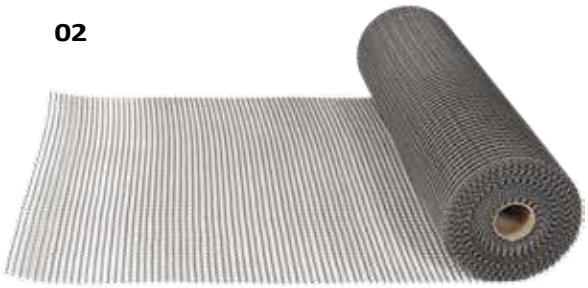
PROMETHEUS TT - STRUCTURAL CYCLE

01

02



03

INDEX

1. Data and Documentation
2. Use
3. Laying phases
4. Specification item
5. Component technical data

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 m² / 500 m²
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.	20 pcs. / - pcs.
BFO02-296	Helicoidal Bar - Helikon		Ø 9 mm - 0.6 m	- kg/pc.	20 pcs. / - pcs.
BFO02-297	Helicoidal Bar - Helikon		Ø 9 mm - 1.0 m	- kg/pc.	20 pcs. / - 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 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 at high (PH) in Portland cement water.
03 Stainless steel AISI 304 class A2 strain hardened (non-chloride resistant), gives greater hardness and strength to the helical bar.

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.

PROMETHEUS TT - STRUCTURAL CYCLE

3. LAYING PHASES


1. DRILLING AND INSERTION OF **HELIKON** STEEL BARS


2. FIRST COAT OF STRUCTURAL MORTAR **BIO FORCE ONE**


3. APPLICATION OF THE STRUCTURAL NETWORK **TITANET**


4. 150 X 150 NET HANDKERCHIEF APPLICATION **TITANET**


5. BENDING STEEL BARS **HELIKON**


6. SECOND COAT COVERING STRUCTURAL MORTAR **BIO FORCE ONE**

4. SPECIFICATION ITEM

Entry	Description	Unit	Price
Dak.D.BFO0x.2xx	Supply and installation of **01** 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. **02** 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. **03** Stainless steel helical bars (Order No. BFO02-29x) for dry connections. Hardened class A2 stainless steel (non-chloride resistant), gives the helical bar greater hardness and strength.w 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.	-	-

PROMETHEUS TT - STRUCTURAL CYCLE

5. COMPONENT TECHNICAL DATA - MORTAR

DESCRIPTION

Fibre-reinforced structural mortar based on lime (identification code BFO01-290) optimised for structural reinforcement.
Packed in 25 kg paper bags.

MATERIAL

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.

USE

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 SS

5. TECHNICAL DATA COMPONENTS - HELICAL BARS

DESCRIPTION

AISI 304 stainless steel helical bars (identification 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.

MATERIAL

Made of hardened AISI 304 class A2 stainless steel (non-chloride-resistant), it gives the helix bar greater hardness and strength.

USE

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.

APPLICATION

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:	> 8 kN
ELASTIC MODULUS:	196 GPa
DEFORMATION AT BREAK:	0,56%
EQUATING SECTION:	> 14.9 mm2
DENSITY:	7,850 kg/m3

PROMETHEUS TT - STRUCTURAL CYCLE

CONSERVATION:	in a dry place
LENGTH:	400, 600, 1,000 mm (other lengths on request)
APPLICATION TEMPERATURE	from +5°C to +32°C

WARNINGS

DRY SYSTEM
Execution of seam and/or reinforcement using HELIKON stainless steel helical bar with dry insertion by means of a special KINK device to be attached to the spindle of the SDS-Plus-mounted dowel driver.
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 mesh (identification code R288-CK350, corresponding to the weight per square metre 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
Setting	for 10 cm	5,5 x 2	7
Weaving		half a leno	
Standard Height	cm	100	
Roll length	m	50	
Thickness Treated Fabric	mm	2,0	
Raw Fabric Weight	g/m2	276	
Thickness Treated Fabric	min g/m2	345	
Fuel Content (LOI)	% of mass	20%	
Treatment Type		Alkali-resistant without emollients	
Dimensions Wheelbase	mm	16,4 x 11,5	
Elastic Module	GPa	23	
Resistant area per unit width	mm2/m	33,25	
Maximum load	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
Deposition method	Nominal Value	Individual Value	Average Value
Standard Conditions	3.300 / 4.800	3.100 / 4.600	4,0 / 4,4
Solution 5% NaOH	2.000 / 2.600		3,5 / 3,5
Quick Test	2.800 / 3.000	2.650 / 2.850	3,5 / 3,5
Solutions 3 ions (ETAG 004)		1.800 / 2.800 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 shooting 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.