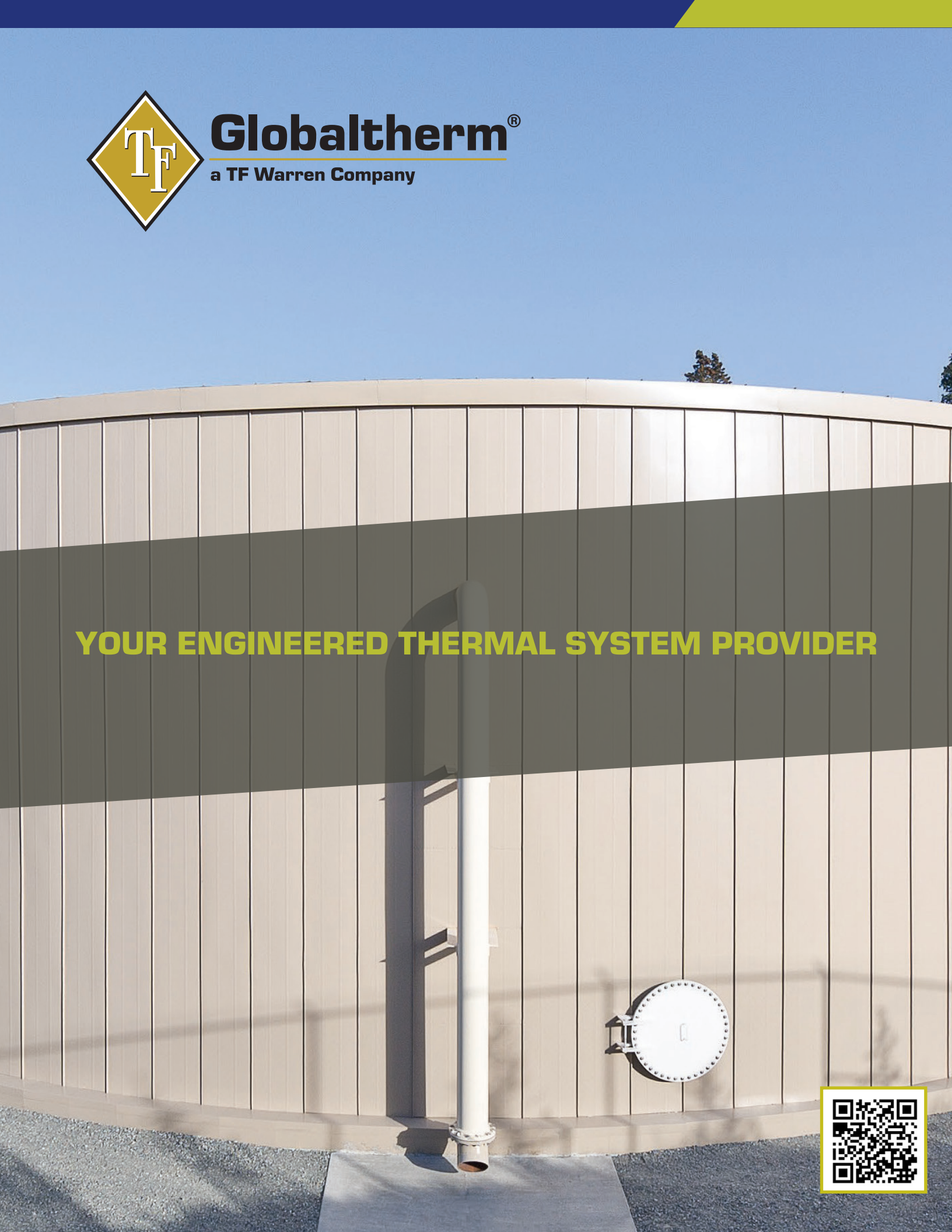
Globaltherm®

a TF Warren Company

YOUR ENGINEERED THERMAL SYSTEM PROVIDER



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Benefits of Globaltherm Insulation Systems

Tank Insulation for your Exact Requirements and Specifications

We manufacture each insulation panel specifically to the precise tank height required, providing maximum insulation value. Additionally, all deck panels can be cut and fabricated to match existing tank diameters. Globaltherm's tank insulation systems have been used for petrochemical, wastewater, energy, fire protection, and food and beverage products.

Our insulation systems are designed to your specific operational, wind load and extreme hot and cold conditions. The custom design incorporates a choice of insulation materials and sheathings in various thicknesses, finishes, and colors.

Globaltherm shipments are shrink-wrapped for protection and palletized for ease of unloading upon arrival at the job site.

CONSTRUCTION

Globaltherm uses only the highest quality materials and construction standards which results in exceptional products capable of withstanding most any weather challenge.

COST

Our custom-fit manufacturing design speeds the installation process and reduces costs.

TURNKEY

We offer every aspect of the total turnkey solution - engineering, project management and installation.

AESTHETICS

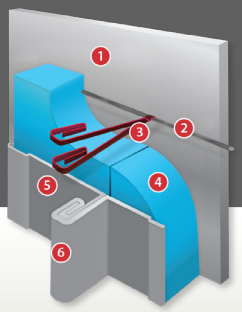
We understand the importance of making these tanks pleasing to look at so they fit into the landscape around them. We use only metal-sheathed systems, offered in a variety of standard and custom colors. On many projects we have worked closely with design architects to help create the look they require.

Horizontal Sidewall System

Globaltherm manufactures a horizontal panel system that consists of foil-faced polyisocyanurate foam insulation in various thicknesses, laminated to a metal outer sheathing. Each panel is factory curved to match the tank's radius. Panels are secured to the tank with 3" wide aluminum or stainless steel external banding spaced on two foot vertical centers. Unique tensioned "bandsion assemblies" are installed at calculated intervals in each band row. This allows for operational expansion and contraction of the insulation for climate fluctuations such as extreme temperature changes. Additionally, individual horizontal panels are removable to allow access to the tank sidewall for inspection or repair.

Vertical Sidewall System

Globaltherm manufactures a vertical sidewall system that consists of foil-faced polyisocyanurate foam insulation in various thicknesses laminated to a stucco embossed, polyester paint finish, aluminum outer sheathing. Each standing seam is 24" wide with lengths up to 53 feet. Our design allows us to accommodate any tank height. The insulation panels are secured to the tank by an internal cable-and-clip system that is secured within the standing seam of each panel.



VERTICAL SIDEWALL CONSTRUCTION

1. Tank shell
2. Anchor cable
3. Retaining clip
4. Thermal insulation
5. Metal jacket
6. Machine-formed, double-locking, standing seam

PRODUCT SPECIFICATIONS
Polyisocyanurate Foam Insulation

Feature:	**R-value of 6 to 6.5 per inch of thickness**
Benefit:	One of the highest R-values available, resulting in less thickness needed to achieve desired thermal performance
Feature:	**Foil facers on both sides**
Benefit:	Adds additional R-value by reflecting radiant heat It's a moisture barrier to help prevent costly tank corrosion.
Feature:	**Foil on the top edges of foam insulation**
Benefit:	Additional precaution to prevent moisture penetration
Feature:	**Closed-cell foam**
Benefit:	Moisture Resistance < 0.3 perm water vapor transmission < 1% water absorption
Feature:	**Compressive strength of 20 psi to 25 psi**
Benefit:	Handles higher roof loads than fiber insulation to allow foot traffic

STANDING-SEAM CONSTRUCTION

Feature:	**Machine-formed, double-locking, standing seam**
Benefit:	• Watertight to help prevent tank corrosion • No exposed screws to leak or loosen resulting in high maintenance cost • Superior wind load resistance • Produces an aesthetically appealing tank • Can eliminate the need for costly scaffolding, resulting in quick installation • Custom lengths up to 48' recommended, 53' maximum • Expansion and contraction are uniformly absorbed along the standing seams.

OTHER INSULATION USED AS INNER-FACE LAYER TO EXTEND PANEL TEMPERATURE RANGE:

Fiberglass Board 2.4#	4.55 R-value per inch	up to 1,000° F
Mineral Wool Board 4#	4.0 R-value per inch	up to 1,200° F
Calcium Silicate block	2.63 R-value per inch	up to 1,200° F
Foamglas block	3.45 R-value per inch	-450° to 900° F

Storage Tank Roofing Systems

Globaltherm has developed metal sheathed roofing systems to meet your needs. All roofing systems are designed to be weather-tight, corrosion-resistant, to expand and contract with the thermal movements of the tank, and to be aesthetically pleasing. We can also design a unique system to specifically match your needs.

Globaltherm's tank insulation services are not limited to, but include the following:

- Anhydrous Ammonia
- Asphalt
- Beverages
- BioDiesel
- Brewery
- Butane/Propane
- Chemicals
- Ethanol
- Wastewater Treatment
- Petrochemicals
- Chilled Water T.E.S. Systems
- Fire Protection

We can design an insulation system that meets the National Fire Protection Association (NFPA) 22 standards.

Standing-Seam Roofs

Globaltherm's standing-seam metal roof insulation system is available as a radial design and may be installed on any shape roof over many suitable insulation materials including:

- Mineral Wool
- Fiberglass
- Polyisocyanurate Foam
- Calcium Silicate
- Perlite

This system can be installed with either welded or non-welded roof plate attachments, allowing the flexibility of in-service installation.

Flat-Panel Roofs

Globaltherm's flat panels include gore and trapezoidal designs. The different panel designs allow our systems to be installed on virtually any type of surface shape required and can be applied over common insulation materials including:

- Mineral Wool
- Fiberglass
- Polyisocyanurate Foam
- Calcium Silicate
- Perlite

Various methods can be utilized to accommodate installations on any tank type. Attachment methods can be internal/external, depending on application requirements.

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