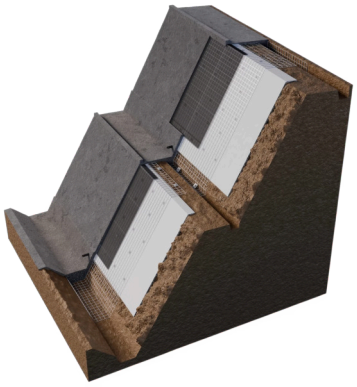

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ConstruckSlope™ Plus 400 System Specifications

Product Description - The ConstruckSlope™ Plus 400 is a multi-component, engineered slope protection system designed for high-demand applications. It integrates a laid geogrid of high-tenacity polyester filaments with extruded polyethylene coating and welded junctions, providing exceptional tensile reinforcement across the slope. In addition to global stability, the system incorporates integral drainage to eliminate hydrostatic pressure and a durable, UV-resistant facing for long-term durability. The system is mechanically anchored at the crest, toe, and on berms to ensure effective load transfer and long-term performance.

The following table lists the key technical values of the ConstruckSlope™ Plus system as a composite. These values are derived from the specified individual components and its interactions/connections.

Property	Component	Test Method	Unit	System Value
Mass per unit area	Geogrid Element	EN ISO 9864/ ASTM D5261	g/m²	1,300
Max. Tensile Strength (md/cmd)	Geogrid Element	EN ISO 10319 / ASTM D6637	kN/m	≥400 / ≥100
Elongation at Max. Strength (md/cmd)	Geogrid Element	EN ISO 10319 / ASTM D6637	%	≤10.5 / ≤10.5
Tensile Strength at 1% Elongation (md)	Geogrid Element	EN ISO 10319 / ASTM D6637	kN/m	68
Tensile Strength at 2% Elongation (md)	Geogrid Element	EN ISO 10319 / ASTM D6637	kN/m	96
Aperture size (md / cmd)	Geogrid Element	-	mm x mm	67 x 61
UV resistance (remaining tensile strength)	Geogrid Element	EN 12224	%	≥ 85

Property	Component	Test Method	Unit	System Value
Weather resistance	Geogrid Element	FGSV / ASTM D4355	Class	High
Roll width	Geogrid Element	-	m	4.75
Raw Material	Geogrid Element	-	-	Polyester (PET) w/ Polyethylene (PE) Coating
In-Plane Water Flow Rate (i=1.0, 20 kPa)	Drainage Element	EN ISO 12958 / ASTM D4716	l/(m·s)	1
Geotextile Opening Size (O_{90})	Drainage Element	EN ISO 12956 / ASTM D4751	µm	90
Raw Material	Drainage Element	-	-	Polypropylene (PP)
Design flow capacity on Berm(S = 2%)	Drainage Element	(Manning n = 0.016; b = 3.0 m; y = 0.10 m)	L/s·m	≈ 547
Berm Drainage Dispersion Volume	Drainage Element	-	m^3/Lm	0.3
Impermeability Of Berm Drain (permeability, k)	Drainage Element	IS 3085 or DIN 1048-5	m/2	$\leq 1.0 \times 10^{-8}$
Water penetration under pressure (72h)	Drainage Element	EN 12390-8	mm	≤ 50 mm
Pore pressure at 10m water	Drainage Element	-	kPa	0
Design Resistant water pressure at 10m Load Height at Toe	Drainage Element	-	kPa	98.6

Property	Component	Test Method	Unit	System Value
Matrix Thickness for Plaster Interlock	UV Protection Element 1	EN ISO 9863-1 / ASTM D5199	mm	20
Max. tensile strength, md/cmd	UV Protection Element 1	EN ISO 10319 / ASTM D6818	kN/m	≥ 2.0 / ≥ 0.4
Elongation at max. strength, md / cmd	UV Protection Element 1	EN ISO 10319 / ASTM D6818	%	≥ 15 / ≥ 10
Mass per unit area	UV Protection Element 1	EN ISO 9864 / ASTM D6566	g/m²	400
Plaster Facing Compressive Strength	UV Protection Element 2	ASTM C109	MPa	>3
Plaster Facing Adhesion Strength	UV Protection Element 2	BS EN 1015-12 / ASTM C952	MPa	>0.3
Raw Material	UV Protection Element 1	-	-	Polypropylene (PP) / Polyethylene (PE)
Anchor Compressive Strength (28 days)	Concrete Element 1 & 2	EN 12390-3 / ASTM C39	N/mm² (MPa)	25 to 31
Anchor Material Density	Concrete Element 1 & 2	EN 12390-7 / ASTM C642	kg/m³	~2,000 - 2,200
Bottom TrenchLock mass per unit length	Concrete Element 1	-	Kg/Lm	500-550
Upper Bench Lock and Lower Bench Shearlock mass per unit length	Concrete Element 2 without any steel element	-	Kg/Lm	680 – 748
Concrete Class reinforced with PP fibers	Concrete Element 1 & 2	EN 206 / ASTM C94	-	C25/30

Property	Component	Test Method	Unit	System Value
Pull-out Strength (per aperture)	Concrete Element 1 & 2 interlock with Geo-grid	ASTM D6706	kN/apert.	≥ 6.9
Minimum Embedment Length (bench/trench)	Concrete Element 1 & 2 interlock with Geo-grid	-	m	≥ 0.86
Overall System Thickness	-	-	mm	30-33
Length / Height of Slope	-	-	m	9-10

Component Rationale and Function within the System

Geogrid Element (ConstruckGrid™ HS 400/100)

Provides the primary tensile reinforcement to ensure the global stability of the slope. Its low elongation at working loads prevents deformation of the slope face.

Drainage Element (ConstruckDrain™)

Its high in-plane flow capacity ensures rapid drainage of infiltrating water, preventing the buildup of hydrostatic pressure, which is a primary cause of slope failure. The integrated geotextile is designed to be filter-stable with common soil types.

UV Protection Element 1 (Construck3DMat™)

A thick, three-dimensional mat that creates a high-void structure for the plaster to mechanically interlock with, forming a strong, composite bond that prevents the facing from slipping or delaminating.

UV Protection Element 2 (ConstruckUVCover™)

A durable, fiber-reinforced plaster that provides long-term UV and mechanical protection for the underlying geosynthetic components.

Concrete Elements 1 & 2 (ConstruckScreed™)

A high-strength, low-shrinkage screed used to create robust mechanical anchors (shear locks, crest/toe trenches) that ensure the tensile forces from the geogrid are effectively transferred into the stable ground.

The values presented in this data sheet are based on the individual material specifications and are to be used for design and quality assurance purposes for the ConstruckSlope™ Plus system.

The listed technical values are guiding values, achieved in our laboratories and/or independent testing institutes. Our products are subject to changes without prior notice.