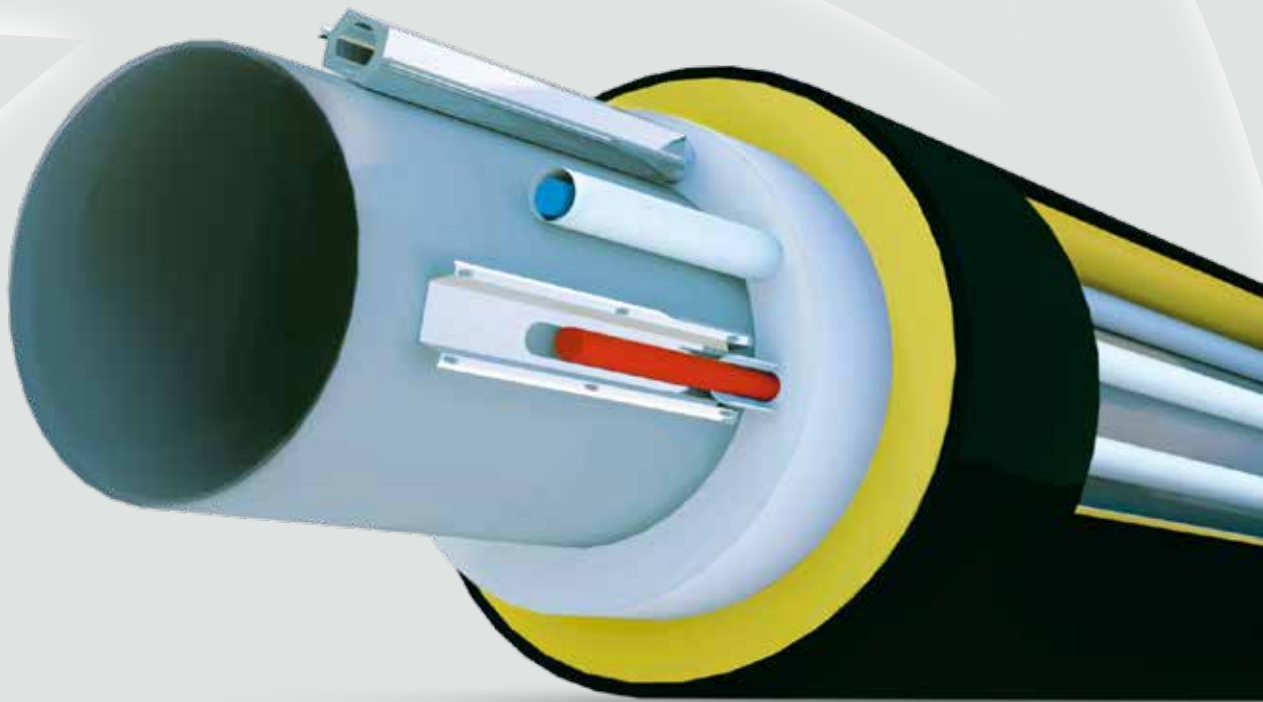


TRACE-THERM™

PRE-INSULATED PIPE SYSTEM



PARTNERS IN EXCELLENCE



TRACE-THERM™ PROTECTION

Pipelines are a simple and cost-effective way of transporting materials, liquids, powders, and gases, sometimes for relatively long distances. Thermal insulation is often installed on the pipeline to prevent liquids and gases from changing state or to reduce viscosity to enhance flow. However, thermal insulation may not be enough and additional heating is required. The longer the pipeline, the bigger the challenge.

PERMA-PIPE understands these situations, as well as the importance of having a sound designed thermal insulation system. TRACE-THERM™ is a pre-insulated & heat traced pipe system fabricated in ISO certified facilities to ensure the highest quality, safety, and efficiency.

TRACE-THERM™ PERFORMANCE

TRACE-THERM is a pre-insulated & heat traced pipe system designed to ensure optimum heat management during the life of the pipeline. TRACE-THERM is fabricated with either a single layer or multiple layers of different insulation material and is designed to minimize heat loss and meet system design operating temperatures and cool down requirements. Multiple layers are used to minimize the finished product outer diameter and therefore the total installed cost.

TRACE-THERM™ FEATURES

- Operating temperatures up to 1200 °F (649 °C)
- Tubes or raceways are utilized for easy installation of heat tracing and fiber optics cables
- Heat tracing methods include:
 - » Skin effect heat tracing utilizing specially designed cables that run through ferromagnetic tubes that heat up when the cables are energized

- » Direct heating through the use of a heating element or heat tape contacting the pipe along its length
- » Impedance heat tracing utilizing the carrier pipe to generate heat in the system through the application of a low AC voltage to the pipe
- » Direct heating through the use of steam to heat the carrier pipe directly or through heat tubes
- Aluminum diffusion barrier is applied to prevent cell gas from dissipating out of the insulation layer and decreasing thermal efficiency
- A tough outer casing covers the insulation to eliminate damage during installation and operation, preventing water ingress and costly corrosion under insulation. Optional materials include: durable high-density polyethylene (HDPE), fiber-reinforced polymers (FRP), and metals
- Anti-corrosion coatings to prevent corrosion of the carrier pipe and optional secondary containment pipes are available
- Optional fiber optics sensing for accurate temperature control

TRACE-THERM™ SOLUTIONS

TRACE-THERM is the most economical and maintenance-free solution for above or below ground applications that require safe, reliable, and even heat distribution. It is available for a wide range of temperatures and environments to serve various industries such as oil & gas, chemicals, district energy, and food & beverage. TRACE-THERM complies with international standards to meet the strictest quality standards.

PERMA-PIPE offers turnkey services to meet operational and project challenges beyond the piping system that our clients have come to trust. We provide project planning, engineering support for system construction, design assistance and calculations, project management, pre-fabrication services, and field service training certification to reduce your installation, environmental, and safety concerns from start to finish of a piping project. Our extensive track record of successful global projects will showcase our experience.





TRACE-THERM™ OPTIONS

Heat Tubes or Channels
 Polyurethane or Composite Insulation
 HDPE, FRP, or GI Metal Outer Jacket
 Aluminum Diffusion Barrier

Carrier Pipe Options:

Carbon Steel
 Stainless Steel

Applications:

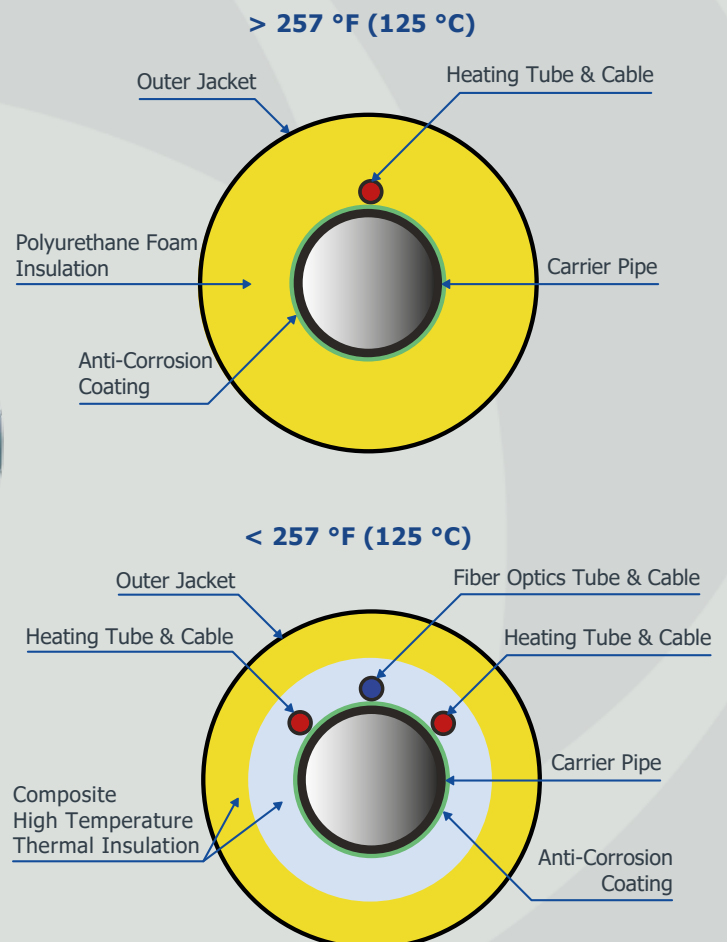
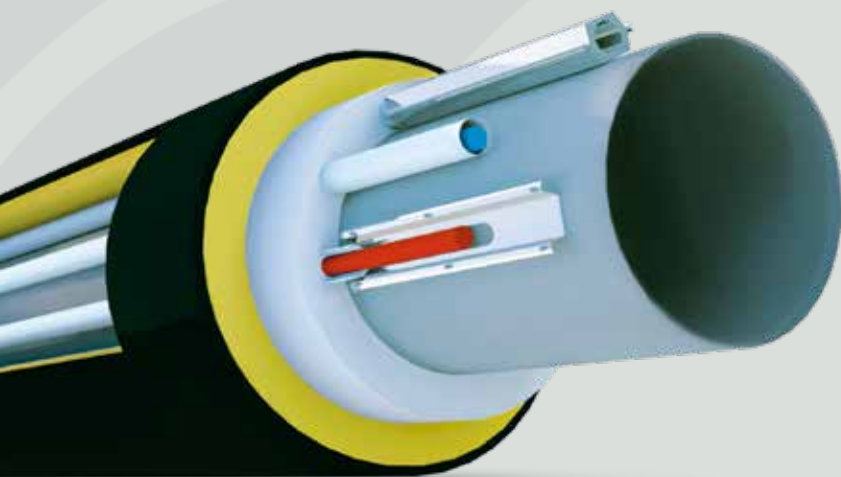
Crude, Heavy or Waxy Oils, Sulphur, Phenol, Caustic,
 Asphalt, Acids, Fuel Lines, and Other Chemicals

PARTNER WITH PERMA-PIPE


PERMA-PIPE International Holdings, Inc. (NASDAQ:PPIH) is a global engineered pipe services company offering core competencies in anti-corrosion coatings, insulation solutions, containment systems, leak detection systems, engineering support, field service, and custom fabrication.

When you do business with PERMA-PIPE, you are partnering with a company that has served the industry for over 100 years and has vast experience in all the markets we serve. You are not just buying a long-lasting, reliable piping system; you are also investing in a partnership with a company that stands behind its products and services while providing lasting peace of mind.

TYPICAL TRACE-THERM™ CROSS-SECTIONS





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 permapipe.com