

FRP ACCESS PLATFORMS



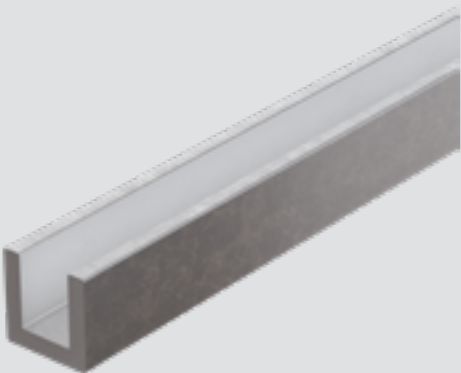
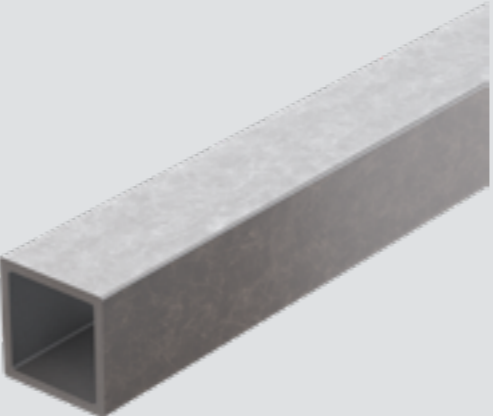
APPLICATIONS FOR POLYMER ACCESS PLATFORMS AND GANGWAY BRIDGES INCLUDE:

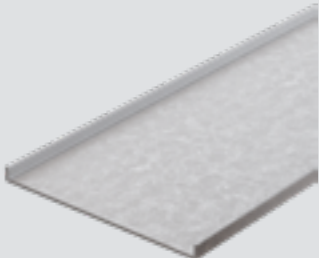
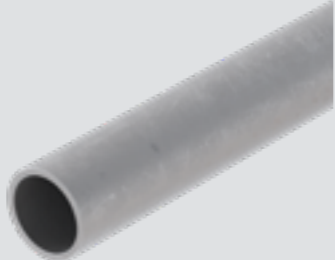
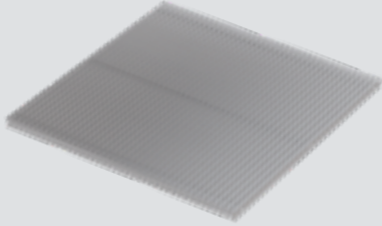
- Elements of bridge structures and inspection passages, as well as guardrail structures.
- Access platforms and gangway structures in the highly corrosive C5-CX zone.
- Support trusses for small and medium loads.

UTECH OFFERS COMPLETE SOLUTIONS FOR FRP ACCESS PLATFORMS, WHICH INCLUDE:

- Detailed design and calculation taking into account all loads and operating conditions.
- On-site consultation and support during installation and commissioning.
- Justification for choosing FRP solutions compared to traditional materials (stainless steel, carbon steel, etc.), taking into account service life and cost effectiveness.

MAIN ELEMENTS USED

<p>FSS U-SHAPED PROFILE SYSTEM FOR SMALL/MEDIUM LOADS</p> <p>Type: CH43, CH53, CH60, CH75, CH100, CH150, CH200 Wall thickness, mm: 5; 6; 7.5; 8; 10</p>  <p>See section «FRP support systems»</p>	<p>FSS CLOSED PROFILE SYSTEM FOR HEAVY LOADS</p> <p>Type: SQ50, SQ60, SQ100 Wall thickness, mm: 5; 6</p>  <p>See section «FRP support systems»</p>
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<p>CONNECTING ELEMENTS</p> <p>Simple and convenient elements for non-standard connections</p>  <p>See section «FRP support systems»</p>	<p>HANDRAILS</p> <p>Provide convenient and safe operation</p>  <p>See section «FRP support systems»</p>	<p>GRATING</p> <p>Standard cards 1 m²</p>  <p>See section «FRP support systems»</p>
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FRP PLATFORM CALCULATION AND DESIGN FEATURES

THE DESIGN OF ACCESS PLATFORM STRUCTURES REQUIRES A COMPREHENSIVE APPROACH AND CONSIDERATION OF MANY FACTORS. THE KEY ASPECTS OF SMART DESIGN ARE:

1. Load-bearing capacity calculation. FRP structures must meet current standards and codes to ensure strength and durability.
2. Corrosion resistance. It is important to anticipate measures to protect structures from corrosion to prevent premature failure.
3. Wind and snow loads. These factors should always be considered when determining the size and shape of structures, as well as when selecting materials and techniques.
4. Maintenance and operation. Provision should be made for various site works, as well as for additional utilities (e.g. lighting).
5. Installation and dismantling. An important aspect is the option for shipping the assembled structure, which may require specialised design.
6. Customised needs. Considering the customer's needs, installation organisations and maintenance services will allow the development of the most convenient and functional design.
7. 3D design. The use of modern software products allows the project to be developed in detail and all necessary aspects considered.

REGULATORY DOCUMENTS FOR FRP STRUCTURE CALCULATION AND DESIGN

THE FOLLOWING REGULATORY DOCUMENTS SHOULD BE TAKEN INTO ACCOUNT WHEN DESIGNING FROM FRP MATERIALS:

1. STO "Avtodor" 2.24-2016, Recommendations for design, construction and maintenance of composite designs: stair rails, stairways, observation passages and drainage trays on artificial road structures"
2. on motorways of the "Avtodor" state company.
3. Recommended practice for the calculation of bridge spans using composite materials.
4. GOST 33344-2015 "Constructive pultruded profiles from polymer composites. General specifications."
5. STO «Nostroi» 2.29.112-2013 "Bridges. Construction of timber and composite bridges. Part 2. Construction of the footbridges of polymeric composite materials."
6. CoP 35.13330.2011 "Bridges and culverts."
7. GOST 54928-2012 "Pedestrian bridges and overbridges from polymer composites. Specifications."

STABILITY OF FRP ELEMENTS

THE SERVICE LIFE OF FRP ELEMENTS IS AN IMPORTANT FACTOR IN THE FEASIBILITY STUDY CALCULATION. FACTORS TO BE CONSIDERED IN THE CALCULATION:

- Type of FRP. Different FRP types have different service lives and resistance to different influences.
- Chemical composition of the environment. FRPs can be sensitive to certain chemical exposures, such as acids, alkalis, and salts.
- Air temperature. High temperatures can reduce the life of FRPs as they can lose their mechanical properties.
- Ultraviolet radiation. Ultraviolet radiation affects the mechanical properties of the elements FRP

Data from the tables derived from the tests can be used to assess the suitability of FRP under specific conditions. These tables reflect the stability of FRP elements under different operating conditions.

TABLE FOR CALCULATING THE SERVICE LIFE OF FRP ELEMENTS

Chemical element	Concentration	Polyester		Chemical element	Concentration	Polyester	
		21 °C	71 °C			21 °C	71 °C
Acetic acid	25 %	R	I	Mineral oil	100 %	R	R
Acetone	Any	I	I	Nitric acid	5 %	R	R
Ammonium hydroxide	10 %	R	I	Sodium bicarbonate	10 %	R	R
Benzene	Any	I	I	Sodium bisulphate	Any	R	R
Benzene sulphonic acids	5 %	R	R	Sodium carbonate	0 %	R	I
Calcium chloride	Any	R	R	Sodium chloride	Any	R	R
Water Chlorine	Any	I	I	Sodium hydroxide	5 %	I	I
Copper sulphate	Any	R	R	Sodium nitrate	Any	R	R
Ethylene dichloride	Any	I	I	Sodium silicate	Any	R	I
Fatty acids	100 %	R	R	Sodium sulphate	Any	R	R
Petrol, Automatic	100 %	R	I	Sulphur dioxide	Moisture	I	I
Hydrochloric acid	25 %	R	I	Sulphuric acid	1 %	R	R
Hydrochloric acid	37 %	R	I	Sulphuric acid	25 %	R	R
Paraffin / Fuel Oil	100 %	R	I	Sulphuric acid	50 %	I	I
Magnesium chloride	100 %	R	I	Trisodium phosphate	20 %	R	I
Methyl ethyl ketone	100 %	I	I	Zinc sulphate	Any	R	R

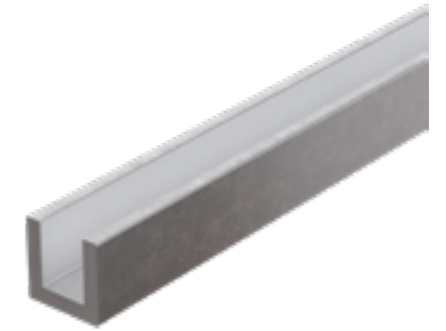
R – resistant

I – irrisistant

PROFILES FOR FRP ACCESS PLATFORMS

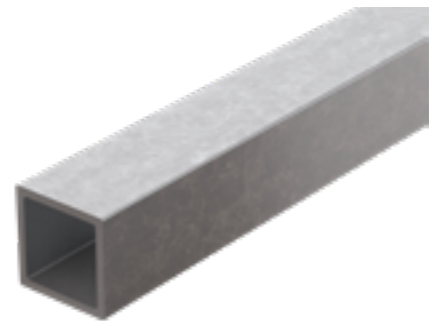
FRP CH CHANNEL BAR

Item No.	Name	Weight, kg/m
3867143	OS S-M CH50x50x5 6000 FRP channel bar	1.7
3829028	OS FSS CH100-1-6000 FRP channel bar	0.37
3867136	OS S-M CH60x60x7,5 6000 FRP channel bar	2.4
3867137	OS S-M CH75x75x7,5 6000 FRP channel bar	3.15
3867139	OS S-M CH150x50x6 6000 FRP channel bar	2.86
3867140	OS S-M CH200x60x8 6000 FRP channel bar	4.91
3867141	OS S-M CH200x100x10 6000 FRP channel bar	7.4



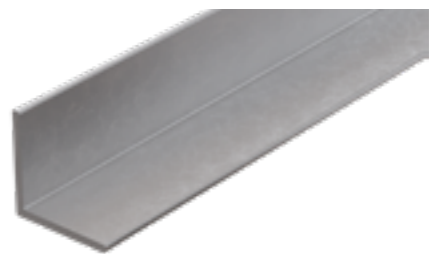
FRP PROFILE SQ

Item No.	Name	Weight, kg/m
3867144	Profile OS S-M SQ60x60x5 6000 FRP	2.15
3879232	Profile OS S-M SQ60x60x5 1000 FRP	2.15
3879246	Profile OS S-M SQ60x60x5 2000 FRP	2.15
3867145	Profile OS S-M SQ100x100x6 6000 FRP	4.3
3879233	Profile OS S-M SQ100x100x6 1000 FRP	4.3
3879247	Profile OS S-M SQ100x100x6 2000 FRP	4.3



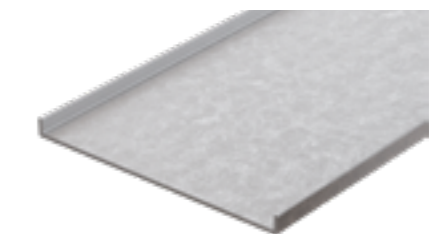
FRP ANGLE ANG

Item No.	Name	Weight, kg/m
3867146	Angle OS S-M ANG63x63x5 6000 FRP	1.03
3867147	Angle OS S-M ANG75x75x6 6000 FRP	1.73



FRP FLANGING CH 200 X 14 X 3

Item No.	Name	Weight, kg/m
3867149	Flanging S-M CH200x14x3 6000 FRP	1.5
3879237	Flanging S-M CH200x14x3 1000 FRP	1.5
3879251	Flanging S-M CH200x14x3 2000 FRP	1.5



DECKING FRP 1000X38

Item No.	Name	Weight, kg/m
3867150	Decking OS 1000x38 R FRP	5.30
3867151	Decking OS 1000x38 RAS FRP	5.70

