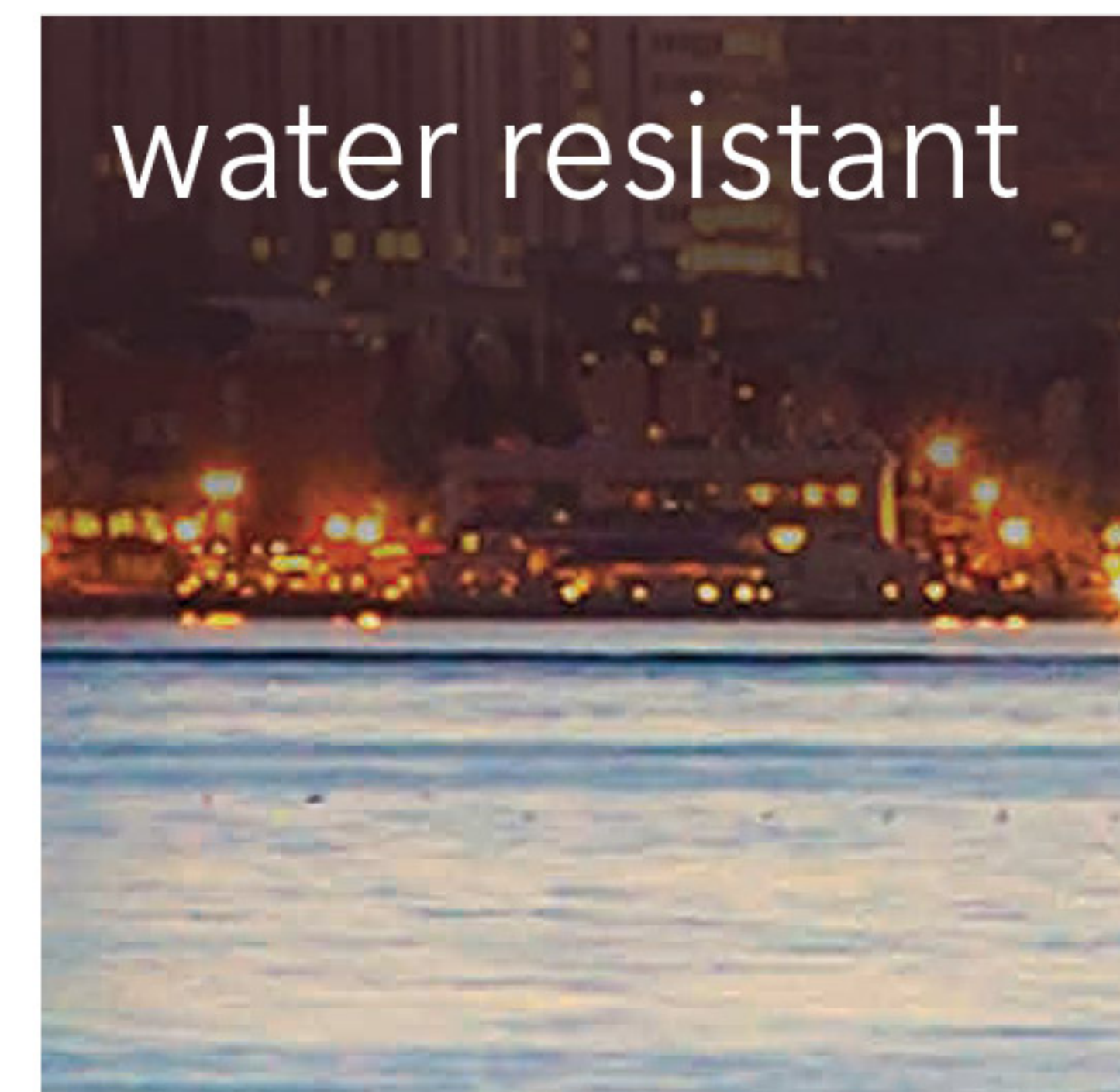
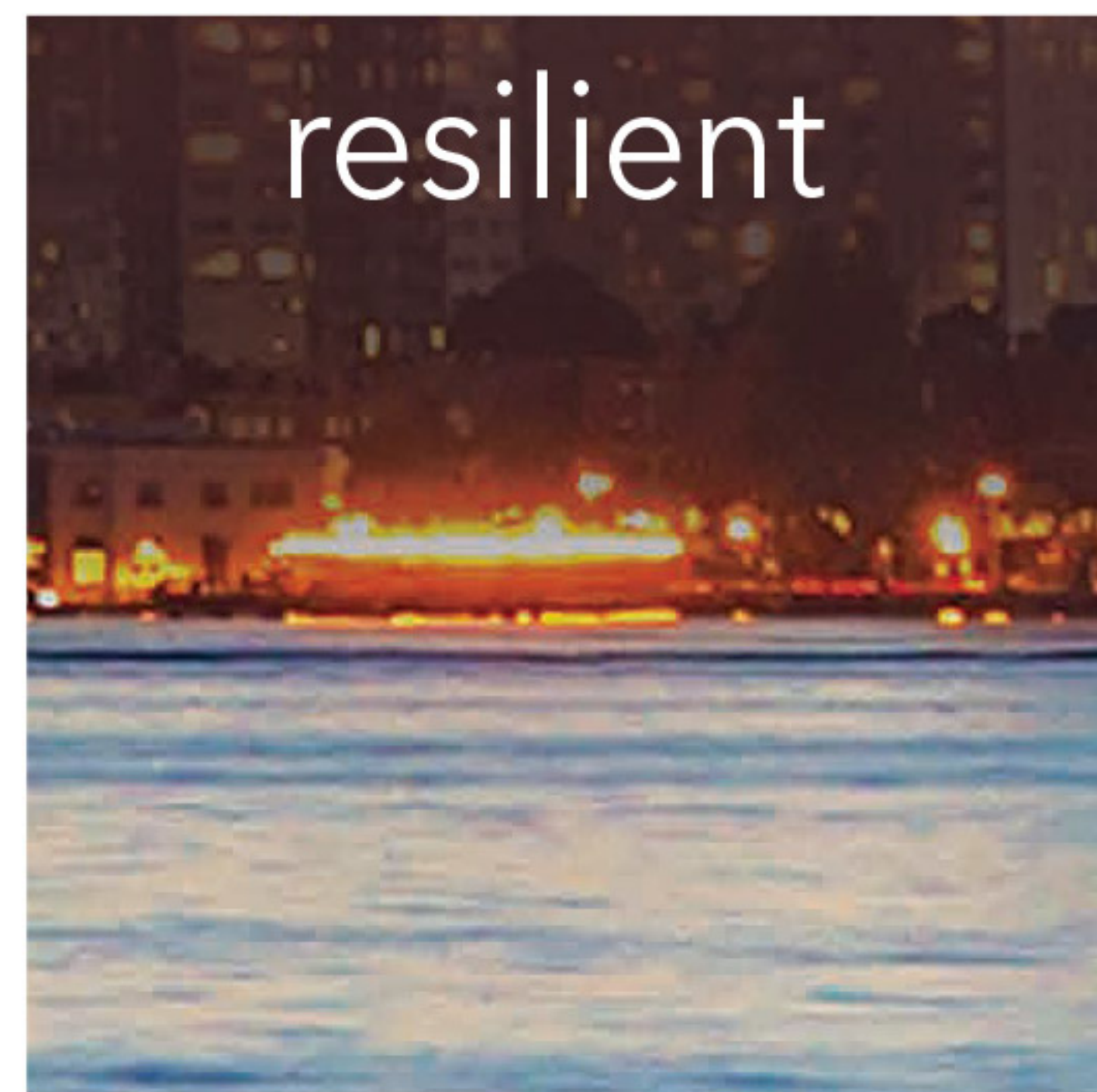
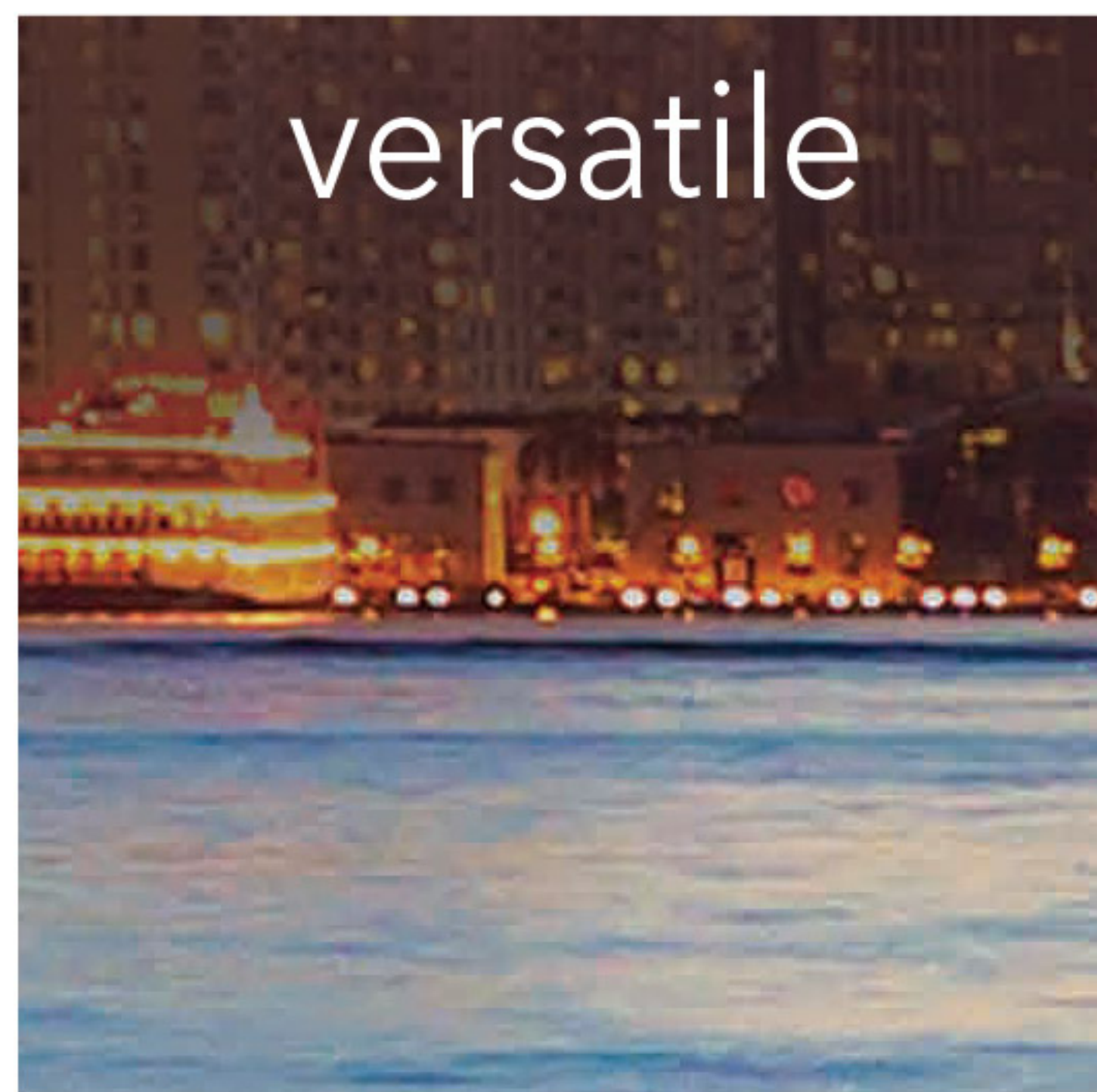
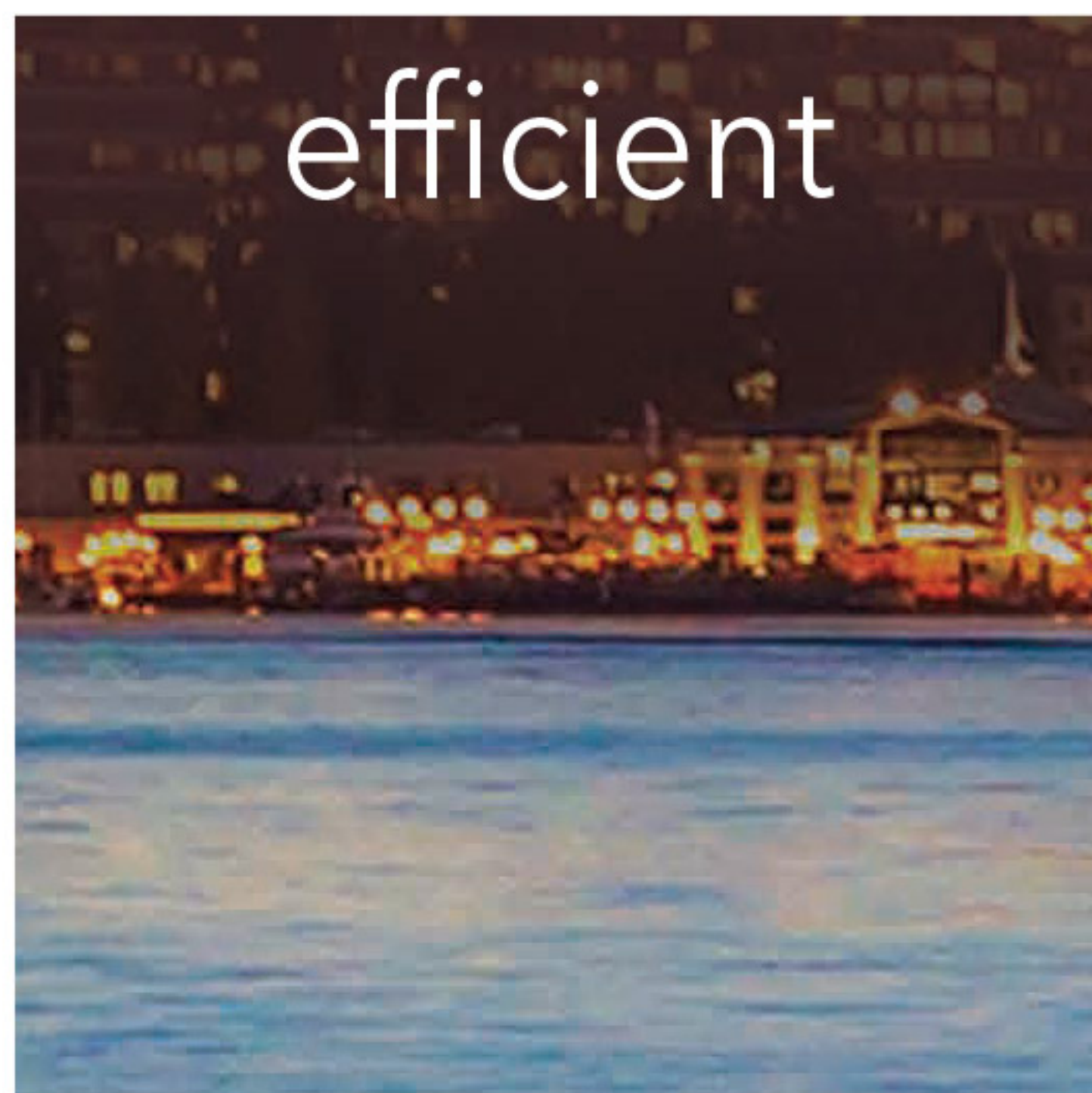
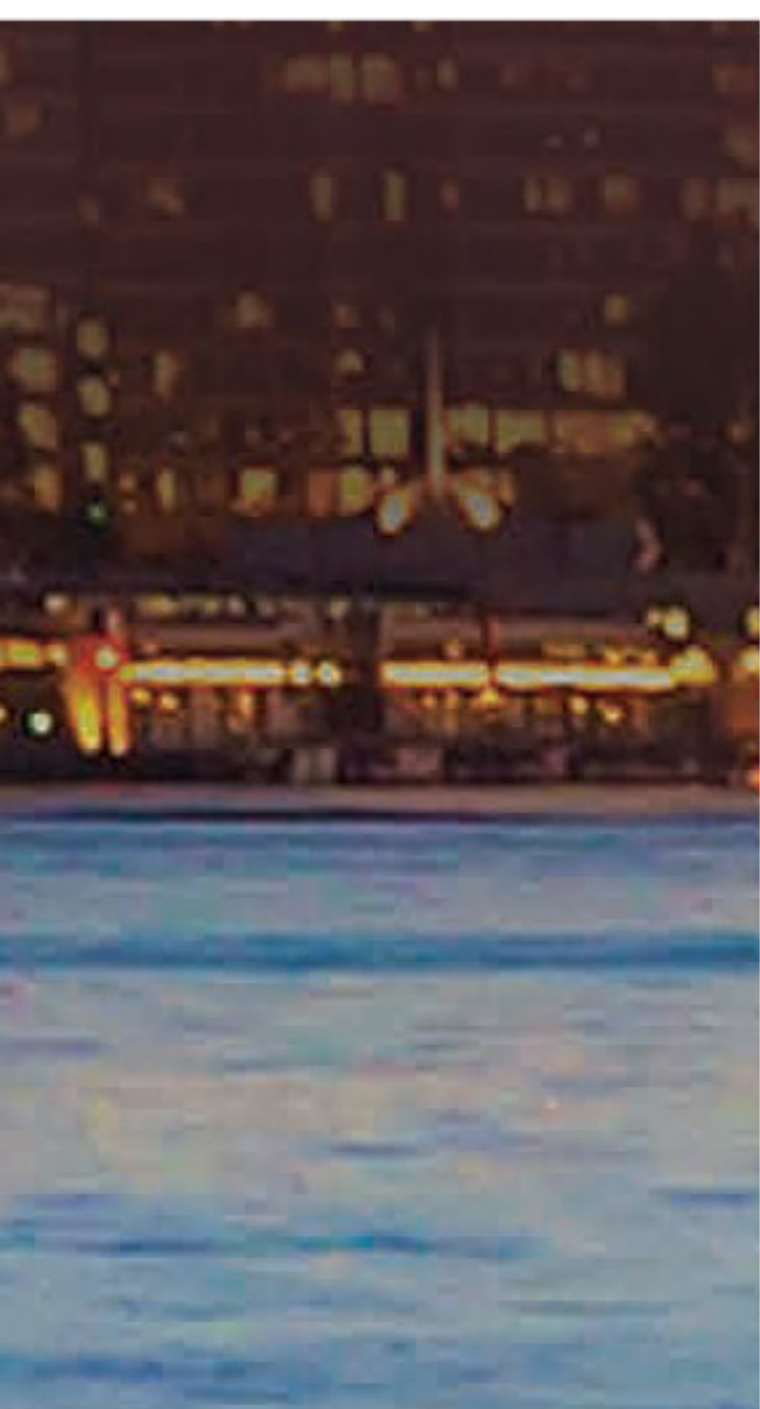
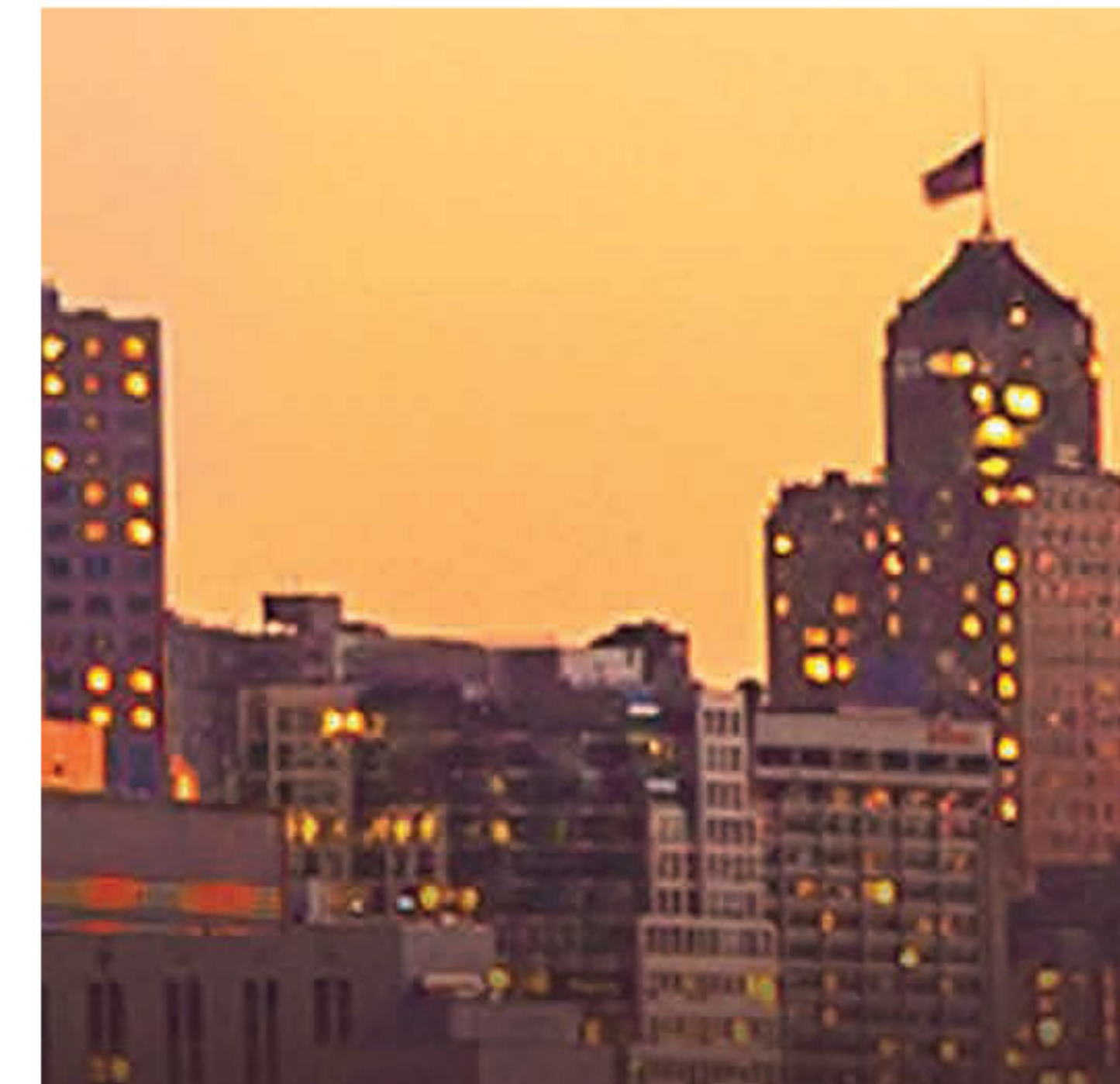
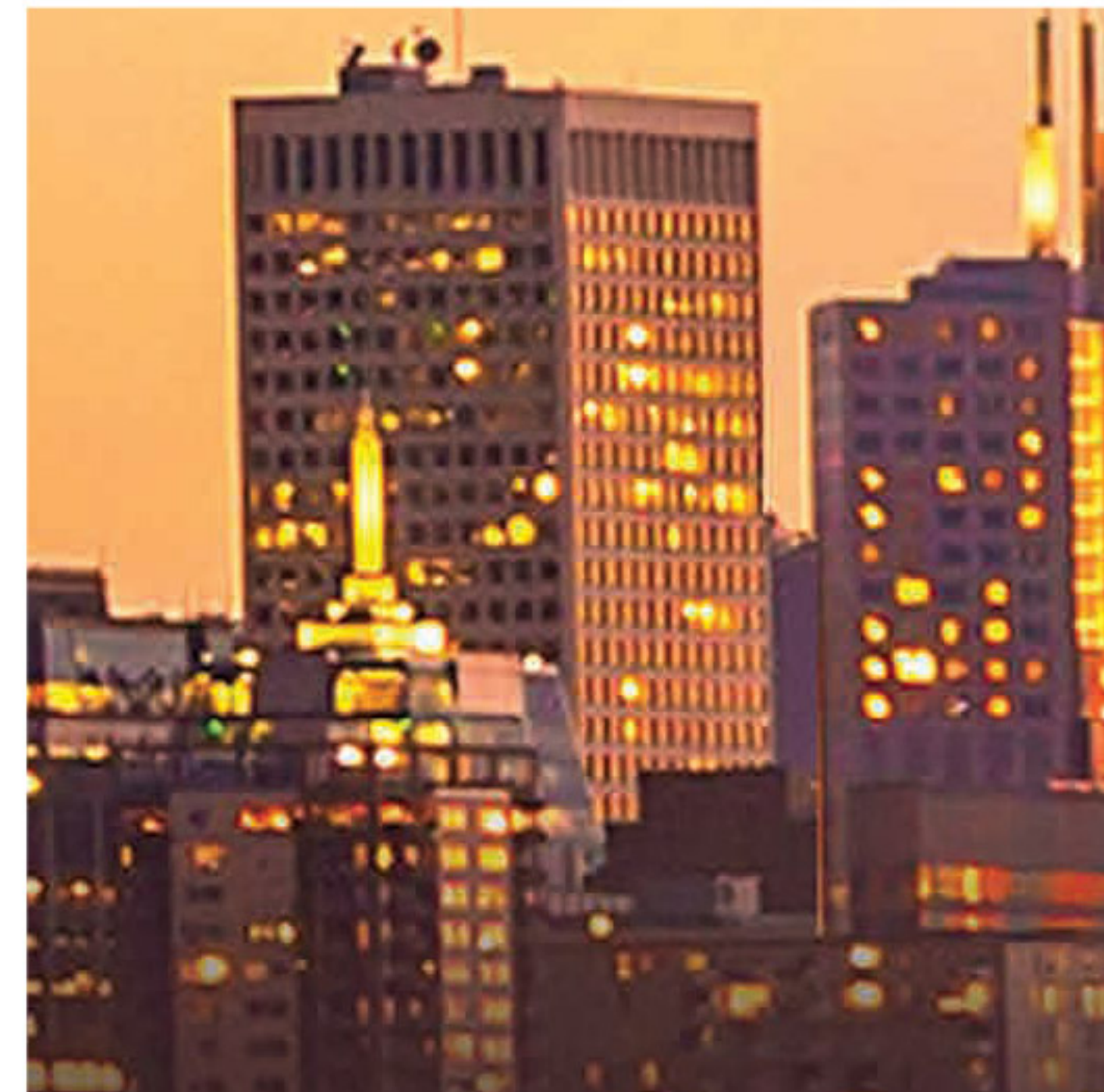
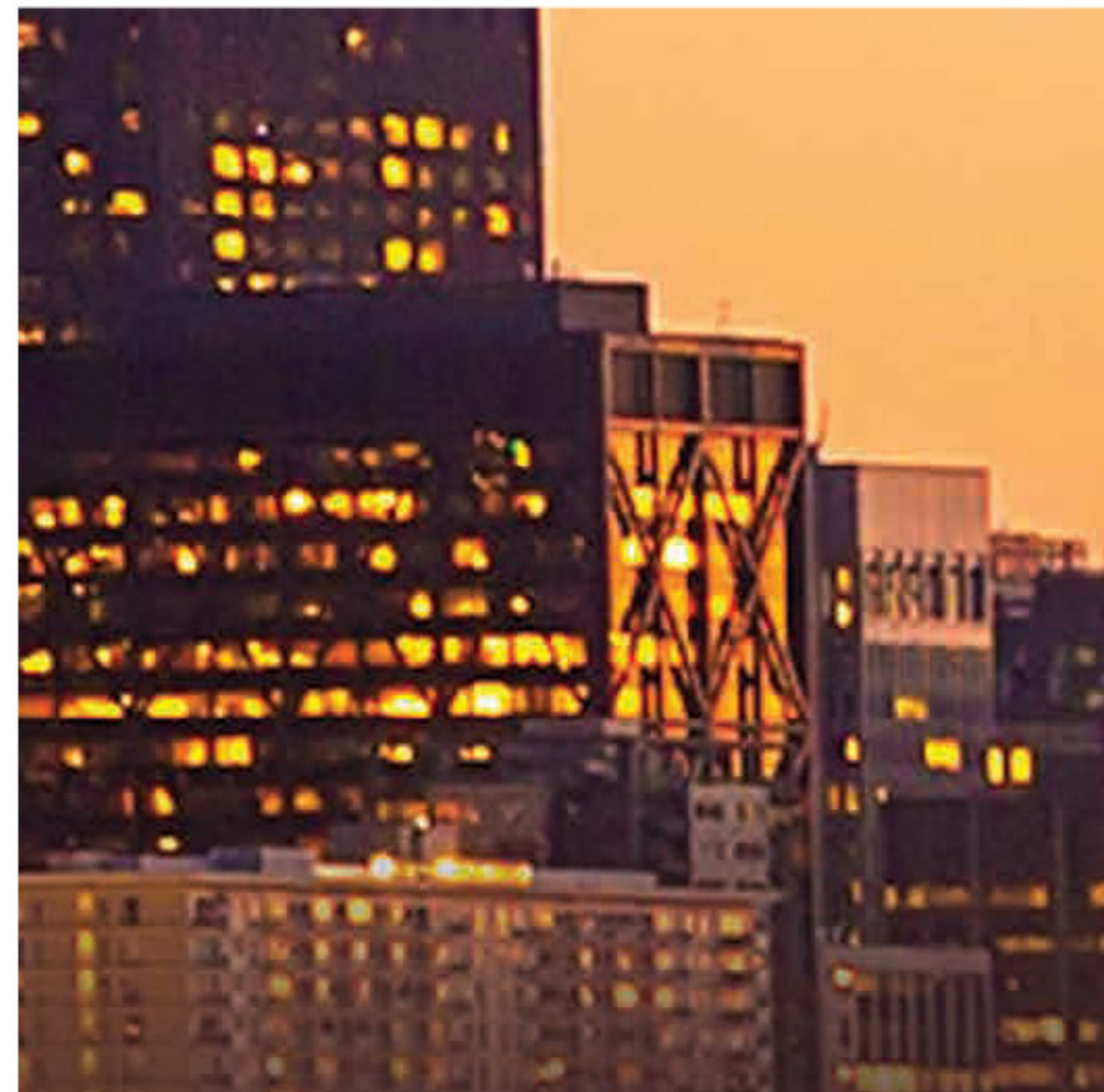
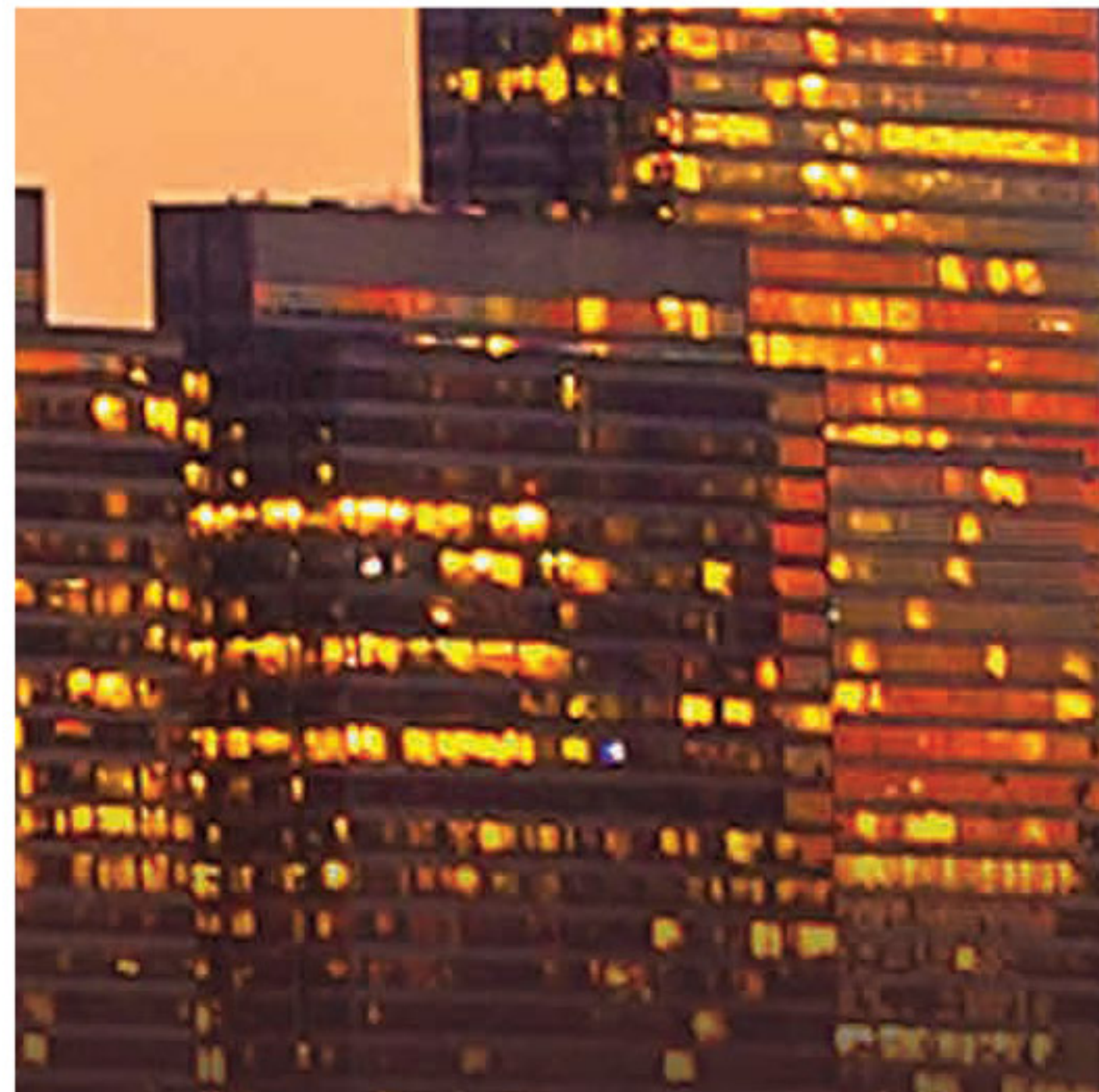
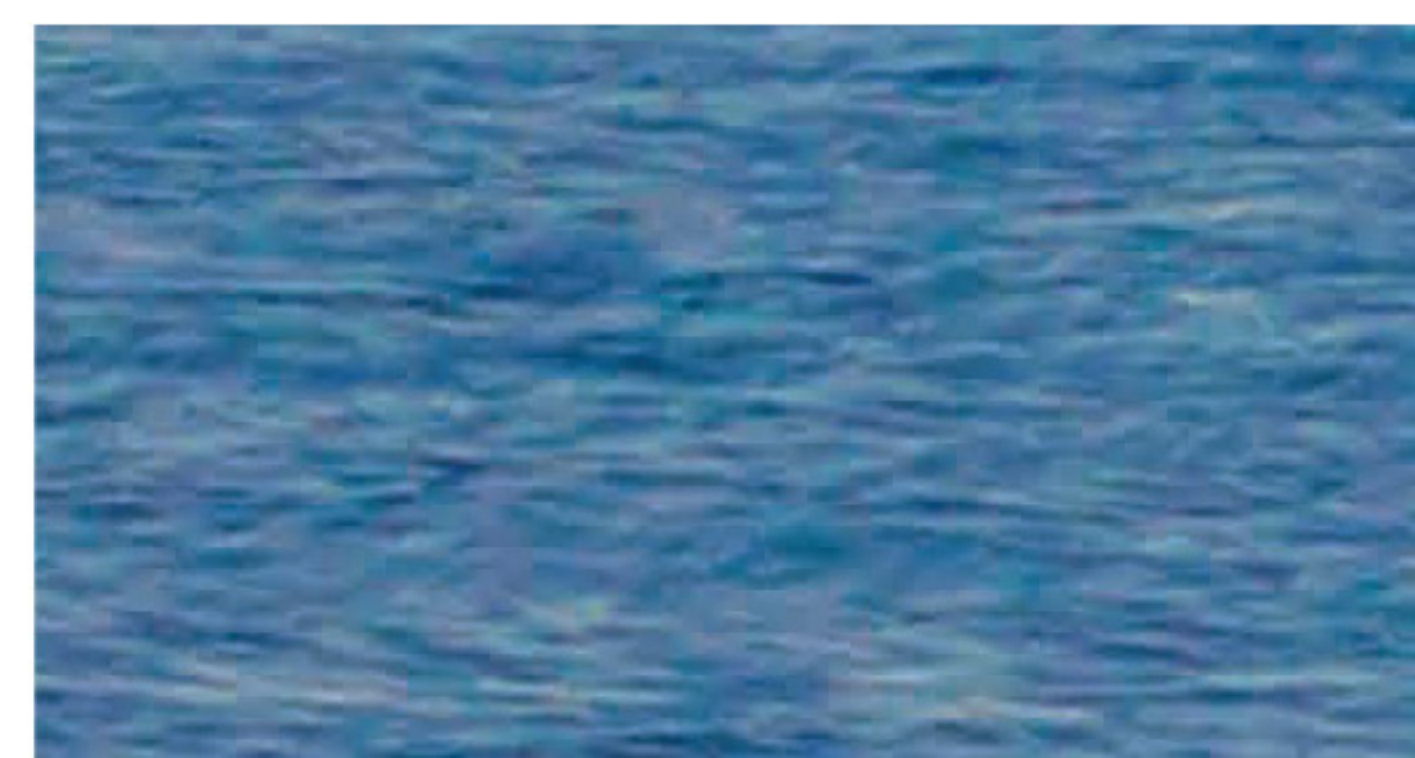
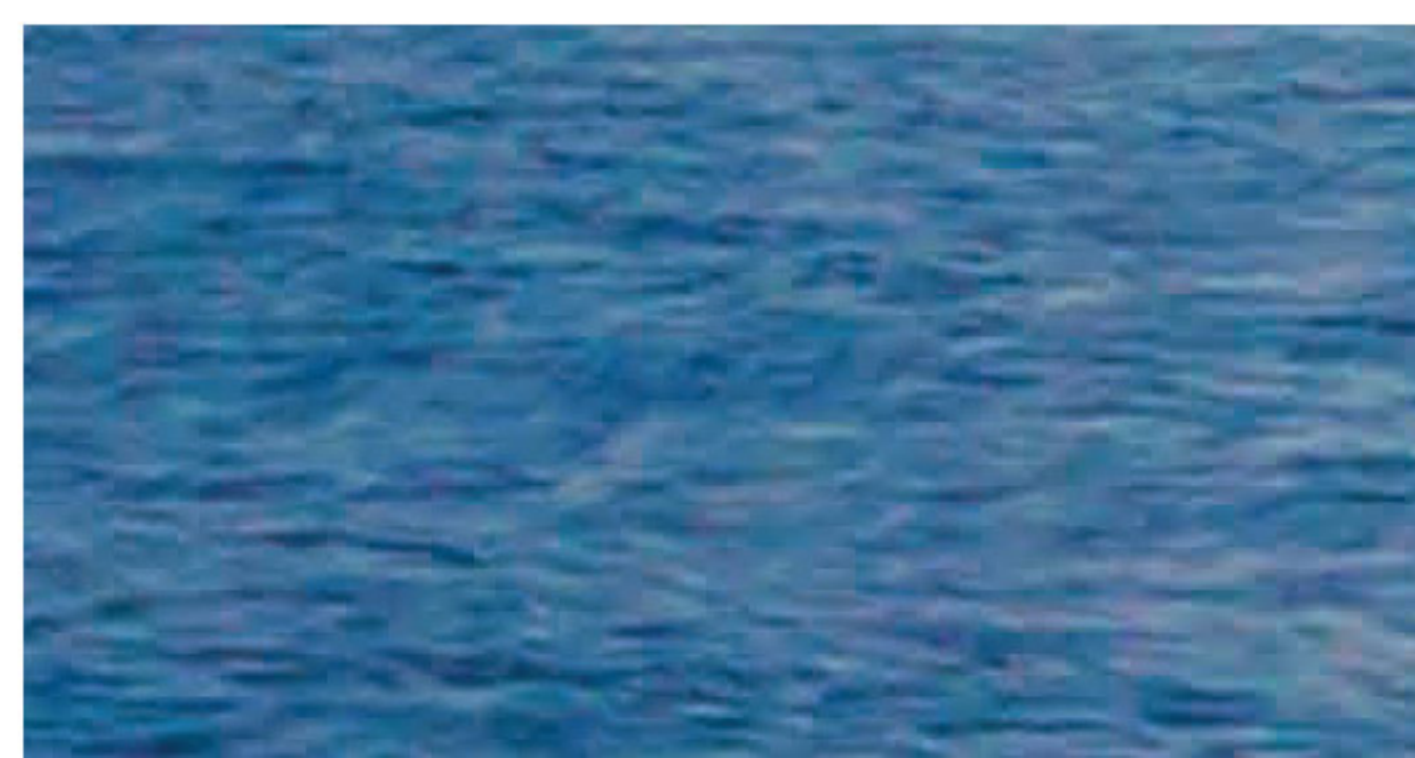
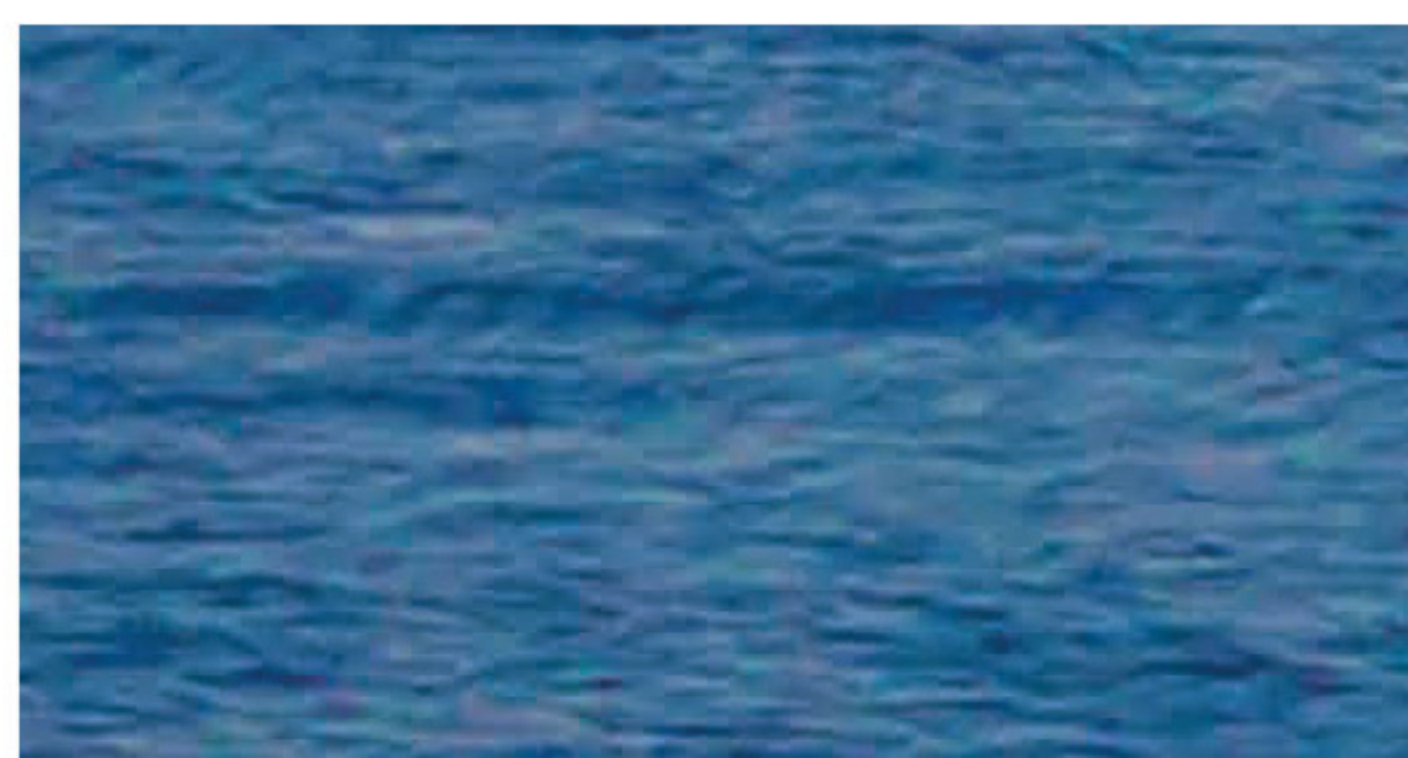
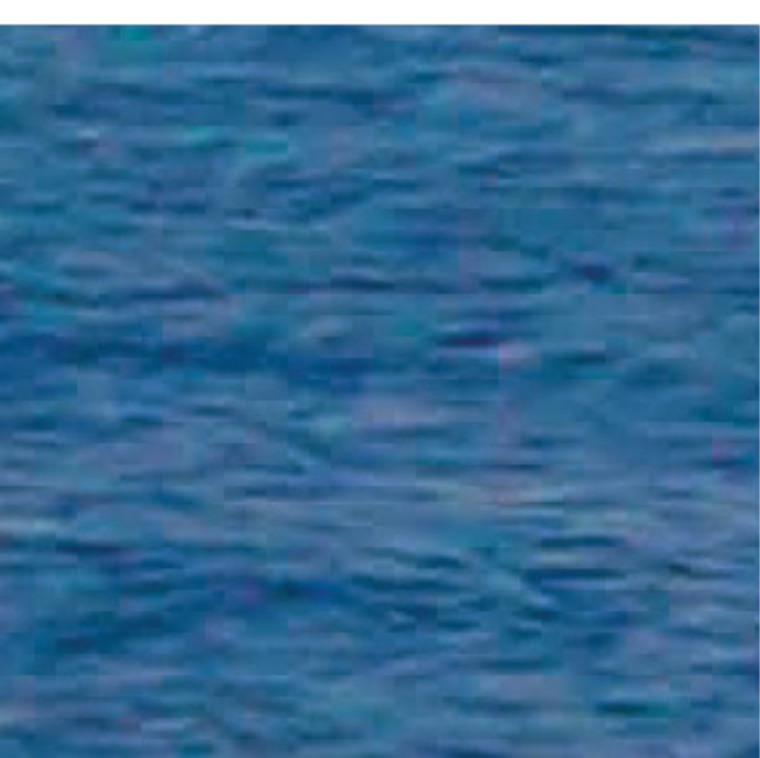


Pyrogel[®]
XTE

High Performance Thermal Insulation

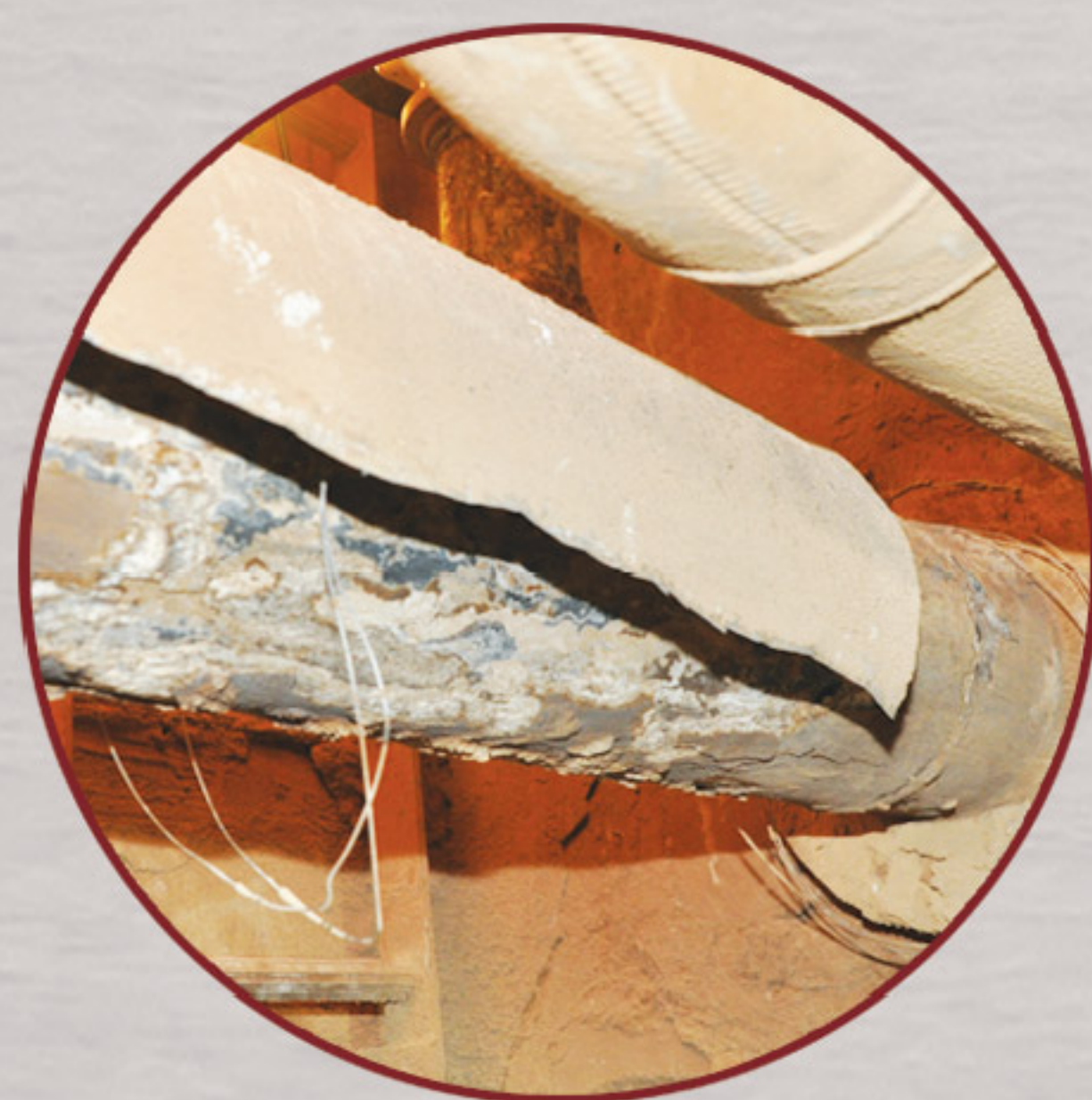


empowering efficient, resilient steam distribution networks



Network Advantages

Quality and affordable steam generation is important to you and your customers. You need to balance comfort & power with system efficiency, reliability, resiliency and safety. Pyrogel® XTE insulation can help your steam network:



Boost Resiliency

Pyrogel XTE is durable and water resistant, yet it remains breathable. This means that your network stays dryer for longer. If water does find its way in, it gets out faster. Faster dry-out equals better resiliency post flooding event.

Reduce Costs

Unlike traditional insulations, Pyrogel XTE has a longer service life. Not only can it survive floods, it can be removed & reused for inspection & maintenance work, which decreases replacement costs.

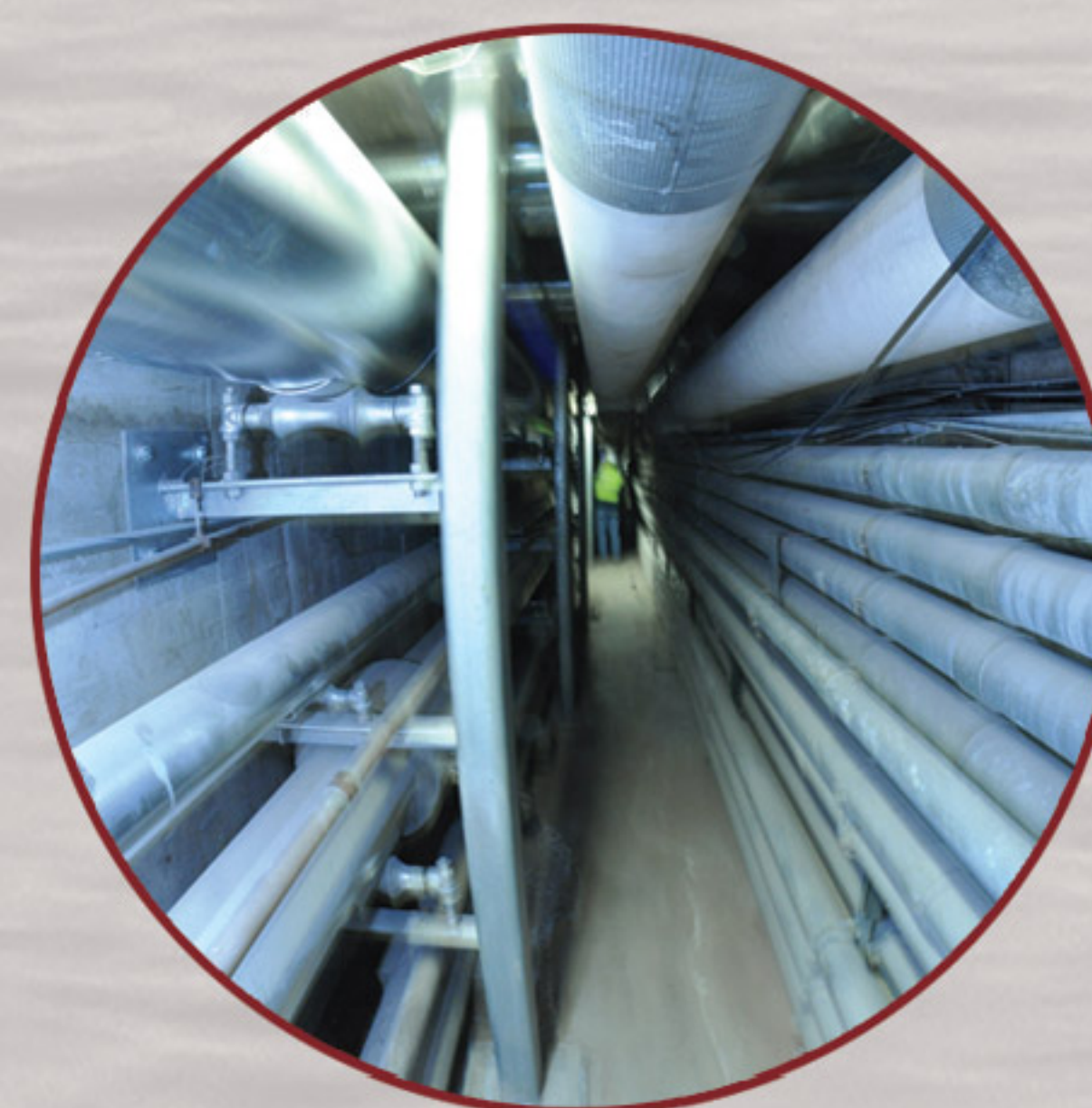


Improve Existing Performance

Upfront energy efficiency improvements with Pyrogel XTE can help you avoid adding unnecessary capital for more power generation capacity. Pyrogel XTE can recover lost line performance and reduce wasteful infrastructure costs.

Operate Safer Systems

Pyrogel XTE allows you to insulate to proper touch temperatures in areas where space is at a premium. Operators also report minimal to no fugitive steam emissions, even when the steam line is fully submerged. Vaults and tunnels remain safer and more comfortable for inspection & maintenance.



Resolve Space Challenges

Are you prevented from meeting code requirements due to space restrictions in your legacy distribution system? The extremely low thermal conductivity of Pyrogel XTE offers equivalent performance at up to 80% less thickness than conventional insulation.

Enhanced Resiliency

What our customers say about Pyrogel®

“

We no longer fight a losing battle against flooding

Water is our number one enemy

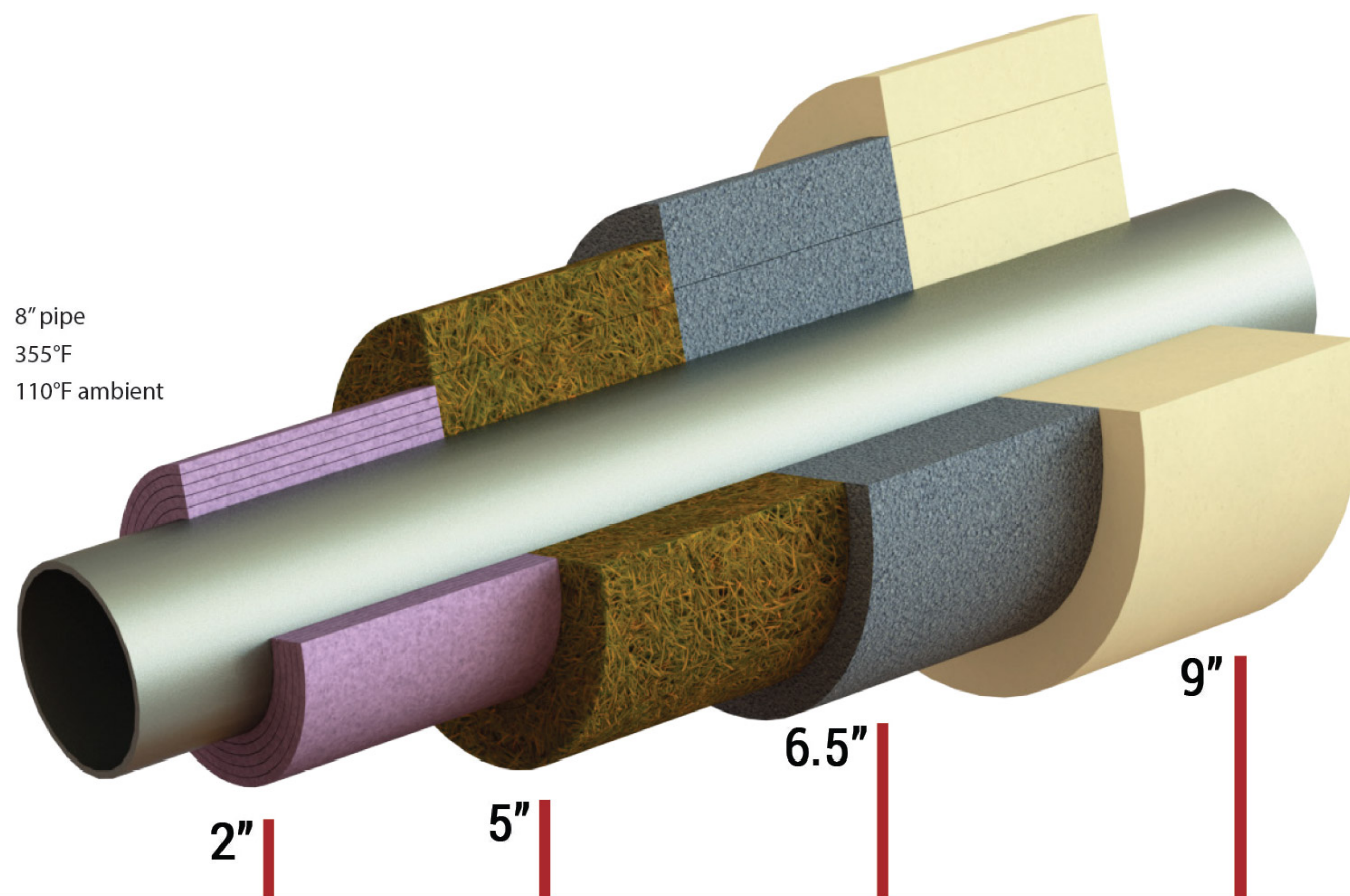
Pyrogel helped us to support additional customer
steam consumption without seeing the anticipated
increase in generating needs


”

Deliver Compliance

Pyrogel® XTE Thickness to Meet ASHRAE 90.1 - 2013

Operating Temperature		Nominal Pipe or Tube Size				
		<1 in.	1 in. to <1 ½ in.	1½ in. to <4 in.	4 in. to <8 in.	≥8 in.
>350°F	177°C	1.2 in. (30mm)	1.2 in. (30mm)	1.6 in. (40mm)	2 in. (50mm)	2 in. (50mm)
251°F to 350°F	122°C to 177°C	1 in. (25mm)	1.2 in. (30mm)	1.6 in. (40mm)	2 in. (50mm)	2 in. (50mm)
201°F to 250°F	94°C to 121°C	0.8 in. (20mm)	0.8 in. (20mm)	1.2 in. (30mm)	1.6 in. (40mm)	1.6 in. (40mm)
141°F to 200°F	61°C to 93°C	0.6 in. (15mm)	0.6 in. (15mm)	1 in. (25mm)	1.2 in. (30mm)	1.2 in. (30mm)
105°F to 140°F	41°C to 60°C	0.4 in. (10mm)	0.4 in. (10mm)	0.8 in. (20mm)	0.8 in. (20mm)	0.8 in. (20mm)



 2 in. (50mm) for equivalent heat loss	60% thinner than Fibrous Insulation	69% thinner than Cellular Glass	78% thinner than Calcium Silicate
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Pyrogel XTE is the highest performing thermal insulation available for steam distribution systems. Requiring a fraction of the thickness of other insulations, Pyrogel XTE resolves space challenges and clashes in tunnels, vaults, and plant rooms.

Outstanding Performance

Operators who implement Pyrogel® XTE in their district energy network can expect reduced O&M costs, in addition to immediate energy savings. These combined savings can enhance your project ROI, making the network switch to Pyrogel XTE more compelling.

- Increased end user steam quality
- Lowered maintenance costs
- Reduced fugitive steam
- Decreased fuel consumption
- Achieved energy codes in tight spaces
- Improved corrosion defense



Duke University

Application: Tunnels & Vaults
Wins: Efficiency, Resiliency, Durability

Duke University's facilities management team selected Pyrogel to combat excessive energy losses in steam vaults which are subject to moisture ingress and to periodic flooding. This simple measure reduced heat loss during flooding events, limited fugitive steam associated with traditional wet insulations and helped to maintain steam quality to campus consumers.

Despite adding new consumption capacity, Duke's network operators did not observe an equivalent increase in demand in the network—partially attributed to the reduced heat losses in the vaults.



University of Minnesota

Application: Tunnels
Wins: Space, Logistics, Efficiency

Pyrogel was selected to insulate steam lines operating at 396°F. Space restrictions limited potential efficiency improvements with fibrous insulation. Just 2" (50mm) of Pyrogel delivered a 19% reduction in heat loss relative to 4" (100mm) of fibrous insulation.

No changes to pipe supports were required. Pyrogel sections were pre-cut to maximize working space in tunnels.

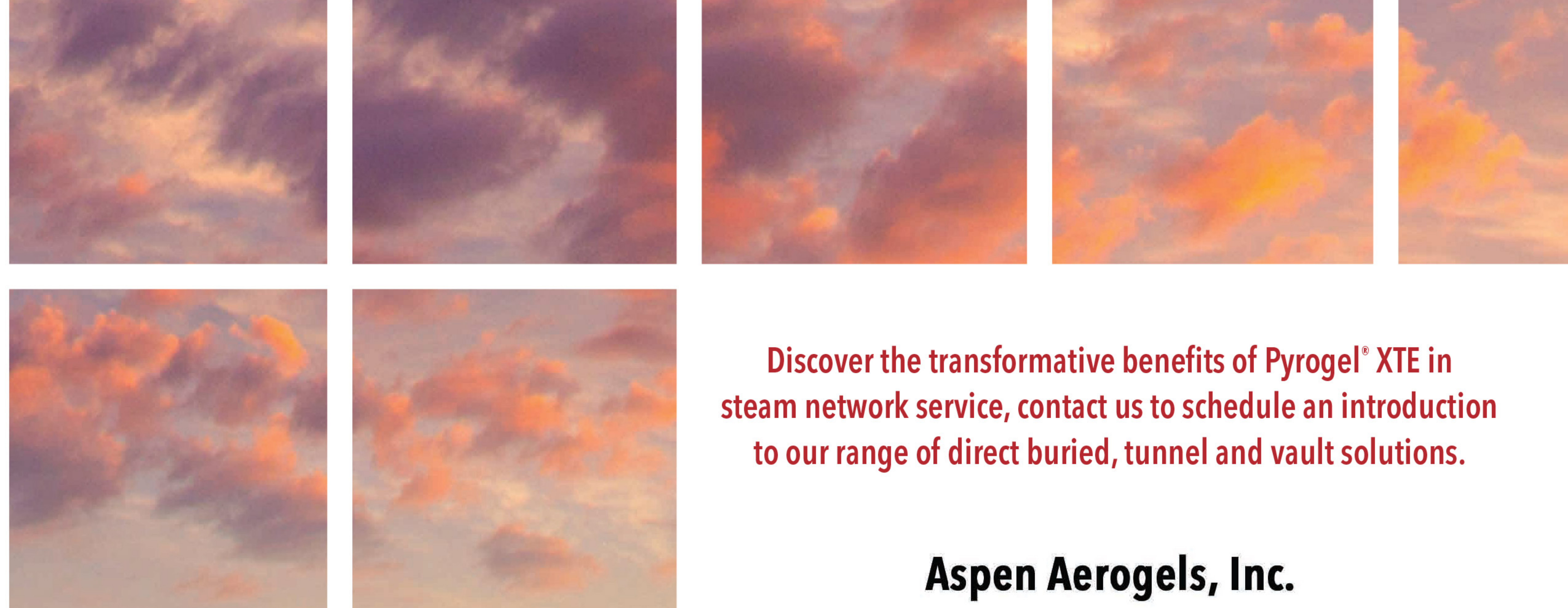


College Campus (Northeast USA)

Application: Tunnels
Wins: Space, Durability, Resiliency

The incumbent calcium silicate insulation had failed within 1 year of installation due to moisture uptake. Pyrogel insulation was cut to fit onsite and combined with prefabricated elbows for the ultimate in versatility and speed. System performance is now unaffected by periodic flooding. Pyrogel excelled in the confined space environment.

The "one size fits all" versatility enabled the contractor to hot install as the system did not have to be shut down for measurement.



Discover the transformative benefits of Pyrogel® XTE in steam network service, contact us to schedule an introduction to our range of direct buried, tunnel and vault solutions.

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