HI-GARD
ABOVE GROUND PRE-INSULATED PIPING SYSTEM

FACTORY PRE-INSULATED PIPING FOR HIGH AND LOW TEMPERATURE PIPING

- HIGHEST INSULATION QUALITY
- REDUCED FIELD INSTALLATION COSTS
- PIPE SUPPORTED DIRECTLY FROM JACKET
- SPEEDS UP PROJECT COMPLETION
Why Hi-Gard Factory Pre-insulated Piping?

Perma-Pipe's Hi-Gard eliminates the need to insulate and jacket the pipe in the field on the pipe rack, improving insulation system quality and decreasing project construction time and labor costs. The pre-insulation is done in a factory controlled environment and is not exposed to the elements during application. The jacketing is applied immediately after insulating the pipe. Hi-Gard provides owners and engineers with a high quality, thermally efficient insulation system with installation, operating and maintenance cost savings.

Hi-Gard is furnished in a variety of insulation and jacket materials to provide optimal performance.

- Insulations: Polyurethane Foam, Calcium silicate, Perlite, Aerogel.
- Jacket: FRP, HDPE, Aluminum, Stainless Steel, Galvanized Steel

The piping system is supported directly from the jacket instead of the pipe, eliminating breaching of the jacket and the potential for water and moisture ingress into the insulation system, additional heat loss and corrosion.

The addition of heat tracing for freeze protection or temperature maintenance results in greater overall savings, as the heat tube is attached and insulated in the factory. The system is designed to result in the lowest life-cycle cost.
Hi-Gard can be provided with a single insulation material or a composite insulation system to minimize the cost and optimize the performance of the insulation system for a particular application.

**Aerogel:** Perma-Pipe utilizes Pyrogel® XT-E as manufactured by Aspen Aerogels. This hydrophobic insulation is formed from 3% silica solids with 97% air in extremely small nano pores. Aerogel is the world’s lowest density solid and the most effective thermal insulator up to 1200°F (650°C). Aerogel’s equivalent thickness is typically 50% to 80% less than other high temperature insulation materials, saving both space and cost.

**Calcium-silicate and Perlite:** Perma-Pipe uses both Calcium-silicate and perlite insulations which have excellent compressive strength properties (≥ 80 psi) and suitable for high temperature applications to 1200°F (650°C).

**Polyurethane Foam:** Perma-Pipe applies low thermal conductivity and high compressive strength PU foam. PU foam can be used as a stand-alone insulation (temperatures below 284°F (140°C), or as an outer layer in a composite insulation system. This combination results in a high quality, low cost, energy efficient piping insulation solution for high temperature above ground piping systems.

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Over 40 kms of pre-insulated pipe with Aerogel and metal jacket supplied in Alberta for Steam, Emulsion, Gas & Water lines.
Perma-Pipe, the largest manufacturer of pre-engineered and pre-insulated piping systems in North America, has over 50 years of experience in meeting the needs of its customers.

Perma-Pipe is ISO-9001 certified and has 6 strategically located manufacturing facilities:

- Camrose, AB, Canada
- Lebanon, TN
- New Iberia, LA
- Dammam, S Arabia
- Fujairah, UAE
- Gujarat, India

Perma Pipe is headquartered in Niles, IL (Chicago) with sales offices in Houston, TX, Calgary, Alberta, Sharjah, UAE, Dammam, Saudi Arabia and Mumbai, India.