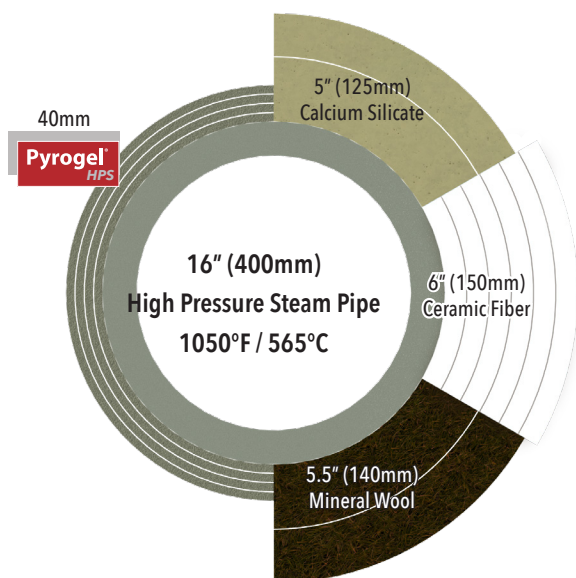


PYROGEL® HPS REDUCES MAINTENANCE EXPENSE & JOB COMPLEXITY

PLANT SITUATION

A combined-cycle power plant is performing equipment maintenance in the boiler area, which requires the removal of a piece of equipment. This part of the boiler area is already congested with piping. These space constraints are exacerbated by the thick calcium silicate insulation that is required for personnel protection on these hot lines that carry high pressure steam. To facilitate removal of the equipment, additional clearance was required, and the outage team identified the need to remove insulation from existing pipework. Upon removal of the protective jacketing, the deteriorated rigid insulation crumbled, and was unable to be reused.



All systems provide the same energy efficiency

INSULATION CHALLENGE

The maintenance team was forced to replace the deteriorated rigid insulation before the plant could be restored to operating condition, but the challenge was deciding what to replace it with. Rigid insulation systems are bulky, cumbersome to work with, and logistically challenging – every piece of pipe cover needs to be fabricated to the correct size and shape of the pipe or vessel being insulated. This consumes office and field hours to manage, and any supply-chain mix-ups are costly.

PYROGEL SOLUTION

The on-site contractor considered the cost of lengthy maintenance events, the difficulties of working with traditional insulation, and their opportunity to make a long-term investment for the plant. Rather than reproduce the original condition, the contractor recommended and successfully installed Pyrogel HPS as an alternative to the incumbent insulation.

OPERATOR BENEFITS

Pyrogel's versatile format meant that a single roll could be used to insulate a variety of pipe diameters, saving valuable time – which lowered the total installed cost (TIC) during this time sensitive maintenance event.

It is expected that the Pyrogel insulation will provide service for the economic life of the boiler.

The plant commented that, if they had chosen the ultra-thin Pyrogel to begin with, they wouldn't have had to strip the piping insulation to move the equipment. Conserving this time and expense would have represented savings of approximately \$25,000.

Pyrogel® Configurations



**Pyrogel®
XTE**

Medium to High Temperature Insulation

Maximum Service Temperature

1200°F / 650°C
0.4 in (10mm) - Yes
0.2 in (5mm) - Yes
Full Roll - Yes
Pony Roll - Yes
Color = Maroon

Optimized For

- Medium Pressure Steam
- Condensate Lines
- SCR Pipework
- Duct Liners
- Maximum CUI Defense



**Pyrogel®
HPS**

High Temperature Thermal Insulation

Maximum Service Temperature

1200°F / 650°C
0.4 in (10mm) - Yes
0.2 in (5mm) - No
Full Roll - Yes
Pony Roll - Yes
Color = Gray / Green

Optimized For

- Gas & Steam Turbines
- High Energy Pipes & Vessels
- Boiler Expansion Joints

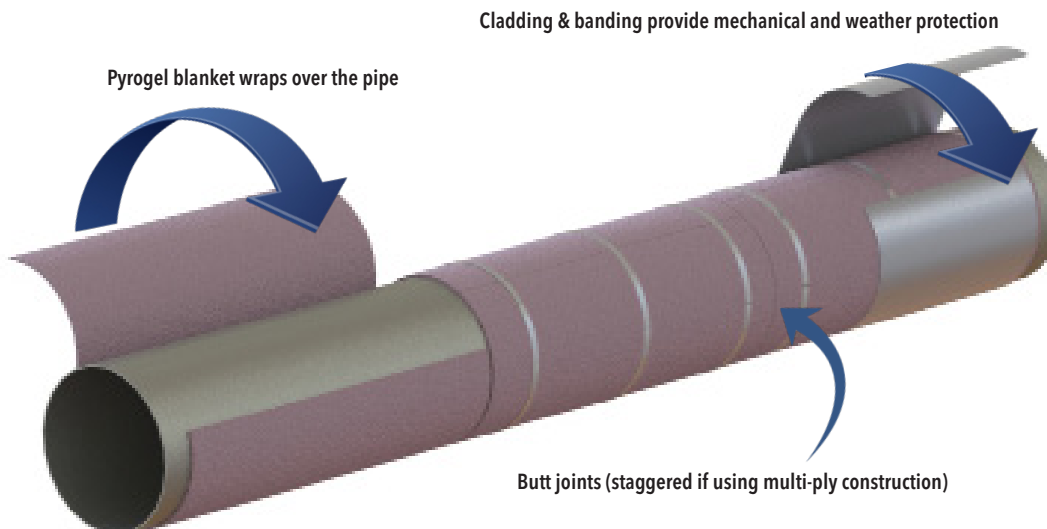


80 ft2 Pony Rolls in 0.4 in. (10mm) - 45 lb / roll



850 ft2 rolls in 0.4 in. (10mm) - 350 lb / roll
1500 ft2 rolls in 0.2 in. (5mm) - 320 lb / roll

Pyrogel® Installation Method



IMPORTANT NOTE - Pyrogel Products

The use of tape and spray adhesives is limited to application temperatures below 250°C (480°F).

18G insulators wire or stainless steel banding at 18 inch centers must be used above 480°F

Cut With Shears, Cutting Knife, Insulation Saw

Secure With Fiber Reinforced Tape, 18G Stainless Steel Insulator's Wire Or 3/4 In. Steel Banding

Technical Support

We engineered Pyrogel to resolve power generation's toughest insulation challenges, it is supported by a team of application specialists and design engineers. If you are not satisfied with the performance of your existing thermal insulation, get in touch to learn how we can assist with a Pyrogel solution tailored to your needs. Our services include

Problem Diagnosis

Site Inspections

Training Seminars

Trial Installations

Specifications

Contractor Training