



The ImmediaTile system is a fast, easy and permanent tile installation system that includes tile with pre-applied adhesive that avoids the mess and waste associated with traditional installation methods.

Interior wall surfaces that are flat, clean and dry are prepared with the ImmediaTile Bond Enhancer and/or Waterproofing Membrane, then permanently set when the ImmediaTile's pre-applied adhesive contacts the substrate and is pressed firmly into place. To complete the system, ImmediaTile Grout is designed to be compatible with all components and provides a durable, flexible finish that also enhances the strength of the overall installation.

SYSTEM COMPONENT TESTING

To test system performance, H.B. Fuller Construction Products, the manufacturer of ImmediaTile installation products, conducted several tests and technical installations within its own laboratory to assess bond, water permeability, crack bridging capability and real-world installations.

1. BOND

To assess bond, the ISO 13007-2 tensile adhesion test was chosen as the basis for the evaluation. Due to the uniqueness of the ImmediaTile system, two modifications were made to the test method.

First, all test substrates were coated using the specially designed bond enhancer, per manufacturer recommendations. Second, to accommodate the need to activate the pre-applied PSA adhesive on the back of the tile, approximately 15 pounds of weight was applied to each 4 square inch (5,08 cm x 5,08 cm) test tile. This process replicates the actual tile installation process. The test assemblies were then tested in accordance with the ISO 13007-2 requirements. Results are recorded as follows:

Condition	ISO Requirement	Test Result N/mm ²	Test Result	Pass ISO Test Requirement
Tensile adhesion strength 24 hr	N/A	3,16 N/mm ²	458,91 PSI	N/A
Tensile adhesion strength 72 hr	N/A	3,24 N/mm ²	469,65 PSI	N/A
Tensile adhesion strength 7 day	N/A	2,05 N/mm ²	297,05 PSI	N/A
ISO Standard Condition Tensile adhesion strength 28 day	C1= 0,5 N/mm ² Minimum C2= 1,0 N/mm ² Minimum	2,99 N/mm ²	433,75 PSI	Yes, Passes C1 & C2
ISO Standard Condition Tensile adhesion strength after water immersion	C1= 0,5 N/mm ² Minimum C2= 1,0 N/mm ² Minimum	1,77 N/mm ²	256,07 PSI	Yes, Passes C1 & C2
ISO Standard Condition Open time: tensile adhesion strength	C1= 0,5 N/mm ² Minimum After not less than 20 minutes	3,05 N/mm ²	442,14 PSI	Yes
Special characteristic Tensile adhesion strength Fast Setting Adhesives	Tensile after no more than 6 hours 0,5 N/mm ² Minimum Tensile after Open time: after not less than 10 min (W) 0,5 N/mm ²	2,90 N/mm ²	420,63 PSI	Yes, Passes F
Special characteristic Transverse deformation (Flexible/Deformable Adhesive)	Deformable adhesive (S1) 2,5-5 mm, Highly deformable adhesives (S2) greater than 5 mm	Greater than 5 mm	Greater than 5 mm	Yes, Passes S1 & S2
Special characteristic E - Extended open time	Extended open time: tensile adhesion strength greater than 0,5 N/mm ² after not less than 30 min	2,92 N/mm ²	423,69 PSI	Yes, Passes E
Special characteristic P - Exterior glue plywood adhesion (optional substrates)	Normal exterior glue plywood adhesion (P1) 0,5 N/mm ² Improved exterior glue plywood adhesion (P2) 1 N/mm ²	2,86 N/mm ²	414,29 PSI	Yes, Passes P1 & P2

CONCLUSION

According to the requirements for passing ISO 13007-1, a Global standard for Cementitious Tile Adhesives, **all applicable conditions tested exceed the minimum tensile bond threshold** for both C1 and C2 Cementitious Adhesives.

The conditioning time for the standard samples does not seem to influence the tensile strength and the PSA achieves close to its maximum strength as soon as 6 hrs. The

permanent PSA attributes of the Hot Melt Adhesive realize nearly unmeasurable Open Time.

This system exceeds both the Fundamental and Improved Requirements of the Open Time Test requirements for ISO 13007-1.

The ImmediaTile System **also passes several of the Special Characteristics** including Fast Setting, Extended Open Time, Deformable Adhesives, and bonding to Plywood Substrates.

Based on this testing the ImmediaTile System passes and exceeds the requirements for ISO 13007-2 C2, F, S2, E & P2 Cementitious Adhesives.

2. WATERPROOFING

To assess waterproofing, the system was tested according to the EN 14891 Standard specification (standard in accordance with ISO 14891-6) requirements. The tile used for the testing were 4 square inch (5,08 cm x 5,08 cm) C-tile bonded to the waterproofed assembly with 15 pounds of weight applied for 30 seconds to each one. This process replicates the actual tile installation process. Results are as follows:

Condition	EN Requirement	Test Result N/mm ²	Test Result	Pass EN Test Requirement
EN Standard Condition Tensile adhesion strength 28 day	0,5 N/mm ² Minimum	1,89 N/mm ²	274,12 PSI	Yes
EN Standard Condition Tensile adhesion strength after water contact	0,5 N/mm ² Minimum	0,70 N/mm ²	101,82 PSI	Yes
EN Standard Condition Tensile adhesion strength after heat ageing	0,5 N/mm ² Minimum	1,93 N/mm ²	279,56 PSI	Yes
EN Standard Condition Tensile adhesion strength after freeze-thaw	0,5 N/mm ² Minimum	1,91 N/mm ²	276,71 PSI	Yes
EN Standard Condition Tensile adhesion strength after lime water contact	0,5 N/mm ² Minimum	0,90 N/mm ²	130,58 PSI	Yes
EN Standard Condition Water impermeability	No water intrusion 20 g weight gain Maximum	No intrusion 0 g weight gain	N/A	Yes
EN Standard Condition Crack bridging ability	0,75 mm Minimum	> 1,5 mm	> 0,06 in	Yes

CONCLUSION

According to the requirements for passing EN 14891, applicable conditions tested **exceed the minimum tensile bond** threshold. The ImmediaTile Waterproofing System exceeds the requirements of EN 14891 with no visible water intrusion and zero weight gain. The crack bridging ability also **far exceeds the minimum requirement**.

3. REAL-WORLD SHOWER APPLICATION

To assess the performance of the system on shower wall applications, a shower mockup assembly was installed using the ImmediaTile System.

The mockup consisted of HardieBacker® cement board substrate. The assembly was coated with ImmediaTile Waterproofing membrane per the application instructions including waterproofing mesh in shower corners and terminations. Once the Waterproofing Membrane was fully dry, the ImmediaTile glazed ceramic wall tiles were installed within the first vertical 6 feet of Hardiebacker in a horizontal grid pattern with ¼ inch grout joints. The tile was grouted with ImmediaTile RTU Grout following applications instructions and allowed to dry for 24 hours.

After 24 hours, the plane changes were caulked/sealed using a 100% silicone sealant. The finished assembly was allowed to dry/cure for 7 days before being exposed to water.

To simulate a real-world scenario and in addition to normal usage, the shower was run for 30 min and then allowed to dry for 30 min. This was repeated daily for a total of 4 hrs (2 hr total shower, 2 hr dry). These cycles started March 2nd, 2020 and this was repeated daily for 6 months. A Wohler VE 200 borescope was used to check behind the mock-up for water intrusion. Results showed no water intrusion behind the installation. Grout surface was hard and unaffected by the continuous daily water soaking. None of the tile have debonded or are loose or hollow.

CONCLUSION

The shower testing has been a success, there have been **no evidence of water intrusion** into the system. The tiles are securely adhered to the Hardiebacker with no deleterious effects on grout, waterproofing bond or overall system performance.

HardieBacker® is a registered trademark of James Hardie Building Products Inc.

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