ECO2 CLIP MORTAR™

PRODUCT DESCRIPTION

ECO2 CLIP MORTAR™ is an industry-first mortar engineered specially for Clip Leveling Spacers. The product is highly polymer-modified and ultra-creamy, designed to wet into both the substrate and tile. ECO2 CLIP MORTAR is silica sand-free, single-component, sag/slump-resistant and ideal for vertical and horizontal installation of normal and large-format non-vitreous, semi-vitreous and impervious tiles, including porcelain and most natural stone with or without Clip Leveling Spacers. The ECO2 CLIP MORTAR formula contains a blend of high-performance ingredients and light-weight recycled glass aggregates that work to create the mortar's sag and slump resistance; as well as create an incredibly easy, creamy-smooth handling mortar that dramatically increases job site efficiency. A 45 lb (20.4 kg) of ECO2 CLIP MORTAR bag offers the SAME VOLUME/COVERAGE as a 50 lb (22.7 kg) bag of conventional mortar, allowing for easier carrying and transport.

Green Features

- **51% recycled content**
- **23 lbs (10.5 kg) of glass per bag diverted from the landfill**
- **100% silica sand-free**
- **Solvent-free - no VOCs**
- **Will not promote mold, mildew or bacteria growth**
- **Contributes to LEED® and WELL® objectives and requirements**

Performance Features

- **Industry-first mortar specially-designed for Clip Leveling Spacers**
- Ultra-creamy
- Exceptional contact with both substrate and tile
- Extended open time
- Sag/slump resistant
- For setting normal and large-format non-vitreous, semi-vitreous, vitreous and impervious ceramic and porcelain tiles, mosaics, pavers and quarry tiles with or without Clip Leveling Spacers
- For setting marble and granite dimension stones with or without Clip Leveling Spacers (see LIMITATIONS)
- Performance exceeds requirements for institutional, commercial and residential applications
- Meets or exceeds ANSI A118.4 E & T and ANSI A118.11 requirements

Packaging

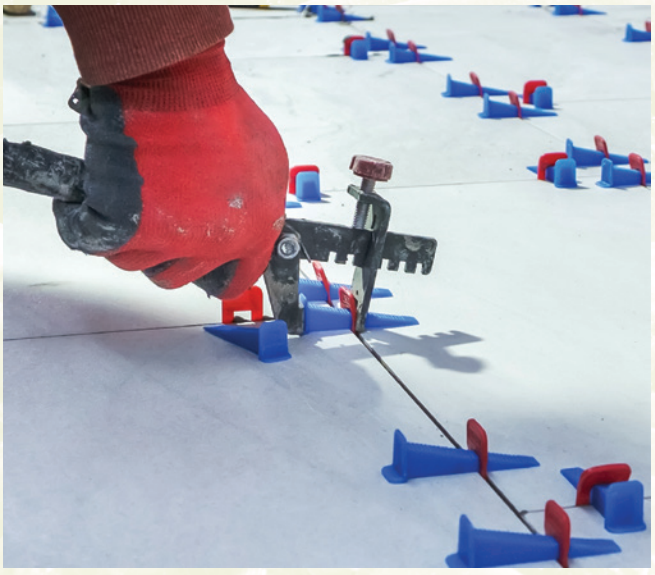
45 lb (20.4 kg) bag, gray or white

Suitable Substrates

NOTE: Using ECO2™ PRIMER prior to the application of ECO2 CLIP MORTAR can eliminate time-consuming surface preparation, such as scarifying or shotblasting (refer to technical data sheet for details).

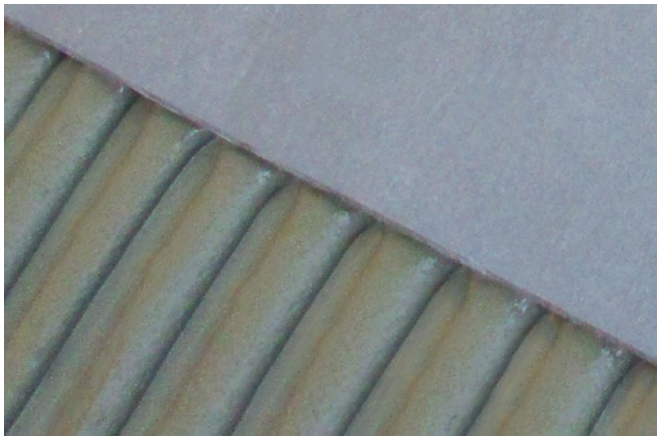
- Dry, cured concrete (28 days old). For concrete substrates less than 28 days old, please contact our Technical Service Department for appropriate recommendations
- Concrete and masonry blocks
- Cement backer units (CBU)
- Cementitious screeds, rendering, leveling coats and mortar beds
- Gypsum wallboard (INTERIOR dry areas only)
- Double layered EXTERIOR Grade Douglas Fir Plywood, certified CANPLY (SELECT) or (SEL-TF) CSA 121, minimum 1 1/4" (32 mm) total thickness, for INTERIOR Residential Light -duty Floors and countertops, in dry areas only
- Radiant heating system
- Uncoupling membrane (interior use only)
- Sheet-applied waterproofing and vapor retarder membranes complying to ANSI A118.10 norm (interior use only)
- Existing ceramic tiles (interior applications) *
- Cementitious Terrazzo floors*
- Epoxy Moisture Management/Resinous Flooring*
- Old Cut-back adhesive residue*

* *With adequate prior preparation (contact our Technical Services Department for appropriate recommendations)*



Limitations

- For setting EXTRA-LARGE / EXTRA-THIN units (above 24" x 24" [60 x 60 cm] and less than 3/16" [5 mm] thickness), please contact our Technical Service Department for appropriate recommendations.
- Do not use at temperatures below 10°C (50°F) or above 35°C (95°F).
- Do not apply directly over particleboard, chipboard, presswood, Lauan, masonite, OSB, or other dimensionally unstable materials.
- Do not use for the installation of green marble and other moisture sensitive stones that react to standard cement mortars and setting materials containing water.
- For the installation of white, pastel or translucent marble, use only ECO2 CLIP MORTAR WHITE.
- Do not use for installing glass tiles.
- Do not use for installations submitted to prolonged water contact, immersion or high humidity level (e.g. pools, gang showers, fountains, steam rooms, spas, etc.).
- Do not use where excessive moisture/hydrostatic conditions, and/or recurring moisture problems exist.
- When using ECO2 CLIP MORTAR over a radiant heating system (previously checked for good functioning), turn the system off 24 hours prior to the installation and wait at least 2 weeks before turning it back on.



TECHNICAL DATA

Applicable Standards

For Additional Information, please refer to the most recent TCNA handbook for ceramic tile installation or the TTMAC Specification Guide 09 30 00 Tile Installation Manual, or visit our website at www.eco2level.com.

WORKING PROPERTIES (@73°F [23°C] and 50% RH)	
Pot life	> 1 hour
Open time	≥ 30 minutes
Initial cure	> 24 hours
Final cure	28 days
Adjustability	35-45 minutes

PHYSICAL PROPERTIES (@73°F [23°C] and 50% RH)		
VOC content		0 g/L
Recycled content		51% recycled content (23 lb per 45 lb bag)
Silica sand content		0%
Silica quartz content		< 0.1%
Shear strength per ANSI A118.4 tests (at 28 days)		
Test	Standard	Results
Porcelain tile	> 200 psi (1.3 MPa)	> 300 psi (2.1 MPa)
Quarry tile	> 150 psi (1.03 MPa)	> 300 psi (2.1 MPa)
Shear strength per ANSI A118.11 tests (at 28 days)		
Test	Standard	Results
Quarry tile to plywood	> 150 psi (1.03 MPa)	> 250 psi (1.7 MPa)
ANSI 118.4E - Extended open time		
Test	Standard	Results
On concrete	> 75 psi (0.5 MPa)	> 250 psi (1.72 MPa) Pass
ANSI 118.4T - sag resistance		
Test	Standard	Results
On concrete	< 0.02 in (0.5 mm)	< 0.01 in (0.3 mm) Pass
Approximate coverage per 45 lb (20.4 kg) bag		
Notched trowel		Coverage
1/4" x 1/4" x 1/4" (6 x 6 x 6 mm)		80 ft² (7.5 m²)
1/4" x 3/8" x 1/4" (6 x 10 x 6 mm)		65 ft² (6.0 m²)
1/2" x 1/2" x 1/2" (12 x 12 x 12 mm)		40 ft² (3.7 m²)
3/4" x 9/16" x 3/8" (19 x 14 x 10 mm) U-notch		35 ft² (3.2 m²)
3/4" x 5/8" x 5/16" (19 x 16 x 8 mm) U-notch		27 ft² (2.5 m²)
Shelf life		
12 months if kept in its original unopened packaging and stored in a dry location.		

INSTALLATION

Surface Preparation

- All supporting surfaces must be structurally sound, solid, stable, level, plumb and true.
- Surfaces must be clean and free of dust, oil, grease, paint, tar, wax, curing agent, primer, sealer, form release agent or any deleterious substance and debris which may prevent or reduce adhesion.
- Acids, concentrated alkaline conditions and cleaning chemical residues must be neutralized or removed.
- All concrete substrates must be solid, sound, slightly textured and have a direct tensile cohesive strength greater than 175 psi (1.2 MPa) when tested in accordance with ACI 503 R – (Appendix A) procedure.
- On grade or below grade concrete slabs must be installed over an effective vapor barrier.
- All concrete substrates must be dry and free of hydrostatic conditions and/or extreme moisture problems. Do not prime, repair, level or patch the substrate, or install any floor covering materials until moisture problems and conditions have been addressed to meet finished flooring manufactures requirements. Please contact our Technical Service Department for appropriate recommendations
- Smooth concrete substrate surfaces must be either PRIMED with ECO2™ PRIMER OR mechanically roughened in accordance with an engineer approved procedure (shotblasting, scarification, grinding, sand or waterblasting, etc) to provide sufficient surface texture and profile for adequate bonding of the product.
- For ceramic and porcelain tiles up to 12" x 12" (30 x 30 cm), the structural design of the wood substrate must not allow a deflection greater than L/360 when tested to 300 lb (136 kg) concentrated loads in accordance with ASTM C627 Standard test method. For square and rectangular tiles with one edge dimension 15" (38 cm) and 18" (45 cm) up to 23" x 23" (58 x 58 cm) the maximum deflection should not exceed L/540 unless an effective CIM (crack isolation membrane) is used in the installation system. For tiles 24" x 24" (60 x 60 cm) or larger and for ALL dimension stone installation, the maximum deflection must not exceed L/720.

NOTE: Do not overheat floors or basement during cold season construction. These conditions could cause the product to cure too rapidly and affect its performance.

Mixing

Mixing ratio: 2 1/3 – 2 3/4 parts powder to 1 part water (by volume)

1. Use clean mixing-tools and containers.
2. In a clean mixing container, measure and pour 6.4 quarts – 7.4 quarts / 1.6 US gal - 1.85 US gal (6.1L – 7.0 L) of cool clean water and gradually add 45 lb (20.4 kg) of ECO2 CLIP MORTAR powder mix, while mixing slowly.
   NOTE: For applications underneath some membranes or for gluing down plywood/cement board on plywood, measure and pour up to 7.9 quarts / 2 gal (7.5L) of cool clean water and gradually add the powder mix, while mixing slowly.
3. Using a low-speed mechanical mixer (150 - 300 rpm), mix until a homogeneous, smooth, lump-free, consistency is achieved.
4. Let the mortar sit approximately 10 minutes; remix without adding any more water or powder-mix.
5. The product is now ready for setting.
6. During the setting, keep the mortar-mix fresh & smooth by periodically re-stirring the inside of the bucket without ever adding water.
7. Clean tools and hands with water while the mortar is still fresh.

Application

ECO2™ offers expert jobsite inspections for all applications to help ensure every project is a complete success.
Contact ECO2™ Technical Services for complete details.

NOTE: Protect from any direct air ventilation or heat radiation source, such as direct sunlight, during and after the installation.

1. Pressure-apply the mortar with the flat edge of the recommended notched-trowel to promote a positive bond and completely cover the substrate.
2. IMMEDIATELY AS YOU GO (without delay) and before skinning or drying occurs, apply a sufficient mortar layer and, using the notched side of the trowel, ridge in a straight-line directional pattern to achieve an even setting bed. For walls, maintain ridges running in a horizontal directional pattern. **For large format tile installation on floors, it may be necessary to back-butter each individual large-format tile completely with fresh mortar and to apply them without delay over the freshly-applied ridged mortar bed to ensure proper transfer.**
3. Do not spread more mortar than can be covered with tiles within 30 minutes.
4. If the mortar dries or skins-over, it must be removed and replaced with fresh mortar.
5. Place tiles firmly with a slight back and forth motion across ridges and tamp tiles repeatedly to achieve at least an 85% mortar contact with the tile back (95% in wet areas, commercial floors and exterior installations and 100% for natural stone installation).
6. Tiles should be embedded in the mortar to at least 1/3 of their thickness.
7. Remove excess mortar from grout space and wipe-off blotches and smears immediately while mortar is fresh.

Expansion and Control Joints

- Install control joints where tiles abut restraining surfaces, around the perimeter of the work and at the base of columns and curbs.
- Install and space expansion and control joints in all directions in accordance with TCNA HANDBOOK FOR CERAMIC TILE INSTALLATION Detail #EJ-171 recommendations, or TTMAC Specification Guide 09 30 00 Detail #301-MJ recommendations.

  CAUTION: DO NOT cut EXPANSION JOINTS in after the tiles have been installed. Install tiles normally and stop when the control joint location is reached. Cut the tile if required and resume setting from the opposite side of the joint. Before proceeding further, rake the joint and leave the tile and joint space clean.
- DO NOT FILL EXPANSION JOINT SPACE UNTIL GROUTING IS COMPLETED on the remainder of the job.
- Install a suitable industry-approved compressible bead and flexible sealant to caulk expansion and control joints. Follow the sealant manufacturer's installation instructions.

Curing and Grouting

- Do not step on floors and protect area from foot traffic for at least 24-48 hours, depending on temperatures and humidity conditions.
- Protect walls from water contact, impact and vibration for at least 24 hours.
- Allow at least 24 hours after installation before grouting tiles.

NOTE: Extended protection and downtime requirements before grouting may be required depending on temperature and humidity conditions and on the porosity and size of the tile or stone being installed.

Cleaning

Clean tools and hands with water while the product is still fresh.

Health and Safety

Refer to the Safety Data Sheet (SDS) for complete details.

AVAILABILITY AND COST

Contact ECO2™ for availability and cost.

WARRANTY

ECO2™ warrants that this product is manufactured using quality raw materials and is of merchantable quality and suitable for the purpose for which it was intended. ECO2™ liability under this warranty shall be limited to the replacement of its product proven to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising from the use of/or the inability to use this product.

FILING SYSTEM

Additional information is available upon request, or by visiting www.eco2level.com.

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