High Performance Insulation for Delayed Coking Units

Maximize Liquid Yield
Superior Asset Protection
Reduce Operating Expense
Optimize Infrastructure
INSULATE TO YOUR ADVANTAGE

Pyrogel® HPS is engineered to minimize heat losses and help maintain uniform drum wall temperatures, thereby providing superior temperature control and promoting optimal initial coke bed formation.

Achieving operating targets such as furnace outlet temperatures, drum inlet and outlet temperatures, and temperatures in outlet lines for start of cycle preheat, is critical to optimization of product yields. Increasing drum outlet temperature by reducing heat loss to the environment can shift production in the right direction—maximizing valuable liquid yields while reducing the amount of solid coke formation. If you’ve tried tuning your controls and are not hitting your targets, perhaps it is time to try Pyrogel HPS?

The cyclic operating conditions of DCUs can wreak havoc on drum and pipe insulation. High temperatures, expansion-contraction and water ingress—the three enemies of insulation—can destroy conventional materials, leading to safety and performance issues.

Persistently wet or missing insulation can lead to accelerated corrosion, particularly on drum heads. Pyrogel’s uniquely hydrophobic yet breathable properties, combined with a multi layer protection, ensure that assets remain dry and efficient. Superior attachment details also limit fatigue stress formation.

When you insulate with an engineered Pyrogel HPS system, you provide the best protection for your DCU assets, allowing them to operate safer, for longer.
For almost two decades, Aspen Aerogels has built a reputation for solving thermal insulation's toughest challenges. For owners and operators globally, when it gets too hot, too wet, or too tough for other thermal insulations, they turn to Pyrogel to restore performance and productivity.

Uneven heating and cooling can result in multiple times greater heat loss than allowed for in the original design. These losses can require increases in furnace heat rates to compensate. Pyrogel HPS combats these losses for the life of the unit, allowing the DCU to get back to operating targets.

Whether planned or unplanned, DCU maintenance events are complex, and downtime is costly. Routine inspection and maintenance should not mean you have to replace your insulation. Using a well-designed insulation system that incorporates Pyrogel HPS will allow you to remove and reuse your insulation. After all, if the insulation is damaged enough to warrant replacement, it likely was not doing its job in the first place—preventing you from doing yours.

Just 2" (50 mm) of Pyrogel HPS can provide the same level of heat conservation as 6" (150 mm) of mineral wool. In the congested environment of a DCU, such space and weight saving supports two distinct revenue improvement options.

1. **Superinsulate**: Increase the thickness of Pyrogel insulation to boost liquid yield potential.

2. **Supersize**: Increase the drum diameter within the existing DCU cage infrastructure.

Whether it is time to re-drum, re-insulate, or build a new unit, the use of Pyrogel HPS opens up new opportunities for design engineers to increase return on investment.
Richard Schmidt
INDUSTRIAL SEGMENT MANAGER
281-467-6635
rschmidt@aerogel.com

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