

## RENOLIT ALKORPLAN 35041

### Geomembrane for tunnels and basement works with signal layer (twin colours)

#### Non UV



#### → PRODUCT

- Non-reinforced geomembrane, opaque, made of flexible polyvinyl chloride (PVC-P), with thin yellow signal layer (PVC-P), designed for tunnels and basement works. This geomembrane is not suitable for permanent exposure to UV-radiation.
- The use of a geomembrane with a thin «signal» layer of clear colour allows for:
  - A better lighting in the tunnel under construction by the reverberation of the artificial lights.
  - An easy visual detection of the damages caused to the geomembrane as well as during the installation and during the successive works. Indeed, if the geomembrane, locally, sustains a loss of thickness by mechanical, thermal or other aggression, the thin «signal» layer will be damaged, and the dark layer of the geomembrane will appear underneath.

#### → CHARACTERISTICS

- Manufactured in ISO 9001 and ISO 14001 certified plant.
- Mechanical properties in accordance with EN 13491.
- CE marking.
- Geomembrane with thin yellow signal layer (twin colours).
- Hardly combustible (B2 - ÖN B 3800/1, B2 - DIN 4102, IV.2 - SIA 280, class E - EN ISO 11925).
- Resistant to swelling, rotting and ageing.
- Very high level of water tightness, even with permanent deformation.
- High capacity for adaptation to irregularities or deformation of support due to its high deformability and welding strength.
- High resistance to puncturing.
- Root resistance in accordance with EN14416.
- Not resistant to bitumen, oil and tar.

#### → INSTALLATION

- Hot air or hot wedge welding achieves correct assembly of the geomembrane. The weld ability and the quality of the welding done on site can be influenced by atmospheric conditions (temperature, humidity of the air) and also by the state of surface of the geomembrane (clean and dry) and must be adapted accordingly.
- An anti-puncturing geotextile or a composite (protective membrane with laminated fleece) should be placed onto the support of the waterproofing.
- In case the geomembrane will be covered with sand, gravel or concrete a geotextile or a protection membrane of non reinforced PVC-P RENOLIT ALKORPLAN 35020 (protection against dynamic puncturing) should be placed in between.
- The geomembrane can be used on a bituminous support after the insertion of a suitable separation layer.

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→ CHARACTERISTICS	NORMS	UNITS	SPECIFICATIONS		
Thickness	EN 1849-2	mm	1.5 ±5%	2.0 ±5%	3.0 ±5%
Tensile strength	EN ISO 527	N/mm <sup>2</sup>	L: ≥ 16 T: ≥ 16		
Elongation at failure	EN ISO 527	%	L: ≥ 300 T: ≥ 300		
Tear strength	DIN 53363 EN ISO 34	N/mm kN/m	≥ 80 ≥ 40		
Dimensional stability after accelerated ageing (6h/80°C)	EN ISO 1107-2	%	≤ 2		
Puncture resistance (CBR)	EN ISO 12236	kN	≥ 1.7	≥ 2.4	≥ 3.0
Height of fall without perforation	DIN 16726	mm	≥ 750	≥ 1100	≥ 1700
Cold folding resistance	EN 495-5		No cracks at -20°C		
Resistant under water pressure	DIN 16726		Waterproof at 10 bar/10 h Waterproof at 6 bar/72 h		
Behavior after storage in hot water (8 months/50°C)					
- Mass variation	SIA.V 280	%	≤ 4		
- Variation of elongation at failure		%	≤ 10		
- Variation of tensile strength		%	≤ 10		
Folding at a temperature of -20°C			No cracks at -20°C		
Behavior after long-term ageing 80°C / 7 days					
- General appearance	DIN 16726 5.13.3 5.14 5.18	%	No blister ≤ 3		
- Dimensional stability, L&T		%	< ±10		
- Variation of tensile strength, L&T		%	< ±20		
- Variation of elongation at failure, L&T		%	No cracks at -20°C		
Folding at a temperature of - 20°C					
Behavior after storage in hot water and alkaline solutions. (90d/23°C) Methods A&B.					
- Variation of tensile strength, L&T	EN 14415	%	< ±20		
- Variation of elongation at failure, L and T		%	< ±20		
- Folding at a temperature of - 20°C			No cracks at -20°C		
Root resistance	EN 14416		Fulfilled		
Oxidation resistance	EN 14575		Fulfilled		
Behavior in fire	B2 ÖN B 3800/1 SIA 280 DIN 4102 EN ISO 11925		B2 IV.2 B2 Class E		

We reserve the right to amend or change specifications as and when required.

We will be pleased to advise current specifications upon request.

Other technical characteristics are available upon request.

#### → STORAGE

- Standard packaging: delivery in roll form, 2.15 meter width, on cardboard cores.
- Store in a dry unheated space. Rolls to be parallel and in original packing. Do not stack in cross form or under pressure. The storage area must be of such nature as not to damage the geomembrane.