Technical Data Sheet

PT Membrane Crystal 1050

- Pre-applied, active, crystalline waterproofing membrane -

Product description

PT Membrane Crystal 1050 is an absolutely new unique, 3-layer, highly flexible tanking sheet/membrane. The membrane is pre-applied and cold applied, no need of heat and open flames during application, but it can be welded if wanted. It consists of a synthetic membrane which is coated with a pressure sensitive adhesive and treated with crystalline granulate. This special design offers a very high safeness against water penetration. Because of the crystalline properties it is a permanently active waterproofing membrane. Very high bonding to concrete because of crystalline growing into the substrate (concrete) and has self healing properties as well. The PT Membrane Crystal 1050 is trafficable for about 1-3 months, depend on the weather situation. The membrane has a self-adhesive strip on one side for side lap overlapping and ensures a perfect bonding between the membranes. The application must be done before the reinforcement steel is fixed and the concrete is poured.

Area of application

PT Membrane Crystal 1050 is used for the waterproofing of exterior basement walls, foundations, tunnels, floor plates, etc. The same product is suitable for vertical and horizontal areas. PT Membrane Crystal 1050 is usable against pressurized water and infiltration of radon gas.

Properties

- **Crystalline active**
- **Permanently working**
- **Highly flexible**
- **Trafficable coating**
- **Pressure sensitive adhesive**
- **Continuous thickness**
- **Watertight against pressurized water**
- **Chemical resistant**
- **Methane gas barrier**
- **Radon gas barrier**
- **UV-resistant for >60 days**
- **Highly crack-bridging**
- **High elongation**
- **Not harmful for groundwater**
- **German engineered**

Specification

Base	: flexible synthetic membrane
Self adhesive coating (1.)	: pressure sensitive polymer resin
Active coating (2.)	: crystalline active coating, mineral based
Color	: white
Processing temperature	: > + 5°C to +38°C
Weight	: approx. 1350 g/sqm

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Thickness : approx. 1.3 mm
Length according to DIN EN 1848-2 : 20 m
Width according to DIN EN 1848-2 : 1050 mm

Basic characteristics	Performance	Harmonized technical specification
Visible defects	Pass	EN 1850-2
Dimensions and deviations	Length: 20 m ± 0.10 m Width: 1050 mm ± 5 mm Straightness: Passed	EN 1848-2
Thickness and area density	Membrane thickness with coating: 1.27 mm (+10/-5%) Area density: 1350 g/m² ± 10%	EN 1849-2
Water tightness Water pressure 60 kPa (0.6 bar)	Passed	EN 1928-A
Water tightness Water pressure 400 kPa (4 bar)	Passed	EN 1928-B
Resistance to impact Substrate Al plate	400 mm	EN 12691-A
Resistance to impact Substrate EPS plate	800 mm	EN 12691-B
Durability – against heat ageing	Passed	EN 1296 and EN 1928-A
Durability – against chemicals	Passed	EN 1847 and EN 1928-A
Compatibility with bitumen	Passed	EN 1548 and EN 1928-A
Tear resistance – longitudinal direction (nail shank)	>500N	EN12310-1
Tear resistance – transvers direction (nail shrank)	>650N	EN12310-1
Steam permeability	g: 6.97*10 kg/(m²*s) ± 30%	EN 1931-B
Resistance to static loading Substrate: EPS plate	≤ 15 kg	EN 12730-A
Resistance to static loading Substrate: Concrete	≤ 20 kg	EN 12730-B
Resistance to static loading Substrate: EPS plate	≤ 15 kg	EN 12730-C
Tensile force in longitudinal direction	≥ 120 N/6 mm	EN 12311-2
Tensile force in transverse direction	≥ 140 N/6 mm	EN 12311-2
Tensile strength in longitudinal direction	≥ 13 N/6 mm	EN 12311-2
Tensile force in transverse direction	≥ 14 N/6 mm	EN 12311-2
Elongation at rupture – transverse direction	≥ 650%	EN 12311-2:2013
Elongation at rupture – Longitudinal direction	≥ 500 %	EN 12311-2:2013
Reaction to fire	Class E	EN 13501-1

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Peeling strength of bonding to poured concrete (N/mm²)

Clean surface	: ≥ 2.6
Contaminated surface with cement powder	: ≥ 2.4
UV aging (3 months)	: ≥ 2
Peeling strength of bonding to poured concrete (after being submerged in water) (N/mm)	: ≥ 2

All technical datas are measured in our laboraty.

Please take notice about the safety information and advice given on the safety data sheets and packaging labels.

Delivery form

PT Membrane Crystal 1050
20 m per roll
Width:
1050 mm — Article-No. 14200024

PT HDPE-Tape 150
20 m per roll
Width: 120 mm — Article-No. 14330150

PT DS-Tape
30 m per roll
Width: 100 mm — Article-No. 14310100

PT REP-Tape
20 m per roll
Width: 100 mm — Article-No. 14320100

Storage

12 months (cool and dry in the original package)

Application

Preparation of the surface

The surface must be sound, even, stable and clean. The substrate to be coated should not have damages, gaps, joints or voids greater than 10 mm. To prevent movements of penetrations such as pipe penetrations for water and electricity during concrete and membrane installation, they have to be fixed and stabilized. Damaged concrete should be renovated with PT Thix Mortar of PT Epoxy Mortar UNI first. Sharp edges have to be removed first.

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Material

Horizontal application
PT Membrane Crystal 1050 must be placed with the active crystalline coating upwards and the white layer facing the substrate.

The overlapping between the membranes is 75 mm. Before removing the siliconized PE-foil (of the side lap overlapping area) ensure that the membranes overlapping zone is positioned correctly. Ensure the back side of each subsequent roll is clean prior fixing and overlapping. Then start removing of siliconized PE-foil to bond the membranes together. Use a heavy roller to ensure a complete perfect bonding between the membranes. Then go ahead with removing of plastic film and press membranes together.

At the overlapping area of end laps the PT Membrane Crystal 1050 the PT HDPE-Tape 150 is used. The roll width of the tape is 150 mm. The tape has to be placed 75 mm (150 mm tape) under the first membrane, with the siliconized PE-foil upwards. While removing the first layer of silicone foil the PT Membrane Crystal 1050 must be pressed together. The next membrane has to be placed over the second half of PT HDPE-Tape 150. Proceed with removing of siliconized foil and press the membranes together.

Vertical application
PT Membrane Crystal 1050 must be fixed mechanically to the substrate by using fixing tools. These fixings must have a low profile head so that the membrane won't be damaged from the fixings. The overlapping between the membranes is 80 mm. Before removing the siliconized foil (at the overlapping area) ensure that the membrane overlapping is positioned correctly. Ensure the back side of each subsequent roll is clean prior the overlapping. Then start removing of siliconized foil to bond the membranes together. Use a heavy roller to ensure a complete perfect bonding between the membranes. Then go ahead with removing of siliconized foil and press membranes together.

All detailing for example around pipes should be completed with PT Hydro-Active-Coating 1C extra, a liquid applied membrane. For better bonding to HDPE a preparation with PT REP-Tape 100 is recommended.

Repairs before concrete placement
In case of damaging the PT Membrane Crystal 1050 during installation of formwork and reinforcement steel placement it is necessary to repair prior pouring of concrete. PT REP-Tape can be used to repair any cuts or punctures <10 mm. For larger repairs, cut a sleeve out of PT Membrane Crystal 1050 to fit across to repair zone. Ensure that the sleeve overlaps a minimum of 150 mm of damaged area.
Repair sleeve must then be sealed with PT DS-Tape 100 as per recommended cut edge detailing.

Pouring of concrete
The concrete should be poured within 30 days of PT Membrane Crystal 1050 installation.

Ensure that all overlapping areas are sealed and the siliconized PE-foil is removed in that area.

Do not damage the membrane during pouring of concrete.

Formwork removal
It is very important not to remove formwork until the concrete has sufficient compressive strength to develop the required adhesion with PT Membrane Crystal 1050. Too early removal of all formworks can lead to a displacement of PT Membrane Crystal 1050 and or concrete damage. Remove the formwork at earliest after 72 hours. A minimum concrete compressive strength of 10 N/mm² is recommended prior removing formwork.

Application areas:

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Remarks
The information given in this technical data sheet corresponds to the current state of development and is based on our experience, our knowledge and is non-binding. An investigation has to be done with focus on the respective building project and the area of application. The technical expert advice of proof-tec employees does not exclude the planning or control by an engineer. We are liable within the scope of our general delivery and sales conditions, we are not liable for the application of our materials. The generally accepted rules of technology must be observed. If necessary, preliminary tests have to be carried out.

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All previous versions of this technical data sheet are not valid anymore and should not be used anymore.