

Product

- TPSX-12 is a filter pressed, high-temperature, water resistant calcium silicate (calsil) pipe and block insulation manufactured by BEC Industrial (Shanghai) Co., Ltd, imported exclusively by Thermal Pipe Shields Inc. and sold through their nationwide network of distribution partners.
- Third party verified to meet or exceed all physical property requirements in accordance with ASTM C533 Type I.
- Engineered to protect industrial piping and equipment operating continuously at temperatures up to 1200°F (650°C).
- Contains integral inorganic silicate chemistry to inhibit corrosion under insulation (CUI).



Features

- TPSX-12 is produced with 50 ton filter pressing equipment creating a much more consistent, physically robust product without adding additional density, or altering other physical properties and performance criteria.
- In addition, the filter pressing process provides on average twice as much compressive strength vs. the ASTM minimum requirement and is much stronger than North American molded calsil.
- Produced in 3' lengths and available in a wide assortment of IPS pipe sizes with configurations designed to maximize shipping container yields.
- Factory treated with silicone water repellent to provide predictable bulk water shedding ability during inclement weather installations.

Benefits

- Highest compressive strength of any industrial insulation supports the metal jacketing and stands up to physical abuse or foot traffic during construction and operations.
- Non-combustible insulations may add a measure of passive fire protection when used in conjunction with stainless steel jacketing. (Contact TPS Technical Services)
- Integral inorganic silicate chemistry actively inhibits the corrosion mechanism by forming an on demand passivation layer and a pH buffering effect in the presence of absorbed water due to a failure in the weather barrier.

Applications

- Calsil insulation has a 40+ year history of use for mid-high temperature industrial process piping, storage tanks and equipment. It is the workhorse insulation for oil refineries, power and chemical plants, and pulp and paper mills.
- Many engineers and maintenance planners specify calsil insulation in areas of the plant where there is a risk of damage to the metal jacketing due to physical abuse or workers walking or climbing on pipes and equipment.
- Due in part, to a historical monopoly of the North American calsil market, there is a perception that calsil insulation will always cost much more than lower compressive strength alternatives such as mineral fiber.
- TPSX-12 creates organic competition in the calsil market to allow owners to specify and purchase a stronger, readily available material with a cost closer to fibrous insulations.

Safety

- TPSX-12 does not contain asbestos, mercury or lead.
- Calcium silicate is produced with amorphous silica, not crystalline silica which is subject to new OSHA exposure limits.
- No formaldehyde binders to oxidize at high temperatures.
- Provides consistent thermal performance at high temperatures to protect plant workers from burn injuries.
- Non-combustible insulation when tested in accordance with ASTM E136. Calsil withstands direct flame impingement.
- 0 flame spread and 0 smoke developed per ASTM E84.
- Calsil maintains its thickness and insulating performance throughout its long service life to protect plant assets, provide stable process control and prevent burn injuries caused by inadvertent contact with high temperature systems.



TPSX-12™ Calcium Silicate

ASTM C585- Pipe Sizes Standard 3' lengths

1/2-12	Two piece clamshells
14-28	Preformed Tri or Quads
30-40	Preformed Hexes
42-126	Curved Radius Block (CRB)
Flat Block	Plain or 3-V Scored

Size configurations specifically engineered to reduce lead times, increase installation efficiency with lighter, less bulky pieces, maximize packed container volumes to reduce shipping costs and reduce footprint required in construction lay down yards.

Specification Compliance

ASTM C533, Type I Material Standard	Meets or Exceeds All Test Methods
ASTM C302/C303 Dry Density	<13 lbs. per cu. ft. (208 kg/m ³)
ASTM C165 Compressive Strength	>220 psi @ 5% strain (1517 kPa)
ASTM C203 Flexural Strength	>80 psi (551 kPa)
ASTM C356 Linear Shrinkage	<1.0% after 24 hr. soaking heat @ 1200°F (650°C)
ASTM C447 Max Service Temp	1200°F (650°C)
ASTM C421 Abrasion Resistance	Weight Loss by Tumbling <10% after 10 minutes
ASTM C692/C871/C795 Corrosion Tests (Stainless)	Passes
ASTM C1617 Mass Loss Corrosion (Ferrous)	Passes <DI Water Control
ASTM E136 Non-Combustible	Passes
ASTM E84 Surface Burning Properties	Flame Spread - 0 Smoke Developed - 0

*Third party published values tested by Tutco Scientific Corporation: Fruita, Colorado USA

Thermal Conductivity

