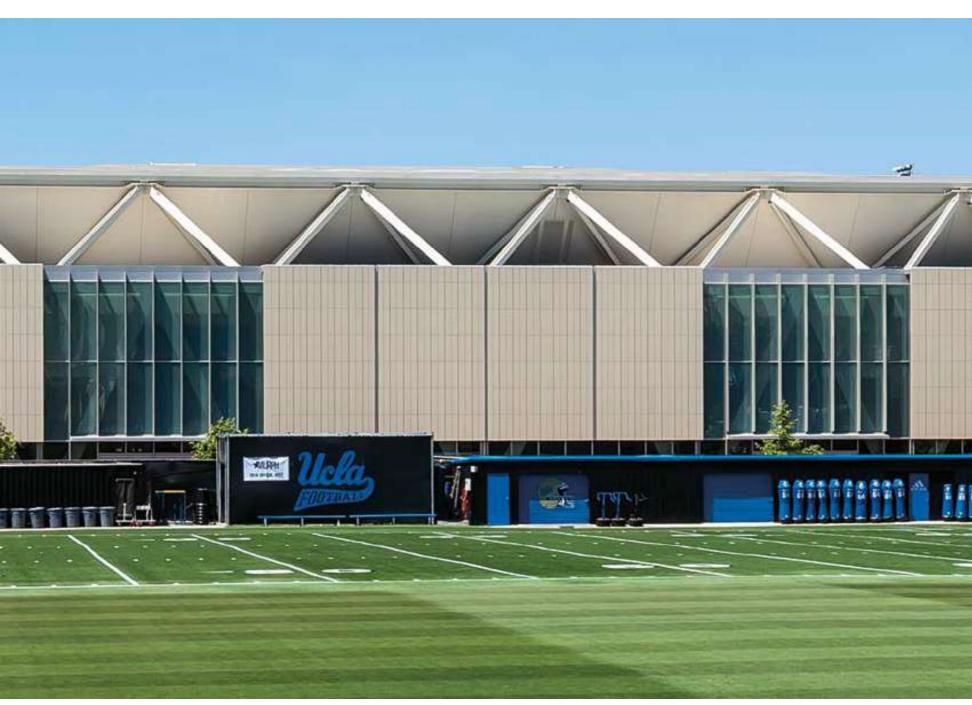




Facelift for a university

In recent years, the North American construction market has experienced a sharp increase in the ratio of renovations and expansions to new construction projects. In part this is a by-product of a greener approach to design, because improving the energy performance of existing buildings generally results in lower total energy costs than new construction.



Pauley Pavilion, University of California, Los Angeles, USA / Architects: NBBJ, Los Angeles, USA / Products: KeraTwin® / Photos: RMA Photography Inc.









his trend, however, also reflects an uncertain economy and the densification of urban centres. A 2008 report by California's Lawrence Berkeley National Laboratory (Report LBNL-291) forecasts that at least half of the buildings that will be in use in developed economies by 2050 have already been built, and a 2003 survey by the U.S. Energy Information Agency found that buildings more than 20 years old account for more than 72 per cent of the nation's floor-stock.

Lighter in weight and more cost-effective than many other construction materials, the durable, color-fast ceramic tile is highly suitable for many projects involving the transformation of an existing building. One award-winning example, the Pauley Pavilion renovation and expansion, was completed at the University of California, Los Angeles (UCLA) campus in

2012. Home to UCLA's fabled Bruins basketball team, the original Pauley Pavilion, by Welton Becket, dates from 1965. Tasked with adding one thousand additional seats to what had previously been a 12,000-seat arena and significantly increasing both fan amenity space and team space, the architectural firm NBBJ faced several challenges. A desire to retain the original arena's distinctive V-truss roof structure precluded the possibility of building up, and the proximity of other buildings limited the scope for building outward. NBBJ's solution involved building new locker room, support and event space below grade and creating an enclosed concourse at grade that slopes outward along the original building's northern edge. Glass, steel and AGROB BUCHTAL's ceramic facade system KeraTwin® are the principal materials used to create this elegant new concourse. Athletic Business jurors described the Pauley Pavilion's transformation as "beautifully detailed" and "a masterful makeover" when they bestowed a 2013 Facilities of Merit award on it.



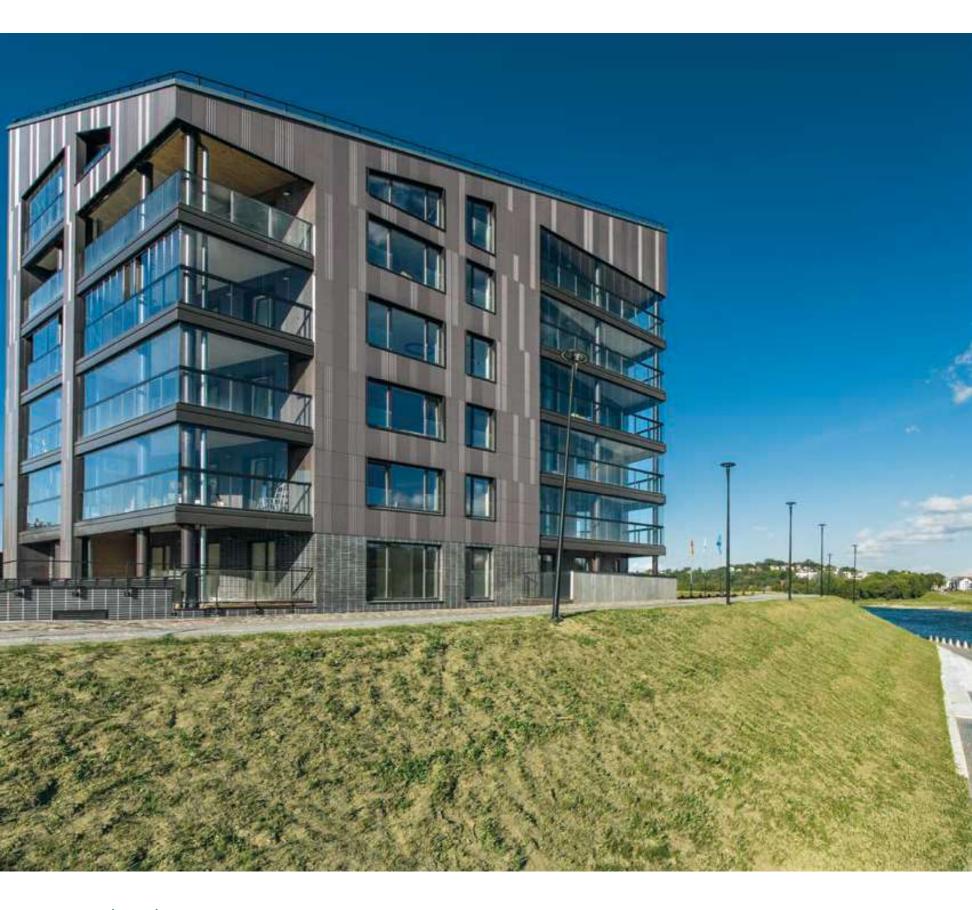


Pauley Pavilion, University of California, Los Angeles, USA / Architects: NBBJ, Los Angeles, USA / Year: 2012 / Products: KeraTwin® (K20), special color cream-beige / Photos: RMA Photography Inc.







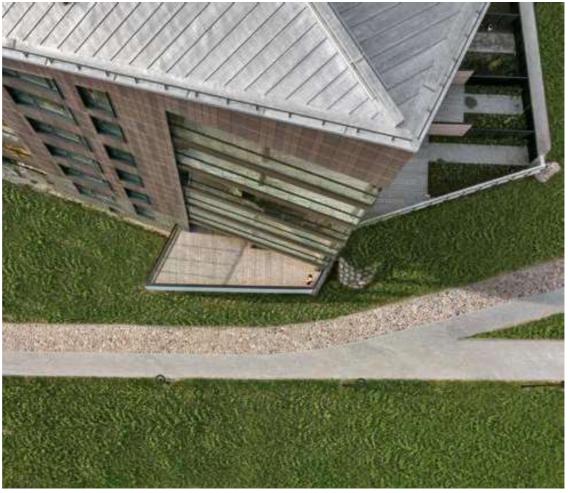


he two apartment buildings are placed in what is becoming the new Piliamiestis quarter, located opposite the monumental Old Castle of Kaunas. This historical Castle is not only centre stage in many of the views from the apartments, but it also formed a major reference for the architecture of the new buildings. On the request of the Kaunas city architect, Kita Kryptis's Tomas Kriaučiūnas has mixed and matched the colors of his buildings with those of the castle. For this, he has used AGROB BUCHTAL's KeraTwin® K20 tiles, finished with the self-washing and air pollutants eliminating **Hytect** technology.

The castle has walls made out of a mix of stone and bricks, and roofs covered with terra-cotta tiles. The brown facades

of the apartment buildings do not exactly mimic the colors of the castle, but they are certainly taking cues from it. In a subtle way, Kriaučiūnas has managed not only to reference the color of the Old Castle but also the texture of its walls. The facades echo the robustness and unevenness of the castle's rusticated walls in the alternating use of tiles with and without grooves, in the variation of the dimensions of the ceramic tiles and in the nuanced color differences between them. In this way, he has given a tactile materiality to his architecture. Despite the evident differences in appearance and history between the Old Castle and the new residential architecture on either side of the river, Kriaučiūnas has achieved a natural, yet novel understanding between past and present.







Transformative tower

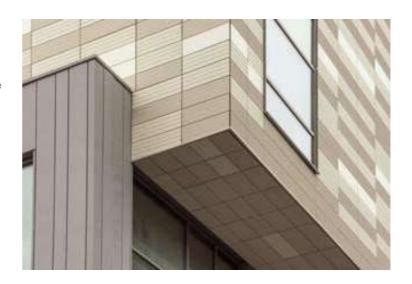
Like many other cities, Boston currently experiences a densification of its urban core. The effect of this is clearly visible in Fenway Park, which used to be a predominantly low-rise district. The contrast between the 20-storey Viridian, named after a chrome green pigment, and its two-storey neighbours is indicative of the scale of the transformation which is taking place there.

runer/Cott Architects and Planners have carefully mitigated this shift in dimensions by dividing up the building into smaller volumes. Moreover, by including programme which benefits the community, they have ensured that the building becomes an integral part of the neighbourhood.

The building has glass balcony screens whose color comes close to the viridian it is named after, but it isn't this green that is determining the overall impression of this architecture. Crucial for the appearance of the building is the subdued cladding in terra-cotta tiles of AGROB BUCHTAL. The Viridian consists of a podium with retail, the Fenway Community Centre, and a large three-storey lobby. Above this podium are two towers with 342 apartments, ranging from micro units to three-bedrooms, catering for a diverse demographics of professionals, students, young families and empty-nesters.

Between the underground parking and the communal rooftop terraces on the fifteenth and twentieth floors, the Viridian also contains a fitness centre, resident lounges, and two 'work labs' with computer bars and conference rooms.

To mitigate this sizable addition to cityscape, Bruner/Cott Architects and Planners have not only broken up the volume in smaller ones, but also created a variation in color and composition to set them even more apart. Slight color variations of the tiles within the main volume help to further scale down the building and to enliven its architecture.



Each volume is covered in a terra-cotta rain screen in different natural earthy colors, which harmonize with the range of reds, browns and yellows of Boston's traditional buildings in brick. While the Viridian is in every sense the product of the twenty-first century, its reliance on the enduring quality of ceramic products situates this architecture in a venerable tradition of timeless city building.





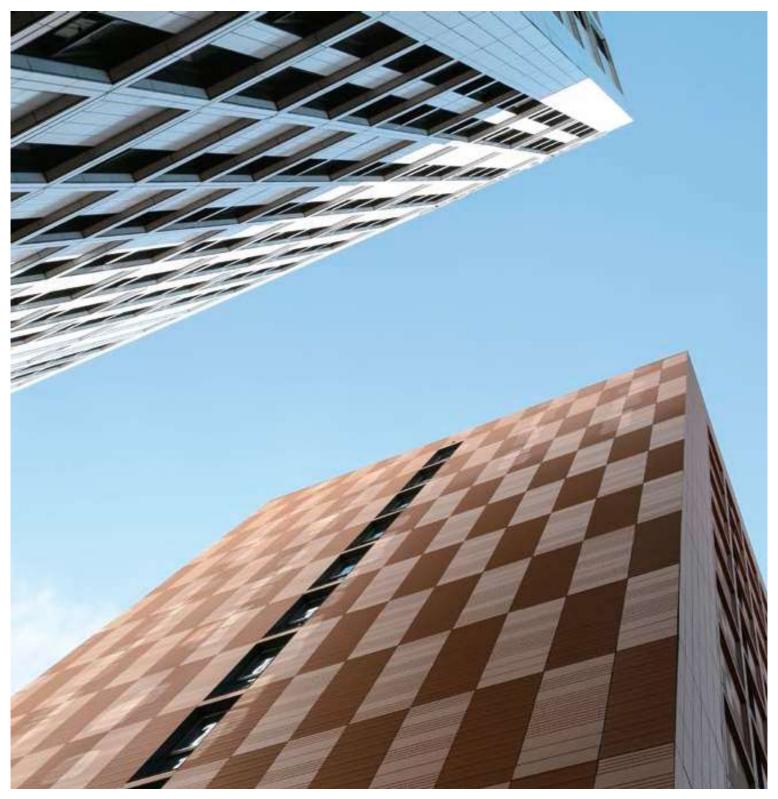


The Viridian, Boston, USA / Architect: Bruner/Cott & Associates, Cambridge, USA / Year: 2015 / Products: KeraTwin® (K20) / Photos: Fred Clements, cb-products



Earthy and airy

Rachel Haugh, one of the name-givers of SimpsonHaugh, has noted that there are two vital requirements for the design of a high-rise. One is to ensure it is well-connected on street level, and the other that it adds something to the skyline.





Downing Students City Village, Belgrade Plaza, Coventry, Great Britain / Architects: Simpson Haugh and partners group / Year: 2017 / Products: KeraTwin® (K20), / Photos: Simon Hadley

his might be true in general, but in the case of the 20-storey complex of Belgrade Plaza in Coventry, it is equally important what happens architecturally in between the bottom and the top. The complex Haugh and Ian Simpson designed as part of the urban regeneration of the area near the Belgrade Theatre is situated in the northwestern part of the centre of Coventry. The city has endured a massive destruction during the Second World War and has subsequently been rebuilt in the 1950s and 60s in a tepid, reconciliatory style, combining concrete and brick. The Belgrade Plaza complex contains retail space on street level, 49 apartments and a variety of different types of housing for 600 students.

This complex obviously stands out due to its height in a predominantly low-rise cityscape, which is determined by the elevated ring road and the postwar reconstruction architecture of the centre of Coventry itself. In the direct surroundings of Belgrade Plaza there is not only the theatre but also some scattered detached and semi-detached housing that has survived the bombing in the 1940s. Simpson and Haugh have managed to blend in their intervention in this rather disparate mix of buildings that forms the context they had to work in, and with. To mitigate the change of scale imposed by the high-rise, the foot of the tower consists of additional low- and mid-rise volumes, with a gridded pattern to further break up their mass. The facades of these lower volumes are cladded with KeraTwin® facade ceramics of earthy shades, harmonizing with the brick buildings in the area. The tower is finished in



light-blue, glazed terra-cotta tiles with a glossy coating. The effect of these light-hued ceramics and their reflective finish is that it makes the tower appear lighter, and lighting it up, adding a welcome brightness to Coventry.





The cladding of the projections attributing the facade its characteristic structure required special customised production. Hence, AGROB BUCHTAL not only designed special panels and cross-sections: assembly was also based on an individual and detailed solution featuring a combination of K20 clamps and K20 system profiles. Based on detailed drawings, the arrow-shaped panels for the intersections were cut precisely in the factory in various sizes.







Pretoria Tower, South Africa / Architect: Boogertman + Partners, Pretoria / Year: 2014 / Products: KeraTwin®, special color / Photos: Roger Skudder

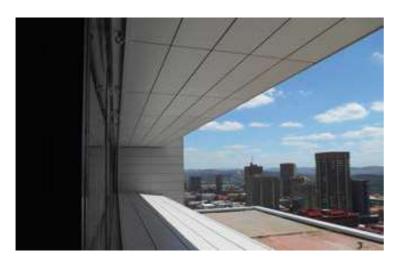
Pretorias landmark with a new appearance

When the Pretoria Tower was completed in 1978, it was not only the first skyscraper in the rapidly-growing city of Pretoria; it was also regarded as a prime example of progressive architecture throughout South Africa. Meanwhile somewhat outdated, the building has now been given a new facade complying with current construction standards yet maintaining the original appearance as consciously as possible.

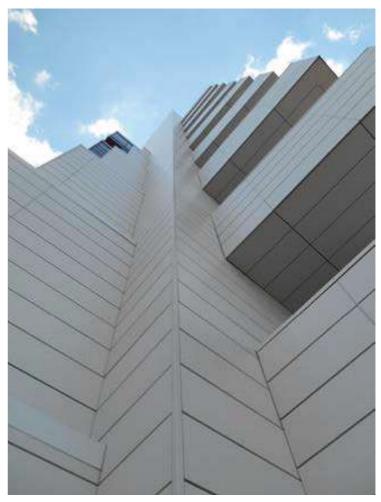
reviously known as the "Volkskas Buiklding" on the corner of Pretorius Street and Lilian Ngoyi Street, the building is not only regarded as the city's most distinctive landmark but also serves as a visual orientation point for public spaces throughout the central business district.

In the course of more than three decades, the Pretoria Tower has become a characteristic element in the city's history. Today, it is protected by the provisions of the "National Heritage Resources Act" as an "outstanding architectural achievement of a remarkable architect". That is why the initiative for the restoration of the Tower founded in 2010 attached great importance to a renewal of the facade in such a subtle manner that the look, the shape and the structure of

the building were basically maintained and the aesthetic intentions of the architects could be realized. The total volume and the building mass distribution of the building also should remain unchanged, if possible. However, an analysis of the architecture office Boogertman + Partners showed that it was almost impossible to retain and restore the existing facade made of glazed ceramic mosaic tiles and to meet the current requirements with regard to construction technique in this way. That is why one decided in favour of a rear-ventilated facade realized with 20 mm thick KeraTwin® panels, whose glaze color was adapted to the original look as exactly as possible. The visible aluminium substructure profiles were powder-coated accordingly. In total, AGROB BUCHTAL supplied 31,000 m² of KeraTwin® panels and the appropriate accessories to Pretoria for installation.











LEED®-certified transport centre

Although North America lagged behind Europe for many decades in sustainable building practices, in recent years burgeoning interest in LEED® and other green building rating systems has brought the two continents into closer alignment. In Montreal, Quebec, the Société de transport de Montréal (STM) recently opened a transport center that earned a LEED® Gold rating.

he Stinson Transport centre, designed by Lemay, will have a smaller environmental footprint than the facility it replaces, even though it is four times the size of its predecessor.

Stretching the length of seven football fields, STM's first roof-covered transport centre minimises the environmental and sensory impact of the 300 buses it can accommodate. Treating the roof as a 'fifth facade' was key to Lemay's sleight of hand: residents of high-rise towers bordering the site gaze

down on a visually engaging patchwork of ventilation skylights and green roof expanses, traversed by the yellow oblong roof demarcating the administrative portion of the facility. Natural light streaming through the skylights permeates the transport centre, and approximately 85 per cent of the heat generated by the vehicles and the maintenance areas is reused for heating and air conditioning. The environmentally responsible materials specified for this project include 2,300 m² of AGROB BUCHTAL ceramic tiles comprising part of the building envelope.



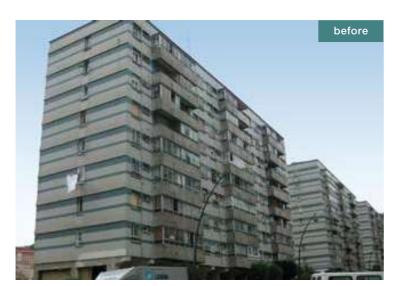


Ceramic facade systems for sustainable renovation

The world-wide trend towards urbanization continues. New town dwellers need housing space, but hardly any areas for new buildings are available today. That is why densification and gentrification have become more and more important during the last years. In this situation, ceramic facade systems offer decisive advantages.

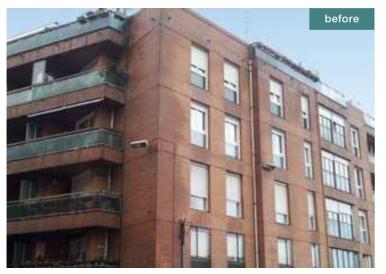
tructural measures at existing buildings open up new chances for future-oriented urban planning: formerly neglected urban districts are becoming attractive residential quarters, and even historic buildings meet the increased requirements of the energy balance after energy-efficient renovation. That is why the number of renovation projects is already exceeding the volume of new buildings in many places. Ceramic facade systems installed on the old facade like a second shell provide a sustainable solution advantageous in terms of energy efficiency and

aesthetics. In this way, diverse energy saving requirements can be met, as the gap between old and new facade provides space for insulation layers of any thickness. In addition, curtain-type facades offer ideal conditions for the visual enhancement of buildings, as they also permit a building grid independent of the original structure of the building. And the positive effects on the quality of living also speak in favour of this type of renovation. Because thanks to the decoupling of the outer shell from the building structure, the living spaces remain cool in summer and warm in winter.



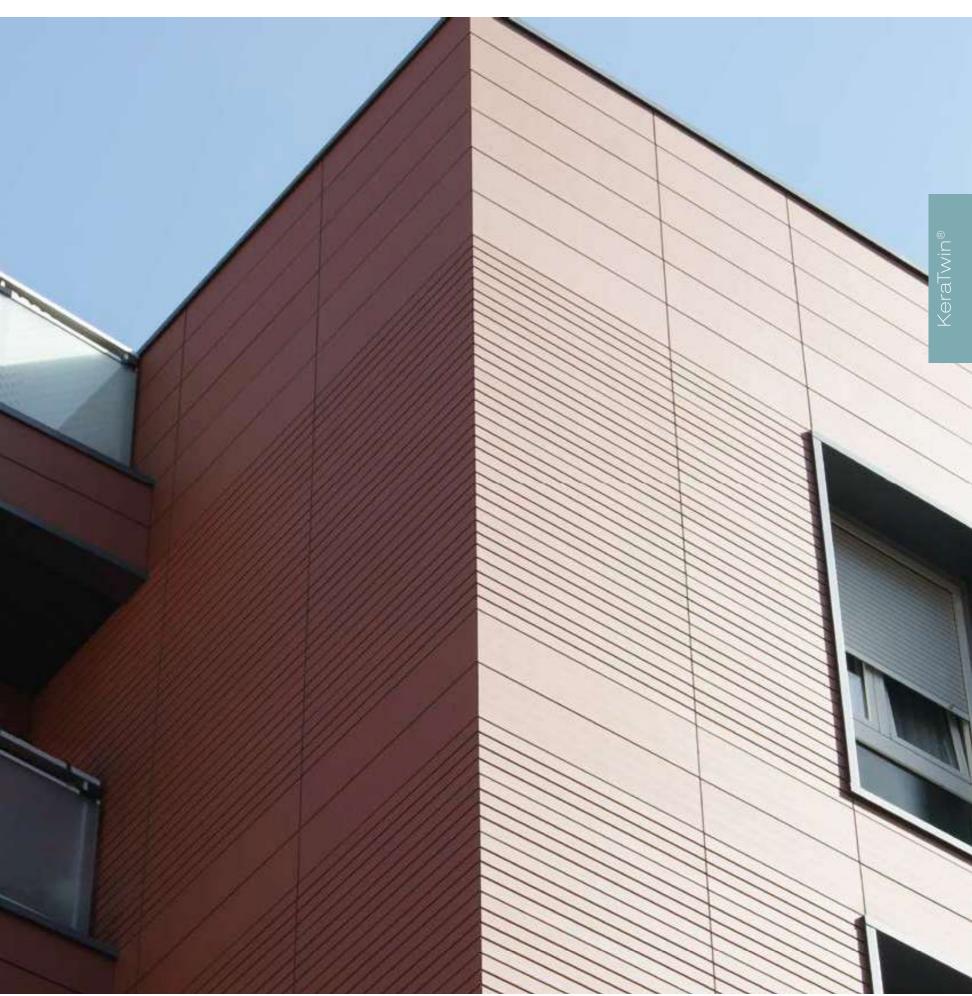


Residential building Av. Julian Gaiarre, Bilbao, Spain / Year: 2013 / Products: KeraTwin®





Residential building c/Juan Bautista Uribarri, Bilbao, Spain / Year: 2015 / Products: Kera $\mathsf{Twin}^{\texttt{0}}$



Residential building Av. Julian Gaiarre, Bilbao, Spain / Year: 2015 / Products: KeraTwin®



The KeraTwin® system offers additional options in terms of surface finish. In addition to the glossy, silky-matt or unglazed surfaces, panels are now also available which benefit from the new technical possibilities offered by digital printing in order to create even more natural and lively facade areas or to achieve highlights.

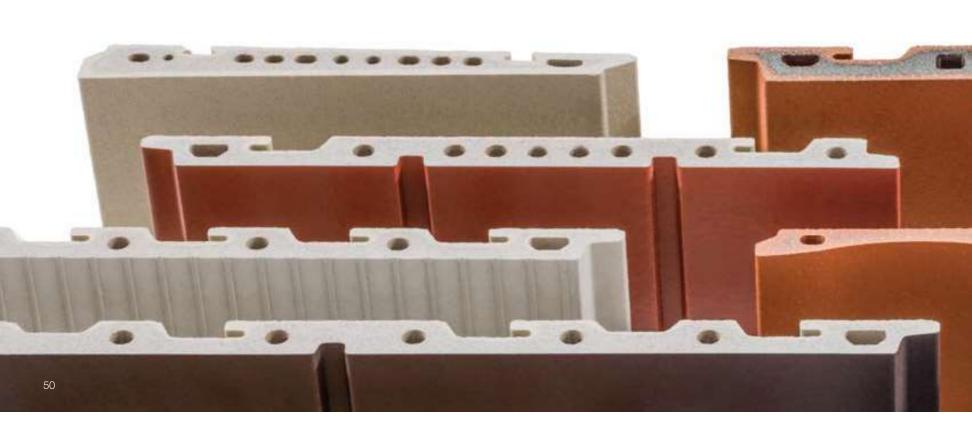
For example, stone or wood looks can be realised which intimate great depth while this method sees the advantages of ceramic as a material being retained in full. The same also applies for the new metallic surface finishes which open up incredible design options for ceramic facades.





KeraTwin® K20





Extruded Ceramic Panels, Precision, DIN EN 14411, group Alla, glazed/unglazed (GL/UGL) (small-/large-size stoneware panels), 20 mm thick, 32 kg/m^2

Lengths of up to 1,800 mm (in 1 mm steps)

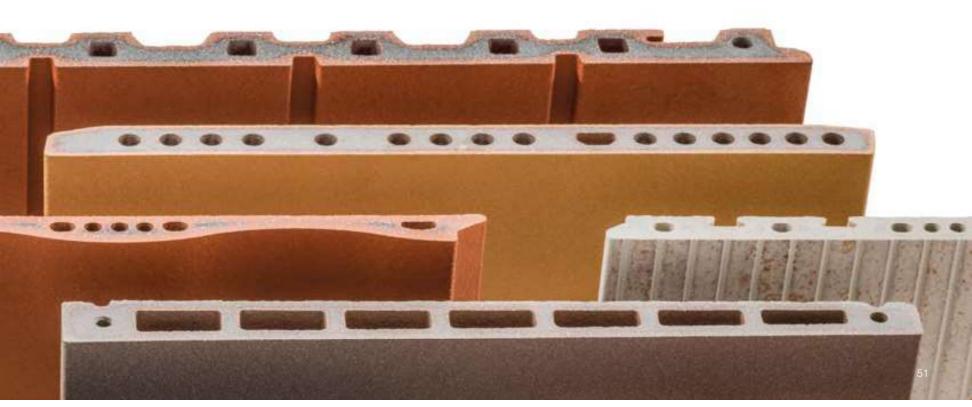


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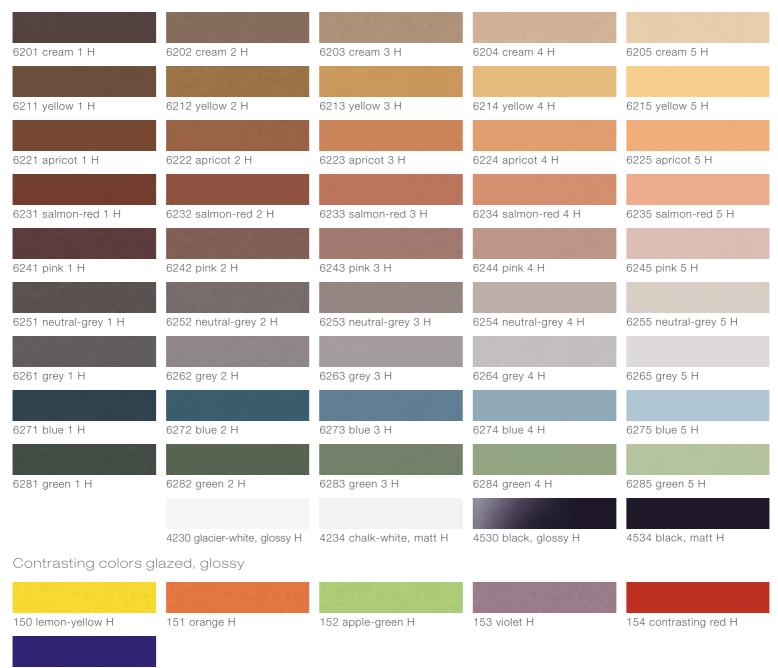
Schematic diagram: production-related deviations possible in individual cases; exact panel cross-section on request.

In addition to the variants shown, other, individual developments are possible on request.

Due to the different panel cross-sections, the choice of the fastening system depends on the individual case. Furthermore, color deviations compared to the standard variants can not be excluded.



SpectraView glazed, silky-matt



144 intense blue H

Natura unglazed



Design unglazed



1403 golden red 1403 golden red H



1410 golden cream 1410 golden cream H

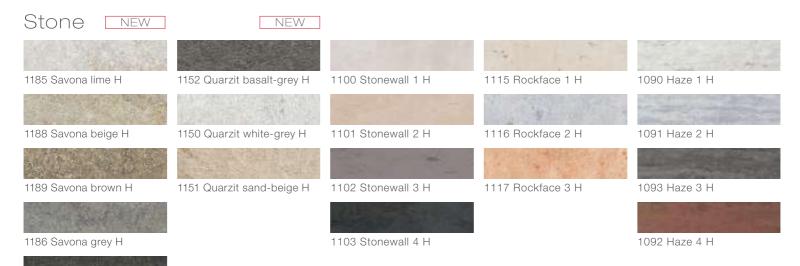


1414 golden grey 1414 golden grey H

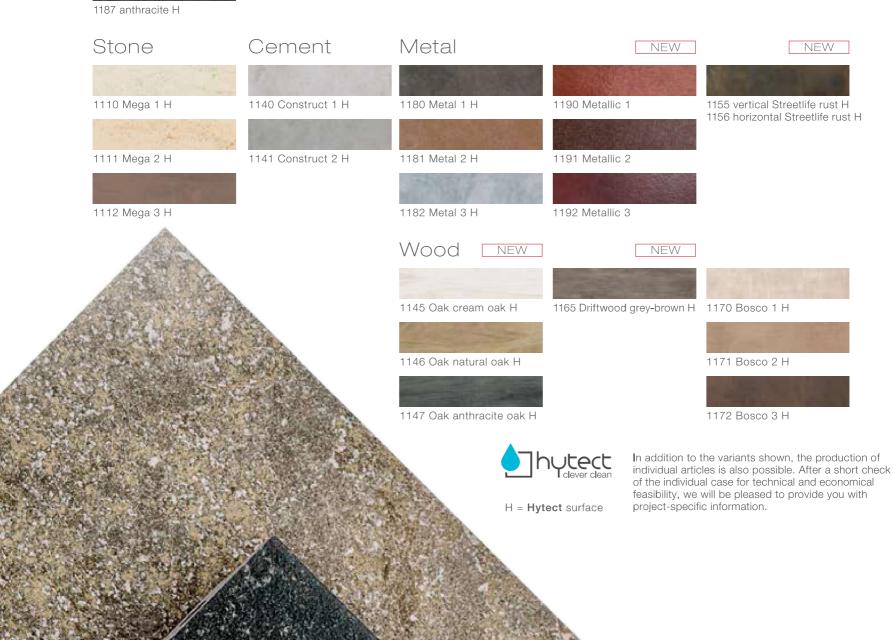


1415 golden anthracite 1415 golden anthracite H

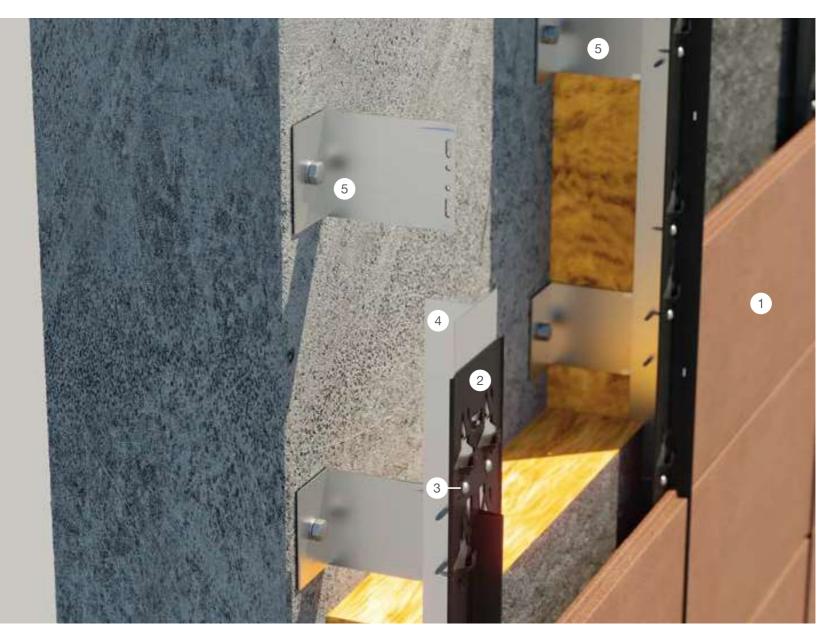
Design glazed





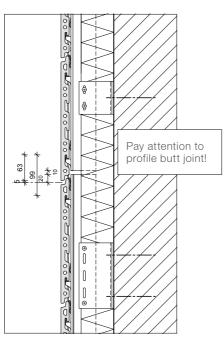


KeraTwin® K20 – Fastening with vertical system rail K20



System description

The KeraTwin® K20 facade panels are simply hung in the vertical system rail with the holding grooves on the reverse side. For mounting the panels, no additional tools are required. The compression spring and removal protection integrated in the system rail prevents clattering and constraining forces in the case of alternating wind loads and also the easy removal of panels. The position of the panels is secured either by means of a joint profile adjusted to the joint width or by means of spacers.



- 1 Facade panel KeraTwin® K20
- 2 Vertical system rail K20, article 620
- 3 A4 stainless steel screw, article 659 (alternatively, fastening with AI blind rivet, article 658, is possible), fixing necessary under each fastening hook!
- Vertical bearing profile (basic substructure)
 Minimum width 80 mm / recommended width 100 mm
- 5 Wall bracket (basic substructure)
- A profile butt joint of the vertical bearing profiles behind a panel is not allowed! See standard technical detail drawings.

Mounting instructions for KeraTwin® K20 – Fastening by means of vertical system rail K20

Mounting instructions as video film: www.agrob-buchtal.de

Substructure

The mounting of the substructure must be carried out according to project-specific, static calculation. The general approval Z-33.1-1175 of the construction supervisory authority serves as basis.

- The profiles of the basic substructure have to be mounted perpendicularly and in a flush way. (T-profile width ≥ 80 mm; recommended width ≥ 100 mm)
- The system rails K20 (Art. no. 620, 625, 630) have to be precisely aligned horizontally and fastened at the provided holes by means of screws (Art. no. 659) or rivets (Art. no. 658).
- The distance of the system rails K20 in horizontal direction must correspond to the longitudinal grid of the panels.
- The length of the vertical profiles must be divisible by the height of the panel format and should not exceed the height of a storey of the building.
- A profile butt joint behind a panel is not allowed.
- In case of open vertical joints, one joint spacer per panel (Art. no. 645) is inserted in a centric extrusion hole of the panel.
- In case of closed vertical joints, the joint profile (Art. no. 640 in case of single-span girder; plug-in joint profile, Art. no. 647, in case of single-span girder with jibs) must be used.



Basic substructure



Fasten system rail with Al blind rivet (Art. no. 658) or A4 stainless steel screw (Art. no. 659)



Click in the joint profile (for closed joints)



Hang in the KeraTwin® panels

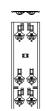


Alternative to the joint profile: spacer, Art. no. 645 (for open joints)

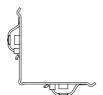
Accessories: KeraTwin® K20 – Fastening with vertical system rail K20



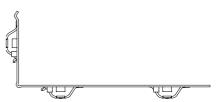
Article 620 System rail, painted* Material: AIMg3 H22 (EN AW-5754), painted black, RAL 7021, for installation with joint spacer K20/8



Article 625 System rail, bright* Material: AlMg3 H22 (EN AW-5754), unpainted, for installation with joint profile K20/8



Article 630 System rail, external angle* Material: AIMg3 H22 (EN AW-5754), unpainted, for installation of mitre-cut panels and external angle profiles



Article 635
Embrasure profile*
Material: AIMg3 H22
(EN AW-5754),
unpainted, dimensions and grid
according to project-specific
requirements



Article 640 Joint profile K20/8 Material: AIMg3 H22 (EN AW-5754), painted black, RAL 7021, RAL-color-painted on request.



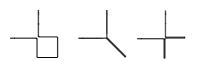
Article 645 Joint spacer K20/8 Weight: 0.5 kg / box Material: AlMg3 H22 (EN AW-5754) Box contents: 250 pieces painted black, RAL 7021



Article 658
Al blind rivet, bright
Weight: 1.3 kg / box
Nominal dimensions: 4.8 x 10 mm
Box contents: 500 pieces
for system rail installation



Article 659
A4 stainless steel screw, bright
Weight: 2.8 kg / box
Nominal dimensions: 4.8 x 16 mm
Box contents: 1,000 pieces + 1 bit
for system rail installation



Article 650 / 652 / 654
External angle profile Square /
Sword / Negative
Material: AlMg3 H22
(EN AW-5754),
painted black,
RAL 7021,
RAL-color-painted
on request.



Article 647
Plug-in joint profile K20/8
Material: AlMg3 H22
(EN AW-5754)
painted black,
RAL 7021,
RAL-color-painted on request.
for installation in case of
single-span girder with jibs
Length: 1496 mm



Profile lengths available: Grid of 15 cm, 60 cm: 2992 mm Grid of 17.5 cm: 2967 mm \cdot Grid of 20 cm, 25 cm, 30 cm, 37.5 cm, 50 cm: 2992 mm Grid of 22.5 cm, 32.5 cm: 2917 mm \cdot Grid of 27.5 cm: 3017 mm Grid of 35 cm, 40 cm: 2792 mm \cdot Grid of 55 cm: 3292 mm Grid of 45 cm: 2692 mm

System rail K20 available for panel grids of 15 cm - 17.5 cm - 20 cm - 22.5 cm - 25 cm - 27.5 cm - 30 cm - 32.5 cm - 35 cm - 37.5 cm - 40 cm - 45 cm - 50 cm - 55 cm - 60 cm. Other grids on request.

Important: The use of silicone caoutchoucs must be absolutely avoided, because silicone fluids segregate and effect sticky surfaces on which dirt adheres. Therefore, only use the system components mentioned (foamed pieces, EDPM rubber profile, neoprene rubber washer) and pointing, bonding and sealing materials recommended by us. We will be pleased to inform you in detail. The usual final cleaning after completion of the construction works is still required. A warranty for the system KeraTwin® K20 in the scope of the general approval no. Z-33.1-1175 of the construction supervisory authority only applies if the system components shown on these pages are used.



Ordre des infirmières et infirmiers du Québec, Canada / Architect: Lemay architecte / Year: 2015 / Photo: Adrien Williams



Mikrovisata, Kaunans, Lithuania, Baltic States / Architect: G. Natkevičius ir partneriai / Year: 2015 / Photo: Leonas Garbačauska



Underground railway line 4, Rio de Janeiro, Brazil / Year: 2016 / Photo: Lorenzo Rimondi

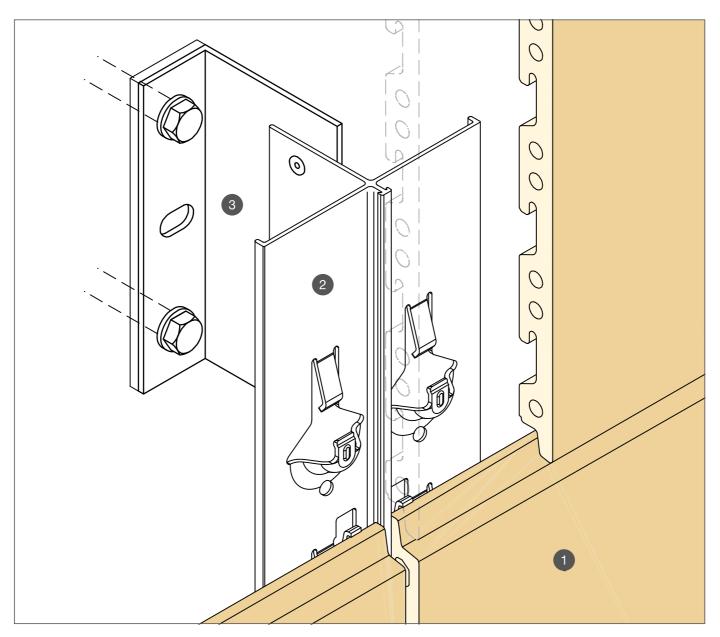


Sonaville Appartementencomplex, Nijmegen, the Netherlands / Architect: Molenaar en Co Architecten / Year: 2010 / Photo: Marcel van der Burg



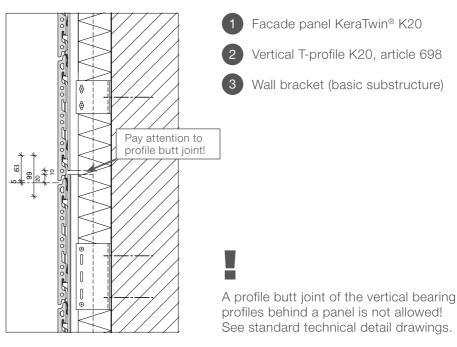
Orangerie de Soussie, Morocco / Architect: JLA Studio / Year: 2016 / Photo: Sife Elamine

KeraTwin® K20 – Fastening with vertical T-profile K20



System description

The KeraTwin® K20 facade panels are simply hung in the vertical T-profile K20 with the holding grooves on the reverse side. For mounting the panels, no additional tools are required. The compression spring and removal protection integrated in the T-profile K20 prevents clattering and constraining forces in the case of alternating wind loads and also the easy removal of panels. The position of the panels is secured either by means of profile types adjusted to the joint width or by means of spacers for closed or open vertical joints.



Mounting instructions for KeraTwin® K20 – Fastening by means of vertical T-profile K20

Mounting instructions as video film: www.agrob-buchtal.de

Substructure

The mounting of the substructure must be carried out according to project-specific, static calculation. The general approval Z-33.1-1175 of the construction supervisory authority serves as basis.

- Mount the T-profiles K20 (Art. no. 690, 695, 698) perpendicularly and in a flush way.
- Exactly align the T-profiles K20 horizontally.
- Open vertical joints with T-profile K20 (Art. no. 698) or T-profile K20 (Art. no. 695) with spacer (Art. no. 645).
- Fastening with single-span girder: T-profiles K20 (Art. no. 690, 695, 698)
- Fastening with single-span girder with jib on both sides: T-profile K20 (Art. no. 695); for closed vertical joints, use the plug-in joint profile (Art. no. 647).



Basic substructure



Hang in the KeraTwin® panels



Mount the T-profile with approved fastening means



Alternative to T-profile with joint profile: spacer, Art. no. 645 (for open joints)

Accessories: KeraTwin® K20 – Fastening by means of vertical T-profile K20





Article 690 T-profile K20 with joint profile, painted* Material: EN AW-6060 T6 painted black, RAL 7021



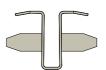
Article 698
T-profile K20 with
recessed joint profile,
painted*
Material: EN AW-6060 T6
painted black,
RAI 7021



Article 695
T-profile K20 without joint profile, painted*
Material: EN AW-6060 T6 painted black,
RAL 7021,
for installation
with joint spacer K20/8



Article 645
Joint spacer K20/8
Weight: 0.5 kg / box
Material: AIMg3 H22
(EN AW-5754)
Box contents: 250 pieces
painted black,
RAL 7021



Article 647
Plug-in joint profile K20/8
Material: AlMg3 H22 (EN
AW-5754)
painted black, RAL 7021,
RAL-color-painted on request
for installation in case of
single-span girder with jibs
Length: 1496 mm

T-profile K20 available for panel grids of 15 cm - 17.5 cm - 20 cm - 22.5 cm - 25 cm - 27.5 cm - 30 cm - 32.5 cm - 35 cm - 37.5 cm - 40 cm - 45 cm - 50 cm - 55 cm - 60 cm. Other grids on request.

Profile lengths available: Grid of 15 cm, 60 cm: 2992 mm \cdot Grid of 17.5 cm: 2967 mm Grid of 20 cm, 25 cm, 30 cm, 37.5 cm, 50 cm: 2992 mm \cdot Grid of 22.5 cm, 32.5 cm: 2917 mm Grid of 27.5 cm: 3017 mm \cdot Grid of 35 cm, 40 cm: 2792 mm \cdot Grid of 55 cm: 3292 mm Grid of 45 cm: 2692 mm

Important: The use of silicone caoutchoucs must be absolutely avoided, because silicone fluids segregate and effect sticky surfaces on which dirt adheres. Therefore, only use the system components mentioned (foamed pieces, EDPM rubber profile, neoprene rubber washer) and pointing, bonding and sealing materials recommended by us. We will be pleased to inform you in detail. The usual final cleaning after completion of the construction works is still required. A warranty for the system KeraTwin® K20 in the scope of the general approval no. Z-33.1-1175 of the construction supervisory authority only applies if the system components shown on these pages are used.

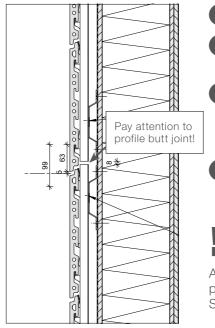
KeraTwin® K20 – Fastening with vertical Omega profile K20





System description

The Omega profile stands out due to its simple and efficient installation on difficult bases such as e.g. walls with post and beam construction. Horizontal bearing profiles are fixed at the posts. The vertical Omega profiles can then be arranged independent of the distance between the posts, and the panel lengths can be freely planned. The complex system structure with dowel, wall bracket and vertical bearing profile is not required. The subsequent laying of the ceramics is carried out as in the case of the system rail K20. The KeraTwin® K20 facade panels are simply hung in the vertical Omega profile with the holding grooves on the reverse side. No additional tools are required for mounting the panels. The compression spring and removal protection integrated in the Omega profile prevents clattering and constraining forces in the case of alternating wind loads and also the easy removal of panels. The position of the panels is secured either by means of a joint profile adjusted to the joint width or by means of spacers.



- 1 Facade panel KeraTwin® K20
- Vertical Omega profile K20, article 624
 - A4 stainless steel screw, article 659 (alternatively, fastening with Al blind rivet, article 658, is possible)
- Horizontal bearing profile (basic substructure)



A profile butt joint of the vertical bearing profiles behind a panel is not allowed! See standard technical detail drawings.

Mounting instructions for KeraTwin® K20 – Fastening by means of vertical Omega profile K20

Mounting instructions as video film: www.agrob-buchtal.de

Substructure

The mounting of the substructure must be carried out according to project-specific, static calculation. The general approval Z-33.1-1175 of the construction supervisory authority serves as basis.

- The profiles of the basic substructure have to be mounted perpendicularly and in a flush way (top-hat or alternatively Z-profile).
- The Omega profiles K20 (Art. no. 624, 627, 633) have to be precisely aligned horizontally and be fixed through the long holes provided on the edge by means of screws (Art. no. 659) or rivets (Art. no. 658). (Pay attention to fixed and sliding point execution!)
- The distance of the rails in horizontal direction must correspond to the longitudinal grid of the panels.
- A profile butt joint behind a panel is not allowed.
- In case of open vertical joints, one joint spacer per panel (Art. no. 645) is inserted in a centric extrusion hole of the panel.
- In case of closed vertical joints, the joint profile (Art. no. 640 in case of single-span girder; plug-in joint profile, Art. no. 647, in case of single-span girder with jibs) must be used.



Basic substructure



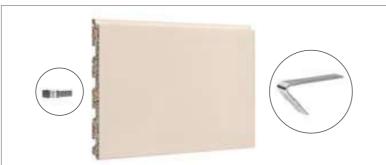
Fasten Omega profile with Al blind rivet (Art. no. 658) or A4 stainless steel screw (Art. no. 659) (Pay attention to fixed and sliding point)



Click in the joint profile (for closed joints)



Hang in the KeraTwin® panels



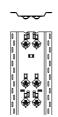
Alternative to the joint profile: spacer, Art. no. 645 (for open joints)



Accessories: KeraTwin® K20 – Fastening by means of vertical Omega profile K20



Article 624 Omega profile, painted* Material: AlMg3 H22 (EN AW-5754), painted black, RAL 7021, for installation with joint spacer K20/8



Article 627 Omega profile, bright* Material: AIMg3 H22 (EN AW-5754), unpainted, for installation with joint profile K20/8



Article 633 Omega profile, external angle* Material: AIMg3 H22 (EN AW-5754), unpainted, for the installation of mitre-cut panels and external angle profiles



Article 658
Al blind rivet, bright
Weight: 1.3 kg / box
Nominal dimensions: 4.8 x 10 mm
Box contents: 500 pieces
for Omega profile installation



Article 659
A4 stainless steel screw, bright
Weight: 2.8 kg / box
Nominal dimensions: 4.8 x 16 mm
Box contents: 1,000 pieces + 1 bit
for Omega profile installation



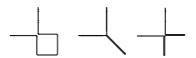
Article 647
Plug-in joint profile K20/8
Material: AlMg3 H22
(EN AW-5754)
painted black, RAL 7021,
RAL-color-painted on request
for installation in case of
single-span girder with jib
Length: 1496 mm



Article 640 Joint profile K20/8 Material: AIMg3 H22 (EN AW-5754), painted black, RAL 7021, RAL-color-painted on request



Article 645 Joint spacer K20/8 Weight: 0.5 kg / box Material: AlMg3 H22 (EN AW-5754) Box contents: 250 pieces painted black, RAL 7021



Article 650 / 652 / 654 External angle profile Square / Sword / Negative Material: AIMg3 H22 (EN AW-5754), painted black, RAL 7021, RAL-color-painted on request

Profile lengths available: Grid of 15 cm, 60 cm: 2992 mm Grid of 17.5 cm: 2967 mm \cdot Grid of 20 cm, 25 cm, 30 cm, 37.5 cm, 50 cm: 2992 mm Grid of 22.5 cm, 32.5 cm: 2917 mm \cdot Grid of 27.5 cm: 3017 mm Grid of 35 cm, 40 cm: 2792 mm \cdot Grid of 55 cm: 3292 mm Grid of 45 cm: 2692 mm

Omega profile K20 available for panel grids of 15 cm - 17.5 cm - 20 cm - 22.5 cm - 25 cm - 27.5 cm - 30 cm - 32.5 cm - 35 cm - 37.5 cm - 40 cm - 45 cm - 50 cm - 55 cm - 60 cm. Other grids on request.

Important: The use of silicone caoutchoucs must be absolutely avoided, because silicone fluids segregate and effect sticky surfaces on which dirt adheres. Therefore, only use the system components mentioned (foamed pieces, EDPM rubber profile, neoprene rubber washer) and pointing, bonding and sealing materials recommended by us. We will be pleased to inform you in detail. The usual final cleaning after completion of the construction works is still required. A warranty for the system KeraTwin® K20 in the scope of the general approval no. Z-33.1-1175 of the construction supervisory authority only applies if the system components shown on these pages are used.

^{*} legally protected



Private villa, Romania / Architect: Victor Gota / Year: 2016



Raiffeisen Forum, Mödling, Austria / Architect: arge x42 / Year: 2014 / Photo: Rich Hiebl



Town Center Costa del Este Panama City / Architect: Alexandra Brauer / Year: 2017 / Photo: Lorenzo Rimondi

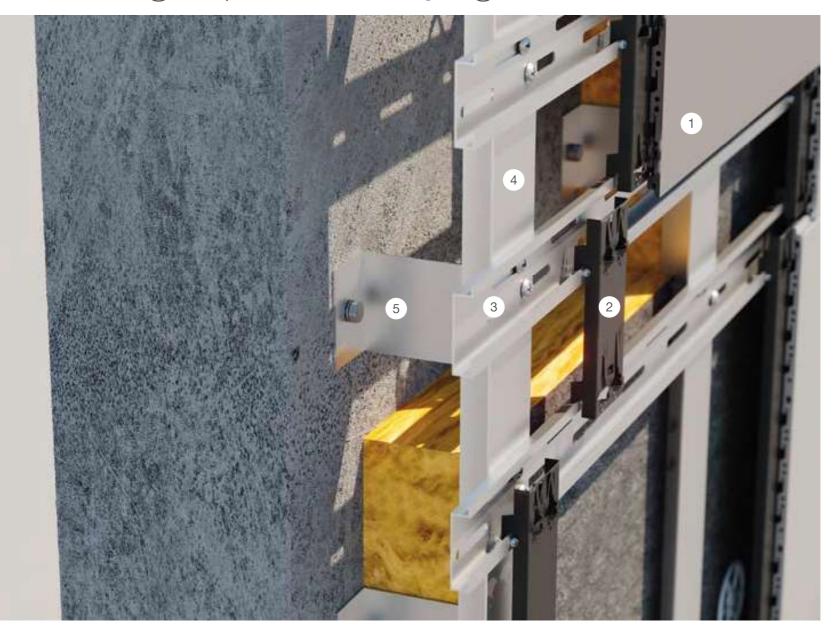


University, Bologna, Italy / Architect: Raffaele PANELLA / Year: 2015 / Photo: Lorenzo Rimondi



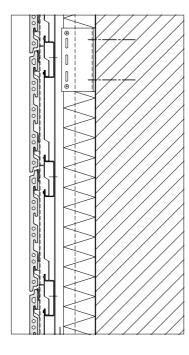
SNAC, Southampton, Great Britain / Architect: CZWB Architects / Year: 2015 / Photo: Norbert Lindner

KeraTwin® K20 – Fastening with OmegaV profile for laying in bonds



System description

The OmegaV profile was developed to enable installation of KeraTwin® K20 panels in various bonds while availing of all of the advantages offered by the K20 system. The horizontal bearing profiles are fastened to a basic construction at the desired height grid. Then the OmegaV profiles can be hung from the horizontal bearing profiles and with the requisite spacing (length grid) before being secured to the two top suspension brackets using A4 stainless steel screws. The KeraTwin® K20 façade panels are simply hung in the preassembled OmegaV profiles using the holding grooves on the reverse side. No additional tools are required for mounting the panels. The compression spring integrated in the OmegaV profile prevents clattering and constraining forces in the case of alternating wind loads as well as the easy removal of panels. The position of the panels is secured either by means of a joint profile adjusted to the joint width or using spacers.



- 1 KeraTwin® K20 facade panel
- 2 OmegaV profile, Article 700
- Horizontal supporting profile, Article 597-01
- 4 Vertical bearing profile (basic substructure)
- Wall bracket (basic substructure)

System illustration

Mounting instructions for KeraTwin® K20 – with OmegaV for laying in bonds

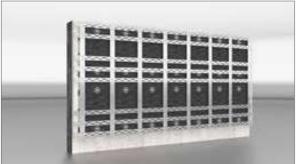
Substructure

The mounting of the substructure must be carried out according to project-specific, static calculation. The general approval Z-33.1-1175 of the construction supervisory authority serves as basis.

- The profiles of the basic substructure have to be mounted perpendicularly and in a flush way.
- Fix the horizontal supporting profiles (Art. no. 597) at the pre-installed vertical substructure by means of the supplied fastening materials.
- Hang in the OmegaV profiles exactly at horizontal grid distance.
- The distance of the profiles in horizontal direction must correspond to the longitudinal grid of the panels.
- The position of the OmegaV profiles is secured at the suspension brackets on the left and the right.



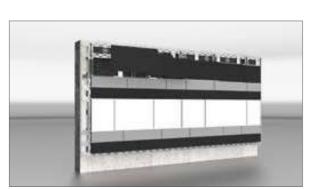
Mounting instructions as video film: www.agrob-buchtal.de



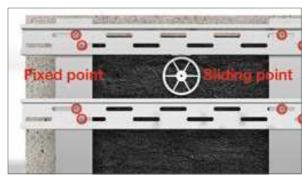
Basic substructure with horizontal supporting profiles



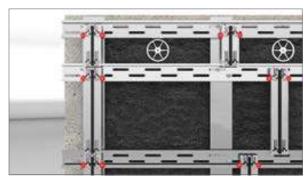
OmegaV profiles



Panel mounting

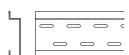


Fixed and sliding point execution

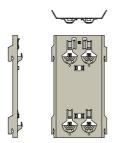


Fixing of OmegaV profiles

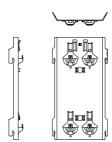
Accessories: KeraTwin® K20 – OmegaV fastening on horizontal supporting profile



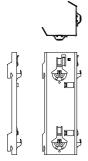
Article 597-01 Horizontal supporting profile, perforated Standard length: 2995 mm Nominal dimensions: 05/90 x 25 mm Material: EN AW 6063 T66 unpainted



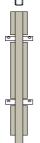
Article 700 OmegaV, painted*, RAL 7021 Material: AIMg3 H22 (EN AW-5754) painted black, for installation with joint spacer K20/8



Article 701 OmegaV, bright* Material: AIMg3 H22 (EN AW-5754) unpainted, for installation with joint profile Single K20/8



Article 705 OmegaV, external angle, bright* Material: AIMg3 H22 (EN AW-5754) unpainted, for the installation of mitre-cut panels and external angle profiles



Article 707 Joint profile Singel K20/8 Material: AlMg3 H22 (EN AW-5754) painted black, RAL 7021 RAL-color-painted on request



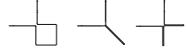
Article 645 Joint spacer K20/8 Weight: 0.5 kg/box Material: AlMg3 H22 (EN AW-5754) Box contents: 250 pieces painted black, RAL 7021



Article 658
Al blind rivet, bright
Weight: 1.3 kg / box
Nominal dimensions: 4.8 x 10 mm
Box contents: 500 pieces
for Omega profile installation



Article 659-01
A4 stainless steel screw, bright
Weight: 1.4 kg/box
Nominal dimensions: 4.8 x 16 mm
Box contents: 500 pieces + 1 bit
for OmegaV fastening



Article 650 / 652 / 654
External angle profile
Square / Sword / Negative
Material: AIMg3 H22
(EN AW-5754),
painted black, RAL 7021
RAL-color-painted on request

OmegaV profiles and joint profiles Singel available for all standard grids (see page 51). Other grids available on request.

Important: The use of silicone caoutchoucs must be absolutely avoided, because silicone fluids segregate and effect sticky surfaces on which dirt adheres. Therefore, only use the system components mentioned (foamed pieces, EDPM rubber profile, neoprene rubber washer) and pointing, bonding and sealing materials recommended by us. We will be pleased to inform you in detail. The usual final cleaning after completion of the construction works is still required. A warranty for the system KeraTwin® K20 in the scope of the general approval no. Z-33.1-1175 of the construction supervisory authority only applies if the system components shown on these pages are used.

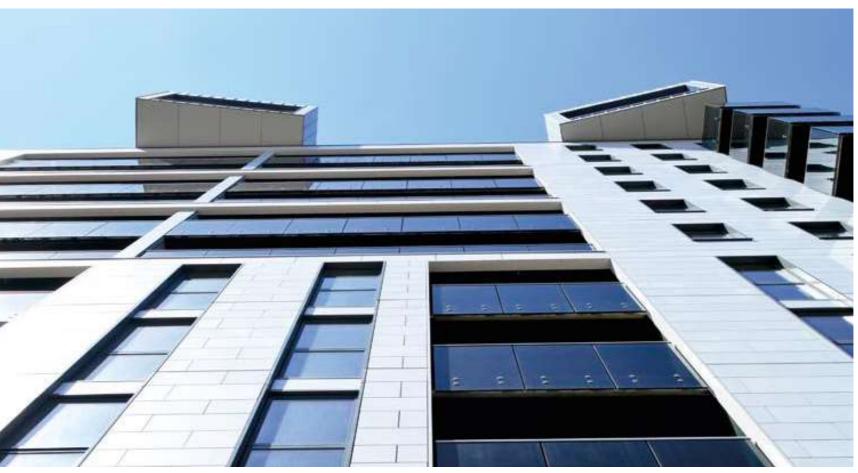
^{*} legally protected



Naabtal-Realschule (secondary school), Nabburg, Germany / Architect: Architekturbüro Schönberger / Year: 2016 / Photo: Atelier Bürger



Queen Alexandra Hospital, Portsmouth, Great Britain / Architect: BDP, Whicheloe Macfarlane / Year: 2009 / Photo: David Salmon



Thurston Road, London, Great Britain / Architect: ECE Architecture / Year: 2015 / Photo: Alice Jenner

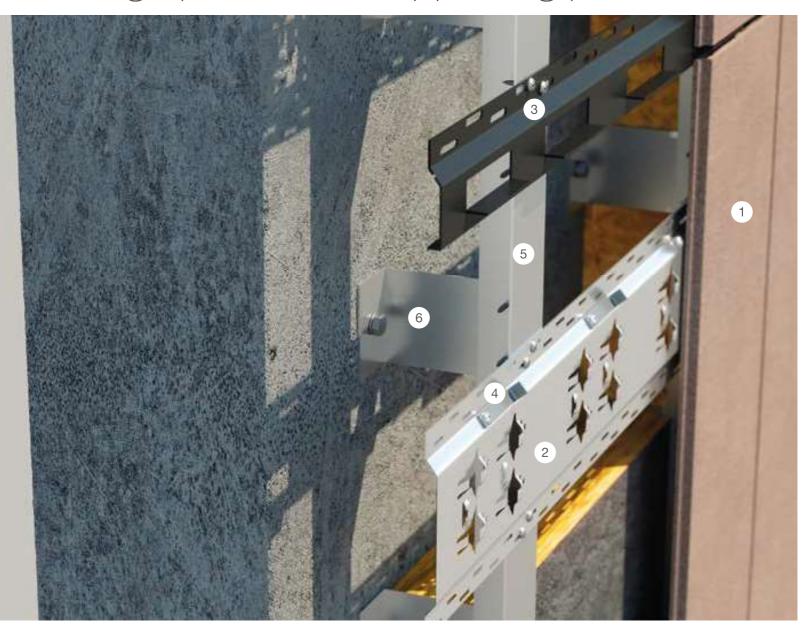


Brofestebygget, Alesund, Norway / Architect: Slyngstad Aamlid Arkitekter / Year: 2015



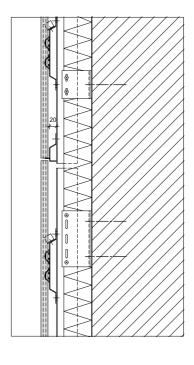
Hall of residence Emmanuel College, Cambridge, Great Britain / Architect: Bidwells / Year: 2016 / Photo: David Salmon

KeraTwin® K20 – Fastening OmegaS with Omega profile and supporting profile



System description

Omega profile and OmegaS supporting profile permit vertical installation of the KeraTwin® facade panels. Secured to the vertical supporting structure, the OmegaS profiles arranged horizontally carry off wind loads and the dead weight of the panels is carried off by the supporting profile mounted in the height grid. The KeraTwin® K20 facade panels are simply hung horizontally in the Omega profiles using the holding grooves on the reverse side. No additional tools are required for mounting the panels. The compression spring integrated in the Omega profile prevents clattering and constraining forces in the case of alternating wind loads. Each KeraTwin® panel is secured using two securing angles to prevent it from slipping out. The horizontal joints can be open or closed with joint profiles.



- 1 KeraTwin® K20 facade panel
- 2 Omega profile K20, Article 627
- 3 Supporting profile OmegaS, Article 710
- 4 Securing bracket, Article 711
- 5 Vertical bearing profile (basic substructure)
- 6 Wall bracket (basic substructure)
- A profile butt joint of the vertical bearing profiles behind a panel is not allowed! See standard technical detail drawings.

Mounting instructions for KeraTwin® K20 – OmegaS with Omega and supporting profile

Substructure

The mounting of the substructure must be carried out according to project-specific, static calculation. The general approval Z-33.1-1175 of the construction supervisory authority serves as basis.

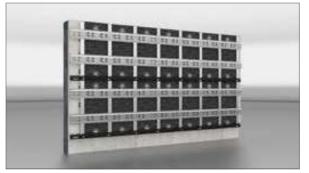
- The profiles of the basic substructure have to be mounted perpendicularly and in a flush way.
- Fix the horizontal K20 Omega profiles (Art. no. 627) at the pre-installed vertical substructure by means of the supplied fastening materials. The vertical distance depends on the panel length single-span girder (= 1/2 of panel length), with jibs on both sides (= 1/4 of panel length).
- Mount the supporting profiles according to the height grid (panel length + 8 mm).
- Fully insert the KeraTwin® panels in the construction.
- Position the securing brackets at both Omega profiles and fix them.



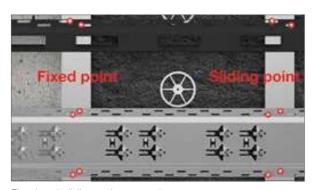
Mounting instructions as video film: www.agrob-buchtal.de



Basic substructure with K20 Omega profiles



OmegaS with Omega and supporting profiles



Fixed and sliding point execution

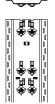


Panel mounting

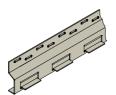


Securing of the position of the panels at the K20 Omega profiles (with securing brackets)

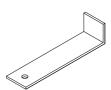
Accessories: KeraTwin® K20 – Fastening with OmegaS supporting profile for vertical mounting



Article 627 Omega profile, bright* Material: AIMg3 H22 (EN AW-5754), unpainted



Artikel 710 OmegaS supporting profile painted Material: AIMg3 H22 (EN AW-5754) painted black RAL 7021



Artikel 711
Position securing bracket, bright
Material: AIMg3 H22
(EN AW-5754)
unpainted
Box contents: 50 pieces



Article 658
Al blind rivet, bright
Weight: 1.3 kg / box
Nominal dimensions: 4.8 x 10 mm
Box contents: 500 pieces
for Omega profile installation



Artikel 659-01
A4 stainless steel screw, bright
Weight: 1.4 kg/box
Nominal dimensions: 4.8 x 16 mm
Box contents: 500 pieces + 1 bit
or the fastening of Omega profile,
OmegaS and position securing



Article 688 Joint profile Material: EN AW 6063 T66 painted black, RAL 7021, RAL-color-painted on request Length: 1496 mm



Article 689 Holding clip for joint profile Material: AlMg1 (EN AW 5005 A) unpainted Box contents: 100 pieces

Omega profiles and OmegaS supporting profile available for all standard grids (see page 51). Other grids available on request.

Important: The use of silicone caoutchoucs must be absolutely avoided, because silicone fluids segregate and effect sticky surfaces on which dirt adheres. Therefore, only use the system components mentioned (foamed pieces, EDPM rubber profile, neoprene rubber washer) and pointing, bonding and sealing materials recommended by us. We will be pleased to inform you in detail. The usual final cleaning after completion of the construction works is still required. A warranty for the system Kera Twin® K20 in the scope of the general approval no. Z-33.1-1175 of the construction supervisory authority only applies if the system components shown on these pages are used.

^{*} legally protected



Höxter Markt, Höxter, Germany / Architect: msp architekten GmbH / Year: 2015 / Photo: Mark Wohlrab



Clarion Hotel, Helsinki, Finland / Architect: Sarc Architects / Year: 2016



Children's Hospital, Helsinki, Finland / Architect: Sarc Architects / Year: 2017



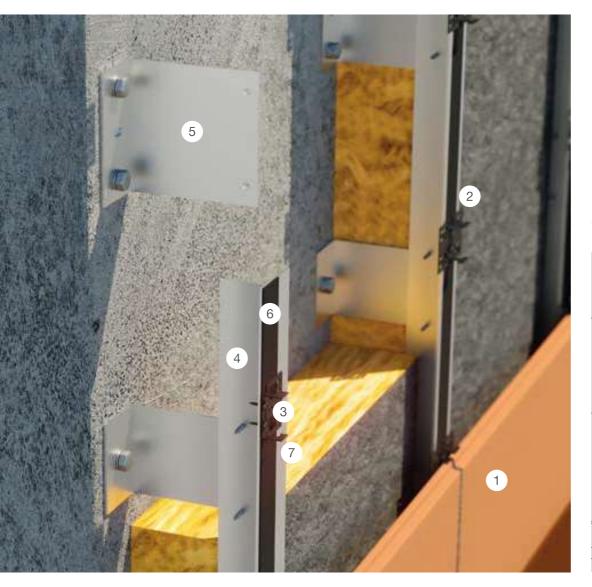
Hotel Mercure, Madrid, Spain / Architect: BAT Arquitectos / Year: 2017



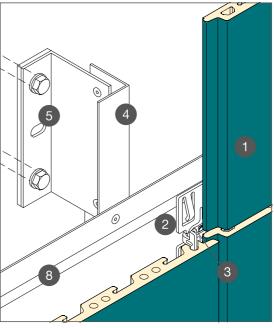
Pauley Pavilion UCLA University of California, Los Angeles, USA / Architect: NBBJ, Los Angeles, USA / Year: 2012 / Photo: RMA Photography Inc.

KeraTwin® K20 – Fastening with clamp system K20

Horizontal installation

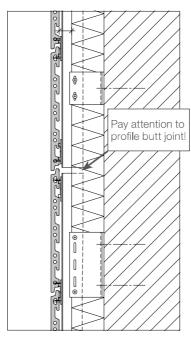


Vertical installation



System description

The KeraTwin® K20 facade panels with a maximum panel length of 135 x 50 cm are fixed by means of the clamps K20, which laterally engage with the channels of the facade panel. The compression spring integrated in the clamps prevents clattering and constraining forces in the case of alternating wind loads.



- Facade panel KeraTwin® K20, max. panel length: 135 x 50 cm
- 2 Twin-clamp K20, article 680
- 3 Stainless steel blind rivet, article 675
- 4 Vertical bearing profile (basic substructure)
- Wall bracket (basic substructure)
- 6 Joint tape, black, article 506
- 7 Edge-clamp K20, article 681
- 8 Horizontal bearing profile (basic substructure)
- A profile butt joint of the vertical bearing profiles behind a panel is not allowed!
 See standard technical detail drawings.

Mounting instructions for KeraTwin® K20 – Fastening with clamp system K20

Mounting instructions as video film: www.agrob-buchtal.de

Substructure

The mounting of the substructure must be carried out according to project-specific, static calculation. The general approval Z-33.1-1175 of the construction supervisory authority serves as basis.

- The profiles of the basic substructure have to be mounted perpendicularly and in a flush way.
- The distance of the bearing profiles (profile width ≥ 60 mm) in horizontal direction must correspond to the longitudinal grid of the panels.
- The length of the vertical profiles must be divisible by the height of the panel format and should not exceed the height of a storey of the building.
- A profile butt joint behind a panel is not allowed.
- In the vertical joints, the black joint tape (Art. no. 506) can be applied.
- The clamps (Art. no. 680, 681, 682, 683, 684) must be fastened with at least 2 rivets (Art. no. 675).
- For the processing of the rivets (Art. no. 675), an extended rivetting tool (25 mm) is required.
- In the area of the clamp fastening, the joints can be closed with the joint profile (Art. no. 688) and one holding clip for joint profile (Art. no. 689) per panel.



Basic substructure



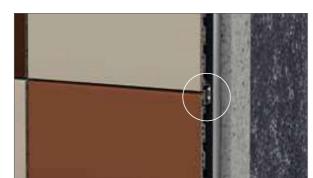
Fasten edge-clamps with stainless steel blind rivet (Art. no. 675)



Apply joint tape on vertical bearing profiles



Mount the KeraTwin® panels in vertical rows



Termination with edge-clamps

Accessories: KeraTwin® K20 -Fastening by means of clamp system K20



Article 680 Twin-clamp K20* Weight: 45 kg / 1,000 pieces Perforation: 2 x 3.3 mm Ø Material: AlMg3 H22 (EN AW-5754), painted black, . RAL 7021



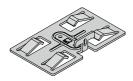
Article 681 Edge-clamp K20* Weight: 24 kg / 1,000 pieces Perforation: 4 x 3.3 mm Ø Material: AIMg3 H22 (EN AW-5754), painted black, RAL 7021



Article 682 Edge-clamp K20, left Weight: 24 kg / 1,000 pieces Perforation: 4 x 3.3 mm Ø Material: AIMg3 H22 (EN AW-5754), painted black, RAL 7021



Article 683 Edge-clamp K20, right Weight: 24 kg / 1,000 pieces Perforation: 4 x 3.3 mm Ø Material: AIMg3 H22 (EN AW-5754), painted black, RAL 7021



Article 684 Single-clamp K20
Weight: 45 kg / 1,000 pieces
Perforation: 2 x 3.3 mm Ø
Material: AlMg3 H22
(EN AW-5754), painted black, RAL 7021



- Twin- and single-clamps: 7 pieces/stringEdge-clamps: 13 pieces/string



Article 675 Stainless steel blind rivet, black Weight: 1.05 kg / box Nominal dimensions: 3.2 x 9.5 mm Box contents: 500 pieces extended mandrel (58 mm)



Joint tape, black Weight: 0.5 kg / roll Nominal dimensions: 40 mm wide, 50 m self-adhesive, weather-resistant



Joint profile Material: EN AW 6063 T66 painted black, RAL 7021 RAL-color-painted on request Length: 1496 mm



Article 689 Holding clip for joint profile Material: AIMg1 (EN AW 5005 A) unpainted
Box contents: 100 pieces

Important: The use of silicone caoutchoucs must be absolutely avoided, because silicone fluids segregate and effect sticky surfaces on which dirt adheres. Therefore, only use the system components mentioned (foamed pieces, EDPM rubber profile, neoprene rubber washer) and pointing, bonding and sealing materials recommended by us. We will be pleased to inform you in detail. The usual final cleaning after completion of the construction works is still required. A warranty for the system KeraTwin® K20 in the scope of the general approval no. Z-33.1-1175 of the construction supervisory authority only applies if the system components shown on these pages are used.

^{*} legally protected



Kongju University, Korea / Year: 2006



Old people's residential home "Postplatz", Kempten, Switzerland / Architect: Sattler Architekten AG / Year: 2014 / Photo: Adriano Faragulo



Office building, Leinfelden-Echterdingen, Germany / Architect: pbs architekten Gerlach Krings Böhning Planungsgesellschaft mbH / Year: 2016 / Photo: Claus Graubner, Frankfurt, Germany



Bowhuis Zoetermeer, Netherlands / Architect: Klunder Architecten / Year: 2006 / Photo: Rob Hoekstra

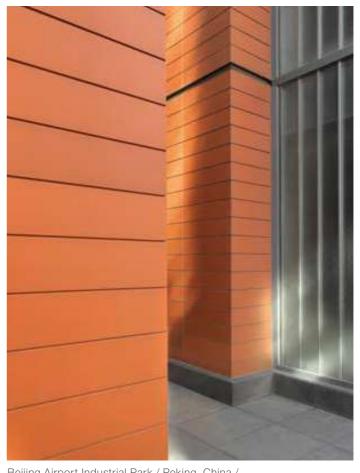


Ufa, Russia / Architect: Bashkirgrazhdanprojekt, Pavel Mazin / Year: 2015 / Products: KeraTwin®

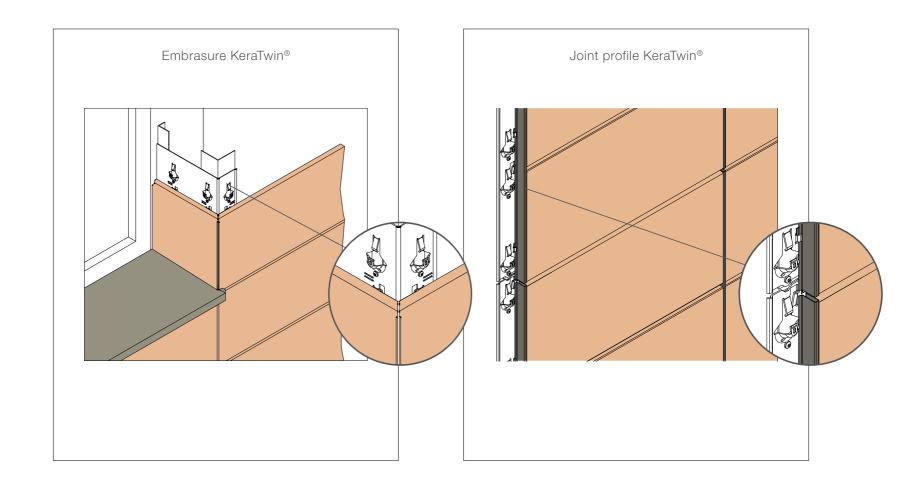
Detail solutions for KeraTwin®

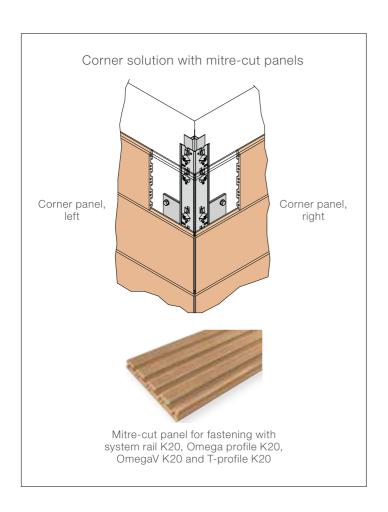
For ensuring the visual and technical perfection of corners and borders as well, AGROB BUCHTAL has developed standard technical details, which can be adapted to the project-specific requirements as needed – also as special production.

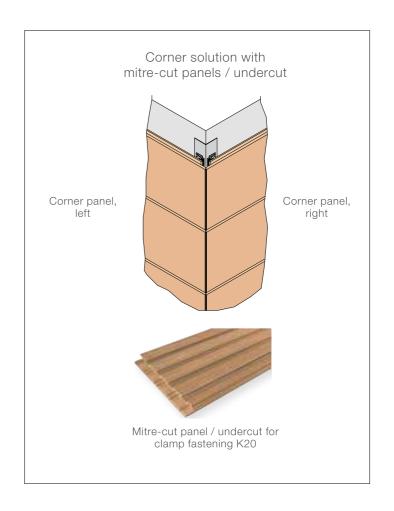
This includes, for example, terminations at windows, doors and the corresponding embrasures, both horizontal and vertical. In addition, mitre-cut panels for corner solutions and practical corner profiles (rectangular or rounded) facilitate the convincing design of problematic facade details.

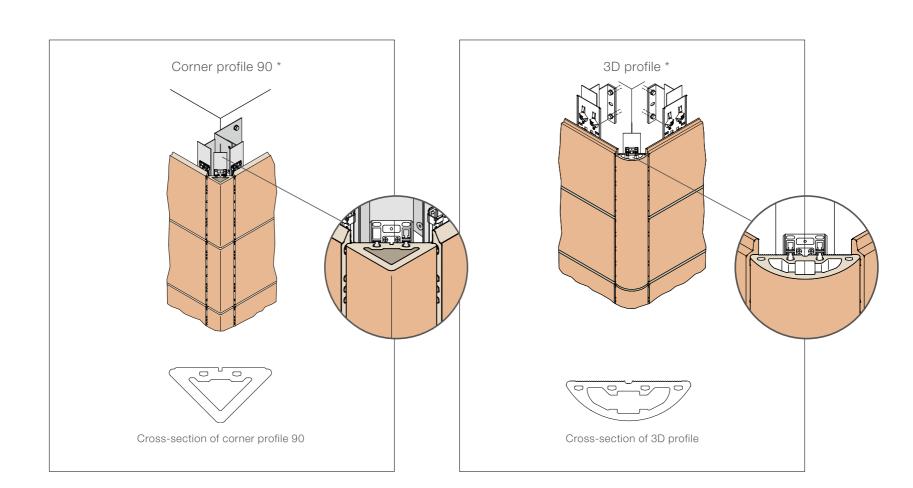


Beijing Airport Industrial Park / Peking, China / Architect: Perkins + Will









 $^{^{\}ast}$ product-specific details, project-related on request