

Piping Pre-Insulated With Aerogel Reduces Installation Cost and Increases Pipe Density in Small Spaces



Dekoron/Unitherm
6200 Preinsulated Pipe

CASE STUDY

DETAILS

Customer: Dekoron/Unitherm

CHALLENGES

- Insulate small diameter piping that has a process temperature of up to 400°F (204°C).
- Reduce installation cost 50%.
- Reduce finished pipe diameter to increase loading in pipe racks.
- Eliminate insulation gaps to minimize loss.
- Provide a fully sealed system that is not affected by weather or rain.
- Provide tubing to meet exacting bio/pharmaceutical standards (BPE-6200).

SOLUTIONS

- Dekoron/Unitherm integrated **Pyrogel® 2250 (2 mm)** aerogel insulation with a continuous, extruded thermoplastic outer jacket.
- Dekoron/Unitherm developed two versions of the outer jacket: for its 6200 Preinsulated Pipe (welded, coupled, and flanged pipe), and for its BPE-6200 Preinsulated Pipe (orbitally welded pipe and fittings).

BENEFITS

- Installation costs were cut 30%-50%.
- Aerogel-insulated pipe was 30% smaller than pipe insulated with fiberglass and 50% smaller than pipe insulated with calcium silicate.
- Aerogel provided gap-free insulation with consistent and predictable thermal properties.
- Insulation properties did not deteriorate in water: pipes could be soaked and dried without affecting thermal properties.
- Aerogel was integrated with a continuous, weather resistant outer jacket that had no seams to leak. Jacket material could be tailored for the environment and withstood repeated cleaning without degradation.
- Preinsulated, prefabricated pipes (carbon steel, stainless steel, and specialty alloy) minimized environmental contamination during installation.

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