SILCOR® 575 HB

One-part high build polyurethane waterproofing membrane

Product Description

A one-part, liquid applied, high solids, polyurethane (PU) waterproofing membrane. It is formulated for simple, high build application to horizontal and vertical substrates. After application, the product cures through reaction with ambient humidity, forming a tough, flexible, elastomeric membrane.

Uses

SILCOR® 575 HB is specifically designed for use as a robust, high build waterproofing and detailing membrane on non-exposed vertical and horizontal substrates. The product may also be used on exposed vertical and horizontal areas, when overcoated with SILCOR Top Coat 75 as UV colour stable and foot trafficable membrane protection. Typical applications include:

- Retaining walls
- Lift pit walls
- Planter boxes
- Green roofs and landscaped decks
- Upstands, penetration and drainage outlet detailing
- Exposed and covered walls
- Window / door rebates and reveals
- Plant room floors and bunds
- Balconies, roof decks and podiums

Product Advantages

- Seamless – liquid applied and monolithic, eliminating vulnerable joins, seams and laps
- High build – suitable for vertical application
- Fully Bonded – no water tracking between membrane and substrate
- Simple Application – one-part, humidity cured. Applied by roller or brush to horizontal surfaces
- Cold Applied – no flame or heat required for application
- Low VOC – reduced EH&S issues on site
- Flexible – long life elastomeric membrane.
- Accommodates typical structural movement
- Bridges non-structural concrete shrinkage cracks without full membrane reinforcing
- Polyurethane Chemistry – free from bitumen or tar – will not bleed or stain
- Internal Wet Areas – compliant with AS 3740-2021
- External Above Ground – compliant with AS 4654-2012

Design

Generally, all horizontal substrates to have a minimum 1:100 fall to drainage and/or not retain water other than residual due to substrate surface tension. Consult the GCP Technical Department for specific design requirements on your project.

System Components

- SILCOR 575 HB – 1-part PU membrane
- SILCOR Primer BS – 1-part solvent-based PU primer for dry cementitious, masonry, metal and timber substrates
- SILCOR Primer BW – 2-part, water borne epoxy primer for green, damp or dry cementitious, masonry and metal substrates
- SILCOR Top Coat 75 – 2-part, solvent based, UV stable PU, protective top coat. Only used over exposed SILCOR 575 HB membrane or in foot trafficable areas
- SILCOR LM PU Sealant – 1-part polyurethane sealant for detailing and joint sealing
- Reinforcing PE Fabric Strip – Non-woven, needle punched polyester reinforcing fabric. For membrane reinforcement at high movement junctions, if required

Compatibility / Adhesion

SILCOR 575 HB may be applied to the following cured, stable, prepared and primed substrates:

- Concrete, blockwork, brick
- Cementitious screed, render or topping slabs
- Water resistant timber, plywood or particle board
- Many types of metals
- Compressed Fibre Cement sheet (CFC), Cement Composite Sheet (CCS)
- Glass reinforced concrete (GRC)
- Rendered, aerated autoclaved concrete (AAC)

Substrate Quality

Substrates must be structurally sound, smooth, clean and dry.

New Concrete

Well compacted, moisture-cured as required by AS 3600. Minimum age of concrete at time of waterproofing application should be 14-28 days, dependent on concrete thickness, moisture content and GCP primer being used.

Curing and Form Release Compounds

Only non-permanent, degrading acrylic types may be used. Residues must be removed by water blasting or grinding prior to priming.
Wax emulsion, oil, hydrocarbon, hydrocarbon resin, chlorinated rubber, silicon containing or bitumen emulsion types are unacceptable and will prevent adhesion of waterproofing to substrate.

Concrete Strength

Compressive strength - minimum strength grade 25 MPa.
Concrete surface pull-off strength - minimum 1.0 MPa for non-trafficable and 1.5 MPa for trafficable surfaces.

Concrete Finish

Steel trowel, light power float or off-form, to give a well compacted (not burnished) surface free of honeycombing, voids or excessive porosity. Porous, low surface strength, tamped, bull float or broom finishes are unacceptable and must be rectified prior to primer and membrane application.
Where non-ponding external surfaces are specified, in accordance with AS 4654.2, concrete provided to the applicator shall be set to falls and be free of ponding depressions.

Concrete Block, Brick and Stone Masonry Finish

Sound, flush pointed mortar joints with no gaps or voids. All block work shalle be reinforced and fully core filled.
Excessively porous block work may require sealing with high strength fairing compound prior to primer and membrane application.

Screeds and Toppings

Structurally sound, fit for purpose, minimum 20 MPa compressive strength grade and reinforced or resistant to fracture or break-up in use.

Substrate Preparation

Concrete and Masonry

Remove all dirt, dust, concrete spillage, weak material, laitance, oil, grease, coatings, curing compounds, form release agents, tyre rubber marks, rain damage and other contaminants/defects by an appropriate method. This may include brooming, vacuuming, scraping, water blasting (4000 psi with RotorJet head), captive sand blasting or grinding.
Chamfer external corners and remove residues from internal corners and expansion joints.
Repair non-structural defects including bug holes, honeycombing, rain damage and gross pin holing using a minimum 25 MPa, low shrinkage PMC or epoxy repair mortar or fairing compound.
Advise main contractor of identified structural cracks and moving construction joints. Rectifications to be arranged by main contractor.
Chase construction joints to a minimum size of 10 x 10mm (square cut only). Chase shrinkage cracks to a minimum size of 10mm x 10mm (square cut preferred) and clean chase.
Allow all repairs to cure fully and dry to a moisture content below the maximum allowable for the GCP primer being used (see relevant primer PDS).
Note - Outgassing occurs naturally in concrete surfaces and can lead to pin hole formation in applied primers, membranes and coatings. Rectification of rain damaged or burnished concrete by grinding or sand blasting can expose high porosity concrete, leading to increased outgassing. The applicator must assess the prepared substrate for porosity and adjust repair and priming methods accordingly to minimise the effects of outgassing.

Compressed Fibre Cement Sheet (CFC)

Ensure sheeting materials used are free of all surface sealers, coatings and acrylic primers.
Ensure sheets have been installed to the manufacturer's requirements, and are clean, dry and contaminant free.

Light Weight Cement Composite Sheet (CCS)

In addition to CFC sheet requirements, due to laminar structure and low internal strength of CCS sheets, they must be prepared and primed carefully using a very low viscosity, high penetration GCP primer such as SILCOR Primer BS, only.

Metals

Remove all dirt, dust, oil, grease, corrosion and oxides from steel, aluminium, zinc/galvanising, copper, stainless steel etc. and roughen surface by abrasion or garnet blasting to SA 2.5 near white metal. Solvent wipe with clean xylene or methyl ethyl ketone (MEK) on a clean, lint free cloth. Prime surface within 30 minutes to minimize surface oxidation.

Plastics

Remove all dirt, dust, oil, grease and other contaminants.
For PVC, epoxy, polyester and ABS, solvent wipe with MEK solvent immediately prior to priming.
For difficult to bond plastics such as HDPE or PP, consult the GCP Technical Department before proceeding.

Aerated Autoclaved Concrete (AAC)

Surface must be high-strength rendered to seal and provide a strong, smooth finish. Allow render to dry to a moisture content below the maximum allowable for the GCP primer being used (see relevant primer PDS).

Detailing

External Above and Below Ground Areas

Detail according to NCC and AS 4654.2 requirements, by installing minimum 15 x 15mm bond breaker fillets of SILCOR LM PU Sealant to all internal corners, penetrations, drainage outlets etc.
Allow sealant to cure a minimum 24 hours.

Expansion Joints

For expansion and other movement joints designed with movements less than ±10mm (total of 20mm), install suitable closed cell backer rod to joints. Set depth to achieve correct joint geometry (see SILCOR LM PU Sealant PDS).
Gun SILCOR LM PU Sealant to joint recess and tool to a smooth concave finish. Allow sealant to cure a minimum 24 hours.
For expansion and other movement joints designed with movements greater than ±10mm (total of 20mm), employ proprietary expansion joint seals (by others), or contact your GCP representative.

Chased Non-Moving Construction Joints & Shrinkage Cracks

Prime chase sides using SILCOR Primer BS. Allow to cure tack free. Install bond breaker tape to base of primed square cut chases. Gun SILCOR LM PU Sealant to primed chase within 24 hours of priming. Tool to a smooth concave finish. Allow sealant to cure a minimum 24 hours.

CFC & Cement Composite Sheet Joints

Gun SILCOR LM PU Sealant to joint and tool to a smooth concave finish. Allow sealant to cure a minimum 24 hours.

Internal Wet Areas

Detail according to NCC and AS 3740 requirements, by installing minimum 12 x 12mm bond breaker fillets of SILCOR LM PU Sealant to all internal corners, penetrations, drainage outlets etc.
Allow sealant to cure a minimum 24 hours.

Priming

General

- All substrates must be primed prior to applying SILCOR 575 HB membrane.
- Application to highly porous substrates while substrate temperature is increasing may result in concrete outgassing and pin-hole formation in primer. This can be reduced or prevented by priming substrates in the late afternoon or evening, when concrete temperature is stable or falling.
- The applicator must inspect the primed substrate to ensure it is pin-hole free and rectify pin-holed primer, prior to membrane application.
- Adjust application procedures and schedule to suit local conditions.
- Membranes must be applied to the primed surface within the primer recoat window. Consult the relevant primer PDS for further details. If recoat time of primer is likely to be exceeded, broadcast the freshly applied primer with clean, kiln dried, sharp quartz sand of 0.5 to 1.0mm diameter to 120% coverage (to refusal). Allow primer to cure completely and remove excess loose sand by vacuuming. Membrane may be applied to the sand blinded surface up to 14 days after laying, provided the surface remains clean, dry and free of all contamination.

Ensure the following parameters are met prior to and during primer application:

PARAMETER	LIMITS
Substrate Temperature	+5°C to +35°C with temperature stable or falling
Ambient Temperature	+5°C to +35°C
Relative Humidity	30% to 85%
Dew Point	Minimum 3°C below substrate temperature

Concrete, Masonry, Screeds and CFC Sheet – Below 5.0% Moisture Content

- Prime prepared substrates using SILCOR Primer BS or SILCOR Primer BW at a minimum rate of 0.3kg/m², by roller.
- For greatest penetration and substrate adhesion,SILCOR Primer BW is preferred.
- Where low odour or significant outgassing occurs, use SILCOR Primer BS.
- Coverage rate is dependent on surface porosity and may require two or more applications.

Consult the relevant primer PDS for further application information.

Concrete, Masonry, Screeds and CFC Sheet – Below 10.0% Moisture Content

- Prime prepared substrates using only SILCOR Primer BW at a minimum rate of 0.3kg/m², by roller.
- Coverage rate is dependent on surface porosity and may require two or more applications.

Consult the relevant primer PDS for further application information.

Light Weight Cement Composite Sheet

Due to the laminar nature of light weight cement composite sheet (SCYON™ and similar products), prime using only SILCOR Primer BS for highest penetration, adhesion and consolidation of substrate.
Coverage rate is dependent on surface porosity and may require two or more applications.

Consult the relevant primer PDS for further application information.

Metal, Plastic, Timber and Other Substrates

Consult the relevant primer PDS or GCP Technical Department for further application information.

Membrane Application

General

Ensure the following parameters are met before and during application:

PARAMETER	LIMITS
Substrate Temperature	+5 °C to +35 °C with temperature stable or falling
Ambient Temperature	+5 °C to +35 °C
Relative Humidity	30% to 85%
Dew Point	Minimum 3 °C below substrate temperature
Condition	Clean, dry and free from condensation, contaminants, stones, leaves etc.

Application Equipment

SILCOR 575 HB membrane is best applied in two cross directional applications by medium-nap, non-shedding roller or brush. Airless spray application is possible. Consult the GCP Technical Department for further information.

Mixing

Mix material thoroughly before use using a minimum 650W, variable speed drill (maximum 300 RPM) fitted with a clean paddle or "Jiffy" type mixer. Avoid entraining air into the product during mixing.

Applied Membrane Thickness Control

Apply membrane at or above the minimum required thickness, as detailed in the GCP Project Specification. Product must be installed at the correct and specified Dry Film Thickness (DFT). Consult your GCP Specification for the project or contact your representative for further details.
To ensure correct DFT is installed, test applied thickness during application using a clean, accurate Wet Film Thickness (WFT) gauge and adjust applied thickness of liquid membrane accordingly. Test WFT regularly, typically every 2m² (0.5m² to 1m² for small areas).

Horizontal, Vertical or Sloping Application

SILCOR 575 HB is suitable for horizontal, vertical and sloping applications. Minimum required Dry Film Thickness (DFT) is typically achieved in two applications. Note this product is not self-levelling. Two or more coats are typically required to achieve the required DFT. One coat application may be employed, however full through cure time will be extended.

Applied Membrane Appearance

SILCOR 575 HB is a high build membrane. It is not designed to self-level. Application by roller or brush typically produces a textured surface finish, unsuitable for use in direct foot traffic areas (with SILCOR Top Coat 75 as UV protection), or where a smooth, aesthetically pleasing finish is required.

Movement Areas

At potential movement areas such as detailed and sealed expansion joints, construction joints and active cracks, install a bond breaker tape centred over the joint or crack. Bond breaker tape should be a minimum 90mm wide for expansion joints, minimum 45mm wide for construction joints and minimum 20mm wide for moving cracks.
Bond breaker tape must be flexible, polyethylene faced, single sided adhesive and resistant to primer, membrane, xylene and heat (90°C or greater). Tape must be less than 0.5mm thickness. Adhesive must be natural rubber or butyl rubber based. Suitable tapes are 3M 8979 or Tesa 58663.

Reinforcing

Full reinforcing of SILCOR 575 HB is not typically recommended, provided the membrane is applied to the minimum specified WFT/DFT. Where high movement is expected at junctions and joints and use of a bond breaker tape is not possible, a reinforcing strip may be employed, as detailed in Membrane Detailing below.

Membrane Detailing

- To the SILCOR LM PU Sealant detailed internal corners, chamfered external corners, construction joints, penetrations, drainage outlets and cracks, apply SILCOR 575 HB as a minimum 150mm wide application centred over the sealant fillet/corner/bond breaker tape. Apply to provide a minimum 1.0mm DFT (1.17mm WFT) and allow to cure to minimum recoat time.
- To the SILCOR LM PU Sealant detailed expansion joints, apply SILCOR 575 HB as a minimum 200mm wide application centred over the joint bond breaker tape. Apply to provide a minimum 1.0mm DFT (1.17mm WFT) and allow to cure to minimum recoat time.

Where reinforced membrane is required in high movement areas, without bond breaker tape, the following process is recommended to ensure correct membrane function:

- Apply SILCOR 575 HB to a minimum 1.0mm DFT (1.17mm WFT) as detailed above and allow to cure to minimum recoat time.
- Apply a second coat of membrane and lay Reinforcing PE Fabric strip into the wet membrane. Wet fabric through with membrane completely, ensuring no bubbles or wrinkles are present.
- While wet, apply additional membrane to fully cover the reinforcing fabric with a minimum 1.0mm WFT of membrane. Allow to cure to minimum recoat time.
- Use only GCP's Reinforcing PE Fabric as reinforcing. Do not use fibreglass chopped strand mat or other reinforcing materials.
- Reinforce using the step wise method shown in i) to iii) above. Do not use a one-step wet-on-wet reinforcing method.

Application of Continuous Membrane

- Apply SILCOR 575 HB membrane to primed and previously membrane detailed areas, at or above the minimum required thickness in one or more coats.
- Required minimum thickness is dependent on installation area, type of use of the area, topping or membrane protection being employed and product warranty period required and will be specified in the GCP Project Specification or architect's specification. Where not specified, a minimum DFT of 1.5mm must be employed, in one or two coats.
- Allow to dry fully between coats. Test WFT during application using a WFT gauge and adjust applied thickness accordingly.
- Continue membrane to turn-ups by a minimum 100mm above finished surface level, or as detailed in project specification or AS 4654.2-2012.

Typical Membrane Cure & Recoat Times

AMBIENT TEMP. (°C)	TACK FREE TIME (HRS)	MINIMUM RECOAT TIME (HRS)[1]	MAXIMUM RECOAT TIME (HRS)[2]	READY FOR TOP COATING, BACKFILLING, TOPPING OR FLOOD TEST (HRS)[3]

35	3	8	36	36
30	3.5	10	40	40
22	4	12	48	48
10	10	18	72	72
5	15	30	130	130

Note – Above times will be extended if RH (Relative Humidity) is less than 60%
1 - Minimum Recoat Time = Light Applicator Foot Traffic Allowed
2 - Maximum Recoat Time = Applicator Foot Traffic Allowed
3 - Ready for Flood Test etc. = Open to Access by Other Trades

Top Coat

Mix SILCOR Top Coat 75 and apply minimum two cross-directional coats by brush, roller or airless spray to a total minimum rate of 0.3 kg/m² to give a uniform finish. All membrane remaining exposed / partially exposed must receive to coat as protection against UV and foot traffic damage.

Clean-up

Clean application equipment immediately using xylene solvent. Cured product must be removed mechanically.

Protection and Surfacing

SILCOR 575 HB must be permanently protected from damage by one of the following:

Unbonded Screed or Unbonded Topping Slab

Install PROTECTOBOARD™ or a double layer of minimum 250 micron builder's plastic over the cured membrane as a slip sheet, prior to installation of screed or topping slab. Ensure all protection sheet laps are taped to seal.

Direct Stick Tiles, Bonded Screed or Bonded Topping Slab

Membrane surface should be compatibilized before application of cementitious tile adhesives, bonded screed or topping slab as follows:

- Between 12 and 48 hours of final membrane application, lightly solvent wipe the membrane surface using isopropanol. Allow to dry, then apply a coat of SILCOR 575 HB membrane at a rate of 0.7 kg/ m² (WFT=0.5mm). Broadcast the freshly applied membrane with clean, kiln dried, sharp quartz sand of 0.5 to 1.0mm diameter to 120% coverage (to refusal). Allow membrane to cure at least 24 hours and remove excess loose sand by vacuuming. Membrane must not be visible through the sand cover.
- Tiles may be applied using high quality polymer modified cementitious tile adhesives.
- Screeds and topping slabs should be polymer modified, or have a minimum 20 MPa compressive strength, to resist break-up in use.

Backfill

Install PROTECTOBOARD or RAPID-DRAIN™ to membrane as protection and/or drainage prior to backfilling with graded fill or filling of planters with soil.
Where non-graded fill is to be used, install PROTECTOBOARD™ HS or high compressive strength drainage cell as protection.

Landscaping

Install PROTECTOBOARD, RAPID-DRAIN, heavy-duty drainage cell or heavy-duty needle punched geotextile (minimum 500gsm) over the cured membrane as protection and/or drainage prior to soil loading.

Pavers

Install pavers on adjustable supports (pods) positioned directly on the membrane surface. Where gaps between pavers will be present, protect the membrane from direct and indirect UV exposure by applying SILCOR Top Coat 75, heavy duty (minimum 500gsm) geotextile PROTECTOBOARD, or 2 x layers of 250 micron black builder's plastic prior to support and paver installation.

Pebble Ballast

Install RAPID-DRAIN drainage cell over membrane to protect and ensure free drainage to falls prior to loading of pebble ballast. Ballast must be hand loaded with care to prevent damage to drainage cell or and membrane.

Insulation and Ballast

Install foam sheet insulation over RAPID-DRAIN to ensure free drainage to falls. Cover insulation with geofabric prior to loading of pebble ballast.

Top Coat to Exposed Trafficable and Non-Trafficable Areas

Protect all exposed membrane (turn-ups, planter boxes above soil level etc) by application of SILCOR Top Coat 75 within 72 hours of membrane application. Apply at a minimum rate of 0.3 kg/m² in two cross-directional coats to give an even finish.

Maintenance

Refer to the relevant GCP Operation and Maintenance Manual for details. Consult your GCP sales representative for further information.

Estimating

Please contact your local GCP representative or the GCP Technical Department for information specific to your project estimating requirements.

Limitations

- When applied with a smooth finish at the recommended minimum thickness and combined with SILCOR Top Coat 75, the system is suitable for maintenance foot traffic. However, this system is not suitable for vehicle traffic. Minimum applied thickness required is dependent on intended areas of application and warranty period desired. Consult your GCP sales representative or the GCP Technical Department for further information.
- Cure rate is affected by temperature and humidity.
- High temperatures and/or high humidity will cause rapid surface skinning and cure.
- Low temperatures and/or low humidity will significantly extend cure time. Humidity below 25% RH can prevent product cure. Information contained in this document does not cover all possible application scenarios or imply product suitability for an application. Do not use water spray or misting to accelerate cure.

Please contact your local GCP representative or the GCP Technical Department for further information.

Safety and Handling

Read and understand the product label and Safety Data Sheet (SDS) for each system component. All users should acquaint themselves with this information prior to working with the products and follow the precautionary statements. SDSs can be obtained by contacting your local GCP representative or office. SILCOR 575 HB is slippery when uncured. Avoid walking on applied or spilt product.

Storage

Product should be stored in original packaging at temperatures between 15° and 25°C, under cover and protected from all sources of heat, ignition, moisture, frost and direct sunlight.

Shelf Life

Nine (9) months from date of manufacture when stored in original, unopened packaging, in accordance with storage conditions detailed above. Once opened, product may solidify within days.

Supply and Packaging

PRODUCT	PACKAGE SIZE
SILCOR 575 HB	22 kg pail
SILCOR Primer BS	17 kg pail (17.9 L)
SILCOR Primer BW - Resin	10 L pail
SILCOR Primer BW - Hardener	10 L pail
SILCOR LM PU Sealant	600 ml sausage
REINFORCING PE Fabric	100/150/300mm x 50m roll
SILCOR Top Coat 75 - Resin	15 kg pail (13.2 L)
SILCOR Top Coat 75 - Hardener	3 kg pail (3.0 L)

PROTECTOBOARD™	1830 x 1220 x 3mm
RAPID-DRAIN™	15240 x 1220 x 10mm

Product Properties

PROPERTY	TYPICAL VALUE
Liquid Membrane Properties	
Membrane Chemistry	High solids polyurethane
Appearance	Grey viscous liquid
Specific Gravity[1] (g/ml)	1.40 ±0.03
Viscosity[1] (mPa.s) Brookfield (LV spindle 3/12 rpm)	45,000 ±10,000
Solids Content (%w/w)	91 ±3
Tack Free Time[1] (hours)	4 hrs
Gel Time[1] (hours)	6
Min. Recoat Time[1] (hours)	12
Max. Recoat Time[1] (hours)	48
Min. Cure Time[1] – Ready for flood testing, topping, backfilling (hours)	48
Fully Cured Membrane Properties	
Shore A Hardness (°A)	65 ±5
Tensile Strength (MPa)	> 2.5
Elongation (%)	> 500
Tear Strength (N/mm)	> 13.0
Adhesion to Primed Concrete (MPa)	> 1.5
Cyclic Crack Bridging	Pass – Class III
Root Resistance	Resistant to nonaggressive root systems
Bio Resistance	Resistant to microbial degradation

1 – Tested at 25°C / 60% RH. Values may vary dependent on temperature and/or humidity at time of use. The above values and properties do not constitute a specification.

Product Warranties

GCP and contractors recognised by GCP as experienced in the application of GCP products will provide warranties for qualified individual projects. Warranty periods offered are dependent on project details and complexity. Contact your local GCP representative for further details.

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gcpat.com.au/solutions/products/silcor-liquid-waterproofing/silcor-575-hb