Steam Network Resiliency

Challenge Accepted
Running a steam network is tough....

- Aging infrastructure
- Water ingress
- Regulations
- Safety
- Hard to access places
- Customer demands
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.

Space challenged locations make meeting energy codes and safety requirements impossible.

They suffer degradation of their current insulation due to the harsh conditions associated with water and heat.
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
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 much-above-average precipitation.
External Safety
Internal Safety

Initial Readings:
Surface Temperature: Entry Ladder
Surface Temp: Wall Behind Entry Ladder

Post Readings:
Surface Temperature: Entry Ladder
Surface Temp: Wall Behind Entry Ladder
**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.
Pipe Size: 8”

Process Temperature: 355°F
Flows Water
Fast flowing water enters the service trench, causing the jacketing to degrade. Fibrous insulation is scoured from the pipe causing 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.
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

Plant Rooms

Vaults

Tight Spaces

Slip Joints

Tunnels
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

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