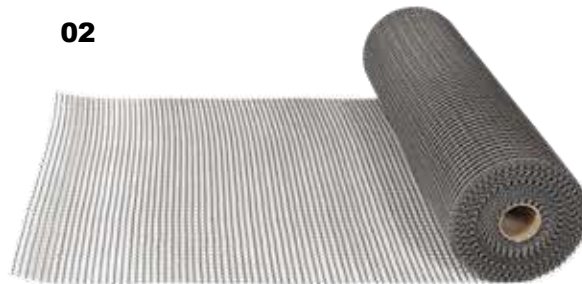


# PROMETHEUS - STRUCTURAL CYCLE



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## 1. DATA AND DOCUMENTATION

Code	Description	g/m2	Measures	Weight	Pkg. / Pallet
BFO01-290	Structural Mortar - Bio Force One		25 kg	- kg/pc.	1 cf. / 56 cf.
RET01-1179	Structural Network - Titanet 500	345	1,00 x 50	- kg/pc.	50 m <sup>2</sup> / 500 m <sup>2</sup>
RET01-1179/150	Structural Mesh Handkerchief - Titanet 150	345	150 mm x 150 mm	- kg/pc.	1 pc. / - pcs.
BFO02-295	Helicoidal Bar - Helikon		Ø 9 mm - 0.4 m	- kg/pc.	1 pc. / - pcs.
BFO02-296	Helicoidal Bar - Helikon		Ø 9 mm - 0.6 m	- kg/pc.	1 pc. / - pcs.
BFO02-297	Helicoidal Bar - Helikon		Ø 9 mm - 1.0 m	- kg/pc.	1 pc. / - pcs.
BFO03-300	KINK adapter for bar attachment		-	- kg/pc.	1 pc. / - pcs.

### MATERIAL

**01** Natural NHL5 natural hydraulic lime-based mortar. The hydraulic lime makes it ideal for wet applications and compatible for applications in the world of restoration and structural consolidation.  
**02** Valid alternative to nets made of AR (Alkali Resistant) glass, as it is assembled with E-glass yarn with a low soda ash (NAOH) content and a special anti-alkali resin that gives it excellent performance.  
 The anti-alkali barrier guarantees high resistance even at high (PH) in Portland cement water. **03**  
 Hardened class A2 stainless steel gives the helical bar greater hardness and strength. Resistant in highly aggressive environments.

## 2. USE

In the rehabilitation and consolidation of damaged load-bearing walls and for structural upgrading.  
 The correct use of all cycle components eliminates the risk of tipping and subsidence of walls and infill surfaces.

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## 3. LAYING PHASES



## 4. SPECIFICATION ITEM

Entry	Description	Unit	Price
<b>Dak.D.BF00x.2xx</b>	<p>Supply and installation of</p> <p><b>01</b> Structural mortar based on fibre-reinforced NHL5 natural hydraulic lime (identification code BFO01-290) optimised for structural reinforcement. The hydraulic lime makes it ideal for wet applications and compatible for applications in the world of restoration and structural reinforcement. Packaged in 25 kg bags.</p> <p><b>02</b> Grey structural mesh of 345 g/m2 (identification code R288-CK350, corresponding to the weight per m2 of pure glass fibre net of finishing), h. 1.00 x 50 m and mesh 16.4 x 11.5 mm. It is a viable alternative to nets made of AR (Alkali Resistant) glass, as it is assembled with low soda ash (NaOH) E-glass yarn and a special anti-alkali resin that gives it excellent performance. The alkali barrier guarantees high resistance even to high (PH) in Portland cement water. Packaged in cellophane wrapped rolls.</p> <p><b>03</b> Stainless steel helical bars (Order No. BF002-29x) for dry connections. Hardened class A2 stainless steel gives greater hardness and strength to the helical bar. Resistant in highly aggressive environments. In the restoration and consolidation of damaged load-bearing walls and for structural upgrading Packaged in bags of 20 pcs. The correct use of all cycle components eliminates the risk of tipping and subsidence of walls and infill surfaces.</p>	-	-

# PROMETHEUS - STRUCTURAL CYCLE

## 5. COMPONENT TECHNICAL DATA - MORTAR

<b>DESCRIPTION</b>	Structural borinated lime-based mortar (identi cation code BFO01-290) optimised for structural reinforcement. Packaged in 25 kg bags.
<b>MATERIAL</b>	Mortar based on NHL5 natural hydraulic lime fibred. Hydraulic lime makes it ideal for wet applications and compatible for applications in the world of restoration and structural consolidation.
<b>USE</b>	Used in renovations, based on hydraulic lime. Used as a binder of the various components of the Promotheus Cycle.

GENERAL PURPOSE MORTAR (G) UNI EN 998:2 2010 FOR INTERIOR AND EXTERIOR USE	
PARTICLE SIZE CURVE:	0 - 1.4 mm
dough pH:	> 12
APPARENT DENSITY OF FRESH MORTAR:	kg/m3 approx. 1,855
APPARENT DENSITY OF DRIED MORTAR:	kg/m3 approx. 1,750
COMPRESSIVE STRENGTH (EN 1015-11):	10 N/mm2
ADHESION (EN 1015-12):	1 N/mm2 FP-B
COEFFICIENT OF PERMEABILITY TO WATER VAPour (EN 1015-19):	μ 20
REACTION TO FIRE (EN 13501-1):	Class A1
MIXING WATER:	5.25 l per bag
RESA:	Approx. 15kg/m2 per 1 cm thickness
PACKAGE:	25 kg bags
PALLET:	56 sacks kg 1,400
CONSERVATION:	6 months in the original packaging in a dry place.
APPLICABLE THICKNESS PER LAYER:	2-3 cm per hand
APPLICATION TEMPERATURE:	from +5°C to +32°C
REACH CLASSIFICATION:	See SDS

## 5. TECHNICAL DATA COMPONENTS - HELICAL BARS

<b>DESCRIPTION</b>	Stainless steel helical bars (identi cation code BFO02-29x) for dry connections. The helix shape and highly hardened steel give the bar high strength and hardness, thus enabling a mechanical connection. Packaged in bags of 20 pcs.
<b>MATERIAL</b>	Made of hardened class A2 stainless steel gives greater hardness and strength to the helical bar. Resistant in highly aggressive environments.
<b>USE</b>	Used for connections and seams of masonry elements made of solid or half-round bricks. For the renovation of masonry in brick, tuff, stone, unfired earth and wood.
<b>APPLICATION</b>	The installation of the Helical Bars is carried out by making a pre-drilling hole of a diameter suitable for the insertion of the bars, also taking into account the consistency and type of wall substrate to be consolidated. For bars with a diameter of 9 mm (in the case of brick, tuff and timber masonry), 6 mm pilot pre-drilling is recommended. In the case of stone substrates, on the other hand, 8 mm pre-drilling is recommended. Use an impact wrench (exclude rotation if possible) fitted with a KINK adapter to insert the connecting rod. Advance with the insertion to the design depth. The insertion phase can be interrupted and resumed later without affecting the final result. An insertion and holding test of the bar directly on the structure to be consolidated is recommended in order to better calibrate the quantity and method of consolidation.

TYPE OF PRODUCT:	Helical connector for dry insertion
TENSILE STRENGTH:	> 1,110 MPa
TENSILE STRENGTH:	> 16.7 kN
SHEAR BREAKING LOAD:	> 16 kN
ELASTIC MODULUS:	196 GPa
DEFORMATION AT BREAK:	0,56%
EQUATING SECTION:	> 14.9 mm2
DENSITY:	7,850 kg/m3

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CONSERVATION:	in a dry place
LENGTH:	400, 600, 1000 mm (other lengths on request)
APPLICATION TEMPERATURE	from +5°C to +32°C

## WARNINGS

### DRY SYSTEM

Execution of stitching and/or reinforcement using HELIKON stainless steel helical bar with dry insertion by special KINK device to be attached to the spindle of the SDS-Plus-mounted drill. The following work is included:

- realisation of pilot hole with a diameter smaller than the bar and depending on the consistency and composition of the element to be reinforced;
- insertion of the HELIKON bar into the drill hole using a special KINK mandrel;
- grouting of the perforation.

The following are excluded: any reclamation of damaged areas and restoration of the substrate.

### NSM SYSTEM

Execution of stitching and/or reinforcement using HELIKON helical bar with NSM technology within the mortar joint. The following work is included:

- scarifying the mortar joint;
- Filling the joint using structural mortar of pure natural hydraulic lime BIO FORCE ONE (code BFO01-290);
- bar insertion in fresh matrix conditions;
- shaving to complete the mortar joint.

The following are excluded: any reclamation of damaged areas and restoration of the substrate.

## 5. TECHNICAL DATA COMPONENTS - TITANET STRUCTURAL NETWORK [R288]

### DESCRIPTION

Grey net (identification code R288-CK350, corresponding to the weight per m2 of pure glass fibre net of finishing), h. 1.00 x 50 m.  
Packaged in shrink-wrapped rolls.

### MATERIAL

It is a viable alternative to nets made of AR glass because it is assembled with a low-soda (NaOH) E-glass side and a special anti-alkali resin coating that gives it excellent performance at a low price.  
The anti-alkali barrier gives it high resistance even at high (pH) in Portland cement water.

### USE

Used in renovations with a cement and epoxy resin matrix, as structural reinforcement of damaged stone or masonry embedded in cement mortar or for the restoration of load-bearing structures damaged by seismic and/or highly stressful events.

Features	Units of Measurement	RET01-1179	
		Warp	Plot
<b>Setting</b>	for 10 cm	5,5 x 2	7
<b>Weaving</b>		half a leno	
<b>Standard Height</b>	cm	100	
<b>Roll length</b>	m	50	
<b>Thickness Treated Fabric</b>	mm	2,0	
<b>Raw Fabric Weight</b>	g/m2	276	
<b>Thickness Treated Fabric</b>	min g/m2	345	
<b>Fuel Content (LOI)</b>	% of mass	20%	
<b>Treatment Type</b>		Alkali-resistant without emollients	
<b>Dimensions Wheelbase</b>	mm	16,4 x 11,5	
<b>Elastic Module</b>	GPa	23	
<b>Resistant area per unit width</b>	mm2/m	33,25	
<b>Maximum load</b>	kN/m	76	

Tensile strength (TS) and elongation:

Minimum tensile strength (N/50 mm) and maximum elongation (%) is ascertained according to DIN EN ISO 13934-1 as follows

	Tensile strength		Elongation
	Nominal Value	Individual Value	Average Value
Standard Conditions	3300 / 4800	3100 / 4600	4,0 / 4,4
Solution 5% NaOH	2000 / 2600		3,5 / 3,5
Quick Test	2800 / 3000	2650 / 2850	3,5 / 3,5
Solutions 3 ions (ETAG 004)		1800 / 2800 50% / 50%	

### Tolerances:

Setting: ± 5% in Warp and Weft  
Height: ± 1%  
Length: ± 2%  
LOI: ± 3%

### Quality Inspection

The mode of quality control, taking samples and taking the material, is according to standard 0326 works. **Packing:**

The rolls are packed vertically in cardboard boxes on a pallet. **Warehouse:**

Rolls must be stored in a dry place. Storage temperature -10 °C to + 50 °C.