

TILE ASSOCIATION OF NEW ZEALAND SYSTEM APPRAISAL PREPARED FOR:

Technokolla NZ

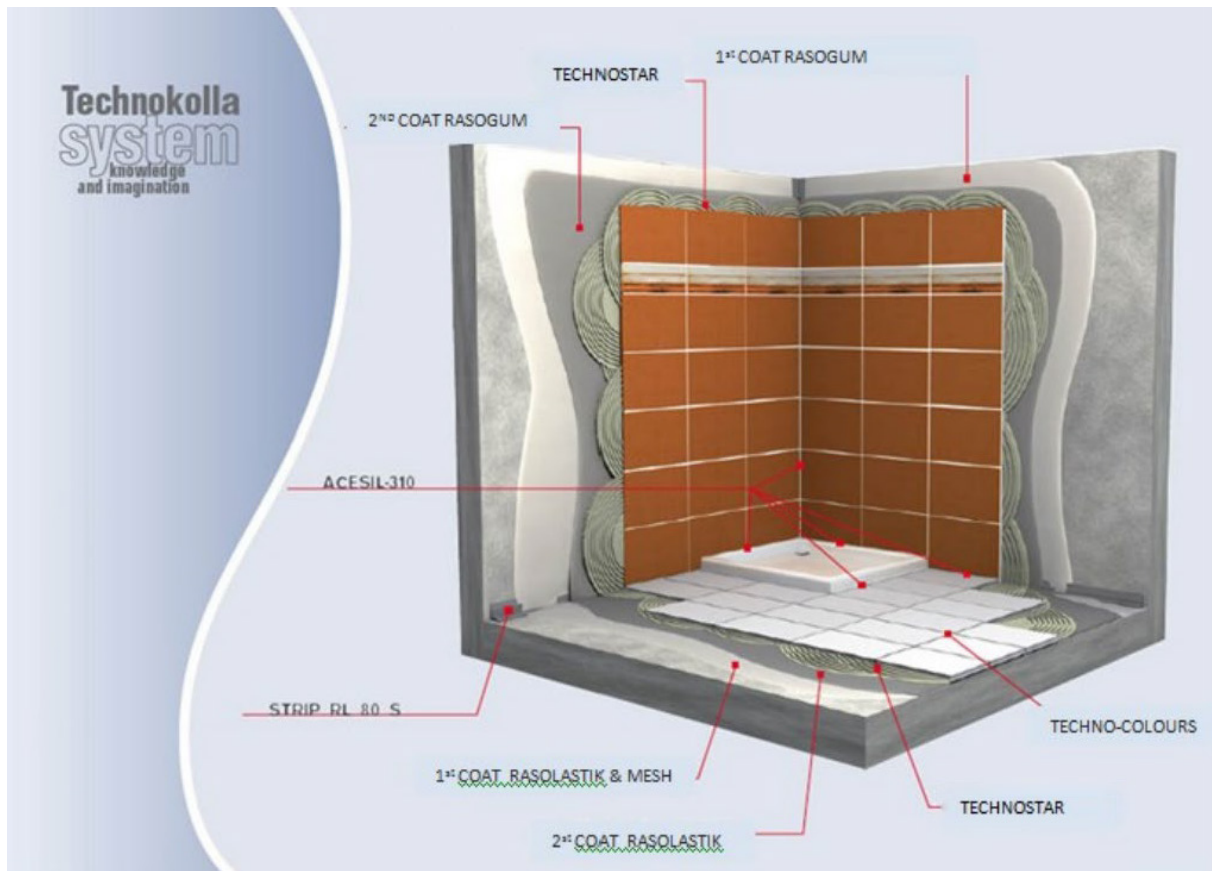
WATERPROOF MEMBRANE AND TILE ADHESIVE SYSTEM

APPRAISAL NO. 12122 | VERSION 001



Content

1. TANZ Appraised System
2. Overview of this Appraisal
3. Technokolla NZ Technical Literature
3. Scope of System Appraisal
3. Product Limitations
4. Building Code Compliance (NZBC)
4. Durability
4. Maintenance
5. Product Information
8. Handling and Storage
8. Design Information
9. Substrates
11. Internal Moisture
12. General Installation Information
12. Substrate Preparation
15. Basis of the Appraisal
16. Rasogum +
17. Rasolastik Advance
18. Rasolastik Evo
19. Techno-power
19. Techno S-One
20. Technostar
21. Technorap
21. Technomos
22. Limitations of the Appraisal



TANZ Appraised System

The Technokolla NZ Waterproof Membrane and Tile Adhesive have been appraised by TANZ utilising:

1. The "TANZ Wet Area Waterproof Membrane and Tile System Installation methodology.
2. Current information is drawn from the NZBC-E3 Internal Moisture acceptable solution E3/AS2.
3. The IWAM code of practice (4th Edition)
4. AS-3740 (2010) and AS/NZS-4858. (2012)
5. Branz Good Tiling Guide (3rd Edition)
6. The appraised system encompasses a range of Technokolla NZ supplied products across the following categories:
 - Primers
 - Pre-mixed Screed's
 - Waterproof Membrane systems.
 - Tile Adhesive systems
 - Grout systems and Silicon accessories.

The scope of this appraisal is for internal wet area applications only. Please refer to the Technokolla NZ supplied information for approved tile tray substrates for this type of installation. Exterior use applications are outside of the scope of this appraisal.



Overview of this Appraisal

1. TANZ have appraised the following Technokolla NZ Waterproof Membrane and Tile Adhesive System for under-tile internal wet area applications of buildings.
 - 1.1 When designed and installed to the requirements of the Technokolla NZ technical and installation information (see document reference number alongside product name), the Technokolla NZ supplied products below form the Technokolla NZ Internal Wet Area Membrane and Tile Adhesive system.

This information is available from www.technokolla.com

PRIMERS:

- Primer T Plus – 09/19 249
- Primer 101 – 07/10 187
- TC Lastic 07/19 111
- TC Lax – 04/18 112

PRE-MIXED SCREEDS:

- Kronos – 01/19 100
- Monokronos – 06/19 140

LEVELLING COMPOUNDS:

- Plan-10 N – 01/19 248
- Fibro Level Evo 02/20 254

WATERPROOF MEMBRANES AND THEIR ACCESSORY TYPES:

- Rasogum + - 06/18 251
- Rasolastik Evo – 07/19 226
- Rasolastik Advance – 07/19 246

TILE ADHESIVES:

- Techno-power – 03/18 245
- Techno-S-one – 07/19 236
- Technostar – 07/19 178
- Technorap – 09/13 122
- Technomos – 07/19 120

GROUT AND SEALANTS:

- Technocolours – 01/20 194
- Skycolours Epoxy – 07/19 197
- Skycolours Evolution Epoxy – 07/19 232
- Acesil 310 acid cure sealants – 08/19 101

Technokolla NZ Technical Literature

- 2.1 The Technokolla NZ Waterproof Membrane and Tile Adhesive Systems, product technical literature must be read in conjunction with this appraisal.
- 2.2 All aspects of the appraisal information pertaining to the scope, design, installation, and maintenance must be followed.
- 2.3 Accompanying technical literature supporting this appraisal has been used in the assessment of the Technokolla NZ Internal Wet Area Membrane and Tile Adhesive System.

Scope of System Appraisal

- 3.1 The Technokolla NZ Internal Wet Area Membrane and Tile Adhesive system has been appraised by TANZ as a wet area waterproofing membrane system, within the following scope:
- 3.2 The Technokolla NZ Internal Wet Area Membrane and Tile Adhesive system has been appraised by TANZ as a wet area waterproofing membrane system, within the following scope:
- 3.3 On floor substrates of concrete, plywood, compressed fibre cement sheet and fibre cement sheet tile underlay.
- 3.4 On Technokolla NZ, pre-mixed screeds, cement self-levelling floor compounds products outlined in this appraisal.
- 3.5 On wall substrates of concrete, concrete masonry, wet area fibre cement sheet lining systems, and wet area plasterboard lining systems.
- 3.6 When a finished surface of ceramic or stone tile is installed above the membrane.
- 3.7 When the floor substrate structure has been designed and constructed to ensure that deflections in the substrate do not exceed 1/360th of the span of the building elements used to construct the substrate.
- 3.8 When designed and constructed in accordance with the “TANZ Wet Area Waterproof Membrane and Tile System Installation” methodology.
- 3.9 When movement and control joints in the substrate are carried through the membrane and tile or stone finish surface.
- 3.10 When installed by Technokolla NZ accredited applicators of the membrane product type.

Product Limitations

- 4.1 When designed and constructed outside of the “TANZ Wet Area Waterproof Membrane and Tile System Installation” methodology.
- 4.2 When the Technokolla NZ product specific installation information has not been followed.
- 4.3 Tile and Stone finishes are outside of the scope of this product appraisal.
- 4.4 Applications for use in exterior applications have not been assessed in this system appraisal.



Building Code Compliance (NZBC)

- 5.1 It is the opinion of TANZ Inc, that the Technokolla NZ Internal Wet Area Membrane and Tile Adhesive System, when designed and installed in accordance with the information and conditions of this appraisal will meet the following provisions of the NZBC:
- B2 Durability: Performance B2.3.1 (b) and B2.3.2
 - E3 Internal Moisture: Performance E3.3.2 to E3.3.6
 - F2 Hazardous Building Materials Performance F2.3.1
- 5.2 It is the opinion of TANZ Inc, that the Technokolla NZ Internal Wet Area Membrane and Tile Adhesive System when designed and installed in accordance with the information and conditions of this appraisal, will conform to the following AS/NZS standards, nominated Acceptable Solutions of the NZBC and the Code of Practice for Internal Wet Area Membranes information as at the date of publication.
- AS- 3740: 2010 - Waterproofing of domestic wet areas
 - AS/NZS 4858: 2004 – Wet-area membranes
 - E3/AS2 Internal Wet-area Membrane Systems - Membranes installed in accordance with sections 1–4 of the IWAM Code of Practice (as modified by the Acceptable Solution) will comply with Building Code clauses E3.3.2 – E3.3.6.
 - Internal Wet Area Membranes (IWAM) code of practice 4th Edition

Durability

- 6.1 The Technokolla NZ Internal Wet Area Membrane and Tile Adhesive System, when exposed to normal conditions of the environment and subjected use, are intended to have serviceable minimum life period of 15 years and be compatible with ceramic and stone tile finishes that have a serviceable life of between 15 to 25 years.

Maintenance

- 7.1 When designed and installed correctly, no maintenance of the Technokolla NZ Internal Wet Area Membrane and Tile Adhesive System is required or is achievable.
- 7.2 A regular check of the finished surfaces must be made to ensure it remains fully adhered to the substrate. Any cracks or damage that may occur must be repaired by a professional tradesperson immediately.

Product Information

The following products are supplied by Trade Supplies Limited T/A Technokolla NZ:



RASOLASTIK ADVANCE

- A two-part, highly elastic, cementitious, liquid applied membrane.
- It is supplied as a Part A, grey-blue powder in 21 kg multi-wall bags and a Part B, white latex liquid in 7.45 lt plastic containers.



RASOLASTIK EVO

- A single component, highly elastic, cementitious, liquid applied membrane.
- It is supplied as a grey powder in 20 kg multi-wall bags to which water is added at the correct ratio.



RASOGUM +

- A single component, water-based, fast drying, polymer-based, ready-to-use, liquid-applied membrane.
- It is supplied as a white or manhattan coloured paste in 5 and 25 kg buckets.



STRIP RL 80 S

- A cold adhesive strip made from a viscoelastic layer covered with a non-woven fabric made from 30 g/m² polypropylene.
- This strip is used for reinforcing all floor/wall joints, wall/wall joints, fractionising joints, and floor joints.
- It is available as a roll 85 mm wide and 15 m long.



PRIMER - T PLUS

- A single concentrated component, water-based primer for floors and walls.
- It is supplied as a blue coloured emulsion in 5 kg pails.



PRIMER 101

- A single component, water-based primer for when Rasogum + is being applied over wood or polished concrete.
- It is supplied as a blue coloured liquid in 5 kg pails.



PRIMER TC-LASTIC

- A Synthetic rubber-based elasticising and tackifying latex for cement-based mortars and adhesives.
- It is supplied as a white coloured liquid in 5kg pails.



PRIMER TC-LAX

- A Synthetic rubber-based tackifier latex for cement-based mortar and adhesives.
- It is supplied as a white liquid in 5kg pails.



CEMENT SCREED KRONOS

- A quick-drying, controlled shrinkage binder for making indoor and outdoor screeds, to be covered by ceramic tiles or parquet fixed with adhesive.
- It is supplied as an Impalpable grey powder in 25kg bags.



CEMENT SCREED MONOKRONOS

- pre-mixed, quick-drying, controlled shrinkage product for making indoor and outdoor screeds, to be covered by ceramic tiles and parquet fixed with adhesive.
- It is supplied as a grey coloured granular product in 25kg bags.



LEVELLING COMPOUND PLAN 10 N

- A High-performance, ultra-quick setting self-levelling mortar used in layers 1 to 10 mm thick.
- It is supplied as a grey powder in 25kg bags.



LEVELLING COMPOUND FIBRO LEVEL EVO

- A Quick-setting fibre-reinforced self-levelling compound for heavily trafficked floors. Especially suitable for difficult substrates.
- It is supplied as a grey powder in 25kg bags.



TILE ADHESIVE TECHNO-POWER

- A mixed binder powder adhesive for laying porcelain stoneware and ceramic tiles.
- It is supplied as a grey or white powder in 25kg bags.



TILE ADHESIVE TECHNO S-ONE

- A Highly deformable mono-component powder adhesive to fix ceramic tiles and natural stone in large sizes.
- It is supplied as a grey or white powder in 25kg bags.



TILE ADHESIVE TECHNO-STAR

- A Highly deformable mono-component powder adhesive used in layers up to 15 mm thick. Especially suitable for fixing porcelain stoneware and natural stone in large sizes.
- It is supplied as a grey or white powder in 25kg bags.



TILE ADHESIVE TECHNORAP

- A Quick setting powder adhesive with high polymeric content for fixing ceramic tiles.
- Suitable for porcelain stoneware, over-tiling and on heating screeds.
- It is supplied as a grey powder in 25kg bags.



TILE ADHESIVE TECHNOMOS

- An Ultra-white, self-grouting powder adhesive, particularly suitable for laying vitreous mosaic.
- It is available as an ultra-white powder in 25kg bags.



CEMENT BASED GROUT TECHNOLOURS

- Cement-based grouting for 1 to 8 mm joints, with fine finish and bright colour. Micro-shield system provides active protection that helps to prevent the growth of bacteria, fungi and mould.
- It is available in 17 colours and in 5kg bags.



SKYCOLOURS 2-PART EPOXY GROUT

- A two-component epoxy sealant with delicate finishes in harmonious colours.
- For 2 to 20 mm joints.
- It is available as part A-thick paste in 11 colours and part B-viscous liquid in 2kg and 5kg containers.



SKYCOLOURS EVOLUTION EPOXY

- A Two-component epoxy sealant. Bright finish and unique colours.
- For joints 1 to 15 mm wide.
- It is available as part A-thick paste in 15 colours and part B-viscous liquid in 2kg and 5kg containers.



SILICON SEALANT ACESIL-310

- An Acetic silicon sealant with mould inhibitors.
- It is available as viscous paste in 16 colours.



FIBRE GLASS NETTING

- A 100% glass fibre netting used as a thickness gauge to ensure the correct thickness is applied.
- It is supplied as a 50 m² roll with a glass weight of 92 g/m².



Handling and Storage

- 8.1 All materials must be stored inside in a dry, frost-free environment out of direct sunlight. Materials must be stored up off concrete floors and cannot be exposed to freezing conditions.
- 8.2 The product range nominated in this appraisal have an 8 to 24-month shelf life from date of manufacture in the original unopened packaging.
- 8.3 Once opened, the materials must be used within 12 hours to 3 months depending on the chosen product.
- 8.4 Refer to Technokolla NZ product information for shelf-life limitations for a specified product choice.

Design Information

GENERAL

- 9.1 The Technokolla NZ Internal Wet Area Membrane and Tile Adhesive System has been appraised as an under-tile waterproof membrane system to be used in conjunction with:
 - Technokolla NZ Primer's nominated in this appraisal
 - Technokolla NZ waterproofing membrane system accessories
 - Technokolla NZ tile adhesives in the class of C2/S1 or C2/S2
 - Technokolla NZ range of grout and sealant products.
 - Aquatite Wetwall Caddy - Cavity Wall Protector
 - N.T. Waterstops – specific profiles
- 9.2 The Technokolla NZ Internal Wet Area Membrane and Tile Adhesive System is for use in buildings where an impervious waterproof membrane is required to floor and wall wet areas as defined in E3/AS2 to prevent damage to building elements and adjoining structures.
- 9.3 Sections 1-4 of the Internal Wet Area Membranes (IWAM) code of practice must be utilised in the design of internal wet areas that utilise the Technokolla NZ Internal Wet Area Membrane and Tile Adhesive System.
- 9.4 The "TANZ Wet Area Waterproof Membrane and Tile System Installation" design information must be utilised in the design of internal wet areas that utilise the Technokolla NZ Internal Wet Area Membrane and Tile Adhesive System.
- 9.5 Consideration must be made in the design to ensure that all aspects of E3/AS2 are met.

SEALING OF PENETRATIONS AND THROUGH ELEMENTS

- 9.6 Wet area wall penetrations for shower mixers and taps must be sealed in accordance with the requirements of this appraisal and to the following.
 - E3/AS2 4.3.5 see figure 29 page 56
 - E3/AS2 4.4.6
 - IWAM code of practice 4th edition
 - TANZ Wet Area Waterproof Membrane and Tile System Installation Design Methodology
 - Aquatite Wetwall Caddy product and installation information and details.

INSTALLATION OF WATERSTOPS

- 9.7 The correct type of Waterstops must be installed to the shower containment area, bath perimeter area (where applicable) and to doorway entrances in accordance with the requirements of this appraisal and to the following.
- E3/AS2 4.5.1 Water-stops (refer to amended details)
 - E3/AS2 4.5.4 shower Area to adjacent floor
 - E3/AS2 4.3.2 General Design Principals for Shower Areas
 - IWAM code of practice 4th edition
 - TANZ Wet Area Waterproof Membrane and Tile System Installation Design Methodology
 - TANZ - N.T Waterstop details
- 9.8 Movement and control joints may be required to satisfy the design requirements of a projects size and shape and the stone or tile finished surface.
- 9.9 The installed membrane must be protected prior to and during installation of a stone or tile finished surface.
- 9.10 Timber framed systems must comply with:
- NZS 3604
- 9.11 When a specific engineered design (SED) has been utilised, the framing elements must be at least the equivalent stiffness to the framing provisions, outlined in:
- NZS 3604 or comply with the serviceability scope of
 - AS/NZS 1170.
- 9.12 In all substrates uses, structural framing must be provided so that the maximum span of the substrate meets all requirements of the substrate manufacturers technical information.
- 9.13 All sheet edges of the substrate must be fully supported, unless stated otherwise in the manufacturers technical and installation information and the provided test data to support a claim is available to view and complies to an appropriate standard or verification method.
- 9.14 The timber framed systems that support the substrate must be constructed to prevent deflection in the substrate from exceeding 1/360th of the span.
- 9.15 Where NZS 3604 has been utilised, the allowable joist spans that are nominated in Table 7.1 shall be reduced by 20%.

Substrates

- 10.1 Surface Preparation
- All structural building components must comply with the New Zealand Building Code and relevant New Zealand standards including:
- NZS 3604
 - NZS 3603
 - NZS 3403
 - E3/AS2 clause 3.2
 - E3/AS2 clause 4.1
- 10.2 Ensure the substrate has been installed to the manufacturers specifications and is clean and free of dust, oil, paint epoxy coatings.
- 10.3 All contaminate must be removed prior to commencing.

TANZ PRODUCT AND SYSTEM APPRAISAL

Appraisal # 12126

Date of issue: 17/05/2022

Date of expiration: 17/05/2024



CONCRETE AND MASONRY

- 11.1 All concrete and masonry substrates must be to specific engineering design (SED) meeting the requirements of the NZBC and the following NZS requirements:
- NZS 3101 Concrete Structures Standard
 - NZS 3604 must meet concrete slab on ground requirements (or)
 - NZS 4229 Concrete masonry buildings not requiring specific engineering design
 - NZS 4230 Design of reinforced concrete masonry structures

PLYWOOD

- 11.2 Plywood must be a minimum of 17mm thick and comply with
- AS/NZS 2269 Plywood-structural
 - E3/AS2 4.1.2.1
- 11.3 CD grade structural with the sanded C face installed upwards.
- 11.4 Treated H3 CCA treated.
- 11.5 LOSP treated plywood must not be used.
- 11.6 Plywood substrates must be supported with nogs/dwangs or framing with a maximum span of 400mm in each direction.
- 11.7 Fixed with 10g x 50mm stainless steel countersunk head screws, fixed at 150mm centres along the sheet edges and 200mm centres through the body of the sheet.

FIBRE CEMENT COMPRESSED SHEET AND FIBRE CEMENT SHEET TILE AND SLATE UNDERLAY

- 11.8 All fibre cement sheet products must be manufactured to the requirements of:
- AS/NZS 2908.2 Cellulose-Cement Products-Part 2: Flat sheets type B cat 3+
 - E3/AS2 4.1.2.3
- 11.9 Must be specified by the manufacturer as being fit for purpose for wet area membrane substrates.
- 11.10 Installation must be carried out in accordance with the supplied manufacturers installation and product technical information and all test data confirming suitability for the intended use of the product.
- 11.11 Membrane installation must not proceed where the substrate surface temperature is below 10°C or above 35°C.

PARTICLE BOARD

- 11.12 Particle board must not be used as a new substrate in any wet area refer to:
- IWAM code of practice page 41 4th Edition
- 11.13 For existing particle board substrates refer to:
- E3/AS2 4.1.3
 - Page 41 of the IWAM code of practice 4th edition

WET AREA WALL LININGS

- 11.14 Plasterboard wall linings must be deemed by the manufacturer as fit for purpose for wet area construction and comply with:
- AS/NZS 2588 Gypsum Plasterboard
 - E3/AS2 4.1.4.1
- 11.15 Fibre Cement sheet wall linings must be deemed by the manufacturer as fit for purpose for wet area construction and comply with:
- AS/NZS 2908.2 Cellulose-Cement Products-Part 2: Flat sheets type B cat 3+
 - E3/AS2 4.1.4.2
- 11.16 Installation of both types of the forementioned wet area wall linings, must be installed to the manufacturer's instructions.
- 11.17 All shower mixer and tap penetrations must be sealed and incorporate the specified wall lining material to meet the requirements of:
- E3/AS2 4.3.5 General Design Principals for Shower Areas see figure 29 page 56
 - E3/AS2 4.4.6 General Design Principals for Baths see figure 29 page 56
 - IWAM code of practice 4th edition
 - TANZ Wet Area Waterproof Membrane and Tile System Installation Design Methodology
 - Aquatite Wetwall Caddy installation and design details

Internal Moisture

- 12.1 The Technokolla NZ waterproof membrane products nominated in this appraisal have been independently tested and are deemed to be impervious to water as per:
- EN 14891: 2012/AC:2012 - LIQUID-APPLIED WATER IMPERMEABLE PRODUCTS FOR USE BENEATH CERAMIC TILING BONDED WITH ADHESIVES - REQUIREMENTS, TEST METHODS, EVALUATION OF CONFORMITY, CLASSIFICATION AND DESIGNATION
- 12.2 The Technokolla NZ tile and stone adhesive products nominated in this appraisal have been independently tested and meet the following requirements:
- EN 12004: 2017 Adhesives for ceramic tiles - Part 1: Requirements, assessment, and verification of constancy of performance, classification and marking.
 - EN 1348: 2007 Adhesives for tiles - Determination of tensile adhesion strength for cementitious adhesives.
 - EN 1346: 2007 Adhesives for tiles - Determination of open time.
 - EN 12002: 2008 Determination of transverse deformation for cementitious adhesives and grouts.
 - EN 1308: 2007 Adhesives for tiles - Determination of Slip
- 12.3 The means of demonstrating compliance to NZBC clause E3 Internal Moisture for this appraisal is given as:
- E3/AS2 Internal Wet-area Membrane Systems - Membranes installed in accordance with sections 1–4 of the IWAM Code of Practice (as modified by the Acceptable Solution) will comply with Building Code clauses:
 - E3.3.2 – E3.3.6.
 - AS- 3740: 2010 - Waterproofing of domestic wet areas
 - AS/NZS 4858: 2004 – Wet-area membranes
 - Internal Wet Area Membranes (IWAM) code of practice 4th Edition
 - TANZ Wet Area Waterproof Membrane and Tile System Installation Design Methodology



- 12.4 When designed and installed to the requirements of this appraisal, the Technokolla NZ Internal Wet Area Membrane System, will prevent the passage of moisture from penetrating behind wall linings or entering concealed spaces.
- 12.5 All surfaces of the membrane must have a finished surface of ceramic or stone tile.
- 12.6 Falls in showers and shower areas must be at a minimum of 1 in 50 or 1.15 degrees.
- 12.7 For level entry wet area designed showers and bathrooms, the fall must extend out a minimum of 1500mm from the position of the shower rose outlet.
- 12.8 There must be positive fall directed towards the drainage outlet.
- 12.9 Where impervious wall finishes are used such as an acrylic liner, they must overlap the waterproof membrane by a minimum of 50mm.
- 12.10 All penetrations must be sealed by the requirements set out in E3/AS2

General Installation Information

SKILL LEVEL REQUIREMENT

- 13.1 The installation of the framing and substrate must be completed by, or under the supervision of a Licenced Building Practitioner (LBP) with the relevant Licence class and in accordance with information contained inside this appraisal and the manufacturers supplied technical information.
- 13.2 The installation of the Technokolla NZ Internal wet Area Membrane System must be performed by Technokolla NZ approved applicators who have completed the required product training of the membrane type, have a good knowledge of the Technokolla NZ Waterproof Membrane and Tile Adhesive range of products and their respective technical information, and can demonstrate good waterproofing practices.

Substrate Preparation

GENERAL

- 14.1 All installed substrate types must be dry, free of dust/dirt and any grease/oils and detritus.
- 14.2 Are installed to the requirements of this appraisal and to the manufacturers supplied information.
- 14.3 Substrate surfaces must be even in plane and be free from nibs and sharp edges and concrete formwork release agents.
- 14.4 Wall substrates must be flat and true over a 4.0m straight edge placed in any direction of the wall area.
- 14.5 The relative humidity of the concrete substrates must be 75% or less before the application of the specified Technokolla NZ Waterproof Membrane and Tile Adhesive System.
- 14.6 All voids, cracks, holes, rough areas must be filled with the appropriate Technokolla product type that is compatible with the installed substrate type. Refer to the Technokolla NZ for correct product selection.
- 14.7 All joints, junctions of substrate intersections at wall to floor and wall to wall areas are prepared, primed, and have the appropriate waterproof membrane accessories installed to the Technokolla NZ Waterproof Membrane and Tile Adhesive System technical information requirements.
- 14.8 All shower mixer and tap penetrations have been prepared and installed correctly to meet the requirements of E3/AS2. See clause 4.5.5 see figure 29.
- 14.9 All falls meet the requirements as set out in this appraisal.
- 14.10 All drainage outlets are installed correctly and have positive fall directed towards them.

USE OF PRIMER

- 14.11 Smooth and compact substrates such as existing ceramic or agglomerate coverings, must be properly degreased with the correct product type from the Trade Supplies Limited Fila range of products.
- 14.12 In the case of anhydrite screeds, check for the presence of a suitable vapour barrier to prevent rising damp.
- 14.13 Use a carbide method hygrometer to check that the residual humidity is less than 0.5%.
- 14.14 The surface must be sanded and treated with the appropriate Technokolla NZ Primer type.
- 14.15 Any cracks must be repaired with an appropriate Technokolla NZ repair product, sprinkling the fresh surface with sand or dried quartz with granulometry 0.4-1 mm.
- 14.16 Contact Technokolla NZ for correct product selection.
- 14.17 All Technokolla NZ respective technical data sheets must be consulted for correct use of the indicated products.
- 14.18 In the case of cementitious substrates that produce surface dust, these must be treated beforehand with the ready to-use consolidating primer in aqueous dispersion,

USE OF WATERPROOF MEMBRANE

- Rasogum + - 06/18 251
 - Rasolastik Evo - 07/19 226
 - Rasolastik Advance - 07/19 246
- 14.19 Installation of the waterproof membrane system must not be undertaken where the substrate surface temperature is below 5°C or above 35°C.
- 14.20 Rasolastik Advance requires that the powder (Part A) and liquid (Part B) are thoroughly mixed and left to stand for 5 minutes before re-mixing, then applying to the substrate.
- 14.21 Rasolastik EVO requires that the powder is mixed with water and left to stand for 5 minutes before re-mixing, then applying to the substrate.
- 14.22 Rasogum + must be thoroughly stirred before application onto the substrate.
- 14.23 Strip RL 80 S reinforcement is laid onto the substrate before the first coat is applied to provide movement protection at wall/wall and wall/floor junctions, or any other areas such as joints in the flooring substrate, floor cracks.
- 14.24 In all other situations, reinforcement provisions as set out in this Appraisal and the Technical Literature must be followed including detailing of penetrations for water control valves and their associated outlets.
- 14.25 The nominated membranes must be applied in a minimum of two coats at the rates set out in the Technokolla NZ Technical Literature.
- 14.26 Subsequent coats must be applied in an opposite direction to the previous coat.
- 14.27 The total finished system thickness of the Rasogum + membrane must be a minimum of 1 mm.
- 14.28 The Rasolastik Advance and Rasolastik EVO Membranes must be a minimum of 2 mm.
- 14.29 Application can be made by roller (medium/long nap), brush (long bristle), or notched steel trowel (finished with a flat steel trowel).
- 14.30 Clean up of all the nominated membrane types may be undertaken with water.

USE OF TILE ADHESIVE

- Techno-power - 03/18 245
- Techno-S-one - 07/19 236
- Technostar - 07/19 178
- Technorap - 09/13 122
- Technomos - 07/19 120

TANZ PRODUCT AND SYSTEM APPRAISAL

Appraisal # 12126

Date of issue: 17/05/2022

Date of expiration: 17/05/2024



- 15.1 Mix TECHNO S-ONE with approximately 7.5 l of clean water (30±1%). Blend until mixture is homogeneous and lump-free.
- 15.2 It is advisable to use blender at low speed (approx. 500 rpm) as high speed will reduce the mechanical characteristics of the product.
- 15.3 Wait 3 minutes, then stir the product briefly again before applying. The creamy paste obtained can be easily applied by trowel and possesses optimum thixotropy.
- 15.4 Blend grey TECHNO-POWER with approximately 7 l of clean water (28±1%). Blend white TECHNO-POWER with approximately 7.8 l of clean water (31±1%).
- 15.5 Blend until mixture is homogeneous and lump-free.
- 15.6 It is advisable to use blender at low speed (approx. 500 rpm) as high speed will reduce the mechanical characteristics of the product.
- 15.7 Wait approx. 3 minutes, then stir the product briefly again before applying.
- 15.8 The creamy paste obtained can be easily applied by trowel and possesses optimum thixotropy.
- 15.9 Blend TECHNOSTAR with approximately 7 l of clean water (29±1%). Blend until mixture is homogeneous and lump-free.
- 15.10 It is advisable to use blender at low speed (approx. 500 rpm) as high speed will reduce the mechanical characteristics of the product.
- 15.11 Wait 5-10 minutes, then stir the product briefly again before applying.
- 15.12 The creamy paste obtained can be easily applied by trowel and possesses optimum thixotropy.
- 15.13 Blend TECHNORAP with approximately 6 l of clean water per bag (24±1%) until mixture is homogeneous and lump-free.
- 15.14 It is advisable to use blender at low speed (approx. 500 rpm) as very high speed will reduce the mechanical characteristics of the product.
- 15.15 Wait 3-5 minutes, then stir the product briefly again before applying.
- 15.16 The creamy paste obtained can be easily applied by trowel and possesses optimum thixotropy.
- 15.17 Blend TECHNOMOS with approximately 8.25 l of clean water per bag (33±1%) until mixture is homogeneous and lump-free.
- 15.18 It is advisable to use blender at low speed (approx. 500 rpm) as high speed will reduce the mechanical characteristics of the product.
- 15.19 Wait 5-10 minutes, then stir the product briefly again before applying. The creamy paste obtained can be easily applied by trowel and possesses optimum thixotropy.
- 15.20 Apply the nominated adhesive types using a notched trowel.
- 15.21 Apply sufficient product to ensure complete 'wetting' of the back of the tiles.
- 15.22 Tiling must be carried out on freshly applied adhesive, applying adequate pressure to ensure complete and uniform contact with the adhesive and thus optimum bond.
- 15.23 If a film is seen to form on the surface, the adhesive has been left for too long, then immediately remove the adhesive layer with the trowels, discard this material and apply a fresh layer of adhesive.
- 15.24 Do not wet the adhesive once applied, as the water compromises the adhesion. Avoid application in direct sunlight and/or strong wind / draughts.
- 15.25 Ceramics, natural stones, or mosaics can be installed with cementitious adhesives in class C2 or reactive in class R2 according to UNI EN 12004

SUPPLEMENTARY ADHESIVE INFORMATION

- 16.1 The choice of adhesive depends on the size of the tiles and expected operating conditions.
- 16.2 In the case of large tiles (side > 60 cm), it is preferable to use deformable adhesives in class S1 or highly deformable adhesives in class S2.
- 16.3 The tiles must be installed with a solid bed using the back-buttering technique, with joint widths suited to their size.
- 16.4 Spot fixing techniques must not be used.
- 16.5 For the correct choice of tile or stone adhesive, refer to the technical data sheets of the products.
- 16.6 For large format tiles over 900mm consultation with TANZ must be sought.
- 16.7 TANZ recommend the use of Epoxy grout systems for enclosed shower wall and floor areas.

Basis of the Appraisal

- 17.1 All technical data sheet information supplied by Technokolla NZ has been reviewed by TANZ and the test data results, form the basis of this appraisal for the Technokolla NZ Internal Wet Area Membrane and Tile Adhesive system. (Table 1)
- 17.2 Information supplied by Technokolla NZ has been utilised by TANZ to determine compliance to the NZBC and the relevant Acceptable Solutions of E3 Internal Moisture as outlined in this appraisal.
- 17.3 A review of the Test results independently conducted on behalf of Technokolla NZ, has been undertaken by TANZ and found to be satisfactory to comply with:
 - TANZ - N.T Waterstop details
 - Aquatite Wetwall Caddy details
 - E3/AS2 4.5.1 Water-stops (refer to amended details)
 - E3/AS2 4.5.4 shower Area to adjacent floor
 - E3/AS2 -clause 4.3.2 General Design Principals for Shower Areas
 - IWAM code of practice 4th edition
 - TANZ Wet Area Waterproof Membrane and Tile System Installation Design Methodology.
 - Cyclic movement, adhesion to substrates, resistance to aging, resistance to water, resistance to chemicals and water absorption.
- 17.4 A review of the Technokolla NZ Waterproof Membrane and Tile Adhesive product technical information, installation methods and scope of use, has been undertaken by TANZ and found to be satisfactory to comply with:
 - AS 3740: 2010 Waterproofing of domestic wet areas
 - E3/AS2 4.5.1 Water-stops (refer to amended details)
 - E3/AS2 4.5.4 shower Area to adjacent floor
 - E3/AS2 -clause 4.3.2 General Design Principals for Shower Areas
 - IWAM code of practice 4th edition
 - TANZ Wet Area Waterproof Membrane and Tile System Installation Design Methodology.
 - Cyclic movement, adhesion to substrates, resistance to aging, resistance to water, resistance to chemicals and water absorption.
- 17.5 It is the opinion of TANZ that when the Technokolla NZ, Internal Wet Area Membrane and Tile Adhesive System is used, designed, installed, and maintained to the extent of this appraisal information, and used in conjunction with the information outlined in this appraisal, is deemed fit for purpose as an Internal "Waterproof Membrane and Tile Adhesive System"
- 17.6 A full list of the complete testing information and results can be downloaded from **technokolla.com/certifications-and-quality**



rasogum +

TECHNICAL DATA	VALUE	STANDARD
Appearance	Viscous paste	
Colour	White - Manhattan	
pH	~ 8.5	
Brookfield viscosity (impeller rv6-5 rpm)	~ 130,000 cps	
Weight density	~ 1.45 gr/cm ³	
Maximum thickness per coat	1 mm	
Minimum thickness of dry film	1 mm	
Waiting time between the two coats	2-3 h	
Complete setting	7 days	
Can be tiled after	*24-48 h	
Temperature during application	min. +5°C, max +35°C	
Thermal resistance	from -30°C to +80°C	
ADHESION VALUES		
Initial tensile adhesion strength	~ 2,0 N/mm ²	EN 14891: 2012/AC:2012
Tensile adhesion strength after water immersion	~ 1,5 N/mm ²	EN 14891: 2012/AC:2012
Tensile adhesion strength after heat ageing action	~ 2,5 N/mm ²	EN 14891: 2012/AC:2012
Water tightness	no penetration	EN 14891: 2012/AC:2012
Elongation		
Ultimate elongation	~ 400%	ISO37

* these times refer to a temperature of 23°C-50% R.H.. They are shorter at higher temperatures and longer at lower temperatures.

rasolastik advance

TECHNICAL DATA	COMPONENT A	COMPONENT B
Appearance	grey powder	white liquid
Apparent specific mass	approx. 1350 kg/m ³	approx. 1150 kg/m ³
Mixing ratio	2.8	1
Storage	12 months in unopened pack in dry place	12 months in unopened pack protected against freezing temperatures

FINAL PERFORMANCE	VALUE	REQUIREMENT	STANDARD
Initial bond	~ 2.5 N/mm ²	≥0.5 N/mm ²	EN 14891
Bond after immersion in water	~ 0.9 N/mm ²	≥0.5 N/mm ²	EN 14891
Bond after the action of heat	~ 1.6 N/mm ²	≥0.5 N/mm ²	EN 14891
Bond after immersion in limewater	~ 1.7 N/mm ²	≥0.5 N/mm ²	EN 14891
Bond after freezing/thawing cycles	~ 1.4 N/mm ²	≥0.5 N/mm ²	EN 14891
Bond after immersion in chlorinated water	~ 1.7 N/mm ²	≥0.5 N/mm ²	EN 14891
Crack bridging ability	~ 1.35 mm	≥0.75 mm	EN 14891
Crack bridging ability at low temperatures (-20°C)	~ 1.3 mm (no grid)	≥0.75 mm	EN 14891
Crack bridging ability at low temperatures (-20°C)	~ 2.3 mm (with grid)	≥0.75 mm	EN 14891
Impermeability with 1.5 bar water pressure for 7 days	Impermeable		EN 14891

APPLICATION SPECIFICATIONS	VALUE
Application	brush, roller and spray gun
Pot life	*50 min.
Minimum thickness per coat	1 mm
Maximum thickness per coat	1.5 mm
Time interval between 1st and 2nd coat	*3-5 h.
Consumption	approx. 1.6 kg/m ² per mm of thickness
Temperature during application	min.+5°C, max.+35°C
Can be tiled after	*3-4 days

* these time intervals refer to a temperature of 23°C - 50% R.H.



rasolastik evo

TECHNICAL DATA	VALUE	REQUIREMENT	STANDARD
Weight density	~ 1.5 kg/liter		
Particle size	Dmax: 0.315 mm		
Mixing ratio - consistency suitable for roller application	~ 7 liters of water per 20 kg bag		
Mixing ratio - consistency suitable for brush application	~ 6 liters of water per 20 kg bag		
Mixing ratio - consistency suitable for trowel application	~ 4.4 liters of water per 20 kg bag		
Pot-Life at 20°C	~ 60 min		
Water pressure resistance - Positive	5 bar		EN 12390-B
Water pressure resistance - Negative	2.5 bar		UNI 8298/8
Bond after immersion in salt water - 1 month	~ 1.90 MPa		EN 1542
Bond after immersion in salt water - 3 months	~ 1.52 MPa		EN 1542
Bond after immersion in salt water - 6 months	~ 1.22 MPa		EN 1542
Bond after immersion in salt water - 1 year	~ 1.15 MPa		EN 1542
Permeability to CO ₂	S _D : 61 m	S _D ≥ 50 m	EN 1062-6
Water vapour permeability	S _D : 2.91 m (Class I)	Class I – S _D < 5 m (permeable) Class II – 5m ≥ S _D ≥ 50 m Class III – S _D < 5 m (not perm.)	EN ISO 7783
Liquid water permeability and capillary absorption	~ 0.016 kg·m ⁻² ·h ^{-0.5}	w < 0.1 kg·m ⁻² ·h ^{-0.5}	EN 1062-7
Thermal compatibility (immersion in deicing salts)	~ 2.40 N/mm ²	≥ 1 N/mm ²	EN13687-1
Bond strength	~ 2.60 N/mm ²	≥ 1 N/mm ²	EN 1542
Crack bridging ability	L > 0.5 mm	Class A3 (+23°C)	EN 1062-7
Dangerous substances (Hexavalent chromium)	< 0.0002%	Conforms to point 5.4	EN 196-10
Reaction to fire	A2	Euroclass	EN 13501-1

TECHNICAL SPECIFICATIONS	TEST METHOD	RESULTS	REQUIREMENT	STANDARD
Waterproof (1.5 bar for 7 days)	A.7	No passage of water	No passage of water	EN 14891:2012
Initial tensile strength	A.6.2	~ 2.2 MPa	≥ 0.5 MPa	EN 14891:2012
Tensile strength after immersion in water	A.6.3	~ 1.6 MPa	≥ 0.5 MPa	EN 14891:2012
Tensile strength after thermal ageing	A.6.5	~ 3.0 MPa	≥ 0.5 MPa	EN 14891:2012
Tensile strength after freezing-thawing cycles	A.6.6	~ 1.1 MPa	> 0.5 MPa	EN 14891:2012
Tensile strength after immersion in limewater	A.6.9	~ 1.3 MPa	≥ 0.5 MPa	EN 14891:2012
Tensile strength after immersion in chlorinated water	A.6.7	~ 1.1 MPa	≥ 0.5 MPa	EN 14891:2012
Crack resistance in standard conditions (+23°C)	A.8.2	~ 0.95 mm (without net)	≥ 0.75 mm	EN 14891:2012
Crack resistance at low temperatures (-5°C)	A.8.3	~ 0.90 mm (without net)	≥ 0.75 mm	EN 14891:2012

Values obtained after 3.6 kg/m² total consumption in two coats.

APPROVALS / CERTIFICATIONS

Cement-based liquid product (CM) for waterproofing treatments under tiles (glued with class C2 adhesive, according to EN 12004) with crack bridging ability at low temperatures (-5°C) and suitable for contact with chlorinated water, in compliance with the requirements established by EN 14891:2012 in class CMO1P. Conforms to annex ZA Table ZA.1 DoP No. 02 07 01 01 001 0 000231 1026. 14891: the notified test laboratory Modena Centro Prove S.r.l., Lab. No. 01599 performed the initial type tests on samples taken by the manufacturer, in accordance with AVCP System Type 3 testing and issued test report No. 20142364.

SPECIFICATION

Substrates on which ceramic tiles must be laid must be waterproofed with cement-based mortar such as TECHNOKOLLA'S RASOLASTIK EVO, to be blended with water alone.

Technokolla reminds you to examine the “notes” document that completes the information in this data sheet. The document can be downloaded in the pdf format from the website www.technokolla.com.

The advice about technical matters in the technical data sheets, or given verbally or in writing by our personnel as part of our customer assistance service, is the result of our best and most up to date experience. Since we are unable to personally modify the conditions in the building site or the way the work is carried out, this information is purely indicative and, thus, binds us neither legally nor in any other way in relation third parties. This information does not relieve the end user from being responsible for testing our products so as to make sure they are fit for the required use. We therefore strongly advise the customer/user to subject Technokolla's products to preventive tests in order to ensure that they are suitable. The end user is also responsible for checking to make sure that this technical data sheet is not obsolete and that more recent editions have not replaced it. Thus, before using our products, you are advised to download the most up to date version of the technical data sheet from our web site www.technokolla.com.

techno-power

TECHNICAL DATA	VALUE	REQUIREMENT	STANDARD
Curing time	3 min		
Pot life	*6 h		
Open time	*30 min	°30 min	EN 1346
Adjustability time	*Approx. 50 min		
Treadable	*After 24-36 h		
Floor tiles can be grouted	*After 24-36 h		
Wall tiles can be grouted	*After 4-6 h		
Surface can be used	*After 14 days		
Creep on vertical wall	≤ 0.5 mm	°≤ 0.5 mm	EN 1308
	GREY	WHITE	
Initial tensile strength	~ 1.5 N/mm ²	~ 1.3 N/mm ²	°≥ 1 N/mm ² EN 1348
Tensile strength after the action of heat	~ 1.4 N/mm ²	~ 1.1 N/mm ²	°≥ 1 N/mm ² EN 1348
Tensile strength after immersion in water	~ 1.2 N/mm ²	~ 1.3 N/mm ²	°≥ 1 N/mm ² EN 1348
Bond after freezing/thawing cycles	~ 1.5 N/mm ²	~ 1.5 N/mm ²	°≥ 1 N/mm ² EN 1348

° according to standard "EN 12004"

* time intervals refer to a temperature of 23°C-50% R.H.. They become shorter with higher temperatures and longer at lower temperatures.

techno s-one

CONSUMPTION			
Trowel	8x8 mm	10x10 mm	Ø15 mm
TECHNO S-ONE	~ 4 kg/m ²	~ 5 kg/m ²	~ 7 kg/m ²

Consumption data refer to sole use of a trowel on flat substrates.

TECHNICAL DATA	VALUE	REQUIREMENT	STANDARD
Curing time	3 min		
Pot life	*5 h		
Open time	*30 min	°30 min	EN 1346
Adjustability time	*Approx. 45 min		
Treadable	*After 24-36 h		
Floor tiles can be grouted	*After 24-36 h		
Wall tiles can be grouted	*After 4-6 h		
Surface can be used	*After 14 days (21 days for tanks and swimming pools)		
Creep on vertical wall	≤ 0.5 mm	°≤ 0.5 mm	EN 1308
Transverse deformation	2.5 mm	≥ 2.5 mm	EN 12002
	GREY	WHITE	
Initial tensile strength	~ 2.3 N/mm ²	1.8 N/mm ²	°≥ 1 N/mm ² EN 1348
Tensile strength after the action of heat	~ 2.6 N/mm ²	1.8 N/mm ²	°≥ 1 N/mm ² EN 1348
Tensile strength after immersion in water	~ 1.0 N/mm ²	1.0 N/mm ²	°≥ 1 N/mm ² EN 1348
Bond after freezing/thawing cycles	~ 1.6 N/mm ²	1.6 N/mm ²	°≥ 1 N/mm ² EN 1348

° according to standard "EN 12004"

* time intervals refer to a temperature of 23°C-50% R.H.. They become shorter with higher temperatures and longer at lower temperatures.



technostar

CONSUMPTION			
Trowel	8x8 mm	10x10 mm	Ø15 mm
Technostar	~ 4 kg/m ²	~ 5 kg/m ²	~ 7 kg/m ²

Consumption data refer to sole use of a trowel on flat substrates.

TECHNICAL DATA	VALUE	REQUIREMENT	STANDARD
Curing time	10 min		
Pot life	*6 h		
Open time	*30 min	°30 min	EN 1346
Adjustability time	* ~ 50 min		
Treadable	*After 24-36 h		
Floor tiles can be grouted	*After 24-36 h		
Wall tiles can be grouted	*After 4-6 h		
Surface can be used	*After 14 days (21 days for tanks and swimming pools)		
Creep on vertical wall	≤ 0.5 mm	°≤ 0.5 mm	EN 1308
Transverse deformation	2.8 mm	≥ 2.5 mm	EN 12002
	GREY	WHITE	
Initial tensile strength	~ 2.4 N/mm ²	~ 2.3 N/mm ²	°≥ 1 N/mm ² EN 1348
Tensile strength after the action of heat	~ 1.7 N/mm ²	~ 1.6 N/mm ²	°≥ 1 N/mm ² EN 1348
Tensile strength after immersion in water	~ 1.5 N/mm ²	~ 1.6 N/mm ²	°≥ 1 N/mm ² EN 1348
Bond after freezing/thawing cycles	~ 1.9 N/mm ²	~ 1.5 N/mm ²	°≥ 1 N/mm ² EN 1348

° according to standard "EN 12004"

* time intervals refer to a temperature of 23°C-50% R.H.. They become shorter with higher temperatures and longer at lower temperatures.

EMICODE	
Emission class	r.p. No. Eurofins
EC1 Plus	392-2013-00019204_A_1

FRENCH VOC LABEL	
Emission class	r.p. No. Eurofins
Classe A+	cert. Eurofins n° 00019204_B1 rev1 del 13/10/2013

technorap

TECHNICAL DATA	VALUE	REQUIREMENT	STANDARD
Curing time	3 min		
Pot life	*30 min		
Open time	*10 min	°10 min	EN 1346
Treadable	*After 4-6 h		
Floor tiles can be grouted	*After 4-6 h		
Wall tiles can be grouted	*After 2 h		
Surface can be used	*After 48 h (72 h tanks and swimming pools)		
Creep on vertical wall	≤ 0.5 mm	°≤ 0.5 mm	EN 1308
Bond after 6 h	0.9 N/mm ²	°> 0.5 N/mm ²	EN 1348
Initial tensile strength	1.7 N/mm ²	°≥ 1 N/mm ²	EN 1348
Tensile strength after the action of heat	1.2 N/mm ²	°≥ 1 N/mm ²	EN 1348
Tensile strength after immersion in water	1.3 N/mm ²	°≥ 1 N/mm ²	EN 1348
Bond after freezing/thawing cycles	1.1 N/mm ²	°≥ 1 N/mm ²	EN 1348

° according to standard "EN 12004"

* time intervals refer to a temperature of 23°C-50% R.H.. They become shorter with higher temperatures and longer at lower temperatures.

technomos

CONSUMPTION			
Trowel	3x3 mm	6x6 mm	8x8 mm
Technomos	~ 2 kg/m ²	~ 3 kg/m ²	~ 4 kg/m ²

Consumption data refer to sole use of a trowel on flat substrates.

TECHNICAL DATA	VALUE	REQUIREMENT	STANDARD
Curing time	10 min		
Pot life	*6 h		
Open time	*30 min	°30 min	EN 1346
Adjustability time	* ~ 45 min		
Treadable	*After 24-36 h		
Floor tiles can be grouted	*After 24-36 h		
Wall tiles can be grouted	*After 4-6 h		
Surface can be used	*After 14 days (21 days for tanks and swimming pools)		
Creep on vertical wall	≤ 0.5 mm	°≤ 0.5 mm	EN 1308
Initial tensile strength	~ 1.9 N/mm ²	°≥ 1 N/mm ²	EN 1348
Tensile strength after the action of heat	~ 1.4 N/mm ²	°≥ 1 N/mm ²	EN 1348
Tensile strength after immersion in water	~ 1.0 N/mm ²	°≥ 1 N/mm ²	EN 1348
Bond after freezing/thawing cycles	~ 1.8 N/mm ²	°≥ 1 N/mm ²	EN 1348

° according to standard "EN 12004".

* these time intervals refer to a temperature of 23°C-50% R.H.. They become shorter with higher temperatures and longer at lower temperatures.



Limitations of the Appraisal

The above appraisal is to be read in conjunction with the Technokolla NZ technical data sheet.

The products described in the appraisal are limited to the use for Internal Waterproofing and wet area application in accordance with E3 and B2 of the NZBC

The Technokolla NZ products are deemed fit for purpose as waterproof membrane products for wet area use in the New Zealand construction industry and all substrates must meet the relevant NZBC requirements to perform as an acceptable waterproofing barrier.

All information presented to TANZ to produce the following document has been provided by Technokolla NZ and is relied upon as accurate.

All test information has been supplied from Technokolla laboratories with test results and have been relied upon by TANZ as being accurate.

TANZ has provided the above appraisal in accordance with ISO9001 requirements for an appraisal of product/system.

The performance of the above products listed in this appraisal is reliant on the product performing in the same way or like manner as the tested product samples and the products being installed strictly as per the required installation process.

Technokolla NZ warrants that all products used within the "system" will perform as required for the specified time frame as per the NZBC when installed as per the Technokolla NZ technical data sheet.

TANZ offers no guarantee or warranty within this appraisal on behalf of the manufacturer, supplier, installer, or third party of the product/products or system.

TANZ does not act as an agent for Technokolla NZ.

This appraisal must be read in its entirety, in conjunction with the Technokolla NZ technical data sheet information and must not be partly duplicated and used in any other documentation.

Technokolla NZ agrees to the TANZ Terms and conditions for appraisal responsibilities.



GLENFIELD, NORTH SHORE

30c Porana Road
Email: Glenfield@technokolla.co.nz
Phone: 09 441 6292

ELLERSLIE, AUCKLAND

234 Marua Road
Email: Ellerslie@technokolla.co.nz
Phone: 09 527 4648

HENDERSON, WEST AUCKLAND

32 The Concourse
Email: Henderson@technokolla.co.nz
Phone: 09 837 4005

technokolla.co.nz