Data Sheet

DUROCK™ Tile Membrane

Membrane for use under tile in residential and light-commercial applications

- For floors, walls and countertops in bathrooms, kitchens, laundry rooms and entryways
- Crack-isolation solution when installed with DUROCK™ tile membrane adhesive
- Proprietary cementitious coating provides outstanding tile bond
- Rolls out flat, with no rollback memory
- Lightweight, thin and flexible—easy to handle and install
- Cuts with scissors or knife—no dust, no mess
- Installs quickly—no mechanical fasteners required
- Waterproof and vapor-permeable membrane
- Mold and mildew resistant

Description

DUROCK™ tile membrane is an easy-to-install, thin, waterproof, vapor-permeable underlayment and tilebacker in roll form for use in residential and light-commercial floor, wall and countertop applications. With superior tile bond, DUROCK™ tile membrane provides panel-like performance without the weight. DUROCK™ tile membrane is ideal for use over virtually any floor that is designed to accept tile, including wood, concrete, poured gypsum floors, fully bonded vinyl, VCT, existing tile and radiant heat flooring systems. Easy to install, with a patented cementitious surface for outstanding tile bond, DUROCK™ tile membrane also provides a high-performance crack-isolation solution when installed with DUROCK™ tile membrane adhesive. See CGC data sheet DTMA_DATA_CB511 for more information.

Limitations

1. Membrane must be installed with DUROCK™ tile membrane adhesive to achieve crack isolation.
2. Do not use as a roofing membrane or vapor retarder.
3. Do not expose to negative hydrostatic pressure, rubber solvents or ketones.
4. DUROCK™ tile membrane is not suitable for use as a shower pan liner or in continuously submerged areas such as hot tubs and swimming pools.
5. Membrane is not designed or intended for use as a finished surface.
6. Do not install DUROCK™ tile membrane over heavily cushioned, thick-foam backed or perimeter-adhered vinyl flooring.
7. Do not install when ambient or conditioned temperature is below 10 ºC (50 °F) or above 38 ºC (100 °F).
8. Use of DUROCK™ tile membrane is not approved for bridging control joints, construction joints, where dissimilar materials meet or where vertical displacement is anticipated. Refer to the TCNA Handbook for Ceramic Tile Installation for the proper placement and design of movement joints.

When installed with DUROCK™ tile membrane adhesive

1. Do not install DUROCK™ tile membrane adhesive when substrate temperature is below 10 ºC (50 °F) or above 32 ºC (90 °F), or when the relative humidity exceeds 65%.
2. Crack isolation limited to in-plane (lateral) crack widths of less than 3 mm (1/8").
3. Moisture content of wood-based subfloors shall not exceed 12%, by use of a pin-type moisture meter designed to check moisture levels in wood and wood products.
4. Moisture content of concrete subfloors shall be determined by calcium chloride test (ASTM F1869). The maximum allowable moisture emission level shall be 170 µg/(s m^2) (3 pounds per 1000 sq.ft per 24 hours).
5. Moisture content of poured gypsum underlayment floors shall be determined by the polyethylene sheet test (ASTM D4263). No condensation after 16 to 24 hours indicates the floor is dry and the DUROCK™ tile membrane can be installed.
6. Installation is limited to dry or limited-water-exposure areas for light-commercial installations, as defined in the Handbook for Ceramic Tile Installation published by the Tile Council of North America Inc.
7. Installation is limited to dry and wet areas for residential installations only, as defined in the Handbook for Ceramic Tile Installation published by the Tile Council of North America Inc.

Applications

Approved Substrates

1. Floors—Wood-based sheathing, plywood or OSB (APA-Rated Sturd-I-Floor® subfloor, exposure 1 or better); structural cementitious panels (ICC AC318-compliant), cementitious backer units (CBU), FIBEROCK® brand AQUA-TOUGH™ underlayment, fiber-cement underlayment, poured gypsum underlayment, existing fully bonded sheet vinyl, VCT, and tiled surfaces.
2. Walls—Gypsum board (dry areas only), plastered surfaces (dry areas only), cementitious backer units (CBU), FIBEROCK® AQUA-TOUGH™ panels and fiber cement panels.
3. Subfloor requirements:

Joist Spacing	Minimum Sub-floor Thickness
406 mm (16") o.c.	18 mm or 19 mm (23/32" or 3/4")
488 mm (19.2") o.c.	18 mm or 19 mm (23/32" or 3/4")
610 mm (24") o.c.	21 mm or 22 mm (27/32" or 7/8")

* All decking shall be T&G or back-blocked at unsupported edges. Poured gypsum underlayment must be sealed prior to installation of DUROCK™ tile membrane.

4. Maximum subfloor live load deflection limit – l/360 for sawn lumber, concrete, and poured gypsum underlayments; l/480 for engineered wood and cold-formed steel systems (prefabricated framing/I-joists). Surfacing materials such as dimensional stone have more restrictive deflection limits. Consult surfacing materials specifications for applicable deflection limit requirements.
5. Surface variation limits—The amount of variation in the surface of the floor or wall is limited to 6 mm (1/4") in 3050 mm (10') from the required plane. Ensure that all fasteners are seated properly and there are no uneven joints. Adjacent edges of the subfloor panels should be within a maximum tolerance of 1 mm (1/32"). Sand subfloor if necessary. Variation in subfloor surfaces shall meet the limits described in the current TCNA Handbook for Ceramic Tile Installation.

Installation

1. Substrate must be structurally sound, well fastened, dry, clean and free of dust, oil, grease, tar, paint, wax, curing agents, primers, loosely bonded toppings, loose particles and any substance that may reduce adhesion. Ensure that existing surface is properly securely to substrate. Refasten as necessary.
2. For floor applications, precut full width of membrane to provide tight fit to room perimeter. For wall applications, lay out installations in advance and precut the largest membrane section that can be comfortably handled prior to application of adhesive.
3. When using DUROCK™ tile membrane adhesive to bond DUROCK™ tile membrane to the substrate, apply adhesive over an area as wide as the membrane and as deep as can be comfortably reached. Required adhesive coverage is approximately 3.7 m^2/L (150 sq. ft/U.S. gal). to ensure sufficient adhesion between DUROCK™ tile membrane and substrate—do not dilute DUROCK™ tile membrane adhesive. Slight adjustments may be necessary to account for variations in substrate porosity, smoothness or application method. Apply adhesive with a U-notch trowel or a paint roller. For trowel applications—minimum trowel size is 2 mm x 2 mm (1/16" x 1/16"). For rough surfaces a 3 mm x 3 mm (1/8" x 1/8") trowel may be required. Apply adhesive in parallel rows across the width or length of the sheet to avoid trapping air under the membrane. For roller application—use a 10 mm (3/8") nap paint roller. Apply adhesive onto substrate in two coats to achieve adequate coverage; apply second coat immediately over first coat. Ensure entire surface is covered in a uniform and continuous manner.
   - **For installation over porous surfaces such as, but not limited to, gypsum panels, wood-based sheathing, plywood or OSB, and unsealed concrete**—DUROCK™ tile membrane should be installed within 15 minutes of adhesive application. Spread adhesive over an area that can be covered by DUROCK™ tile membrane within the 15-minute application window. Do not allow adhesive to form a “skin”, become translucent or develop tack prior to installation of the membrane.
   - **For installation over non-porous surfaces, such as vinyl and existing tile**—Allow adhesive to air-dry becoming translucent and developing tack, before installing DUROCK™ tile membrane. Times will vary depending

on temperature, humidity and substrate type; however, a minimum of 15 minutes should be allowed. Bond between DUROCK™ tile membrane and the substrate should develop within the specified time noted in the chart below; however, factors such as temperature, humidity, substrate porosity, substrate permeability and adhesive thickness will significantly affect drying and bonding time.

4. DUROCK™ tile membrane can also be installed using and ANSI A136.1 Type 1 organic adhesive or ANSI 118.4 latex-modified Portland cement mortar; however installation with these products will not provide crack isolation. Use a 2 mm (1/16") U-notch trowel for organic adhesive applications and a 3 mm (1/8") U-notch trowel for mortar applications or rough surfaces. Spread Type 1 organic adhesive or latex-modified Portland cement mortar, as far as can be comfortably reached. When mixing thin-set mortar, use the specified water-cement ratio, per mortar manufacturer's instructions, to achieve satisfactory bond development. Do not overwater the thin-set mortar mixture.
5. Install DUROCK™ tile membrane with the cementitious (dark) surface out. Embed the membrane into the adhesive using the flat edge of a trowel or a hand roller. Start in the center of the sheet and work out toward edges, removing all air bubbles. Overlap each row 50 mm (2"), making sure an appropriate amount of adhesive is applied to the joint area.
6. For waterproofing applications on adjacent floors and walls, the floor membrane should be installed first. Membrane should be turned up onto adjacent walls a minimum of 50 mm (2") prior to installation of the wall membrane. Ensure that the upturned portion of the floor membrane is fully bonded to the walls. Measure up from the floor 50 mm (2") and draw or snap a line; apply adhesive up from the floor/wall intersection to this line and install precut membrane as described above. In areas where flashing is required to protect adjacent areas from water, cut a membrane strip to desired height. Pre-crease membrane strip in half lengthwise, with half to be adhered to floor and half to vertical surface. Install corners first and then fill in between corners around perimeter. For outside corners, make a relief cut and press into adhesive. Use smooth edge of trowel to fully embed membrane. For inside corners, make a relief cut, applying adhesive where membrane folds over itself to ensure a water-durable connection. Overlap butt joints by 38 mm (1-1/2"); apply adhesive to vertical and horizontal legs of overlapping layers to ensure a water-durable connection. Work material carefully into position and smooth out using the flat edge of the trowel. Areas unable to receive vertical flashing, such as pipe penetrations and bathtubs, should be sealed using a quality silicone sealant. Run a continuous bead and tool material to provide continuity to membrane.
7. Protect untiled floor membrane with FIBEROCK® floor protector paper, cardboard or wood sheets to prevent abrasion or accidental puncture.
8. Minimum cure times before installing tile:

Membrane Installed Using	Minimum Cure Time Before Installing Tile
DUROCK™ Tile Membrane Adhesive	2 hours
ANSI A136.1-type Organic Adhesive	4 hours
ANSI 118.4 Latex-modified Portland Cement Mortar	8 hours

*Cure times will vary depending on temperature, humidity, and substrate type.

9. To verify satisfactory bond between DUROCK™ tile membrane and substrate, lift the installed membrane at a corner where it is bonded to substrate; good bond is verified when the top membrane layer pulls away, leaving the bottom layer bonded to the substrate. If this designed separation does not occur, allow for additional curing. Repeat this test as necessary in a different area until satisfactory results are achieved. Repair the test areas as needed using additional adhesive.
10. Install tiles on cementitious (dark) side of membrane with ANSI A118.4 latex-modified Portland cement mortar or ANSI A136.1 Type 1 organic adhesive. Determine correct trowel size based on tile material and size to achieve at least 95% coverage of the average tile contact area.
11. After tile installation, do not walk on floor for at least 48 hours unless walking boards or plywood sheets are used, as per current TCNA Handbook for Ceramic Tile Installation. Select, prepare and install ANSI A118.7 latex-modified or ANSI A118.8 modified epoxy emulsion grout per grout manufacturer recommendations.

Product Data

Sizes and Packaging

28 m² (300 sq. ft) rolls, 915 mm wide x 30 m (36" wide x 100')
7 m² (75 sq. ft) kit 7 m² (75 sq. ft). of DUROCK™ tile membrane, 915 mm (36") wide and two one-quart pails of DUROCK™ tile membrane adhesive included in kit)

Standards

DUROCK™ tile membrane is rated for residential and light-commercial applications under ASTM C627, "Standard Test Method for Evaluating Ceramic Floor Tile Installation Systems Using the Robinson-Type Floor Tester."

Availability and Cost

DUROCK™ tile membrane is distributed throughout Canada. Contact a CGC Inc. sales office or sales person for additional information.

Composition

DUROCK™ tile membrane is made from a patented, engineered reinforcement, covered on one side with a cementitious coating.

Warranty and Materials

Products and systems provided by CGC Inc. are warranted to be free from defects in material and workmanship. Contact a CGC Inc. sales office for complete warranty details.

Technical Data

Property	ANSI/ASTM Test	DUROCK Tile Membrane
Fungus and microorganism resistance	ANSI A118.10	no mold growth
Seam strength	ANSI A118.10/ASTM D751	> 8 lbs./inch width
Breaking strength	ANSI A118.10/ASTM D751	>1172 kPa (170 psi)
Dimensional stability	ANSI A118.10/ASTM D1204	< 0.7%
Shear strength to ceramic tile and cement mortar	ANSI A118.10/ASTM C482	> 345 kPa (50 psi)
Waterproofness	ASTM C473 (section 21)**	no visible water penetration to the back surface
Permeance	ASTM E96 (Procedure A)	570 ng/(Pa.s.m²)
System performance	ANSI A118.10/ASTM C627	residential, light-commercial
Point load	ANSI A118.12	> 450 kg (1000 Lbs)
System crack resistance	ANSI A118.12	no failure up to 3mm (1/8") crack opening

** Not intended for continuous water submersion as related to ASTM 118.10.

Product Information
See cgcinc.com for the most up-to-date product information.

Note
Products described here may not be available in all geographic markets. Consult your CGC Inc. sales office or representative for information.

Trademarks
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Safety First!
Follow good safety and industrial hygiene practices during handling and installation of products and systems. Take necessary precautions and wear the appropriate personal protective equipment as needed. Read material safety data sheets and related literature on products before specification and/or installation.

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