2024

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KG construction

ABOU
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Discover modern and ecological solutions with KG Construction Sp. z o.o.

KG Construction Sp. z o.o. is a family company that has been successfully operating in the construction and industrial market since 2012. Over the years, we have completed a number of projects in sectors such as mining, industrial redevelopment and energy.

In response to the growing demand for green solutions, we have expanded our range to include innovative renewable energy products (RES) that effectively meet the needs of both private and institutional customers.

Thanks to our extensive knowledge and experience, we are able to offer not only products but also full technical and advisory support, tailored to the individual needs of each customer.

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NKG material produced by pultrusion

Composite profiles obtained by pultrusion consist of polyester resins reinforced with glass fibres. The addition of a flame retardant and an anti-static agent increases their safety in use, making them resistant to fire.

Production by pultrusion is largely automated, but it took several months to develop the optimum mixture of resins, glass fibres, flame retardants and also additives to obtain a surface conductive material.

The result of these activities is the New Mining Composite (NKG), developed by KG Consulting under the leadership of Krzysztof Gregorek. NKG is flame retardant, anti-electrostatic and non-toxic, meeting the stringent safety requirements of industry, including in explosive atmospheres (Ex).

NKG COMPOSITE

CERTIFICATES AND STANDARDS

- Compliance with PN-EN ISO/IEC 80079-38:2017-02 for equipment in explosive atmospheres in mining plants.
- Meeting requirements standard EN ISO 80079-36:2016-07, concerning non-electrical equipment in explosive atmospheres.
- Compliance with PN-G-46222:1997 - mine shafts and ladder compartments.

APPLICATION

- Structural profiles: Durable, corrosion-resistant and lightweight, great for harsh industrial environments.
- Ladders: Lightweight, durable. Available with protective basket. Can be used in hazardous areas.
- Safety barrier systems: Robust and aesthetically pleasing, easy to install, tailored to specific customer needs.
- Grating - durable and abrasion-resistant. They are mainly used in areas where good ventilation and resistance to heavy weight and intensive traffic is required, such as in mines and industrial plants.

PROPERTIES

Specific mass

At just 1.75 g/cm^3, this makes it one of the lightest materials in its class.

Thermal and electrical insulation

The composite is characterised by low thermal conductivity and negligible linear expansion. It is dielectric as standard, but is also available in a conductive version.

High chemical resistance

It is not subject to oxidation and is extremely resistant resistant to acids and other chemicals.

Safety in use

The material is non-toxic and completely safe. It can come into contact with drinking water.

Colouring in the mass

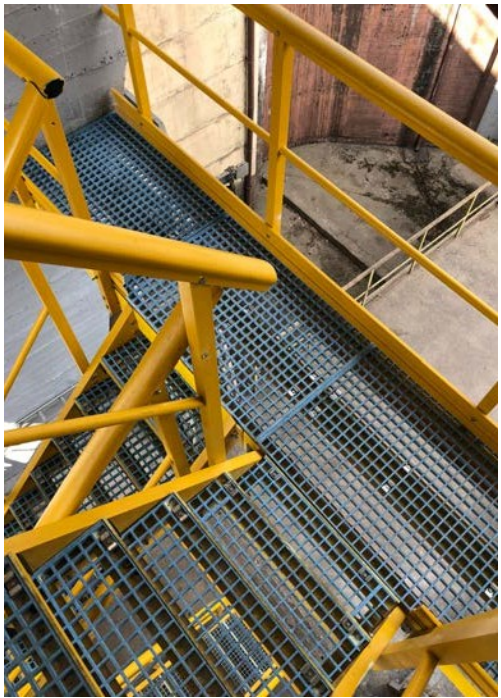
The availability of the full range of RAL colours allows the product to be perfectly matched to the aesthetic requirements of customers.

UV resistance and colour fastness

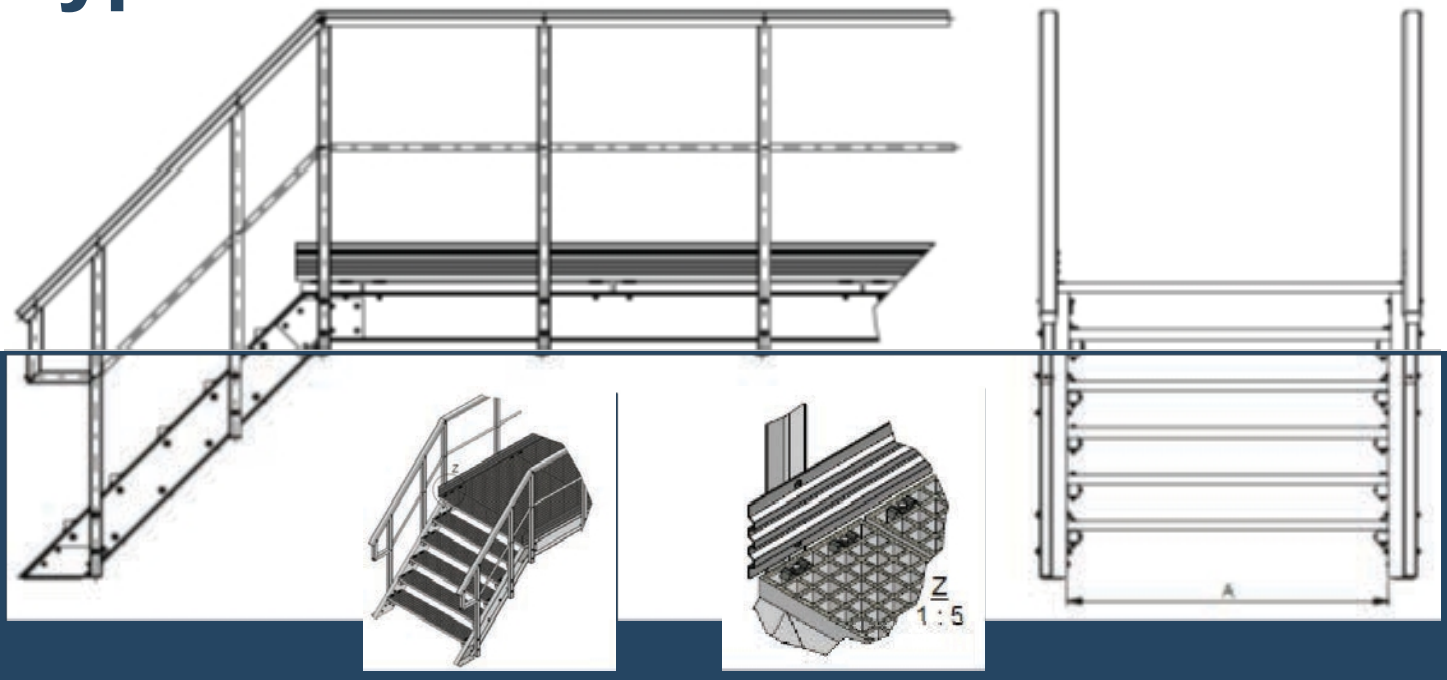
Guarantees long-lasting aesthetics even under difficult outdoor conditions.

NKG COMPOSITE

APPLICATIONS



Stairs made of composite profiles Type NKG



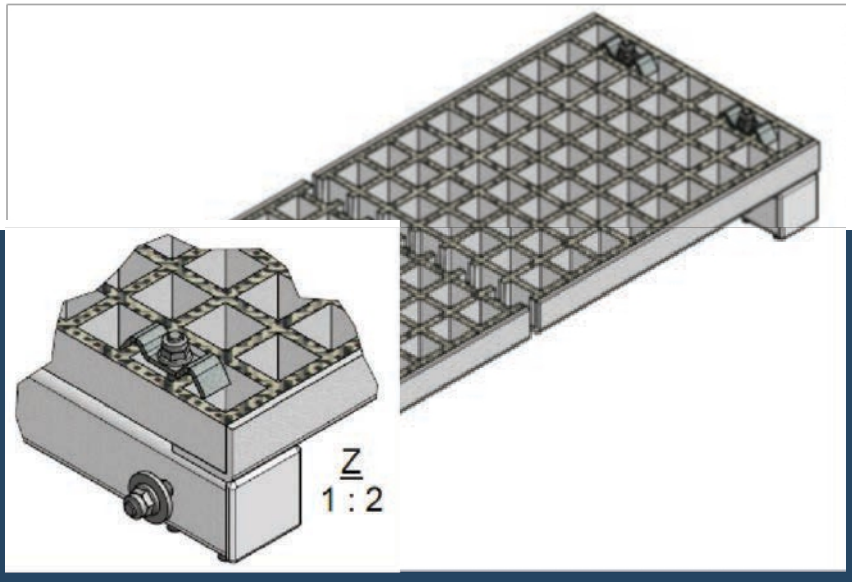
Stairs constructed from NKG-type composite profiles are characterised by exceptional durability and resistance to weather conditions. Thanks to the use of composites that are resistant to rain, snow, frost, ageing and UV radiation, the construction remains stable and safe for many years.

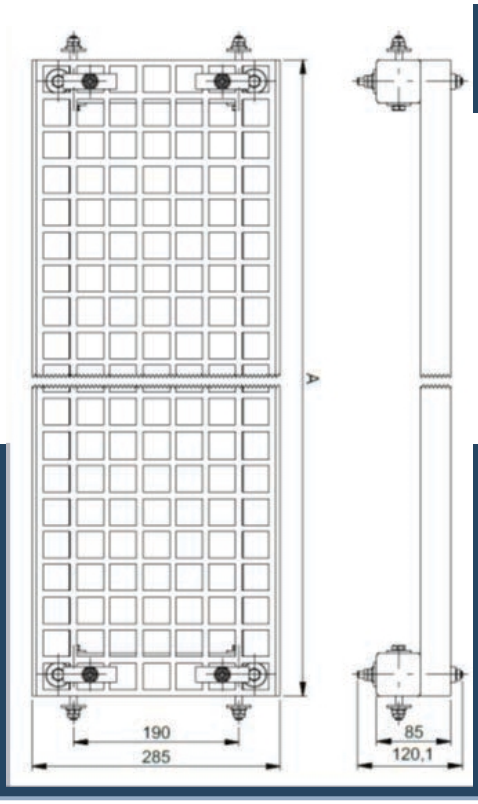
Composite materials significantly reduce the carbon footprint compared to traditional building materials such as steel or concrete. Composites are lighter, which translates into lower transport and installation costs.

The width and angle of the staircase are key parameters that can be tailored to the investor's individual needs and requirements. This makes it possible to optimally adapt the design to the specific space and function the staircase is to serve.

The flexibility in the width and angle of the staircase allows it to be used in small private projects as well as in large commercial or public developments.

NKG composite steps





Steps made of NKG material have found their way into many commercial projects for clients struggling with aggressive environments (salt mines, coal mines, chemical plants). These elements are characterised by high mechanical strength and resistance to corrosion and chemical agents.
The grating design provides excellent air, light and water permeability, which is important in industrial and outdoor environments. We offer grilles in both open and covered versions, tailored to the individual needs of our customers.

The NKG composite material is characterised by UV resistance and a wide operating temperature range of -50°C to +110°C. As a result, they retain their properties over a long period of time, regardless of the ambient conditions.

The material does not corrode or degrade when exposed to moisture, making it ideal for outdoor applications and humid environments.

Grati composite provide good
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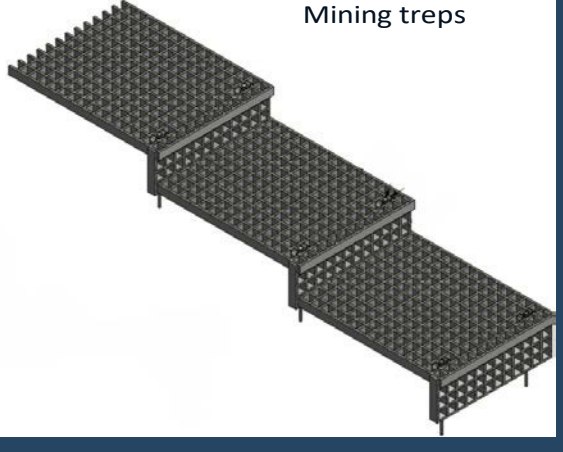
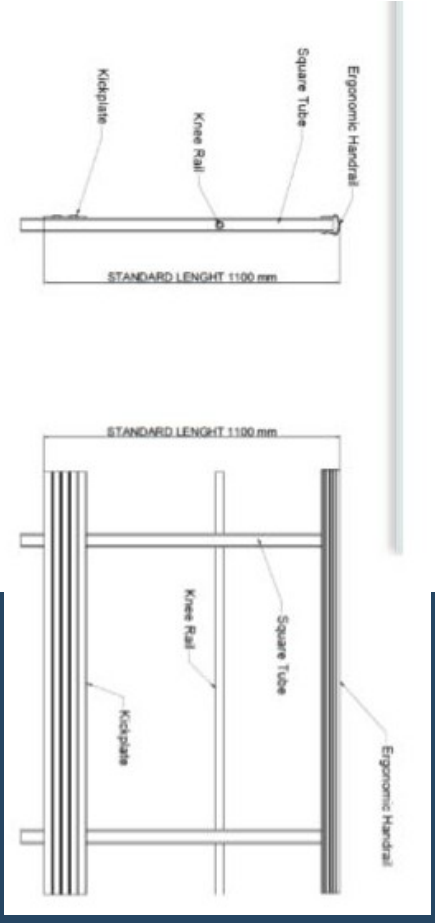
grip, which increases user safety, especially in wet conditions.

The composite material is non-conductive, which is an additional advantage in environments where there is a risk of electrical contact.

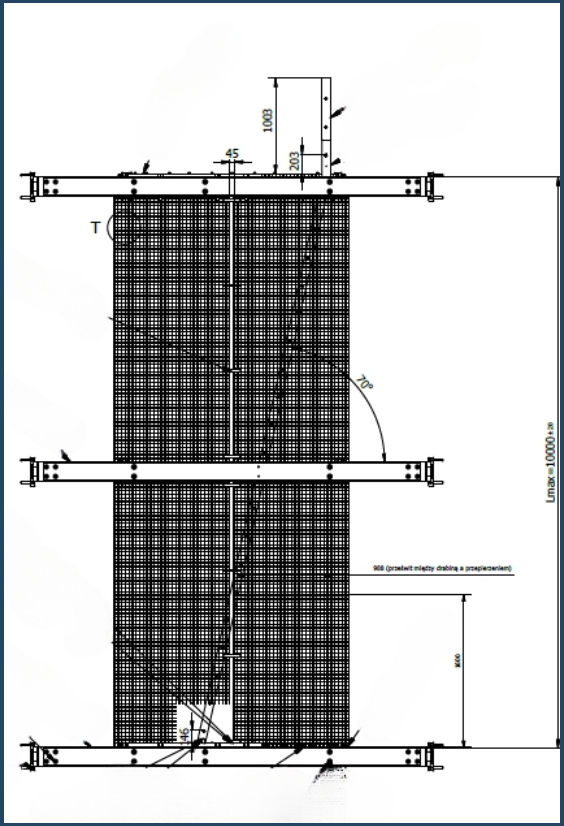
Mining treps

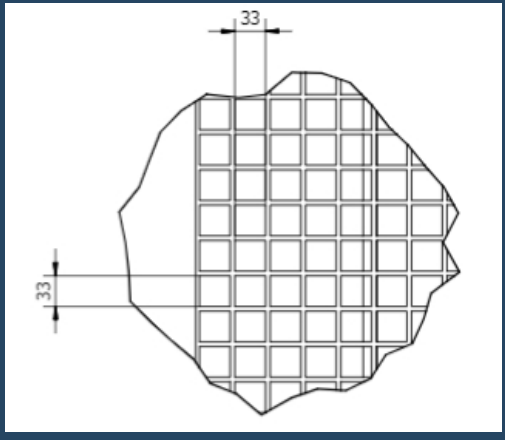


NKG COMPOSITE



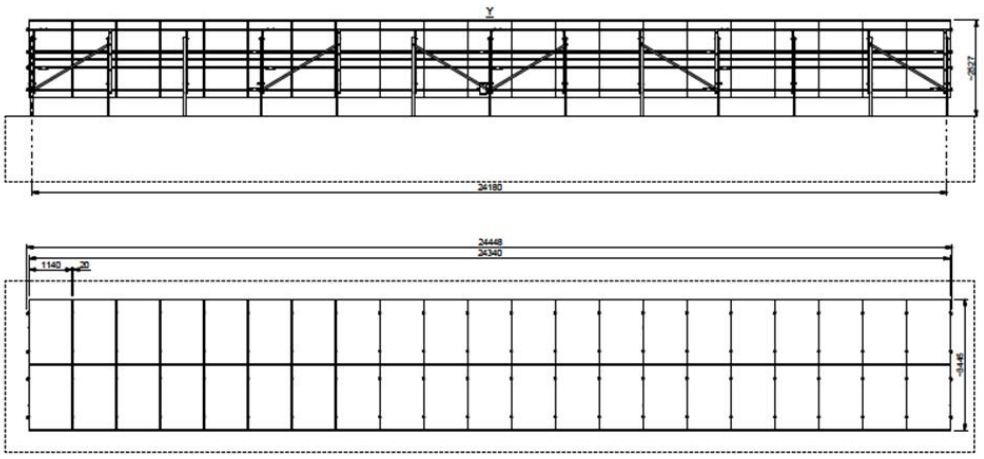
Our range includes a wide range of structural components that form an integral part of lightweight crossing systems, platforms and technical barriers. All our products are characterised by high strength and durability, ensuring reliability and safety in all conditions.

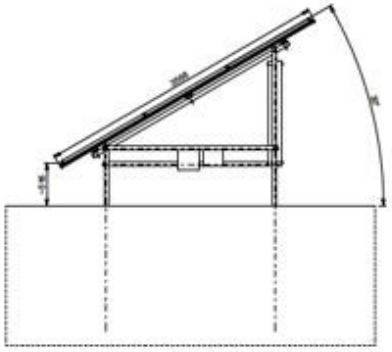




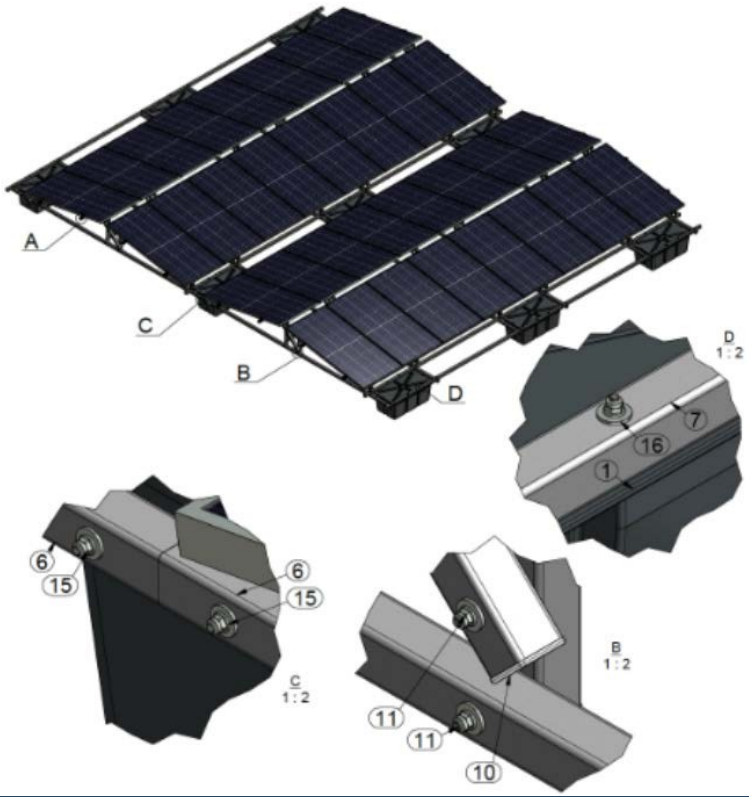
We specialise in the design and implementation of composite ladder compartments for use in mines. Our solutions combine advanced technology, durability and safety, which are key in harsh mining environments.

Composite photovoltaic structures





Advanced lightweight construction systems for photovoltaics combine innovative technological solutions with tangible environmental benefits, such as a significantly longer product life cycle and a lower carbon footprint. Our solutions work well for small-scale rooftop installations as well as for photovoltaic and agrophotovoltaic farms.



Composite structures are ideal for floating photovoltaic farms. Their resistance to corrosion and the aggressive environment make them an excellent choice for installations on still waters such as reservoirs, lakes or ponds.

The production and use of composite materials generate a smaller carbon footprint compared to traditional building materials. Composites are also fully recyclable, further reducing their environmental impact.

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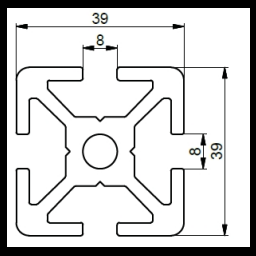

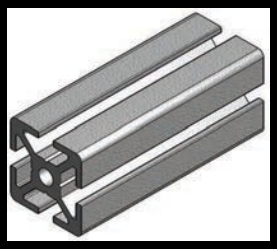

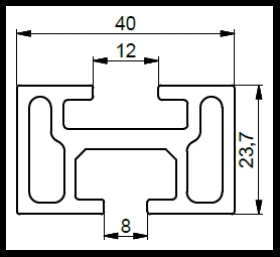

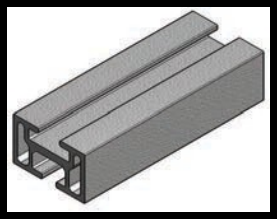

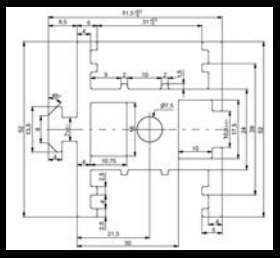

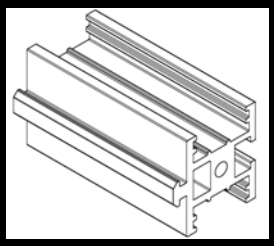

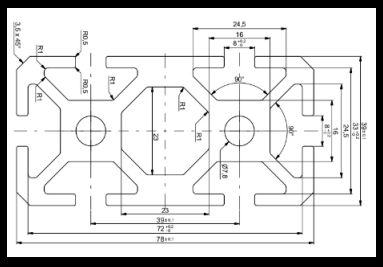

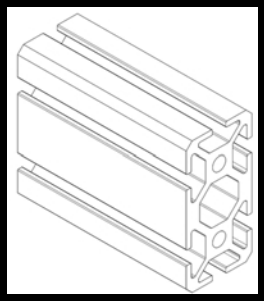

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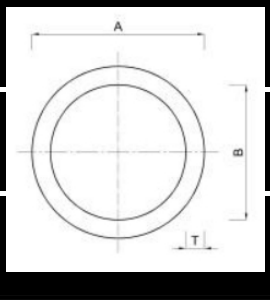

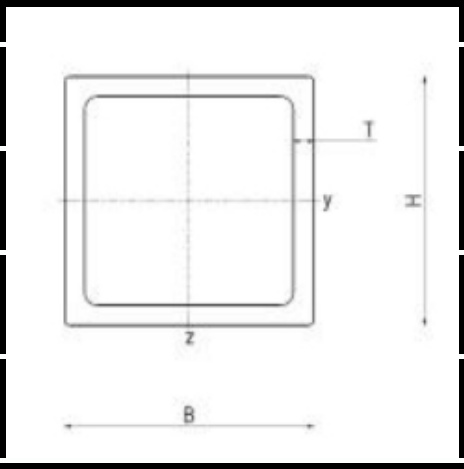
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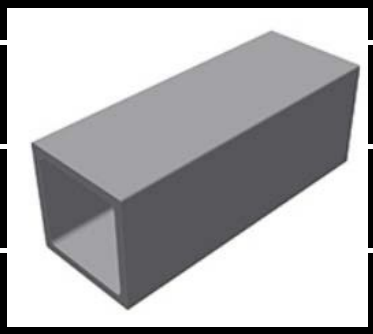

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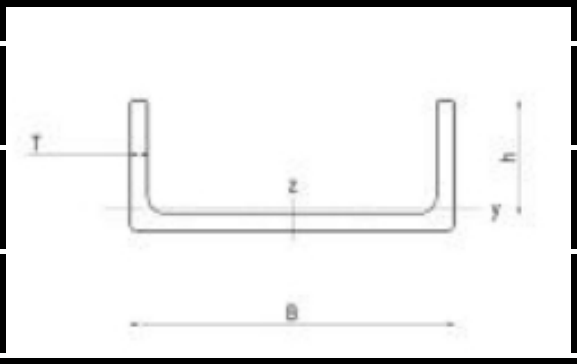

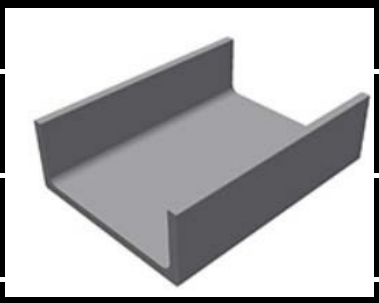

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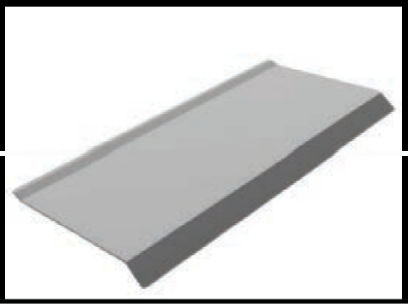

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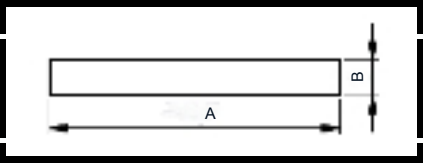

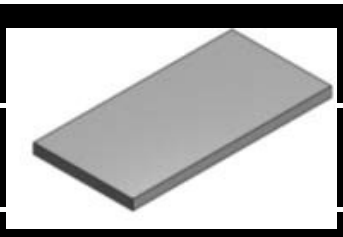

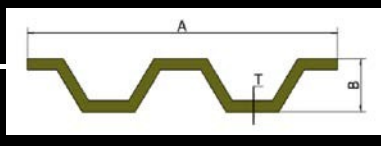

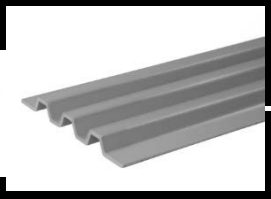

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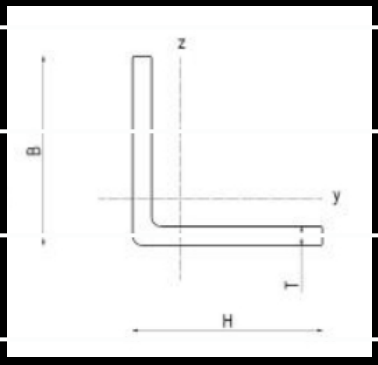

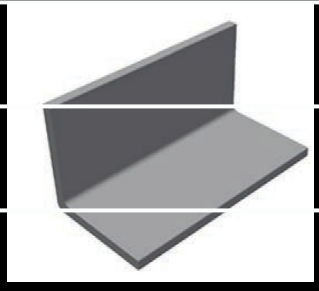

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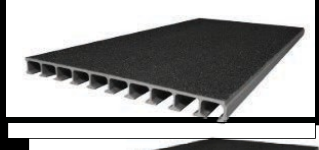

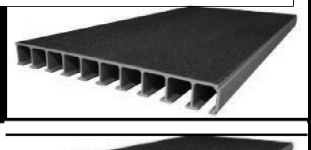

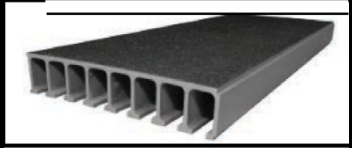

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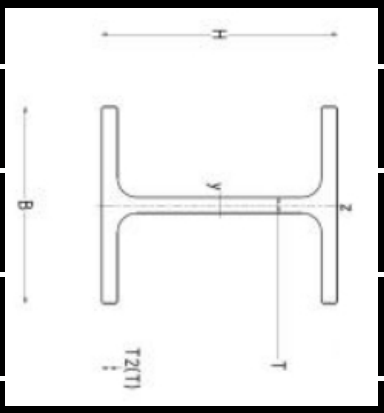

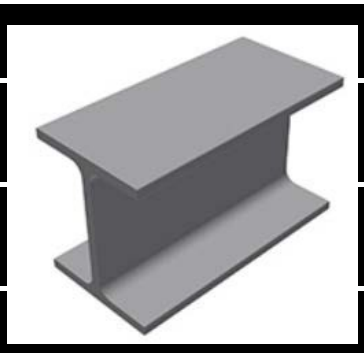

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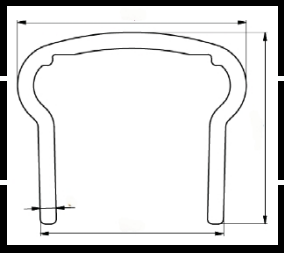

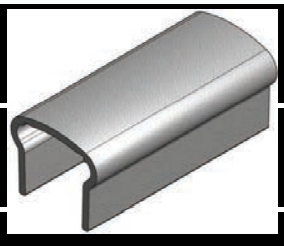

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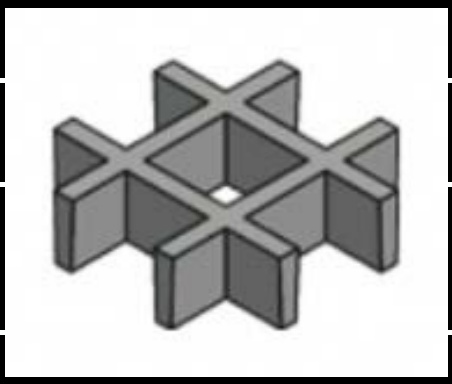


*Single and double-sided covered grilles are also available.

Comprehensive implementation of photovoltaic farms by KG Construction

- Design - We create individual designs for photovoltaic farms, tailored to the specific needs and expectations of our clients, taking into account the local conditions and possibilities of the site as well as its further use.

- Obtaining permits - With many years of experience and knowledge of the regulations, we effectively conduct administrative processes related to obtaining all necessary building and operating permits.

- Delivery and installation - We ensure the delivery of high quality photovoltaic components and their professional installation. Our installation teams are made up of experienced technicians who guarantee a fast and efficient installation.

- Grid connections - We coordinate the entire process of connecting the installation to the power grid, including including carrying out the necessary tests and technical

acceptance.

MODERN PHOTOVOLTAIC INSTALLATIONS

The project carried out by KG Construction sp. z o.o. in August 2022 represents a groundbreaking initiative in the field of hybrid construction, combining the advantages of steel and composites in a single 1 MW plant installed over the roof of an industrial hall. This innovative design made it possible to utilise the space above the roof due to the presence of air handling units, backup power units or skylights on the roof surface.

Adaptability of roofs, light industrial halls - The project is a pioneering project on a continental scale, demonstrating the adaptability of industrial roofs previously considered unsuitable for photovoltaic installations. The project not only increases the energy efficiency of the facility, but also contributes to the reduction of CO2 emissions, supporting environmental and sustainability goals.

HYBRID STEEL CONSTRUCTION COMPOSITE

Use of steel links and advanced composite materials have created a lightweight but extremely strong structure that can support solar panels without adding additional weight on existing roofs.

OPTIMISATION OF SPACE

Thanks to innovative construction system of project, it was possible to install photovoltaic panels on the roof, which would not allow such a large installation. With this type of construction area and load capacity on a 1 ha area we can install a capacity of 2 MWp.

INCREASED ENERGY PRODUCTION

Despite the limited space available on the roof, the use of modern technology made it possible to achieve the full planned installation capacity of 1 MW, which translates into significant economic and environmental benefits.

MODERN PHOTOVOLTAIC INSTALLATIONS

The photovoltaic installation project carried out by KG Construction sp. z o.o. based on composite profiles is an example of an innovative approach to the construction of ground-mounted photovoltaic systems. The use of composite profiles developed by the company provides unique benefits and demonstrates KG Construction's technological capabilities in the renewable energy sector.

KG Construction is a leader in the implementation of modern composite technologies in the renewable energy industry, offering solutions that are not only environmentally friendly but also economically attractive.

INNOVATIVE COMPOSITE CONSTRUCTION

The special profiles available in our range are dedicated components for the construction of photovoltaic systems. The composite material, which is a combination of glass fibre and resin, offers exceptional strength while reducing the weight of the structure compared to traditional materials such as steel or aluminium.

ENERGY EFFICIENCY AND ECOLOGY

The installation is capable of producing a significant amount of renewable energy, reducing dependence on fossil fuels and carbon emissions. This is a step towards sustainability and supporting local environmental initiatives.

QUICK AND EASY INSTALLATION

The composite profile allows faster and simpler installation compared to heavier and more difficult to work with metallurgical products.

MODERN PHOTOVOLTAIC INSTALLATIONS

The pilot floating photovoltaic installation on Lake Meadow, built entirely on a NKG composite structure, is a groundbreaking project by KG Construction Sp. z o.o., presenting an innovative approach to the use of solar energy in aquatic environments.

The floating installation on Lake Meadow is a significant step towards the development and commercialisation of floating photovoltaic systems, demonstrating KG Construction's capabilities in creating innovative and ecologically sustainable energy solutions.

INNOVATIVE COMPOSITE CONSTRUCTION

The use of composites in a floating structure ensures not only lightweight and corrosion resistance, but also durability in harsh, aggressive environments. Composite materials are ideal for applications in this type of environment as they do not degrade due to water and UV radiation.

USE OF FLOATING PHOTOVOLTAIC PANELS

Floating photovoltaic installations are characterised by higher efficiency compared to ground-based systems due to the constant cooling during periods of elevated temperatures.

MINIMISED ENVIRONMENTAL IMPACT

The use of composite structures minimises the ecological footprint of the installation without permanently altering the lake ecosystem. In addition, the resilience of composite structures allows chemical-free construction of floating installations on unused industrial tanks.

CARPORT

The Carport SmartSolar airtight canopy provides an ideal solution for the installation of photovoltaic panels, enabling the efficient use of solar energy while providing roofing for vehicles and walkways. Through the use of photovoltaic panels, the energy produced can be used to power household appliances, lighting, as well as to charge electric cars in the households and businesses. This innovative design not only allows full the use of available solar energy, but also contributes to increased energy efficiency, reduced operating costs and reduced emissions of harmful substances.

With a flexible approach to the dimensions of the structure, each project is uniquely tailored, ensuring maximum functionality and aesthetics.

MODERN PHOTOVOLTAIC INSTALLATIONS

SmartSOLAR

Weather resistance

The carport structure is designed to withstand harsh weather conditions, ensuring durability and reliability all year round.

Doubled capacity

SmartSolar offers exceptional energy efficiency, delivering 2x more power per square metre than standard installations, which maximises use of available space.

Sealless roof construction

The innovative roof solution guarantees a complete seal, protecting your vehicle from rain and snow without the need for gaskets, minimising the risk of leaks.

Modern design

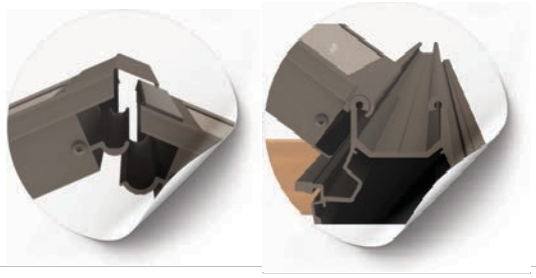
The aesthetics of our SmartSolar carports have been refined in every detail, combining modernity with functionality. The design fits in with any type of architecture, providing an elegant decorative element as well as a practical solution.

Quick installation

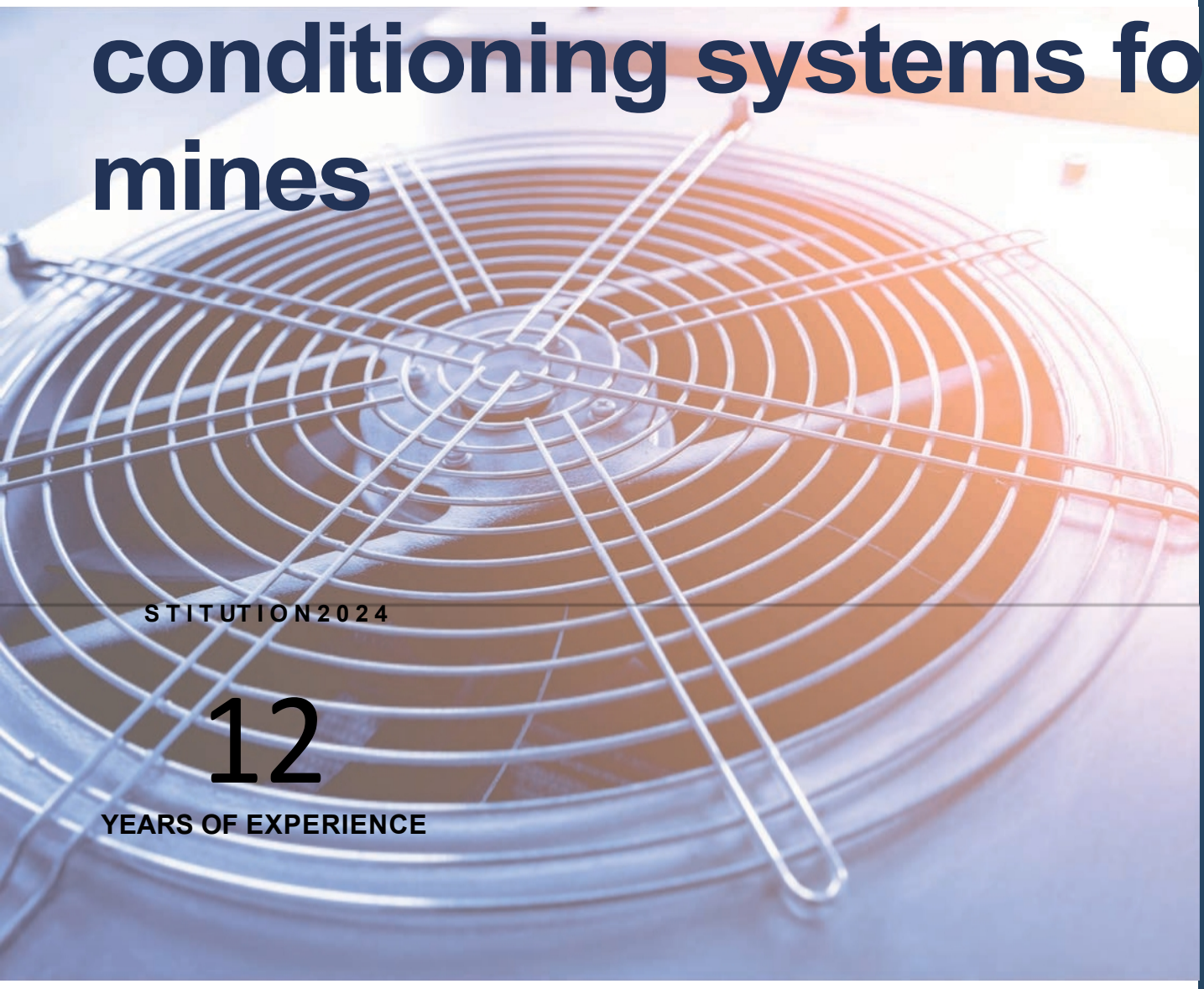
Our system enables installation in record time - a project can take as little as one day to complete, so you will quickly have a functional and aesthetically pleasing solution for your home or business.

Integrated drainage system

The carport is equipped with a system that effectively drains water, preventing water accumulation and possible damage to the structure and ensuring cleanliness under the canopy.



Ventilation and air conditioning systems for mines



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12

YEARS OF EXPERIENCE

Working in underground mines is characterised by specific, difficult conditions compared to surface plants. In addition to the technical hazards arising from the technological processes, there are natural hazards associated with the surrounding rock mass. These hazards include:

- Water and gas, Gas
- ejections, Gas and dust
- explosions, Bumps,
  Climate challenges.

The deeper the deposits, the higher the temperatures of the surrounding rocks and the more difficult the working

INDUSTRIAL AIR CONDITIONING

conditions.

INDUSTRIAL AIR CONDITIONING

The design of ventilation and air-conditioning systems requires consideration of local conditions, the cross-section of mine workings, rock temperature, air velocity, the number and size of machines and people working, and the safety and comfort of the crew. Polish mining regulations require a working temperature of no more than 28°C to be maintained and, if this is not possible, the working hours of the crew to be reduced to six hours. A temperature of 33°C is considered as rescue action conditions.

Ventilation and air conditioning

Maintain stable microclimate parameters is difficult, but essential for the safe and efficient work of mining crews.

Equipment selection

It is important to determine the depth and length of ventilation routes and the transport of ice water to the areas requiring cooling.

Effectiveness

The calculation of the system's efficiency is based on the ratio of power input to power output.

Air-conditioning systems of several to several tens of megawatts are based on the generation of chilled water at a temperature of around 2°C. The location of the generators, whether in the Surface Climate Station or in the underground workings, is crucial. An important element is the reduction of pressure resulting from the depth of the shaft through heat exchangers or Pelton turbines, which minimises costs.

INDUSTRIAL AIR CONDITIONING

Experienced Engineers

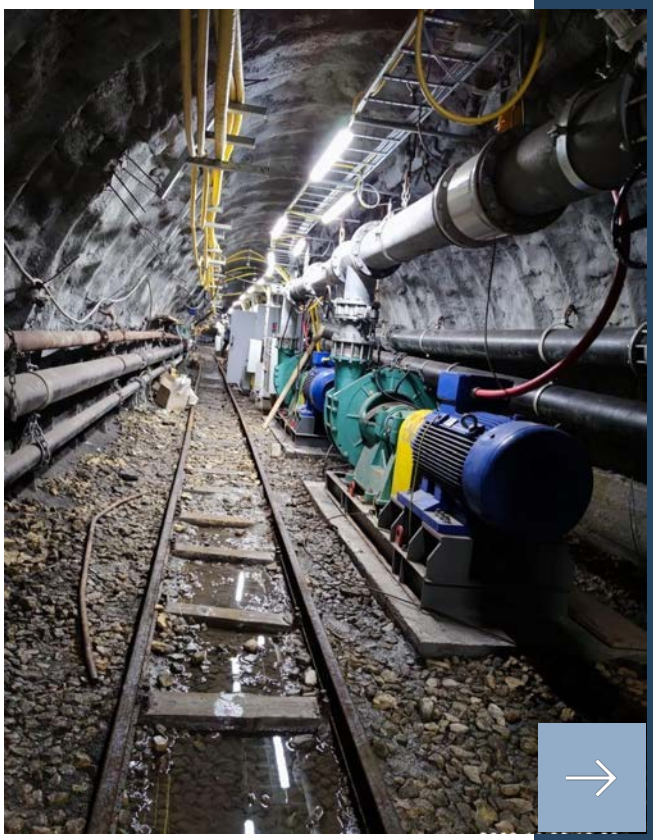
Our engineers develop project conceptual and detailed design of the air-conditioning system, taking into account heat and cold exchange and the selection of locations and equipment. We provide a complete customer service from concept, design, delivery, installation, operation, maintenance and servicing.

Our Experience

We have experience in turnkey projects, involving teams of several hundred people. When you work with us, you choose quality and professionalism.

Energy optimisation

We ensure the optimum selection of machines to maintain optimal working conditions with the lowest energy expenditure.



Quality of Materials

Titanium Exchangers: We use titanium heat exchangers and full flow automation.

Composite pipelines: Composite pipelines provide long service life, ease of installation and resistance to contamination.

We ensure safety and comfort in the toughest conditions. When you work with us, you choose quality and professionalism.

Measurement services for photovoltaic installations

Our company offers professional measurement services for photovoltaic installations, using Sonel's innovative meters, including the MPI 540-PV - the world's smallest instrument of this type with a rich set of functions. We provide comprehensive diagnostics and optimisation of your PV installation's operation, which is key to ensuring its safety and efficiency.

TRUST EXPERTSOTM AND ENSURE YOUR PEACE OF MIND WITH OUR

MEASUREMENT SERVICES

PROFESSIONAL MEASUREMENT SERVICES. CONTACT US TODAY TO FIND OUT MORE ABOUT OUR OFFERING AND TO ARRANGE A MEASUREMENT.

Discover the precision of measurements with the Sonel MPI 540-PV

- Open circuit voltage measurement up to 1000 V DC
- Short-circuit current measurement up to 20 A DC
- Short-circuit current measurement up to 20 A DC measuring 250, 500 or 1000 V
- Protective connection resistance measurement with ±200 mA
- Measurement of the operating current and power of the installation with external clamps and additional equipment

In addition, our services include measurements necessary to assess the day-to-day operation of the installation, such as:

- RMS measurement of AC mains voltage and frequency
- Insulation resistance of AC circuits
- Blocking diode analysis and polarity check

We use advanced technologies such as Bluetooth for wireless communication and Sonel Pomiary Elektryczne software, which reduces documentation preparation time. Our tools, also enable precise irradiance and temperature measurements of panels, translating into energy efficiency and installation safety.

For whom: Our offer is aimed at electrical installers, service technicians and owners of PV

MEASUREMENT SERVICES

installations who expect the highest quality of service and reliable condition monitoring.

COMPOSITE LIGHTING COLUMNS

The state-of-the-art composite lighting pole combines advanced technology and exceptional aesthetics to provide unparalleled durability and safety. Designed for intensive use in a wide variety of conditions, this product guarantees efficiency and longevity, far superior to traditional solutions.

Developed in accordance with EN 40- 7:2002, the composite lighting pole is not only a practical but also an aesthetic addition to any urban space. Choose the product and invest in the future of your road infrastructure with a focus on innovation, safety and durability.
The choice of elegant design emphasises modernity and blends harmoniously into any urban space.

COMPOSIT
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The choice of elegant design emphasises modernity and blends harmoniously into any urban space.

BURIED POLES

COLUMNS INSTALLED IN A PREFABRICATED FOUNDATION

- **High strength performance**: The pole is resistant to seismic shocks, vibrations and the onslaught of strong winds, making it an ideal choice for sites exposed to extreme conditions.

- **Certified quality and safety**: the product has passed rigorous tests in all speed classes and passive safety categories in accordance with PN- EN 12767:2019, ensuring the highest safety standard.

- **Lightweight but robust design:** Offers high resistance to vandalism while reducing transport and installation costs thanks to its light weight.

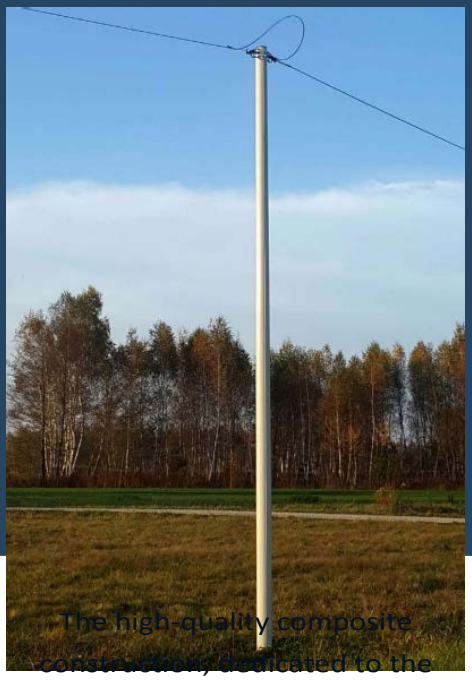
- An **ecological and economical choice**: The non-conductive construction of the pole eliminates the risk of theft (no scrap value) and is fully resistant to contamination and weather conditions, including road salt. 100% recycling and lower CO2 emissions are our contribution to environmental protection.

- **Sustainability i modern design:** We guarantee up to 40-50 years of effective use combined with a modern design that harmonises with any urban landscape.

COMPOSITE

STORMPOLE TELECOMMUNICATIONS MASTS

Composites are ideal for [illegible] protecting households and industrial facilities from lightning. Composite masts provide effective separation from the protected objects, while minimising installation, maintenance and operating costs.



The high-quality composite construction, dedicated to the telecommunications, construction and electrical installation industries, combines low weight with high physical and chemical strength.
This guarantees efficient installation and long-term trouble-free operation of fibre optic and telecommunications lines.

Composite and top-quality structures are ideal as advertising or presentation tools, meeting even the most demanding expectations of institutional and business customers.
Their exceptional durability and aesthetics enhance the prestige of any brand, offering both functionality and a sophisticated look.

The products meet the highest passive safety standards and contribute to: a reduction in the number of accidents with road infrastructure, a reduction in the impact of vehicle collisions with poles, savings in the road investment budget (no need to install guard rails, shielding poles that do not meet passive safety requirements).

Innovative Recycled Products

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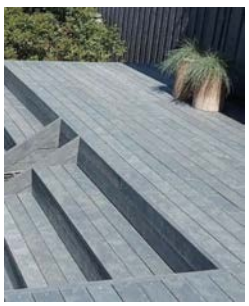
3,286

SATISFIED CLINETS

The products are made from high quality recycled composites for durability and weather resistance. The possibility of colouring in different colours allows the products to be tailored to individual needs and the aesthetics of the space. Innovative design solutions and ergonomic shapes ensure comfort of use and an aesthetically pleasing appearance.



Application

Ideal for urban public spaces, parks, gardens, recreational areas and wherever durable and aesthetically pleasing solutions are required.

Offer

Bench

urban

Pot

modular

Bench

with pot

Platform

topical

Armchair

single person

Bench

with a low sub-wash

ESTRUCTIONALCONSTRU
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POSSIBILITYBETWEENTHEDIFFFERENTC
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Offer

Bench

urban

Pot

Bench

without backrest

Pot

high

Table

small

Bench

with two pots

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POSSIBILITYBETWEENTHEDIFFFERENTC
OLLORIESOFTHECOORDINATION

Offer

Pot

openwork

Table

picnic

Table

picnic table for 4 people

Board

terrace

Board

feather key

Board

smooth

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OLLORIESOFTHECOORDINATION

Contact us for more solutions tailored to your needs.

Thank you for taking a look at our offer. We are convinced that our solutions will meet your expectations and contribute to the success of your of your projects. Please do not hesitate to contact us to discuss the details and tailor our services to your individual needs. Trust experience and professionalism of KG Construction - together we will build the future.

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