BUMATECH

Tile Adhesive • Waterproofing • Dry Mix • Construction Chemicals

APPLICATION PROCEDURE · 2027



QTTC 07 INTERIORS & WET AREAS GROUP

BATHROOM WATERPROOFING & TILING

8 system layers · 7 application steps · 3 signed-off hold points

SINGAPORE GREEN BUILDING COUNCIL MEMBER

VGBC STANDARD MEMBER

COMPANY PROFILE BUMATECH

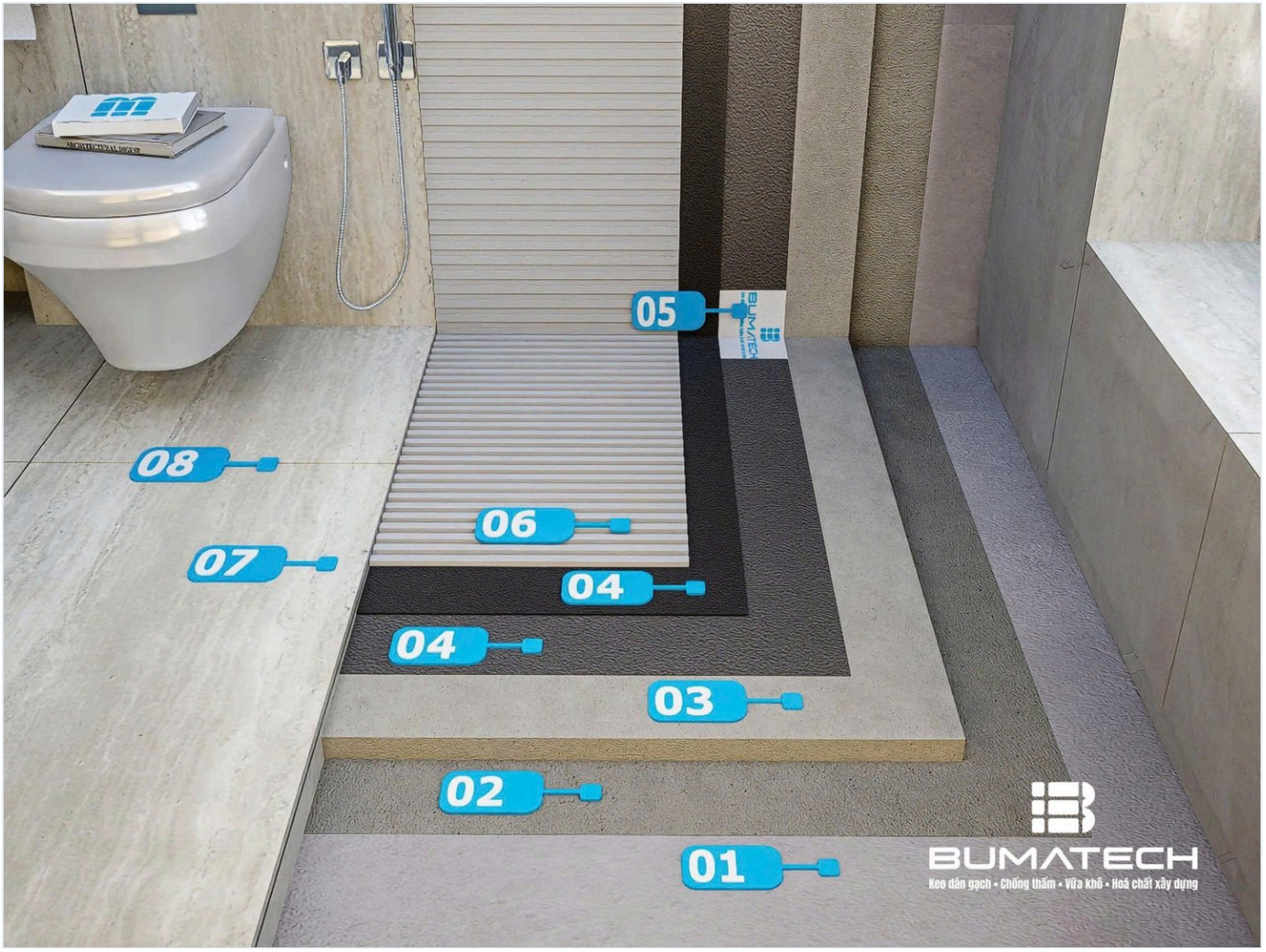
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01 PURPOSE AND SCOPE

Guidance on waterproofing and finish tiling of toilets and bathrooms in residential houses, high-rise buildings, schools, hospitals, hotels and shopping centres.

Applies to bathroom floors and walls on concrete substrates: rendering and laying a screed to falls with ready-mixed mortar, two-coat waterproofing with reinforcing tape, a flood test, then tiling with class C2 or higher tile adhesive.

02 PRODUCT SYSTEM BUILD-UP



01	Concrete
02	Bonding coat **BuMaLATEX**
03	Wall render, floor screed **Re 100** / **Sc 100**
04	Waterproofing **FLEX WP 2K** / **BuMaLASTIC**
05	Elastic reinforcing tape **BuMaTAPE**
06	Tile adhesive **BuMaFIX** + **LATEX SP** / **BuMaECO** + **CeRaLASTIC** / **BuMaSET** / **BuMaBOND** / **BuMaFLEX**
07	Finish tiles
08	Tile grout **CeRaCOLOR USG** / **CeRaCOLOR USG EXTRA**

03 SIX MATERIAL LAYERS, ONE SYSTEM

Waterproofing, tile adhesive and tile grout each have alternatives — choose from the comparison tables. **BuMaLATEX** bonding coat and **Re 100** / **Sc 100** mortar: coverage and mixing ratios are given in step 6.2.

FLEX WP 2K
BuMaLASTIC

WATERPROOFING · TWO OPTIONS

Flex WP 2K · BuMaLASTIC

Two-component flexible cementitious–polymer waterproofing

Property	FLEX WP 2K	BuMaLASTIC
Choose when	Standard areas	Substrates at risk of cracking or movement
Liquid : powder ratio (by weight)	1 : 3	1 : 1.5
Coverage	1.5 - 2.0kg/m²	1.0 - 1.5kg/m²
Adhesion standard After water contact	≥ 1.4MPa ≥ 1.0MPa	≥ 1.2MPa ≥ 1.0MPa
Crack bridging Elongation 28 days	≥ 0.75mm 30% ± 10%	≥ 1.2mm 230% ± 23%
Pot life Waiting between coats	45 minutes 20 - 40 minutes	1 hour 30 - 60 minutes
Application	Do not apply below 15°C · Wait 3 - 7 days before water testing · Wait at least 7 days before tiling	

REFERENCED STANDARDS

BS EN 14891:2017
EN 1504-2 (C) PI-MC-PR

BuMaTAPE

CORNER & PIPE REINFORCEMENT

BuMaTAPE

Elastic tape, rubber core between two fabric layers · Roll 15cm × 10m

Tensile strength	5.7MPa
Elongation at break	≥ 664%
Crack bridging after 28 days	4.79mm
Application	Placed BETWEEN the two waterproofing coats · 8 - 35°C

REFERENCED STANDARDS

BS EN 12311-2:2013
BS EN 14891:2017

CeRaCOLOR USG
CeRaCOLOR USG EXTRA

TILE GROUT · TWO OPTIONS

CeRaCOLOR USG · CeRaCOLOR USG EXTRA

Cement-based tile grout for wet areas — CG2A · CG2WA

Property	CeRaCOLOR USG	CeRaCOLOR USG EXTRA
Mixing water Joint width	330 - 380 ml/kg 1 - 6mm	330 - 380 ml/kg 1 - 6mm
Water absorption 30 240 minutes	≤ 5.0g ≤ 10.0g	≤ 2.0g ≤ 5.0g
Application	Use within 30 minutes at 35°C · Put into service after 24 hours	

C2 TILE ADHESIVE

FOUR OPTIONS FOR TILING ON WATERPROOFING

BuMaFIX · LATEX SP · BuMaECO · CeRaLASTIC · BuMaBOND · BuMaFLEX

Use C2 or higher only — **BuMaFIX** and **BuMaECO** mixed with water reach only C1, so the admixture is mandatory

Property	BuMaFIX + LATEX SP	BuMaECO + CeRaLASTIC	BuMaBOND	BuMaFLEX
Mix per 25kg bag	1.5kg LATEX SP + 4.5kg water	~7.50kg CeRaLASTIC	6.25 - 6.75 White 6.38 - 6.88 litres	6.25 - 6.75 litres of water
Coverage per 1mm adhesive bed	~1.30kg/m²	~1.30kg/m² + ~0.4kg/m² CeRaLASTIC	~1.25kg/m²	~1.15kg/m²
Max. tile size on waterproofing	60 × 60cm	80 × 80cm	60 × 60cm	80 × 80cm
Adhesion 28 days After water immersion	≥ 2.5MPa ≥ 1.8MPa	≥ 2.5MPa ≥ 1.5MPa	≥ 1.7MPa ≥ 1.4MPa	≥ 2.0MPa ≥ 2.0MPa
Pot life Adjusting time	45 minutes 10 minutes	01 hour 20 minutes	08 hours 15 minutes	08 hours 20 minutes
Application	Surface 5 - 35°C · Bed 2 - 15mm · Grouting: walls after 6 hours, floors after 24 hours · Foot traffic after 24 hours · In service after 07 days			

REFERENCED STANDARDS

EN 12004-1:2017: **BuMaFIX** + **LATEX SP** C2TE · **BuMaECO** + **CeRaLASTIC** C2TES1 · **BuMaBOND** C2TE · **BuMaFLEX** C2TES1

BuMaSET (C2) may also be used, but on waterproofing only for tiles up to 40 × 40cm.

Scan the QR code on each card to open the TDS of that product on bumatech.vn.

04 FIFTEEN POINTS NOT TO BE MISSED

Red blocks: getting these wrong ruins the whole system and cannot be fixed by applying another coat. Yellow block: 2 recommendations, not counted among the mandatory points.

Substrate and ambient conditions

- Concrete at least 28 days old, roughened to CSP 2 - 3 (ICRI), surface pull-off adhesion ≥ 1.5MPa — substrate requirement of **Re 100** / **Sc 100**.
- Moisture content of the render and screed ≤ 6% before waterproofing. This is the **decisive threshold**. Mist-cure the mortar for the full 7 days, then let it dry and re-measure until it passes.
- Surface temperature must be **at least 3°C above the dew point** — below that, moisture condenses into a thin film and destroys adhesion. Quick reference in Appendix A.
- Application temperature 15 - 35°C: do not apply **FLEX WP 2K** or **BuMaLASTIC** below 15°C; **BuMaTAPE** 8 - 35°C; tile adhesive 5 - 35°C.

Mixing and waiting times

- Mix the waterproofing BY WEIGHT: **FLEX WP 2K** liquid : powder = 1 : 3; **BuMaLASTIC** = 1 : 1.5. Pour the liquid into the bucket first, then the powder.
- The mix is usable for only 45 minutes (**FLEX WP 2K**) or 1 hour (**BuMaLASTIC**) at 35°C — mix only what you can apply.
- Two mandatory waiting periods: mist-cure the mortar for at least 7 days before waterproofing; allow the waterproofing at least 7 days before tiling.

Mistakes that ruin the whole system

- DO NOT tile on waterproofing with a class C1 adhesive: **BuMaFIX** must be mixed with **LATEX SP**, **BuMaECO** with **CeRaLASTIC**.
- **BuMaTAPE** does NOT waterproof on its own. The tape sits BETWEEN the two coats: apply coat 1, embed the tape while coat 1 is still wet, then apply coat 2 fully covering the tape edges.
- Pipe penetrations, floor drains and wall-floor corners must be completed BEFORE the main area is coated — this is where most leaks occur.
- DO NOT skip the flood test. Once tiled, the waterproofing can no longer be seen or repaired.

Protection after application

- Keep off and keep water away from the waterproofing until it has cured; keep it free of dust before tiling.
- Grouting: walls after 6 hours, floors after 24 hours. Foot traffic after 24 hours, put into service after 07 days.

Before full-scale application

- Always carry out a trial on a small area to assess adhesion and compatibility between the adhesive, the tile and the actual substrate.
- Check the latest TDS version on the website before every project — where there is any difference, the TDS prevails.

Recommendations — not prohibitions

- For WORKERS' HEALTH: a bathroom is an enclosed space — open it up for ventilation or set an extractor fan when mixing powders and during application.
- High air humidity (above 85%) does not prohibit application, but coatings dry more slowly: extend the time between coats until touch-dry, and re-check the dew point before each coat.

05 TWENTY-ONE ITEMS, FIVE STAGES

01 Surface preparation

	Hand-held grinder with dust shroud	Roughen to CSP 2 - 3, treat corners and pipe penetrations
	High-pressure water jet	Alternative method for roughening and cleaning
	Industrial vacuum cleaner	Remove all dust before the bonding coat and before waterproofing
	Epoxy injection pump	Inject **BOND 81** with **BOND 39** to repair cracks

02 Mixing

	Clean mixing bucket	Mixing mortar, waterproofing, tile adhesive and grout
	Low-speed hand-held mixer	Mix until uniform and lump-free
	Weighing scale	Waterproofing and admixtures are mixed by weight
	Measuring jug	Measure exact water for tile adhesive and grout

05 Personal protective equipment

	Gloves and safety goggles	Mandatory when mixing, cutting tiles and cutting tape
	Dust mask	Cement dust when mixing, tile dust when cutting

03 Screeding and waterproofing

	Steel trowel	Render and screed; press **BuMaTAPE** firmly into coat 1
	Wooden float	Float the screed smooth, keep falls to the floor drain
	Long-handled roller	Roll the bonding coat and both waterproofing coats
	Flat brush · Small brush	Detail corners, pipe penetrations, floor drains; brush-apply **FLEX WP 2K**
	Scissors	Cut **BuMaTAPE** to corners and pipe penetrations

04 Tiling and grouting

	Notched spreader	Spread adhesive on FLOORS, comb ridges in one direction
	Notched trowel	Spread adhesive on WALLS; back-butter the tiles
	Rubber mallet	Tap tiles to spread the adhesive evenly and set the correct level
	Levelling clips & wedges · Cross spacers	Keep tile edges flush and joints even
	Rubber grout float	Pack joints full, strike off excess at 45°
	Sponge and water bucket	Clean joints and tile faces once the grout has firmed

INSTRUMENTS FOR CHECKING SITE CONDITIONS

	Pull-off adhesion tester	Substrate ≥ 1.5MPa (step 6.1)
	Surface moisture meter	Screed ≤ 6% before waterproofing (step 6.2)
	Surface thermometer with thermo-hygrometer	Compare with the dew point (step 6.1, Appendix A)
	Aluminium straightedge	Check flatness and falls to the drain (steps 6.2, 6.7)

06 SEVEN STEPS, THREE HOLD POINTS

Steps with a red border are **hold points** — they must be inspected and signed off (Appendix B) before work continues. If a hold point is skipped, the work that follows will not be accepted.

6.1 Substrate acceptance

HOLD POINT

Inspect and sign off the concrete substrate before screeding. If it fails, do not proceed.

- **B1** Concrete has been cured for the full 28 days. If not, record its actual age in the report.
- **B2** Measure surface pull-off adhesion, ≥ 1.5MPa — substrate requirement of **Re 100** / **Sc 100**.
- **B3** Check floor levels and the positions of floor drains and pipe penetrations against the design; ensure sufficient depth for the screed to falls.
- **B4** Measure air temperature, humidity and surface temperature: surface ≥ 3°C above the dew point (Appendix A); temperature 15 - 35°C.
- **B5** Complete the substrate acceptance record (Appendix B), signed by the contractor and the supervisor.

6.2 Surface preparation

Roughen, repair cracks and pipe penetrations, then render and screed to falls.

- **B1** Grind or high-pressure water-jet to CSP 2 - 3; remove dust, laitance, oil, grease and curing compounds.
- **B2** Cracks: inject two-component epoxy **BOND 81** together with epoxy adhesive **BOND 39**.
- **B3** Pipe penetrations, floor drains: seal around pipes with an MS Polymer sealant, fill flush with **BuMaFILL 50** / **PATCH 40**, pre-wetting the substrate as per each product's TDS.
- **B4** Roll on the bonding coat **BuMaLATEX** : water : cement = 1 : 1 : 4 by weight, ~1kg **BuMaLATEX** per 4m², use within 30 minutes.
- **B5** While the bonding coat is still wet: render walls with **Re 100**, screed floors with **Sc 100** (water: **Re 100** 3.50 - 3.75 litres, **Sc 100** 3.25 - 3.50 litres per 25kg bag; machine-mix 5 - 10 minutes), with falls to the drain of at least 0.5%; form wall-floor coves with mortar gauged with **BuMaLATEX** instead of water.
- **B6** Mist-cure for at least 7 days. Before waterproofing, re-measure the mortar moisture content ≤ 6%.

6.3 Detailing first

Reinforce the critical details BEFORE coating the main area.

- **B1** Mix the waterproofing by weight: **FLEX WP 2K** 1 : 3 or **BuMaLASTIC** 1 : 1.5; liquid first, then powder, mix with a low-speed mixer for 3 - 5 minutes.
- **B2** Apply coat 1 first at wall–floor corners, pipe penetrations, floor drains and door thresholds.
- **B3** While coat 1 is still wet, lay **BuMaTAPE** into the wall-floor corners and around pipes; press down with a steel trowel for full contact.
- **B4** Wait 20 - 40 minutes (**FLEX WP 2K**) or 30 - 60 minutes (**BuMaLASTIC**) until touch-dry, then apply coat 2 fully covering the tape edges.

6.4 Main area application

Two waterproofing coats at right angles; coverage stated for both coats together.

- **B1** Apply coat 1 by roller or brush over the whole floor; on walls, apply up to the design height.
- **B2** Once touch-dry, apply coat 2 at right angles to coat 1, fully covering the reinforced details.
- **B3** Total coverage for two coats, split evenly between coats: **FLEX WP 2K** 1.5 - 2.0kg/m²; **BuMaLASTIC** 1.0 - 1.5kg/m².
- **B4** Keep off and keep water away from the waterproofing until it has cured.

06 APPLICATION PROCEDURE — CONTINUED

6.5 Inspection — flood test

HOLD POINT

Inspect before tiling — once tiled, the waterproofing is hidden.

- **B1** Check all over: continuous coating, no misses or pinholes; tape edges, pipe penetrations and floor drains fully covered.
- **B2** Check coverage: quantity used divided by area must meet the rate in step 6.4.
- **B3** After 3 - 7 days: plug the drain and flood the floor (depth and duration per design / supervisor). No leakage or damp patches on the ceiling below or the outer wall faces.
- **B4** Drain, recoat any defects and re-test. Take photos and complete the record (Appendix B).

6.7 Final inspection and handover

HOLD POINT

A complete record set, enough to trace back any warranty claim.

- **B1** Sign-off sheet for hold points 6.1 · 6.5 · 6.7 (Appendix B) and the flood test record.
- **B2** Final check: no hollow tiles, joints full and even, test water drains fully to the floor drain.
- **B3** Site diary (date, weather, dew point, mixes), delivery notes with batch numbers, photos of each stage.

6.6 Curing, tiling and grouting

Tile only once the waterproofing is at least 7 days old and has passed the flood test.

- **B1** Mix C2 adhesive per 25kg bag: **BuMaFIX** with 1.5kg **LATEX SP** + 4.5kg water; **BuMaECO** with 7.5kg **CeRaLASTIC**; **BuMaBOND** / **BuMaFLEX** with 6.25 - 6.75 litres of water (white **BuMaBOND** 6.38 - 6.88 litres).
- **B2** Notched spreader on floors, notched trowel on walls, combed in one direction. Back-butter every tile; adhesive coverage of the tile back above 90%.
- **B3** Set and adjust within 10 - 20 minutes (per adhesive); use a rubber mallet, levelling clips and cross spacers for even joints and falls to the drain.
- **B4** Grouting: walls after 6 hours, floors after 24 hours. Mix **CeRaCOLOR USG** / **CeRaCOLOR USG EXTRA** with 330 - 380 ml of water per kg; pack joints full, strike off excess at 45° to the joints.
- **B5** When the grout has firmed, wipe clean with a damp sponge. Protect joints from water and impact while curing; foot traffic after 24 hours, in service after 07 days.

07 SITE SAFETY

- Cement-based products are alkaline — contact with sweat or body fluids may cause skin irritation, mild burns or an allergic reaction in sensitive individuals.
- Eye contact: rinse at once under gently running clean water for 10 - 15 minutes, do not rub; seek medical help if pain persists.
- Protection: gloves, safety goggles, dust mask when mixing and cutting tiles, long sleeves.
- Latex admixtures (**BuMaLATEX**, **LATEX SP**, **CeRaLASTIC**) may cause mild irritation on prolonged contact — wear gloves when mixing.
- Enclosed bathrooms: provide ventilation; collect waste material, never pour it into drains or floor drains, dispose of it as construction waste.

Appendix A · Dew point quick reference

Measure air temperature and humidity on site, read off the **minimum surface temperature** (3°C included), then measure the substrate. If the surface is below the table value, do not apply yet. Surfaces are coolest, and most prone to condensation, early in the morning and after rain.

Air	RH 70%	RH 80%	RH 85%	RH 90%
20°C	18°C	20°C	21°C	22°C
25°C	23°C	25°C	26°C	27°C
30°C	27°C	30°C	31°C	32°C
35°C	32°C	35°C	36°C	37°C

Calculated with the Magnus formula. For intermediate values, use the column and the next higher row.

Appendix B · Hold point sign-off sheet

Hold point	Criteria	Result	Contractor	Supervisor
6.1 Substrate acceptance	Concrete ≥ 28 days · Adhesion ≥ 1.5MPa · Levels, drains, pipes as designed · Surface ≥ dew point + 3°C · 15 - 35°C			
6.5 Flood test	Continuous, tape edges covered · Full coverage · No leakage on flooding			
6.7 Handover	No hollow tiles, full joints, good drainage · Records 6.7 complete			

Record the date, time and actual readings in the Result column. One sheet per wall section.

Precautions and disclaimer. The technical information in this document is based on BUMATECH's best knowledge and experience at the time of issue. Users are responsible for carrying out their own tests to assess the suitability of the products for the actual requirements of each project. As BUMATECH has no control over site conditions or the application process, it accepts no liability for any loss or damage that may arise. BUMATECH reserves the right to update this information at any time without prior notice; the latest version is available on request.

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APPLICATION PROCEDURE SET · 2027

30 PROCEDURES · ONE AREA, ONE PROCEDURE

BASEMENTS & TANKS
7 PROCEDURES

- QTTC 01 Basement wall waterproofing
- QTTC 03 Column and beam grouting and finishing
- QTTC 04 Basement waterproofing and tiling
- QTTC 05 Water tank waterproofing and tiling
- QTTC 06 Fire-fighting water tank waterproofing
- QTTC 13 Swimming pool waterproofing and tiling
- QTTC 21 Tiling of traffic tunnel walls

BASEMENTS & TANKS

FLOORS & SUBFLOORS
6 PROCEDURES

- QTTC 02 Floor surface hardener
- QTTC 12 Self-levelling underlay for vinyl floors
- QTTC 18 Concrete-effect self-levelling floor
- QTTC 19 Chemical-resistant floor waterproofing and tiling
- QTTC 23 Self-levelling over existing tiled floors
- QTTC 24 Tiling over existing tiled floors

FLOORS & SUBFLOORS

INTERIORS & WET AREAS
7 PROCEDURES

- QTTC 07 **Bathroom waterproofing and tiling**
- QTTC 08 Balcony waterproofing and tiling
- QTTC 09 Small-format interior tiling
- QTTC 10 Large-format interior tiling
- QTTC 11 Tiling on cement board
- QTTC 14 Interior wall finishing
- QTTC 22 Waterproofing and tiling on cement board

INTERIORS & WET AREAS

EXTERIORS
5 PROCEDURES

- QTTC 15 Exterior tiling
- QTTC 16 Exterior wall waterproofing
- QTTC 17 Decorative render for exterior walls
- QTTC 20 Waterproofing and protection of concrete structures
- QTTC 25 Waterproofing of painted exterior walls

EXTERIORS

ROOFS
5 PROCEDURES

- QTTC 26 Exposed roof deck waterproofing
- QTTC 27 Roof deck waterproofing and tiling
- QTTC 28 Waterproofing of tiled pitched roof slabs
- QTTC 29 Waterproofing of roof decks with existing tiles
- QTTC 30 Waterproofing and retiling of roof decks with existing tiles

ROOFS

SINGAPORE GREEN BUILDING COUNCIL MEMBER

VGBC STANDARD MEMBER

Company-level certification — SGBC and VGBC member

The parameters in this document are established by laboratory testing under standard conditions; actual values vary with temperature, humidity, accompanying materials and workmanship. Check the latest TDS version on the website before every project.

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