

PRODUCT DESCRIPTION

CTI™ (Cement-based thermal insulation mortar) is a lightweight, eco-friendly solution engineered for superior thermal resistance and energy efficiency in building applications. Ideal for walls, roofs, and structural elements, it effectively insulates and improves indoor comfort while reducing energy consumption. This versatile mortar offers excellent adhesion and moisture resistance, making it suitable for both new constructions and renovation projects. Architects, contractors, and builders can rely on it for optimal performance and durability in various applications.



PRODUCT FEATURES

- Lightweight and easy to apply
- Excellent thermal resistance
- Enhanced adhesion properties
- Resistant to moisture and weathering
- Eco-friendly
- High thermal insulation
- Easy to apply, projectable
- Homogeneous insulation without thermal bridges
- waterproof and breathable

PRODUCT USES

- External and internal walls
- Roof insulation
- Basement wall insulation
- Insulation for renovation projects
- Undercover
- Wall Insulation
- Roof Insulation
- Floor Insulation
- Ceiling Insulation
- Facade Insulation
- Thermal Breaks
- Cavity Fill Insulation
- Precast Concrete Panels
- Structural Insulated Panels (SIPs)
- Renovation and Retrofitting Applications

HOW TO USE

TECHNICAL DATA	
Property	Value
Thermal Conductivity (λ)	0.045 - 0.065 W/m·K
Density	Approx. 0.70 ± 0.05 g/cm ³ (at +20°C)
Compressive Strength	2.5 - 5 MPa
Water Absorption	≤ 15%
Curing Time	24-48 hours (initial)
Layer Thickness	40 mm maximum
pH	12
Mixing Ratio	21-23 liters of water per 25 kg bag
Consumption	3.75 kg/m ² /cm thickness
Ambient Temperature	+5°C min / +30°C max
Support Temperature	+5°C min / +30°C max
Pot Life	~40 minutes

PHYSICAL DATA

Property	Value
Packaging	25 kg bags
Color	White - Gray
Chemical Base	Lightweight cement
Storage	12 months from date of manufacture
Storage	Original, well-closed packaging; protected from frost and sunlight

Surface Preparation

- **Clean the Surface:** Ensure that the surfaces to be insulated are clean, dry, and free from dust, grease, and any loose materials. Use a wire brush or vacuum to remove any debris.
- **Repair Damages:** Inspect for any cracks, holes, or imperfections in the substrate. Repair these areas to ensure a smooth, even surface for application.
- **Moisture Control:** Check for any moisture issues. If the substrate is excessively damp, allow it to dry before proceeding with the insulation application.
- **Priming (if necessary):** Depending on the substrate, applying a primer may enhance adhesion. Follow the manufacturer's recommendations for primer usage.

Mixing

- **Mixing Ratio:** Combine 21 to 23 liters of clean water per 25 kg bag of cement-based thermal insulation mortar.
- **Mixing Procedure:**
 - Pour the required amount of water into a clean mixing container.
 - Gradually add the insulation mortar powder while continuously mixing using a mechanical mixer or a suitable mixing tool.
 - Mix until a homogeneous, lump-free consistency is achieved. The mixture should be workable but not overly fluid.
- **Pot Life:** The mixed mortar has a pot life of approximately 40 minutes at +20°C. Use the mixture within this time to ensure optimal performance.

Application

- **Application Tools:** Use a trowel, putty knife, or a spray machine for applying the mortar, depending on the size and nature of the project.
- **Layer Thickness:** Apply the insulation mortar in layers, with a maximum thickness of 40 mm per application.
- **Technique:**
 - For walls, start from the bottom and work upwards.
 - For horizontal surfaces, apply evenly to avoid sagging.
 - Ensure that each layer is evenly spread and well adhered to the substrate.
 - If multiple layers are required, allow each layer to partially cure before applying the next, ensuring proper bonding.
- **Finishing:** After application, you can use a trowel to smooth the surface and achieve the desired finish.

Curing

- **Curing Time:** Allow the applied insulation mortar to cure for a minimum of 24 to 48 hours before exposing it to any significant loads or conditions. Full strength and performance may take up to 28 days to achieve.
- **Curing Conditions:**
 - Protect the applied mortar from extreme weather conditions such as direct sunlight, rain, or frost during the curing period.
 - If necessary, mist the surface lightly with water or cover it with wet burlap to maintain moisture, especially in hot or dry environments.
- **Final Inspection:** After the curing period, inspect the surface for any cracks or imperfections. Repair as necessary before finishing or applying additional layers.

LIMITATIONS

- Application must be conducted by trained professionals familiar with thermal insulation systems.
- Ensure that any structural issues, such as cracks or moisture damage, are resolved prior to application.
- Only apply the product when ambient and substrate temperatures are within the range of +5°C to +30°C to ensure proper adhesion and curing.
- Do not exceed the maximum layer thickness of 40 mm per application to avoid potential cracking or poor adhesion.
- Ensure the mixing ratio of 21 - 23 liters of water per 25 kg of powder is strictly followed to maintain optimal performance.

- The product must be protected from prolonged exposure to moisture during the curing period to prevent reduced thermal performance.

PACKAGING

The cement-based thermal insulation mortar is available in 25 kg bags, designed to ensure ease of handling and application. Each bag is carefully sealed to maintain product integrity and protect it from contamination or moisture during storage and transport.

STORAGE

The cement-based thermal insulation mortar should be stored in its original, unopened packaging in a cool, dry place, protected from frost and direct sunlight. Ideal storage conditions are in environments where temperatures remain between +5°C and +30°C. Exposure to excessive moisture or humidity should be avoided, as this can affect the product's quality and performance. When stored correctly, the product maintains its effectiveness for up to 12 months from the date of manufacture.

HANDLING

Approved personal protection equipment should be worn at all times. Particle mask is recommended for possible airborne particles. Gloves are recommended when working to avoid skin irritation. Safety glasses are recommended to prevent eye irritation. Wear chemical resistant clothing / gloves / goggles. Ventilate area. In absence of adequate ventilation, use properly fitted respirator.

CLEANUP

Dispose of material in accordance with local disposal regulations. Uncured material can be removed with approved solvents. Cured materials can only be removed mechanically.

FIRST AID

In case of skin contact, wash thoroughly with soap and water. For eye contact, flush immediately with plenty of water; contact physician immediately. For respiratory problems, remove to fresh air. Wash clothing before reuse.

DISCLAIMER OF LIABILITY

AFZIR, LLC warrants its products to be free from manufacturing defects. Buyer determines suitability of product for use and assumes all risks. Buyer's sole remedy shall be limited to replacement of product. Any claim for breach of this warranty must be brought within one month of the date of purchase.

AFZIR shall not be liable for any consequential or special damages of any kind, resulting from any claim or breach of warranty, breach of contract, negligence or any legal theory.

The Buyer, by accepting the products described herein, agrees to be responsible for thoroughly testing any application to determine its suitability before committing to production.