Vertical Standing Seam Panel Insulation for Tanks and Towers

NewStar Solutions Inc. tank insulation panel system, manufactured of prefabricated standing seam Aerogel insulation panels, provides long-term, maintenance-free thermal control of large bulk storage tanks in the chemical, oil, gas and asphalt product markets. Storage tanks and towers from 10 feet (three meters) or larger in diameter that require thermal conservation or condensation control are perfect applications for a NewStar Solutions system. Every system is pre-fabricated to ensure the utmost quality control standards, and is custom engineered to meet the specific tank height, thickness requirements, and specifications to meet the customers standards.

An aluminum outer jacket or other jacket as specified by the customer is bonded to a Aspen Aerogels insulation to form a laminated NewStar Solutions panel. The amalgamation of an outer shell of aluminum or specified other with a double rolled seam provides a tank insulation system that is resilient to weather, long-lasting, and maintenance-free. These panels can extend vertically the full height of a tank side-wall or may be shortened into smaller panels to ease installation for long panels or confined areas. These panels may also be utilized on a tank roof. Protrusions from the insulation, such as man ways, nozzles and ladder clips, are tightly fitted and sealed. Where ground water wicking is a concern in most insulation systems it does not pose a problem to the NewStar Solutions panel. The Aspen Aerogel insulation we use in our panel system is hydrophobic and will not wick water.

Rivets or screws are not required to attach the panels in place, therefore eliminating holes in the cladding. The double rolled seam ensures a weatherproof seal designed to withstand very high winds.

The internal anchor and double rolled seam work together to allow for the expansion and contraction of the tank, while holding the panels securely against the tank regardless of thermal conditions.

Tank Insulation Panel System

Ratings / Specifications

Panel width ..................................24” (61 cm)
Panel height ..................based on tank height
Panel anchor cable..........¼” dia. (6.4 mm) steel
Panel retaining clip…3/8” x 0.015” stainless steel (9.5 mm x 0.38mm)
Available insulation materials/temperature ranges
Pyrogel XT ...........-40°F to 1200°F (-40°C to 649°C)
Pyrogel XTF ..........-40°F to 1200°F (-40°C to 649°C)
Insulation k factors
Pyrogel XT …0.16 Btu-in/hr-ft°F (23 mw/m-K)
Pyrogel XTF …0.16 Btu-in/hr-ft°F (23 mw/m-K)
Available insulation thicknesses… 5mm to 100 mm
Available metal jacket materials 2/thicknesses
Aluminum…………………0.024” (0.61 mm)
Stainless steel 0.016” (0.41 mm)
Coated steel……………..0.024” (0.61 mm)

Note: 1) Mean temperature for k factor is 100 degrees C (212 F) 2) Metal jacket is available in a variety of colors
1) Aluminum, stainless steel, galvalume or coated steel outer shell. Metal jacket is also available in a variety of colors.
2) Aspen Aerogel Pyrogel XT insulation is bonded to outer shell in the factory.
3) Tank shell.
4) Double rolled vertical seam provides a tank insulation system that is resilient to weather, long-lasting, and maintenance-free.
5) Turnbuckles are adjusted to set pretension on the wire cable anchor system.
6) Pre-tensioned, wire cables, applied circumferentially around the tank, allow for tank expansion and contraction while holding the panels securely in place against the tank wall.
7) Stainless steel retaining clips are fastened around the stainless cable and are formed into the panels double locked seam. This design allows the panels to be tightly secured to the cable while allowing the cables to expand and contract.
8) Stiffener ribs add rigidity and strength to the panels while adding an eye appealing profile to it.

Application Details

Cladding Details
**Advantages of a NewStar Solutions Panel System**

1. Costly scaffolding is eliminated. Panel system is installed by use of a man-lift or climber basket.
2. Lighter panel design which leads to faster installations.
3. Weather proof system
4. Thin panel design with high energy savings due to the Aspen Aerogels materials we use in our system.
5. Material is hydrophobic and will not wick water, greatly decreasing the chances for CUI (Corrosion Under Insulation).
6. No need for rivets or screws therefore eliminating water penetration locations.
7. Able to withstand high winds.
8. Specialized training and technical support from start to finish for you project.

**Attachment Details**

Stickpins temporarily hold the steel cables in place prior to tightening the turnbuckles once the cable is run around the circumference of the tank the Stainless steel turnbuckles and two double crimped ferrules at each end cable end are tightened to the preset tension required to support the NewStar Solutions Inc. panels.

Stainless steel retaining clips are fastened around the stainless cable and are formed into the panels double locked seam. This design allows the panels to be tightly secured to the cable while allowing the cables to expand and contract.