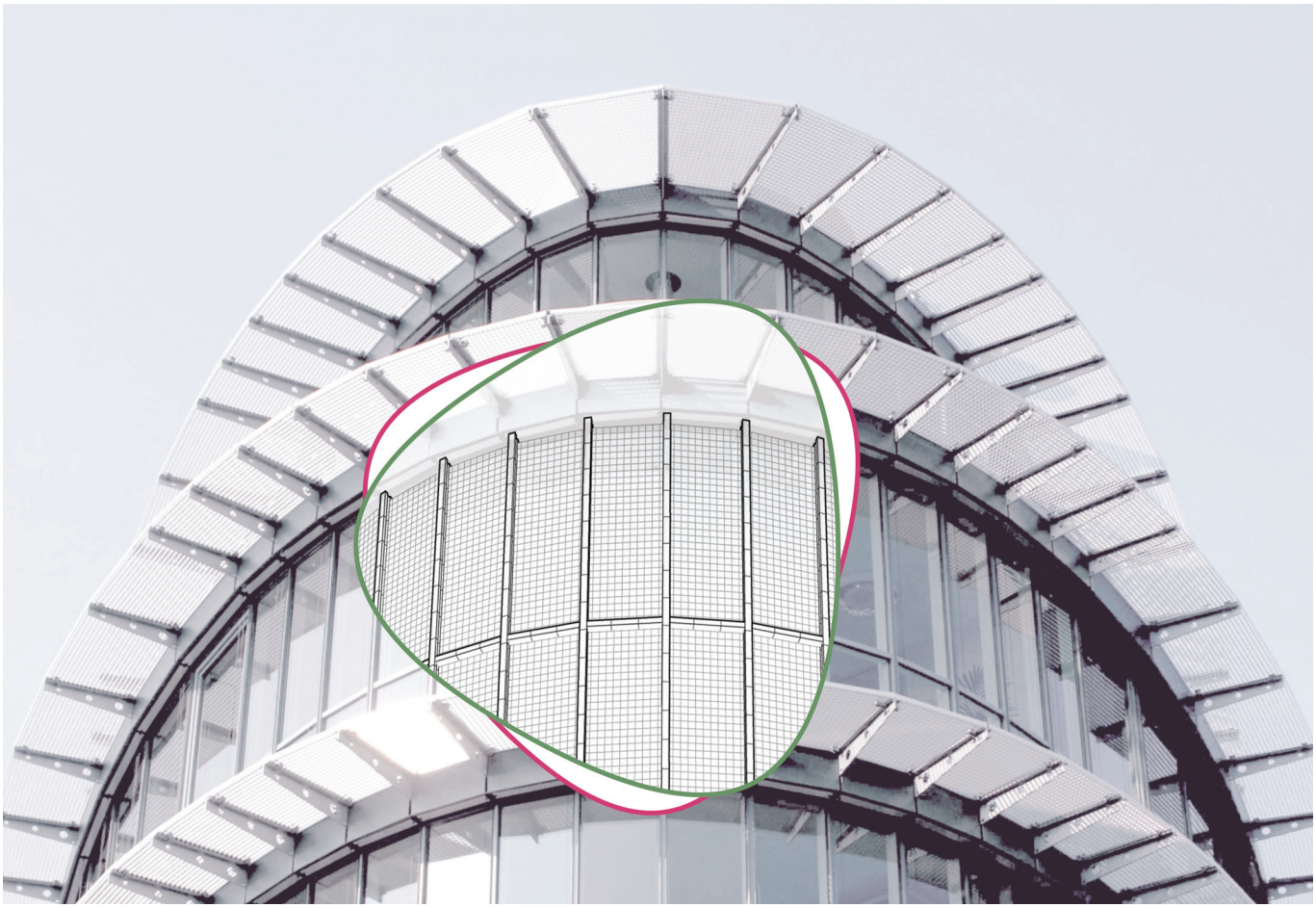
REHAU®

Unlimited Polymer Solutions



CURTAIN WALLING REHAU-POLYTEC 50 S

REHAU-POLYTEC 50 S

Profile Design and Technical Data

Sight Lines	50 mm
Range of Profile Depth	71 - 134 mm
Range of Glazing Size	6 - 40 mm
Max. Glazing Weight	up to 180 kg
Thermal Performance	U_f = 0.88 - 1.3 W/m²K (depending on profile combination)
Max. „I“ Value (Steel)	$I_{x, Steel}$ up to 221 cm^4 (equivalent of 663 cm^4 in Aluminium)
Weather Performance (EN 12154 / ENV 13050)	RE $_{1950}$
Wind Resistance (EN 13116)	± 2.0 kN/m² (Safety test ± 3.0 kN/m²)
Air Permeability (EN 12152)	AE
Impact Resistance (EN 14019)	E5 / I5
Sound Insulation (EN ISO 140-3)	$R_{W,P}$ up to 43 dB (depending on glass spec)

Application

Curtain Walling	Warm Façade (thermally broken), Stick System
Flat Screen (Plan View)	
Facetted Screen (Plan View)	Convex transom angle 0 - 45° Concave transom angle 0 - (-5°)
Vertical Inclination/Slope	Inclination outward, up to 15° from vertical Inclination inward, up to 30° from vertical

Glazing/Panels

Glazing	Single/Double/Triple glazing
Opaque Panels	Panels with various finishes
Openings	REHAU Window and Door Systems, Aluminium Doors and Automatic Sliding Doors

Colour Options

External	Mill finish, Anodised finish, Powder coating (RAL colours, DB- Metallic)
Internal	PVC-Extrusion finish in white (similar to RAL 9016), Painting in REHAU-Acryl II (REHAU Colour chart)

REHAU-POLYTEC 50 S

Thermal Performance Testing

Nachweis
Wärmedurchgangskoeffizient

Prüfbericht 422 32122/3

ift ROSENHEIM

Auftraggeber: **REHAU AG + Co.**
Verwaltung Erlangen
Ytterbium 4

91058 Erlangen-Eltersdorf

Produkt: Kunststoffprofil, Profilkombination: Riegel
Bezeichnung: REHAU-Polytec 50
Bauteile: Riegel: 164 mm
Ansichtsbreite: 50 mm
Material / Oberfläche: statischer Querschnitt: PVC - hart, Stahl/verzinkt
Deckleiste: Aluminium/pulverbeschichtet/eloxiert
Druckleiste: Aluminium/pressblank
Thermische Trennung / Dämmzone: Isolator:
Art: durchgehend
Material: PVC - hart
Einlagen: Polyethylen-Schaum mit Bemessungswert der Wärmeleitfähigkeit λ_R = 0,042 W/m·K
Metalloberflächen im Dämmzonenbereich:
Druckleiste: pressblank / unbehandelt
Füllung: Dicke: 32 mm
Einbautiefe 13,5 mm
Besonderheiten: --

Grundlagen
EN ISO 10077-2 : 2003-10 Wärmetechnisches Verhalten von Fenstern, Türen und Abschlüssen - Berechnung des Wärmedurchgangskoeffizienten - Teil 2: Numerisches Verfahren für Rahmen

Darstellung

Wärmedurchgangskoeffizient

U_f = 0,90 W/(m^2 · K)

Der berechnete Wärmedurchgangskoeffizient berücksichtigt nicht den Einfluss der Verschraubung. Dieser ist nach den anerkannten Regeln für das Profil zu ermitteln und auf das Ergebnis aufzuschlagen.

Verwendungshinweise
Dieser Prüfbericht dient zum Nachweis des Wärmedurchgangskoeffizienten U_f .

Gültigkeit
Die genannten Daten und Ergebnisse beziehen sich ausschließlich auf den geprüften und beschriebenen Gegenstand.
Die Ermittlung des Wärmedurchgangskoeffizienten ermöglicht keine Aussage über weitere leistungs- und qualitätsbestimmende Eigenschaften der vorliegenden Konstruktion.

Veröffentlichungshinweise
Es gilt das ift-Merkblatt „Bedingungen und Hinweise zur Benutzung von ift-Prüfdokumentationen".
Das Deckblatt kann als Kurzfassung verwendet werden.

Inhalt
Der Nachweis umfasst insgesamt 5 Seiten
1 Gegenstand
2 Durchführung
3 Einzelergebnisse

ift Rosenheim
30. November 2006

Norbert Sack, Dipl.-Phys.
Prüfstellenleiter Bauphysik
ift Zentrum Glas, Baustoffe & Bauphysik

Konrad Huber, Dipl.-Ing. (FH)
Prüfingenieur
ift Zentrum Glas, Baustoffe & Bauphysik

ift Rosenheim GmbH
Geschäftsführer:
Dipl.-Ing. (FH) Ulrich Sieberath
Dr. Jochen Peichl

Notified Body No. 0757
Anerkannte PÜZ-Stelle: BAY 16

System Test Report

Evidence of Performance
Air permeability
Watertightness static
Resistance to wind load
Impact resistance

Test Report 108 34713e
Translation of Test Report 108 34713 dated 27 November 2007

ift ROSENHEIM

Client: REHAU AG + Co.
Verwaltung Erlangen
Ytterbium 4

91058 Erlangen-Eltersdorf,
Germany

Product: Stick construction
System: REHAU-Polytec 50 S
Overall dimensions (W x H): 4950 mm x 3200 mm
Frame material: Steel profiles with PVC encasement

Test	Classification Curtain walling
Air permeability EN 1026	AE
Watertightness static EN 1027	RE_{1950}
Resistance to wind load EN 12179	Design load ± 2,0 kN/m² (± 41,77 psf) Safety load ± 3,0 kN/m² (± 62,66 psf)
Impact resistance EN 14019	I5 / E5

Basis
Test sequence according to EN 13830 : 2003-09, Curtain walling – Product standard

Test standards
EN 12153
EN 12155
EN 12179
EN 14019

Representation

Instruction for use
The present test report serves to demonstrate the above characteristics for curtain walling.
The present test report does not cover all performance characteristics listed in the product standard.

Validity
The data and results obtained relate exclusively to the tested and described specimen.
This test does not allow any statement to be made on further characteristics of the present structure regarding performance and quality, in particular the effects of weathering and ageing.

Notes on publication
The ift-Guidance Sheet "Conditions and Guidance for the Use of ift Test Documents" applies.
The cover sheet can be used as abstract.

Contents
The report contains a total of 11 pages
1 Object
2 Procedure
3 Detailed results
Annex 1 Photographs
Annex 2 Test record
Annex 3 Documentation and processing instructions of the system

ift Rosenheim
29 September 2008

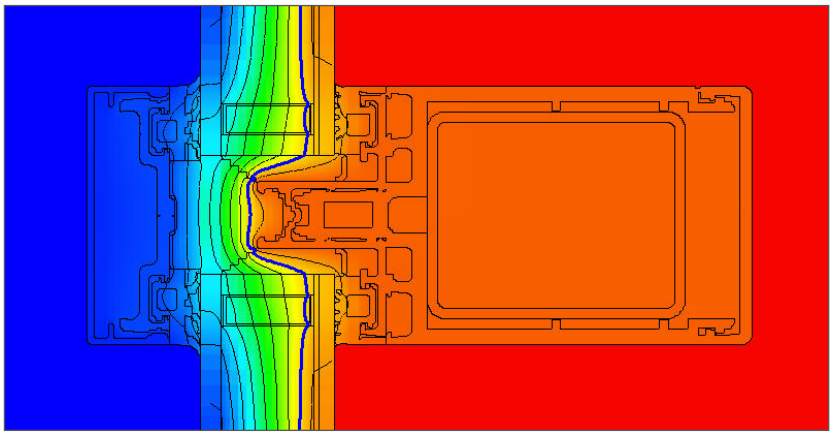
Jörn Peter Lass, Dipl.-Ing. (FH)
Test engineer
ift Centre Windows & Facades

Benno Reichelt, Dipl.-Ing. (FH)
Test engineer
ift Centre Windows & Facades

ift Rosenheim GmbH
Geschäftsführer:
Dipl.-Ing. (FH) Ulrich Sieberath
Dr. Jochen Peichl

Notified Body No. 0757
Anerkannte PÜZ-Stelle: BAY 16

Isotherms



Benefits of the composite curtain walling system REHAU-Polytec 50 S

- Thermal Performance with U_f-Value up to 0.88 W/m²K to minimise energy losses through the building shell and to avoid thermal bridging for sustainable building solutions.
- Structural Strength with minimal profile depth because of box steel sections which provide outstanding wind resistance (E_{Steel} = 3 x $E_{Aluminium}$).
- High Weather Performance because of mullion drained and pressure equalised system design. Dry joint system ensures reliable solution and ease of installation.
- Attractive design and finish properties of Aluminium Cover Profiles with 50 mm sight lines to suit the architecture of the building.
- Colour options with powder coated Aluminium Cover Profiles to the outside and Acryl II painted internal sections (RAL colour, DB metallic).
- Tried and tested system used throughout Europe on low rise as well as high rise buildings. System Test according to EN 13830.

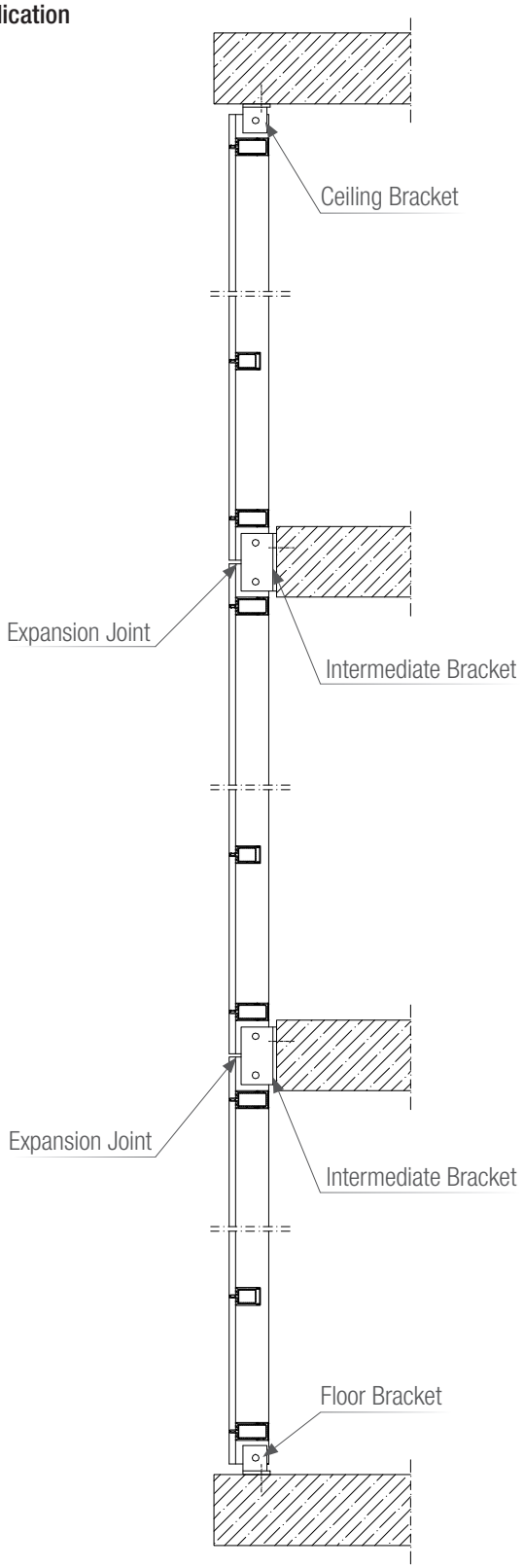
REHAU-POLYTEC 50 S

Application

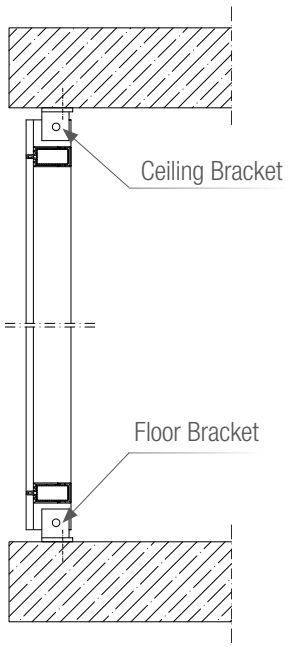
The curtain walling REHAU-Polytec 50 S is a warm facade (thermal broken) in stick system design, which separates the interior and exterior climate regarding weather protection and thermal insulation.

REHAU-Polytec 50 S can be installed in front of ther floor slabs (multi storey) or in between the floor slabs (single storey). The area of application is limited to vertical constructions and those inclined up to 15° to the outside and up to 30° to the inside.

Fixing brackets are used to anchor the mullions to the building structure to transfer the wind, traffic and dead loads.
Loose bearings compensate for thermal expansion and building movements.



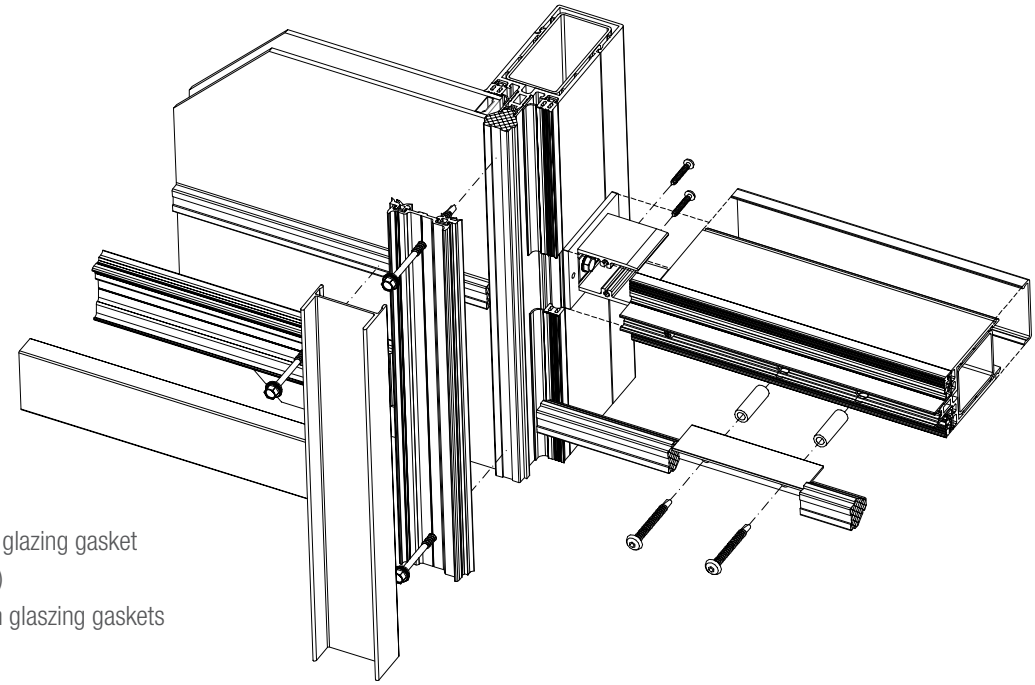
Multi-storey Curtain Walling.



Single-storey Curtain Walling.

REHAU-POLYTEC 50 S

Construction principle

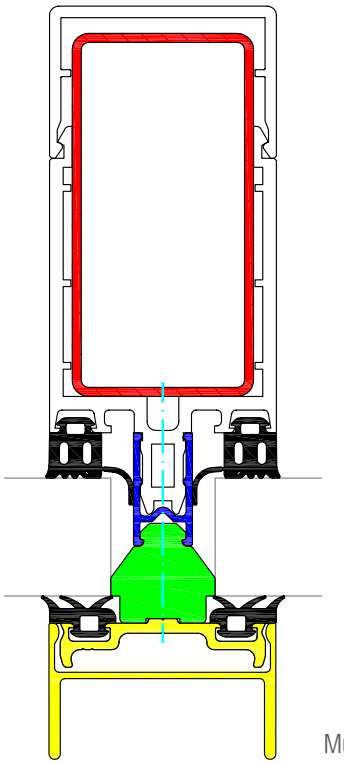


Construction Assembly:

- Aluminium Cover Profile
- Aluminium Pressure Plate with glazing gasket
- Glazing/Panels (Insulation Area)
- Box Steel and PVC profiles with glaszing gaskets

Characteristics

- Galvanised Box Steel sections provide the structural strength required for wind resistance, imposed and dead loads.
- PVC Profiles provide means of inserting glazing gaskets and other auxiliary profiles and by encasing the box steel sections to offer a warm internal surface.
- PVC Isolator overlap the mullion joint to ensure excellent weather performance and to create the dedicated drainage path (mullion drained). All profiles are square cut, no end milling required.
- PE Foam Isolator to improve the thermal and weather performance as well as the air tightness.
- EPDM Glazing gaskets create the seal to glazing and panels.
- Stainless Steel Pressure Plate Fixing
- Aluminium Pressure Plates and Cover Profiles form the external finish and provide the necessary glazing pressure. A wide range of different Cover Profiles are available to suit the architecture of the building.



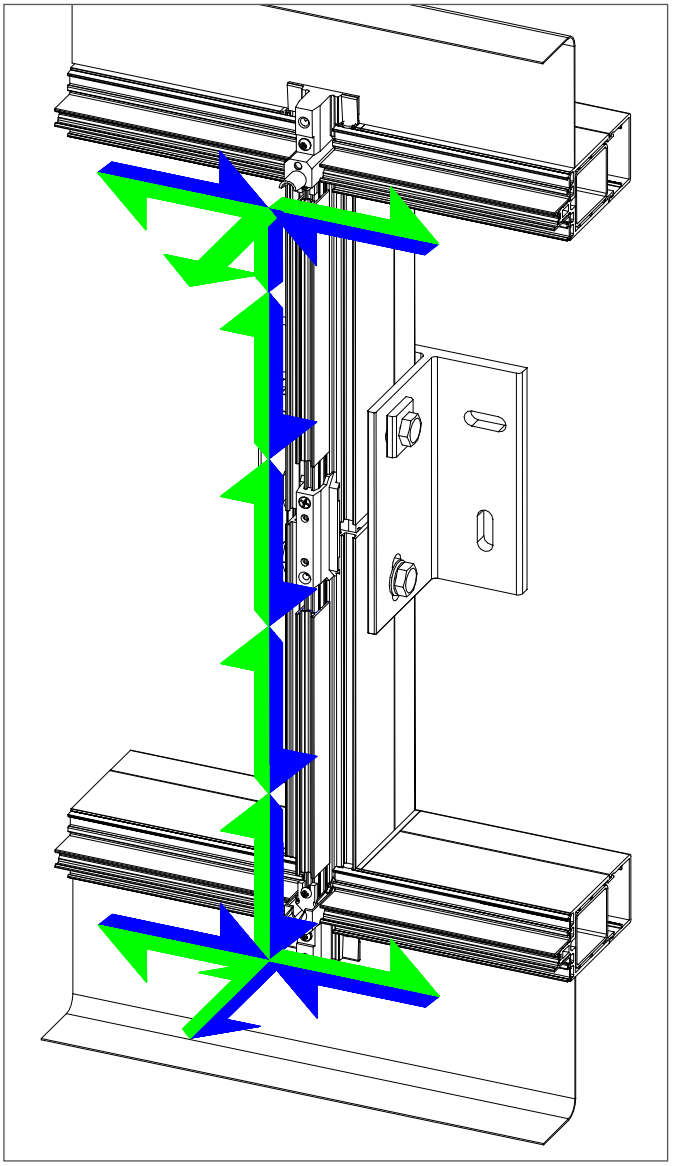
Mullion Cross Section

REHAU-POLYTEC 50 S

Mullion Drained and Pressure Equalised System

For long lasting sealed unit performance it is vital that the glazing rebates are dry or able to dry off quickly. This is achieved via the drainage and ventilation path within the system design. The drainage path follows the transom isolator to the mullion. Dedicated mouldings which penetrate the pressure plate at each storey direct the water out of the system and create pressure equalisation & ventilation, which ensures high weather performance.

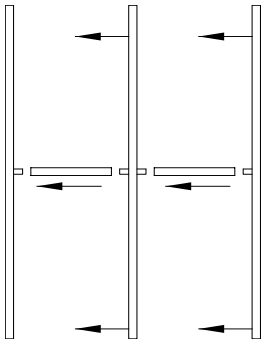
- Drainage path
- Equalisation/Ventilation path



REHAU-POLYTEC 50 S

Installation

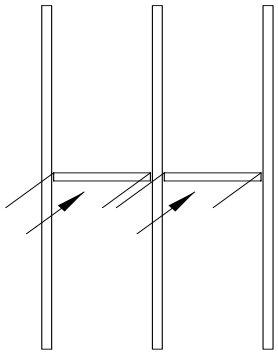
„Side Installation“



The installation method for REHAU-Polytec 50 S depends on the type of connector used.

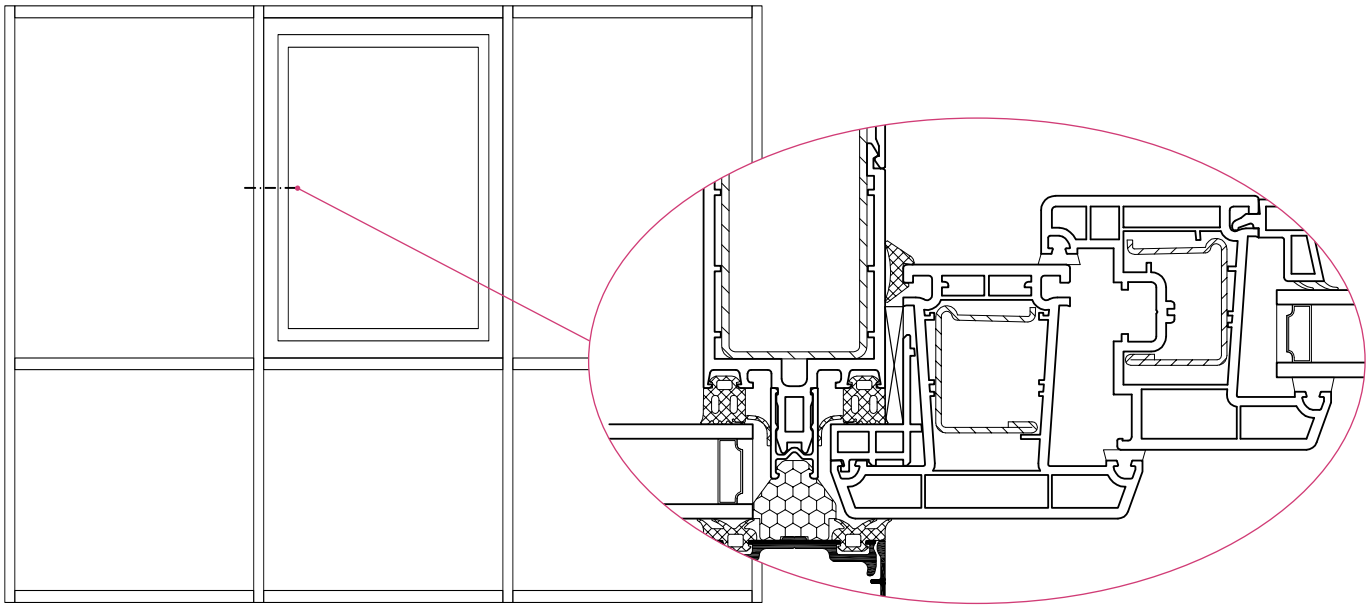
When using the Connector 50/80/120 the first mullion gets installed followed by the transoms and the next mullion and so on.

„Front Installation“



When using the Sliding Connector 50/80 the mullions can be positioned and installed first, followed by the transoms which get pushed on from the front. It is advisable to insert the top and bottom transom when installing the mullions at the same time.

Openings



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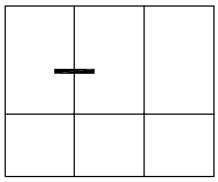
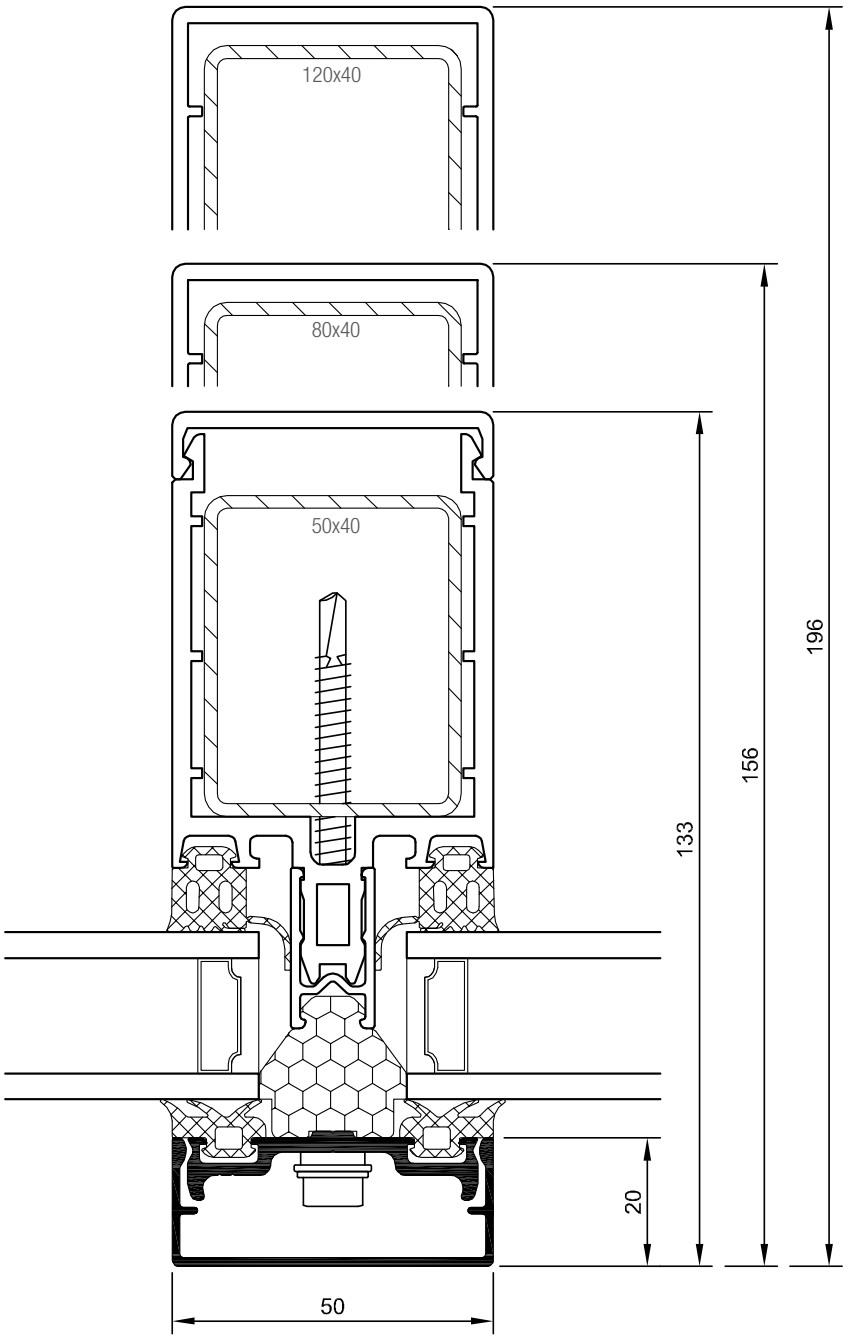


Vertical Mullion



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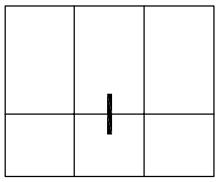
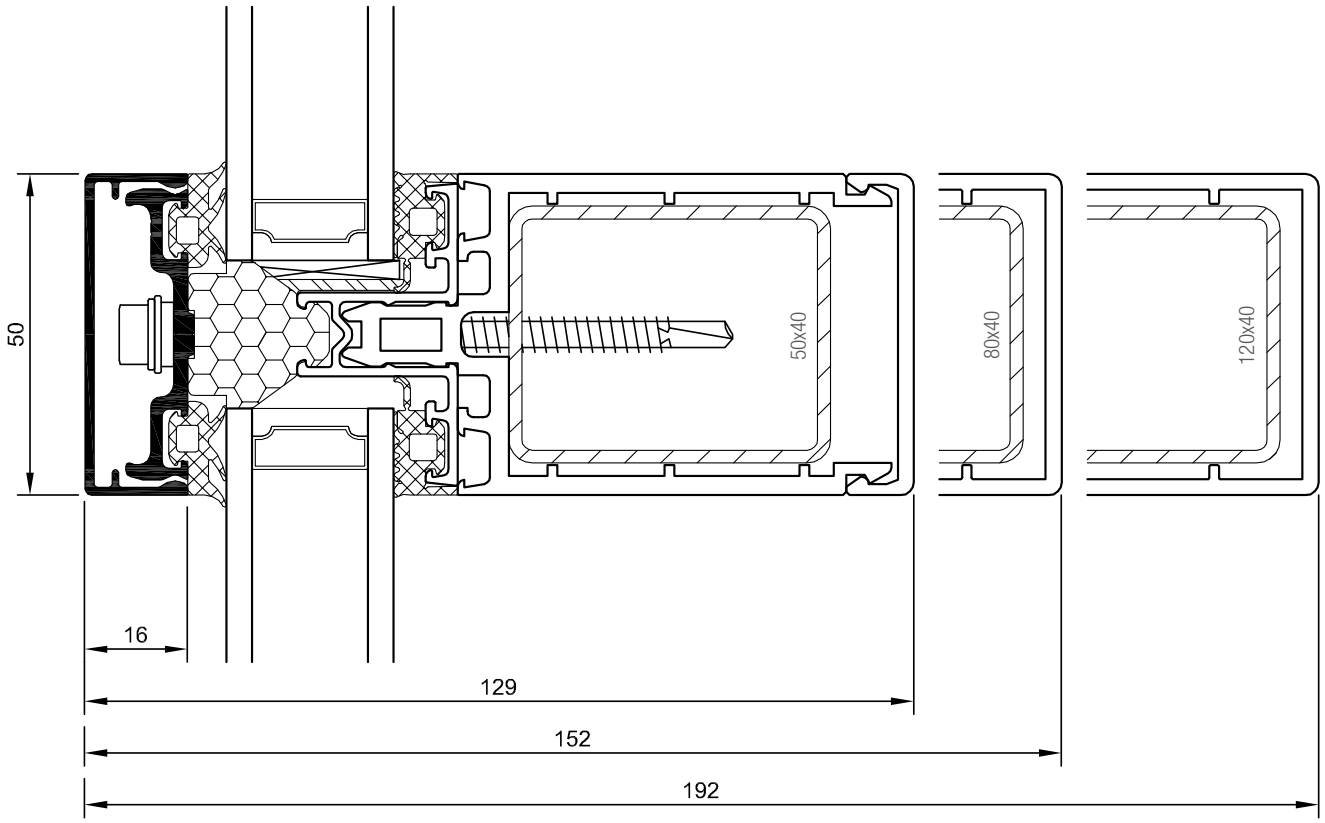


Horizontal Mullion/Transom



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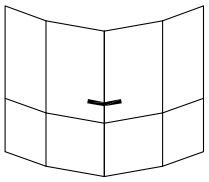
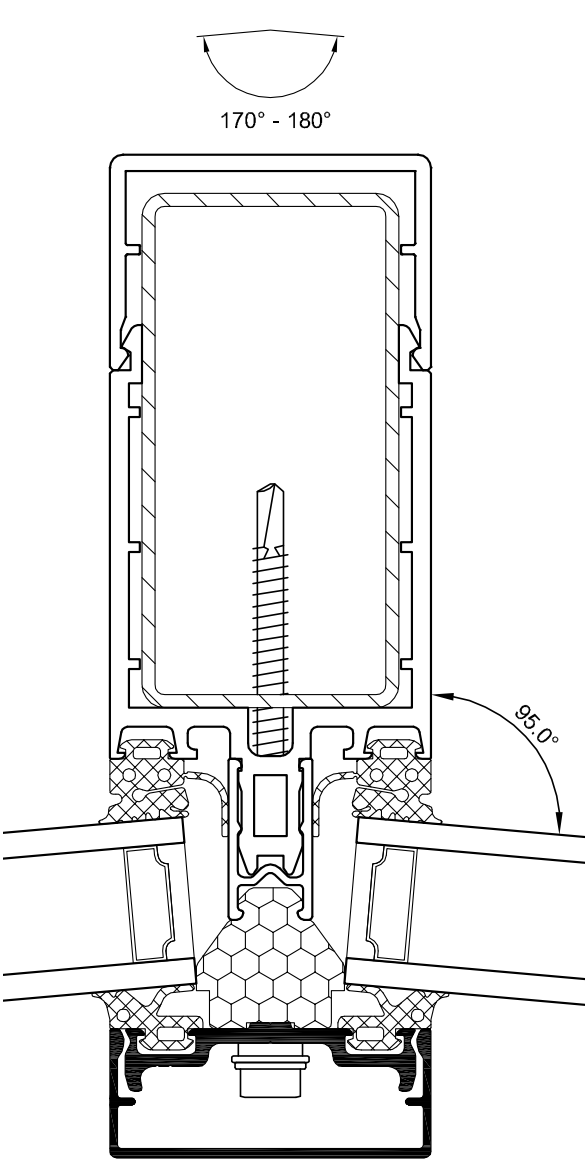
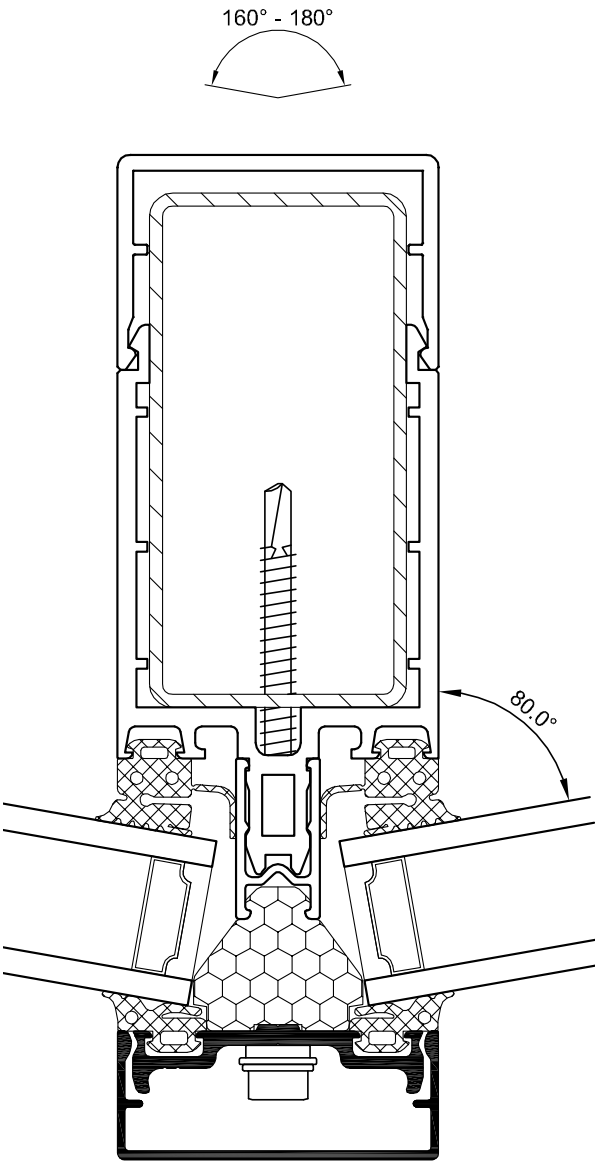


Polygonal (Facetted) Curtain Walling



Concave



Convex

REHAU-POLYTEC 50 S

References

Office Building Raumedic, Münchberg (Germany)

Day Care Center Lebenshilfe, Schwabach (Germany)

Apartments Centrium, Woking (UK)

Apartments East Hill, London (UK)

Apartments, Jekatarinenburg (Russia)

Office Building Donenergo, Rostow a. Don (Russia)

Office Building Reform, Steyr (Austria)

Volvo Showroom, Jekatarinenburg (Russia)

REHAU SALES OFFICES

AR: Buenos Aires, Phone: +54 11 489860-00, buenosaires@rehau.com **AT: Linz**, Phone: +43 732 381610-0, linz@rehau.com **Vienna**, Phone: +43 2236 24684, wien@rehau.com **AU: Adelaide**, Phone: +61 8 82990031, adelaide@rehau.com **Brisbane**, Phone: +61 7 38897522 brisbane@rehau.com **Melbourne**, Phone: +61 3 95875544, melbourne@rehau.com **Perth**, +61 8 94564311, perth@rehau.com **Sydney**, Phone: +61 2 87414500, sydney@rehau.com **BE: Brussels**, Phone: +32 16 3999-11, bruxelles@rehau.com **BG: Sofia**, Phone: +359 2 96557-71, sofia@rehau.com **BA: Sarajevo**, Phone: +387 33 475-500, sarajevo@rehau.com **BR: Arapongas**, Phone: +55 43 32742004, arapongas@rehau.com **Caxias do Sul**, Phone:+ 55 54 32146606, caxiasdosul@rehau.com **Mirassol**, Phone: +55 17 32535190, mirassol@rehau.com **Sao Paulo**, Phone: +55 11 461339- 22, saopaulo@rehau.com **BY: Minsk**, Phone: +375 17 2450209, minsk@rehau.com **CA: Moncton**, Phone: +1 506 5382346, moncton@rehau.com **Montreal**, Phone: +1 514 9050345, montreal@rehau.com **St. John's**, Phone: +1 709 7473909, stjohns@rehau.com **Toronto**, Phone: +1 905 3353284, toronto@rehau.com **Vancouver**, Phone: +1 604 6264666, vancouver@rehau.com **Winnipeg**, Phone: +1 204 6972028, winnipeg@rehau.com **CH: Bern**, Phone: +41 31 7202-120, bern@rehau.com **Vevey**, Phone: + 41 21 94826-36, vevey@rehau.com **Zurich**, Phone: +41 44 83979-79, zuerich@rehau.com **CL: Santiago**, Phone: +56 2 540-1900, santiago@rehau.com **CN: Guangzhou**, Phone: +86 20 87760343, guangzhou@rehau.com **Beijing**, Phone: +86 10 64282956, beijing@rehau.com **Shanghai**, Phone: +86 21 63551155, shanghai@rehau.com **CZ: Brünn**, Phone: +420 547 425-580, brno@rehau.com **Prague**, Phone: +420 2 72190-111, praha@rehau.com **DE: Berlin**, +49 30 66766-0, berlin@rehau.com **Bielefeld**, Phone: +49 521 20840-0, bielefeld@rehau.com **Bochum**, Phone: +49 234 68903-0, bochum@rehau.com **Frankfurt**, Phone: +49 6074 4090-0, frankfurt@rehau.com **Hamburg**, Phone: +49 40 733402-100, hamburg@rehau.com **Leipzig**, Phone: +49 34292 82-0, leipzig@rehau.com **Munich**, Phone: +49 8102 86-0, muenchen@rehau.com **Nuremberg**, Phone: +49 9131 93408-0, nuernberg@rehau.com **Stuttgart**, Phone: +49 7159 1601-0, stuttgart@rehau.com **DK: Copenhagen**, Phone: +45 46 7737-00, kobenhavn@rehau.com **ES: Barcelona**, Phone: +34 93 6353-500, barcelona@rehau.com **Bilbao**, Phone: +34 94 45386-36, bilbao@rehau.com **Madrid**, Phone: +34 91 6839425, madrid@rehau.com **EE: Tallinn**, Phone: +372 6 2839-32, tallinn@rehau.com **FR: Agen**, Phone: +33 5536958-69, agen@rehau.com **Lyons**, Phone: +33 472026-300, lyon@rehau.com **Paris**, Phone: +33 1 348364-50, paris@rehau.com **Rennes**, Phone: +33 2 996521-30, rennes@rehau.com **St. Avold**, Phone: +33 3879177-00, stavold@rehau.com **FI: Helsinki**, Phone: +358 9 877099-00, helsinki@rehau.com **GB: Birmingham**, Phone: +44 121 3442-300, birmingham@rehau.com **Glasgow**, Phone: +44 1698 50 3700, glasgow@rehau.com **Manchester**, Phone: +44 161 7777-400, manchester@rehau.com **Slough**, Phone: +44 1753 5885-00, slough@rehau.com **GE: Tiflis**, Phone: +995 32 559909, tbilisi@rehau.com **GR: Athens**, Phone: +30 210 6682-500, athens@rehau.com **HU: Budapest**, Phone:+36 23 5307-00, budapest@rehau.com **HK: Hongkong**, Phone: +8 52 28987080, hongkong@rehau.com **HR: Zagreb**, Phone: +3 85 1 3886998, zagreb@rehau.com **ID: Jakarta**, Phone: +62 21 5275177, jakarta@rehau.com **IT: Milan**, Phone: +39 02 95941-1, milano@rehau.com **Pesaro**, Phone: +39 0721 2006-11, pesaro@rehau.com **Rome**, Phone: +39 06 900613-11, roma@rehau.com **Treviso**, Phone: +39 0422 7265-11, treviso@rehau.com **IN: New Delhi**, Phone: +91 11 32948602, newdelhi@rehau.com **Mumbai**, Phone: +91 22 67922929, mumbai@rehau.com **IE: Dublin**, Phone: +353 1 816502-0, dublin@rehau.com **JP: Tokyo**, Phone: +81 3 57962102, tokyo@rehau.com **KR: Seoul**, Phone: +82 2 5011656, seoul@rehau.com **KZ: Almaty**, Phone: +7 7272 455467, almaty@rehau.com **LT: Vilnius**, Phone: +3 705 24614-00, vilnius@rehau.com **LV: Riga**, Phone: +3 71 67 609080, riga@rehau.com **MK: Skopje**, Phone: +3 892 2402-670, skopje@rehau.com **MX: Mexico**, Phone: +52 461 61880-00, mexico@rehau.com **Monterrey**, Phone: +52 81 81210-130, monterrey@rehau.com **NO: Oslo**, Phone: +47 22 5141-50, oslo@rehau.com **NL: Nijkerk**, Phone: +31 33 24799-11, nijkerk@rehau.com **NZ: Auckland**, Phone: +64 9 2722264, auckland@rehau.com **PO: Lisbon**, Phone: +3 51 21 94972-20, lisboa@rehau.com **PE: Lima**, Phone: +51 1 2261713, lima@rehau.com **PL: Gdansk**, Phone: +48 58 6685960, gdynia@rehau.com **Katowice**, Phone: +48 32 7755-100, katowice@rehau.com **Poznan**, Phone: +48 61 849-8400, poznan@rehau.com **Warsaw**, Phone: +48 22 519-7300, warszawa@rehau.com **TW: Taipei**, Phone: +886 2 25861210, taipei@rehau.com **RO: Bacau**, Phone: +40 234 512066, bacau@rehau.com **Bucharest**, Phone: +40 21 2665180, bucuresti@rehau.com **Cluj**, Phone: +40 264 415211, clujnapoca@rehau.com **RU: Chabarowsk**, Phone: +7 4212 411218, rehau.chab@mail.ru **Yekatarinburg**, Phone: +7 343 3510344, jekatarinburg@rehau.com **Krasnodar**, Phone: +7 861 2103636, krasnodar@rehau.com **Moscow**, Phone: +7 495 6632060, moscow@rehau.com **Nizhny Novgorod**, Phone: +7 8312 786927, nishnijnowgorod@rehau.com **Nowosibirsk**, Phone: +7 383 2000353, nowosibirsk@rehau.com **Rostov-on-Don**, Phone: +7 8632 978444, rostow@rehau.com **Samara**, Phone: +7 8462 698058, samara@rehau.com **St. Petersburg**, Phone: +7 812 7187501, stpetersburg@rehau.com **SE: Örebro**, Phone: +46 19 2064-00, oerebro@rehau.com **SCG: Belgrade**, Phone: +3 81 11 3770-301, beograd@rehau.com **SG: Singapore**, Phone: +65 63926006, singapore@rehau.com **SK: Bratislava**, +4 21 2 682091-10, bratislava@rehau.com **TH: Bangkok**, Phone: +66 2 7443155, bangkok@rehau.com **TR: Ankara**, Phone: +90 312 4726950, ankara@rehau.com **Istanbul**, Phone: +90 212 35547-00, istanbul@rehau.com **Izmir**, Phone: +90 232 4458525, izmir@rehau.com **UA: Dnepropetrowsk**, Phone: +380 56 3705028, dnepropetrowsk@rehau.com **Kiev**, Phone: +380 44 4677710, kiew@rehau.com **Odessa**, Phone: +380 48 7800708, odessa@rehau.com **UAE: Dubai**, Phone: +9714 8835677 630, dubai@rehau.com **US: Chicago**, Phone: +1 630 3173500, chicago@rehau.com **Dallas**, Phone: +1 972 2702322, dallas@rehau.com **Detroit**, Phone: +1 248 8489100, detroit@rehau.com **Grand Rapids**, Phone: +1 616 2856867, grandrapids@rehau.com **Greensboro**, Phone: +1 336 8522023, greensboro@rehau.com **Los Angeles**, Phone: +1 951 5499017, losangeles@rehau.com **Minneapolis**, Phone: +1 763 5851380, minneapolis@rehau.com **ZA: Durban**, Phone: +27 31 657447, durban@rehau.com **Johannesburg**, Phone: +27 11 201-1300, johannesburg@rehau.com