



# STERLING<sup>®</sup> ThermoCrete™ PLUS

Lightweight Insulating fireproof concrete for Roof Fills Natural Thermal Insulation with Performance and Durability of concrete.

## Description:

Sterling® ThermoCrete™ Plus 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® ThermoCrete™ Plus System allows architects, engineers and contractors versatility in design, high performance and reasonable cost.

Sterling® ThermoCrete™ Plus 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® ThermoCrete™ Plus cast-in-place concrete provides a smooth surface for applying the built-up roofing membrane.

Sterling® ThermoCrete™ Plus 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® ThermoCrete™ Plus** 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/mm<sup>2</sup> for concrete.
  - 13 n/mm<sup>2</sup> for screed.
- Refrigerated Cold storage Facilities

## Features & Benefits:

- **Re-Roofing-** Slope to drain systems employing **Sterling® TechnoLite Plus** provide an economical solution to existing flat roofs with damage due to ponding of water.
- **Lightweight-**When compared with structural grade concrete, **Sterling® TechnoLite Plus** 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'

## 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® ThermoCrete™ Plus**.

### Base Waterproofing for Concrete Roof slab

Use TECHNOCRETE®URP 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 **TechFin® 2-K** waterproofing system before laying **Sterling® ThermoCrete™ Plus**-Lightweight concretes system.

## Material Mixing & Placement

**Materials-** It shall be placed in panels in a continuous operation. Material shall be screwd 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.

**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.

| Physical Properties       |                             |   |                  |                      |                           |             |
|---------------------------|-----------------------------|---|------------------|----------------------|---------------------------|-------------|
| Appearance                |                             | Free flowing brown granules             |                  |                      |                           |             |
| Water Retention           |                             | 45% by volume / 530% by weight          |                  |                      |                           |             |
| Solubility                |                             | Insoluble in water and organic solvents |                  |                      |                           |             |
| Mix proportions by volume |                             |   |                  |                      |                           |             |
| Cement                    | Sterling® ThermoCrete™ Plus | Sa n d                                  | Wet Densit y 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   |
| 1                         | 5                           | 0                                       | 49 - 55          | 25-31                | 175-125                   | 0.72-0.75   |
| 1                         | 4                           | 0                                       | 55 - 62          | 30-35                | 225-325                   | 0.79-0.81   |
| 1                         | 3                           | 2                                       | 85 - 91          | 75-80                | 600-620                   | 2.50-2.75   |

- In accordance with the requirements of the Building Regulations.
- **Versatile- Sterling® TechnoLite Plus** 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® TechnoLite Plus** has excellent insulating properties. Three inches of **Sterling® TechnoLite Plus** concrete is equivalent to 50mm thick of rigid board insulation layer over steel decks. One inch of **Sterling® TechnoLite Plus** concrete is equal in insulating value to 20 inches of regular concrete.
- **Ease of Application- Sterling® TechnoLite Plus** insulating concrete is easily placed by modern specially designed pumping equipment.
- **Sterling® TechnoLite Plus** is recommended for reduction in the "carbon foot print" of building as it reduces fuel consumption of the air-conditioning plant.

In general the roof temperature is in the range of 60°C to 80°C in summer and this can be substantially reduced by installation the roof with **Sterling® TechnoLite Plus** below mentioned is an example of reduction in surface temperature after the application of **Sterling® TechnoLite Plus system**:

- RCC terraces- Up to 14°C
- Asbestos cement sheets - Up to 16°C
- GI or powder coated sheets- Up to 22°C

The above figures are indicative and will vary according to ambient atmospheric conditions.

### 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°C to 30°C.

### Packaging:

**Sterling® ThermoCrete™ Plus** 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.

### Final Waterproofing for roof slab

After application of **Sterling® ThermoCrete™ Plus** Lightweight concretes system Use **TECHNOCRETE®URP 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 (15 to 20 minutes) then apply Elastomeric waterproofing system **TechFin® 2-K** 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** @200 ml per bag of cement followed by a layer of glass fibre mesh by maintain overlaps margin of 100 mm.

### Health & Safety Instructions:

**Sterling® ThermoCrete™ Plus** 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.

Consider property in proximity of the application area to prevent loss or damage. Protect your jobsite from unauthorized persons. Store all materials and equipment safely and out of reach of children and animals.

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.

**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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