies

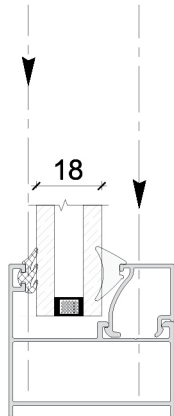
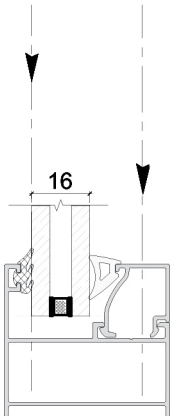
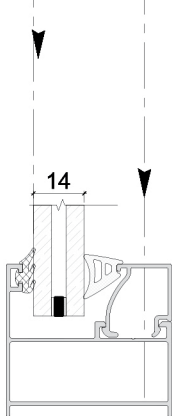


Light Hinged System 45 Series

Glazing Table



Glazing Thickness	Gasket Inside	Gasket Outside	Glazing Bead
6 mm	 EP-1008	 MO68	 ALN-112
14 mm	 EP-021	 MO68	 ALN-113
16 mm	 EP-019	 MO68	 ALN-113
18 mm	 EP-016	 MO68	 ALN-113





Light Hinged System 45 Series

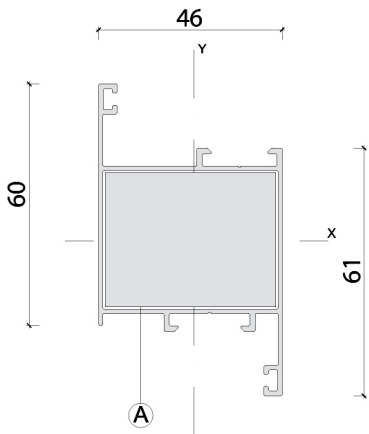
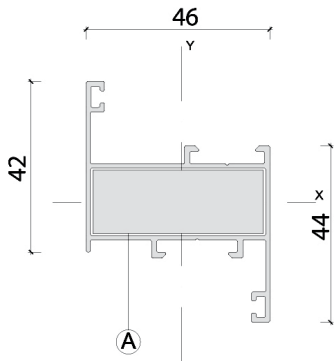
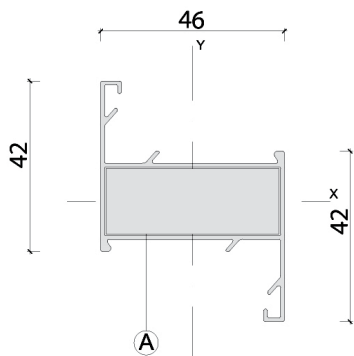
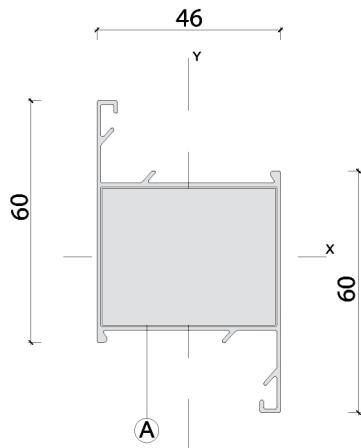
Profile & Accessories Information

$I_x: 6.94 \text{ cm}^4$	$I_y: 7.04 \text{ cm}^4$	$I_x: 2.32 \text{ cm}^4$	$I_y: 5.25 \text{ cm}^4$
Frame: ALN-100	A: PCP- 34 / 43 mm	Frame: ALN-105	A: PCP- 16 / 43 mm
Weight: 580 gr/m	—	Weight: 483 gr/m	—
$I_x: 2.06 \text{ cm}^4$	$I_y: 4.66 \text{ cm}^4$	$I_x: 6.10 \text{ cm}^4$	$I_y: 6.30 \text{ cm}^4$
Frame: ALN-155	A: PCP- 16 / 43 mm	Frame: ALN-150	A: PCP- 34 / 43 mm
Weight: 421 gr/m	—	Weight: 508 gr/m	—



Light Hinged System 45 Series

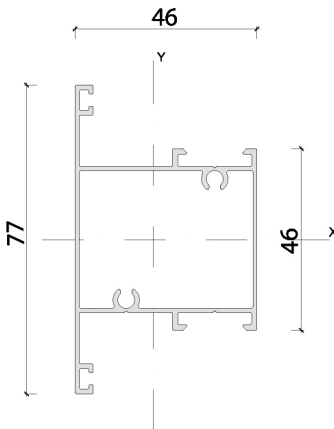
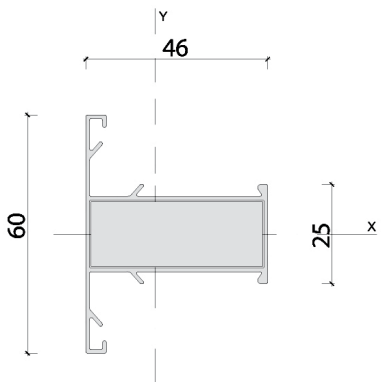
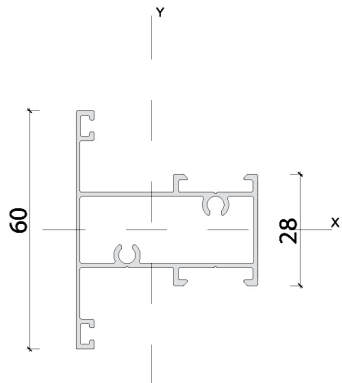
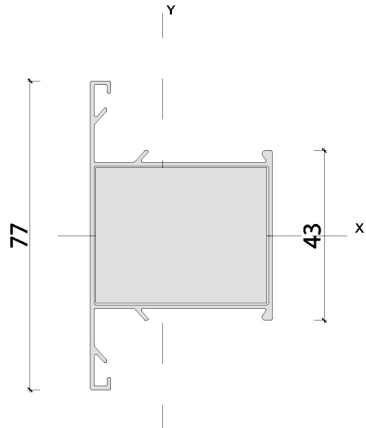
Profile & Accessories Information

			
I_x : 11.33 cm ⁴	I_y : 8.60 cm ⁴	I_x : 4.58 cm ⁴	I_y : 6.89 cm ⁴
Sash : ALN-101	A: PCP- 34 / 43 mm 	Sash : ALN-106	A: PCP- 16 / 43 mm 
Weight: 702 gr/m	—	Weight: 607 gr/m	—
			
I_x : 3.87 cm ⁴	I_y : 6.23 cm ⁴	I_x : 9.54 cm ⁴	I_y : 7.81 cm ⁴
Sash: ALN-156	A: PCP- 16 / 43 mm 	Sash : ALN-151	A: PCP- 34 / 43 mm 
Weight: 513 gr/m	—	Weight: 599 gr/m	—



Light Hinged System 45 Series

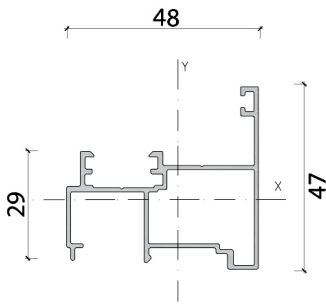
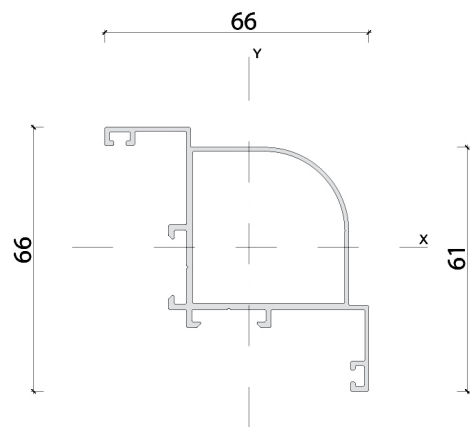
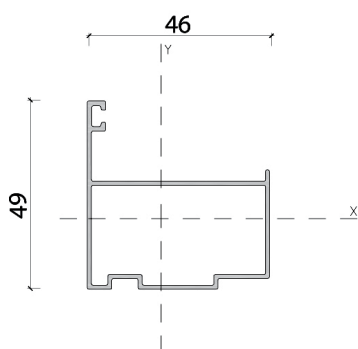
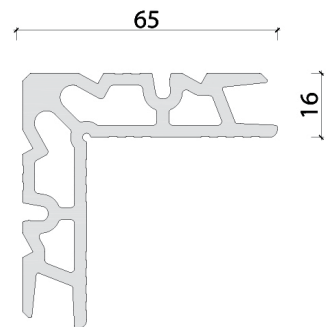
Profile & Accessories Information

			
I_x : 11.80 cm ⁴	I_y : 8.74 cm ⁴	I_x : 3.87 cm ⁴	I_y : 5.67 cm ⁴
Transom: ALN-102	—	Transom: ALN-157	A: ALN-118/43 
Weight: 761 gr/m	—	Weight: 513 gr/m	—
			
I_x : 4.65 cm ⁴	I_y : 6.95 cm ⁴	I_x : 9.54 cm ⁴	I_y : 7.33 cm ⁴
Transom: ALN-107	—	Transom: ALN-152	A: ALN-117/43 
Weight: 667 gr/m	—	Weight: 599 gr/m	—



Light Hinged System 45 Series

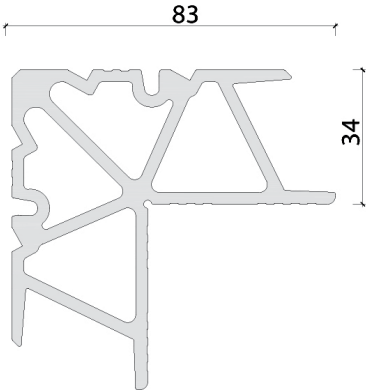
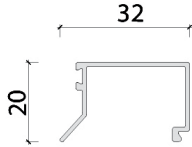
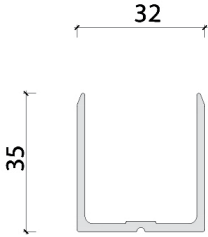
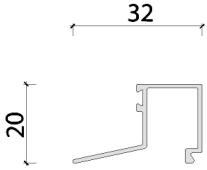
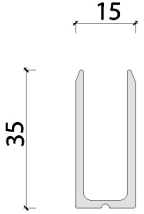
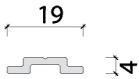
Profile & Accessories Information

			
I_x : 3.03 cm ⁴	I_y : 6.50 cm ⁴	I_x : 10.90 cm ⁴	I_y : 10.90 cm ⁴
Profile: ALN-103	—	Profile: ALN-109	—
Weight: 591 gr/m	—	Weight: 794 gr/m	—
			
I_x : 3.72 cm ⁴	I_y : 5.46 cm ⁴		
Profile: ALN-108	—		
Weight: 497 gr/m	—	Corner joint: PCP 16	Weight: 2387 gr/m



Light Hinged System 45 Series

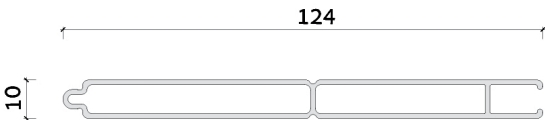
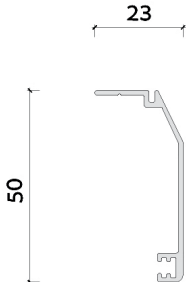
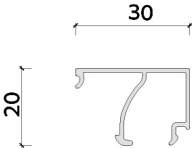
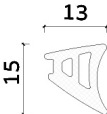
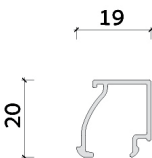
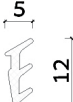
Profile & Accessories Information

			
Corner joint: PCP 34	Weight: 3505 gr/m	Profile : ALN-110	Weight: 211 gr/m
			
Transom bar profile: ALN-117	Weight: 532 gr/m	Profile : ALN-111	Weight: 211 gr/m
			
Transom bar profile: ALN-118	Weight: 429 gr/m	Profile : ALN-224	Weight: 110 gr/m



Light Hinged System 45 Series

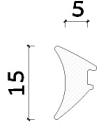
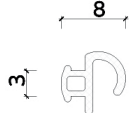
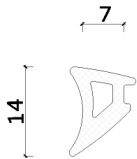
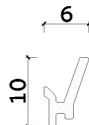
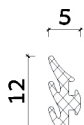
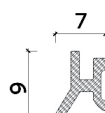
Profile & Accessories Information

			
Profile: ALN-212	Weight: 872 gr/m	Flange profile: ALN-119	Weight: 278 gr/m
			
Glazing bead: ALN-112	Weight: 229 gr/m	Gasket: EP-021	Weight: 80 gr/m
			
Glazing bead: ALN-113	Weight: 178 gr/m	Gasket: 1008	Weight: 34 gr/m



Light Hinged System 45 Series

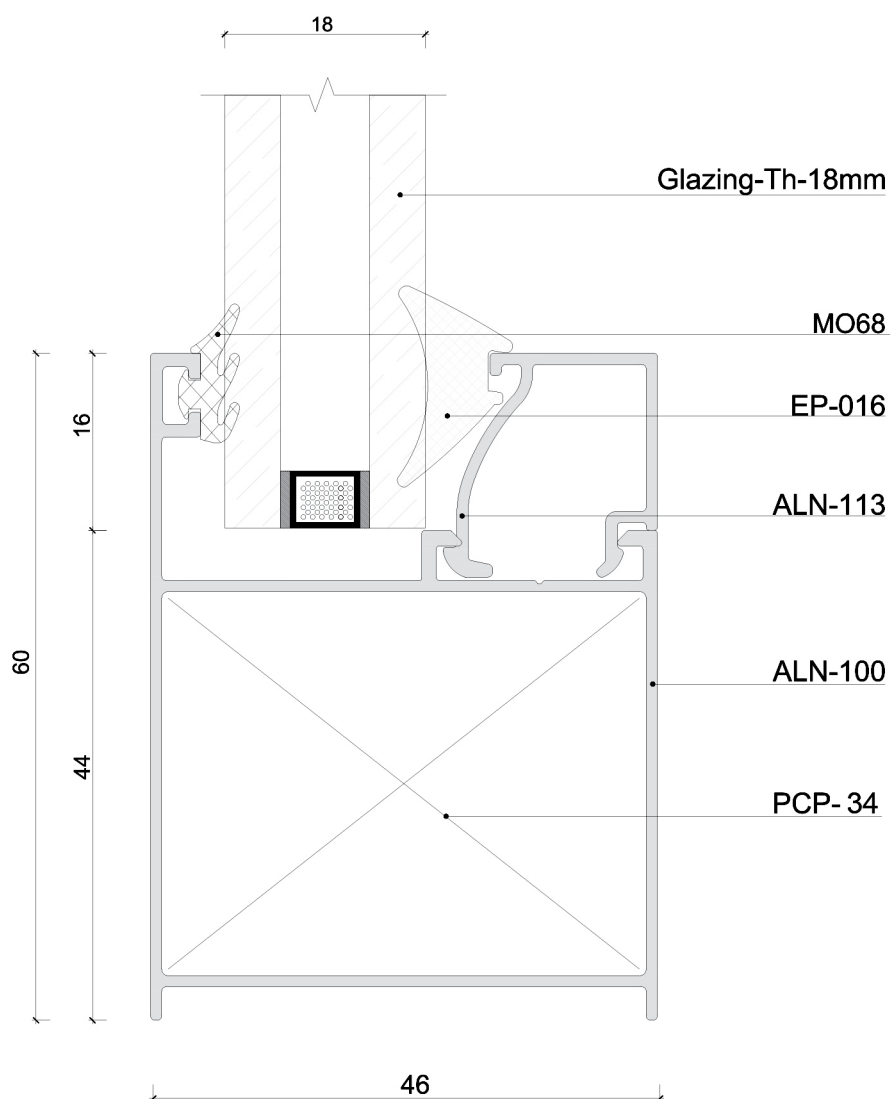
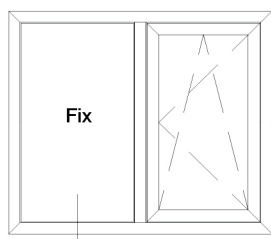
Profile & Accessories Information

			
Gasket: EP-016	Weight : 77 gr/m	Gasket: EP-018	Weight : 27 gr/m
			
Gasket: EP-019	Weight : 61 gr/m	Gasket: MOB	Weight : 21 gr/m
			
Gasket: MO68	Weight : 48 gr/m	Gasket: MOS	Weight : 32 gr/m



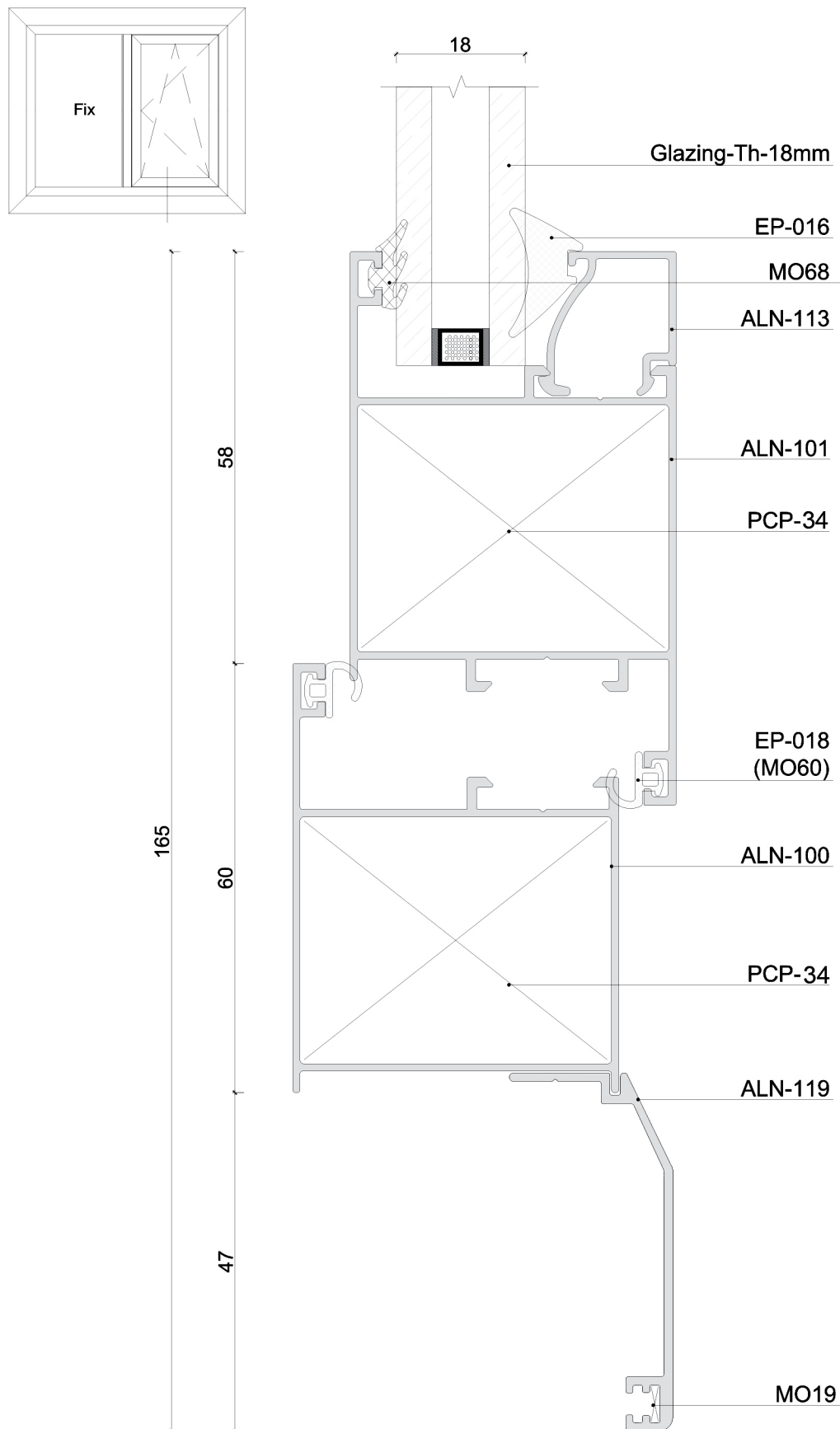
Light Hinged System 45 Series

Fabrication Details



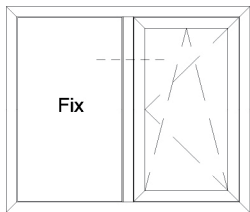


Light Hinged System 45 Series Fabrication Details



Light Hinged System 45 Series

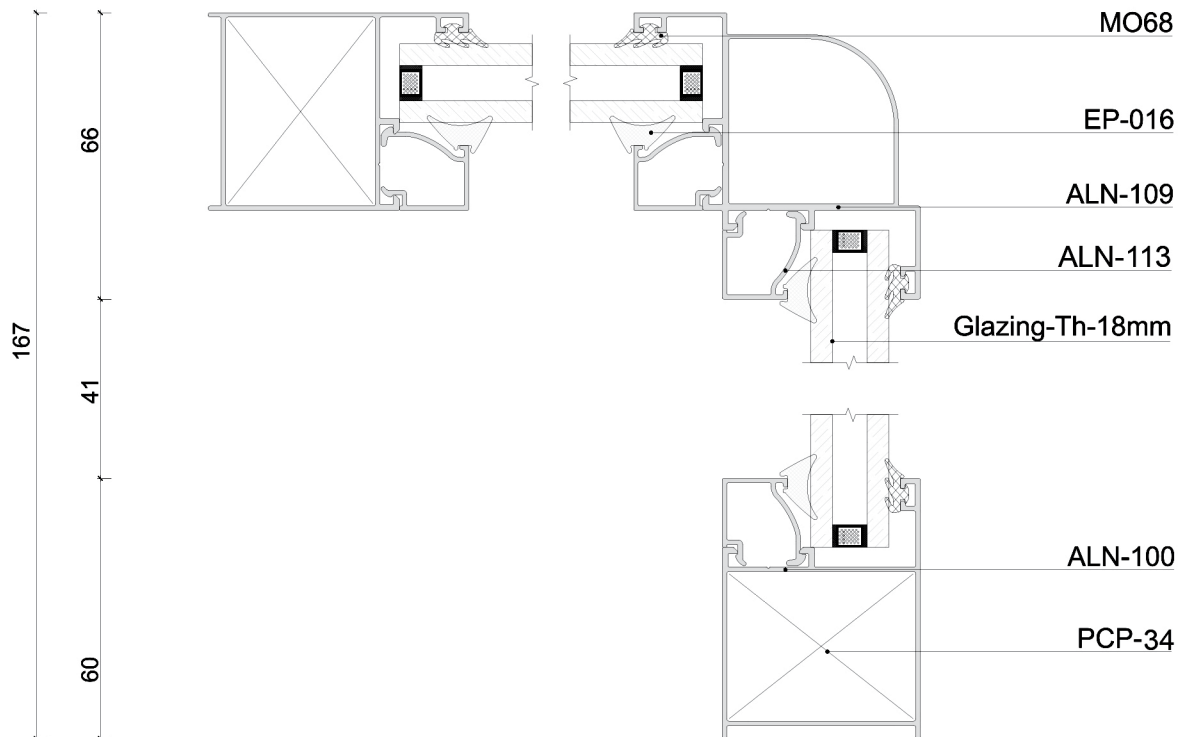
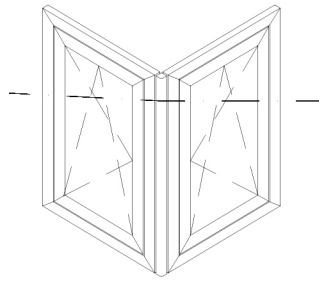
Fabrication Details





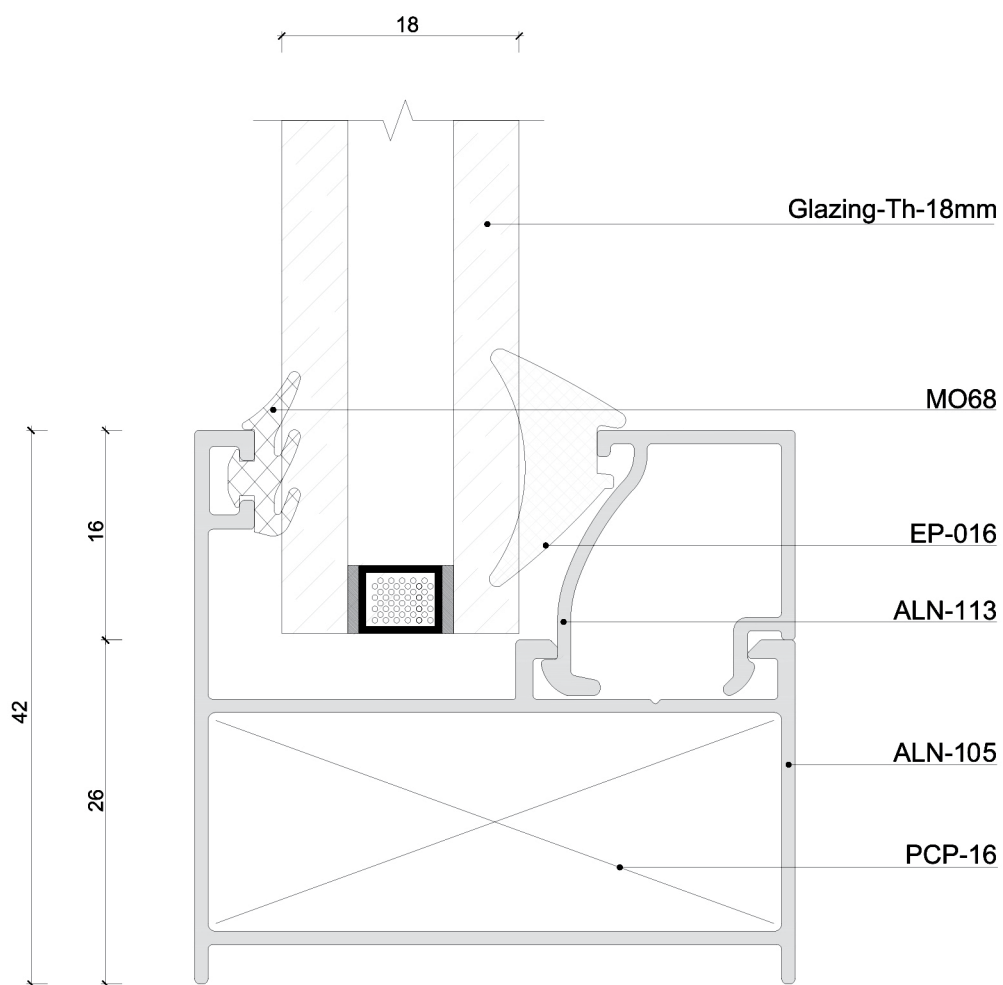
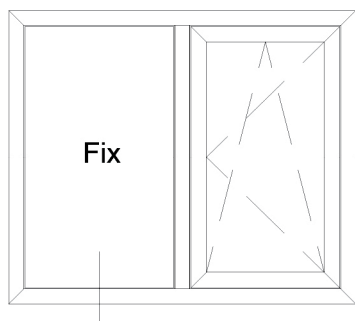
Light Hinged System 45 Series

Fabrication Details



Light Hinged System 45 Series

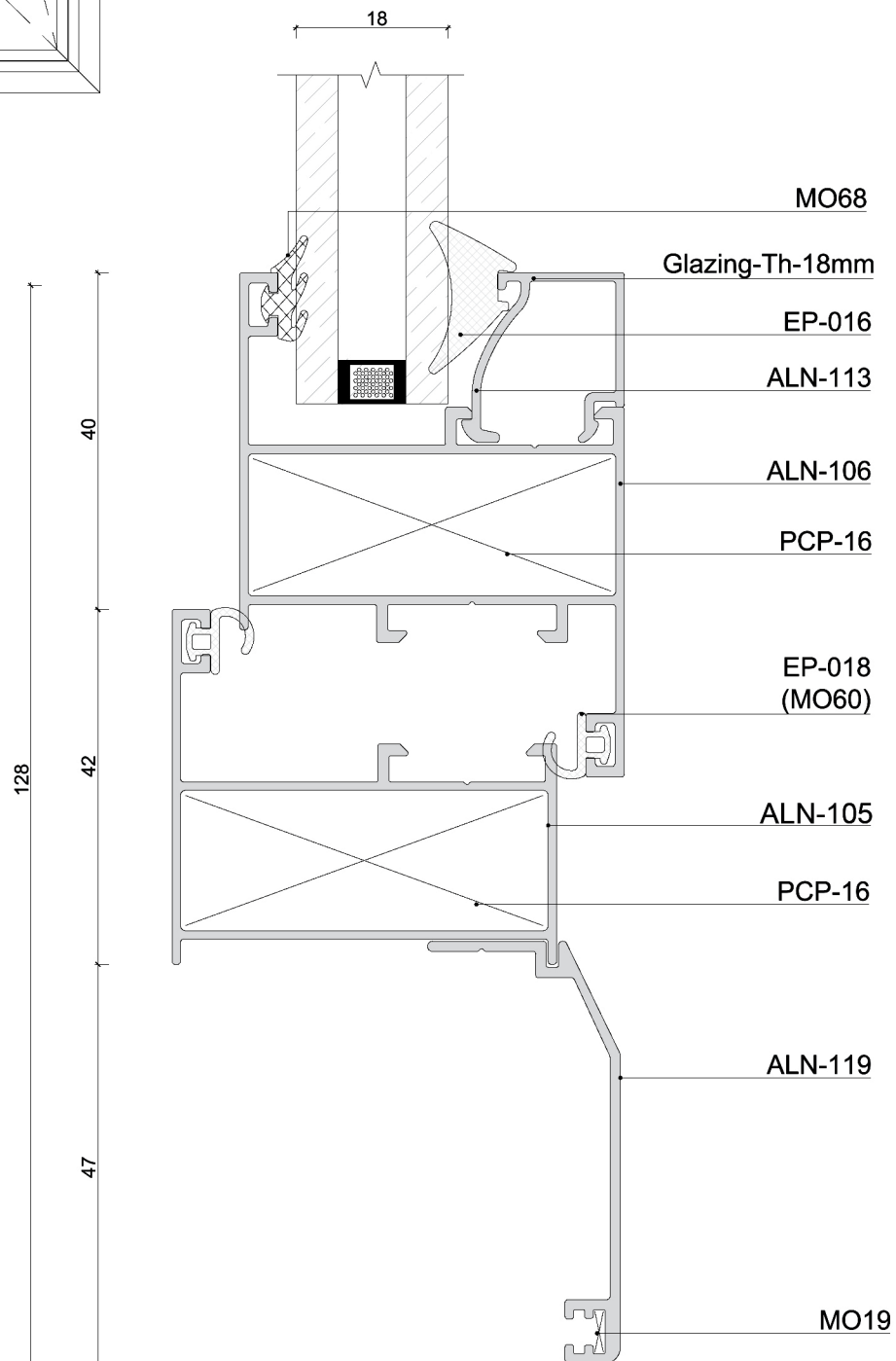
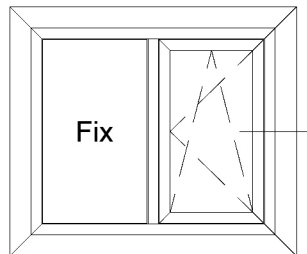
Fabrication Details





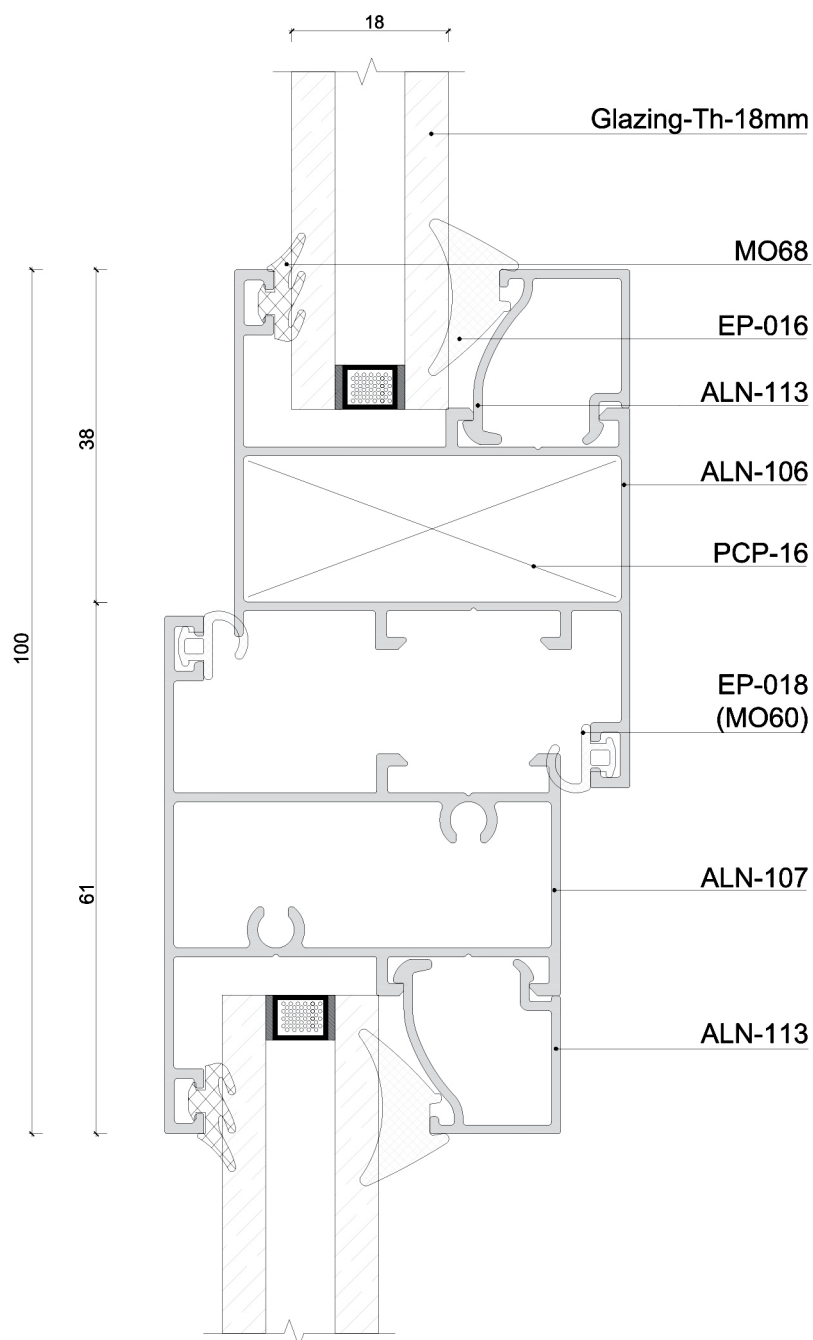
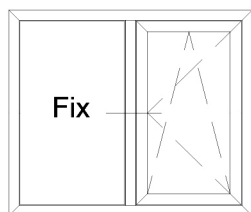
Light Hinged System 45 Series

Fabrication Details



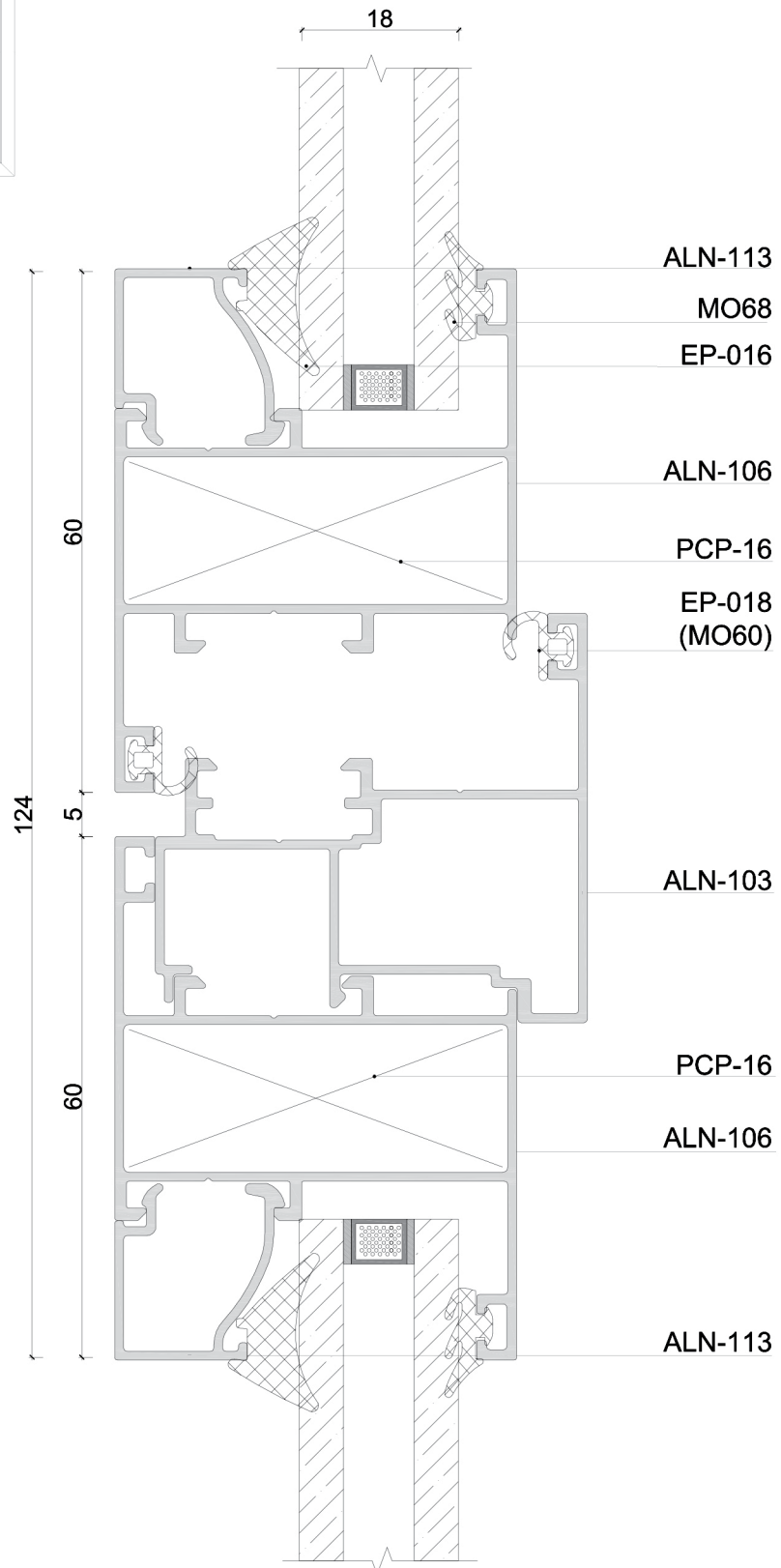
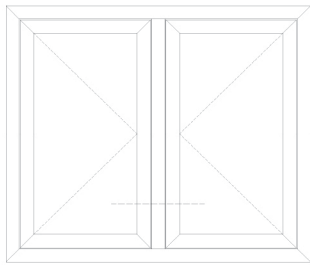
Light Hinged System 45 Series

Fabrication Details



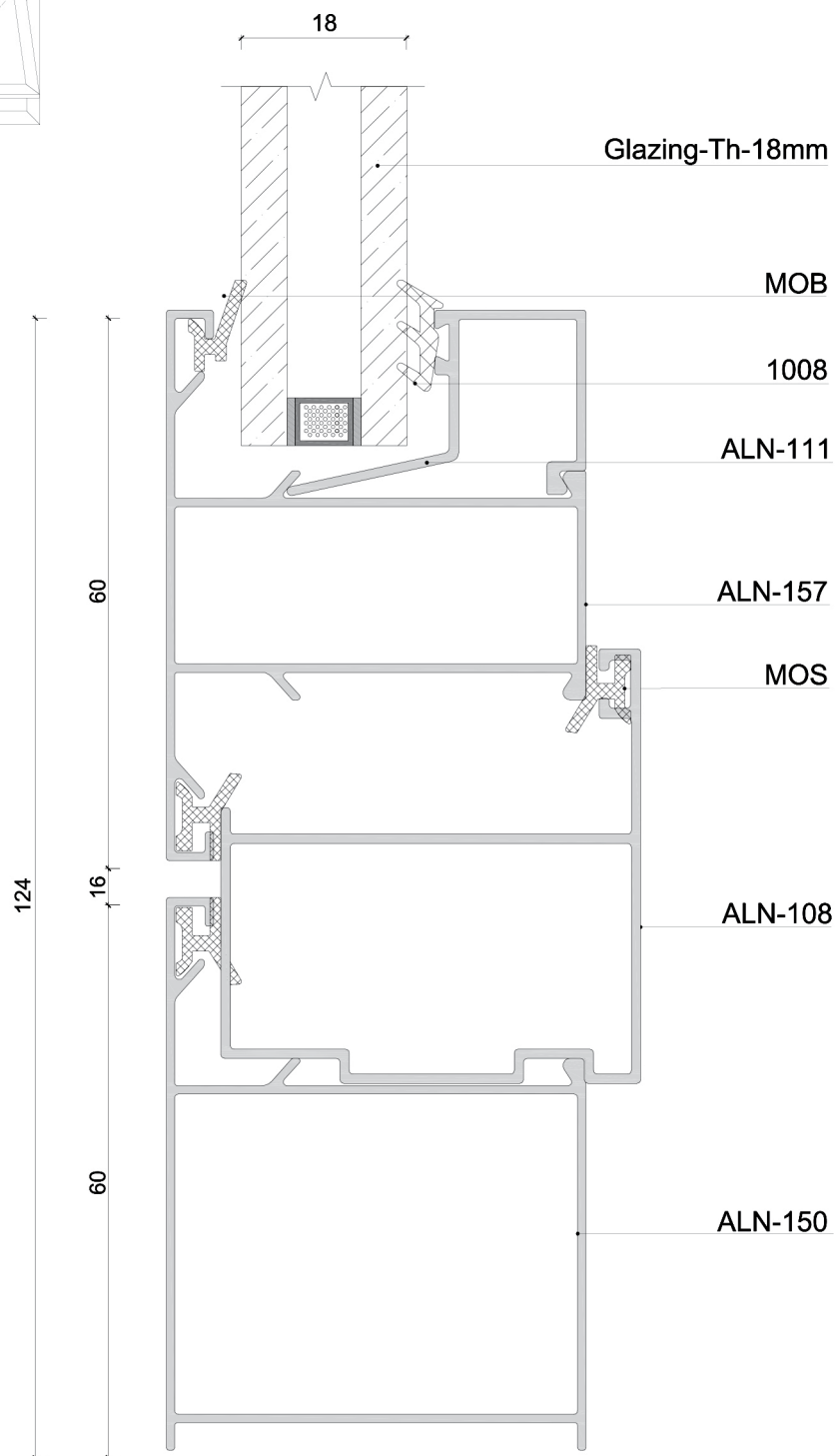
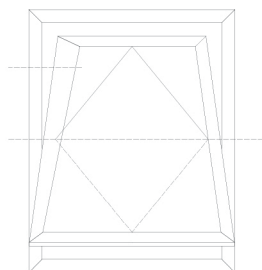


Light Hinged System 45 Series Fabrication Details



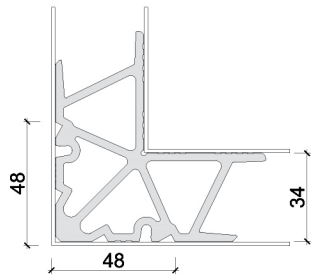
Light Hinged System 45 Series

Fabrication Details



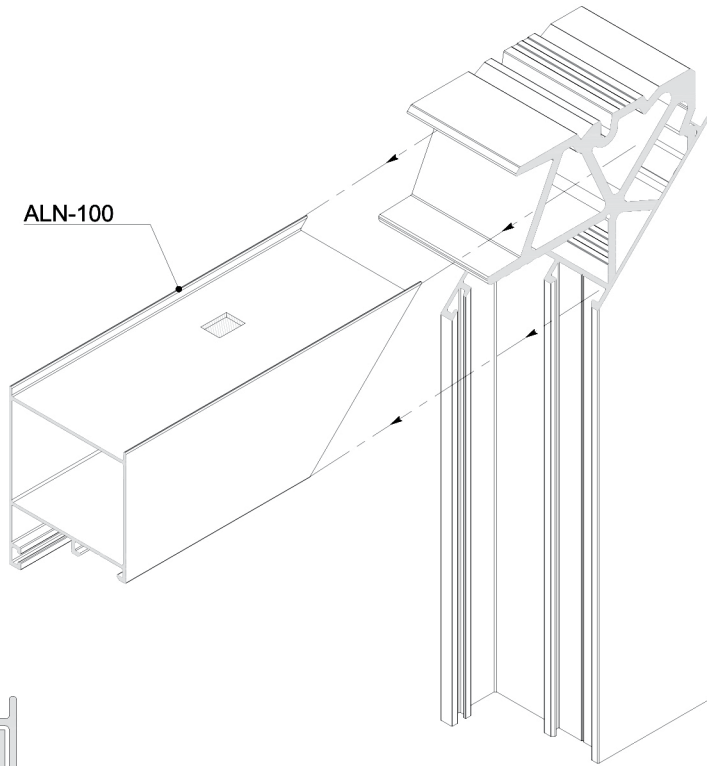


Light Hinged System 45 Series Assembly Drawing

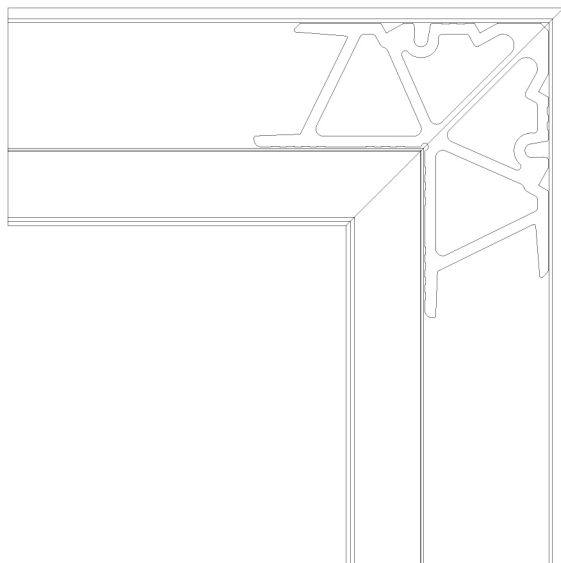
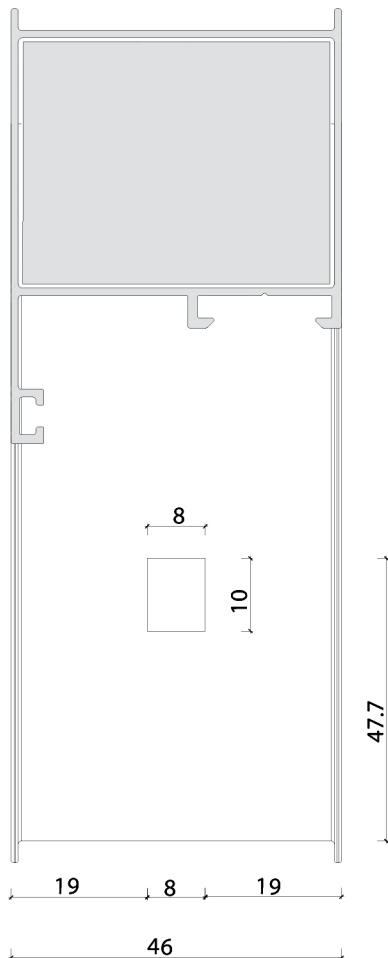


A: PCP-34 /43 mm

ALN-100

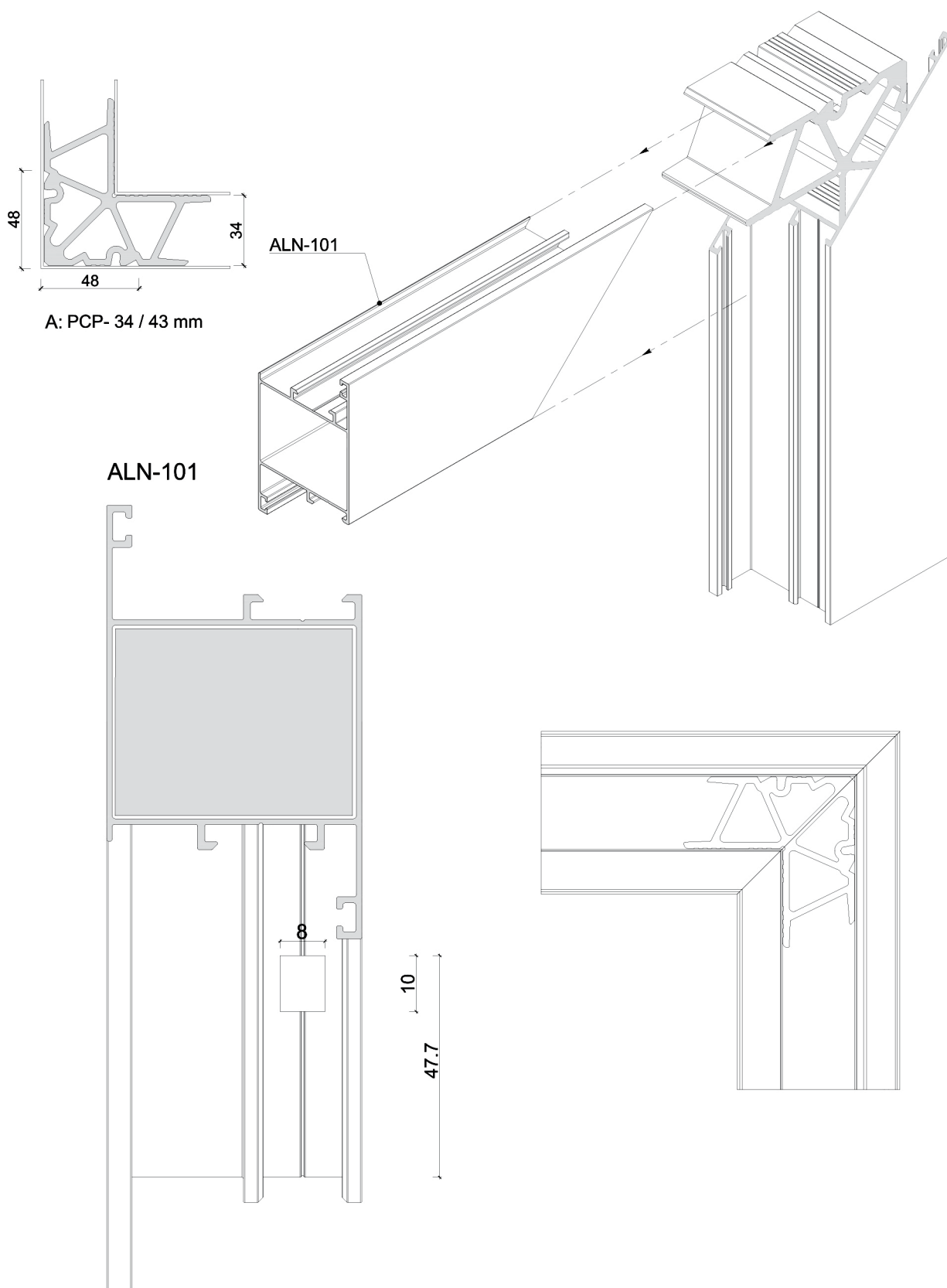


ALN-100



Light Hinged System 45 Series

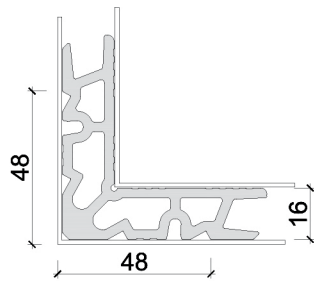
Assembly Drawing





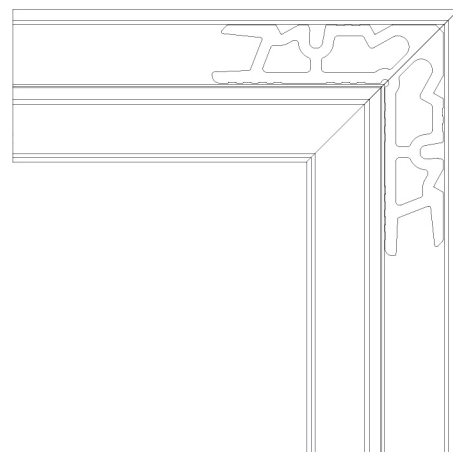
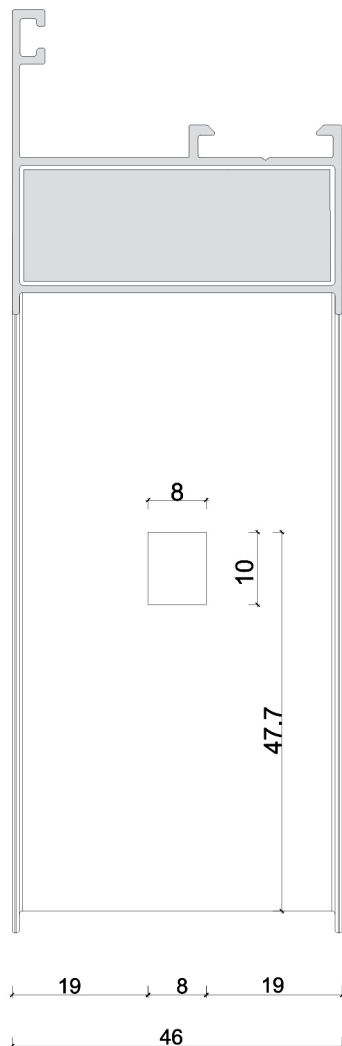
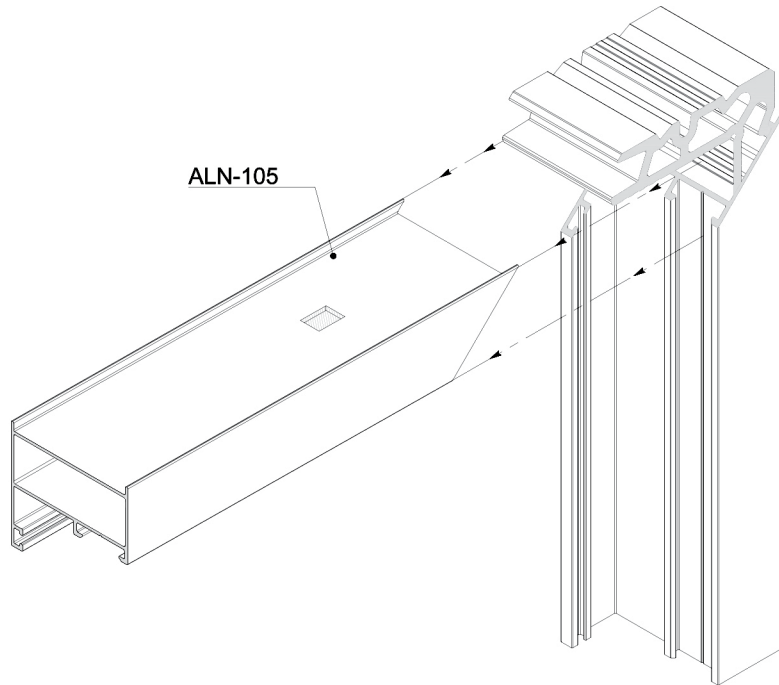
Light Hinged System 45 Series

Assembly Drawing



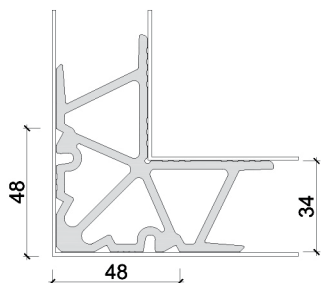
A: PCP- 16 / 43 mm

ALN-155

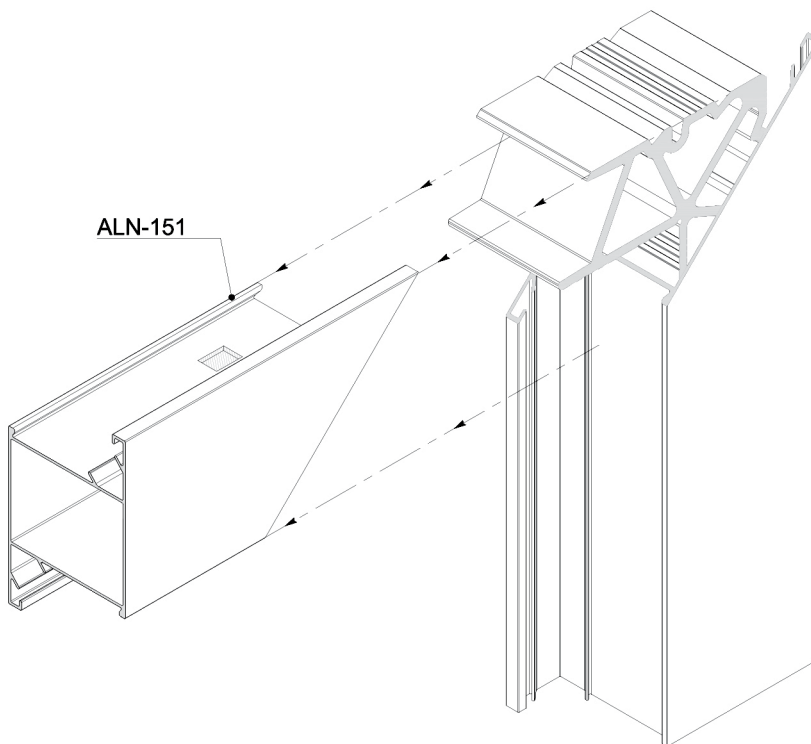


Light Hinged System 45 Series

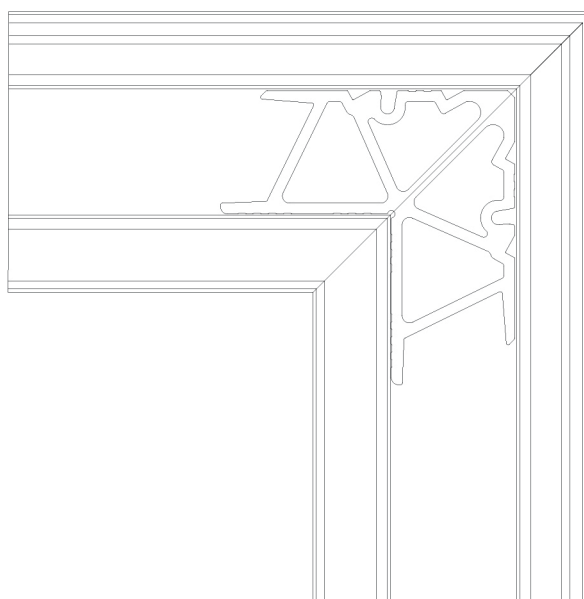
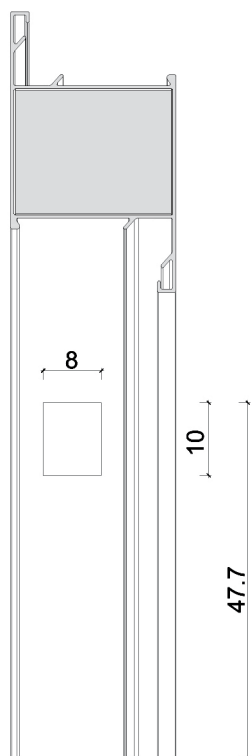
Assembly Drawing



A: PCP- 34 / 43 mm

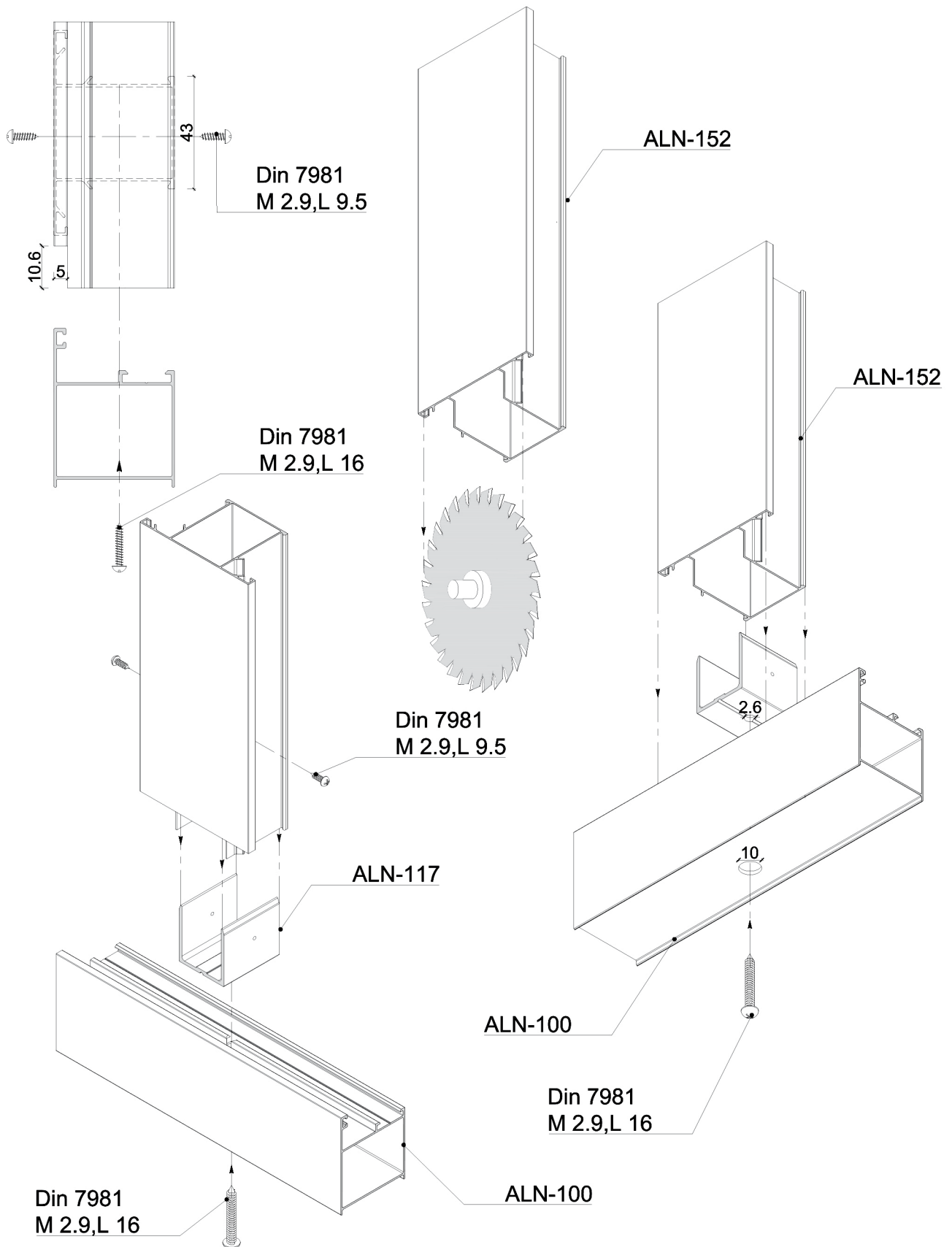


ALN-151



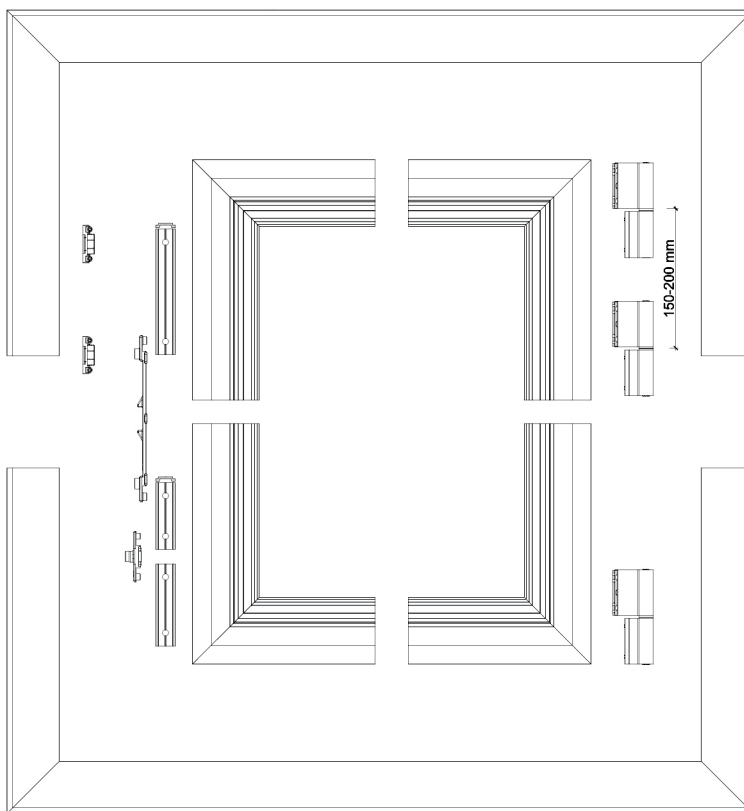
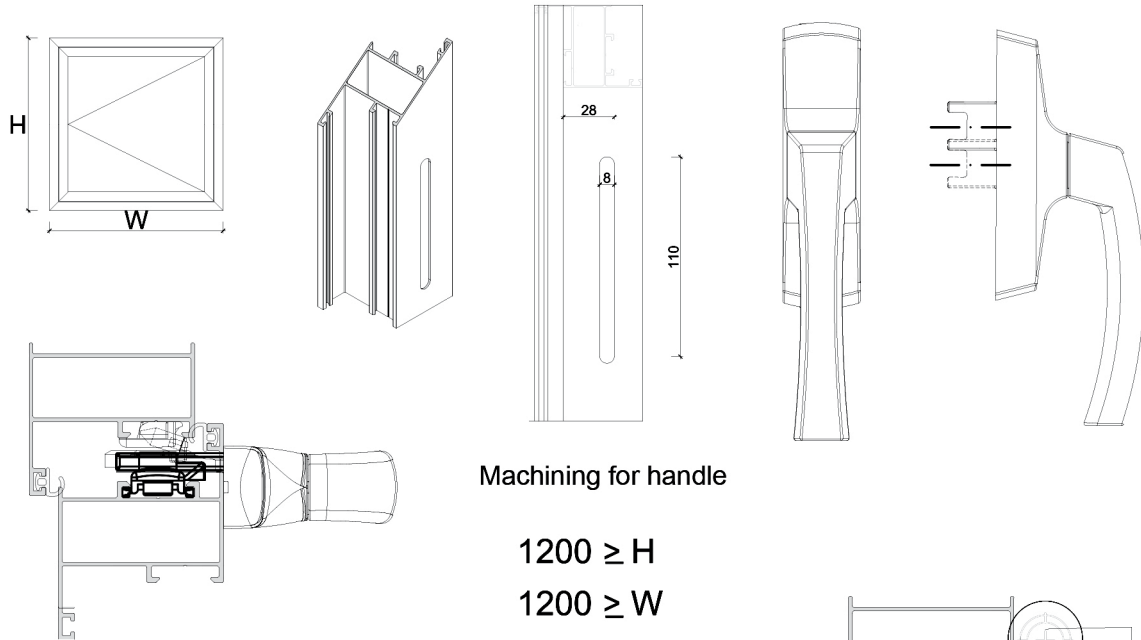


Light Hinged System 45 Series Assembly Drawing

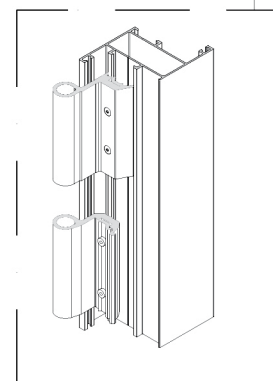


Light Hinged System 45 Series

Hardware Installation



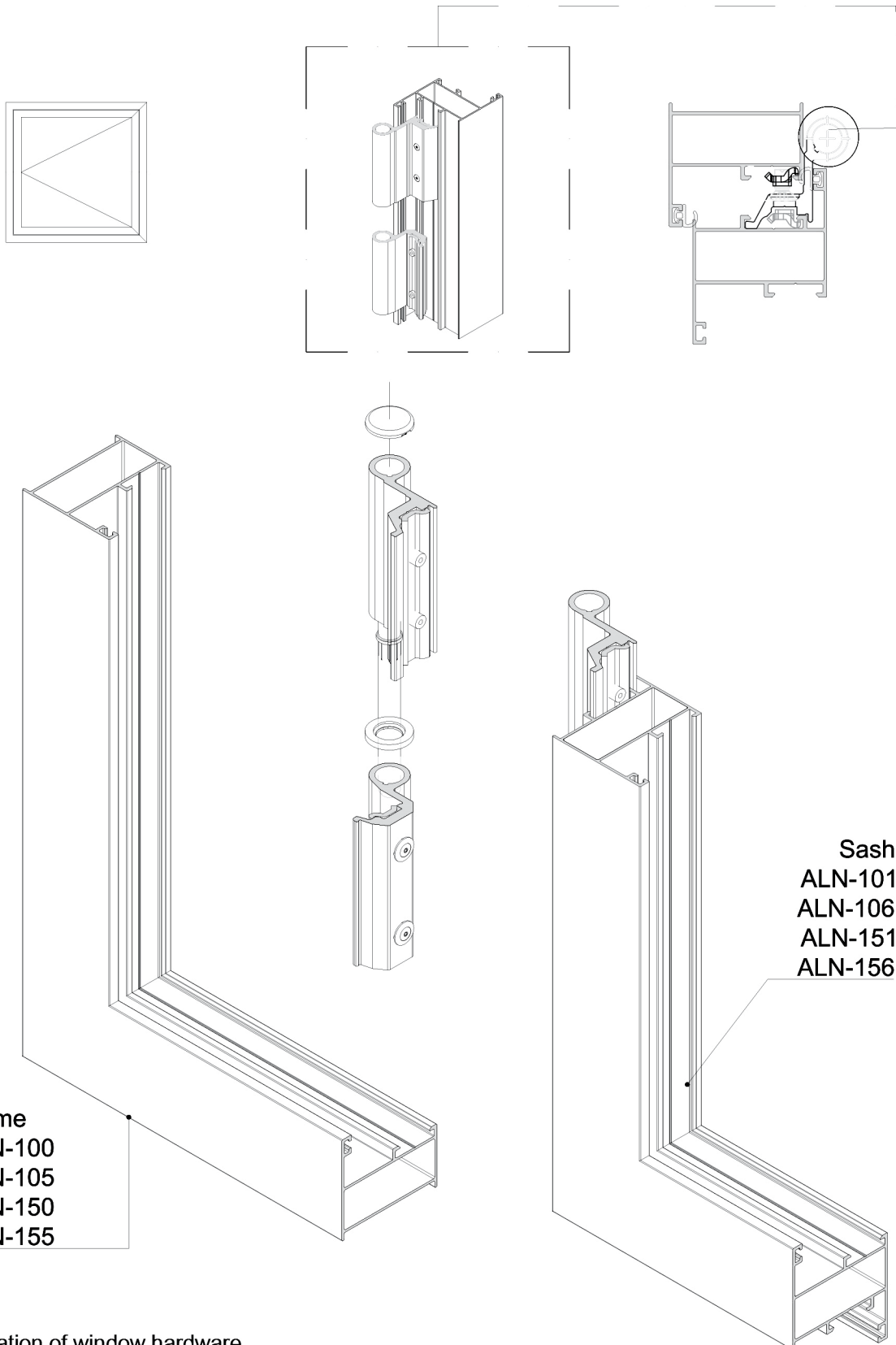
Installation of turn Hardware





Light Hinged System 45 Series

Hardware Installation



Installation of window hardware





Facade System

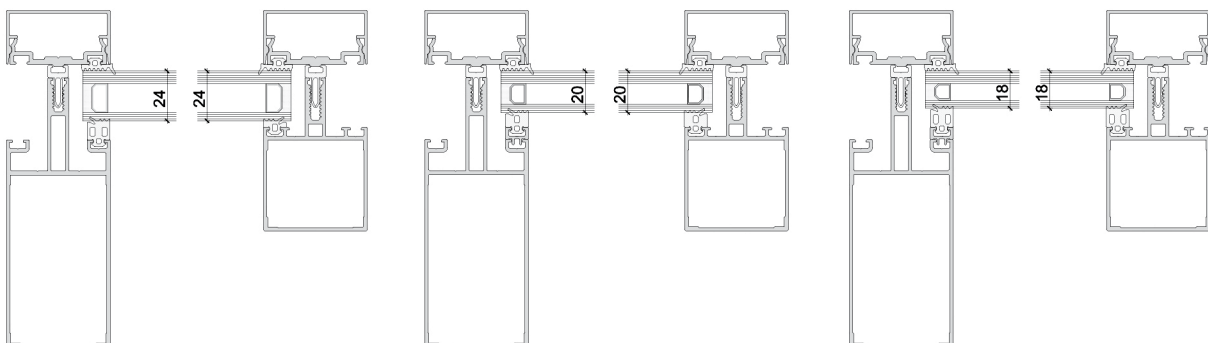




Faca Cap System

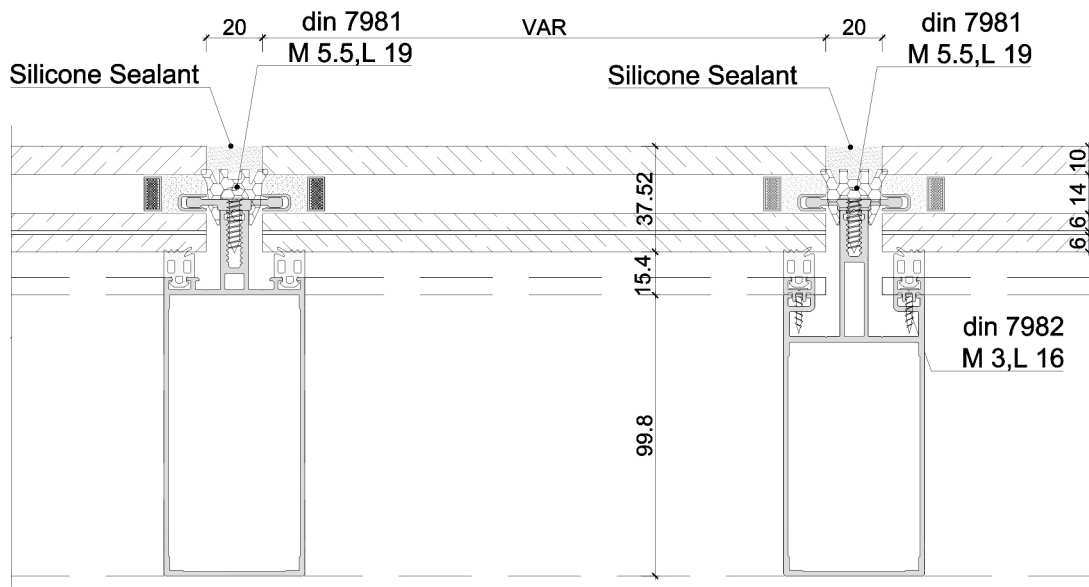
Glazing Table

Glazing Thickness	34 mm	30 mm	28 mm	26 mm	24 mm	20 mm	18 mm
Gasket Pressure Plate	 EP-001	 EP-001	 EP-001	 EP-001	 EP-001	 EP-001	 EP-001
Gasket Mullion	 EP-003	 EP-005	 EP-005	 EP-002	 EP-002	 EP-004	 EP-005
Gasket Trunsom	 EP-006	 EP-008	 EP-008	 EP-005	 EP-005	 EP-004	 EP-005
Distance Profile Mullion	 FCD-136	 FCD-137	 FCD-137	-	-	-	-
Distance Profile Trunsom	 FCD-136	 FCD-137	 FCD-137	-	-	 FCD-136	 FCD-136
Auxiliary Profile Mullion	 PA-906	 PA-906	 PA-905	 PA-900	 PA-900	 PA-900	 PA-900
Auxiliary Profile Trunsom	 PA-906	 PA-906	 PA-905	 PA-900	 PA-900	 PA-900	 PA-900
Leveling Plate Trunsom	 AK-P08	 AK-P08	 AK-P08	 AK-P04	 AK-P04	 AK-P04	 AK-P04
Glass support Trunsom	 FCD-145	 FCD-145	 FCD-145	 FCD-144	 FCD-144	 FCD-144	 FCD-144



SG System

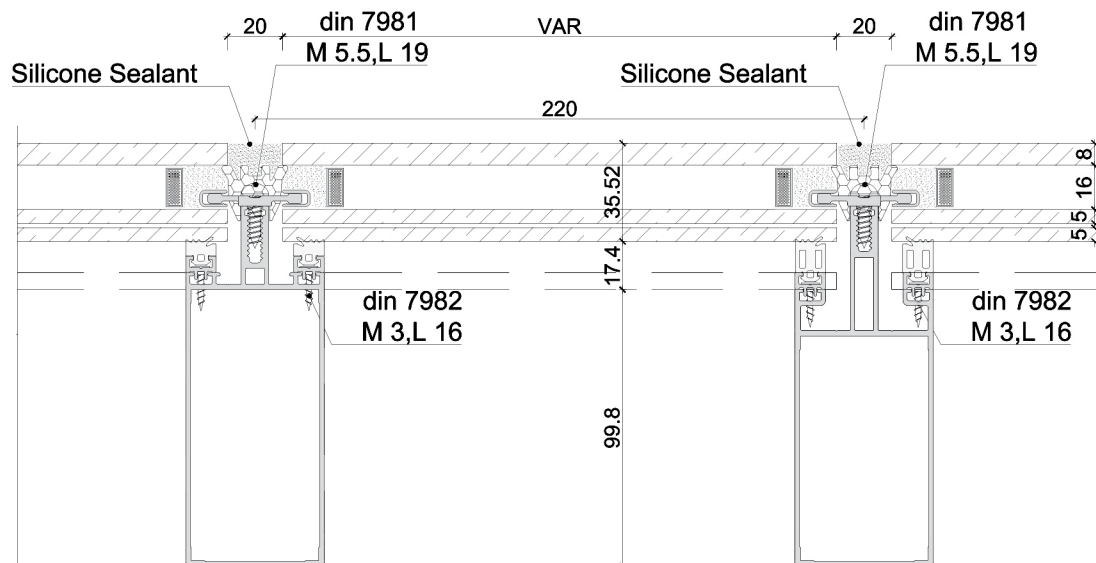
Glazing Table



Straight Detail - Glazing Thickness 38 mm		
IMAGES	DESCRIPTION	CODE
	Mullion	FCD-102
	Transom	FCD-107
	Clamp	FCD-140
	U-Channel	FCD-139
	Ledge Sealing	AK-825
	Distance Profile Mullion	FCD-136
	Glazing Gasket - Mullion	EP-005
	Glazing Gasket - Transom	EP-005



SG System Glazing Table

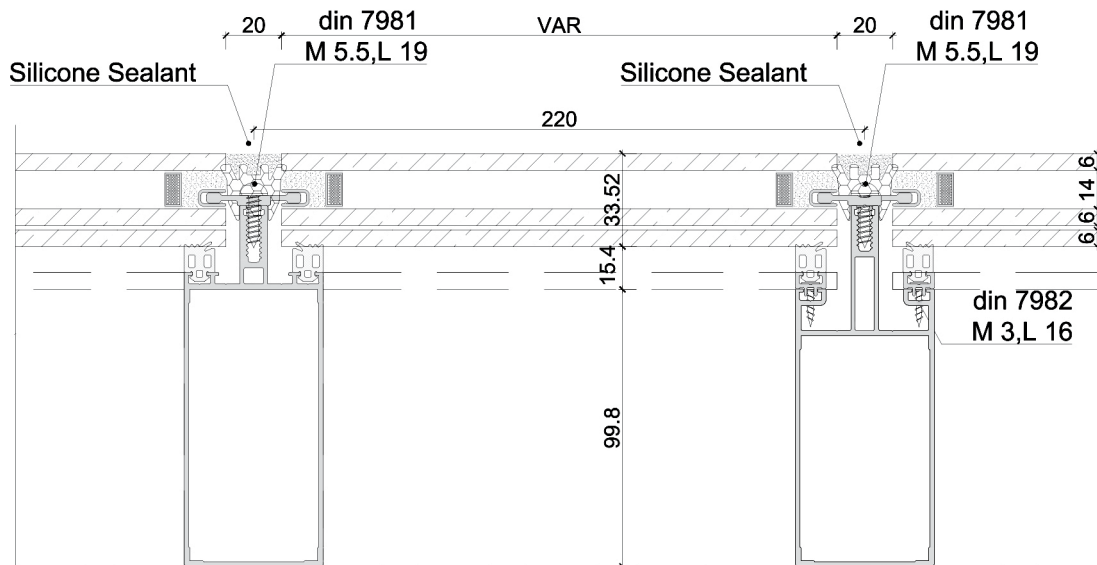


Straight Detail - Glazing Thickness 36 mm		
IMAGES	DESCRIPTION	CODE
	Mullion	FCD-102
	Transom	FCD-107
	Clamp	FCD-140
	U-Channel	FCD-139
	Ledge Sealing	AK-825
	Distance Profile Mullion	FCD-136
	Glazing Gasket - Mullion	EP-003
	Glazing Gasket - Transom	EP-006



SG System

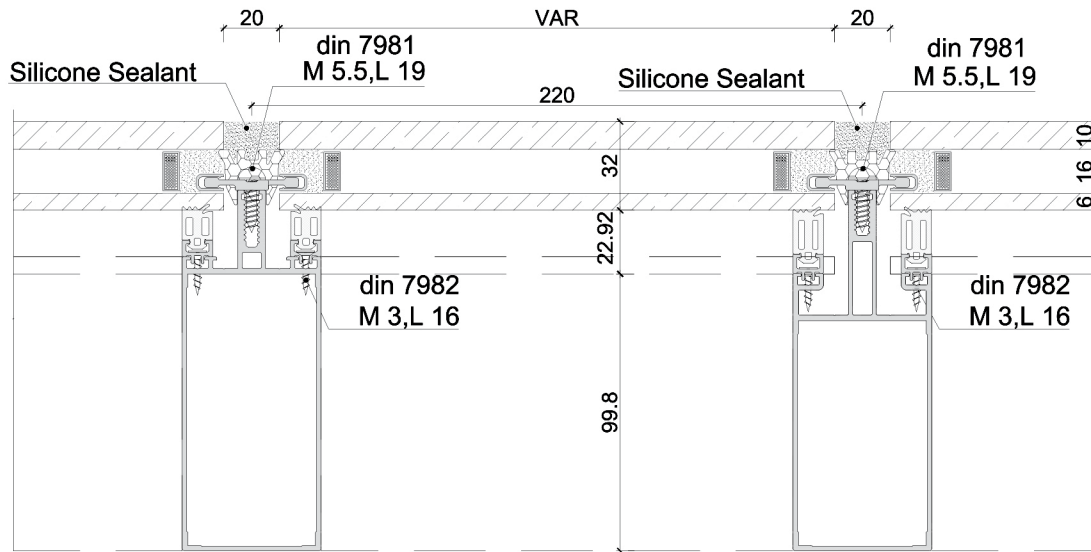
Glazing Table



Straight Detail - Glazing Thickness 34 mm		
IMAGES	DESCRIPTION	CODE
	Mullion	FCD-102
	Transom	FCD-107
	Clamp	FCD-140
	U-Channel	FCD-139
	Ledge Sealing	AK-825
	Distance Profile Mullion	FCD-136
	Glazing Gasket - Mullion	EP-005
	Glazing Gasket - Transom	EP-005



SG System Glazing Table

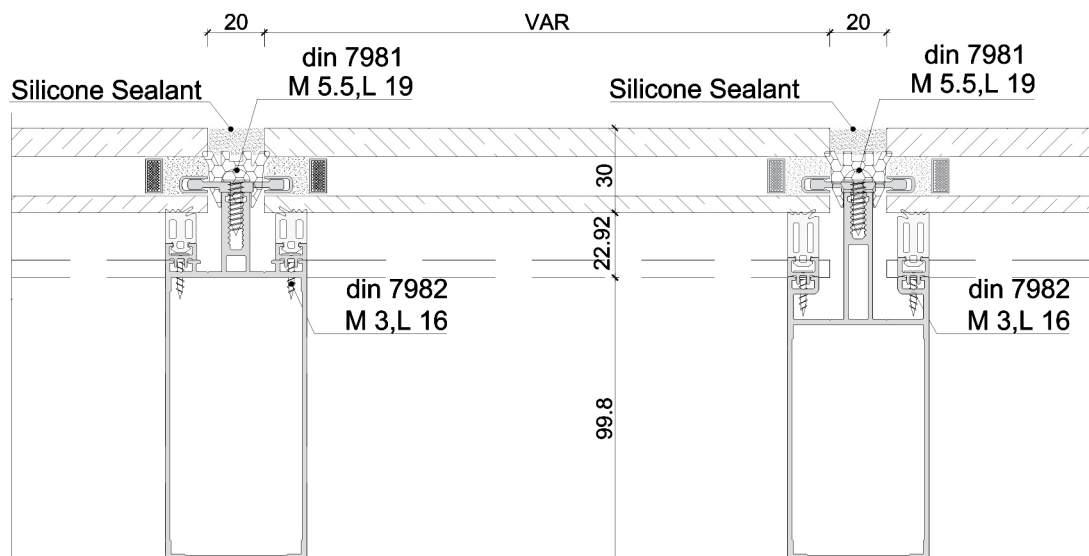


Straight Detail - Glazing Thickness 32 mm		
IMAGES	DESCRIPTION	CODE
	Mullion	FCD-102
	Transom	FCD-107
	Clamp	FCD-140
	U-Channel	FCD-139
	Ledge Sealing	AK-825
	Distance Profile Mullion	FCD-137
	Glazing Gasket - Mullion	EP-006
	Distance Profile Mullion	FCD-136
	Glazing Gasket - Transom	EP-008



SG System

Glazing Table

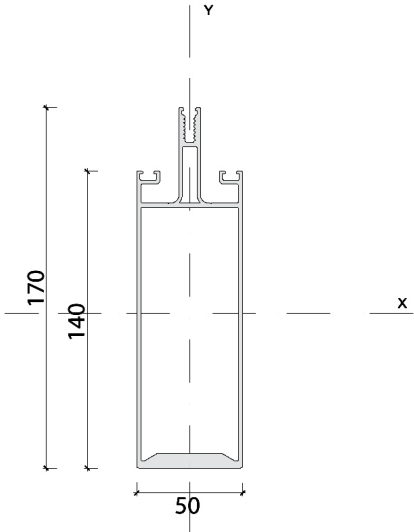
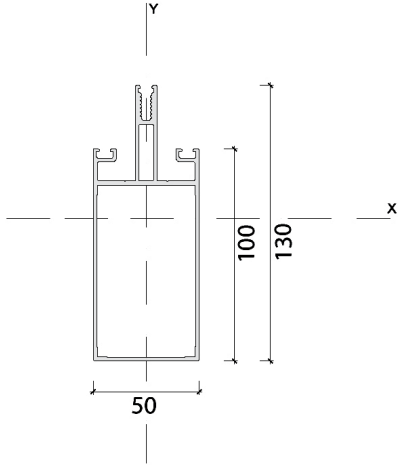
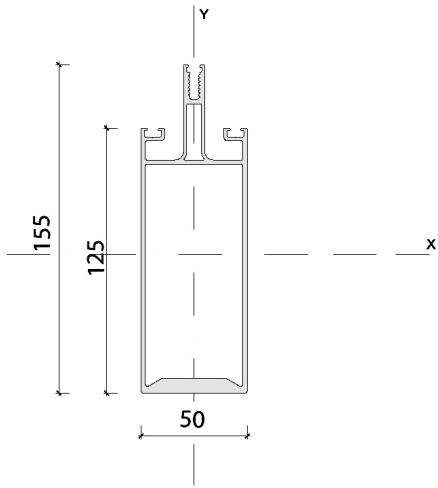
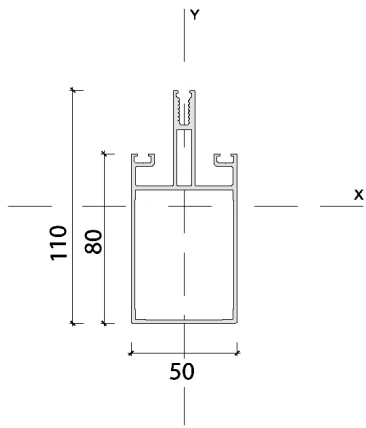


Straight Detail - Glazing Thickness 30 mm		
IMAGES	DESCRIPTION	CODE
	Mullion	FCD-102
	Transom	FCD-107
	Clamp	FCD-140
	U-Channel	FCD-139
	Ledge Sealing	AK-825
	Distance Profile Mullion	FCD-137
	Glazing Gasket - Mullion	EP-006
	Distance Profile Mullion	FCD-136
	Glazing Gasket - Transom	EP-008



Face cap, SG and Frameless Systems

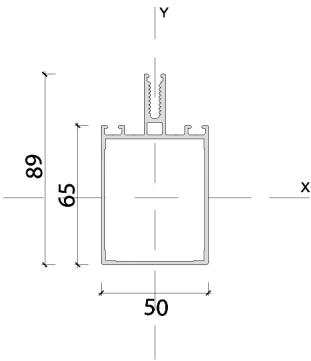
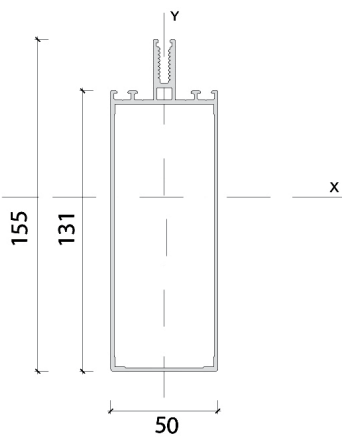
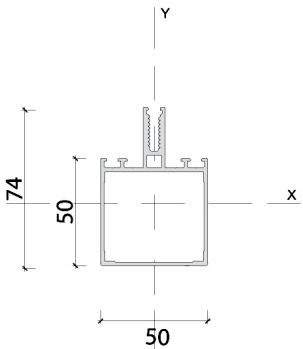
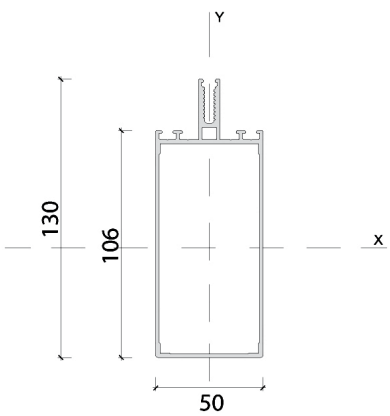
Profile & Accessories Information

			
$I_X: 385.32 \text{ cm}^4$	$I_Y: 39.79 \text{ cm}^4$	$I_X: 115.99 \text{ cm}^4$	$I_Y: 24.73 \text{ cm}^4$
Mullion: FCD-100	Weight: 3156 gr/m	Mullion: FCD-102	Weight: 1998 gr/m
			
$I_X: 299.75 \text{ cm}^4$	$I_Y: 36.33 \text{ cm}^4$	$I_X: 71.96 \text{ cm}^4$	$I_Y: 20.98 \text{ cm}^4$
Mullion: FCD-101	Weight: 2994 gr/m	Mullion: FCD-103	Weight: 1825 gr/m



Face cap, SG and Frameless Systems

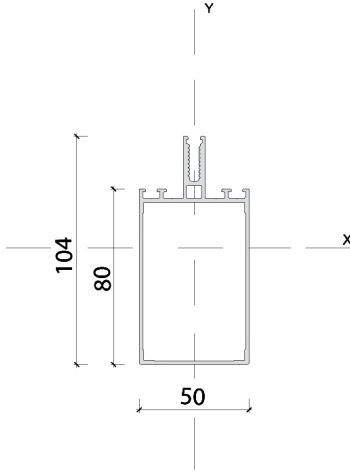
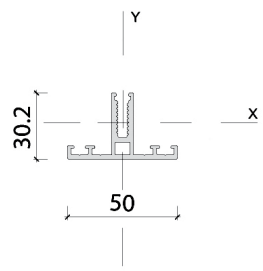
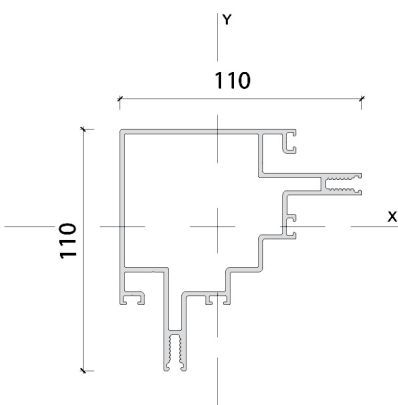
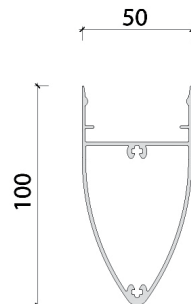
Profile & Accessories Information

			
I_X : 42.61 cm ⁴	I_Y : 16.52 cm ⁴	I_X : 197.87 cm ⁴	I_Y : 28.89 cm ⁴
Transom: FCD-104	Weight: 1480 gr/m	Transom: FCD-106	Weight: 2049 gr/m
			
I_X : 25.19 cm ⁴	I_Y : 13.70 cm ⁴	I_X : 122.36 cm ⁴	I_Y : 24.20 cm ⁴
Transom: FCD-105	Weight: 1350 gr/m	Transom: FCD-107	Weight: 1833 gr/m



Face cap, SG and Frameless Systems

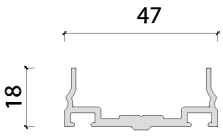
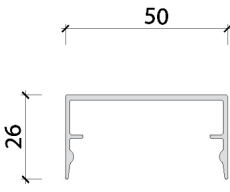
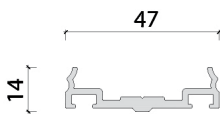
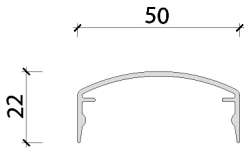
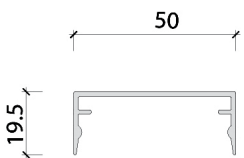
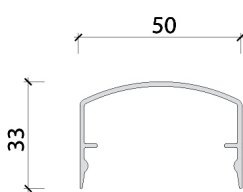
Profile & Accessories Information

			
I_x : 65.99 cm ⁴	I_y : 19.33 cm ⁴	I_x : 2.19 cm ⁴	I_y : 3.61 cm ⁴
Transom: FCD-108	Weight: 1609 gr/m	Transom: FCD-135	Weight: 737 gr/m
			
I_x : 108.53 cm ⁴	I_y : 108.55 cm ⁴		
Corner Profile : FCD-134	Weight: 2773 gr/m	Cover Cap : FCD-109	Weight : 1307 gr/m



Face cap, SG and Frameless Systems

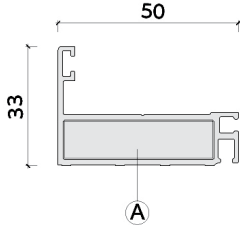
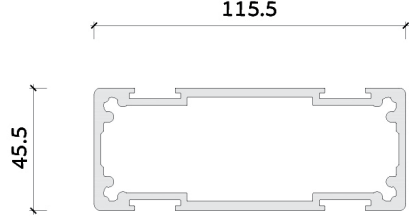
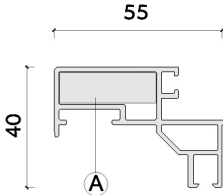
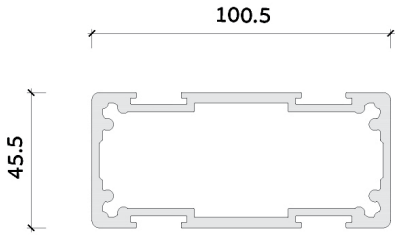
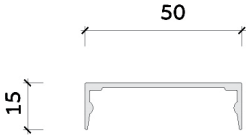
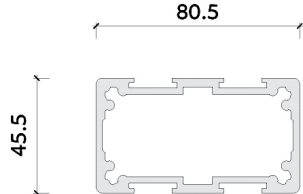
Profile & Accessories Information

			
Pressure Plat : FCD-110	Weight : 516 gr/m	Cover Cap : FCD-113	Weight : 421 gr/m
			
Pressure Plat : FCD-111	Weight : 470 gr/m	Cover Cap : FCD-114	Weight : 340 gr/m
			
Cover Cap : FCD-112	Weight : 370 gr/m	Cover Cap : FCD-115	Weight : 421 gr/m



Face cap, SG and Frameless Systems

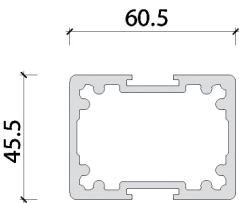
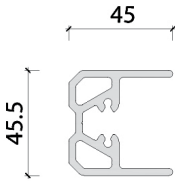
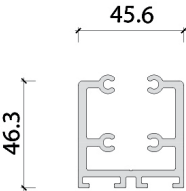
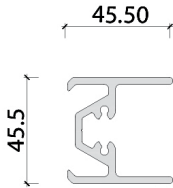
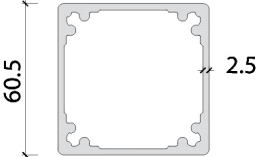
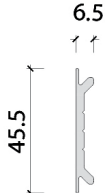
Profile & Accessories Information

			
Ventilation: FCD-116	A: PCP-10/40.7 mm 		
Weight : 624 gr/m		Expansion Joint Profile : FCD-121	Weight : 3119 gr/m
			
Ventilation: FCD-117	A: PCP-10/31.2 mm 		
Weight : 880 gr/m		Expansion Joint Profile : FCD-122	Weight : 2835 gr/m
			
Cover Cap : FCD-118	Weight : 329 gr/m	Expansion Joint Profile : FCD-123	Weight : 2457 gr/m



Face cap, SG and Frameless Systems

Profile & Accessories Information

			
Expansion Joint Profile: FCD-124	Weight : 2130 gr/m	Expansion Joint Profile: FCD 127	Weight: 1590 gr/m
			
Expansion Joint Profile : FCD-125	Weight : 1785 gr/m	Expansion Joint Profile: FCD 128	Weight: 1393 gr/m
			
Expansion Joint Profile : FCD-126	Weight : 2165 gr/m	Connector Real Profile: FCD 129	Weight: 378 gr/m



Face cap, SG and Frameless Systems

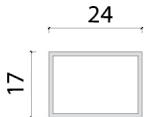
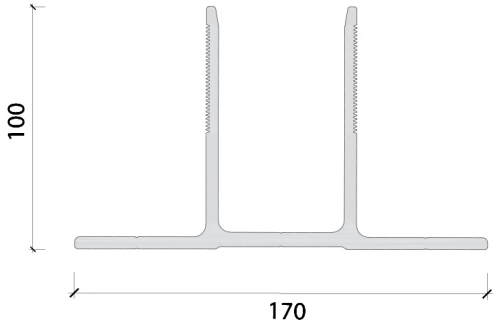
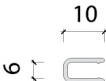
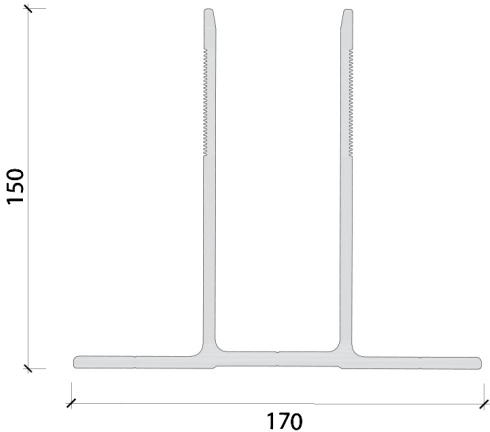
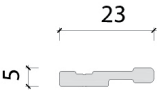
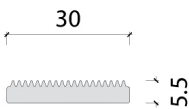
Profile & Accessories Information

Angular Expansion Joint Profile: FCD-130	Weight : 1670 gr/m	Cover Cap : FCD-133	Weight : 1671 gr/m
Cover Cap : FCD-131	Weight : 1264 gr/m	Adaptor: FCD-136	Weight: 97 gr/m
Cover Cap : FCD-132	Weight : 1636 gr/m	Adaptor: FCD-137	Weight: 104 gr/m



Face cap, SG and Frameless Systems

Profile & Accessories Information

			
Profile : FCD-138	Weight : 211 gr/m	Profile : FCD-141	Weight : 4860 gr/m
			
U-Channel : FCD-139	Weight : 62 gr/m	Profile : FCD-142	Weight : 6210 gr/m
			
Clamp: FCD-140	Weight : 191 gr/m	Profile : FCD-143	Weight : 378



Face cap, SG and Frameless Systems

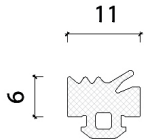
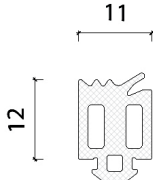
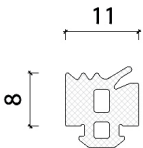
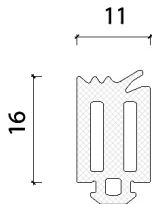
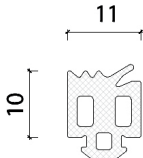
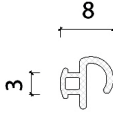
Profile & Accessories Information

Glass support: FCD-144	Weight: 232 gr/m	Corner: PCP-10	Weight : 2454 gr/m
Glass support: FCD-145	Weight: 292 gr/m	Gasket: EP-001	Weight : 66 gr/m
Profile: FCD-146	Weight : 1336 gr/m	Gasket: EP-002	Weight: 60 gr/m



Face cap, SG and Frameless Systems

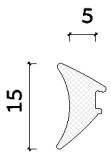
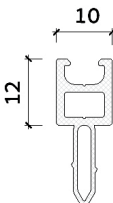
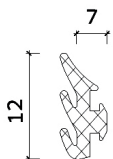
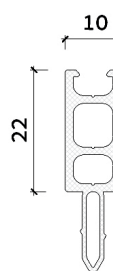
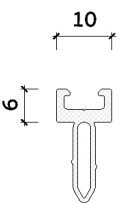
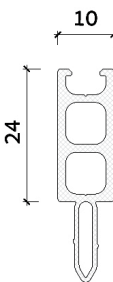
Profile & Accessories Information

			
Gasket: EP-003	Weight: 91 gr/m	Gasket: EP-006	Weight: 137gr/m
			
Gasket: EP-004	Weight: 109 gr/m	Gasket: EP-008	Weight: 153 gr/m
			
Gasket: EP-005	Weight: 121 gr/m	Gasket: EP-018	Weight : 27 gr/m



Face cap, SG and Frameless Systems

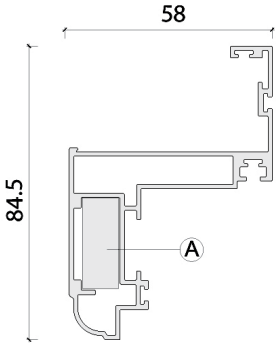
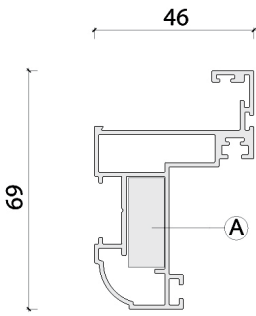
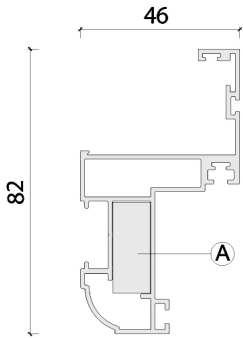
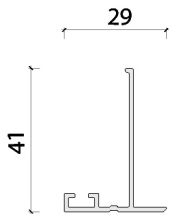
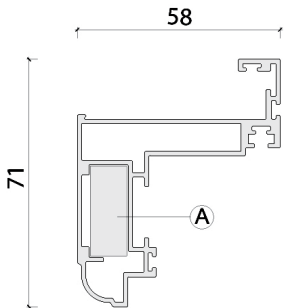
Profile & Accessories Information

			
Gasket: EP-016	Weight : 77 gr/m	Polyamide: PA-902	Weight: 105gr/m
			
Gasket: MO68	Weight: 46 gr/m	Polyamide : PA-905	Weight: 164 gr/m
			
Polyamide: PA-900	Weight: 78 gr/m	Polyamide: PA-906	Weight: 172 gr/m



Face cap, SG and Frameless Systems

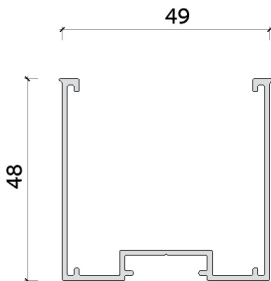
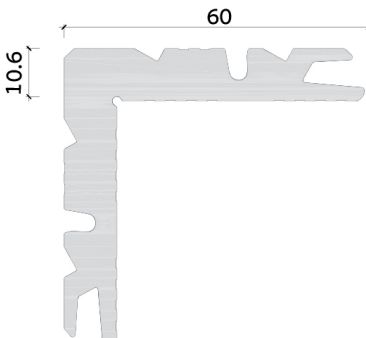
Profile & Accessories Information

			
Profile : FCD-150	A: PCP-11/25.7 mm 	Profile : FCD-153	A: PCP-11/25.7 mm 
Weight : 1156 gr/m		Weight : 969 gr/m	
			
Profile : FCD-151	A: PCP-11/25.7 mm 	Profile : FCD-154	Weight : 265 gr/m
Weight : 1021 gr/m			
			
Profile : FCD-152	A: PCP-11/25.7 mm 	Profile : FCD-155	Weight : 86 gr/m
Weight : 1102 gr/m			



Face cap, SG and Frameless Systems

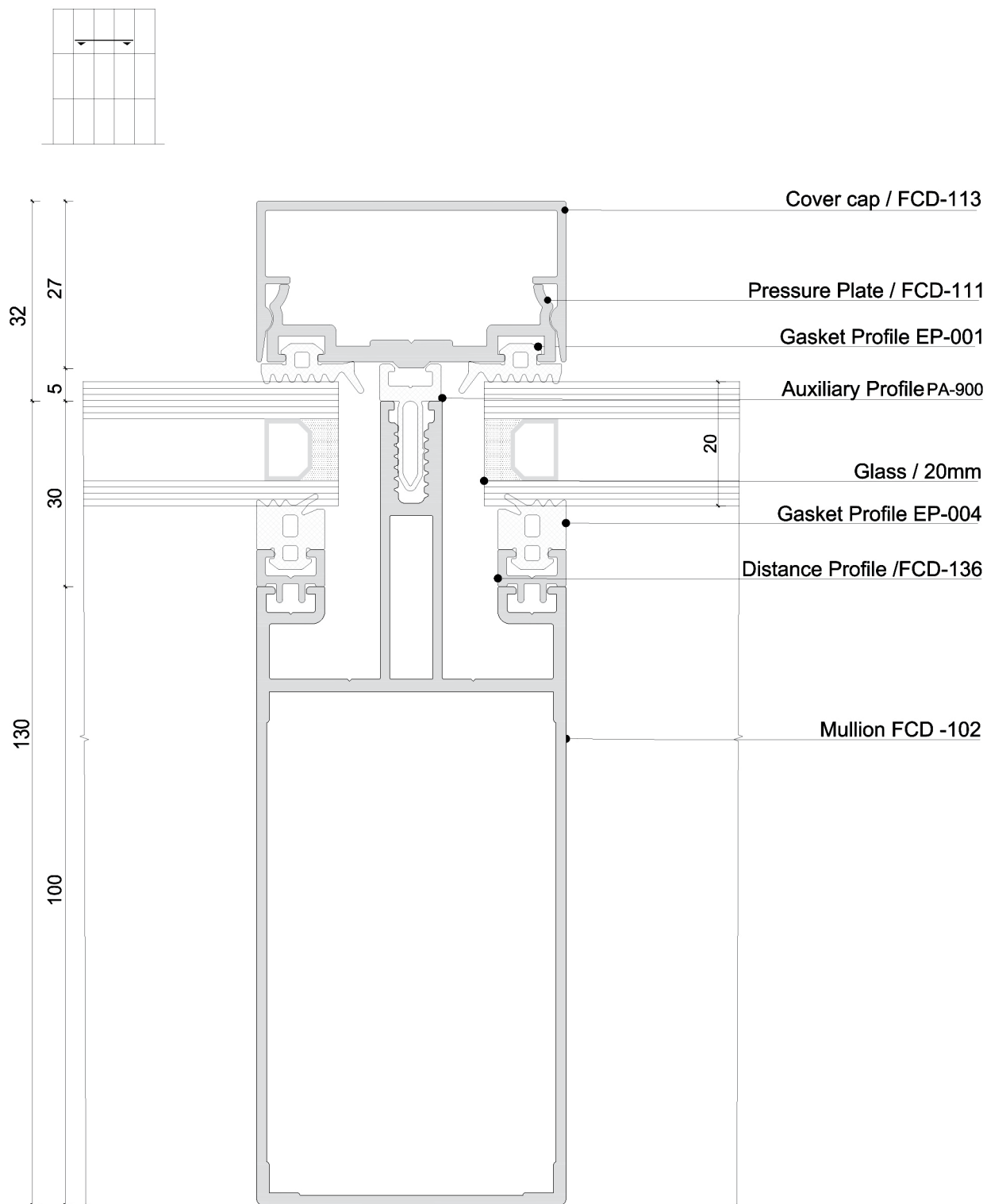
Profile & Accessories Information

			
Profile : FCD-156	Weight : 556 gr/m	Corner Joint: PCP11	Weight: 2549 gr/m
			
Profile : FCD-157	Weight : 265 gr/m	Leveling Plat : AK-P04	Weight : -
			
Profile : ALN-331	Weight : 141 gr/m	Leveling Plat : AK-P08	Weight : -



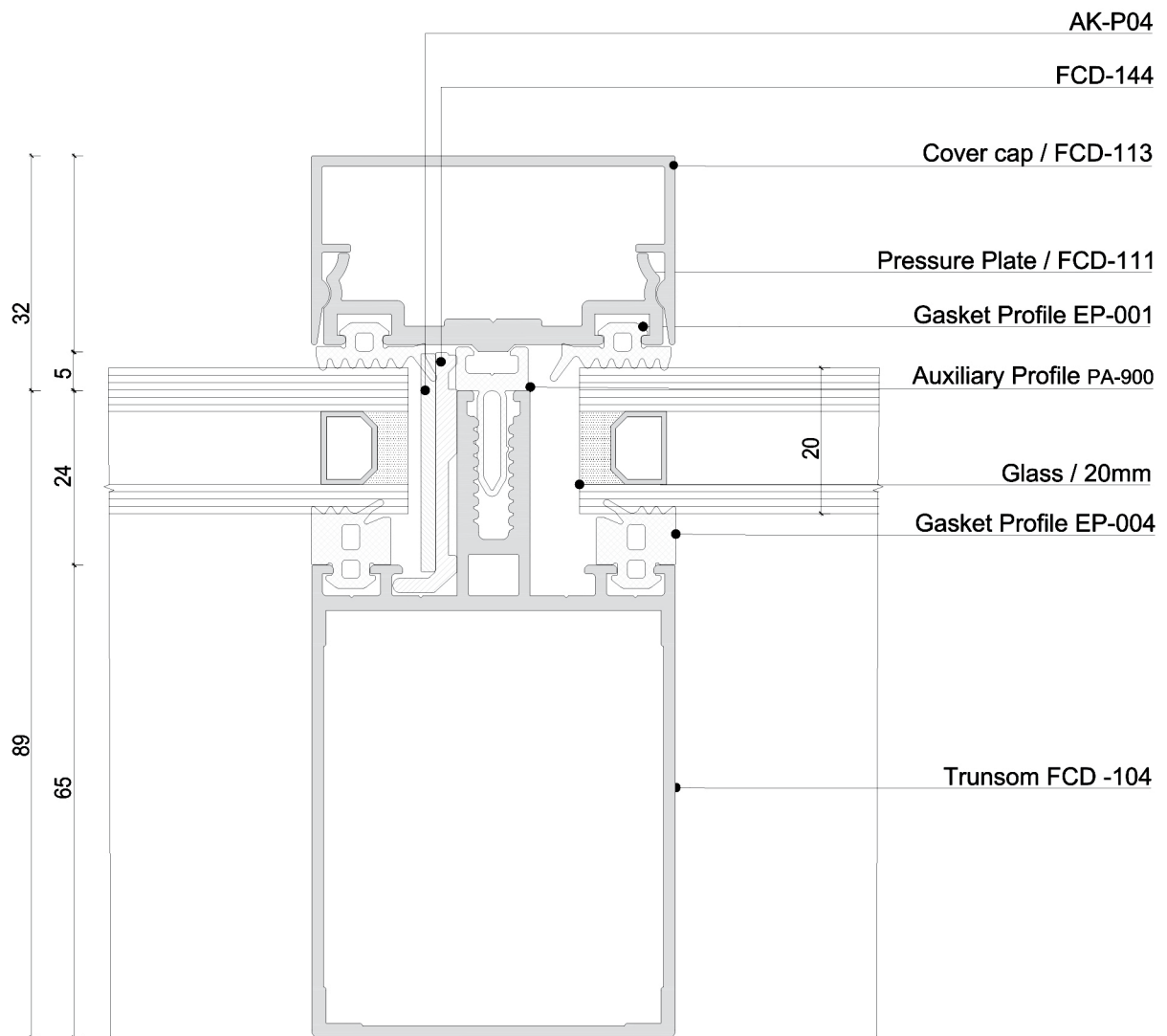
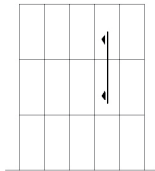
Face cap, SG and Frameless Systems

Fabrication Details



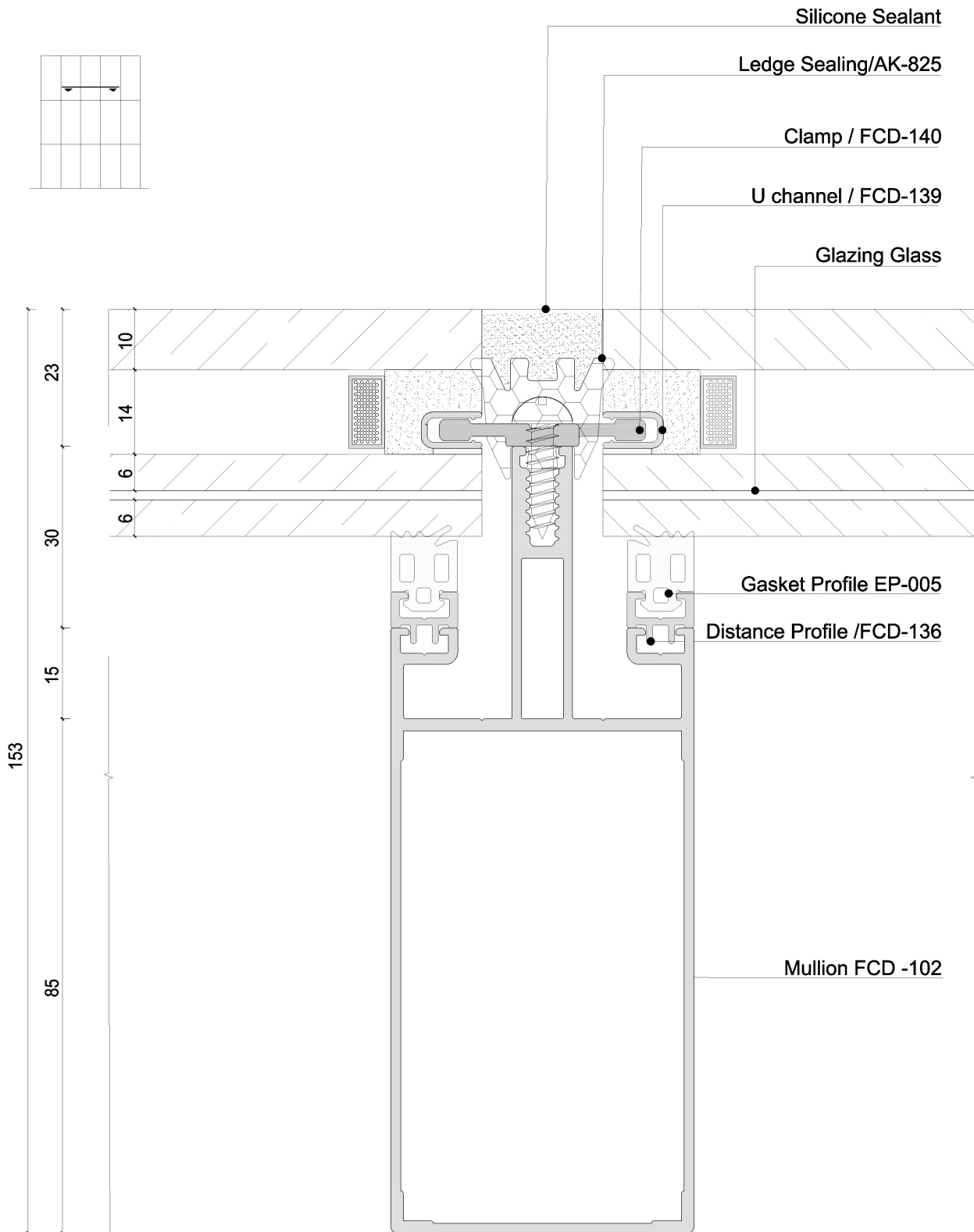


Face cap, SG and Frameless Systems Fabrication Details



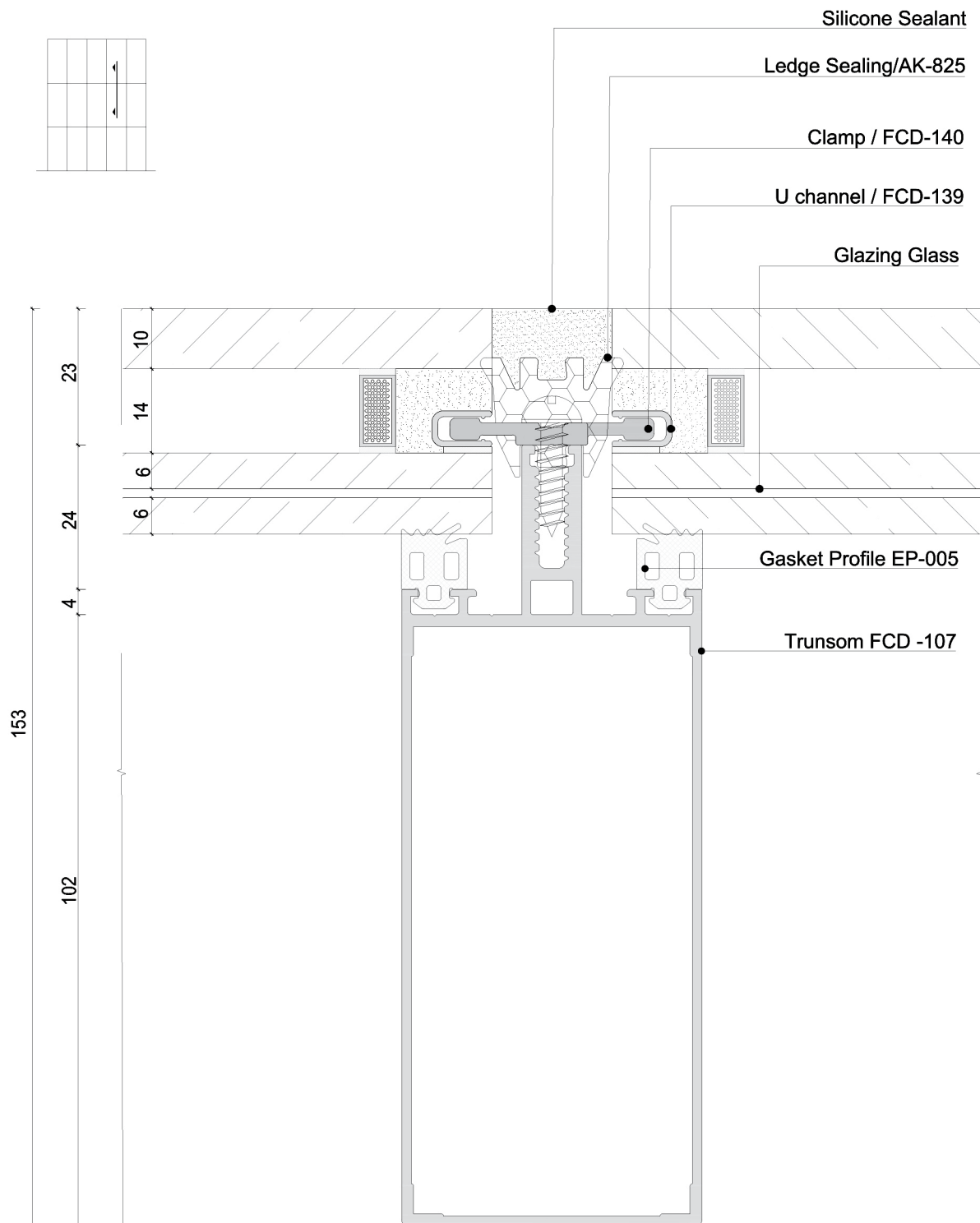


Face cap, SG and Frameless Systems Fabrication Details



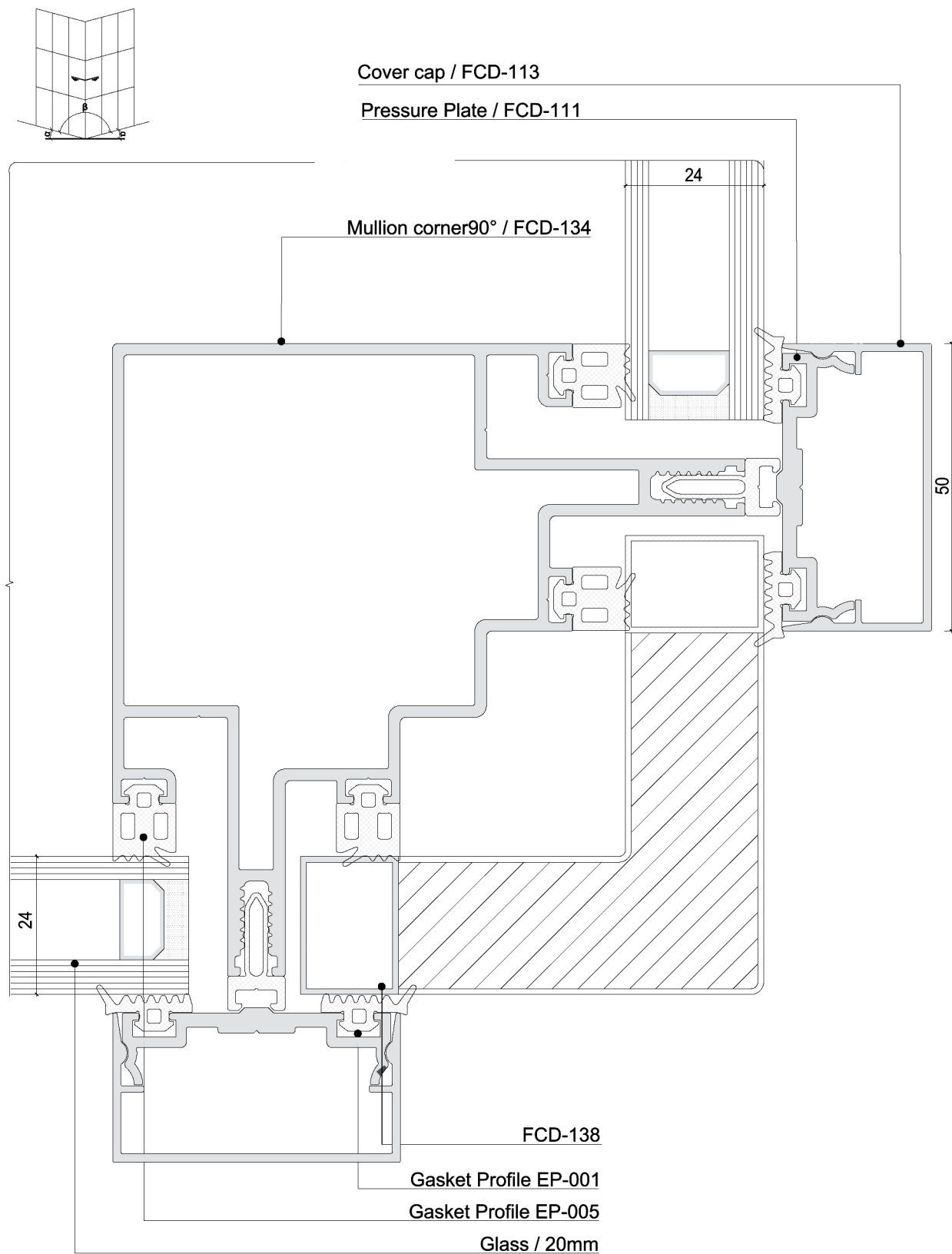


Face cap, SG and Frameless Systems Fabrication Details



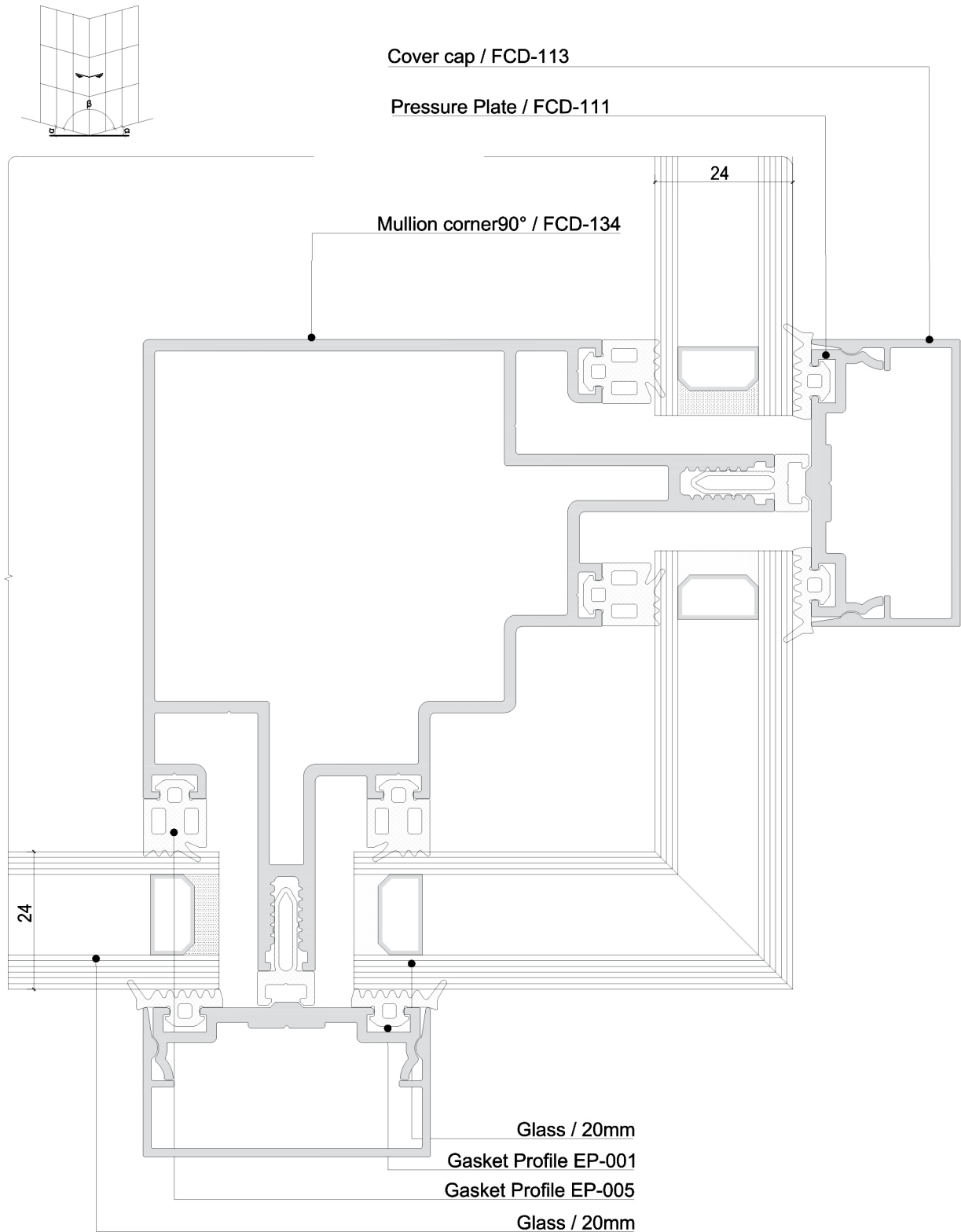
Face cap, SG and Frameless Systems

Fabrication Details



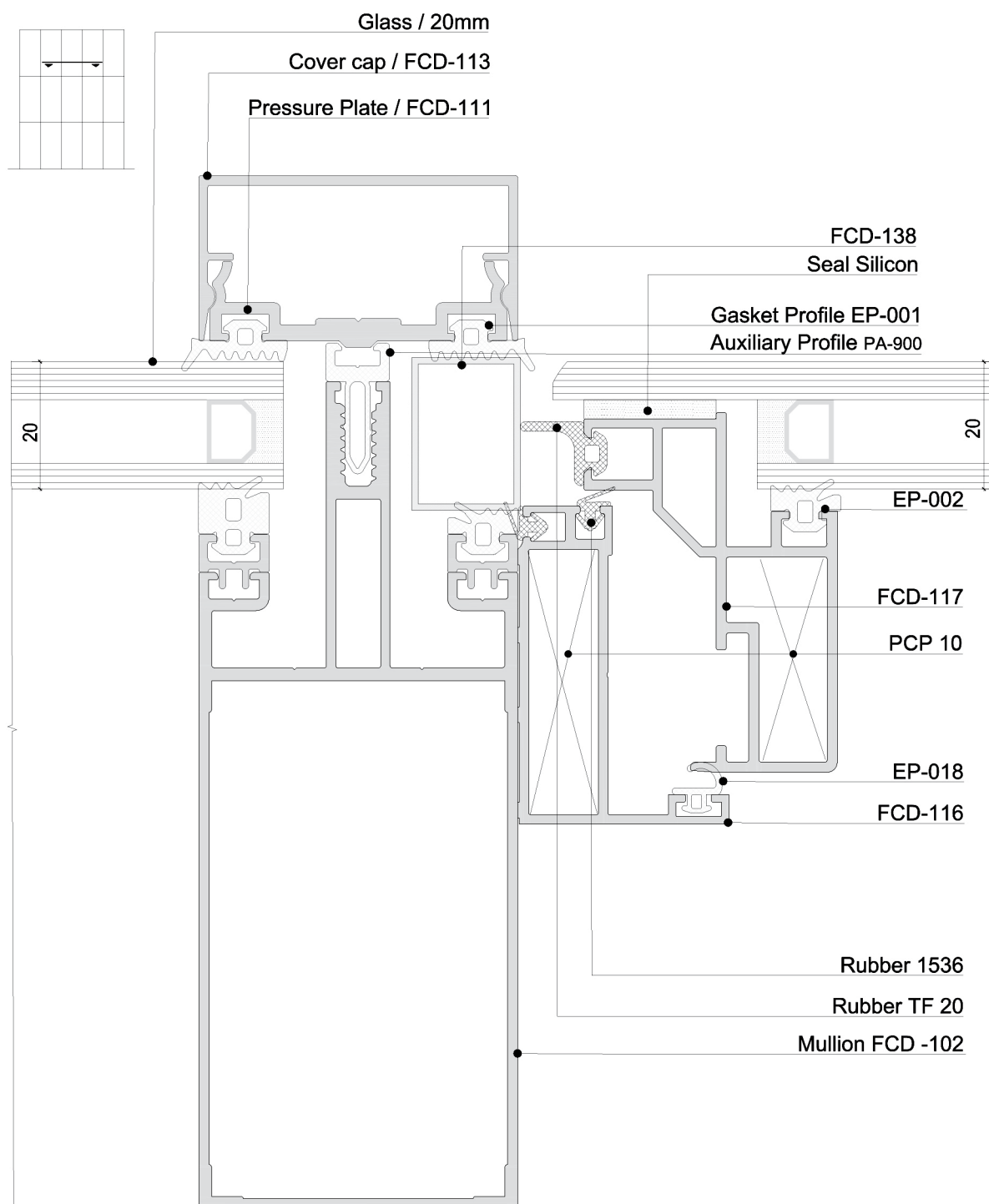


Face cap, SG and Frameless Systems Fabrication Details



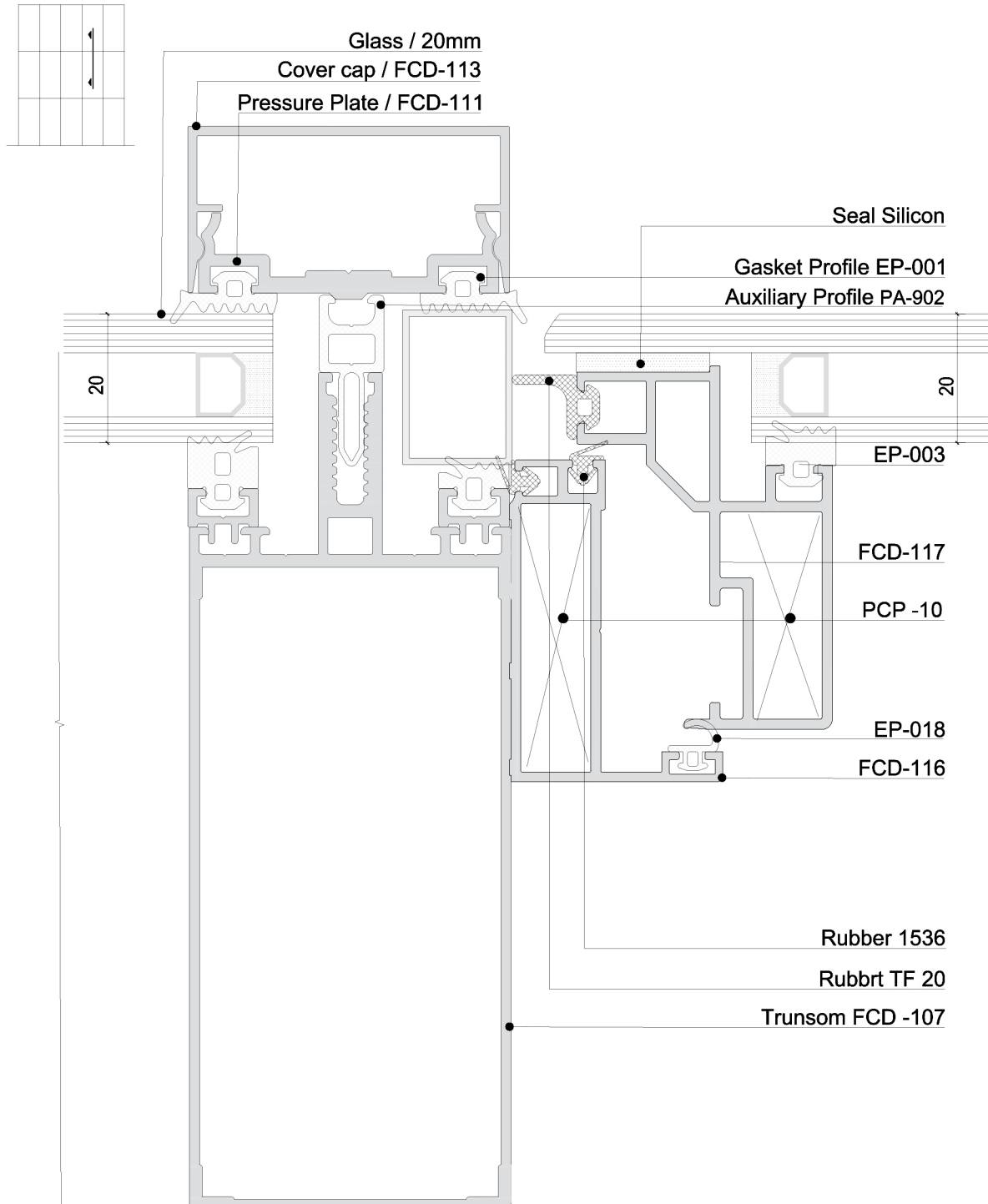
Face cap, SG and Frameless Systems

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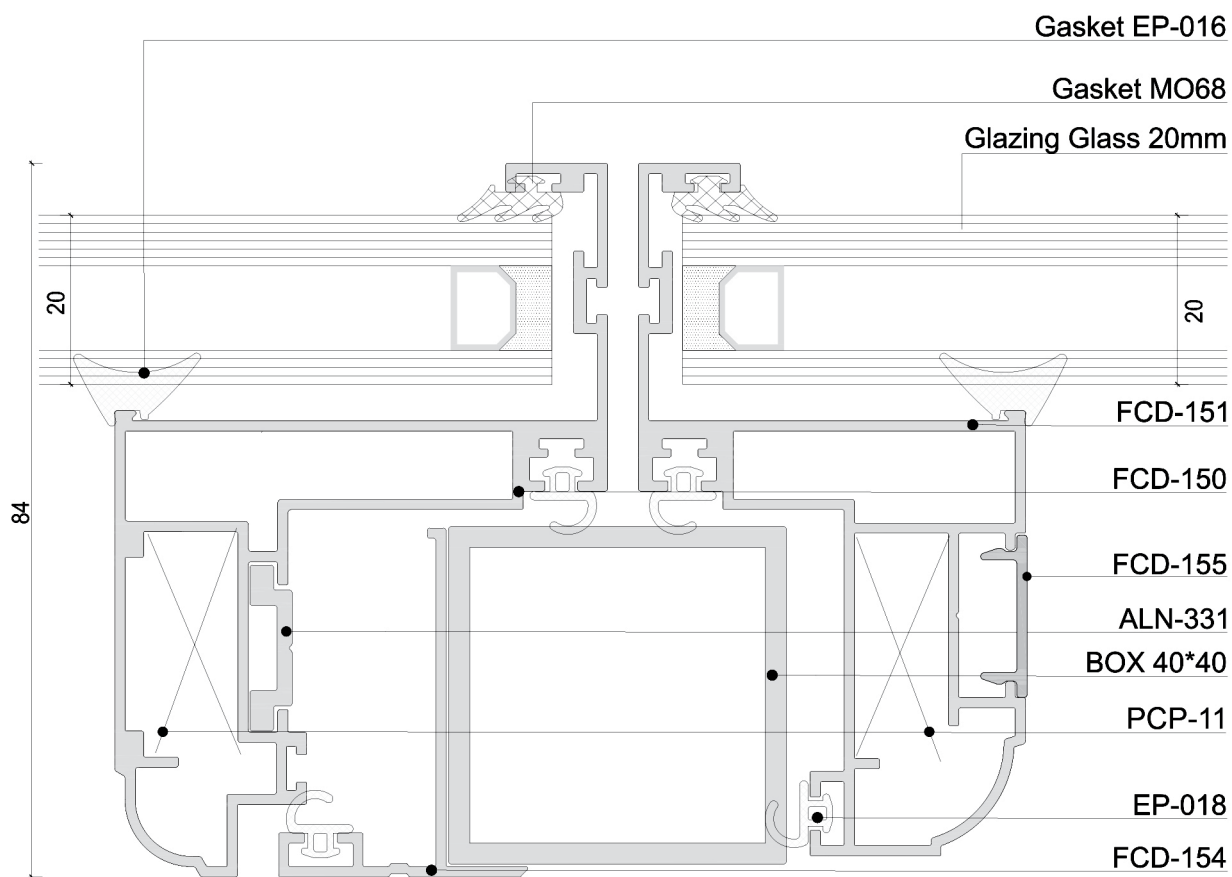


Face cap, SG and Frameless Systems Fabrication Details



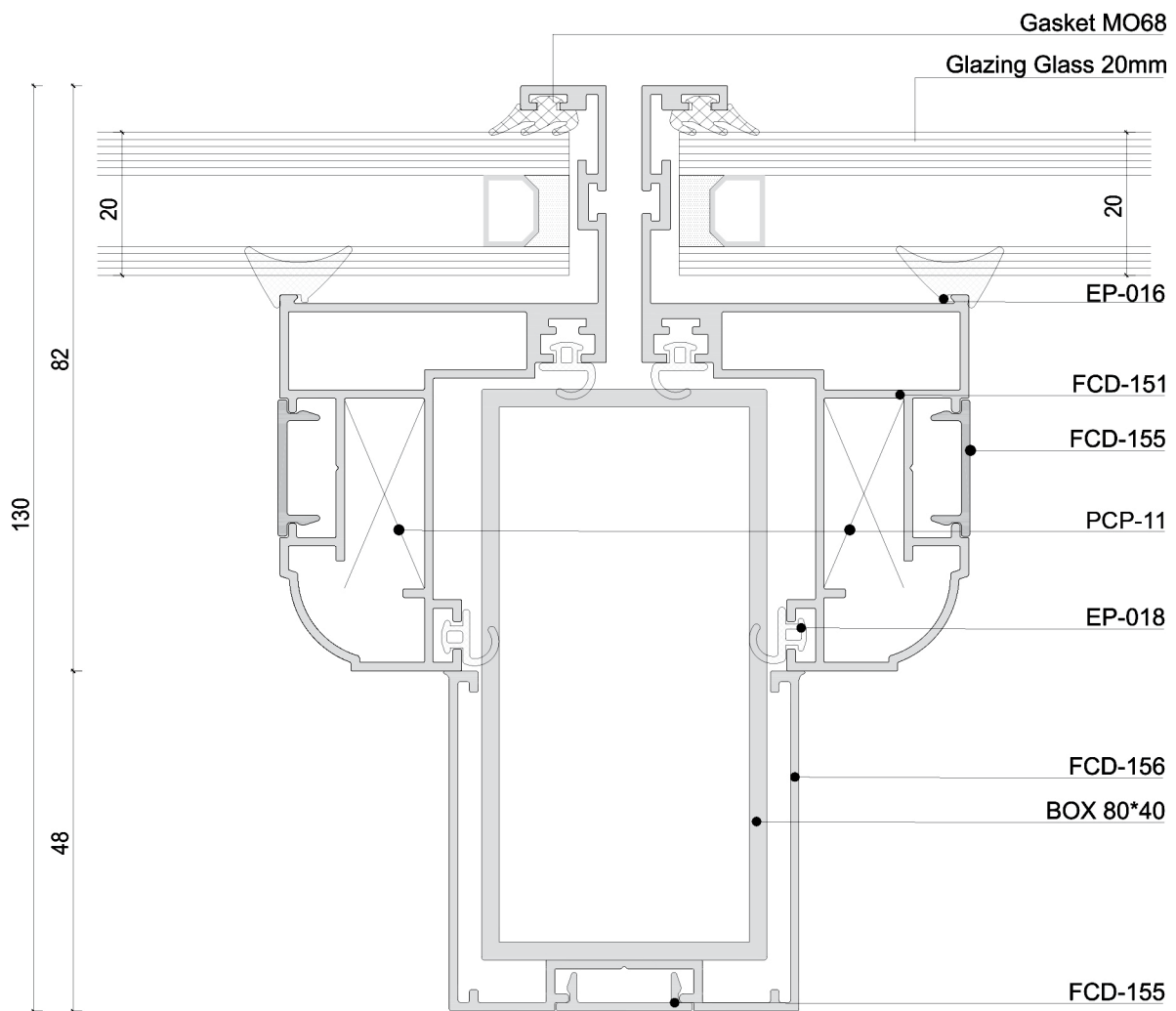
Face cap, SG and Frameless Systems

Fabrication Details



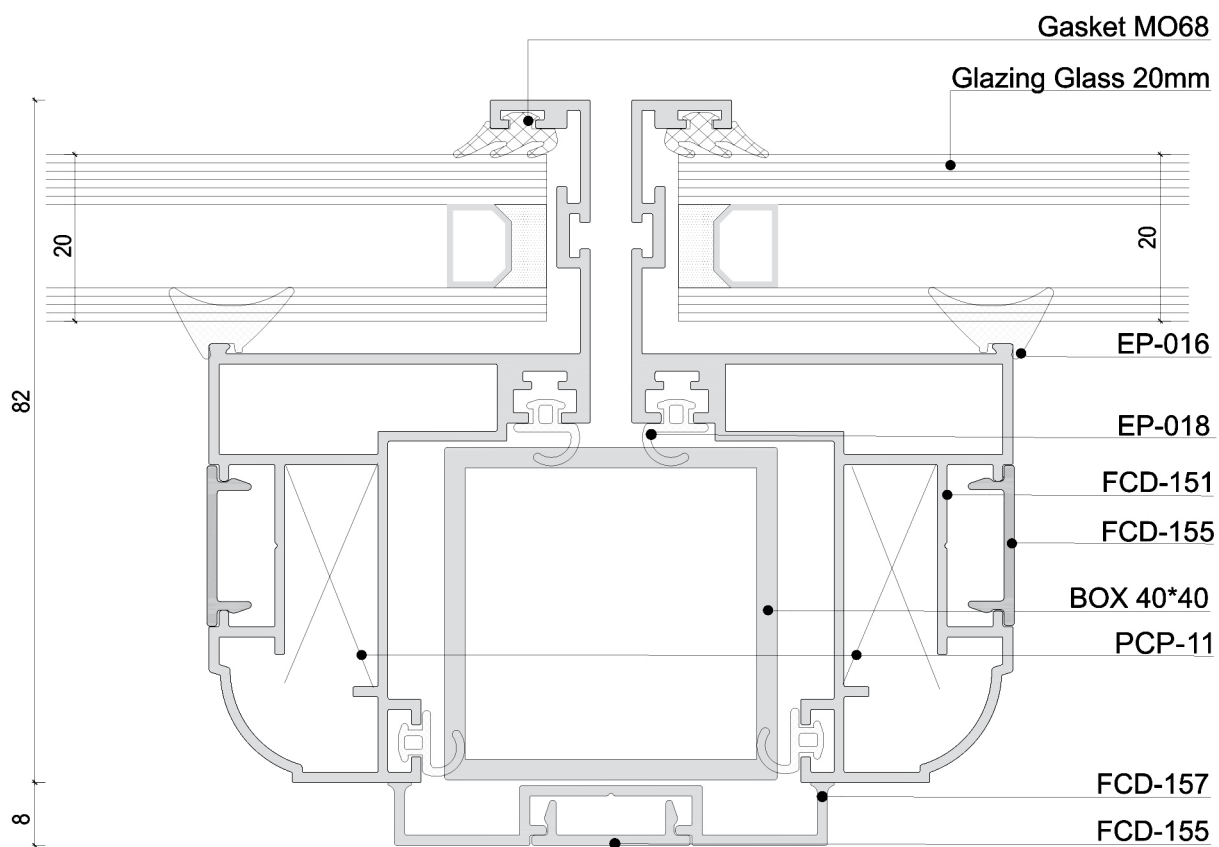


Face cap, SG and Frameless Systems Fabrication Details



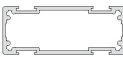
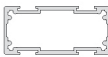
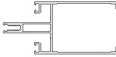
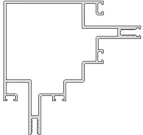
Face cap, SG and Frameless Systems

Fabrication Details





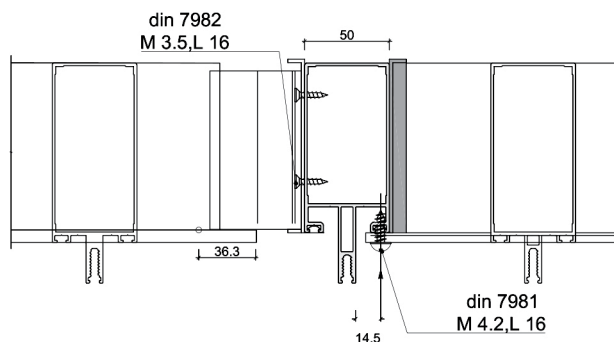
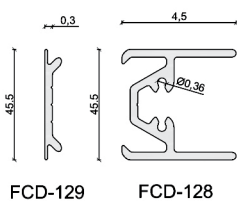
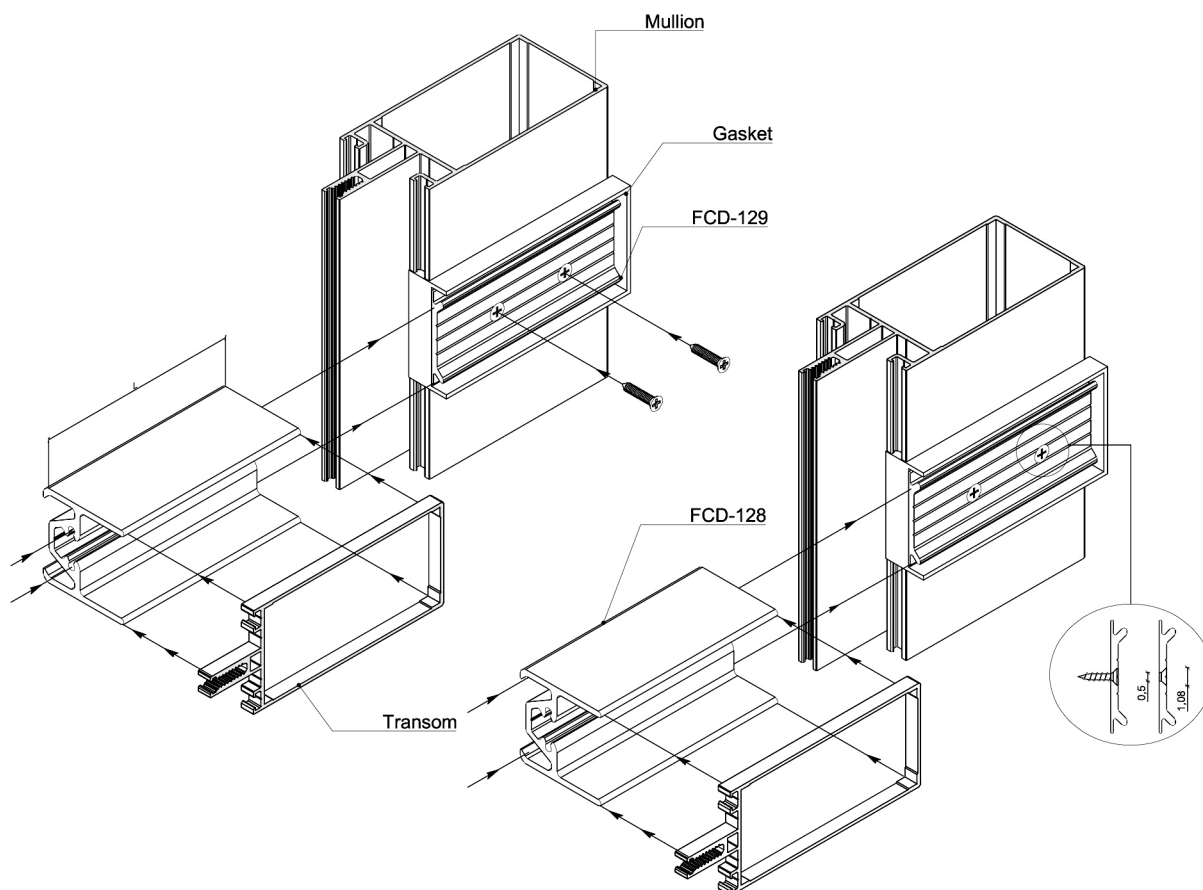
Face cap, SG and Frameless Systems

Mullion and Expansion Joint Profile			
IMAGES	DESCRIPTION Mullion	IMAGES	DESCRIPTION Expansion Joint Profile
	FCD-100		FCD-121
	FCD-101		FCD-122
	FCD-102		FCD-123
	FCD-103		FCD-124
	FCD-134		FCD-126



Face cap, SG and Frameless Systems

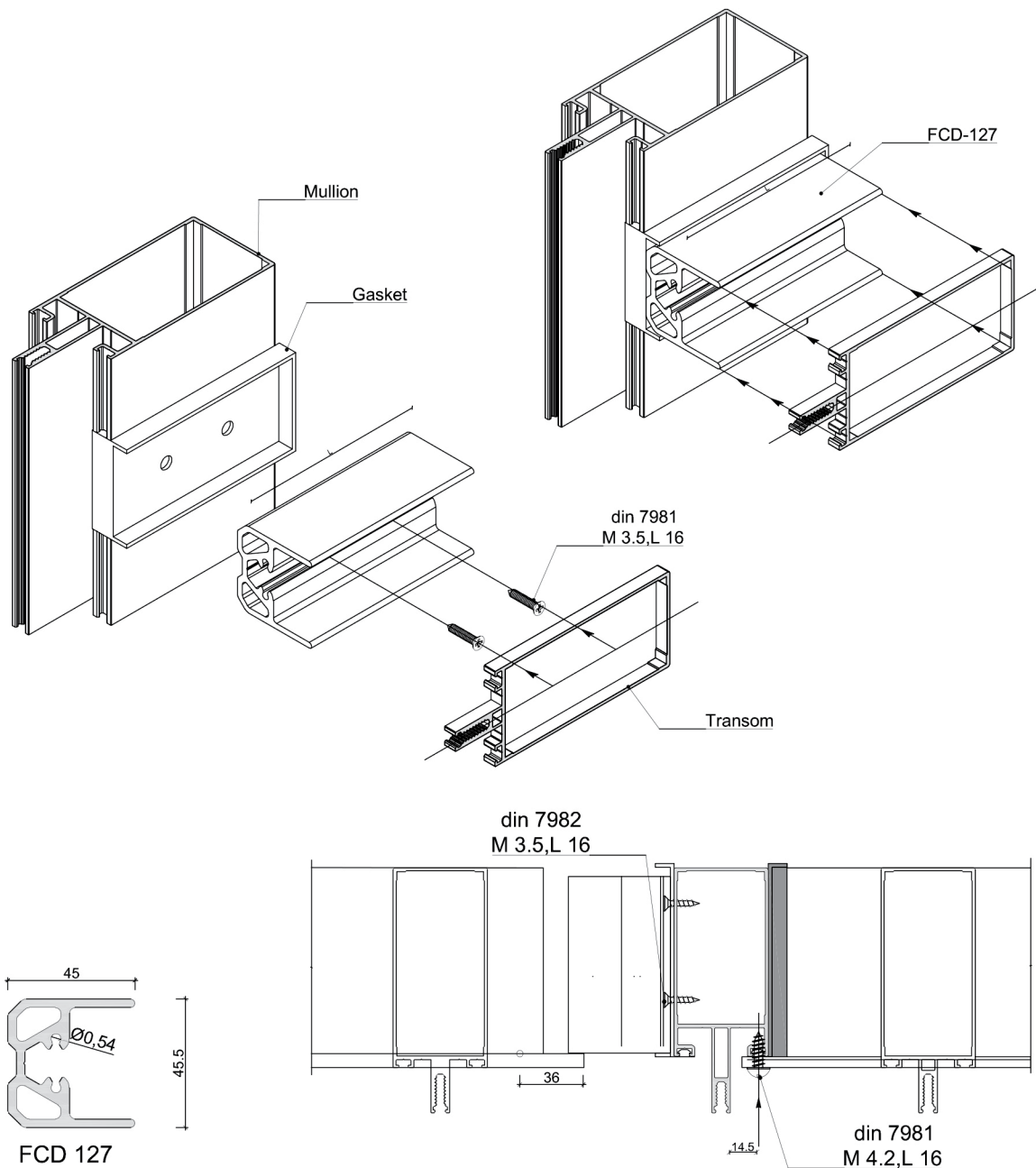
Assembly Drawing



Transom	FCD-104	FCD-105	FCD-106	FCD-107	FCD-108
FCD-129	56.8	41.8	122.8	97.8	71.8
FCD-128	56.8	41.8	122.8	97.8	71.8



Face cap, SG and Frameless Systems Assembly Drawing

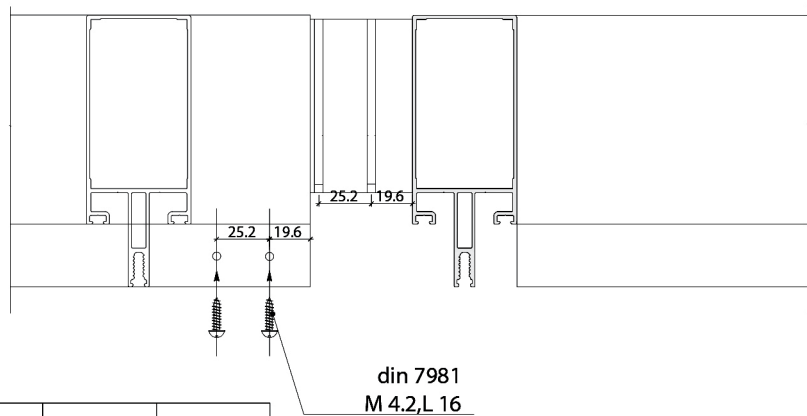
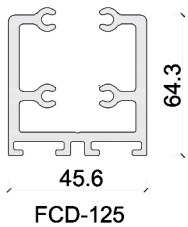
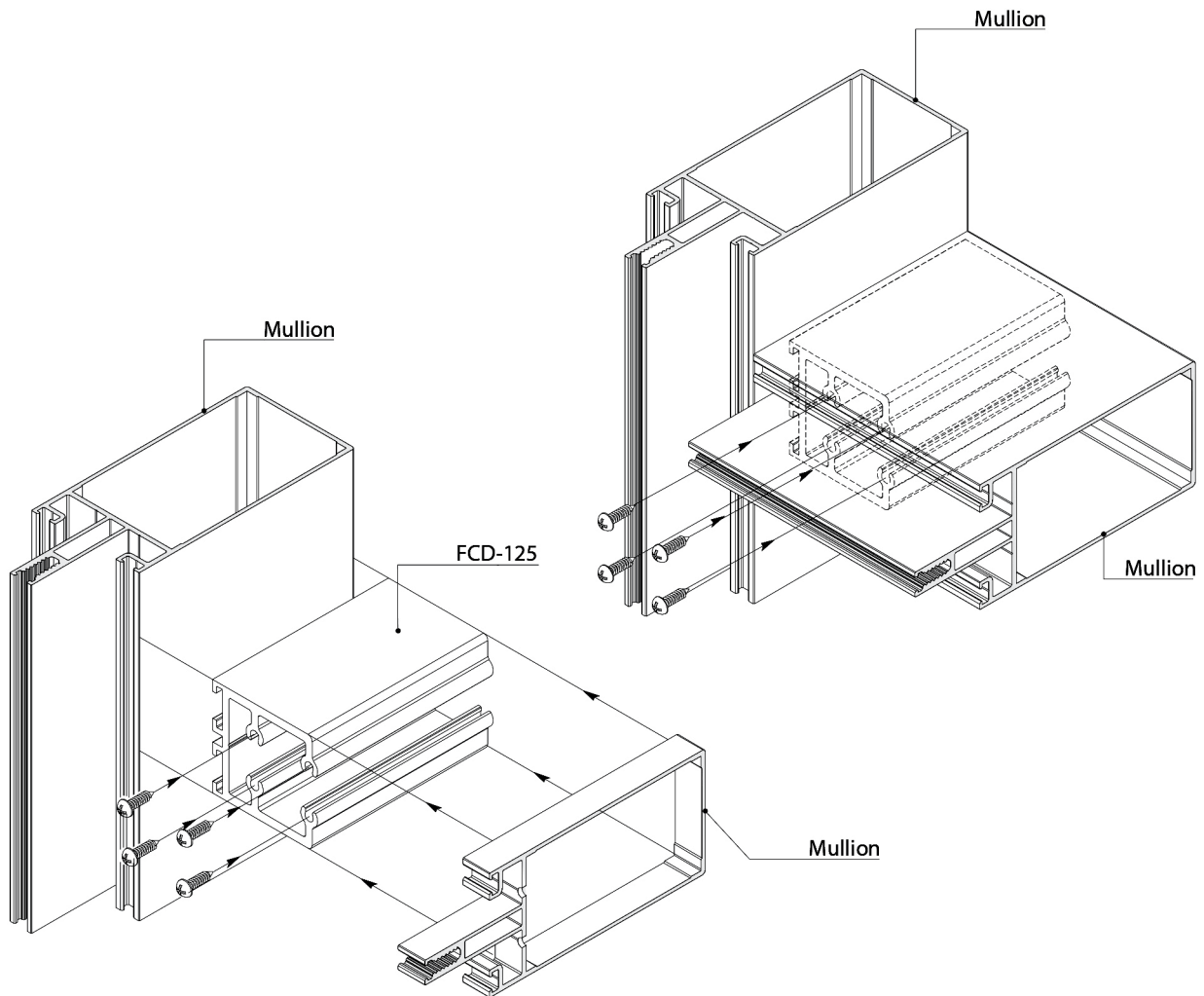


Transom	FCD-104	FCD-105	FCD-106	FCD-107	FCD-108
FCD-127	56.8	41.8	122.8	97.8	71.8



Face cap, SG and Frameless Systems

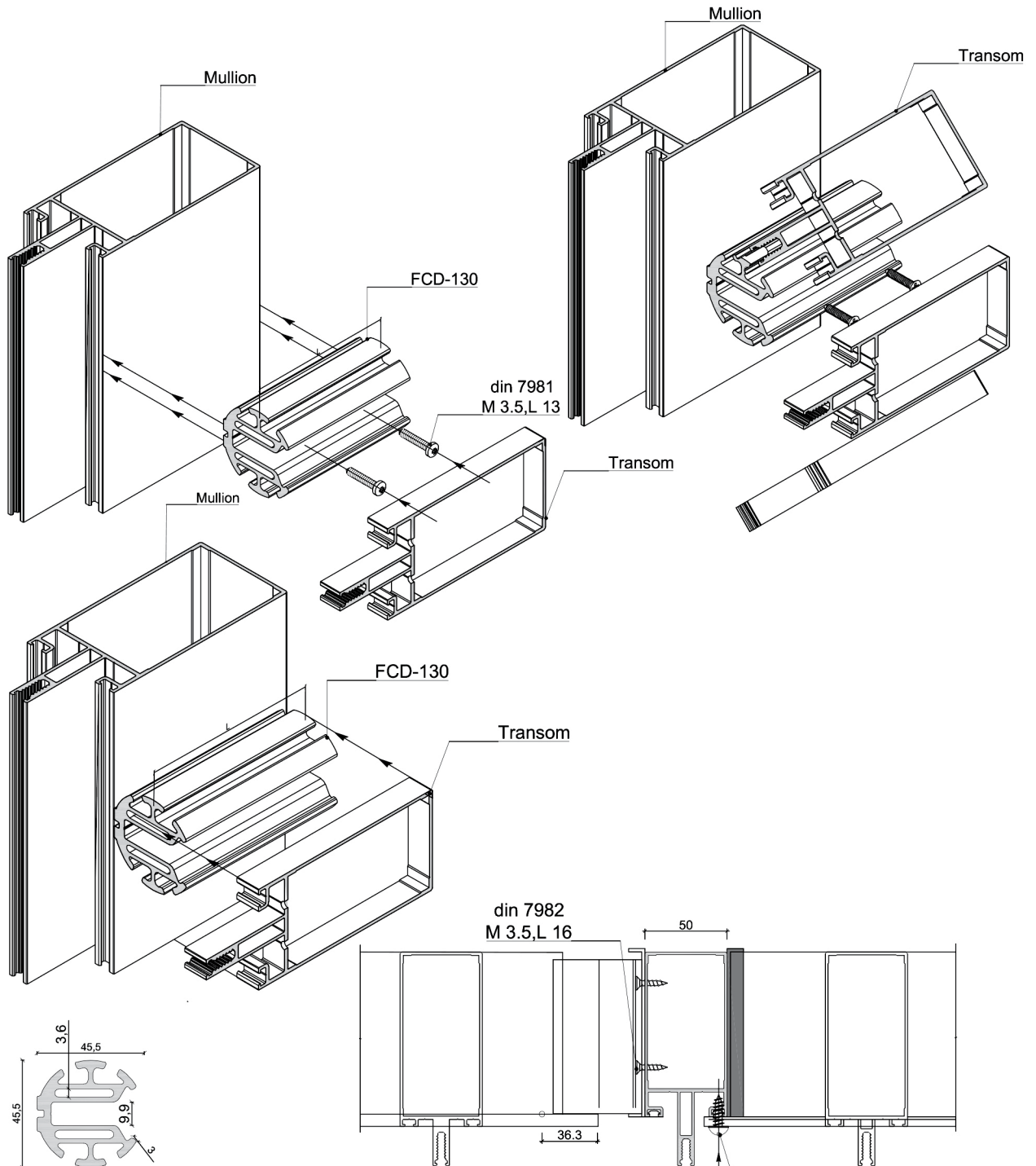
Assembly Drawing



Mullion	FCD-100	FCD-101	FCD-102	FCD-103
FCD-125	116	101	81	61



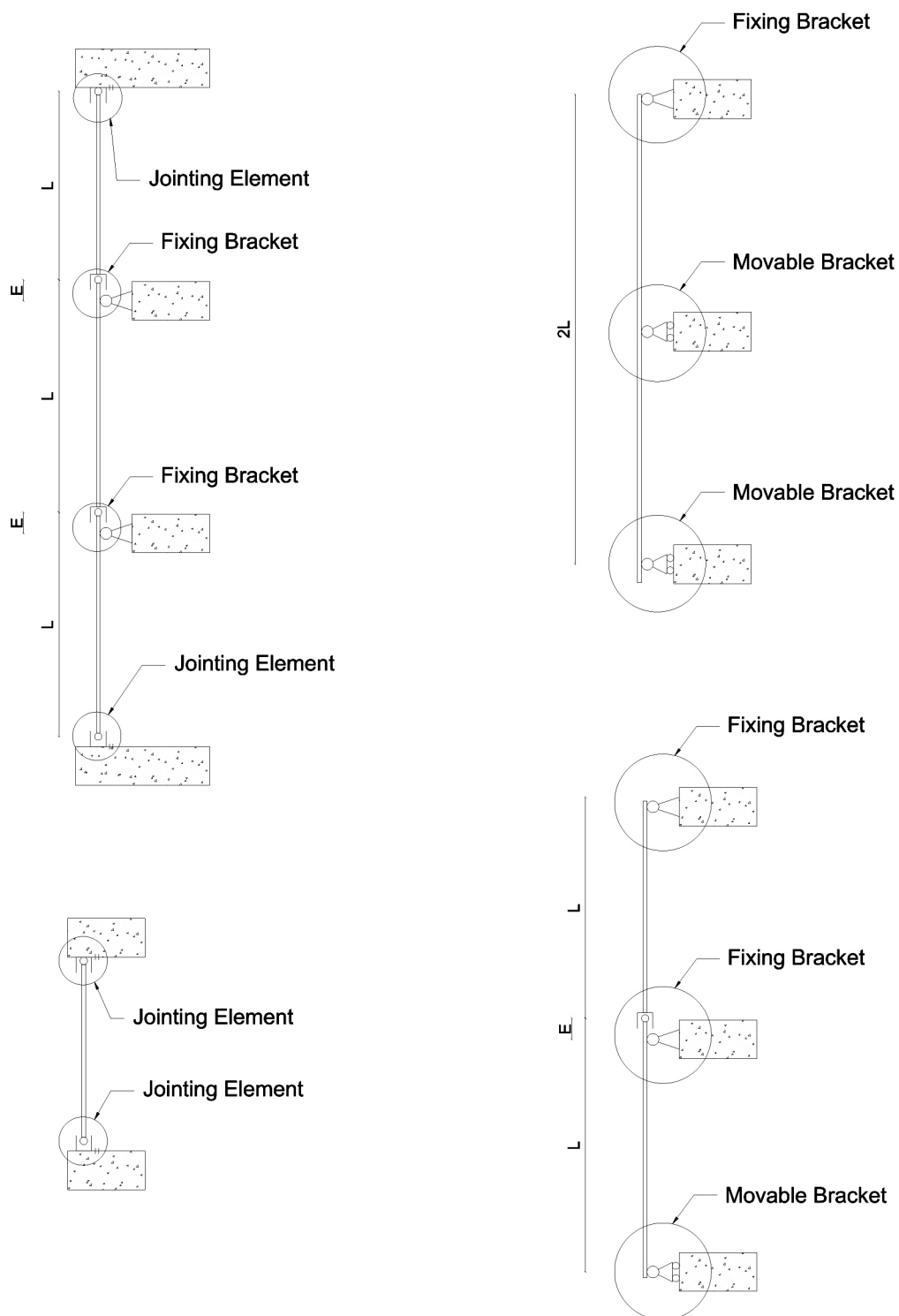
Face cap, SG and Frameless Systems Assembly Drawing



Transom	FCD-104	FCD-105	FCD-106	FCD-107	FCD-108
FCD-130	56.8	41.8	122.8	97.8	71.8

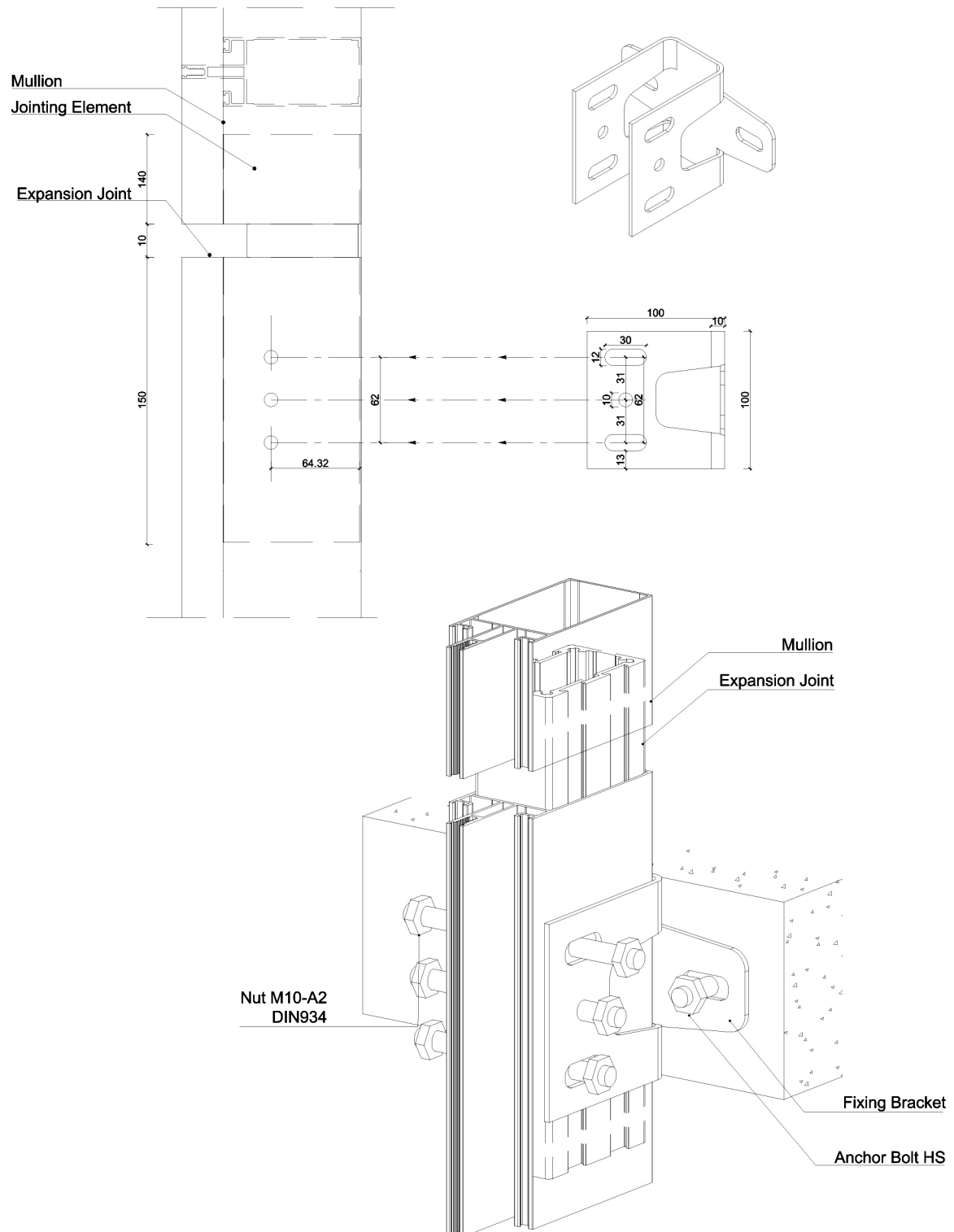


Face cap, SG and Frameless Systems Assembly Drawing

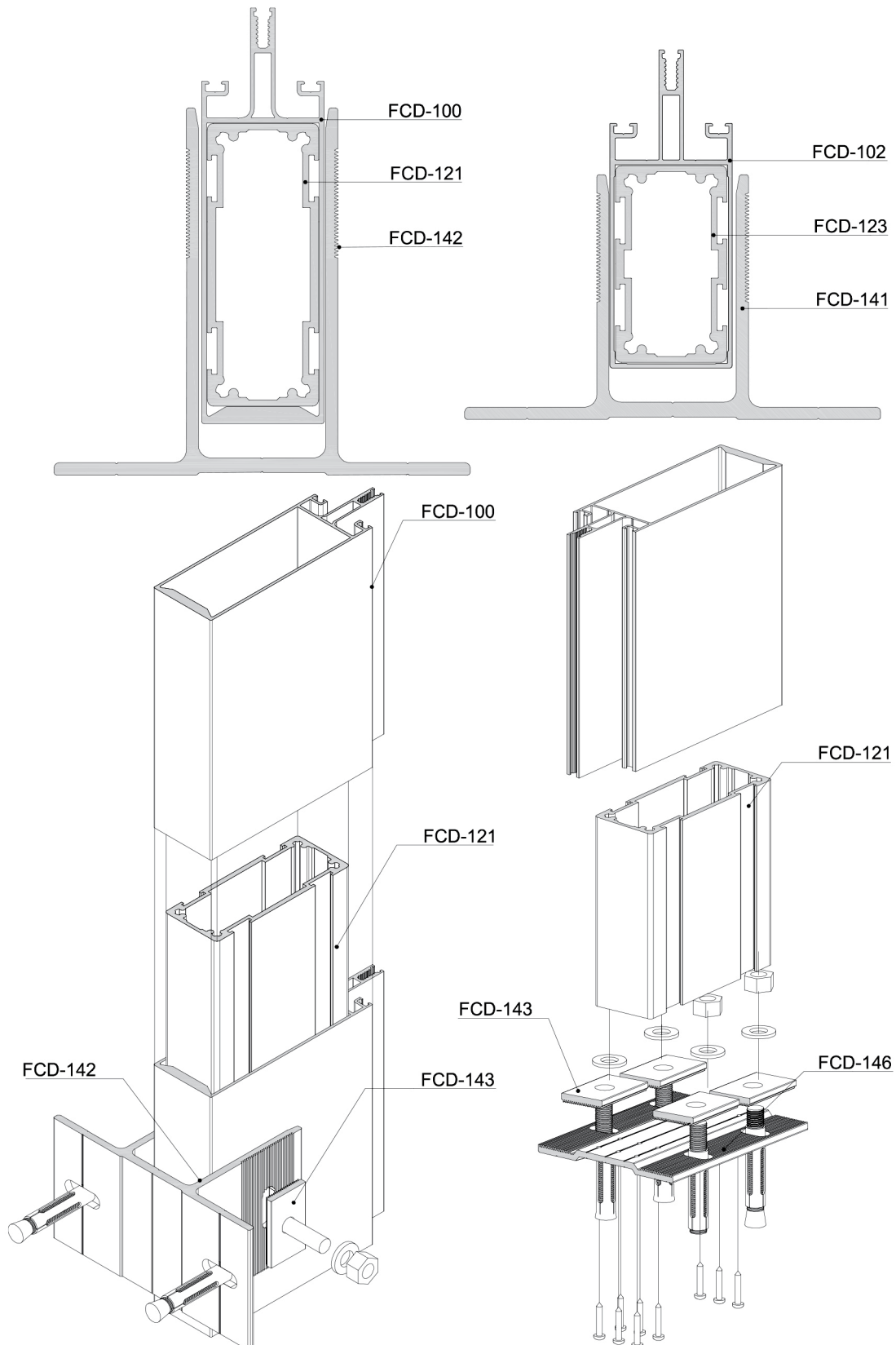




Face cap, SG and Frameless Systems Assembly Drawing



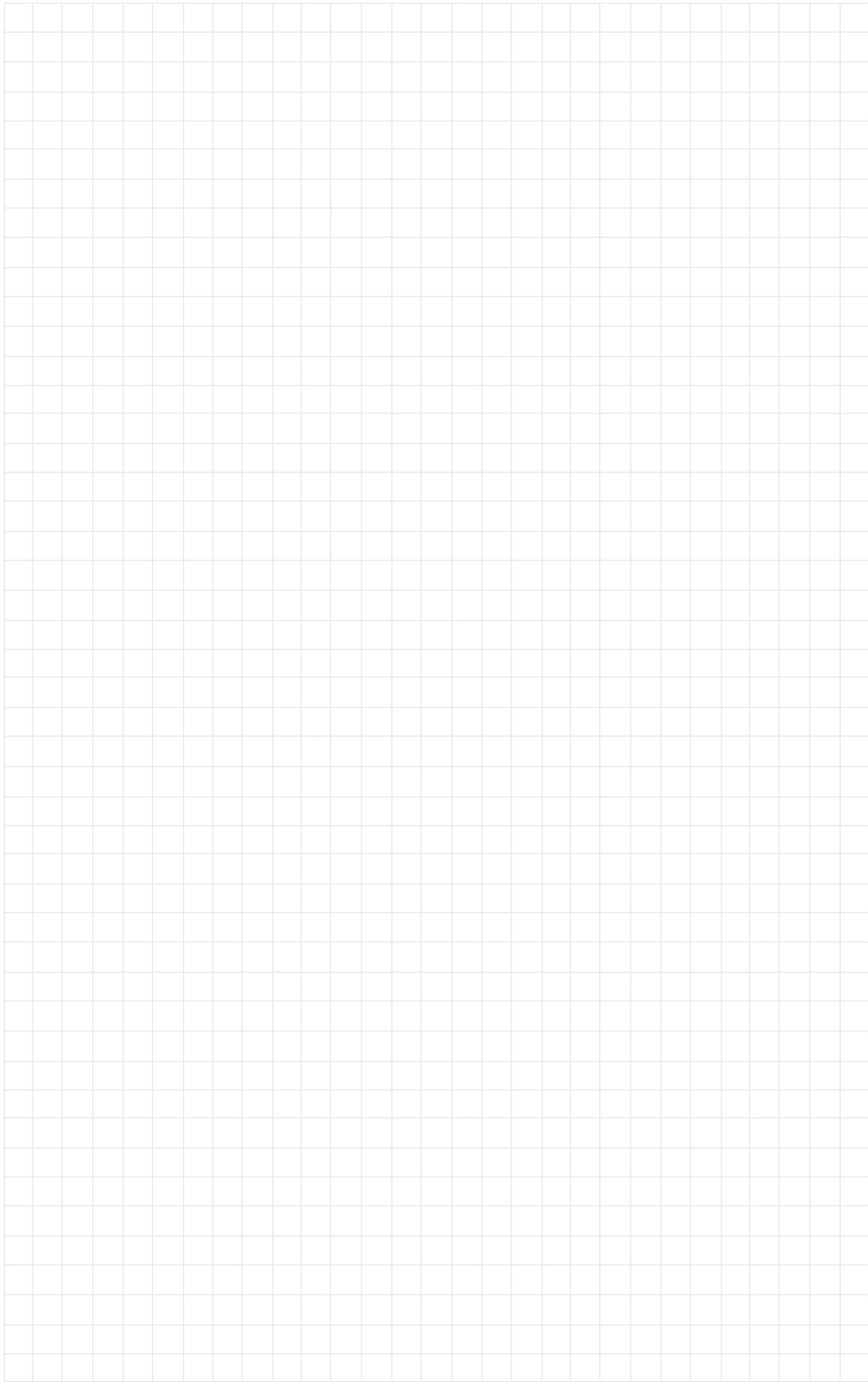
Face cap, SG and Frameless Systems Assembly Drawing





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Sun Shading

Louver System





Louver System

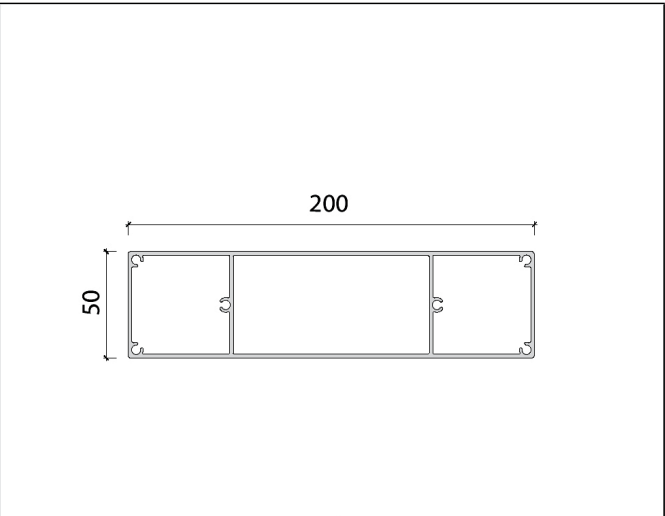
Profile & Accessories Information

Profile : ALS-100	Weight : 1338 gr/m	Profile : ALS-102	Weight : 2117 gr/m
Profile: ALS-101	Weight : 1226 gr/m	Profile : ALS-103	Weight : 3031 gr/m
Profile : ALS-104		Weight : 3570 gr/m	

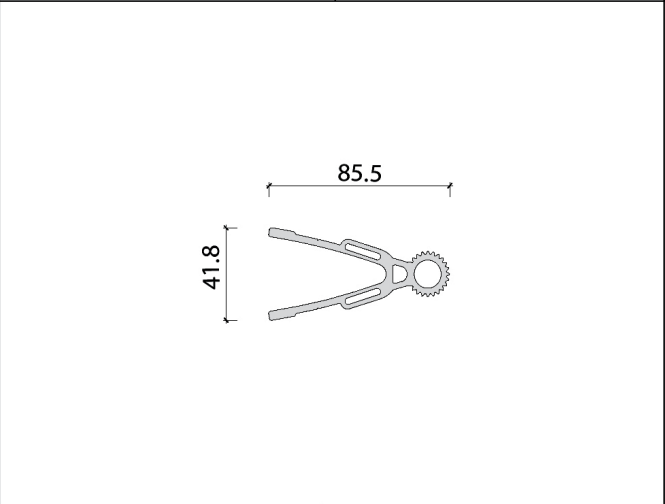


Louver System

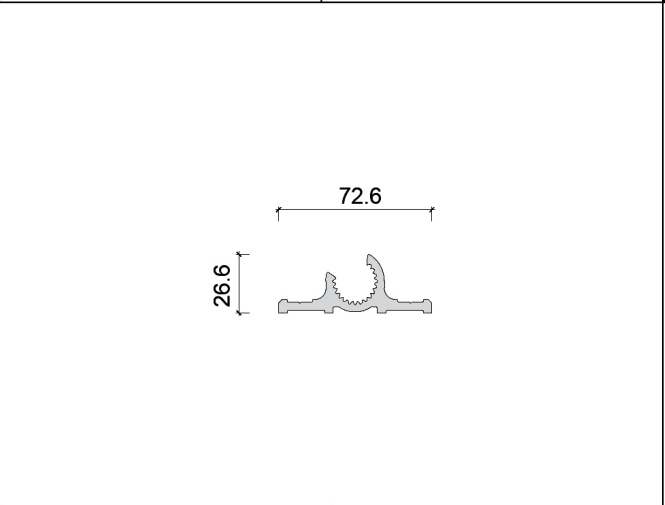
Profile & Accessories Information



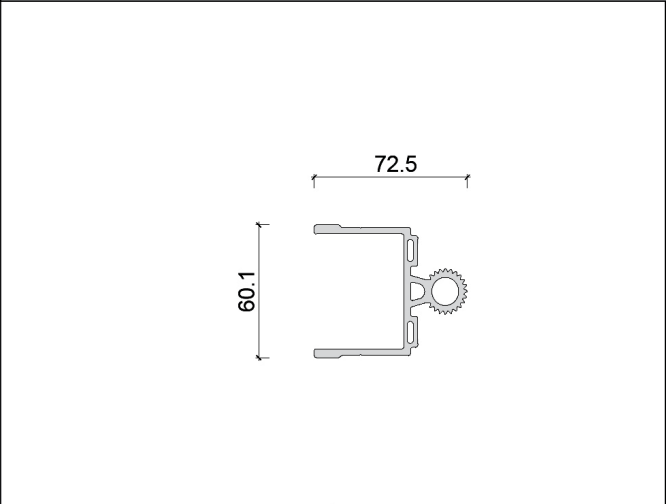
Profile : ALS-105	Weight : 2868 gr/m
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Profile : ALS-111	Weight : 1859 gr/m
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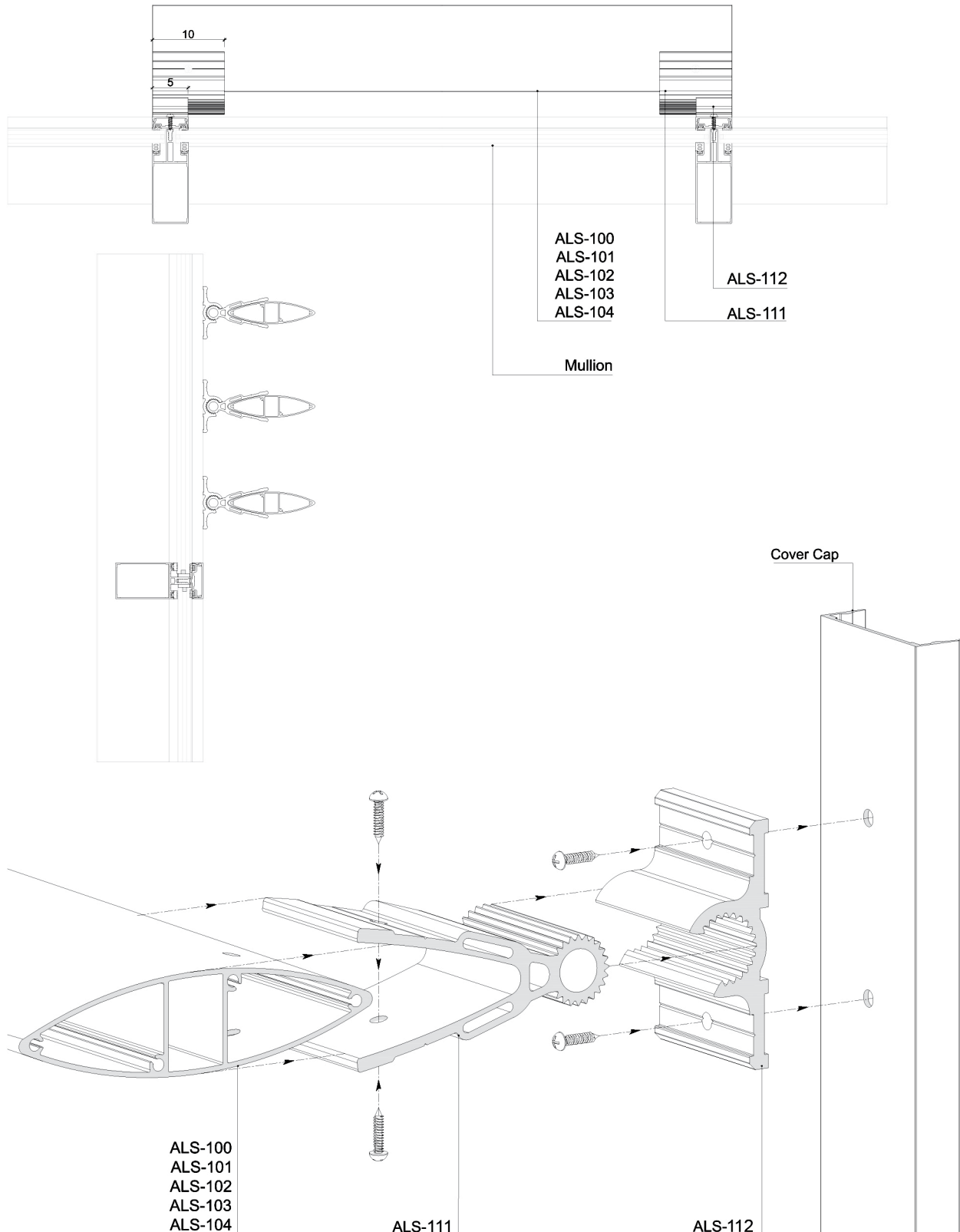
Profile: ALS-112	Weight : 1295 gr/m
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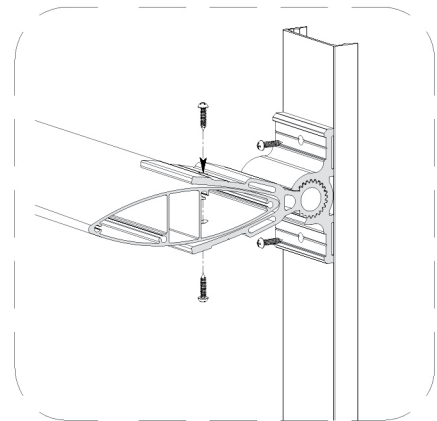
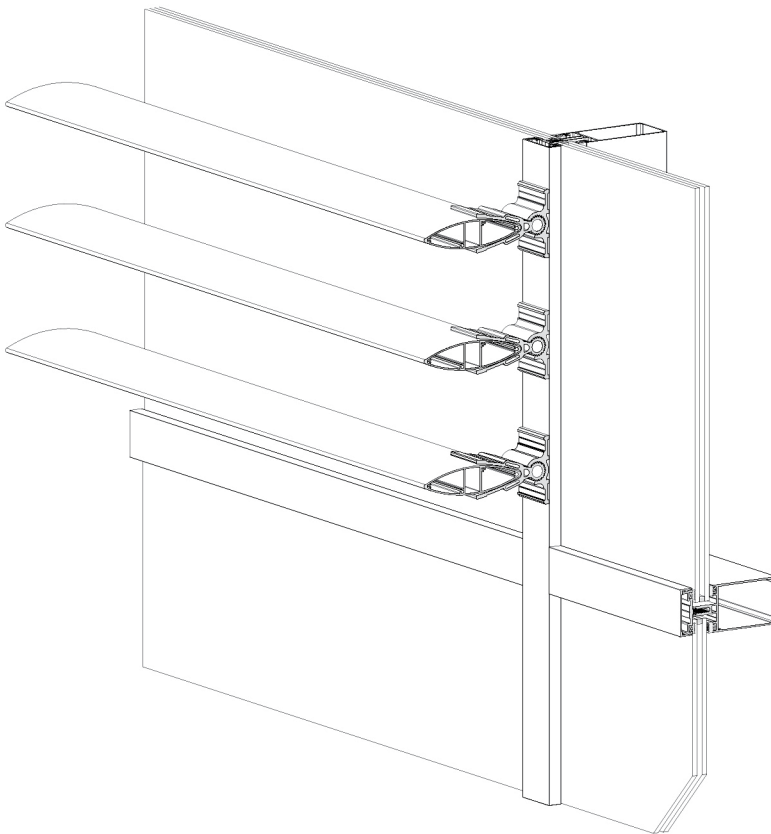
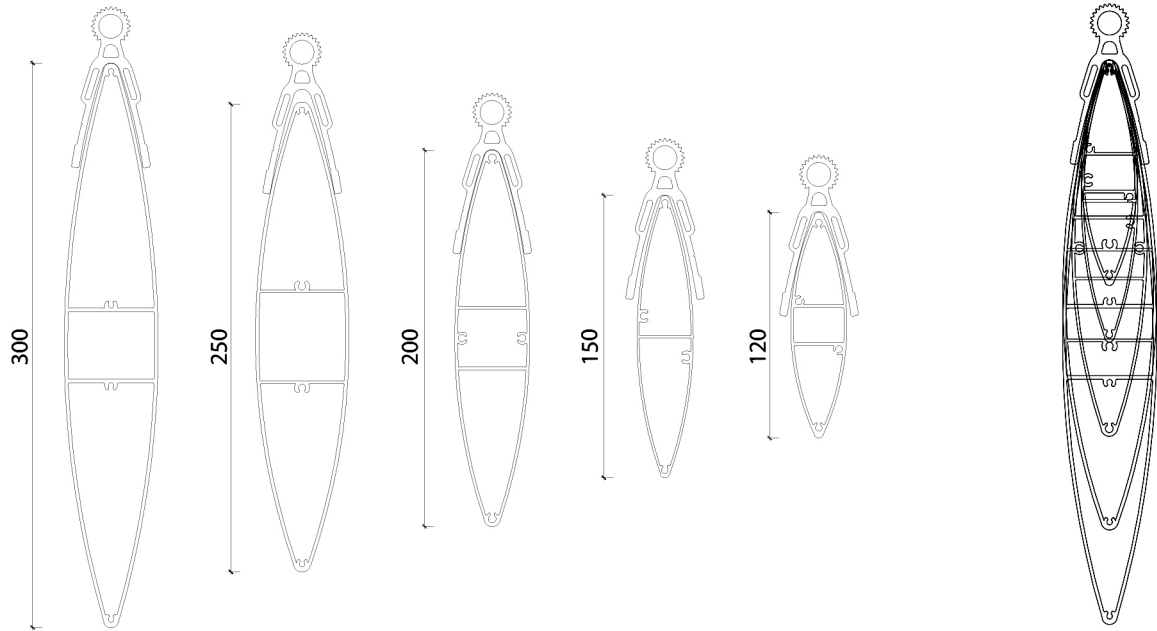
Profile: ALS-113	Weight : 1902 gr/m
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Louver System Assembly Drawing

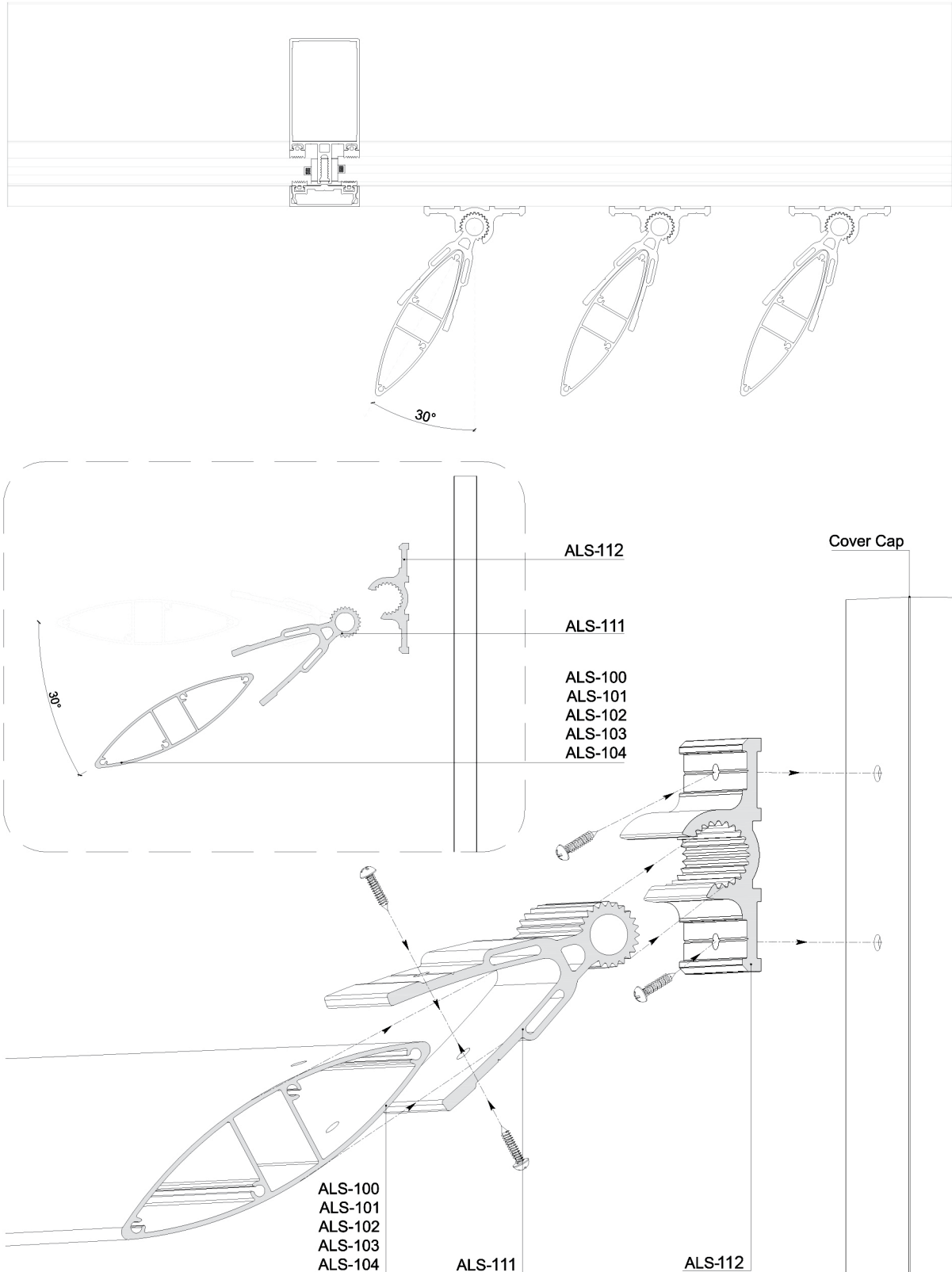


Louver System Assembly Drawing





Louver System Assembly Drawing





Balustrade System

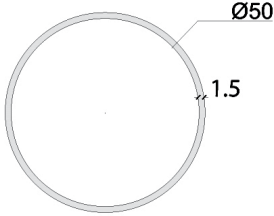
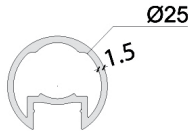
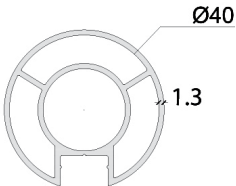
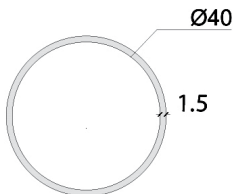
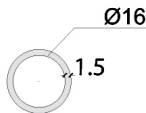
Handrail & Glass Supporting System





Handrail & Glass supporting System

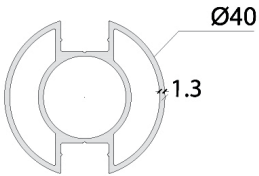
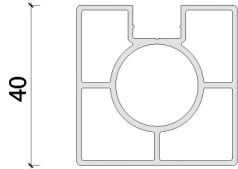
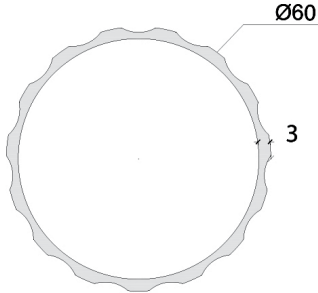
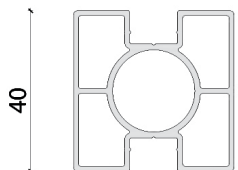
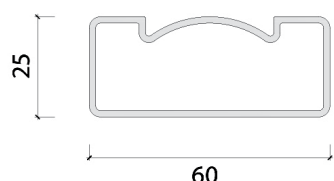
Profile & Accessories Information

			
Profile : BLS-100	Weight : 618 gr/m	Profile : BLS-103	Weight : 370 gr/m
			
Profile : BLS-101	Weight : 745 gr/m	Profile : BLS-104	Weight : 81 gr/m
			
Profile : BLS-102	Weight : 489 gr/m	Profile : BLS-105	Weight : 184 gr/m



Handrail & Glass supporting System

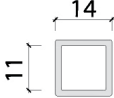
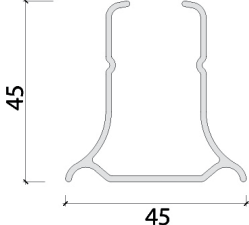
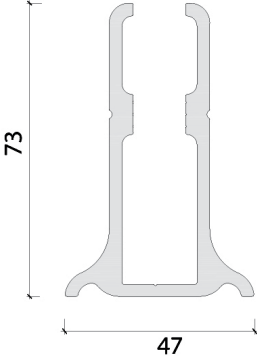
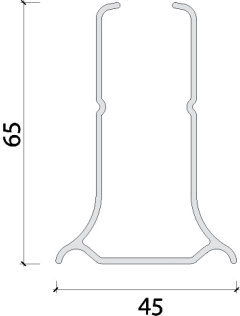
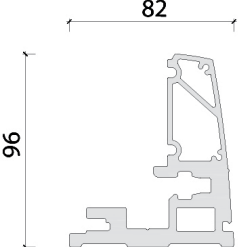
Profile & Accessories Information

			
Profile : BLS-106	Weight : 721 gr/m	Profile : BLS-122	Weight : 872 gr/m
			
Profile : BLS-107	Weight : 1277 gr/m	Profile : BLS-123	Weight : 880 gr/m
			
Profile : BLS-121	Weight : 1469 gr/m	Profile : BLS-124	Weight : 737 gr/m



Handrail & Glass supporting System

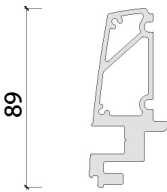
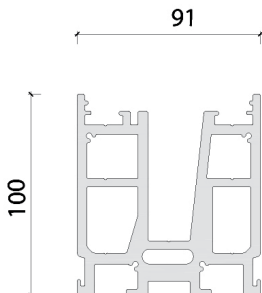
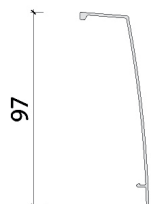
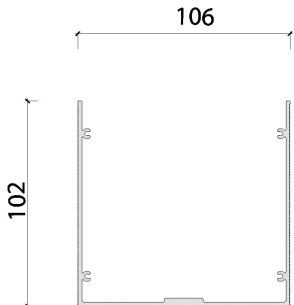
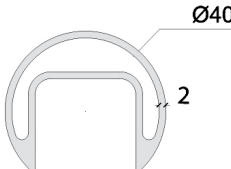
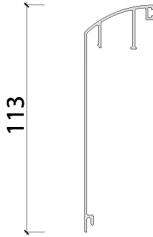
Profile & Accessories Information

			
Profile : BLS-125	Weight : 192 gr/m	Profile : BLS-132	Weight : 551 gr/m
			
Profile : BLS-126	Weight : 84 gr/m	Profile : BLS-133	Weight : 192 gr/m
			
Profile : BLS-131	Weight : 702 gr/m	Profile : BLS-135	Weight : 4841 gr/m



Handrail & Glass supporting System

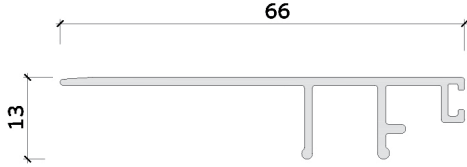
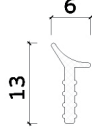
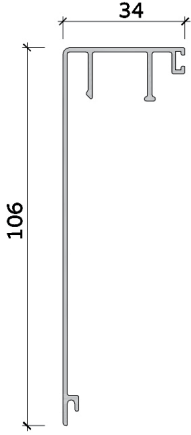
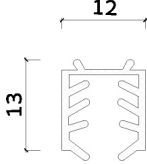
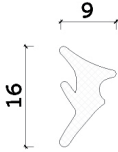
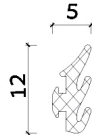
Profile & Accessories Information

			
Profile : BLS-136	Weight : 2595 gr/m	Profile : BLS-140	Weight : 8294 gr/m
			
Profile : BLS-137	Weight : 419 gr/m	Profile : BLS-141	Weight : 1796 gr/m
			
Profile : BLS-138	Weight : 767 gr/m	Profile : BLS-142	Weight : 610 gr/m



Handrail & Glass supporting System

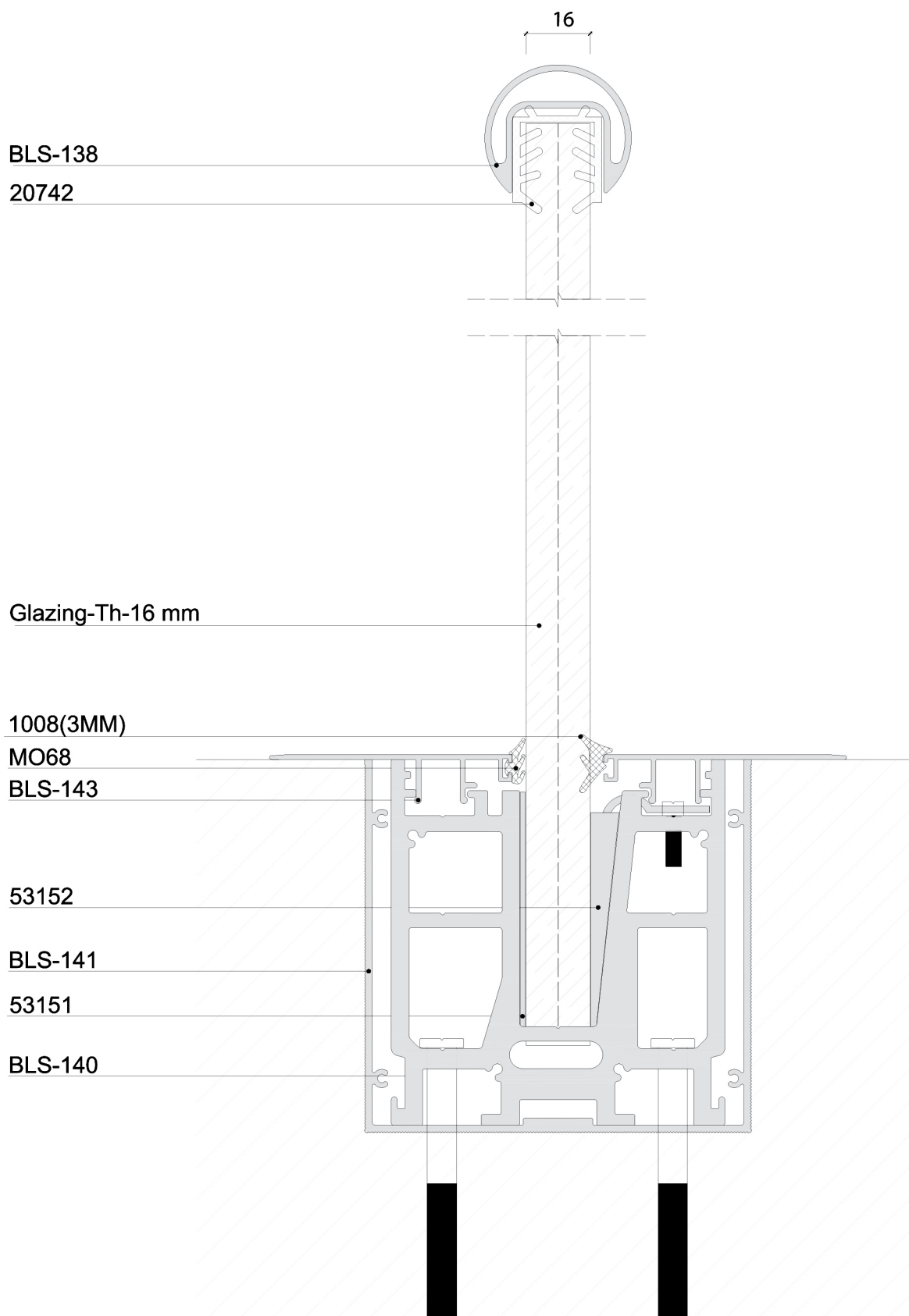
Profile & Accessories Information

			
Profile : BLS-143	Weight : 362 gr/m	Profile : EP-015	Weight : 21 gr/m
			
		Profile : 20742	Weight : 79 gr/m
			
Profile : BLS-144	Weight : 599 gr/m	Profile : 20737	Weight : 36 gr/m
			
Profile : 1008(3MM)	Weight : 75 gr/m	Profile : MO68	Weight : 46 gr/m



Handrail & Glass supporting System

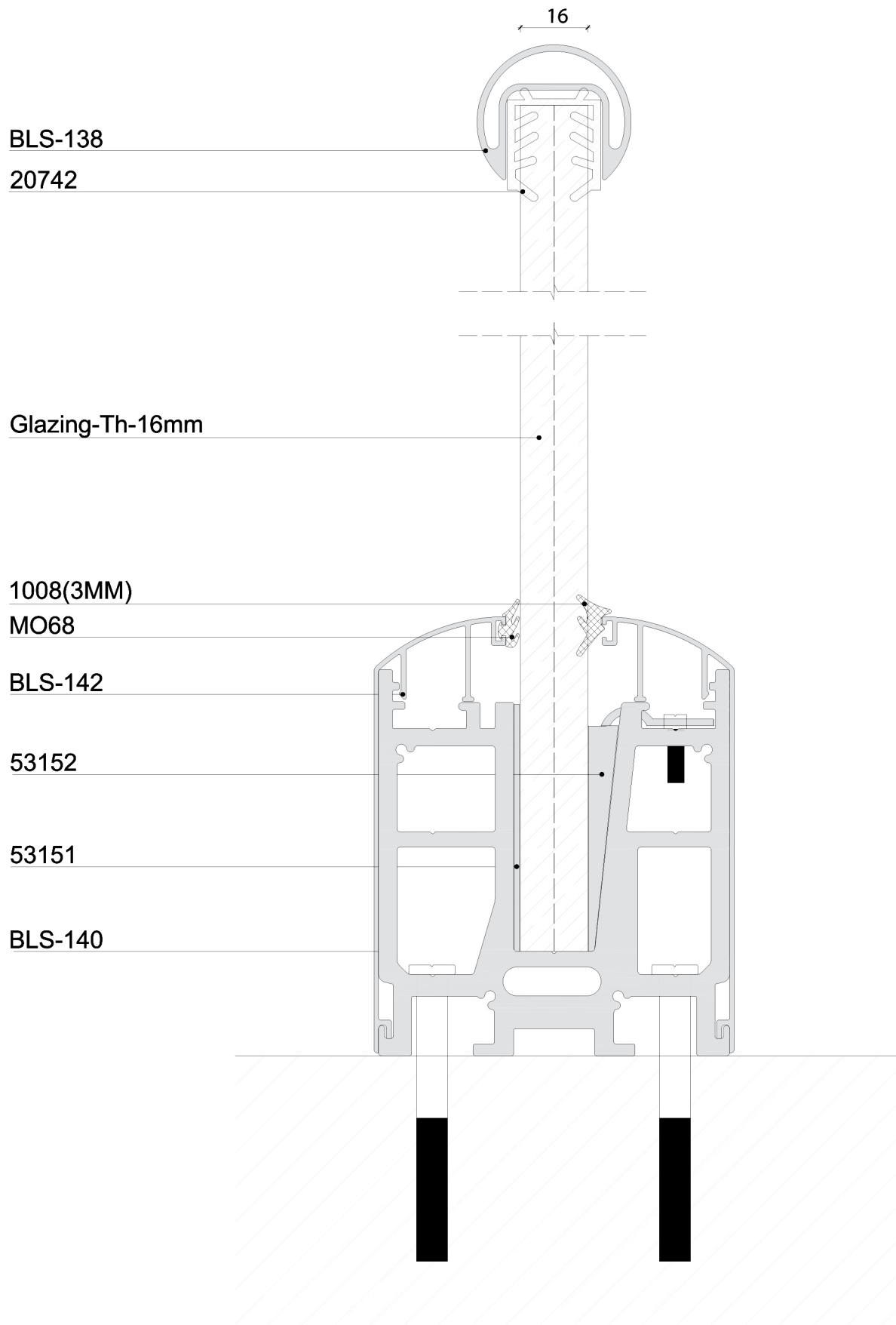
Profile & Accessories Information





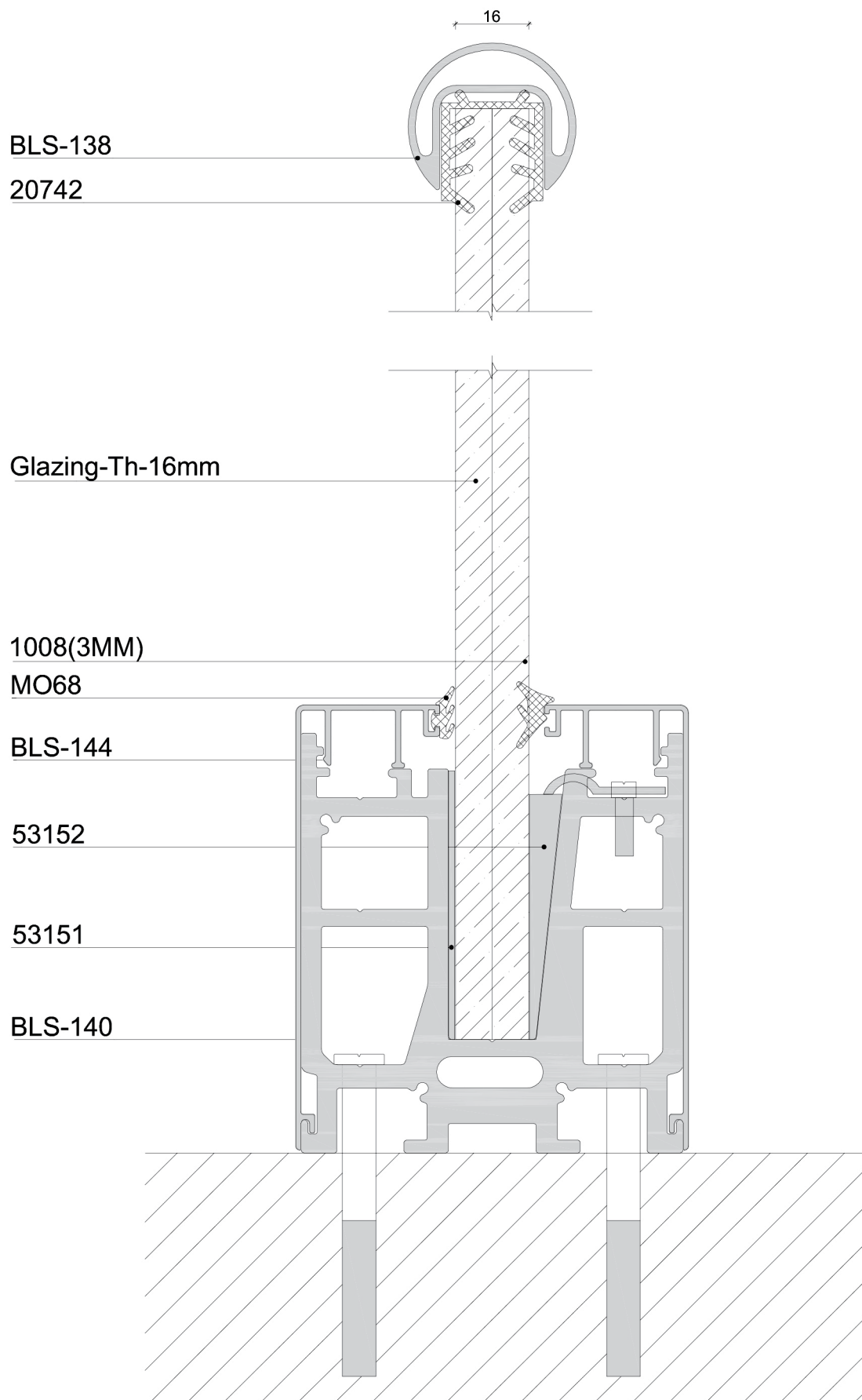
Handrail & Glass supporting System

Profile & Accessories Information



Handrail & Glass supporting System

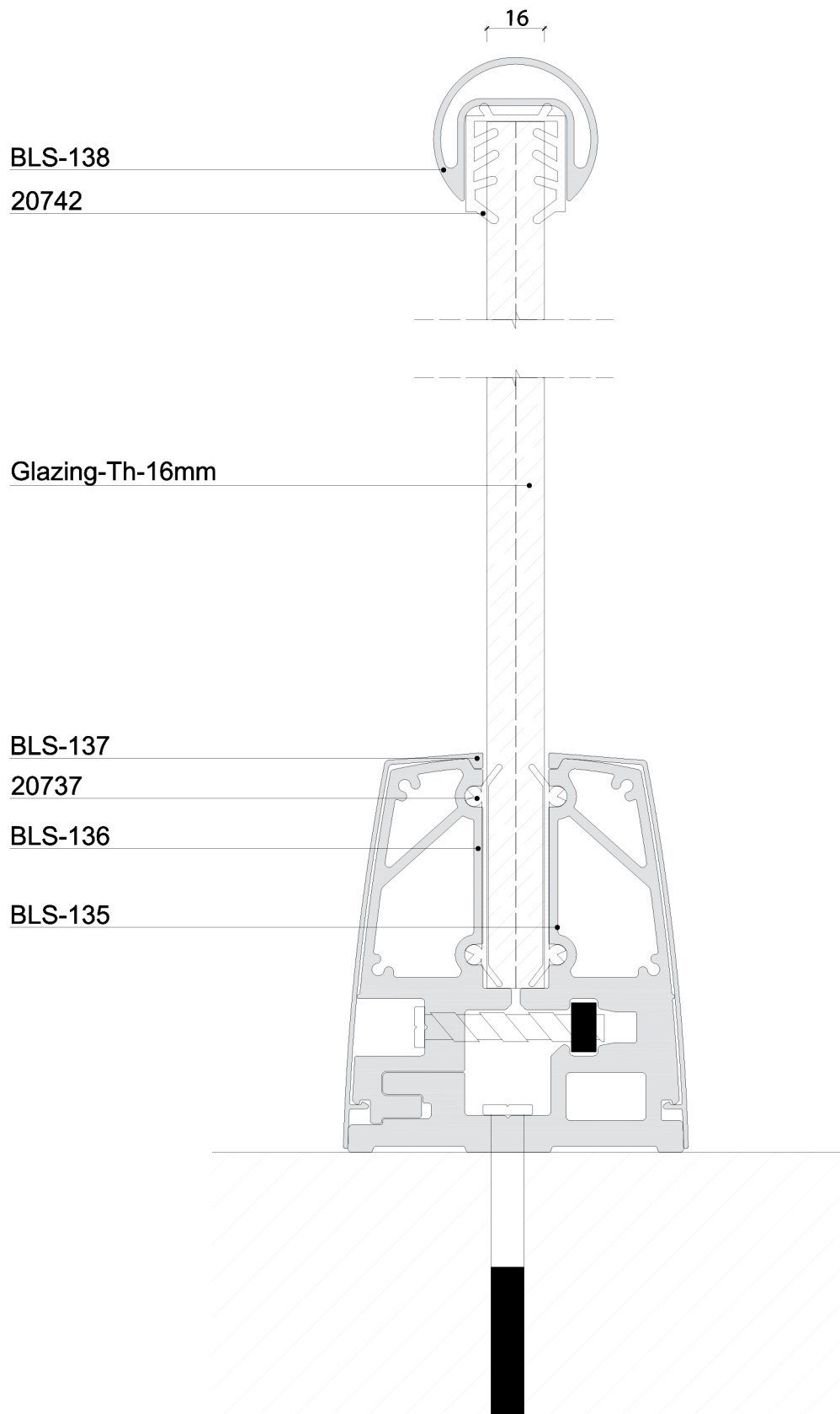
Profile & Accessories Information





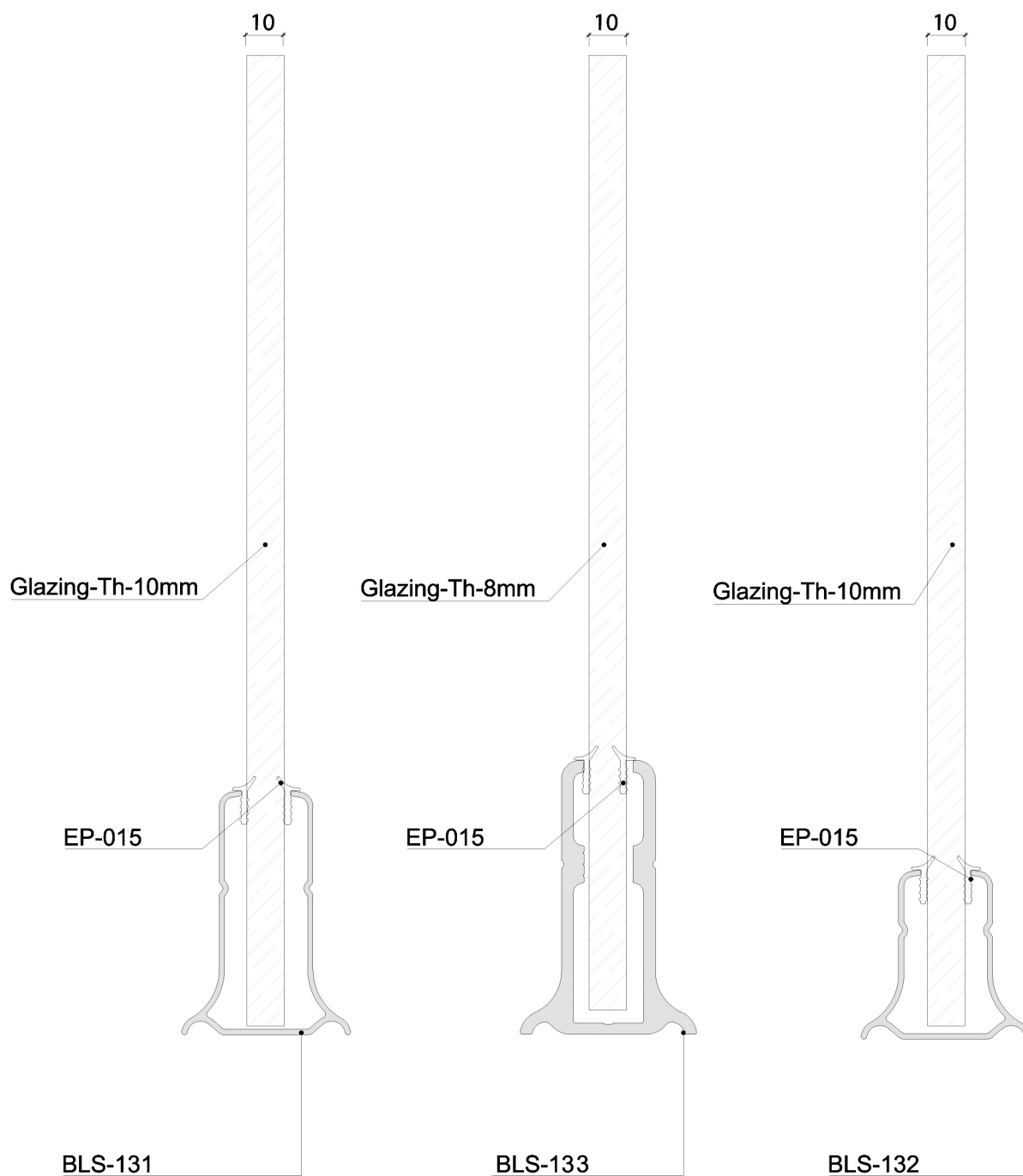
Handrail & Glass supporting System

Profile & Accessories Information



Handrail & Glass supporting System

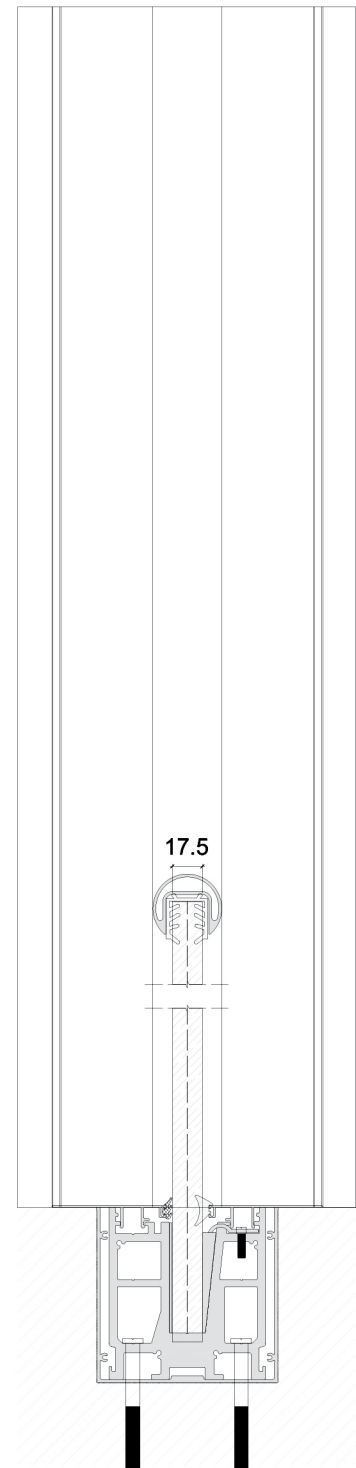
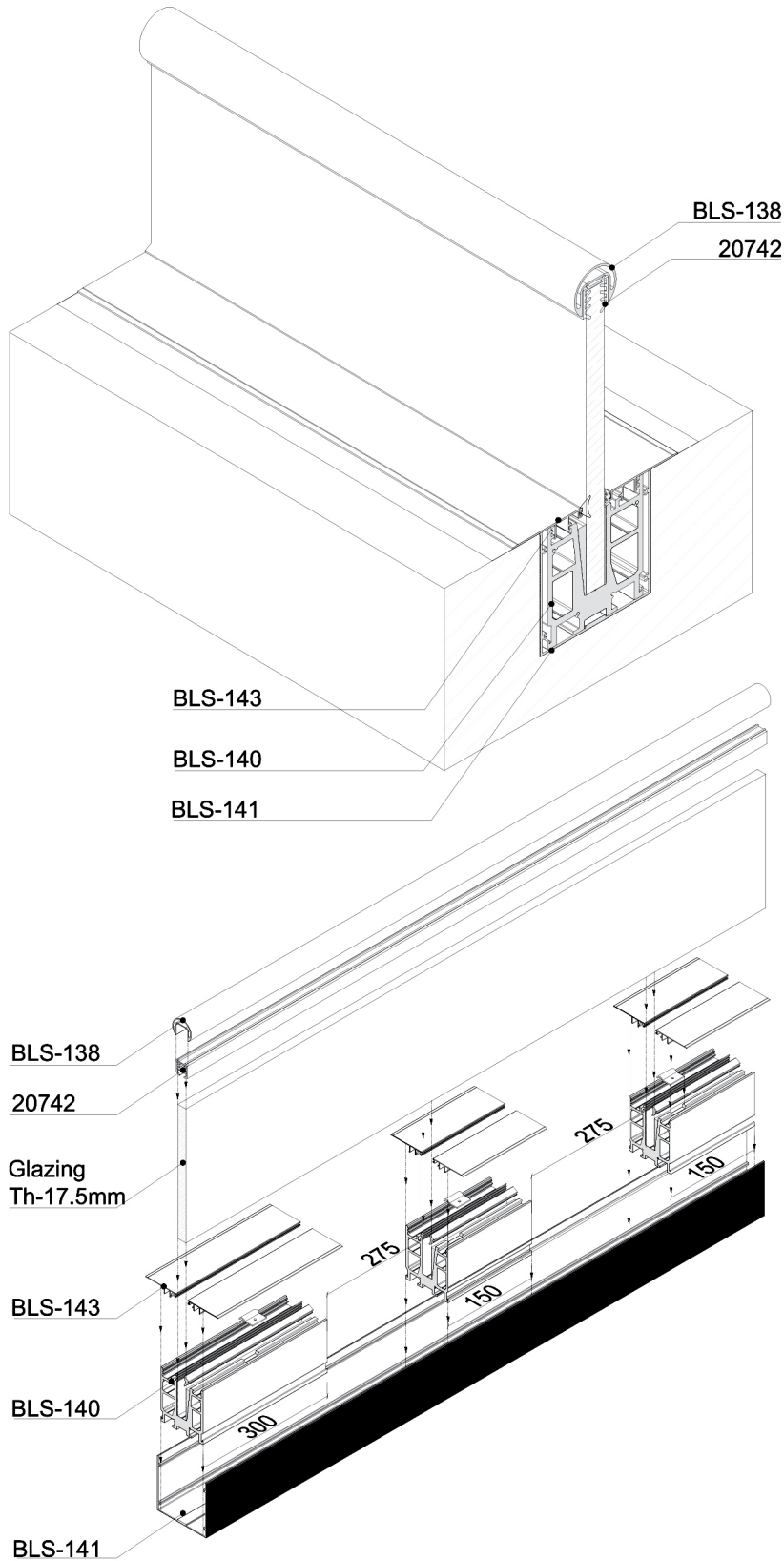
Profile & Accessories Information





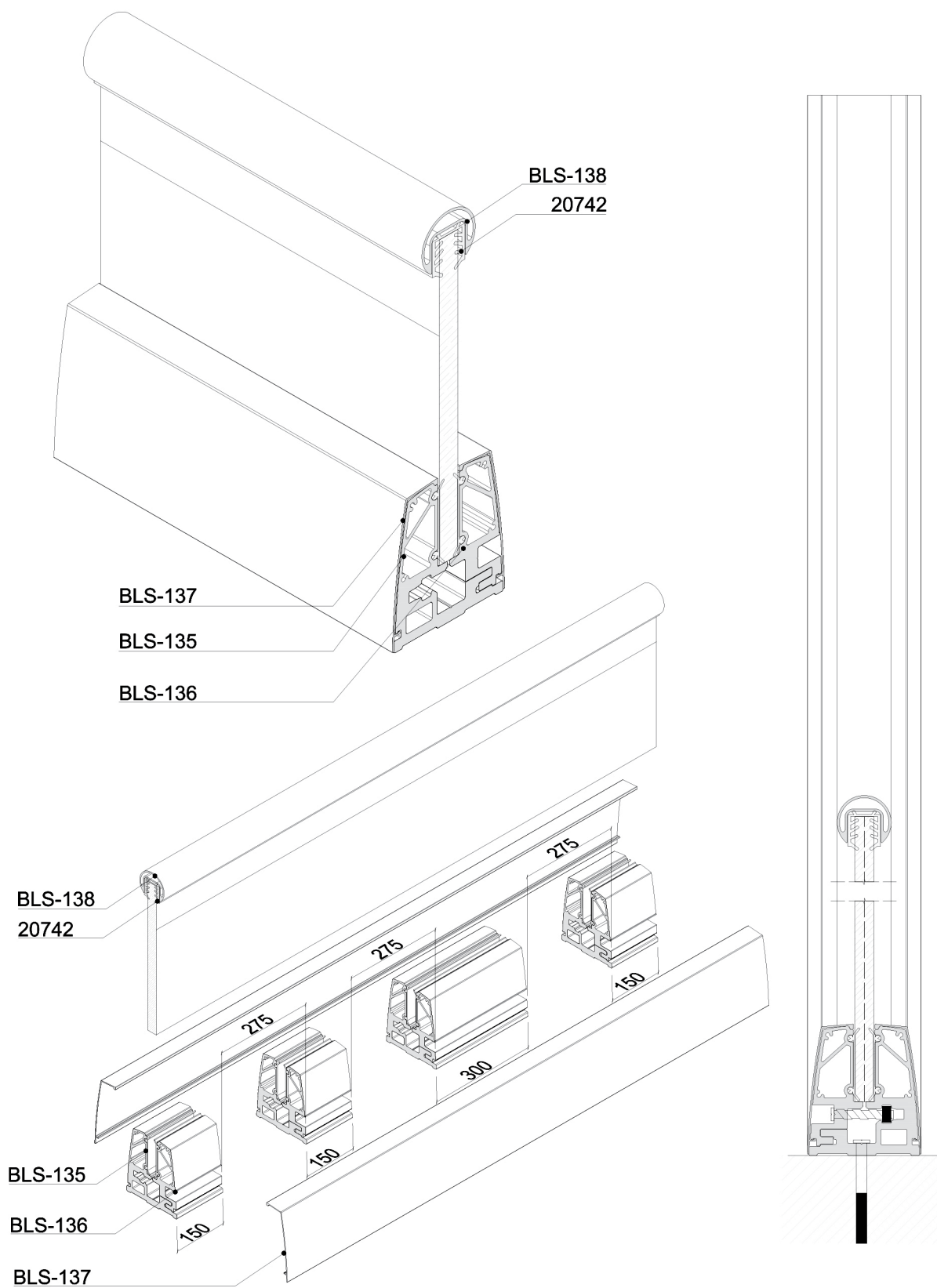
Handrail & Glass supporting System

Profile & Accessories Information



Handrail & Glass supporting System

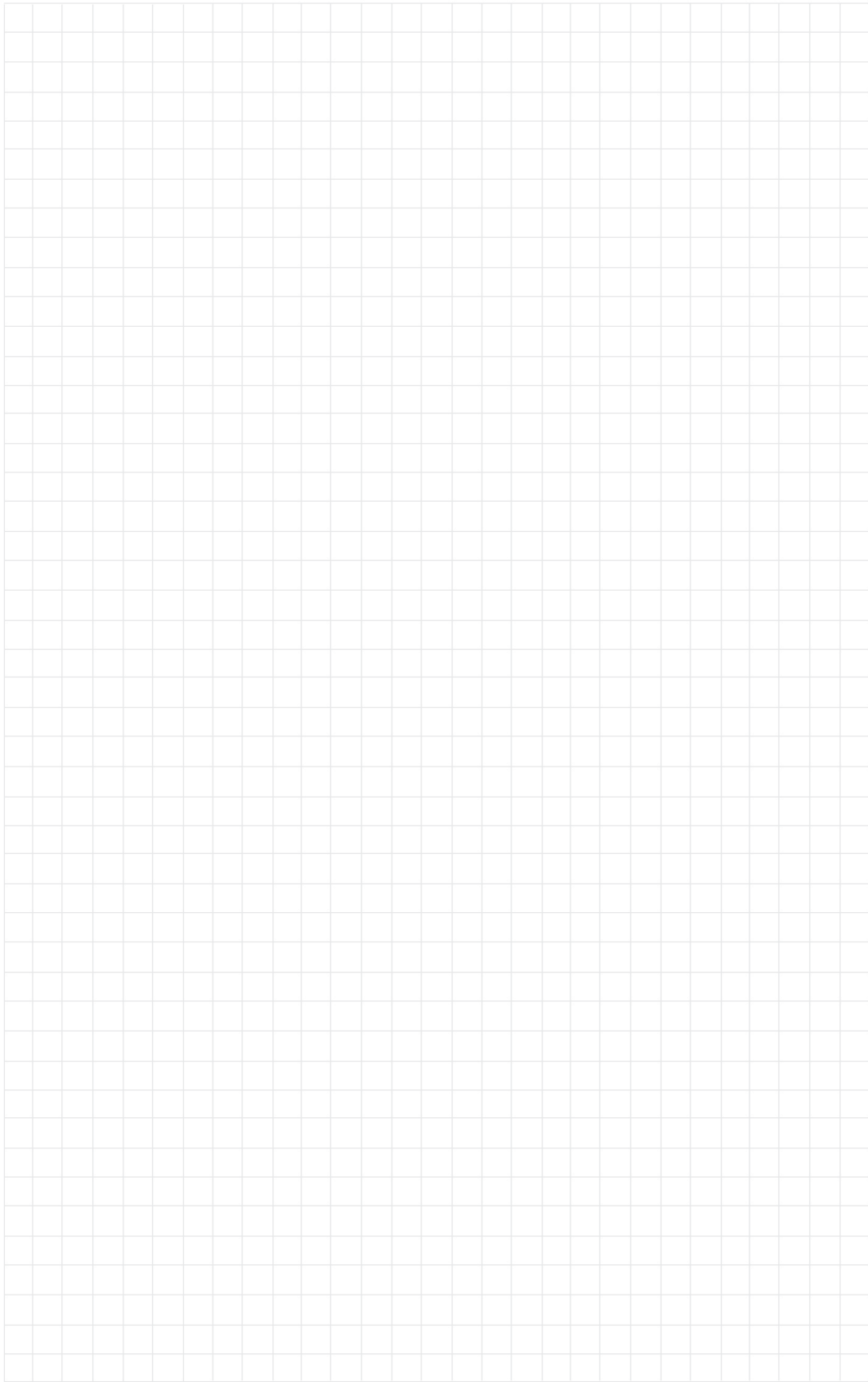
Profile & Accessories Information





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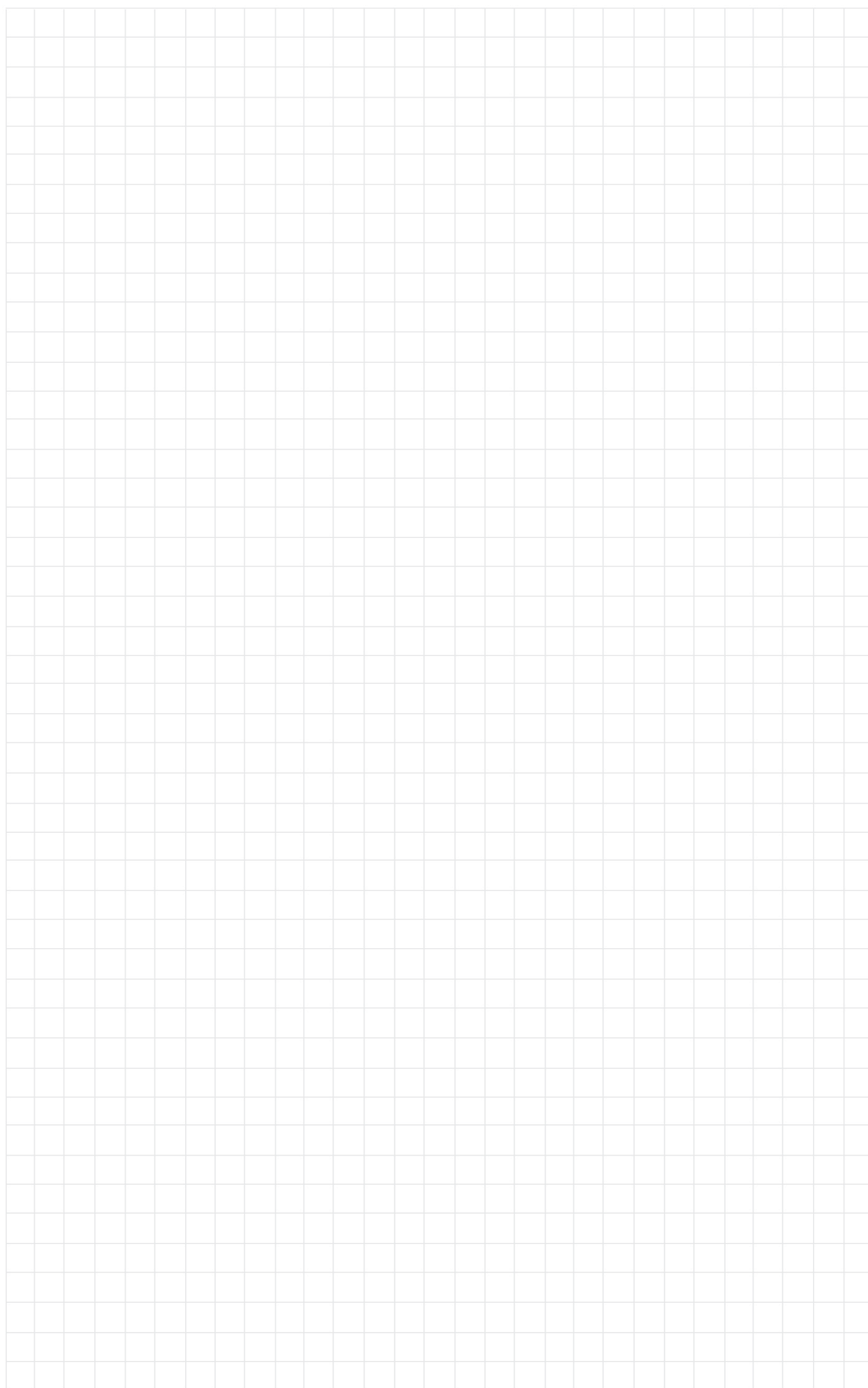
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www.alumroll.com info@alumroll.com
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