STERLING® TECHNOTRADE
The Specialist Construction Chemical Company

Thermoculite 400

Multipurpose High Performance and Durability Lightweight Insulating fireproof Mortar.

Description:

Sterling® Thermoculite 400 is a bagged ultra-lightweight insulating concrete consist of exfoliated vermiculite, ultra-lightweight aggregate, Portland cement & water designed for use to reduce loss of heat through roof slab. Sterling® TechnoLite Plus System allows architects, engineers and contractors versatility in design, high performance and reasonable cost.

Sterling® Thermoculite 400 has unique features for providing both drainage slope and high insulating values to various types of precast concrete units such as core type structural slabs, channel slabs and prestressed single and double tees. Sterling® Thermoculite 400 cast-in-place concrete provides a smooth surface for applying the built-up roofing membrane.

Sterling® Thermoculite 400 provides highly efficient insulation performance over multiple years thereby reducing maintenance and total lifecycle costs while delivering maximum ROI in energy savings.

Application Includes:

Sterling® Thermoculite 400 is recommended for use as a thermal insulation coating on roof slabs and walls of buildings. It can also be used on the interior walls and the roof of freezer rooms and cold storage facilities.

Typical Application Areas include:

- All Types of Roofs decks and slabs i.e. RCC & Metal profile decking.
- Over dense concrete roof and floor slabs.
- External and internal walls.
- Commercial Buildings Sheds.
- Sandwich construction.
- Swimming pool bases and water tank bases, sidewall and top.
- Air-Conditioned Building.
- Green Buildings.
- Any other installation that required lightweight concrete with a compressive strength not exceeding:
- 8 n/mm2 for concrete.
- 13 n/mm2 for screed.
- Refrigerated Cold storage Facilities.

Application Instructions:

Surface Preparation

Remove all grease, oil, dust, residual curing compound, moulds release agent or other contaminant that could impair adhesion of the **Sterling® Thermoculite 400**.

Base Waterproofing for Concrete Roof slab

Use **TECHNOCRETE®P -007** *as a primer coat duly admix with* cement in 1:1 proportion by volume and brush apply a single coat all over the clean surface. Allow this coat to become tacky (15to 20 minutes) then apply Elastomeric **TechFin® 2K** waterproofing system before laying **Sterling® Thermoculite 400 -** Lightweight concretes system.

Material Mixing & Placement

Materials- It shall be placed in panels in a continuous operation. Material shall be screwed with a straight edge. No tamping, Roding, vibrating or steel toweling is necessary. When fill is used to slope for drainage, screeds shall be set to proper grade to insure slope. Sterling® Thermoculite 400 is mixed with the cement in the ratio of 1:6 by volume, One part of cement and six part of Sterling® Thermoculite 400 at site. It is dry mixed by spade properly then make mortar by mixing with sufficient water.

Roofing- Roofing shall be applied in accordance with roofing manufacturer's specifications for light weight poured decks.

Curing- No traffic shall be allowed on deck for 24 hours from completion of pour or until deck will support traffic without damage. In very dry weather the deck shall be sprinkled to prevent drying out. Otherwise the roof membrane shall be applied as soon as the deck has sufficient strength to support foot traffic and surface is dry enough to develop adhesion between deck and hot asphalt or pitch. Under normal conditions this will occur within three to five days.

Properties			
Shape	Flaky granules	Hardness	1.5 to 3 on M.O.H's Scale
Water Retention	45% by volume / 530% by weight	Density material	225 Kg./M3
Solubility	Insoluble in water and organic solvents	Density applied	500 Kg. / M3
Incombustibility	Can be used up to 1100°C	Sintering Temperature	1260°C
Thermal conductivity applied	058 K cal/hr m deg C	PH Value	7.0
Melting Point :	1300°C	Colour	Light to dark brown

Mix proportions by volume

Cement	Sterling® Thermoculite 400	Sand	Wet Density PCF	Oven Dry Density PCF	Com. Strength 28 Days PSI	"K" Factor.
1	8	0	40 -48	19-22	70-125	0.60-0.65
1	7	0	42 -47	20-24	125-140	0.65-0.69
1	6	0	44 -52	23-27	135-175	0.69-0.73

Features & Benefits:

Re-Roofing- Slope to drain systems employing **Sterling® Thermoculite 400** provide an economical solution to existing flat roofs with damage due to ponding of water.

Lightweight-When compared with structural grade concrete, **Sterling® Thermoculite 400** is 15% of the weight. This results in considerable savings from the footings thru the structural steel.

Fireproof-All concretes and screeds are non-combustible as defined in BS 475 Part 41970 and designed in Class 0'
In accordance with the requirements of the Building Regulations.

Versatile- Sterling® Thermoculite 400 concrete can be applied over a variety of bases, allowing architects and engineers ample flexibility in their design criteria. The thickness of the concrete can be varied to permit necessary slope to drain.

Insulation- Sterling® Thermoculite 400 has excellent insulating properties. Three inches of **Sterling® Thermoculite 400** concrete is equivalent to 50mm thick of rigid board insulation layer over steel decks. One inch of **Sterling® Thermoculite 400** concrete is equal in insulating value to 20 inches of regular concrete.

Ease of Application- Sterling® Thermoculite 400 insulating concrete is easily placed by modern specially designed pumping equipment.

Sterling® Thermoculite 400 is recommended for reduction in the "carbon foot print" of building as it reduces fuel consumption of the air-conditioning plant.

Disclaimer: The product information & application details given by the company & its agents has been provided in good faith & meant to serve only as a general guideline during usage. Users are advised to carry out tests & take trials to ensure on the suitability of products meeting their requirement prior to full scale usage of our products. Since the correct identification of the problems, quality of other materials used and the on-site workmanship are factors beyond our control, there are no expressed or implied guarantee / warranty as to the results obtained. The company does not assume any liability or consequential damage for unsatisfactory results, arising from the use of our products.

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Final Waterproofing for roof slab

After application of Sterling® Thermoculite 400 -Lightweight concretes system Use TECHNOCRETE®U*RP K10-M as a primer coat duly admix with* cement in 1:1 proportion by volume and brush apply a single coat all over the clean surface. Allow this coat to become tacky (15to 20 minutes) then apply Elastomeric waterproofing system TechFin® 2K all over the light weight casted areas.

Protection Layer & Final Finish for Roof slab

Providing and laying 20 mm thick cement sand mortar duly admix with **TechnoProof® LWC Plus** @200 Ml per bag of cement followed by a layer of glass fibre mesh by maintain overlaps margin of 100 mm.

Storage & Shelf Life:

24 months from the date of manufacturing when stored in unopened, original sealed and dry condition at a temperature range from $+10^0$C to 30^0C.

Packaging:

Sterling® Thermoculite 400 *is supplied in 25 kg HDPE bags. One Bag contains 0.1* cubic meter.

Coverage:

One cubic meter materials covers 113-114 Sq.ft approx. if laid in average thickness of 75 mm and 160-162 sq.ft approx. if laid in average thickness of 50mm. One cubic meter material can be prepared by mixing 10 bags of **Sterling® Thermoculite 400** and 4-5 bags of cement by hand or mixture machine at site, 500-600 liters water requires to make a mortar.

Health & Safety Instructions:

Sterling® Thermoculite 400 should not come in contact with the skin and eyes, or be swallowed. Wear suitable protective clothing, gloves and eye protection. The use of barrier creams provide additional skin protection. In case of contact with skin, rinse with plenty of clean water, then cleanse with soap and water. Do not use solvent. In case of contact with eyes, rinse immediately with plenty of clean water and seek medical advice. If swallowed, seek medical attention immediately- do not induce vomiting. Protect your health while working with this material, always use safety goggles, gloves and safety clothing. When handling hazardous materials or pressurized materials, or during any application that may result in spills, splashes or airborne particles, a full face shield is strongly recommended. Protect yourself and others on the jobsite.

Observe container labels, SDS, applicable laws and regulations and all instructions before using the product and equipment. In case one of the components comes in contact with the skin, wash thoroughly with soap and water. Provide adequate ventilation in volume and pattern in working area.

Additional Information: Techno Builders Solutions® By Sterling Technotrade India Pvt.Ltd -The Specialist Construction Chemicals Company® range of associated products includes high performance concrete Admixtures, Adhesives, Protective Coatings, Concrete Repairs, Industrial Flooring, Grouts & Anchors, Joint Sealants, Surface Treatments, curing compounds, repair mortars, release agents, Grinding Aids & Waterproofing.

*Separate datasheet are available on these products.

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