KÖSTER
Waterproofing Systems

W - Waterproofing systems

KÖSTER TPO Aqua 2.5 Geo

Technical Data Sheet RT 825 210 F

Issued: 2024-03-01

Certificate of conformity of the factory control 1213-CPR-772 SKZ Würzburg;
Official Test Report 207947/20 accordint to DIN EN 13361:2004/A1:2006 SKZ Würzburg

KÖSTER TPO Aqua 2.5 Geo is a FPO/TPO-PE based homogeneous geomembrane for hydraulic works. It is used for the waterproofing of water supply and storage structures of all kinds.

Features

•Reduces installation time for earlier use of the structure
•Bridges joints and large cracks
•Low friction surface increases water flow
•Higher flow leads to higher hydraulic efficiency
•No cost in expensive joint systems
•Stops leakages – reduces water losses down to 1 to 2%
•The best protection for the structure against deterioration
•Provides embankment stability when applied directly on compacted soil
•High UV resistance ensures long-life with minimum maintenance
•Reduced algae growth on the surface of the membrane
•Reduced formation of vegetation

Technical Data

Roll width	2.10 m
Roll length	20 m
Thickness TPO	2.5 mm
Weight Geotextil	500 g/m²

Fields of Application

For waterproofing any structure for the collection, storage or transport of water such as:
•Canals
•Retention basins
•Artificial lakes
•Irrigation basins
•Fire fighting ponds
•Dam

Substrate

KÖSTER TPO Aqua Geo has very low requirements on the substrate. Various application methods can be implemented according to the project requirements.

The geometry and the size of the canal are crucial to determine the installation method. Long and straight sections should be installed longitudinally, curves should be installed transversal.

Loose laid under Ballast

The ground is compacted and created the canal shape. A geotextile of min 600 g/m² must be placed on the prepared sub grade. The membrane is laid transversally on the canal bed and walls. The section of the membrane on the canal bed is protected with a 2000 g/m2 geotextile protection layer so that the cover ballast system can be placed with heavy machinery.

Longitudinal placement and mechanical fastening

The membrane is mechanically fixed to the concrete using stainless steel bolt anchors over the overlapping welded seams section. The mechanical metal fixing is carried out longitudinal over the welded seams every 4,20 m (2 x 2,10 m wide membrane). The transversal mechanical fixing is done every 8 to 10 meters, depending on the expected water flow. The membrane is secured using 60 x 6 mm stainless steel flat profiles. The seal is secured with a 60 x 3 mm rubber gasket and a stainless steel anti-vibration tooth-lock washer. The fasteners should be a minimum 10 mm concrete screws.

Application

The geomembranes should be unrolled without tension. The overlapping is 6 to 8 cm for the double welding machine. Double welding systems such as the Leister Twinny provide a 2 x 15 mm seam width.

The seams are tested with an air pressure needle system.

Each membrane has a longitudinal 10 cm wide non-fleece backed strip for welding. Butted ends are overwelded with KÖSTER TPO U 2.0.

Please refer to the TPO Installation Instructions and the Technical Manual for TPO of KÖSTER BAUCHEMIE AG for correct application of KÖSTER TPO Roofing and Waterproofing Membranes.

Cleaning

Use KÖSTER TPO Cleaner for preparing the seam area of KÖSTER TPO Aqua Geo membranes in case of heavy soiling or after weathering.

Packaging

RT 825 210 F	2.5 mm x 2.10 m x 20 m

Storage

Store rolls vertically.

Safety

Observe all local, state, and governmental safety regulations when installing the membranes.

Related products

KÖSTER TPO Metal Composite Sheet light grey	Prod. code RT 910 002
KÖSTER TPO Metal Composite Coil light grey	Prod. code RT 910 030
KÖSTER Wall connection profile 60 mm	Prod. code RT 919 003
KÖSTER Bar for membrane fastening	Prod. code RT 919 004

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CE 7772 23	**KÖSTER BAUCHEMIE AG** **Dieselstraße 1-10, 26607 Aurich** **KÖSTER TPO Aqua 2.5 Geo** **1213-CPR-7772** **Homogenous waterproofing membrane made from flexible Polyolefine TPO/FPO (PE)**
Length according to DIN EN 1848-2	20 m
Width according to DIN EN 1848-2	2.10 m
Effective thickness according to DIN EN 1849-2	2.5 mm
	DIN EN 13361:2004/A1:2006
Color	light grey
Visible Defects according to DIN EN 1850-2	free from visible defects
Straightness according to DIN EN 1848-2	≤ 50 mm
Flatness according to DIN EN 1848-2	≤ 10 mm
Mass per unit area according to DIN EN 1849-2	3011 g/m² (including lamination)
Water tightness according to DIN EN 1928 (Method B)	watertight 400 kPa/72h
Determination of permeability to liquids according to EN 14150	≤ 10^{-6} $m^3/(m^2 \cdot d)$
Resistance to shock loads according to DIN EN 12691	≥ 700 mm (Method A) / ≥ 1500 mm (Method B)
Exposure to liquid chemicals, including water according to DIN EN 1847	watertight (Methode A)
Water vapor diffusion resistance according to DIN EN 1931	μ = 76.500
Tensile characterisitcs according to DIN EN 12311-2	
Tensile strength	≥ 1000 N/50mm
Elongation at break	≥ 30 %
Resistance to static loading according to DIN EN 12730	≥ 20 kg
Tear continuation resistance according to DIN EN 12310-2	≥ 300 N
Peel resistance of the overlap according to DIN EN 12316-2	≥ 400 N/50mm
Shear resistance of the overlap according to DIN EN 12317-2	Failure beyond the overlap
Tear resistance (nail shank) according to DIN EN 12310-1	≥ 350 N
Static puncture test according to EN ISO 12236	≥ 4 kN
Determination of the resistance to weathering according to DIN EN 12224	passed (3000h)
Screening test method for determining the resistance to oxidation according to DIN EN 14575	passed (90d)

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