Steam Network Resiliency

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Challenge Accepted



aspen

aerog

Running a steam network is tough....

Aging infrastructure

Water ingress

Regulations

Safety

Customer demands

Hard to access places

Running a steam network is tough....





Boone Pickens Steam Network?

Steam Network Operators turn to aerogel blanket when.....



They are faced with wet or flooding conditions that impact their network performance, personnel & public safety





They suffer degradation of their current insulation due to the harsh conditions associated with water and heat Space challenged locations make meeting energy codes and safety requirements impossible



aspen aerogels[®]

insulation: engineered

"by solving insulation's toughest challenges aerogel blanket insulation reveals added benefits"

Built from the ground up to resist the prime enemies of insulation

Water

Excess Temperature Mechanical Abuse



2019 National Climate Report (issued Jan 2020)

The contiguous U.S. average annual precipitation was 34.78 inches, which is 4.84 inches above the long-term average, the second wettest year on record.

Record precipitation fell across the northern Plains, Great Lakes and portions of the central Plains.

Ten of the last twelve 12-month periods were record wet with the top seven all-time wettest 12-month periods occurring during 2019.

Above-average annual precipitation was observed across much of the nation.

North Dakota, South Dakota, Minnesota, Wisconsin and Michigan each had their wettest year on record during 2019, with much of the central U.S., Northeast and parts of the West experiencing above- to muchabove-average precipitation.















Initial Readings:









Post Readings:



Surface Temperature: Entry Ladder

Surface Temp: Wall Behind Entry Ladder



Surface Temperature: Entry Ladder

Surface Temp: Wall Behind Entry Ladder



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Durably Hydrophobic

Uniquely hydrophobic to repel water up to >550°F Not a coating! Compliant edges support water tight overlaps and joints.



Fast Drying & Breathable

Practically no ability to absorb water, breathable composition supports ultra-fast dryout, minimizing time water is in contact with asset.



Tough & Resilient

Resists tool strikes, foot traffic, rough handling.



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Fibrous Insulation

Foam Glass Calcium

Silicate



Flowing Water

Fast flowing water enters the service trench,causing the jacketing to degrade.Fibrous insulation is scoured from the pipecausing blockages and flooding



No Clearance for insulation

Conventional insulation is too thick to allow clearance at the bottom of the trench. Silt accumulates, standing water is absorbed into the jacketing and insulation further degrading the thermal protection



Public Safety

This trench sits under a public sidewalk, the sidewalk must be removed to enable remedial work.



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Opening Street Surfaces

Increasingly congested utility ground space Limited clearances Negative impacts to local commerce









Public Inconvenience – Project Complexity

Ultra-thin insulation profile minimizes trench demands 'threading the needle' in existing tunnels





OUR PROJECTS

Common problems solved - sustainably













District Steam

Campus Distribution

Benefits

Increase Resiliency

Protect against flooding Recover steam capacity | Capital avoided Reduce maintenance & operational costs

Resolve Spatial Clashes

Safer working in confined spaces De-risk utility clashes

Meet ASHRAE demands

Install design levels of thermal resistance Avoid hot spots and impact on public & maintenance personnel



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Services

Technical Support

Thickness Tables Conversion Specification assistance Heat Loss / Gain calculations Design input

Site Inspections

Physical Inspections Thermographic Surveys

Installation Training

Contractor Training Best Practices onboarding

THANK YOU

AND AND ALSO

