GREENSEAL 5000

LIQUID APPLIED WATERPROOFING MEMBRANE SYSTEM

DESCRIPTION

Greenseal 5000 is a waterproofing system ideally to be used between slabs to protect them against the penetration and lateral movement of water. Greenseal 5000 waterproofing membrane is a cold applied, seamless, elastomeric single component moisture curing bitumen modified polyurethane, specially formulated for hand application by using squeeze or roller to vertical or horizontal surface. It should be applied directly from the container (liquid application). It is designed especially for use as a flexible continuous waterproofing membrane between two-course concrete, between masonry construction and bituminous toppings and also for exterior below grade waterproofing of masonry.

USES

- Parking garages
- Pools decks
- Roof Top
- Shower stalls
- Mechanical rooms
- Fountains
- Bridges
- Highways
- Balconies
- Below grade slabs
- Culverts
- Around drains
- Dams
- Reservoirs
- Concrete tanks

PRODUCT PROPERTIES

Tests	Test Results	Standard
Shore A Hardeness	31	ASTM D-2240
Tensile Strength, Mpa	>2.0	ASTM D-412
Elongation, Percent, Avg.	>800%	ASTM D-638
Puncture Resistance, average	34 N	ASTM E-154
100% Modulus, Mpa	1.6	ASTM D-412
Adhesive to Concrete. Mpa (Pull-off Adhesive Test- applied on concrete)	0.9 (Cohesive B)	ASTM-D-4541
Weatherometer Atlas Xenon Arc Type (1000 hours)	 No Cracking No Hardening	ASTM G-26
Moisture VaporTransmission Perm. Inches/mm2/24h	 0.000248 grains	ASTM-E 96
Crack Test 1/16 inch, Cycled 10 times/24 hours@ 15 F	 No Loss of Bond or Cracking Exhibited	
Crack Bridging Test a) Original b) After contact in the following Chemical for 72 hours i) 0.5% (w/v) NaOCI ii) 1.25% (w/v) NH4OH iii) 3.7% (w/v) HCI	 No cracks No cracks No cracks No cracks	(Able to bridge crack up to 2mm in width)

* Results shown are typical but are not intended as performance criteria for on-site installed material.

ADVANTAGES

1. Inherent membrane flexibility
   - Permits nominal expansion and contraction without losing bond to substrate
   - Durable and remains elastic at extreme temperatures

2. Creates a seamless and continuous protective membrane
   - Effective water and vapour proofing system

3. Chemically impervious barrier
   - Resistant to acids, alkalis and salts
   - Not susceptible to bacteria attack

4. Wide range of curing temperature
   - From -4°C to 82°C

5. Irreversible chemical curing
   - Membrane remains intact after curing even when exposed to elevated temperatures

6. Seal Crack
   - Prevents new concrete from cracking
   - Able to rehabilitate cracked surfaces by sealing cracks up to 2mm wide

7. Ease of application
   - No special tools or equipment required

8. Anti Root
   - By forcing the root to travel elsewhere
   - Prevent future root growth while effectively stopping infiltration.

COVERAGE

20 litres per 12m^2 (1.65 litre/m^2) should produce a cured membrane of 1.10mm thick when GS 5000 is applied to lightly steel trowelled concrete surfaces. A minimum of 1.0mm is recommended to adequately cover nominal surface variations. Coverage may vary with the application technique used. Actual coverage rate and mm thickness depends on finishes and porosity of the substrate.

APPLICATION INSTRUCTIONS

SURFACE PREPARATIONS

Surface preparations are required before using Greenseal 5000.

Thoroughly clean concrete surfaces free of oil, grease, paint and loose dust, mud and laitance and hose down concrete surfaces thoroughly.
For best results, all concrete deck surfaces should be lightly steel toweled to a fairly smooth finish. New concrete must be water cured, at least 14 days old and the surfaces must be dry.

Static Joints and Cracks:
Joints and cracks less than (2.0mm) should be filled by prestriping. The material should be applied to both fill and overlap the joint or crack to a width of 4" (100mm) on each side.

Working or Expansion joints:

All such joints over (2.0mm) wide must be sealed with Greenseal sealant. Care however, should be taken to prevent the waterproofing membrane from adhering to the joint sealant. This could cause sealant or membrane failure. Such adhesion can be prevented by applying a coat of liquid household wax over the cured sealant, and prestriping as above. Joints treated in this fashion will function independently of the overall waterproofing system.

Metal Preparation:

All metal should be wire brushed or sandblasted to bright metal and then primed with Greenseal 5000 Primer prior to application of GS 5000.

Vent, Post Penetration and Drain Pipe:

Clean metal surfaces to bright metal and prime. Remove dust, debris and any other contaminants from voids. Seal with Greenseal sealant, as previously indicated. GS 5000 will adhere to PVC pipe without priming.

Cover Preparation:

The final or overall membrane is applied over the pre-striped cannot strip and up the vertical wall to the top of the wearing surface. In the event that joints result from the topping, they should be caulked with a Greenseal sealant and GS 5000 terminated at 1" below the top of the wearing surface.

Honeycomb and Void:

All honeycombing form-tie and void detected must be plugged with Greenseal injection grout prior to the application of GS 5000.

For treatment to cold joint between floor slab where vertical walls meets slab, the area shall be pre-stripped to 100mm wide on the slab of the concrete and 100mm on the vertical wall. The final membrane at the corner between the walls and slab.

After the surface treatment, just prior to or during the application, all dust, dirt and other contaminants must be removed by broom or preferably vacuum.

APPLICATION : WITHOUT FIBRE MESH

1. All surfaces to be thoroughly inspected, the concrete surface must be clean and free from oil, grease, paint, loose dust, mud and laitance.

2. Greenseal 5000 shall be applied directly onto the concrete surface after the recommended surface preparation work had been completed.

3. Applied directly from the container, no mixing is required.
4. Before application of the 1st coat of GS5000, apply a thin layer of Greenseal 5000 primer.

5. The coat of GS5000 shall be applied at the rate 1.65 litre/m² with a proper roller ensuring that all surface of the concrete surface is covered.

6. Mark up areas of approximately thirteen (12) m² per pail of 20 litres to achieve the final average thickness of 1.4 mm. This can be done by marking an area of thirteen (13) m² and pour 20 liters of Greenseal 5000 and evenly applied the content with a rubber edged notched squeegee by the rate of 1.65 litre/m² to achieve 1.4 mm thick of the waterproofing membrane.

7. The whole procedure is repeated from area to area until the whole roof surface is covered with Greenseal 5000, and ensuring that the membrane are overlapped at least 50 mm between coats.

8. For overnight application all joint or edge must have at least 100mm overlapping of Greenseal 5000.

9. On completion of the Greenseal 5000 membrane, it shall be proceed to protective cement panel. It shall be covered as soon as possible by protective screed to fall and if possible after 3 working days. A time frame of exposure of the membrane shall not exceed for more than one month. A cement/ sand (1:4) protective screed of 50mm thick shall be laid on the entire waterproofing system and embedded with BRC A4 in panels of 2m x 2m and joint of 10mm x 12mm and the joints to be filled with Greenseal Bituminous sealant with backer rod as base.

10. Tiling works shall be laid on top of protective screed.

<u>Using Greenseal 5000 with Greenseal Fiber Mesh</u>

For better tensile strength, use in conjunction with Greenseal Fiber Mesh.

APPLICATION : WITH FIBRE MESH

1. All surfaces to be thoroughly inspected, the concrete surface must be clean and free from oil, grease, paint, loose dust, mud and laitance.

2. Greenseal 5000 shall be applied directly onto the concrete surface after the recommended surface preparation work had been completed.

3. Applied directly from the container, no mixing is required.

4. Before application of 1st coat of GS5000, apply a thin layer of Greenseal 5000 primer.

5. The coat of GS5000 shall be applied at the rate 1.65 litre/m² with a proper roller ensuring that all surface of the concrete surface is covered.

6. After the Greenseal 5000 primer has been applied, ensure that the polyester fibre mesh is all flatten and the layer of Greenseal 5000 primer will be sipping through the polyester fibre mesh and some of the 1st coat GS 5000 will stay on top. It is important to roll the 1st coat with sufficient material and shall not be less than 1.65 litre/m² coverage.

7. Mark up areas of approximately thirteen (13) m² per pail of 20 liters to achieve the final average thickness of 1.4 mm. This can be done by marking an area of thirteen (13) m² and pour 20 liters of Greenseal 5000 and evenly applied the content with a rubber edged notched squeegee by the rate of 1.65 litre/m² to achieve 1.4 mm thick of the waterproofing membrane.

8. The whole procedure is repeated from area to area until the whole roof surface is covered with Greenseal 5000, and ensuring that the membrane are overlapped at least 50 mm between coats.

9. For overnight application all joint or edge must have at least 100mm overlapping of Greenseal 5000.

10. On completion of the Greenseal 5000 membrane, it shall be proceed to protective cement panel. It shall be covered as soon as possible by protective screed to fall and if possible after 3 working days. A time frame of exposure of the membrane shall not exceed for more than one month. A cement/ sand (1:4) protective screed of 50mm thick shall be laid on the entire waterproofing system and embedded with BRC A4 in panels of 2m x 2m and joint of 10mm x 12mm and the joints to be filled with Greenseal Bituminous sealant with backer rod as base.

11. Tiling works shall be laid on top of protective screed.

FEBRE MESH PROPETIES

DESCRIPTION		RESULT
Weave:		Plain
Material (Tex):	Warp: Weft:	22 x 1 x 2 44
Density (counts/inch):	Warp: Weft:	20 10
Unit weight (g/m²)	Raw: Finished product:	54±5 60±5
Content of resin:		≥14%
Tensile strength (N/50mm):	Warp: Weft:	≥650 ≥320
Tensile strength after 28days conditioning in 5% NaOH:	Warp: Weft:	≥50% of original ≥50% of original

MIXING

- No mixing is required.

CURING

The freshly applied GS 5000 shall be protected from direct rain, dirt, oil, grease or other loose particle for at least 12 hours. It is foot trafficable after 24 hours and resistant to light mechanical stress after 3 days. Permanent water pressure resistance shall be achieved after a full hardening of 7 days.

CLEANING EQUIPMENT

Upon completion of the application, tools and equipment should be cleaned immediately with Greenseal Reducer.

STORAGE AND SHELF LIFE

Greenseal 5000 has a shelf life of 12 months. Keep containers tightly closed and away from ignition sources. Do not expose it to direct sunlight or leave it too long in the open air.

A thin layer of skin coat may occur after content is long exposed to the air. However, this can be easily removed and the rest of the content can be used.

POT LIFE

Greenseal 5000 can be used up to 3 months once the packaging is opened. Protect from heat and frost.

PACKAGING AND APPEARANCE

- 20 litre pail
- Colour: Black bitumen

PRECAUTION

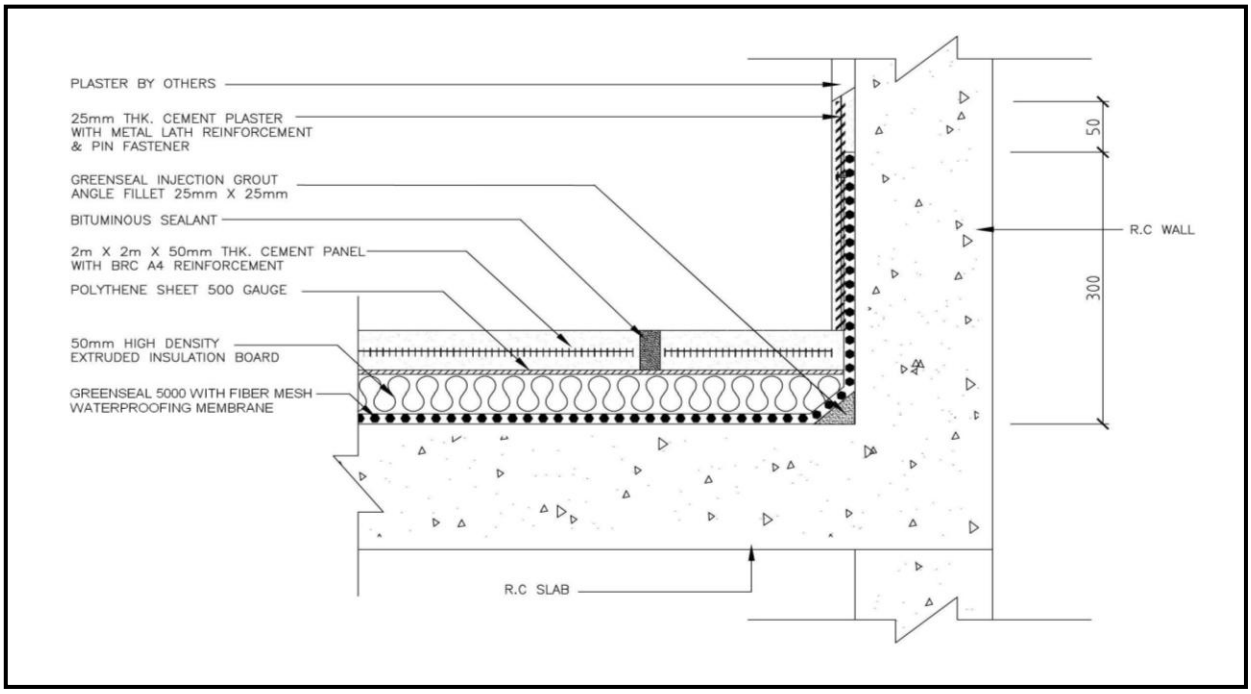
- Bubbling may occur if apply on substrates that are wet.
- Greenseal 5000 should not be used as exposed or wearing surfaces.
- Greenseal 5000 should not be used where a solvent odour is objectionable such as in close proximity to areas where food preparation or processing take place during the time of application.

HEALTH, SAFETY AND CLEANING

It is recommended that the applicator wears a safety goggles and gloves. Avoid prolonged contact with exposed skin, and keep away from mouth and eyes. In case of skin contact, wash areas with soap and water. If contact with eyes, rinse thoroughly with clean water. Seek medical attention immediately if irritation persists.

TECHNICAL PHOTO USING GREENSEAL 5000 WATERPROOFING SYSTEM

TECHNICAL DRAWING USING GREENSEAL 5000 WATERPROOFING SYSTEM



Guarantee

The information contained in this leaflet is based on our experience and technical knowledge, obtained through laboratory testing and from bibliographic material. GREENSEAL reserves the right to introduce changes without prior notice. Any use of this data beyond the purposes expressly specified in the leaflet will not be the Company's responsibility unless authorized by us. Our guarantee covers exclusively the quality of the manufactured product. We will not accept any responsibility exceeding the value of the purchased product.

Greenseal Products (M) Sdn Bhd, Lot 5 & 7, Jln 35/10A, Taman Perindustrian IKS, Mukim Batu Caves,
68100 Kuala Lumpur, Malaysia. Tel : 603-61882298 Fax : 603-61861298
E-mail : enquiries@greenseal.com.my URL: http://www.greenseal.com.my
Greenseal is certified by MS ISO 9001:2008 Quality Management System