COMPOR

FIBERGLASS COMPOSITE

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FIBERGLASS COMPOSITE
TECHNICAL CERTIFICATE

Application

Profiles made of fiberglass composite material, which are produced by pultrusion process, are used in various constructions (stairs, covers, squares, overpasses, technical buildings energy structures, etc.)

Material Properties

- Four times lighter than metal
- Does not corrode
- Durable in aggressive environments
- Not exposed to UV radiation
- Long service life
- Dielectric with antistatic properties
- Easy to install

Complies with EN 13706 and LVN UTN 0103 90 490-01-2016 Technical Regulations.

Characteristics	Compliance with	Notes
Chemical resistance	ISO 175, 4892	-
UV resistance	EN ISO 4892-3:2006	-
Mechanical strength	LVS EN ISO 527	Tensile strength limit 205,7-488,4 MPa Tensile strength limit (CW) 51,6 MPa Elastic modulus 19-40 GPa
Fire resistance and reaction to fire	LVS 263-2000 EN 13501	B s1 d0 and C s2 d0
Density	-	1,66 – 1,93
Glass amount in the mass	-	65-75%
Resin amount in the mass	-	25-35%
Electrical Properties	-	-
Electrical resistance (longitudinal LW)	IEC 60234	Up to 1,58 kV/mm
Electrical resistance (perpendicular CW)	IEC 60234	Up to 7,9 kV/mm
Resistance circuit (indicates the measurement value in the transverse direction)	-	120 seconds
Dielectric constant 60 Hz (perpendicular)	-	5,2
Shelf Life	-	Unlimited

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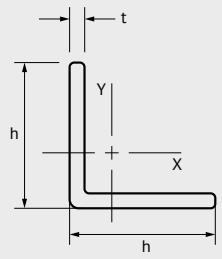
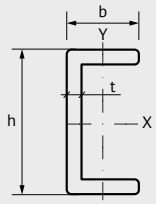
FIBERGLASS COMPOSITE PROFILES

Angle



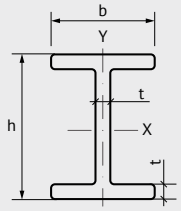
Profile Size, mm			Weight, kg/m	Area, mm²	Moment of Inertia, mm⁴	Elastic Modulus, GPa (B-base)	Tensile Strength, MPa (B-base)	Bending Strength, MPa (B-base)
Height	Width	Thickness						
h - mm	b - mm	t - mm						
25	25	3,2	0,27	143,70	8552	19,0	280,0	250,0
40	40	3,2	0,41	236,50	36503	19,0	285,0	254,0
51	51	3,2	0,51	305,20	77229	19,0	288,0	259,0
51	51	6,4	0,96	594,10	140341	21,8	348,4	288,8
60	60	4	0,81	456,40	159903	26,0	289,0	263,0
76	76	6,4	1,67	916,70	508159	21,8	348,0	289,0
76	76	9,5	2,43	1345,90	714920	26,1	488,4	414,3
120	30	3,2	0,78	459,20	676162	19,0	285,0	254,0

U-profile Beam



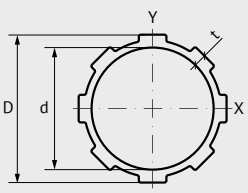
Profile Size, mm			Weight, kg/m	Area, mm²	Moment of Inertia, mm⁴	Elastic Modulus, GPa (B-base)	Tensile Strength, MPa (B-base)	Bending Strength, MPa (B-base)
Height	Width	Thickness						
h - mm	b - mm	t - mm						
75	25	5	0,97	547,90	385768	27,00	350	310
100	40	5	1,41	822,90	1142953	27,00	350	310
150	50	4	1,68	948,50	2979981	23,20	289,3	263,2
150	50	6	2,46	1392,30	4233805	26,00	479	430
200	60	8	4,30	2377,30	12480541	25,00	479	430
200	80	8	4,72	2697,30	15431368	25,00	479	430

Double Beam



Profile Size, mm			Weight, kg/m	Area, mm²	Moment of Inertia, mm⁴	Elastic Modulus, GPa (B-base)	Tensile Strength, MPa (B-base)	Bending Strength, MPa (B-base)
Height	Width	Thickness						
h - mm	b - mm	t - mm						
102	51	6,4	2,19	1210,80	1836461	23,20	429,2	478,3
150	150	10	7,83	4369,70	16810802	30,10	320	305
200	200	10	10,3	5870,50	41511065	30,10	320	305
300	150	15	15,7	8740	116066250	39,64	359	332
300	300	15	23,5	13050	207528750	39,64	359	332

Corrugated Tube



Profile Size, mm			Weight, kg/m	Area, mm²	Moment of Inertia, mm⁴	Elastic Modulus, GPa (B-base)	Tensile Strength, MPa (B-base)	Bending Strength, MPa (B-base)
Outer Diameter	Inner Diameter	Thickness						
D - mm	d - mm	t - mm						
34	25	4,5	0,64	365,00	39641	19,0	288,0	259,0

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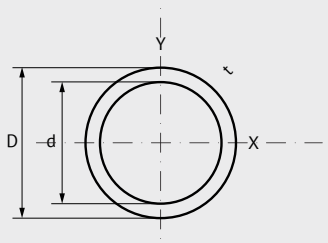
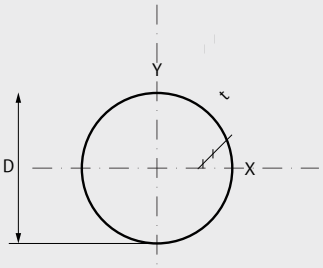
FIBERGLASS COMPOSITE PROFILES

Round Pipe



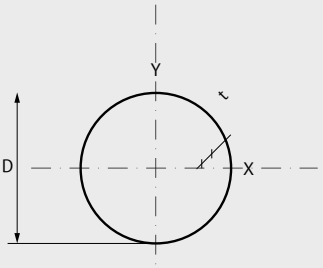
Profile Size, mm			Weight, kg/m	Area, mm²	Moment of Inertia, mm⁴	Elastic Modulus, GPa (B-base)	Tensile Strength, MPa (B-base)	Bending Strength, MPa (B-base)
Outer Diameter	Inner Diameter	Thickness						
D - mm	d - mm	t - mm						
31	**25**	**3**	0,47	257,20	24845	19,0	288,0	259,0
38	**32**	**3**	0,62	290,10	44607	19,0	288,0	259,0
60	**52**	**4**	1,5	703	277264	21	289	263
60	**48**	**6**	2,17	1017	375596	23	430	285
60	**44**	**8**	2,80	1306	452188	24,5	479	430

Concrete Interconnecton Dowels



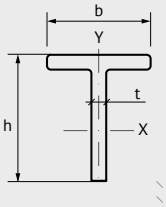
Diameter mm	Weight kg/m	Area mm²	Moment of Inertia mm⁴	Elastic Modulus GPa (B-base)	Tensile Strength MPa (B-base)	Density kg/m³
20	0.64	314	7854	55	685	2000-2100
25	1.00	491	19175	55	685	2000-2100
30	1.44	706	39761	55	685	2000-2100
32	1.64	804	51472	55	685	2000-2100
38	2.32	1134	102354	55	685	2000-2100

Rod



Diameter mm	Weight kg/m	Area mm²	Moment of Inertia mm⁴	Elastic Modulus GPa (B-base)	Tensile Strength MPa (B-base)	Density kg/m³
20	0.64	314	7854	50	650	1900-2000
25	1.00	491	19175	50	650	1900-2000
30	1.44	706	39761	50	650	1900-2000
32	1.64	804	51472	50	650	1900-2000
38	2.32	1134	102354	50	650	1900-2000

T-section



Profile size, mm			Weight, kg/m
Height	Width	Thickness	
h - mm	b - mm	t - mm	
38	**25**	**9,5**	0.35

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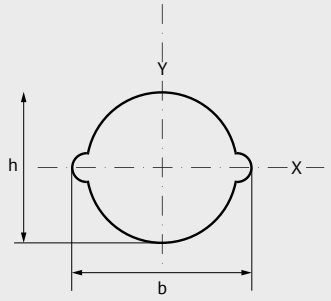
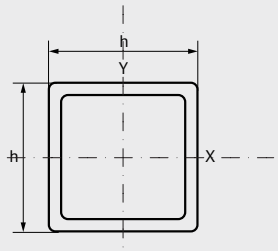
FIBERGLASS COMPOSITE PROFILES

O-section

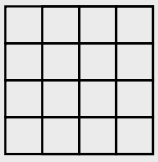


Profile size, mm		Weight, kg/m
Height	Width	
h - mm	b - mm	
14,3	**17**	0.27

Square Tube



Profile Size, mm			Weight, kg/m	Area, mm²	Moment of Inertia, mm⁴	Elastic Modulus, GPa (B-base)	Tensile Strength, MPa (B-base)	Bending Strength, MPa (B-base)
Height	Width	Thickness						
h - mm	h - mm	t - mm						
25	**25**	**3,2**	0,52	274,10	22480	19,0	288,0	259,0
37	**37**	**2,8**	0,66	377,90	74376	18,50	275	250
44	**44**	**2,8**	0,79	447,00	123262	18,80	275	250
44	**44**	**6**	1,57	894,20	214853	23,20	478,3	429,2
51	**51**	**3,2**	1,17	592,20	221782	19,0	288,0	259,0
51	**51**	**6,4**	2,03	1115,50	371141	23,20	478,3	429,2
60	**60**	**4,5**	1,79	990,50	508813	26,00	289,3	263,2
101	**101**	**3,8**	2,61	1507,10	2411802	21,30	331,3	205,7
101	**101**	**8**	5,10	2944	4184405	25	479	430

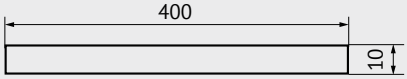


Lattice

Possible Grating Heights, mm	30	38	50

Possible Cell Sizes, mm: 19 x 19, 38 x 38

Plate



Profile size, mm		Weight, kg/m	Area, mm²	Moment of Inertia, mm⁴	Elastic Modulus, GPa (B-base)	Tensile Strength, MPa (B-base)	Bending Strength, MPa (B-base)
Width	Thickness						
B - mm	t - mm						
400	**10**	5,44	4000,0	53333333	30,1	320,0	305,0

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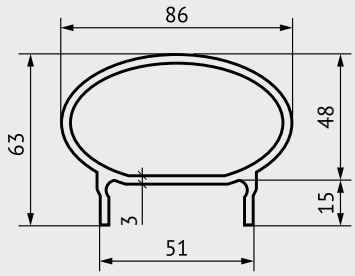
FIBERGLASS COMPOSITE PROFILES

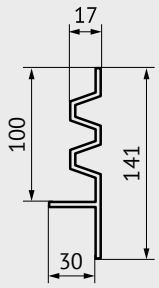
Handle



Profile Size, mm					
Height	Width	Mounting Height	Inner Mounting Width	Outer Mounting Width	Thickness
H - mm	B - mm	h - mm	b - mm	c - mm	t - mm
63	86	15	51	57	3

Weight, kg/m	Area, mm²	Moment of Inertia, Ix mm⁴	Moment of Inertia, Iy mm⁴	Elastic Modulus, GPa (B-base)	Tensile Strength, MPa (B-base)	Bending Strength, MPa (B-base)
0,95	1175	437400	865330c	19,0	285,0	254,0

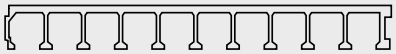
Lower Guard Rail



Profile size, mm			
Height	Width	Mounting Height	Thickness
H - mm	B - mm	h - mm	t - mm
140	30	41	3

Weight, kg/m	Area, mm²	Moment of Inertia, Ix mm⁴	Moment of Inertia, Iy mm⁴	Elastic Modulus, GPa (B-base)	Tensile Strength, MPa (B-base)	Bending Strength, MPa (B-base)
1,03	796,94	1190900	38721	19,0	285,0	254,0

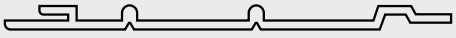
Solid Deck



Profile size, mm			Weight, kg/m	Area, mm²	Moment of Inertia, Ix mm⁴	Moment of Inertia, Iy mm⁴	Elastic Modulus, GPa (B-base)	Tensile Strength, MPa (B-base)	Bending Strength, MPa (B-base)
Height	Width	Thickness							
B - mm	h - mm	t - mm							
509 500*	38	Surface – 6 Legs – 4	8,0	4770,3	855250	109520000	18,7	260	241

*Operating Width

Siding (Finishing Panel)



Area, mm²	Moment of Inertia, Ix mm⁴	Moment of Inertia, Iy mm⁴
949,1	5954,3	6264300

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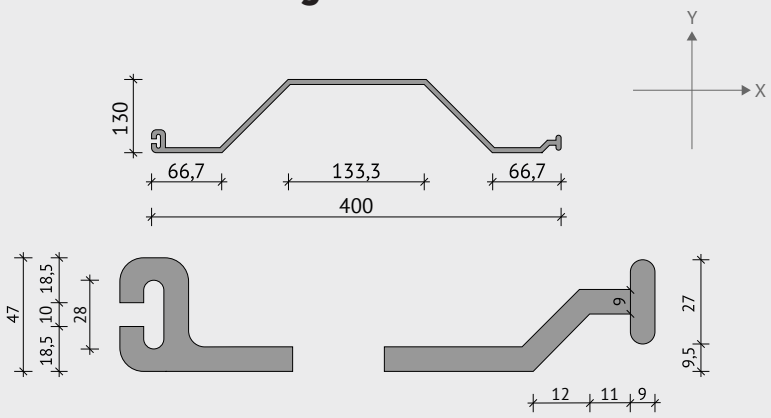
FIBERGLASS COMPOSITE PROFILES

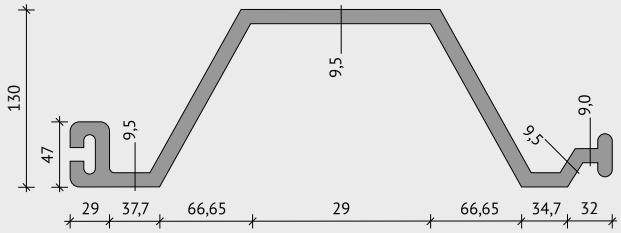
Corrugated Walls



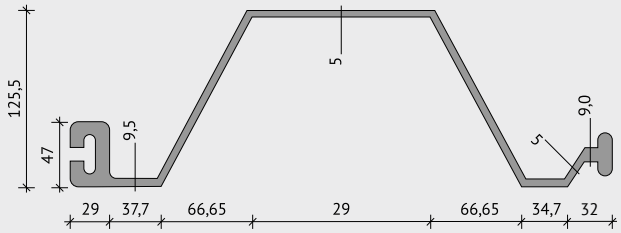
Thickness,mm	Area	Perimeter	Centre of Mass		Tensile Strength	Bending Modulus	Impact Resistance
5	3871	1100	X: 20.00	Y: 5.95	488,4 MPa	26,1 GPa	pie T 20°C – 80 kJ/m²
							pie T 0°C – 110 kJ/m²

Thickness,mm	Area	Perimeter	Centre of Mass		Tensile Strength	Bending Modulus	Impact Resistance
9,5	6126	2750	X: 50.02	Y: 5.92	488,4 MPa	26,1 GPa	pie T20°C – 287 kJ/m²
							Pie T 0°C – 313 kJ/m²

Moment of Inertia (1 m)
Wx = 3468.62/(0.9+5.92) = 508.6 cm^3
Wy = 103738.04/50.02 = 2073.9 cm^3



Thickness, mm	Area, mm^2	Moment of Inertia, Ix mm^4	Moment of Inertia, Iy mm^4
9,5	6126	13169000	97369000



Thickness, mm	Area, mm^2	Moment of Inertia, Ix mm^4	Moment of Inertia, Iy mm^4
5	3870,5	7506400	71316000

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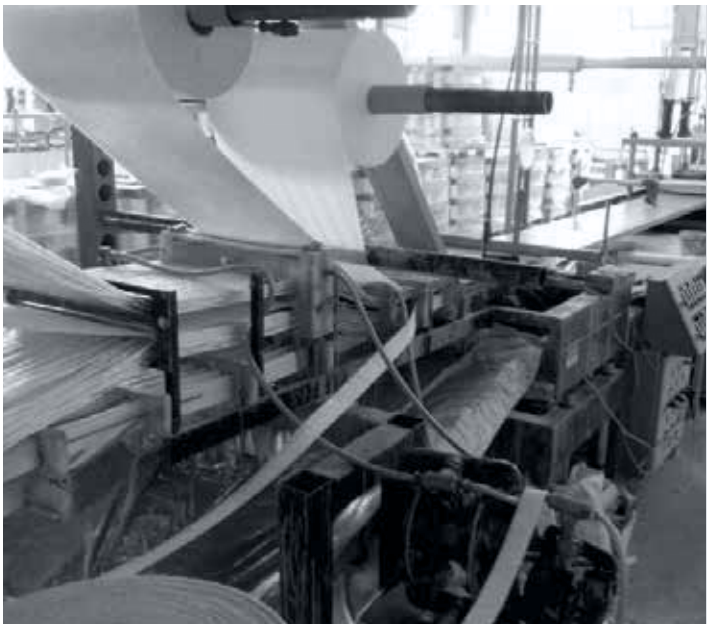
FIBERGLASS COMPOSITE
PULTRUSION

How it Works?

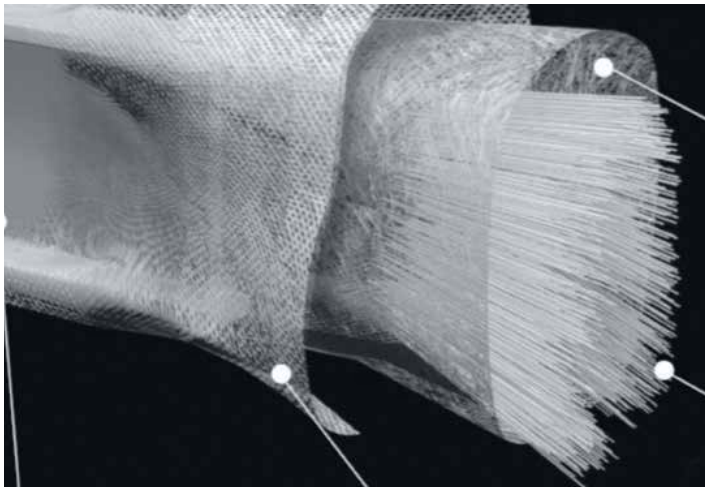
Pultrusion is a continuous technological process when completely formed fiberglass composite profiles with the initially set configuration are made by pulling glass materials impregnated with thermosetting resins through a heated filler casting mould.

A controllable thermosetting resin polymerisation process is provided in the filler. The end products contain 45 to 75 percent fiberglass filler.
The finished profile does not require additional processing. The length of the product is not limited and is usually determined by the customer's needs and transport options.



Process Benefits

This process provides maximum flexibility in profile design selection. The composite can be assigned certain strength parameters (for example: fire resistance, various physical and mechanical properties, dielectric properties and others). The colour of the profile is uniform along the entire length of the cross-section. Colour is selected according to the RAL Catalogue.



75% lighter than metal!

- Fast assembly
- Resistant to aggressive environments and chemicals
- Highly resistant corrosion
- Not exposed to UV radiation
- Light weight
- Low maintenance costs

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FIBERGLASS COMPOSITE
PROPERTIES OF MATERIALS

Properties	Fiberglass Composite	PVC	Steel	Aluminium
Density, kg/m	1,6-2,0	1,4	7,8	2,7
Destructive Compressive (Tensile) Stress, MPa	206-488	41-48	235-480	180-210
Destructive Bending Stress, MPa	220	80-110	400	275
Elastic Modulus, GPa	19-30	2,8	210	70
Coefficient of Linear Expansion, x10°C	8	57-75	11-14	22
Thermal Conductivity Coefficient, Vt/м*К	0,25-0,33	0,3	50	230
Corrosion Resistance	Very good	Good	Poor	Average

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FIBERGLASS COMPOSITE
WINDOW INSTALLATION SYSTEM

The installation system ensures the exact placement of windows and doorways, and also the acceptance of all permanent and variable loads.

The system is adjustable in three dimensions, easily compensating for structural installation tolerances. Mounting bracket size: up to 150 mm, which can be positioned according to the optimal isothermal profile.

An advantageous solution

- Easily adjustable in three dimensions
- Easily compensated installation tolerances
- Simple, quick and safe installation even of large (and heavy) windows and doors
- Individually adjustable sizes
- Increased load carrying capacity without using expensive additional support elements
- A durable structure eliminating installation problems

The highest quality

- Calculated load carrying capacity and safety statics (see data sheet)
- Predictably safe window installation
- Suitable for all workloads
- A comprehensive system from one manufacturer
- Easy and safe installation according to RAL Regulations / ift Rosenheim (Germany)

Structural physics

- Low temperature resistant material
- The sealing process is not delayed
- Sufficient space for insulation and sealing material

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FIBERGLASS COMPOSITE
SOLAR CELL STRUCTURES

We offer solutions using environmentally friendly materials and allowing the use of solar panels in combination with various types of structures.

- Light weight
- Minimum roof load
- Fastening to the roof without drilling
- Resistant to corrosion
- Not affected by temperature fluctuations
- Resistant to UV effect

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FIBERGLASS COMPOSITE
CABLE CHANNELS AND CONSOLES

- Light weight
- Non-conductive
- Resistant to corrosion
- Chemically resistant
- Impact-resistant
- Long service life
- Low maintenance costs

Shelf width:	Overall width:	Weight:
235 mm	265 mm	1 kg/m

Price of 9 32 EUR/m

Dimensions according to the customer's order!

Console

Size:	Price:
250 mm x 350 mm	9,50 EUR/piece

Size:	Price:
200 mm x 350 mm	7,50 EUR/piece

Prices valid until 31/07/2022. All prices are EXW, 0% VAT

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FIBERGLASS COMPOSITE
FISH FARMING, INDUSTRIAL FARMING

We offer service platforms and stairs, in any configurations, according to the project.

- Light weight
- Resistance to moisture, UV and aggressive environment effects
- Resistant to corrosion
- Environmentally-friendly materials
- Fast installation

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FIBERGLASS COMPOSITE
BRIDGE STRUCTURES

We offer construction of pedestrian bridges, suspension bridges, footbridges and stairs. These structures are characterised by a solid deck and anti- slip coating.

- Light weight
- Resistant to corrosion
- Resistance to moisture, UV and aggressive environment effects
- Wear-resistant anti-slip coating (corundum base)
- Fast installation
- Low maintenance costs

Distance between supports, m	0,50	0,75	1,00	1,25	1,50	1,75	2,00
Max. load kg/m², Deflection L/150	15 950	4 730	2 000	1 020	590	370	250
Max. load kg/m², Deflection L/200	11 960	3 535	1 500	765	440	275	185
Max. load kg/m² Deflection L/400	5 960	1 770	750	380	220	135	90

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FIBERGLASS COMPOSITE NOISE BARRIER

- Fast installation
- Light weight
- Thermally and electrically non - conductive
- Resistant to corrosion
- Impact resistant
- Dimensional stability
- Low maintenance costs

Price from 50 EUR/m

which may change depending on the technical details of the project

Structures	Rw – Insulation Index	as – Sound Absorption Coefficient
1. Screen made of fiberglass composite material	dB	-
1.1. Thickness 100 mm	37	0,8
1.2. Thickness 150 mm	38	0,8
2. Impact resistant glass (thickness 13 mm)	37	0,2
3. Screen made of fiberglass composite material + impact resistant glass	-	-
3.1. 100 mm +13.5 mm	37	0,2-0,8
3.2. 150 mm +13.5 mm	37-39	0,2-0,8
4. Fiberglass composite pole	-	-
4.1. I 150 x 150 x 10 mm	39	0,8
4.2. I 200 x 200 x 10 mm	39	0,8

AIR SOUND DAMPING DLR(dB) – **up to 39**
SOUND ABSORPTION Dla(dB) – **up to 13**

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FIBERGLASS COMPOSITE
HANGAR STRUCTURES

We offer wide possibilities in the development of hangar structures, which are characterised by corrosion resistance, long service life, easy installation and low maintenance costs.



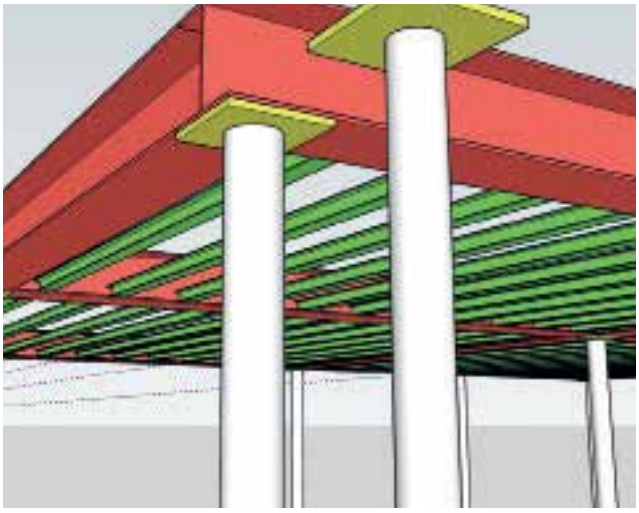

Span:	up to 16 m
Standard pole spacing:	X m
Height:	up to9 m

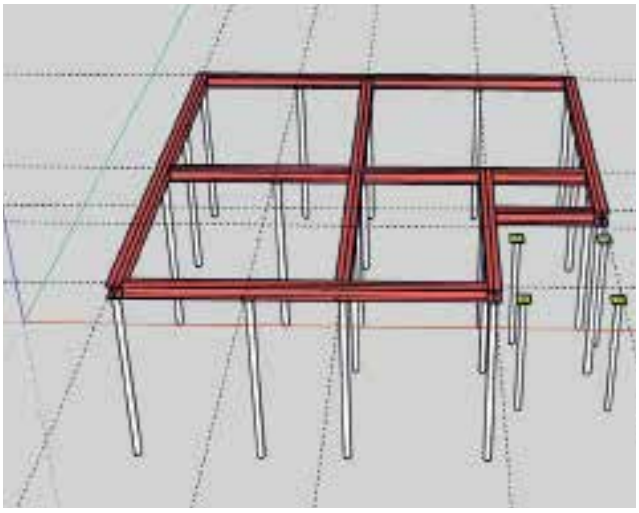
COMPOR

FIBERGLASS COMPOSITE
FOUNDATION SYSTEMS

- Light weight
- Thermally and electrically non-conductive
- Resistant to corrosion
- Durable in aggressive environments
- Impact resistant
- Dimensional stability
- Long service life
- Fast installation all year round

A house foundation system that allows the construction of buildings in difficult conditions: soft soil, clay, mountainous





Fiberglass composite can be combined with a concrete slab used as a floor foundation for a house.

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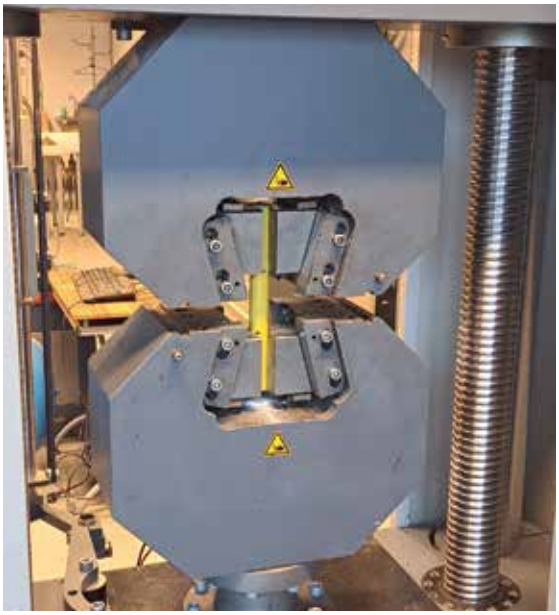
FIBERGLASS DOWEL FOR CONCRETE

Fiberglass rods in size Ø 20, 25, 30, 32 and 38 mm, consisting of fiberglass and polyester resin (polymer base).
Composite material reinforcement does not rust, it's durable against salt, acid, as well as the alkaline environment of concrete.
Used in structures that are subject to permanent temperatures up to 60 °C, short-term: up to100 °C.

Thermal expansion of reinforcement and concrete the coefficient is similar to each other, which prevents risk of cracking due to temperature changes.



Diameter mm	Weight kg/m	Area mm^2	Moment of Inertia mm^4	Elastic Modulus GPa (B-base)	Tensile Strength MPa (B-base)	Density kg/m^3
20	0.64	314	7854	55	685	2000-2100
25	1.00	491	19175	55	685	2000-2100
30	1.44	706	39761	55	685	2000-2100
32	1.64	804	51472	55	685	2000-2100
38	2.32	1134	102354	55	685	2000-2100

Advantages

- Lighter than steel
- Resistant to corrosion
- Long service life
- CO2 friendly
- Does not cause radio wave interference

Application

- High load capacity transport pavements
- Deformation of seam connections in hydraulic structures
- Restoration of concrete structures (damage prevention due to aggressive environment, caused by chloride)
- Widely applicable due to dialectical properties in buildings and facilities like hospitals, airports, radar stations as well as military infrastructure

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FIBERGLASS COMPOSITE
MODULAR HOUSES

We offer modular houses made of composite materials. Supporting structure – fiberglass composite profiles (wide flange beams, U-beams, squares). Panels (thickness of 120 and 170 mm) are highly efficient, energy-efficient structural insulated panels based on natural magnesite, filled with a special filling, the panels provide an excellent coefficient of thermal insulation and high resistance to fire, fungi and pest infestation.

This system is used for the construction of residential and commercial building structures.

These buildings are more energy efficient, use fewer natural resources and generate less waste, energy consumption and pollution during the construction process and throughout the entire life of the building

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FIBERGLASS COMPOSITE
REFERENCES

Carnikava Bridge

Ship service bridge, each section of 24 m

Footbridge (frame, grids), 72 m

Service bridge in the port

Pedestrian bridge (pedestrian section and railing)

Floating modular house

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FIBERGLASS COMPOSITE REFERENCES

Construction of the Dendrārijs railway station

Traverses

Pedestrian crossing with non-slip coating

Ramp structures

Service platforms in a fish farm

Wastewater treatment plant stairs and platform

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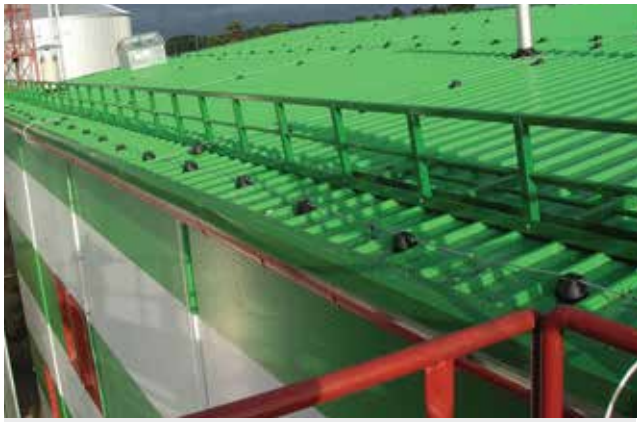
REFERENCES

Support beam in roof structures

Construction of a hangar structure

Hangar – warehouse structure

Double beam application in a private house



Roof guardrail

Noise protection walls

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FIBERGLASS COMPOSITE REFERENCES

Vertical stairs

Liepāja Bridge, staircase structure

Balticovo, cable rack system

Solar cell structure, meadow park

Terrace structure

Lamellas for facades, Rimi Shopping Centre

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REFERENCES

BEFORE RECONSTRUCTION	AFTER RECONSTRUCTION
	
	
	

COMPOR

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