

PRODUCT CODE 5656

SMARTCARE PREAPPLY HDPE 40

High Density Polyethylene membrane for pre-application

PRODUCT DESCRIPTION

SmartCarePreApply HDPE 40 is a thick High density polyethylene membrane with a pressure-sensitive adhesive. Unlike conventional membranes, this forms a bond with the wet concrete poured over it and becomes monolithic part of the structure. This prevents water ingress tracking between the unbonded membrane and structure.



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AREAS OF APPLICATION

- Basement
- Tunnel
- Other underground public constructions
- Subway
- Cave

CHARACTERISTICS/ ADVANTAGES

- Continuous adhesive bond to poured concrete
- Unaffected by ground settlement
- Provides a barrier to water, moisture and gas
- Ready for placement of reinforcement bars
- Sound anti puncture performance
- Excellent chemical resistant to soil types
- Lateral water migration resistant
- Weather and UV resistant
- Resistant to acid and alkali

PRODUCT DATA

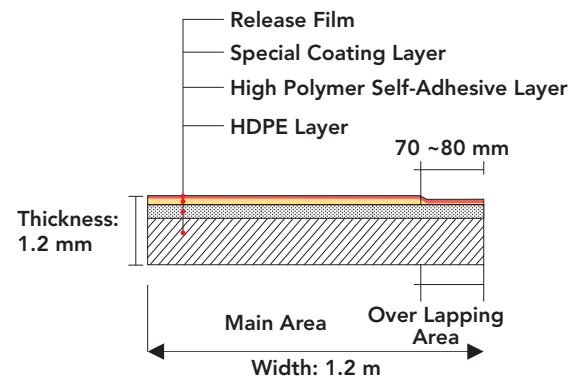
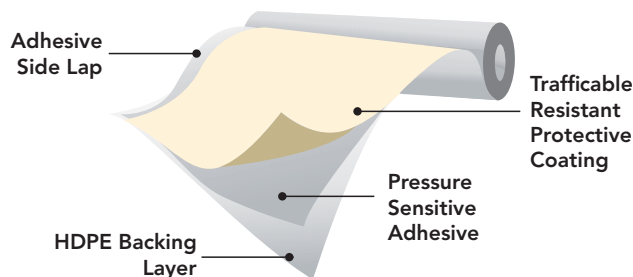
Chemical Properties:

Membrane made of High Density Polyethylene material and pressure sensitized adhesive. Protective coating and release liner is applied above this.

Physical Properties:

Colour: White

Dimensions: 1.2mm thickness, 1.2m width, 30m length



TECHNICAL DATA

Property	Typical Value	Test Method
Colour	White	
Thickness	1.2mm	ASTM D3767
Peel Adhesion to concrete	≥ 1200 N/m	ASTM D903 modified
Resistance to Hydrostatic Head	>70 m	ASTM D5385 modified
Low temperature flexibility	-23 deg C Pass	ASTM D1970
Puncture Resistance	>950 N	ASTM E154
Elongation	$>500\%$	ASTM D412 modified
Tensile strength (film)	28.2MPa	ASTM D412
Crack cycling @ -23 deg C	Pass	ASTM C836

APPLICATION METHOD

Substrate Preparation

All Surfaces — It is essential to create a sound and solid substrate to eliminate movement during the concrete pour. Substrates must be regular and smooth with no gaps or voids greater than 12mm. Grout around all penetrations such as utility conduits, etc. for stability.

Horizontal Blinding

Monolithic concrete blinding or mud slab is preferred. The blinding must be free of loose aggregate and sharp protrusions. An angular profiled blinding is recommended rather than a sloping or rounded substrate. The surface does not need to be dry, but standing water must be removed.

Vertical Sheet Piling

Use concrete, plywood, insulation or other approved facing to sheet piling to provide support to the membrane. Board systems such as timber lagging must be close butted to provide support and not more than 12mm out of alignment.

Membrane Installation

SmartCare Pre-Apply HDPE 40 can be applied at temperatures of 5°C or above. During cold or damp conditions, the selvedge and tape adhesive can be gently warmed using a hot air gun or similar to remove moisture or condensation and improve initial adhesion.

Horizontal Substrates —

Place the membrane HDPE film side to the substrate with release liner side up facing towards the concrete pour. End laps should be staggered to avoid a build up of layers. Leave plastic release liner in position until overlap procedure is completed. Accurately position succeeding sheets to overlap the previous sheet 75mm along the marked selvedge. Ensure the underside of the succeeding sheet is clean, dry and free from contamination before attempting to overlap. Peel back the plastic release liner from between the overlaps as the two layers are bonded together. Ensure a continuous bond is achieved without creases and roll firmly with a heavy roller. Completely remove the plastic liner to expose the protective coating. Any initial tack will quickly disappear.

Vertical Substrates —

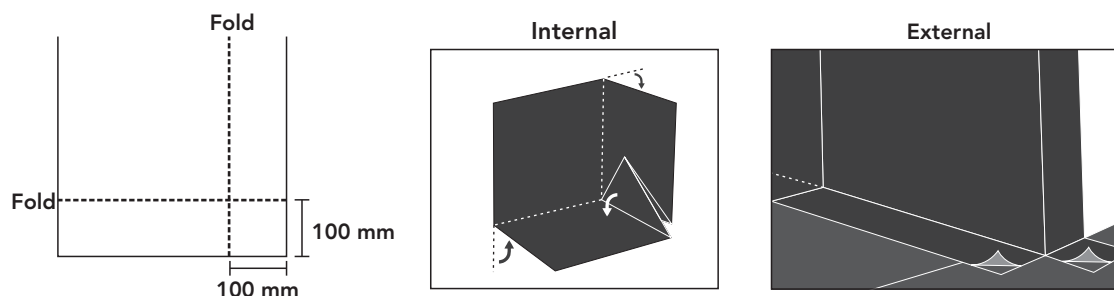
Mechanically fasten the membrane vertically using fixings (i.e. fasteners) appropriate to the substrate with the printed coated side facing towards the concrete pour. The membrane may be installed in any convenient length. Secure the top of the membrane using a batten such as a termination bar or fixing 50mm below the top edge. Fixings can be made through the selvedge so that the membrane lays flat and allows firmly rolled overlaps. Immediately remove the plastic release liner. Any additional fixings must be covered with a patch of SmartCare HDPE Bonding Tape. Ensure the underside of the succeeding sheet is clean, dry and free from contamination before attempting to overlap. Roll firmly to ensure a watertight seal.

Roll Ends and Cut Edges—

Overlap all roll ends and cut edges by a minimum 75mm and ensure the areas clean and free from contamination, wiping with a damp cloth if necessary. Allow to dry and apply SmartCare HDPE Bonding Tape centered over the lap and roll firmly. Immediately remove printed plastic release liner from the tape.

CORNERS

Internal and external corners should be formed as shown in the diagrams returning the membrane a minimum of 100mm and sealing with SmartCare HDPE Bonding Tape. Ensure that the apex of the corner is covered and sealed with tape and roll firmly. Crease and fold the membrane to ensure a close fit to the substrate profile and avoid hollows.



PROTECTION

No protection is required for SmartCarePreApply HDPE membrane. Reinforcement can be directly tied over it.

Note: Remove release liner only after final inspection and approval. It is recommended that concrete is poured within 40 days from application of the membrane.