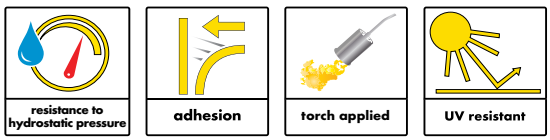
Watertite T2015

Bituminous waterproofing membrane system for deep structures up to 15m

CHARACTERISTICS

- Loosely laid system
- Remains independent of the structural movements and settlements
- Mechanical adhesion of polypropylene fleece of the top layer of the system with concrete forms the system as a part of the concrete structure
- Excellent resistance to water & vapor pressure
- Good dimensional stability under tension
- Excellent flexibility, tensile and tear strengths
- High puncture, wear & fatigue resistance
- High resistance against water borne chemicals
- Exhibits good low temperature flexibility
- Excellent UV resistance



DESCRIPTION

Watertite T 2015 is a 3 layer waterproofing system with 2 base layers of 4mm thick SBS modified bituminous membrane protected with a polypropylene fleece surfaced 3.5mm thick self-adhering bituminous membrane. It is designed for deep structures up to 15 meters from the ground level where high hydrostatic pressure is expected.

FIELDS OF APPLICATION

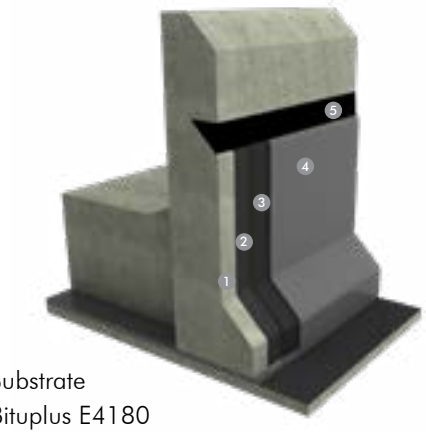
- Commercial buildings with deep excavations
- Deep structure near to sea
- Structures under high hydrostatic pressure

APPLICATION INSTRUCTIONS

The application temperature should be between 5 to 55°C. Application procedures may vary slightly depending upon site conditions. The general recommended guidelines for the application of the waterproofing system are as follows:

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 with a suitable concrete repair mortar. Provide a 45° cement sand angle fillet on all internal corners. External corners shall have a 20mm chamfer.



1. Substrate
2. Bituplus E4180
3. Bituplus E4180
4. Bitustick R400
5. Bitumastic

Priming

Priming is required only at the corners and pile heads. Polyprime SB primer shall be applied at a coverage rate of 4-5m²/L in all vertical and horizontal corners.

Installation

Provide a minimum 200 mm wide reinforcing strip of Bituplus E 4180 over the cement sand angle fillet in all the corners. Place the first membrane layer of the system (Bituplus E 4180) in a loosely laid manner on the blinding concrete. Start installation from the low point or drains. Begin membrane application by unrolling the first layer of the system and aligning the side laps. Side overlaps should be a minimum of 100mm and 150mm at the end overlap. The side and the end overlaps should be torched and sealed so that the first layer is laid loose on the blinding concrete in order to keep the system independent of structural movements.

Torch the second membrane layer (Bituplus E 4180) with 50% staggered overlaps above the first layer to form a fully-bonded layer and provide a complete seal against water penetration. Begin torching the embossed polyethylene side of the rolled portion of the membrane. The standard operating procedure for torching should be followed. Allow to heat the entire roll evenly, not just the lap areas, however with special focus on the laps.
Caution: Do not over torch the membrane as this will expose the reinforcement and cause damage.

Sealing

Heat the membrane and use a round tipped trowel to seal the overlap. Excess compound should be smoothened and pressed into the seam using a heated trowel. Any unbonded areas must be lifted and re-torched. Do not attempt to reseal by torching the top surface of the membrane.

The two layers of waterproofing membranes will be protected with a self-adhesive protection membrane (Bitustick R400), which does not only protect the previous layers but also acts as a third waterproofing layer. The presence of a polypropylene fleece on the Bitustick R400 membrane will ensure complete adhesion with the underside of the freshly placed concrete. Therefore, the waterproofing system is loose laid on the blinding concrete and bonded completely with the structural concrete and thus becomes part of the structure and the waterproofing system adjusts according to any possible structural movement / settlement.

Apply Bitutape TS 15 on the end joints and cut joints (wherever selvedge is not available) of Bitustick R 400 prior to laying of membrane. Unroll and align Bitustick R 400 membrane on second layer to fit the orientation and roll it back. Bitustick R 400 membrane should be placed on 50% of the staggered overlaps on top of the second waterproofing layer. Slowly peel off the release film at the back and simultaneously the release film from the top of Bitutape TS 15 while carefully placing the membrane without changing its orientation. Selvedge of 50mm width is available only on the sides of the membrane which allows continuous application of the subsequent rolls. The membranes shall be butt-jointed at the end laps using Bitutape TS 15 to provide a watertight sealing.

Injection Hose (Optional)

Unsealed construction joints can decisively lessen the durability and utility-value of concrete structures. Nowadays, injection hose systems are being increasingly used for sealing construction joints in waterproof concrete structures. The injection hose compliments the traditional waterstop systems. Pre injection will act like a second layer of waterproofing, this injection activity recommends the step before the dewatering. The area of application is usually at the construction joint (other application areas can be applied) where hardened and fresh concrete must be joined in such a manner that the sealing effect of the construction joint is fulfilled equally. Reliable sealing of construction joints, cracks in construction joints can be filled via Polyinject Hose PVC.

STORAGE & SHELF LIFE

Membranes must be stored vertically in a shaded area on wooden pallets neatly covered by a thick fabric and tied securely in a manner that will minimize exposure to sun light and UV. The membranes shall be protected from all sources of heat and extreme temperatures. The shelf life is up to12 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

Watertite T 2015 system 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

DISPOSAL

Watertite T 2015 system is non-hazardous, non-flammable and therefore can be disposed into any regular disposal area. However, it should be disposed only after wrapping with paper, plastic or cloth as the modified Bitumen has a tendency to soften under heat and pressure which would make further handling very tough. All disposal practices must be in compliance with all local laws and regulations.

SUPPLY

Bituplus E 4180	10M x 1M x 4MM	Roll
Bitustick R 400	8M x 1M x 3.5MM	Roll
Bitutape TS 15	10M x 100MM x 1.5MM	Roll
Polyprime SB	20L/200L	Pail/Drum
Bitumastic	20Kg	Pail
Polyinject Hose PVC	100m	Roll

TECHNICAL SPECIFICATION-SYSTEM

PROPERTIES	VALUES	TEST STANDARDS
Nominal thickness, [mm]	11.5	DIN EN 1849-1
Tensile strength, [L/T] [N/5cm]	>2000	ASTM D 5147
Tear Resistance, [L/T] [N]	>1200	ASTM D 5147
Puncture resistance, [N]	>2800	ASTM E154
Adhesion strength to freshly poured concrete, [N/mm]	>4	ASTM D 1000
Resistance to hydrostatic pressure, 7 bar	No leakage	BS EN 12390-8
Low temperature flexibility, [°C]	-10	ASTM D 5147
Chemical resistance	pH 2.5–11.5	ASTM D 543

All values given are subject to 5-20% variation

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