DAKO

art of concrete

DAKO-GRC Catalogue

Freedom in the creation of façades

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Glassfibre reinforced concrete (GRC) is a premium façade cladding material mainly due to its natural origin, appearance, almost unlimited shaping possibilities and large-format dimensions.

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GRC, or glassfibre reinforced concrete, is a material that offers architects complete freedom when designing ventilated façades. It can be coloured, surface-treated or otherwise shaped to suit the specifics of each project without any major restrictions.

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Glassfibre reinforced concrete façades have a minimalist, purely natural look, making them a suitable choice for contemporary architecture where these qualities are preferred. Resistance to mechanical damage (piercing, breaking) and long service life are just two examples of the important properties that GRC cladding offers.

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DAKO‘s domain is to design such solutions that combine material capabilities with the client‘s financial possibilities while maintaining the aesthetic requirements for the final visual effect of the work.

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Thanks to the glass fibres, GRC has a high flexural tensile strength (20–30 MPa) which enables the production of thin-walled parts. Flexural strength is a key parameter that is monitored in GRC. Its value depends on the production process and technology of each manufacturer.

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DAKO Brno is a family-owned business with more than twenty years of history in the production of concrete prefabricated components. You can find our façade constructions in the Czech Republic, Great Britain, Switzerland, Slovakia, Lithuania or Germany.

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Headquarters of ČSOB, Hradec Králové

C&A Shopping Centre, Zurich I Best architects 22 Prize Winner

01

Why a façade made of glassfibre reinforced concrete?

Glassfibre reinforced concrete (GRC) is a premium façade cladding material mainly due to its natural origin, appearance, almost unlimited shaping possibilities and large-format dimensions. Above all, the natural appearance of glassfibre reinforced concrete panels plays a big role in its selection for a particular project.

The panels have a non-uniform surface texture that aesthetically surpasses exposed concrete of the highest quality. The appearance of GRC panels matures with time and the panels look good even decades later.

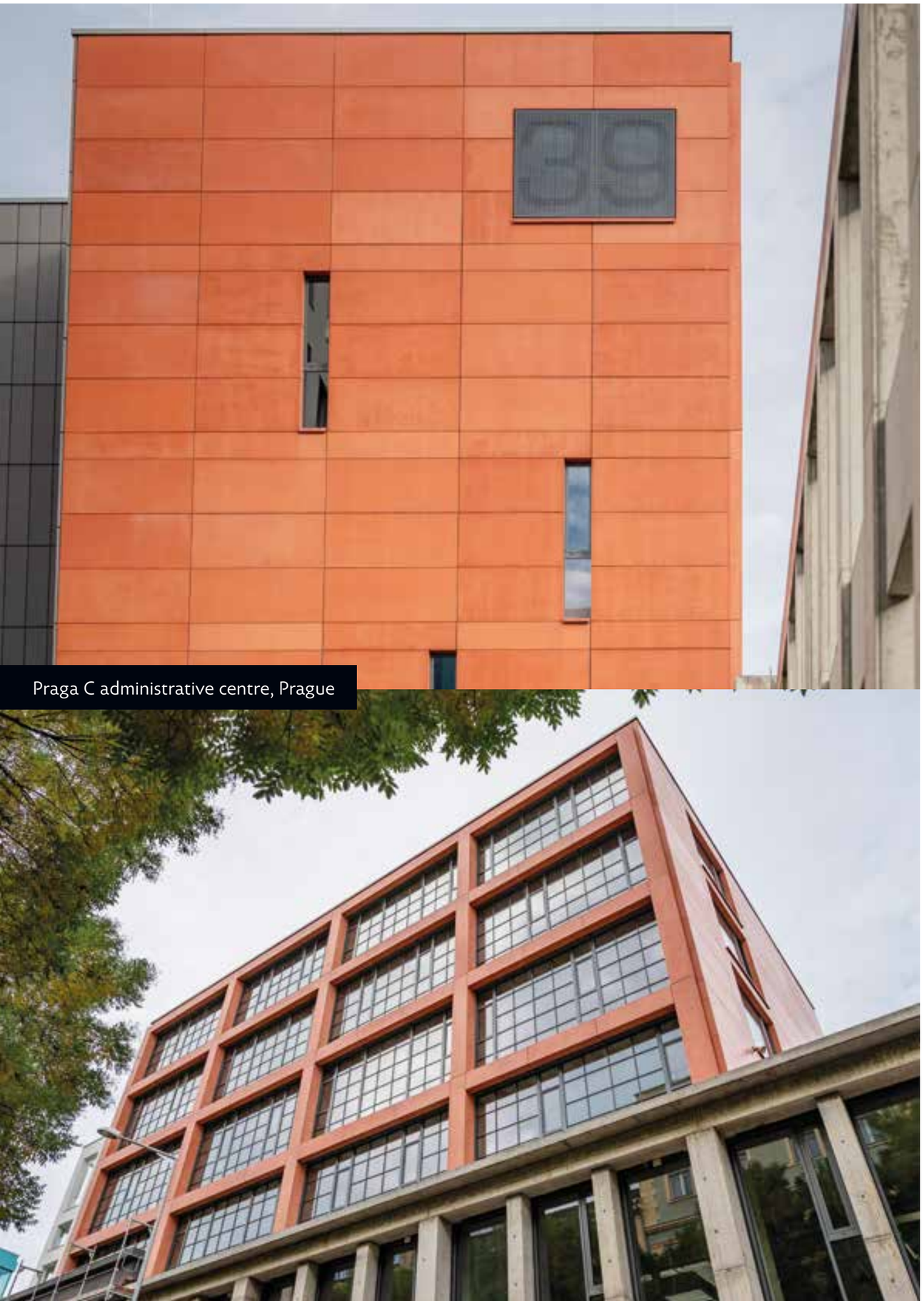
Thanks to its durability and timelessness, this material is becoming increasingly popular among architects and investors, as evidenced by the ever-increasing demand worldwide.

The history of glassfibre reinforced concrete dates back to the middle of the 20th century, when components reinforced with various types of fibres began to be produced in the world. Through long-term research, technology development and testing of individual materials, a new material – glassfibre reinforced concrete – was developed in the early 1970s. The original claddings were produced using casting technology, which is nowadays increasingly being replaced by a more efficient technology – the so-called sprayed GRC.

Glassfibre reinforced concrete is a material that offers a number of advantages:

- *for investors: durability, timeless design and style.*
- *for architects: freedom of design and the opportunity to fulfil their artistic vision.*
- *for construction and installation companies: with good coordination, fast installation and smooth progress of the project.*

Sakura residential complex, Prague I Honour within Future Projects Residential WAN Awards



Praga C administrative centre, Prague

02

DAKO-GRC material

2.1 Material description

Variability and uniqueness
GRC, or glassfibre reinforced concrete, is a material that offers architects complete freedom when designing ventilated façades. It can be shaped, coloured, surface-treated or otherwise formed to suit the specifics of each project without any major restrictions.

Long service life and sustainability
The main features of GRC include durability and sustainability. The result is visually impressive façade panels that can withstand weathering effects for decades without any problems. The first known GRC façade at 30 Cannon Street in London, installed in 1977, has served its purpose for over forty years without the need for refurbishment.

Strength
GRC is characterized by high strength and durability. This is achieved by dispersing glass fibres in a base mixture made of Portland cement, sand, water and other refining additives. Fine-grained particles in the composite structure ensure low water absorption and high frost resistance.

Large formats
Thanks to the GRC spraying technology, it is possible to create façade panels of various shapes with an area of up to 20 m^2. Such components can look very light and airy, organic, or like a heavy concrete mass.

Low weight
Compared to conventional pre-cast concrete components, GRC shell components achieve approximately one-tenth the weight, thus significantly saving the static load of the building.

The combination of these characteristics makes glassfibre concrete a unique and, in some projects, unrivalled material for the production of thin-walled façade panels.

Praga Studios, Prague I Best of Realty 2019 Prize Winner

2.2 Sustainability and ecology

The trend in contemporary architecture is towards ecology and sustainability. Our company strives to minimize the environmental impact of production and focuses on the creation of high quality concrete products with a long service life.

At the same time, we are always looking for new ways to manage valuable natural resources in a sustainable way. We focus on the issue of ecology not only in the area of production, where we cooperate with the Research Institute of Building Materials with whom we are always looking for new sustainable solutions, but also in the company‘s day-to-day operations.

Benefits of DAKO-GRC claddings:

- **long service life of the products**
  – Modern production technology, increasingly high quality additives and pigments guarantee a stable appearance and a decade-long service life of the material.

- **small carbon footprint**
  – Thanks to the combination of low cement content in the mixture and long service life of the products, DAKO-GRC material has a much smaller carbon footprint over the lifetime of the building compared to other façade materials.

- **tailor-made production**
  – Customized manufacturing is efficient; compared to mass production of parts later trimmed to the required size, this results in orders of magnitude less waste.

We are always looking for ways to improve our environmental performance. We are currently focusing on more environmentally friendly packaging of transported parts and are looking for new opportunities in cooperation with environmental institutes.

- **low maintenance costs**
  – The cladding is made of high quality concrete mixture, the technical properties of the cladding ensure its resistance to external effects. No chemicals are required for the routine maintenance of the GRC material façade; if necessary, it is sufficient to wash the parts with water using a hose with nozzle or high-pressure equipment.

- **recyclable waste**
  – The use of construction debris saves natural resources and, at the same time, helps to reduce the amount of construction waste in landfills. The waste produced during production can be characterized as natural – it is concrete that can be used as a recycled material for reinforcement of walking and travelling surfaces, for road embankments, for backfilling of utilities and for various landscaping works.
  – Crushed waste concrete is also used in the company’s premises for paved areas.
  – The company is currently investigating the possibility of using GRC recycled materials for prefabricated toilet modules in the public toilet production division.

- **ecological operation of the company**
  – DAKO emphasizes sustainability and environmentally friendly operation.
  – 80% of the energy needed for company operation comes from renewable sources.
  – Heating with a gas boiler has been substituted by a more environmentally friendly option – a boiler for combustion of wood which is produced as waste during packaging of products.
  – Since 2023, electric power for the company’s operations has been generated by the company’s own photovoltaic power plant.
  – The company uses eco-friendly cleaning products, company clothing made from eco-certified materials or printing on recycled paper for its day-to-day operations.

- **restoration of natural resources**
  – DAKO is involved in promoting environmental projects and sustainable management of natural resources. The company currently contributes to the planting of trees in cultural landscapes and the restoration of natural forest stands – forests and wetlands in the Czech Republic.

Student House, Praha

2.3 Features and quality

High strength of the material
The DAKO-GRC material has a high tensile flexural strength (21–23 MPa) thanks to the glass fibre, which allows the production of thin-walled components. Flexural strength is a key parameter monitored in GRC.

Own laboratory
The quality of DAKO-GRC products is regularly monitored in a fully equipped laboratory. Testing results are regularly evaluated and made available to the investor upon implementation.

Automatic mixing centre
Mixing of the mixture takes place in a modern mixing centre. Thanks to the precise dosage of the individual raw materials, stable (uniform) colour and high strength and durability are achieved throughout the work.

Full membership in GRCA (Glassfibre Reinforced Concrete Association)
The association was founded in 1975 and has been overseeing quality compliance in the production of fibreglass concrete ever since. Its members must meet all requirements for raw materials, the manufacturing process, anchoring methods and material testing in their own laboratories. DAKO Brno is a so-called Full Member of the association, which is the highest level of membership. There are only a few global producers of this material which are full members.

2.4 Application options

Ventilated façades

Large-format and 3D façade elements

Façade cornices

Interior accessories

Urban furnishing components

Architectural façade accessories

Mechanica Waltrovka administrative buildings, Prague I Best of Realty 2017 Prize Winner

Oberseeburgrain apartment house, Luzern

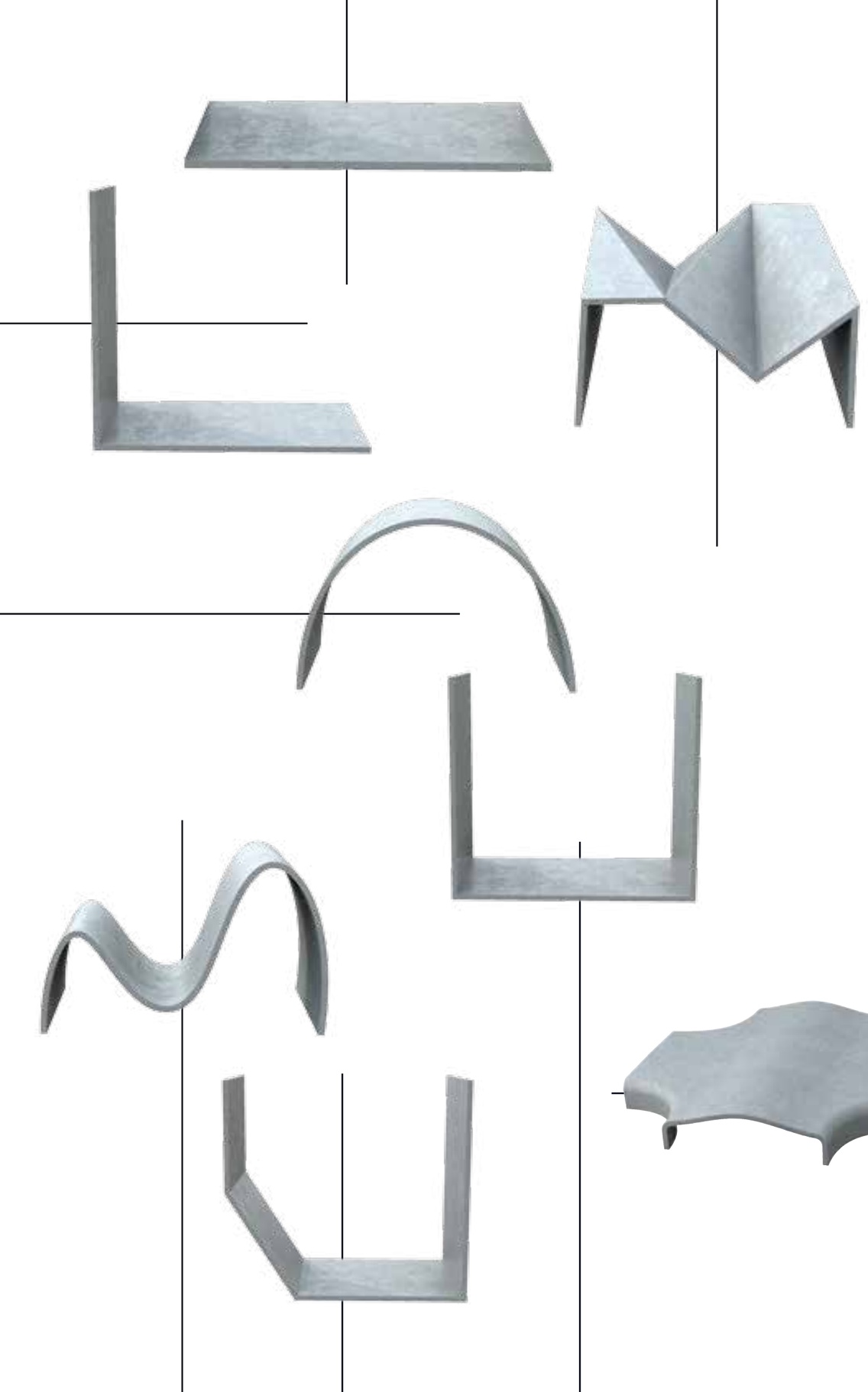
03

DAKO-GRC façade claddings

Glassfibre reinforced concrete façades have a minimalist, purely natural look, making them a choice for contemporary architecture where these qualities are preferred. Resistance to mechanical damage (piercing, breaking) and long service life are just two examples of the important properties that GRC cladding offers.

Compared to precasting technology, GRC components achieve approximately only one tenth of the weight, thus significantly saving the static load of the building. These are 12–20 mm thin shells, which are created by spraying a special mixture into a prepared mould. When creating such a component, it is necessary to devise and develop its design first, i.e., the internal structure and anchoring, then design and manufacture the mould, and finally apply the GRC material to produce a uniform surface without caverns, pores and visible microcracks.

The advantage of GRC products is their variability – in addition to classic cladding panels, it is possible to produce panels with solid corners, spatial components or more complex 3D architectural elements, large format panels and design solitaire components.



3.1 Dimensions and shapes

The shape of the glassfibre reinforced concrete façade panels is determined by the formwork technique during production. Basic shapes include planar, spatial, arc and organic 3D components.

Thanks to the possibility of producing glassfibre reinforced concrete shells by spraying in open moulds, more complex irregular shapes of organic architecture, which have been particularly popular in recent years, can also be produced.

Maximum panel dimensions are not limited by production. The thickness of the cladding varies – depending on the type of anchoring selected and the size of the components – from 12 to 20 mm, up to several centimetres for textured surfaces.

Large-format components with an area between 4 and 20 m² are our domain.

3D large-area stepped panel

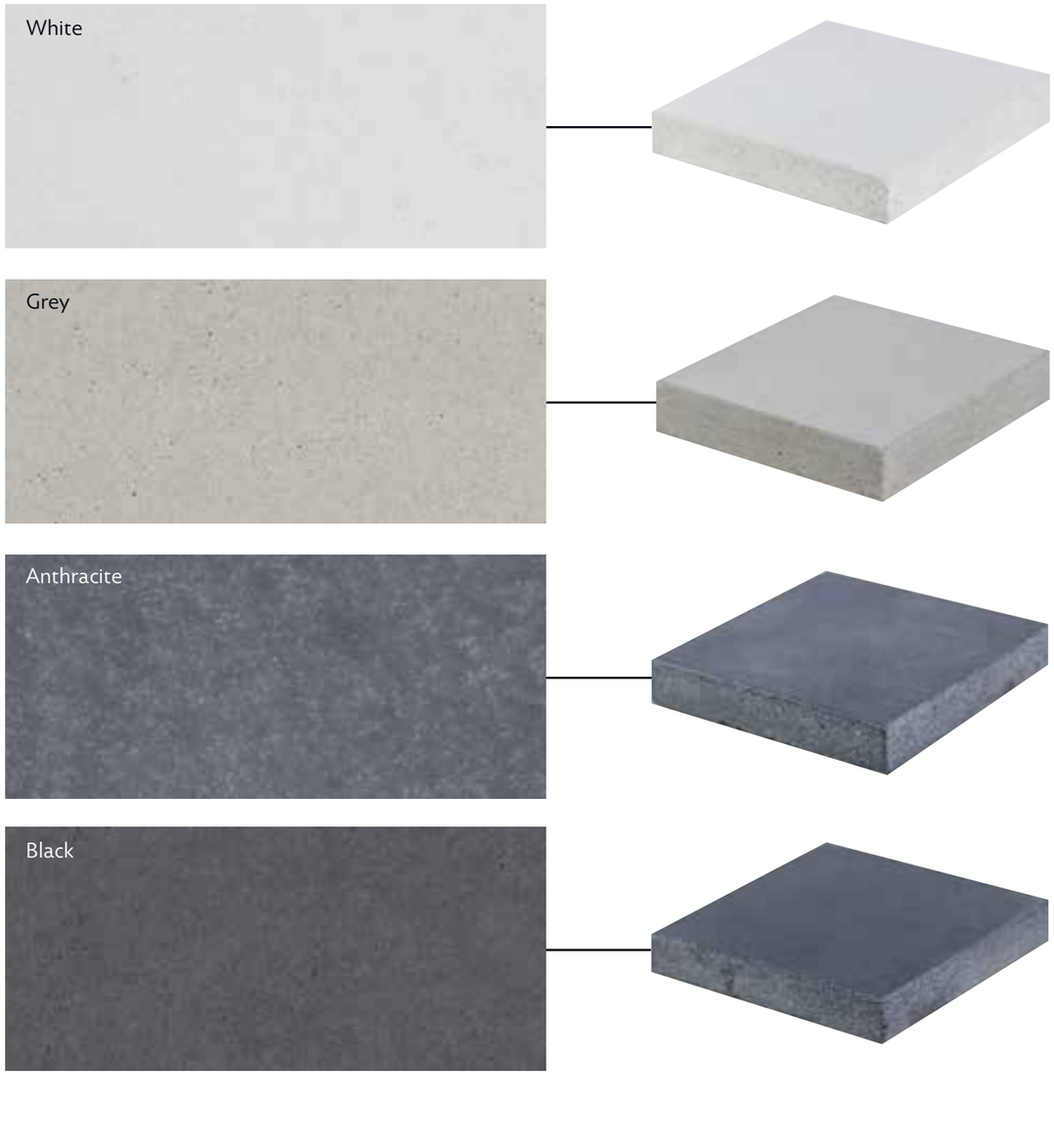
3.2 Colours and surfaces

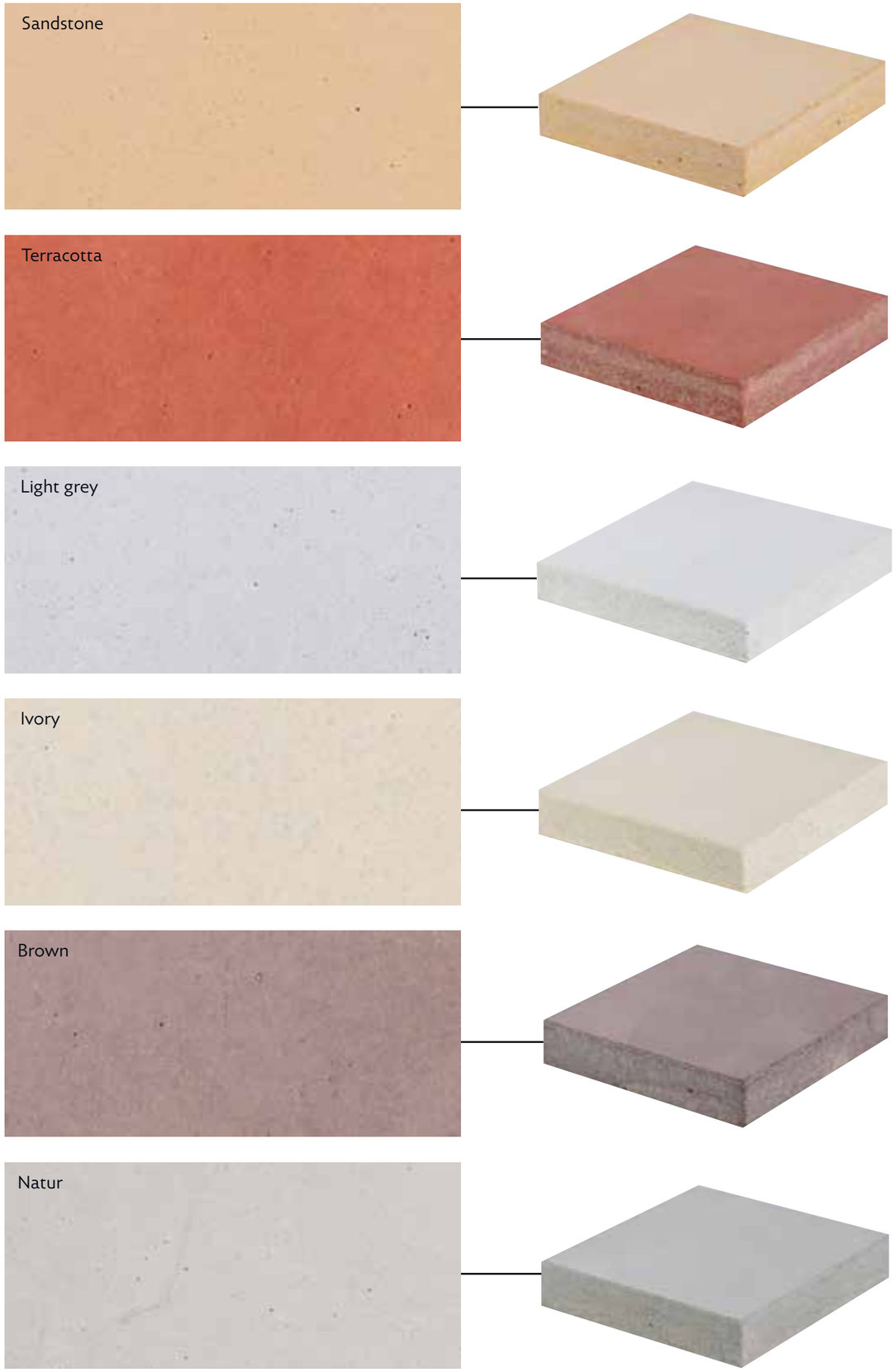
The façade and its design is the imaginary icing on the cake of the entire implementation of a newly built or reconstructed building. The chosen shade and surface of the façade can significantly improve the whole project or, on the contrary, bring down the final impression of the completed work. Therefore, it is advisable to pay due attention to the façade and the details of its design.

3.2.1 Colour shades

DAKO-GRC products are offered as standard in a basic colour range of ten shades and two finishes. The material is dyed in the mass and is therefore maximally resistant to external effects. According to the customer‘s request, it is possible to create a completely individual colour design of the resulting elements.

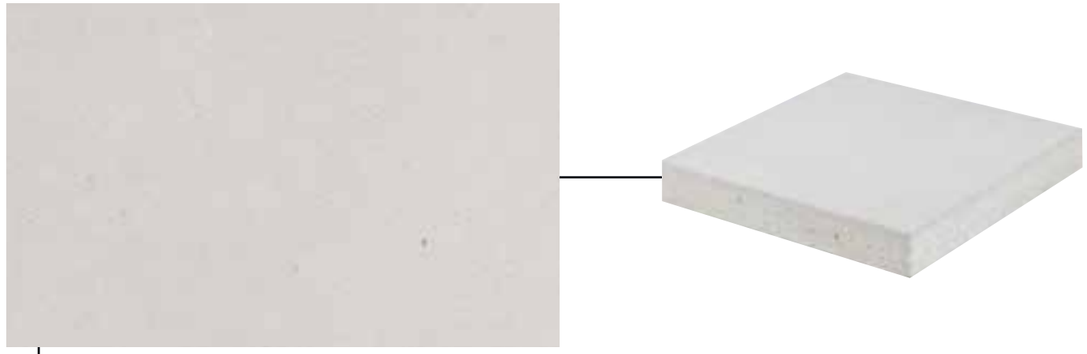
The surface of glassfibre reinforced concrete products after maturing is not homogeneous, there are always different coloured areas. The concrete mixture is composed of natural materials, and just thanks to this fact, it is possible to obtain a very lively and attractive surface appearance.



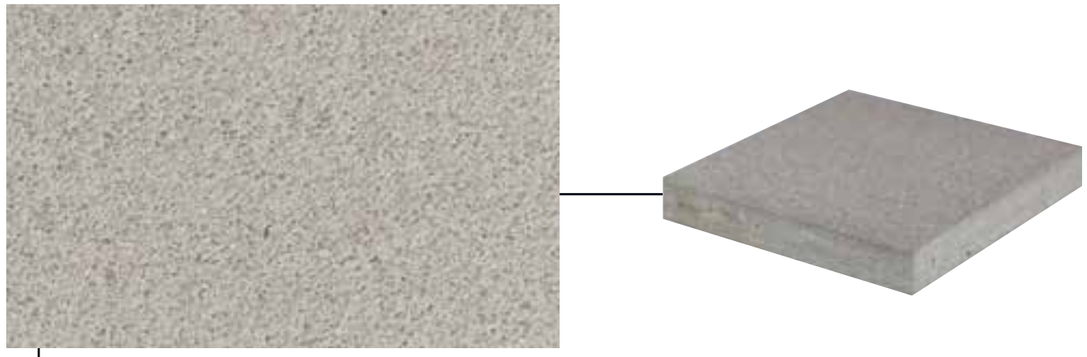


3.2.2 Surface finish

DAKO-GRC glassfibre reinforced concrete panels are offered in two basic surface finishes – smooth panels are the standard, washed surface products are an alternative. An alternative to standard surface finishes is the use of imprint matrices or foils, which make the façade very effective and visually attractive.



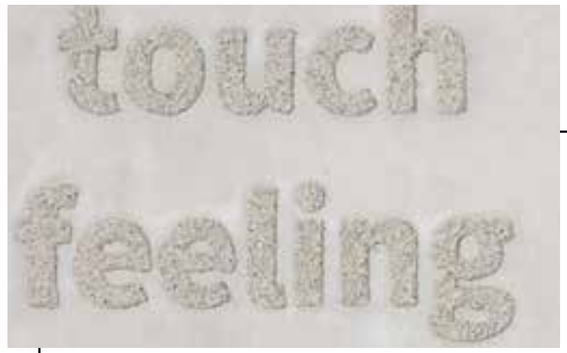
Smooth panels
Components with this finish are smooth both visually and to the touch, the surface is free of cavities and pores. These properties are achieved during production by applying the first, so-called exposed layer in the moulds without the addition of glass fibre. Slight heterogeneity of colour shade within the surface is a typical feature and one of the reasons this natural material is sought after and appreciated.



Washed panels
Rough surface imitating the structure of sandstone is typical for washed panels; it is created by disturbing the face of the resulting component to a depth of 1 mm.

Washed panels – pepper and salt
A black and white combination – the so-called pepper and salt – represents a special type of washed panels.

Imprint dies
The production of panels with the structure according to the used imprint dies is an interesting alternative to the standard surfaces. After inserting dies in the formwork, structured surfaces can be produced according to any design.



Graphic surface
Special foils with hardening retardant applied are available for the production of façades with original graphic motif according to your own design. The desired pattern can be created by blending smooth areas and areas from which fine aggregate emerges after washing.

Old people's home, Paskov

Mourning Hall, Havířov

3.2.3 Hydrophobization and anti-graffiti coating

Hydrophobization
The components are coated with hydrophobic coatings before being shipped to the construction site. These coatings increase their resistance to external effects such as rain, frost, dust and chemical agents. Proper application of hydrophobization treatment closes the pores on the concrete surface, making it absorption-proof. The lifetime of the hydrophobic coating is 10 years; it should be renewed after this period.

Anti-graffiti coating
Application of anti-graffiti coating which prevents, in addition to panel soaking with water, undesirable performances of street artists on the glassfibre reinforced concrete façade. A colourless impregnation agent is used for protection, which guarantees permanent protection against graffiti for concrete without adversely affecting its colour. Cleaning consists in the application of a special agent and its subsequent washing with pressurized water. After this process, it is advisable to renew the anti-graffiti coating.

Illuster Shopping Centre, Uster

Monastery building, Bratislava

04

Anchoring systems

Its almost unlimited shaping possibilities make glassfibre reinforced concrete an attractive material for contemporary architecture. DAKO's domain is designing such solutions that combine the capabilities of the material with the financial possibilities while maintaining the aesthetic requirements for the final visual effect of the work. There are two basic anchoring systems – SMART and STANDARD.

We will design the optimal method of anchoring in accordance with the budget and architectural plan.

4.1 DAKO SMART – large formats, 3D and organic shapes

In addition to conventional GRC façade panels up to 4 m^2 in size, which can be mounted on aluminium grids using hidden anchors, large-format panels with area of up to approximately 20 m^2 can be produced. These panels are anchored to the façade in individual points using steel brackets. The static load-bearing capacity of the entire façade panel is then ensured by the structure which forms part of the individual components.

The benefits resulting from using large format façade panels include the variety of shapes with a reduced number of joints and the high speed of installation. Lower quantity of anchors is used for DAKO-GRC SMART glassfibre reinforced concrete panels when compared with installation of conventional metal grids. This results in a significant savings of used material and, most importantly, of the work of the installers. In most cases, the DAKO-GRC SMART large-format panel is mounted on only four steel brackets.

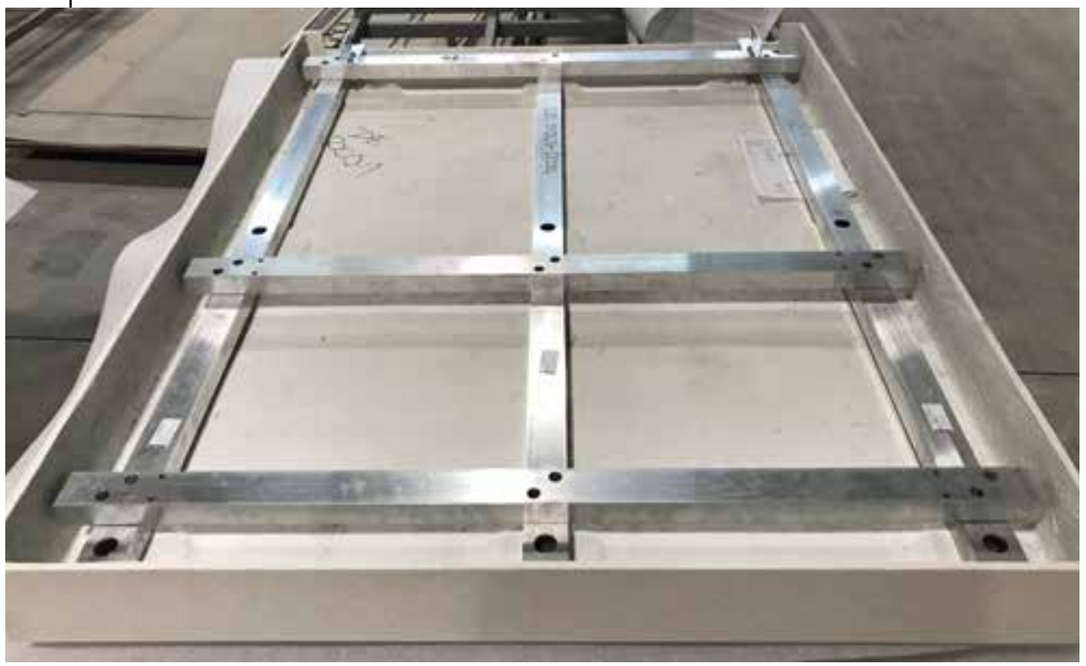
The DAKO SMART system allows you to make great architecture regardless of the shape of the building's bearing structure.

4.1.1 STUD-FRAME – steel frame anchoring

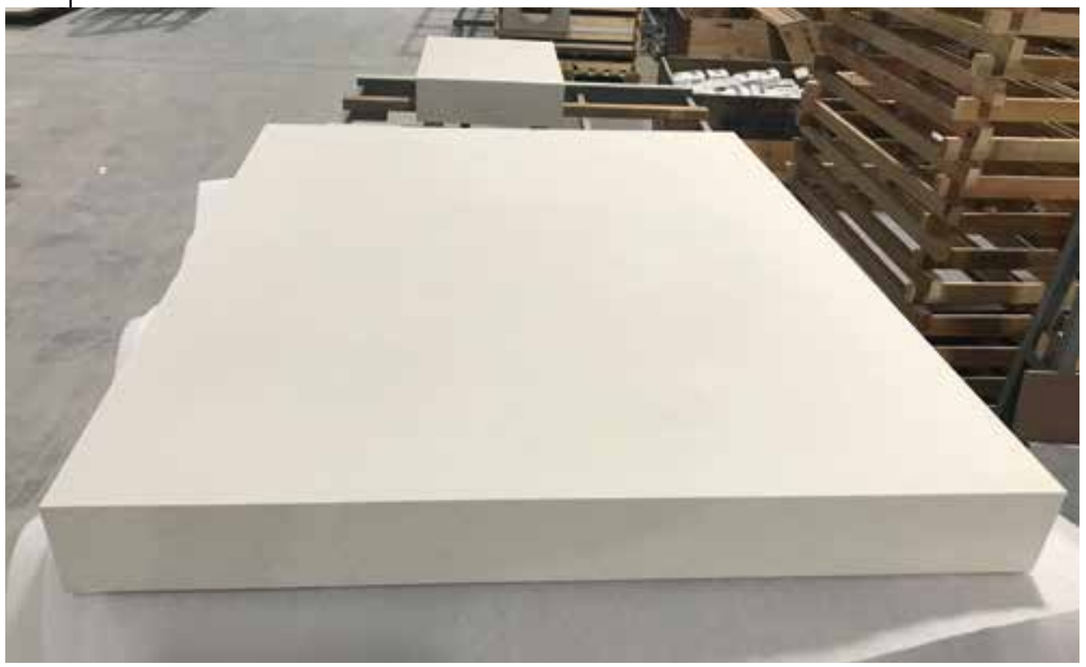
The STUD-FRAME anchoring system for GRC façade panels is based on the principle of integration of the bearing substructure directly into the panels during their production. The method of fixation of the bearing frame to the glassfibre reinforced concrete panel allows movement of the panel during its reshaping as a result of external conditions. Use of the STUD-FRAME anchoring system brings many shape options at the design stage, as well as many advantages during the subsequent construction.

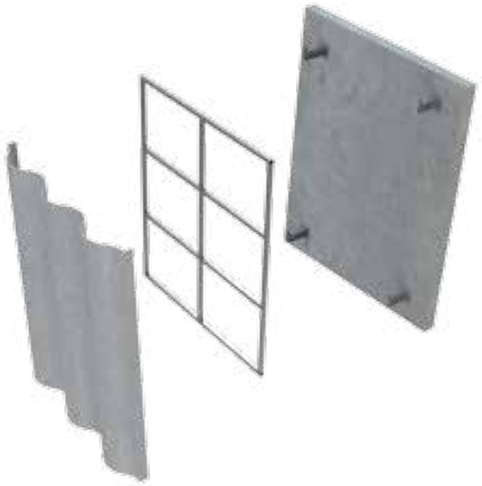
The integrated bearing frame ensures the rigidity of the GRC panels within their complete area. That is why it is possible to produce panels larger than 4 m^2, which can then be easily handled by machinery without risk of damage, and installed on the façade. Steel, aluminium or stainless steel are the materials which are used most frequently for production of the bearing frames.

STUD-FRAME component – reverse side view



STUD-FRAME component – face side view





Components with various shapes without complicated substructures
The bearing frame allows anchoring of large components with complicated shapes without the need to install other substructures. The shape of the frame is adapted to the shape of the façade panels, and its back side is parallel to the building's bearing structure. The resulting shape of the façade is then given only by the façade panels themselves, which is particularly beneficial when designing architectural elements with complicated shapes.

Simple system of fixation to the bearing structure
Only four separate brackets for each component need to be extended from the bearing structure for fitting the GRC panels with the STUD-FRAME integrated frame. A façade panel with an integrated bearing frame is fitted on the extended brackets.

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Fast installation of façade components with possibility of rectification
A small telescopic crane is sufficient for handling the façade panels with the frame, and the panels can be installed by a considerably lower number of workers when compared with the manual assembly of panels anchored using a different method. A rectification system of the complete assembly allows for the precise fitting of large panels even if there are certain inaccuracies during construction. When compared to the other methods of panel anchoring, the combination of large formats and fast installation also represents an economically advantageous solution.

4.1.2 Sprayed anchoring

The principle of sprayed anchors is similar to the STUD-FRAME method. The difference consists in the fact that stiffness is provided within the component itself by means of a glassfibre reinforced concrete supporting frame. The reinforcing structure can also include concrete anchoring sleeves, which are then mounted on steel façade anchors with anchor spikes. The advantage of this method is represented especially by the saving of other materials such as steel or aluminium used for reinforcement of the façade panels.

What can the SMART system allow you to do?
- Construct façades using large and interestingly shaped GRC panels and blocks.
- Shorten the installation period, thus making construction cheaper.
- Install the façade even during the winter period.
- Cover even buildings with a height exceeding 22.5 m with a durable and resistant façade.
- Make handling during installation easier thanks to the anchoring system which is a part of the panels.
- Reduce labour force costs thanks to a considerably lower need for manual work.
- Create great architecture.

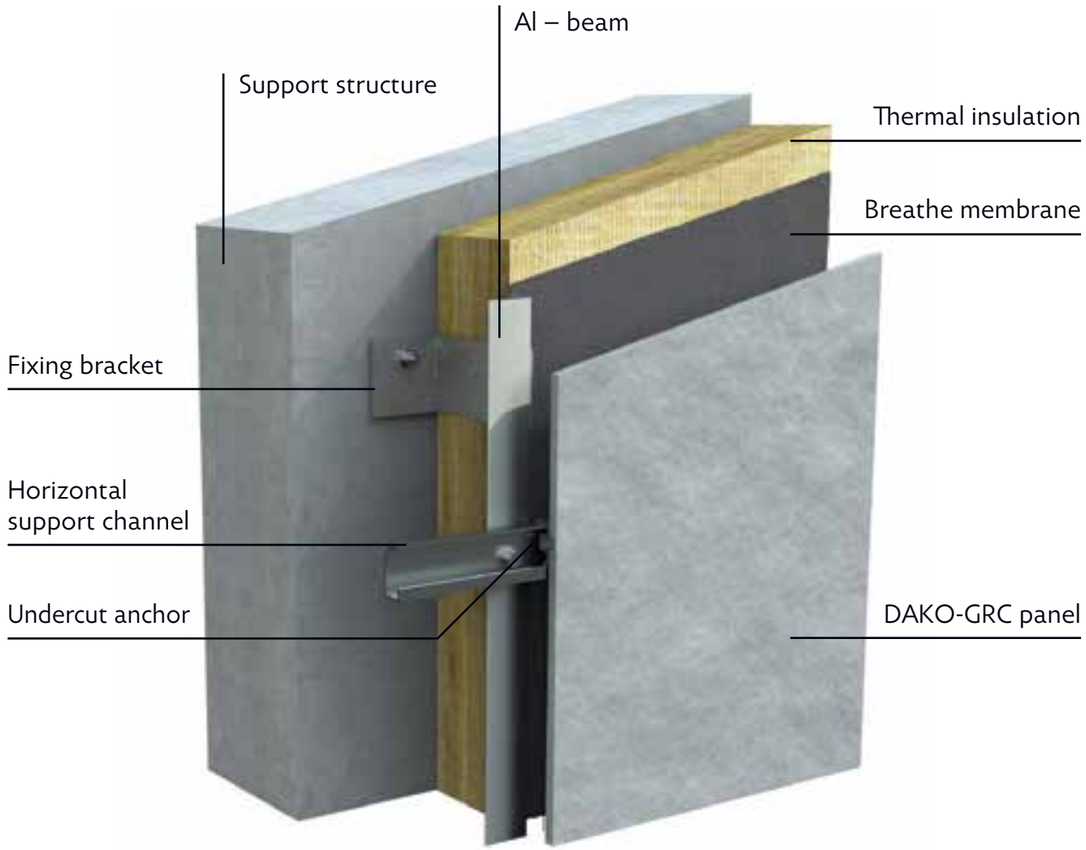
4.2 DAKO STANDARD – smaller formats, manual assembly

The STANDARD system comprises basic anchoring methods suitable for projects with façade panels of smaller dimensions and simple shapes.

4.2.1 Hidden mechanical anchoring

The mechanical anchoring method is based on a technology utilizing a system of hidden suspensions and anchors embedded in the reverse side of the façade panel. The component is then attached to the horizontal part of the support grid and its position on the façade is adjusted using rectifying screws. In the last stage, the cladding is secured against displacement.

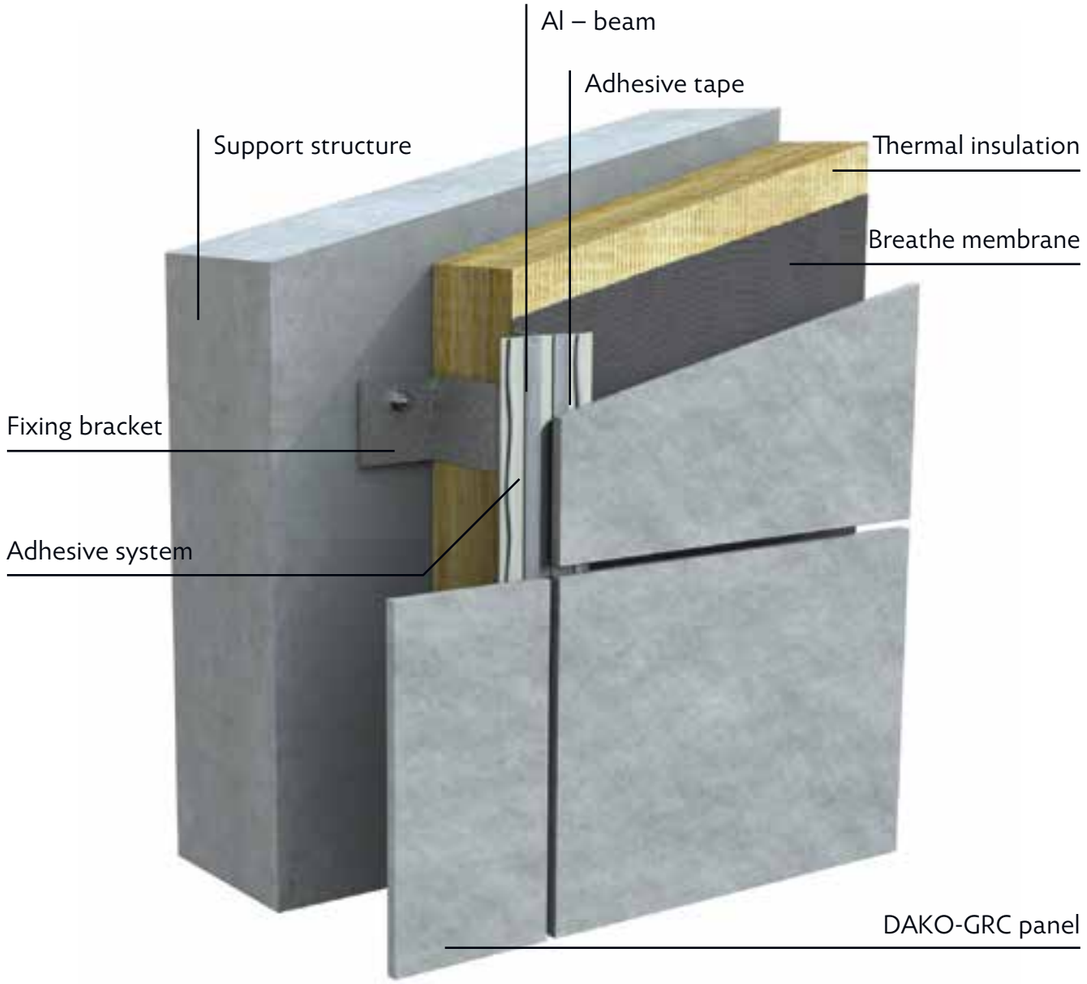
This is a basic method of anchoring, especially suitable for the implementation of façades made of smaller cladding panels of simple shapes up to the size of 4 m² and maximum weight of 80 kg. These limits are due to the manual handling and assembly of the components on the construction site. The advantage consists in the possibility of installation even in the winter period and the use for buildings higher than 22.5 m, which is not possible in the cases where the façade components are glued.



4.2.2 Hidden anchoring by gluing

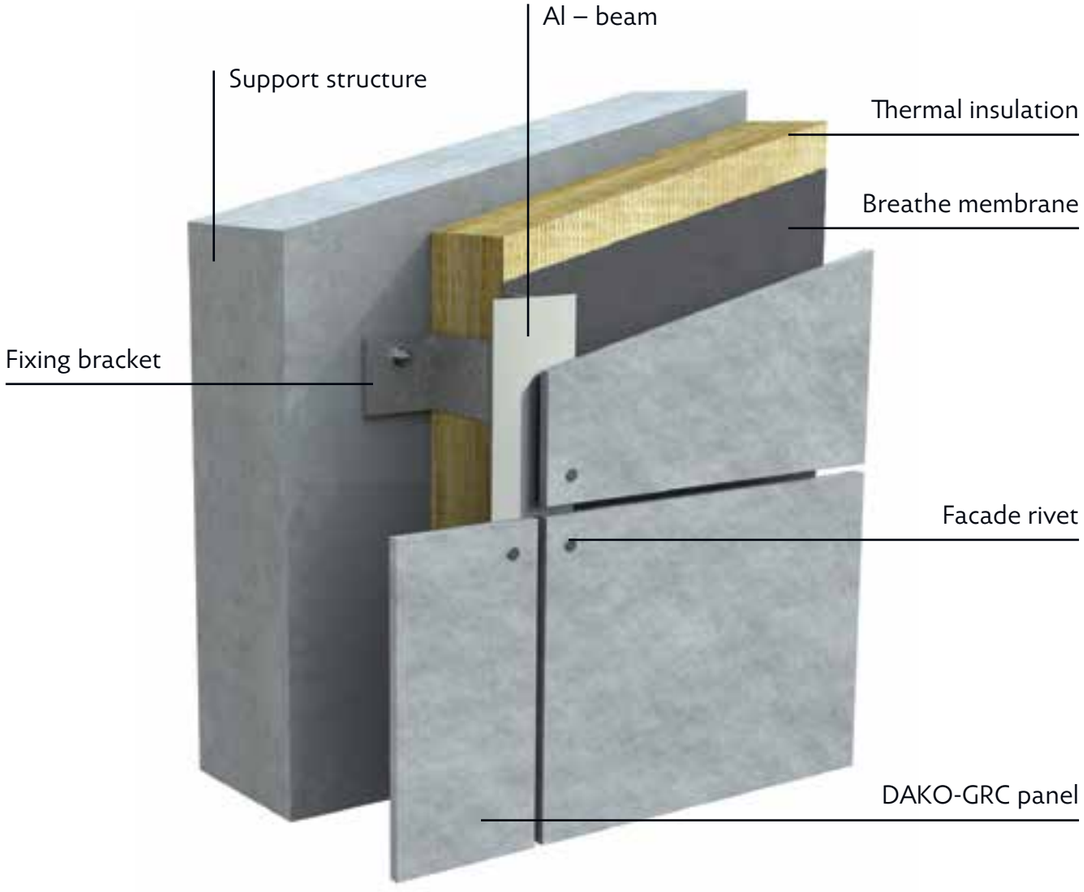
This is the cheapest method of anchoring, again particularly suitable for anchoring smaller cladding components of simple shapes up to the size of 4 m² and maximum weight of 80 kg. The weight and dimensional limits are due to the necessity of manual handling and installation of the components on the construction site. The need to maintain a minimum installation temperature of +5 °C represents a certain limitation.

Glued façades can only be applied on the buildings with a maximum height of 22.5 m. The Sika-Tack Panel gluing system, which is suitable for the creation of ventilated façade constructions in both exterior and interior applications, is used for the installation of DAKO-GRC façade panels.



4.2.3 Visible anchoring by riveting

A mechanical anchoring method where the panels are attached to the aluminium substructure using screws and rivets. Currently, this system is mainly used for fixing suspended false ceiling panels.



4.3 Cost comparison

The DAKO SMART system is suitable if:
- you wish to make a façade from large panels with complicated shapes.
- you appreciate cost savings with respect to metal anchoring components.
- you appreciate lower costs thanks to a lower number of installation workers.
- you want a shorter installation period and subsequent cost savings (shorter rental period for construction site, equipment, etc.).
- you are in a hurry to complete the project.

The DAKO STANDARD system is suitable if:
- you wish to make façade from smaller cladding panels with simple shapes.
- you have cheap labour force available (based on the situation within the given region).

	STANDARD system	SMART system
Component price	100 %	105–120 %
Bearing substructure price	100 %	80–130 %
Installation time	100 %	40–80 %

4.4 Value engineering

DAKO offers the customers an individually optimized solution for each project. Our goal is to offer solutions that satisfy aesthetic, technical and, last but not least, economic requirements.

Example: the Vision Apartments Glattbrugg project
The façade of the building consists of large-format spatial components. The original design included a structurally complicated anchoring system, which we redesigned as a part of value engineering into a more efficient four-point DAKO SMART system.

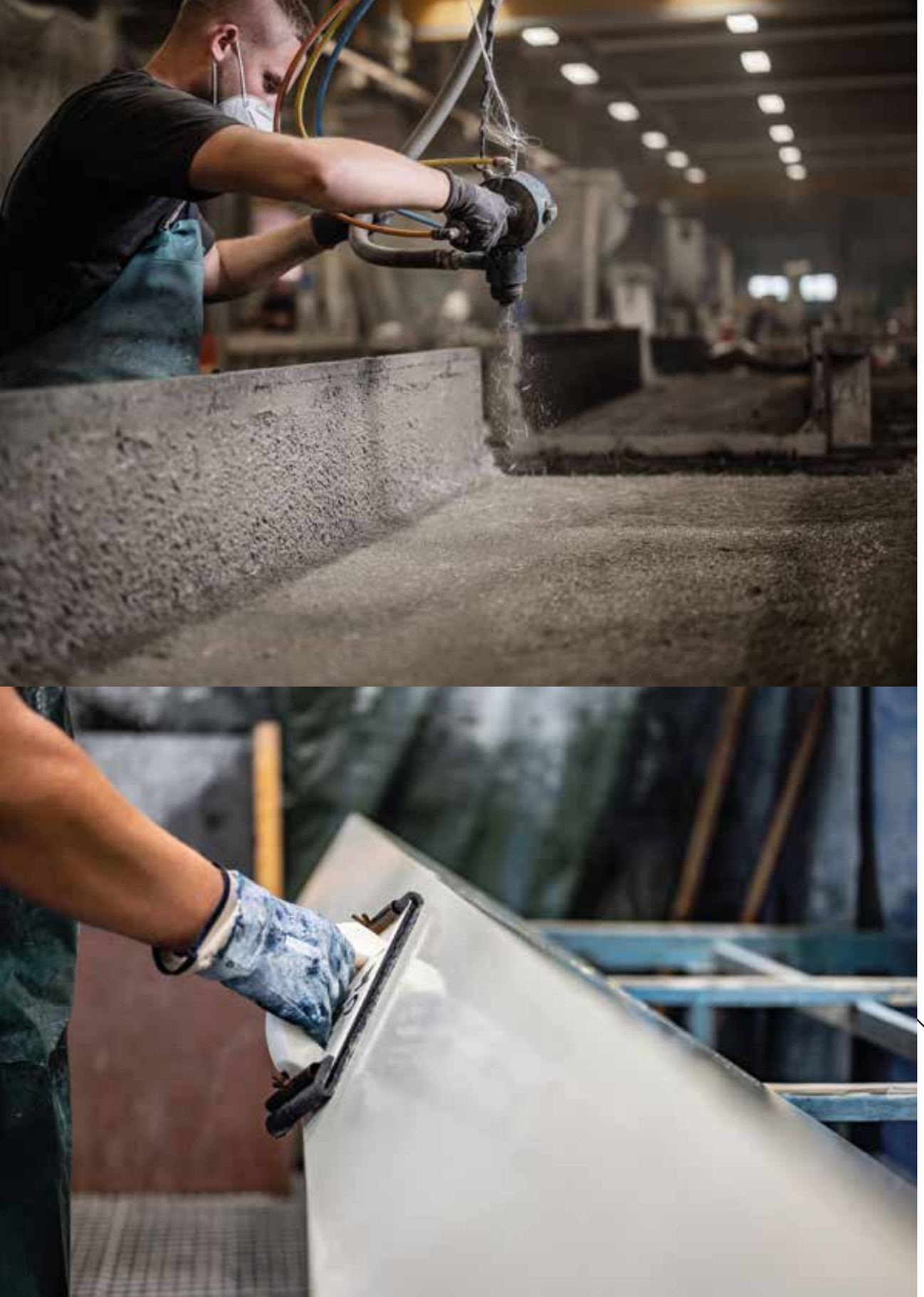
Thanks to this solution, we have achieved a significant reduction in the weight (and therefore the price) of the substructure while maintaining the quality of all products. At the same time, the assembly work was greatly simplified and accelerated.

	Before value engineering	After value engineering
Status	Simple GRC + Al substructure 26,44 t Al	Reinforced GRC + 4 anchoring points 6.07 t of stainless steel
GRC price	100 %	107 %
Substructure price	100 %	44 %
Installation price	100 %	60 %

→ 48

Installation of GRC components – Vision Apartments Glattbrugg

Menza 17. listopadu, Prague I Grand Prix of Architects 2021 Prize Winner



05

Technical characteristics and quality control

The GRC material has a high tensile bending strength thanks to the glass fibre, which allows the production of thin-walled parts. This is a key parameter that is monitored in GRC. Its value depends on the production process and technology of each manufacturer.

The Czech standard for testing glassfibre reinforced concrete allows for a wide range of strengths that the material must meet. However, this range can result in large differences in durability and quality. Particularly for anchor points, the unstable strength of the material leads to the need to oversize the substructure‘s static parameters, which results in a subsequent increase in the cost of the construction work.

Since the company has set maximum product durability as its primary goal, DAKO-GRC products are of high quality and the tested strength values are consistent without significant variations. DAKO has the status of a Full Member of the GRCA association, which places great emphasis on quality control. The members of this association have to comply with demanding criteria and test and then prove their compliance on a daily basis.

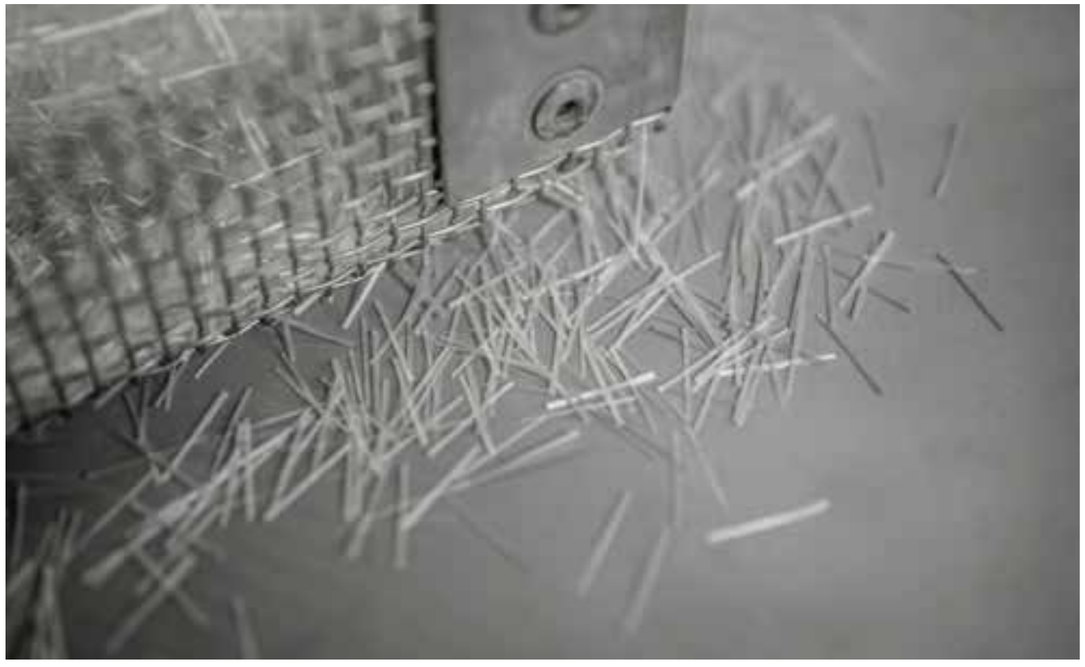
The inspections of input raw materials and the production process are a matter of course. Tensile flexural strength testing, frost resistance testing and anchor point pull-out testing are also required.

The use of cladding panels made of high quality tested material eliminates the installation of a façade that may not meet expectations, especially in terms of aesthetics and, in the worst case, also durability.

5.1 Characteristic properties

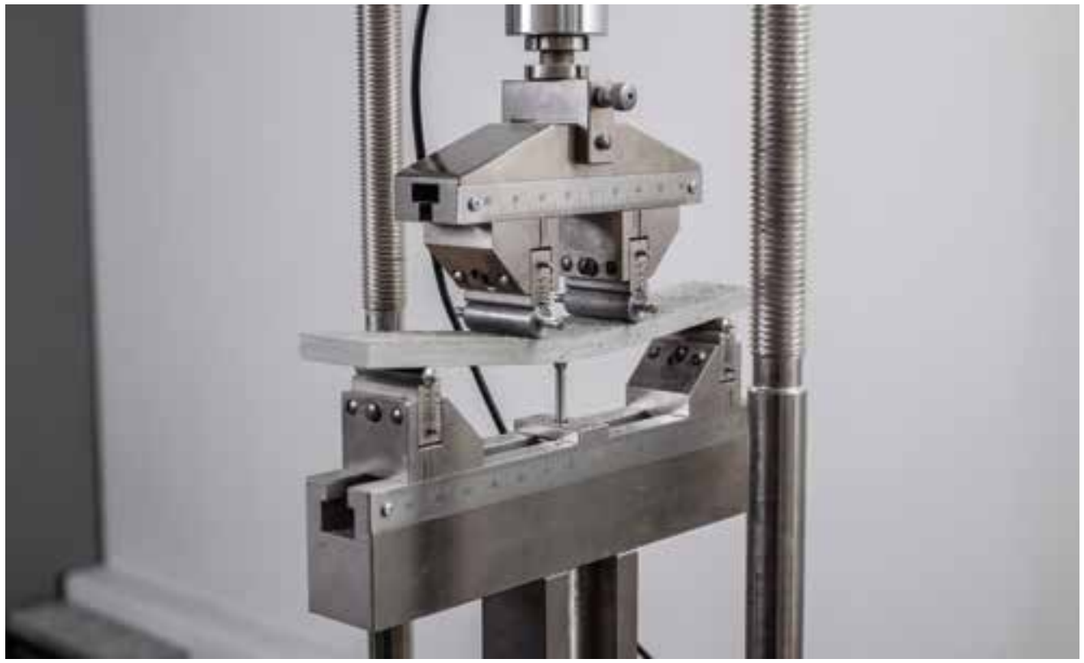
The table shows the results of the testing of DAKO-GRC glassfibre reinforced concrete panels. Thanks to the in-house development aimed at achieving the cement matrix microstructure as dense as possible, highly resistant and durable glassfibre reinforced concrete façade panels can be produced.

Dry volume weight	min. 1950 kg · m^{-3}
Tensile bending strength	>18 MPa
IZOD impact strength	8 kJ · m^{-2}
Frost resistance coefficient T100	>0,95
ČSN EN 13501-1+A1 (without surface finish)	group A – non-flammable
Modulus of elasticity	15 GPa
Absorbency	7 %
Durability – climatic cycles	>0,8
Linear change in dimension due to humidity	0,018 %
Linear change in dimension due to temperature	10 · 10^{-6} °C^{-1}
Dimensional tolerance – component length L (0,5–3,0 m)	± L / 600
Dimensional tolerance – component length L (6,0–10,0 m)	± L / 1200



5.2 Quality and quality inspection

Due to the complexity of our production processes, we take a very rigorous approach to quality inspection in our own fully equipped laboratory. Inspection of individual production steps is equally important; even small details can lead to undesirable deviations from the aesthetic requirements of architects or investors.



Sophisticated material testing
The quality of DAKO-GRC products is monitored on a daily basis. Testing results are regularly evaluated and made available to the investor upon implementation. In particular, the tensile flexural strength, absorbency, density and porosity of the material are tested. Test reports are registered for every project, every day, for every production line.

Quality is essential.
Thanks to regular testing, we only supply the best products.

Four-stage production inspection
During the production process, a four-stage inspection takes place to ensure the highest quality of the delivered products. During this process, the dimensions and thickness of the components are checked, as well as the correct position of the anchors and also the overall appearance of the final components.

Automatic mixing centre
The use of a modern mixing centre allows the production of high quality products and takes the whole production to a new level. Especially the precise dosage of individual ingredients represents an advantage. Thanks to this benefit, more stable and uniform colour and higher strength and durability is achieved for DAKO-GRC products when compared with components produced using the traditional mixing method.

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5.3 Sampling and mock-up

In order to avoid possible problems during construction, it is advisable – especially for large buildings – to make a mock-up. For large projects, sampling in several stages is now standard:
- A4/A3 size sample
- visual mock-up
- functional mock-up

ČSOB Hradec Králové, functional mock-up

A4/A3 format sample
At the beginning of every project, the architect has an idea of how the façade of the designed building should look like. To match the final shade and surface of the GRC component to this vision, sampling in smaller A4 or A3 formats is used in the first phase.

Visual mock-up
After the architect has selected the ideal shade and surface, the next stage of sampling is to create a visual mock-up. This is a sample of a typical part of the façade, on which the appearance and overall architectural impression of the future building is tested. Unlike the functional mock-up, the visual mock-up does not include any substructure, so it is purely about the aesthetics of the future work.

Functional mock-up
Care must be taken, particularly when constructing buildings with complex façade elements connected to other structures, to ensure that the detailing is correct and that the entire solution is functional. It is therefore highly advisable to make a functional mock-up for larger projects. This is a typical façade cut-out including cladding, substructure and thermal insulation. The construction of window openings is also frequently a part of the functional mock-up.

This sample can then be used to fine-tune any inaccuracies and imperfections so that the final work meets all technical requirements. The strength of the components and their resistance to impact, fire, external environment effects, etc. are often also tested on this sample.

Every project represents a challenge for us, one that we enjoy and that fulfils, develops and moves us forward.

University of Oxford, functional mock-up

Trnitá Palace, Brno

DAKO production premises I 2nd prize in the Best Construction of the South Moravian Region 2014 Competition

06

About us

6.1 History and present of the company

DAKO Brno is a family-owned business with a tradition of producing concrete prefabricated components since 1996. You can find our façade constructions in the Czech Republic, Great Britain, Switzerland, Slovakia, Lithuania or Germany. We are constantly developing and working on expanding our product sales worldwide. The production facilities in Prace and Ostrava with lines for large-size GRC 3D panels cover an area of 37,500 m^2. The daily production capacity is 150 m^2 of GRC panels. We perform sophisticated quality inspections on a daily basis.

We are proud to be able to maintain, in large volumes, the quality of detail, colour and continuity of DAKO-GRC products with other structures such as windows, cladding made from other materials or penetration solutions by cladding. We are able to guide our customers through the entire process in a professional way, from matching the architect's design with the capabilities of GRC technology, through the project budget up to production and installation.

We pride ourselves on high-quality full service and networking with other subcontractors. Thanks to these skills, our team is involved in construction projects that attract the attention of the professional architectural community. We are a member of the GRCA association.

We started as a garage company. Today, we have our own production premises and are ready to continue to grow.

6.2 Scope of application

- **DAKO-GRC MATERIAL –** We have developed, and are continuously improving, our DAKO-GRC material which allows us to supply high-quality façade components and other products, from architectonic façade accessories to original interior components.
- **TOILET MODULES –** The production of unattended public toilet modules in a special anti-vandal design represents another field of the company's activities. Simple minimalistic design, perfect cleanliness, resistance to vandalism, long service life, semi-automatic operation and operational cost savings.

1996

Ing. Ludvík Lederer becomes a founder of DAKO Brno, spol. s r.o. The company produces toilet modules in cooperation with the German company Hering Sanikonzept GmbH. The assembly of production halls and the construction of houses represent other fields of the company‘s activities.

2000

The first projects with GRC cladding are emerging. Commencement of cooperation with the Research Institute of Building Materials.

2009

The sceptre of the company management is taken over by the son of the founder, Ing. Petr Lederer. DAKO starts to apply GRC using spraying method.

2013

A new hall for the production of fibreglass concrete parts and toilet modules with a total area of 2,000 m^2 is completed.

2017

DAKO becomes a member of GRCA. CNC milling machine purchased.

2018

A new hall for the production of GRC parts is completed, the production area is expanded by 5,000 m^2. The production capacity is increased and another production line is launched.

2019

An automatic mixing centre, another CNC milling machine are purchased and a fully equipped laboratory is completed.

2020

The company increases its production volume of GRC components. Company rebranding. DAKO becomes a so-called Full Member of the GRCA.

2022

DAKO completes its third production hall. The production area will be expanded by other 2,100 m^2. The current capacity of the production facilities amounts to 10,100 m^2.

Why do investors like to come back to us? Because we are able to design the optimal solution and finish perfectly crafted details even on thousands of metres.

We look forward to your visit!

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The company is a holder of an ISO 9001 and ISO 14001 certificate.

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