Polyflex

Acrylic modified cementitious waterproofing coating

Two component, acrylic cementitious coating which cures to form a tough and flexible coating having excellent waterproofing properties.

CHARACTERISTICS

- Good flexibility. Thermal co-efficient of expansion similar to that of concrete
- Good adhesion to both, porous and non porous surfaces
- Good mechanical properties
- Suitable for light pedestrian traffic
- Excellent durability to long term weathering effect and UV exposure
- Non toxic, therefore suitable for use in potable water applications
- Resistant to carbon dioxide and chloride ion diffusion. (Forms a film that provides an anti carbonation coating over concrete. A 1mm coating provides anti carbonation cover which is equivalent to over 75 cm of concrete)

DESCRIPTION

Polyflex is a two part acrylic modified cementitious coating for protecting concrete structures against water, vapor, ingress of chloride ions, attacks of acidic gases and alkalis. It cures to form a tough flexible coating having excellent waterproofing properties. Polyflex is a blend of cement, selected fillers, polymers and graded silica sand which is in the powder form. The liquid contains acrylic co-polymers and wetting agents.

FIELDS OF APPLICATION

Used as a waterproofing and protective coating for the following structures:

- pile heads
- internal lining for potable water reservoirs and other water retaining structures
- protection of exposed concrete structures like bridge decks against carbonation and chloride attack
- inverted roofs, lift and inspection pits, swimming pools, spillways
- backing on marbles and granites to prevent the ingress of moisture

- general construction waterproofing
- wetarea (bathroom, kitchen, balcony, swimming pool and other features.
- moisture vapor barrier on facade damp proofing

APPLICATION INSTRUCTIONS

The application temperature should be between 5°C to 45°C. Application procedures may vary slightly depending upon site conditions. The general recommended guidelines for the application of the coating system is as follows:

Surface preparation

The surface must be structurally sound and free of oil, grease, dust and other contaminants which will affect the bonding. Any structural cracks and potholes shall be repaired with a suitable repair mortar from the Polycrete* range of repair mortars. The surface to be treated should be presaturated with water prior to application. However, any standing water shall be removed prior to application.

Mixing

Polyflex is supplied in two pre-measured parts which just requires on site mixing. Do not mix more material than that can be used within the pot life. Part mixing can be carried out by mixing 3 parts of powder with 1 part of liquid (by weight). Pour the liquid into a suitable container and slowly

add the powder to the liquid. Mix the contents using a slow speed drill (300-400rpm) fitted to a proprietary paddle mixer till a homogenous, lump free and creamy consistency is achieved. DO NOT ADD WATER TO DILUTE THE MATERIAL.

Application

It is recommended to apply Polyflex in two coats to provide a minimum thickness of 2mm. Each coat shall be applied @1.8 kg/m^2 which will give a dry film thickness of 1mm. The coating can be applied with a stiff brush or by an airless spray of nozzle size of 3-4mm and a pressure of 6-7 bar. After the application of the first coat and whilst the coating is still wet, embed a glass fibre mesh (CL 252 or similar materials) at all corners and other joints for added reinforcement. The second coat shall be applied after the first coat dries off completely (6-8 hours @25°C, 50% rh). For general protection against carbonation and alkali attacks, the coating can be applied in minimum 1mm thickness.

PROTECTION

Adequate protection needs to be provided for the coating in the following conditions:

- areas subjected to mechanical abrasion
- flowing water areas

Curing

The coating shall be cured immediately after it dries by wet hessian cloth or mist spraying for a minimum period of 72 hours. The coating will achieve its full mechanical properties within 7 days at 25°C and 50% rh.

CLEANING

Clean all tools immediately with water after use. Hardened materials can be removed mechanically only.

COVERAGE

1.8kg per m^2 per coat for 1mm dry film thickness.

STORAGE & SHELF LIFE

Store under cover, out of direct sunlight and protect from extreme temperatures. It is recommended to keep the powder bags on pallets and not stacked on the floor. The shelf life is up to 12 months when stored as per recommendations and in unopened conditions. Failure to comply with the recommendations will result in premature deterioration of the product and reduce its shelf life.

SUPPLY

Polyflex	20kg kit (Part A 15kg bag) (Part B 5L pail, wt 5.0kg#)
Polycrete range	25kg bag
CL 252	100mm x 50m

#Approximate weight

HEALTH & SAFETY

As with all construction chemical products caution should always be exercised. Protective clothing such as gloves and goggles should be worn. Treat any splashes to the skin or eyes with fresh water immediately. Should any of the products be accidentally swallowed, do not induce vomiting, but call for medical assistance immediately.

TECHNICAL SPECIFICATION

PROPERTIES	VALUES	TEST STANDARDS
color	Grey/ off white	-
Mixed density, [g/cc]	1.8±0.02	ASTM D 1475
Pot life, [minutes]	45	-
Tensile strength,# [N/mm^2]	> 8	ASTM D 412
Elongation, [%]	> 50	ASTM D 412
Adhesion strength, [N/mm^2]	> 0.5	ASTM D 4541
Crack bridging, [mm]	> 0.5	ASTM C 836
Hydrostatic pressure @5 bar, [50m]	No leakage	BS EN 12390 (part 8)
Hydrostatic negative pressure@3 bar, [30m]	No leakage	BS EN 12390 [part 8]
Toxicity	Non toxic	BS 6920 [WRAS]
Reaction to fire	Class A	ASTM E 84
Abrasion resistance,# [mg]	< 75	ASTM D 4060
VOC, [g/l]	< 50	ASTM D 3960/ D 2369
Drying time, [hours]	6-8	-
Full cure, [days]	7	-
Service temp, [°C]	-5 to 70	-

All values given are subject to 5-10% tolerance

#Values achieved with fibre mesh reinforcment

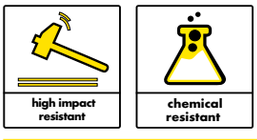
Polypoxy NF

Epoxy repair putty and bedding mortar

Used for bedding, gap filling, repair and adhesive applications.

CHARACTERISTICS

- Easy to use, non slumping
- Good impact resistance
- Resistant to acids, alkalis, oil, grease, hydrocarbon fuels and saline water
- No primer or bonding agent required
- High compressive strength
- Can be trowelled to smooth finish
- Does not Contain Asbestos, Chromated copper arsenate and Lead



DESCRIPTION

Polypoxy NF is an easy to use non-flowing, sand filled two component epoxy compound which can be used for bedding, gap filling, repair and adhesive applications.

FIELDS OF APPLICATION

- as concrete repair: repairing damaged concrete, filling of cracks.
- as a skim coat/filler on prepared floors prior to application of floor coatings and screeds
- as jointing compound: can be used to join pre cast concrete / GRC structures.
- as a bedding material: can be used for fixing tiles on heavy duty areas, bedding bridge beams or bridge bearing.
- excellent for anchoring bolts or replacement rebar and filling bolt pockets.
- as a bonding agent: it bonds to almost all rigid surfaces.
- as a mould: it can be molded to any shape.

ENVIRONMENTAL INFORMATION

Contributes toward satisfying LEED® v4 requirements of the EQ Credit- Low-emitting Materials (for the VOC content)

APPLICATION INSTRUCTIONS

Surface preparation

Clean all the surfaces and remove any loose particles, laitance, dust, oil, grease, paint etc. Abrade the bond area to improve mechanical bond.

TDS_Polypoxy NF_GCC_0322

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Mixing

Polypoxy NF part A and part B shall be mixed thoroughly using a trowel or gloved hand until a uniform color and consistency is achieved. For small mixes, ensure that both the parts are mixed as per the ratio of 60:40 (A:B).

Application

Application can be carried out by putty knife, trowel or wooden float. Press firmly to ensure proper adhesion and full contact. Additional build up can be done by multiple layer application. Thickness can be from 0mm - 5mm. The application of additional layers should follow between 8 - 24 hours after the first application.

CLEANING

Clean all the tools with Polysolvent immediately after use. Hardened materials can be removed mechanically only.

STORAGE & SHELF LIFE

Store in a cool, dry place and keep away from all sources of heat and sunlight. In tropical climates, store in air condition rooms. The shelf life is up to 12 months in un-opened conditions and if stored as per recommendations. Excessive exposure to sunlight, humidity and UV will result in the deterioration of the quality of the product and reduce its shelf life.

HEALTH & SAFETY

As with all construction chemical products caution should always be exercised. Protective clothing such as gloves and goggles shall be worn. Treat any splashes to the skin or eyes with fresh water immediately. Should any of the products be accidentally swallowed, do not induce vomiting, but call for medical assistance immediately.

COVERAGE

3 kg kit will cover 1.67 m^2 at 1mm thickness.

SUPPLY

Polypoxy NF	3kg kit

TECHNICAL SPECIFICATION

PROPERTIES	VALUES	TEST STANDARDS
Color & appearance	Grey/off white paste	-
Density, [g/cc]	1.85±0.05	ASTM D 1475
Application life, [minutes]	45	-
Compressive strength @7days, [N/mm^2]	>60	ASTM C 579
Flexural strength @7days, [N/mm^2]	>30	ASTM C 580
Tensile strength @7 days, [N/mm^2]	>12	ASTM C 307
Shear bond strength @7 days, [N/mm^2]	>40	ASTM C 882
Application thickness, [mm/layer]	0 to 5	-
Application temperature, [°C]	5 to 35	-
Service temperature, [°C]	-5 to 70	-
Initial cure, [hours]	Approx. 8	-
Final cure, [days]	7	-

All values given are subject to 5-10% tolerance

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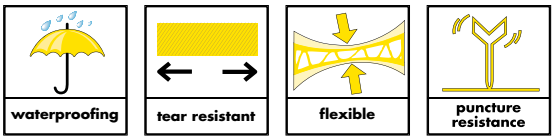
Bituplus E

SBS modified bituminous waterproofing membrane

Bituminous waterproofing membrane, modified with SBS polymers for excellent waterproofing and low temperature flexibility properties.

CHARACTERISTICS

- Excellent resistance to positive water & vapor pressure
- Good dimensional stability under tension
- Excellent flexibility. Can accommodate high structural movements
- High puncture and fatigue resistance
- Excellent tensile and tear strengths
- High resistance against water borne chemicals
- Exhibits good low temperature flexibility with no physical strain



DESCRIPTION

Bituplus E is a bituminous waterproofing membrane manufactured by blending a mixture of bitumen and SBS (Styrene Butadiene Styrene) polymers to obtain excellent waterproofing and low temperature flexibility properties. The polymerized bitumen is coated onto a dimensionally stable reinforcement core of non woven spun bond polyester rot-proof fabric.

FIELDS OF APPLICATION

Bituplus E membrane is typically used for waterproofing / damp proofing of the following areas:

- concrete foundations & footings
- basements
- pile heads
- swimming pools & water retaining structures (externally)
- tunnels
- wet areas (kitchens & bathrooms)

APPLICATION INSTRUCTIONS

The application temperature should be between 5°C to 55°C. Application procedures may vary slightly depending upon site conditions.

Surface preparation

The surface shall be cleaned thoroughly of all contaminants like dust, traces of curing compound, oil and grease. All surface imperfections, protrusions, structurally unsound and friable concrete must be removed and repaired.

Priming

Apply Polyprime SB* (Solvent based primer) @4-6 m²/L to a clean, smooth and dry surface by brush, roller or spray. Allow the primer to dry prior to the application of the membrane. The primer promotes the adhesion between the membrane and the concrete surface.

Alignment

Start the installation of all membrane plies from the low point or drains, so that the flow of water is over or parallel to the plies, but never against the laps. All overlaps at the membrane seams shall be installed so as to have "up" slope laps over "down" slope laps. Begin membrane application by unrolling the roll of Bituplus E membrane and aligning the side laps. Side overlaps should be a minimum of 100 mm and the end overlaps 150mm.

Torching

Bituplus E membrane is installed by using a cylinder fed propane gas torch. Use of hand-held roofing torch is recommended as it affords a good control. Begin torching the embossed polyethylene side of the rolled portion of the membrane. As the membrane is heated the embossing starts to melt away exposing a shiny bitumen surface. Roll forward the membrane and press firmly with the boot or roller against the substrate to bond well. The propane

flame should be moved from side to side and up the lap edge while the membrane is slowly unrolled and adhered to the underlying surface. Caution: Do not over torch the membrane as this will expose the reinforcement and cause damage to it.

Sealing

Heat both the overlaps and use round tipped trowel to seal the overlap. Adequate heat is confirmed when a uniform flow of melted bitumen compound flows evenly in a bead that oozes from the applied membrane's edges. Excess compound should be pressed into the seam using a heated trowel. Any un-bonded areas must be lifted and re-torched.

Protection

Bituplus E should be protected from getting damaged due to the ongoing site activities and during backfilling. Membranes laid on horizontal surfaces can be protected either by a cement sand screed (50mm thick) or by an asphaltic protection board (Bituboard)*. On vertical surfaces the membrane has to be protected with Bituboard. Bituboard can be fixed on the membrane by torching the underside of the board, or with a double sided bitumen adhesive tape (Watertite TS 15)*.
Please contact our technical service team for specific requirement.

STANDARDS

Bituplus E membranes are tested and conform to the requirements of ASTM and UEAtc 2001 standards.

STORAGE & SHELF LIFE

Bituplus E membrane rolls whether loose or on pallets have to be stored vertically in a shaded area, neatly covered by a thick fabric and tied securely in a manner that will minimize exposure to sunlight & UV. The membranes shall be protected from all sources of heat and extreme temperatures. The shelf life is 12 months if stored as per recommendations. Excessive exposure to sunlight, UV and other sources of heat will result in considerable deterioration of the product and reduce its shelf life.

HEALTH & SAFETY

Bituplus E contains a tacky bitumen compound which can stick to human skin during application. Such stains can be removed by using a cloth dipped in a suitable cleaner.

SUPPLY

Bituplus E	1m x 10m, wt 41kg#
Polyprime SB	20L pail & 200L drum
Bituboard	3.2mm 2m x 1m, wt 7.7kg# 6.0mm 2m x 1m, wt 14.0kg#
Watertite TS 15	10m x 50mm, wt 0.60kg

 # Approximate weight

TECHNICAL SPECIFICATION

PROPERTIES	VALUES		TEST STANDARDS
Product	4180	4200	
Thickness, [mm]	4.0	4.0	DIN EN 1849-1
Mass per unit area, [kg/m^2]	4.0-4.3	4.0-4.3	DIN EN 1849-1
Reinforcement [polyester], [g/m^2]	180	200	EN 29073-1
Coating asphalt	Styrene Butadiene Styrene Polymer Modified Asphalt		
Softening point [R&B], [°C]	>110		ASTM D 36
Penetration @25°C, [0.1mm]	20-35		ASTM D 5
Tensile strength [L/T], [N/5cm]	800/600	850/650	DIN EN 12311-1
Elongation at break [L/T], [%]	40/50	40/50	DIN EN 12311-1
Tear resistance [L/T], [N]	160/180 >400/300	180/200 >500/400	DIN EN 12310-1 ASTM D 5147 / D 4073
Resistance to static loading	Static : L_{25}		DIN EN 12730
Hydrostatic pressure @ 5 bar [50m]	No leakage		BS EN 12390 (Part 8)
Water absorption [BSP], [%]	<0.2		ASTM D 5147
Heat resistance @100°C	No flow		DIN EN 52 123
Low temperature flexibility	-3°C to -10°C		ASTM D 5147
Dimensional stability, [%]	<1		ASTM D 6164
VOC [g/L]	<50		ASTM D3960 / D2369

All values given are subject to 5-20% tolerance

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