

MasterShield AKS FLC

Fabric backed HDPE concrete protection membrane

Material Description

MasterShield AKS FLC is a composite product consisting of smooth HDPE sheet with a fleece geofabric heat-cast into one face. It's a durable, nonwoven geoliner made from continuous filament, double needle-punched polyester fabric with a robust backing. MasterShield AKS FLC used for adhesion to various surfaces where then MasterShield AKS can be welded and closed onto and provide a gas tight seal for corrosion protection.

Areas of Application

MasterShield AKS FLC is used as ancillary HDPE sheet to supplement the MasterShield AKS lining in applications such as:

- **Precast Concrete Elements:** Linings for precast pipes, tanks, and other structural elements. Includes both wet-cast and dry-cast pipe manufacturing.
- **Various Structures:** Concrete, Steel, timber, PVC or GRP

Characteristics and Benefits

- **Enhanced Bonding Capability:** The fleece-backed surface allows secure adhesion to concrete, steel, and composite materials like GRP or epoxy substrates.
- **Chemical Resistance:** Exceptional resistance to aggressive chemicals, making it ideal for environments with exposure to acids, alkalis, and industrial .
- **Long-Term Durability:** Designed for a 100-year service life with minimal maintenance requirements, reducing lifecycle costs.
- **Versatile Application Range:** Suitable for varying temperatures and installation methods, including extrusion welding and grouting.

Properties

Charactrastics (Standard)	Unit	3mm	4mm	5mm
Thickness Norminal (ASTM D 5199)	%	±10%	±10%	±10%
Dimensions	m	3x1.5	3x1.5	3x1.5
Density (ASTM D11505/D792)	gr/ml	≥940	≥940	≥940
Melt Flow Index (ASTM D1238-190/21.6)	gr/10min	13	13	13
OIT (ASTM D 3895)	min	>100	>100	>100
Yield Stress* (ASTM 6693-04)	kN/m	45	60	75
Break Stress* (ASTM D6693-04)	kN/m	81	108	135
Break Elongation* (ASTM D6693-04)	%	400%	400%	400%
Shore Hardness (DIN 53505)	N/mm	>50	>50	>50
Fabric Properties:				
Mass (SANS 10221)	g/m ²	90	90	90
Porosity (GeoLabe)	%	93%	93%	93%
Tensile Strength (SANS 10221)	kN/m	4	4	4
Break Elongation	%	50%	50%	50%

* Tested on a smooth/non fleece backed portion of sheet

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Application

For a detailed Application methodology please refer to "Protective liners- MasterShield AKS systems" Application guide.

Surface Preparation

- **Concrete:** Ensure the surface is free of any loose material and thoroughly cleaned using methods like high-pressure water jetting, pneumatic scabbling, or grinding. A CSP of 5 or greater is ideal.
- **Steel:** Use abrasive blasting (SA2.5 grade) for corroded surfaces and, if needed, apply a sanded epoxy primer such as **MasterStrength 2525** or **MasterCrete PRI 2500**.
- **PVC or GRP :** Use sand paper to grit the surface of substrate to form a rough (not shiny) surface.

Installation

- **General Instructions:** Align and secure the fleece-backed HDPE liner with precise cutting to avoid gaps exceeding 3mm. Overlaps should be at least 50mm for better joint integrity.
- **Fixing to Substrate:** The fleece side can be coated with an epoxy resin such as **MasterStrength 1446** or **1475** or **2525** and adhered (on the fleece surface) to surfaces of concrete, Steel, PVC, or GRP.
- This intum provides a HDPE surface onto which the **MasterShield AKS** sheet can be welded and closed onto these non-HDPE surfaces and provide a gas tight seal for corrosion protection.

Welding and Jointing

- **Seam Preparation:** Chamfer edges and grind oxidation layers without excessive material removal. Follow extrusion welding guidelines to ensure joint integrity.
- **Corner and Edge Details:** Thermoform corners when possible. Use extrusion or wedge welding for precise seams.

Post-Installation Quality Checks

- **Void Detection:** "Sound" the surface using a small hammer to identify hollow areas. Fill voids with Master grout if required.
- **Weld Testing:** Follow testing protocols such as peel and shear tests to confirm weld strength.

Packaging

MasterShield AKS FLC Series are available in black and white in 3.0mm x 3.0m x 1.5m sheets.

Storage

MasterShield AKS FLC maximum of 24 months – it is essential that goods are kept in the original packaging, keep cool and dry, protect against sunlight. If packaging film has been opened apply the material within 2 months.

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Disclaimer

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STATEMENT OF RESPONSIBILITY

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