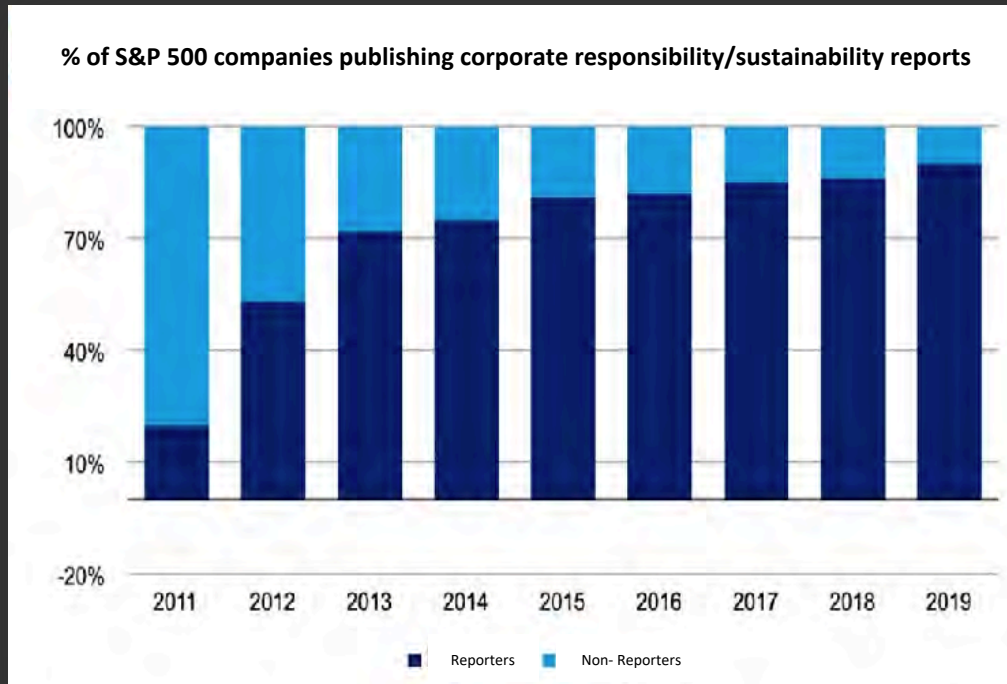




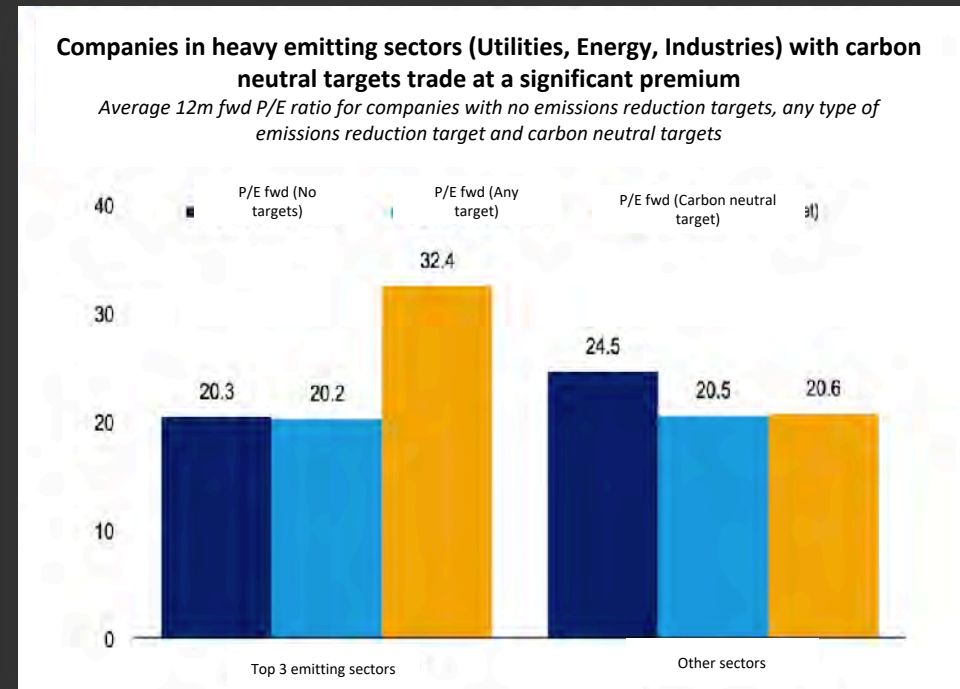
NanoTech Inc.

*Next Generation Materials for Carbon
Reduction, Fireproofing, and Insulation*

Hitting Net Zero is Now a Business Imperative



Source: [Governance and Accountability Institute Inc.](#)



Source: [Governance and Accountability Institute Inc.](#)



The Challenge: Hitting Net Zero is Expensive

Reaching net-zero emissions by 2050 requires a significant increase in spending on physical assets.

Average annual spending on energy, mobility, industry, buildings, agriculture, forestry, and other land use, 2021–50,¹ \$ trillion



¹Estimates based on Net Zero 2050 scenario from the Network for Greening the Financial System, which limits warming to 1.5°C, a hypothetical scenario, not a prediction or projection.

Source: [McKinsey](#)

Cloudy With a Chance of Recession

Expected timing of the next U.S. recession according to investors



Based on a survey of 525 investors, both retail and professional, fielded between March 29 and April 1, 2022.

Source: [Bloomberg MLIV Survey](#)



Extreme Weather Events are Impacting Populations Today

688

*Lives lost to
extreme weather
in U.S. in 2021*

\$145B

*Financial impact of
extreme weather
2021*

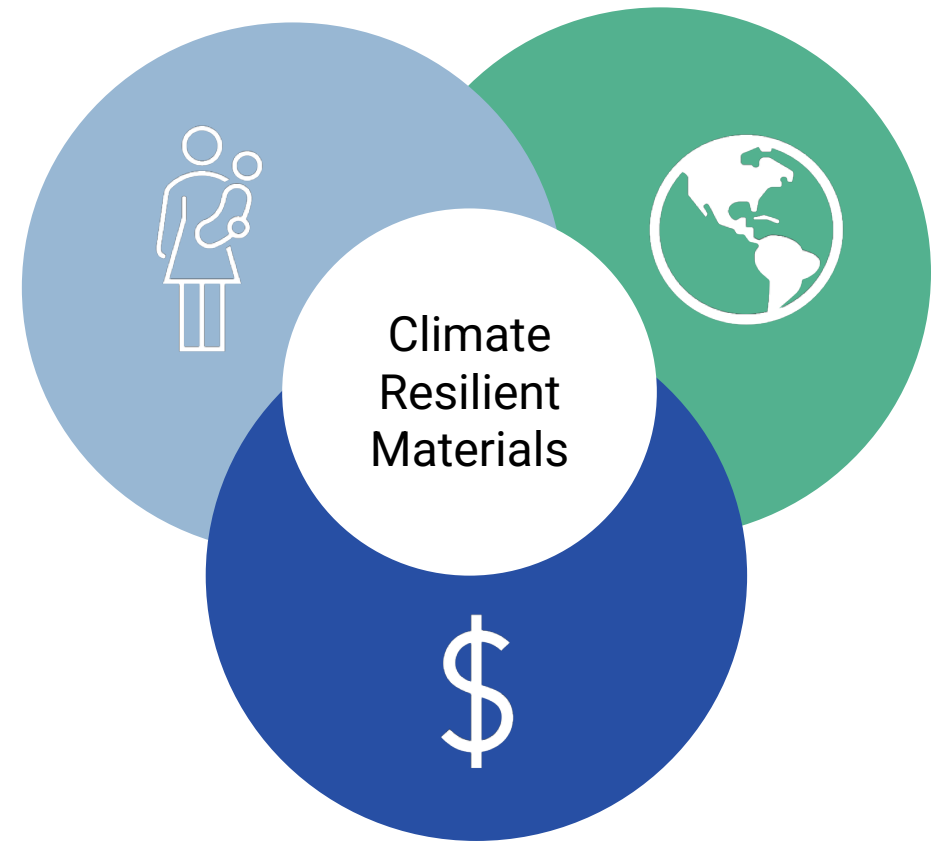
1,666,286

*Acres burned in CA
2020*

7,335

*Independent forest
fires in CA 2020*

WE NEED CLIMATE RESILIENT
MATERIALS THAT PROTECT
AGAINST THE CHALLENGES
OF EXTREME WEATHER
TODAY, WHILE REDUCING
THE IMPACT OF CARBON
EMISSIONS FOR TOMORROW,
AT A SUSTAINABLE PRICE
POINT



CARE
ABOUT
THE
FUTURE

At NanoTech we strive for a
safer and more **resilient**
world through **breakthrough**
materials

Our mission is to pioneer
material science to solve
our **customer's** grand
challenges



ABOUT US



1st Company Selected Part of
Halliburton Labs Clean Energy
Accelerator



Raised Seed Round of \$5MM



Won the Energy Transition
Business of the Year



Our Particle Utilizes Breakthrough Technology to Disrupt Industry Standards

Click



High Emissivity (Emits Heat)

Emits most of the heat away from
the substrate

Low Thermal Conductivity (Resists Heat)

Stops heat transfer with one of the
lowest thermal conductivity values
available on the market

Works In Many Resins

The Nano Shield Particle can be
added into many different types of
resins and carriers to make the
carrier fireproof and/or insulating

Inorganic/Environmentally Friendly

Composed of a common material
very similar to sand



A DEEP DIVE ON EMISSIVITY

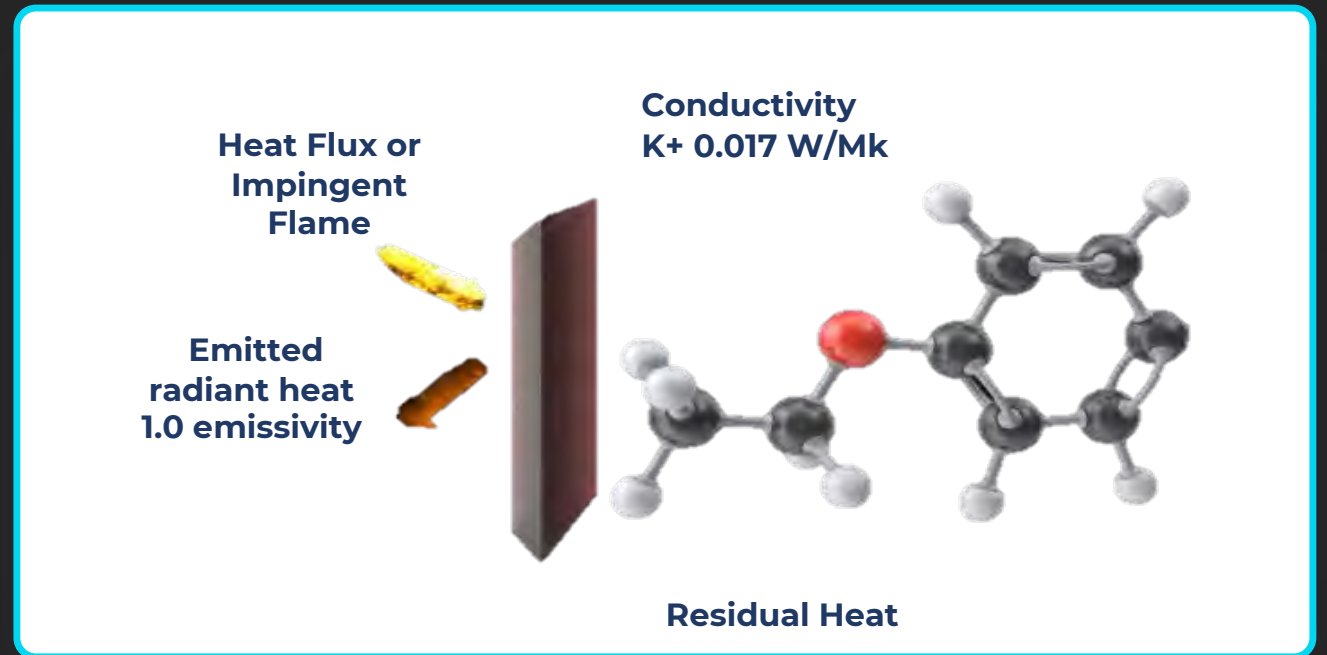
*Reduce energy
consumption by
more than 50%
and fireproof to
1,800 C*

Click 

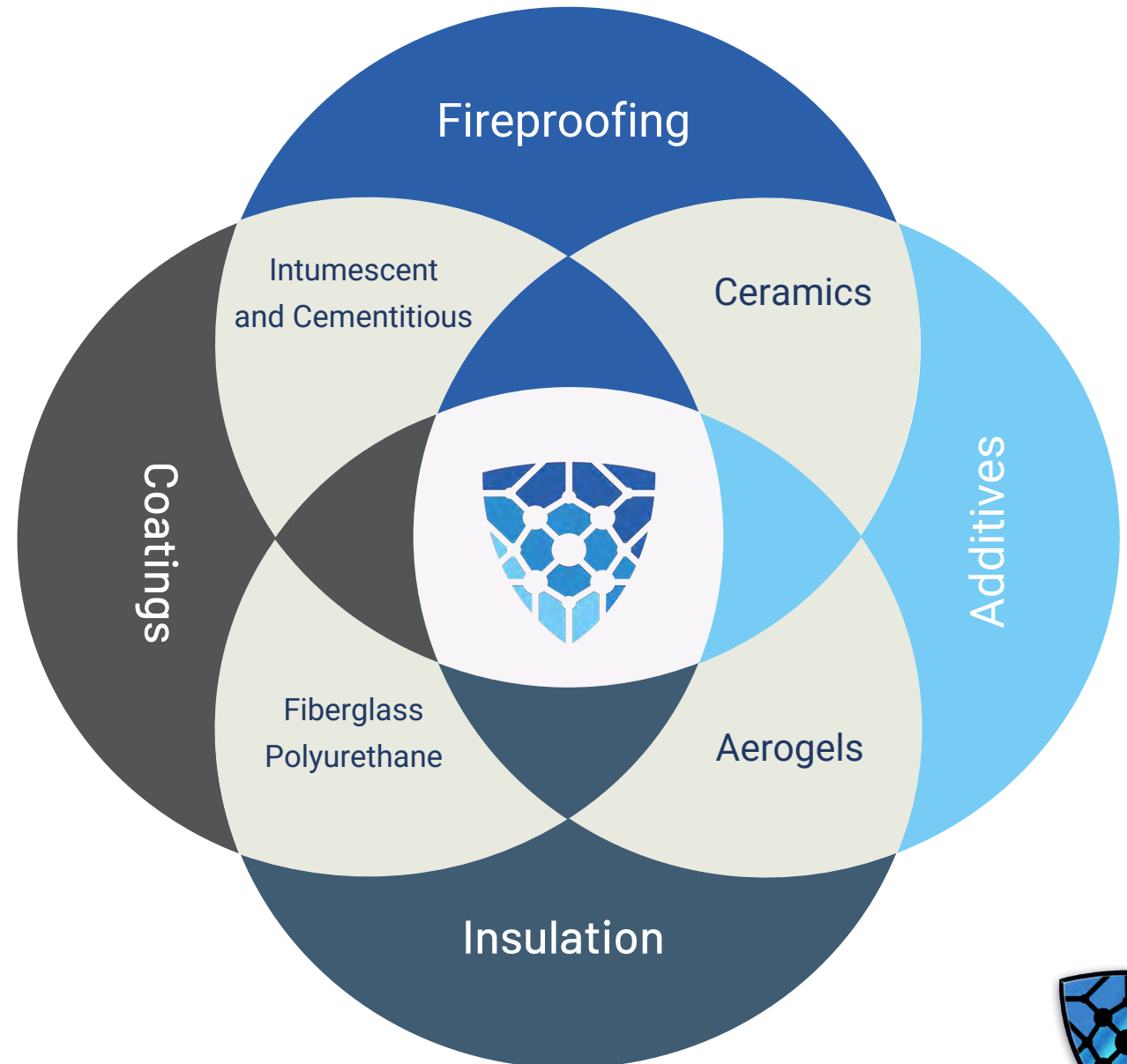


The Science Behind our Technology

- Composed of common materials found in the open market from multiple suppliers and a proprietary mixture of nanoparticles.
- Once cured and when exposed to an impingent flame or heat flux, the particles vibrate, emitting the heat away.
- The sponge-like internal structure ensures low density and low mass while simultaneously preventing heat penetration.



BREAKTHROUGH TECHNOLOGY WITH MULTIPLE APPLICATIONS



Bringing Climate Resilient Materials to Market

Nano Shield Particle



Fireproofing

1,800° C fireproofing

Cool Roof Coating

Reduce energy costs & carbon footprint

Insulation

Perfect heat emittance for extreme insulation

Particle

Adaptable to paints, polymers, cement, resins, and more...

Ceramic

Next generation refractory material

Overview



Leveraging our Particle to Build Resilience in Fireproofing and Insulation



Nano Shield is 11 times better at resisting heat transfer than intumescent products and 6 times better than cementitious materials

AVERAGE K VALUE PROPERTIES:

- | | |
|-------------------------|-----------|
| • Nano Shield K value: | 0.017W/mK |
| • Intumescent K Value: | 0.22 W/mK |
| • Cementitious K Value: | 0.12 W/mK |

AVERAGE OPERATING RATINGS:

- | | |
|--|--------|
| • Nano Shield top protection temperature: | 1800 C |
| • Intumescent top protection temperature: | 1000 C |
| • Cementitious top protection temperature: | 650 C |



How do we Compare to Competitors in Fireproofing?

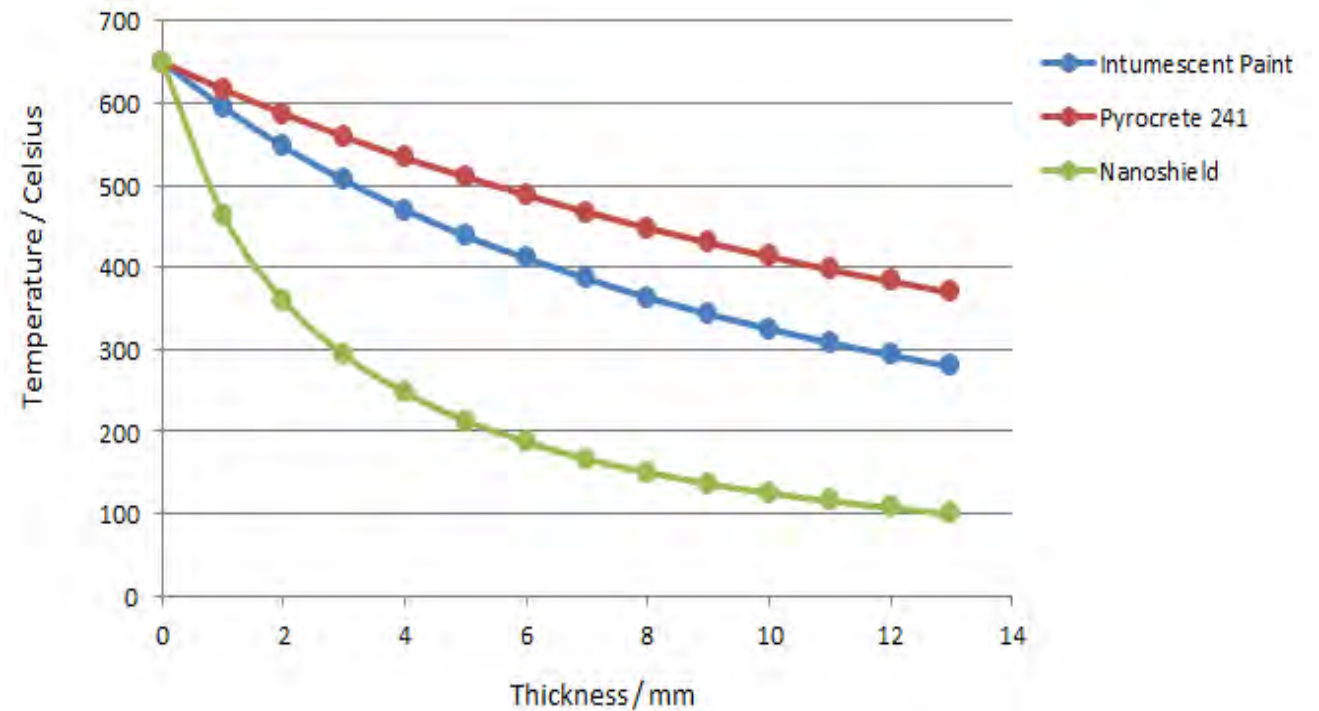


	Intumescent Paints	Cementitious Materials	Nano Shield
<i>Performance</i>	Highest K Value/ Middle Temperature Performance	Middle K Value/ Lowest Temperature Performance	Lowest K Value/ Highest Temperature Performance
<i>Durability</i>	Reactive/Deteriorate quickly	Cannot expand/Cracks over time	Non-reactive/UV Protected/Lasts 10+ years, expands and contracts avoiding cracking
<i>Esthetics</i>	Rough Finish	Rough Finish	Smooth finish Can be pigmented
<i>Weight</i>	1000kg/m3 density	880 kg/m3	450 kg/m3
<i>Application</i>	Toxic/not sprayable	Hard to apply	Sprayable/Non-toxic



How Well do we Perform Under Extreme Temperatures?

Consider a heat flux that produces a constant 650 degrees C for a given surface.



Example: Utility Pole Wildfire Survival Enhancement



Source: [The Atlantic](#)

Client Details

- Our particle has been applied as a sprayable fireproofing coating to wood utility poles
- We have also pultruded our additive into composite utility poles

Results

- We have passed the full two-minute wildfire simulation test



Example: Michigan Fireproofing Project



Client Details

- Coal driven electric power plant
- Concerned by fire which consumed polyurethane foam on the base floor

Results

- Provided an insulation coating to deliver the benefits of polyurethane foam with fireproofing properties



Leveraging our Particle as a Breakthrough Technology in Green Buildings



40% of all U.S. CO₂ emissions result from the demand for heating, cooling, and hot water in buildings. HVAC systems use about 48% of a building's energy on average



Nano Shield Cool Roof Coat can Significantly Reduce HVAC Costs

Click

Sustainability

30%-40%

Reduction in HVAC costs

25°-30°

Reduction in attic temperature

1,566 Million Metric Tons

Potential reduction in carbon emissions
by reducing HVAC use



With a Return

Normalizing for SRI, we are
the best in the business



NanoTech is the only cool roof product on the market leveraging low thermal conductivity plus SRI to achieve >20° temperature difference from our competitors.



How do our Coating Thermal Properties Compare?

Material	Thermal Conductivity (W/m K)
Copper (pure)	399
Gold (pure)	317
Aluminum (pure)	237
Iron (pure)	80.2
Carbon Steel (1%)	43
Stainless Steel (18/8)	15.1
Glass	0.81
Plastics	0.2-0.3
Wood (shredded/cemented)	0.087
Cork	0.039
Water (liquid)	0.6
Ethylene glycol (liquid)	0.26
Hydrogen (gas)	0.18
Benzene (liquid)	0.159
Air	0.026
Nano Shield Cool Roof Coat	0.017

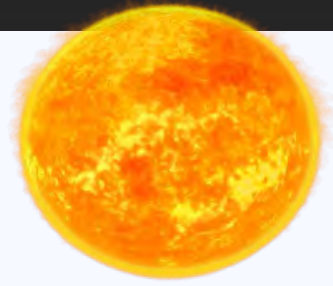
Material	Emissivity
Nano Shield Cool Roof Coat	1.0
Black Paint	0.98
Water	0.95
White Paper	0.94
Vegetation	0.94
White Paint	0.9
Asphalt Pavement	0.9
Wood	0.85
Aluminum Foil	0.07
Polished Gold	0.03
Polished Copper	0.03
Polished Silver	0.02



Sustainability with a Return

Our Technology Provides a
Data Driven Approach to
Demonstrate **Progress** on
Curbing **Scope 1 Emissions**

94° F



94° F

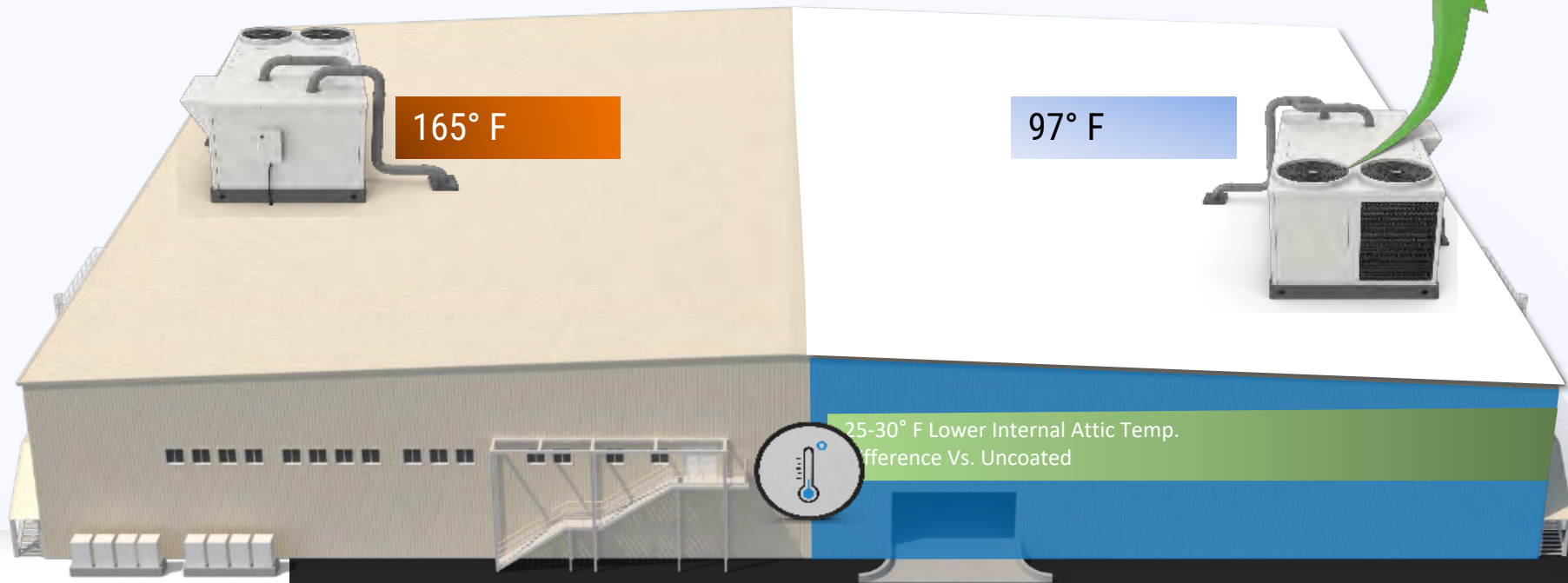
Uncoated

Coated With Nano Shield

165° F

97° F

Reduced Energy Costs
AND
Reduced Carbon Footprint



Example: Dominos Pizza



Roof Details

- Roof Type: Sloped metal roof
- Size: 2,000 ft²
- Application Date: August 2022
- Customer Challenge(s): Internal temperature/HVAC use

Results

- Dropped average internal temperature from 84 °F to 71 °F
- Branded pigmentation did not lower performance



Example: Hawker Heights



Roof Details

- Roof Type: Modified Bitumen
- Size: 7,000 ft²
- Application Date: July 2022
- Customer Challenge(s): Rotted wood from leaks/ HVAC use



Results

- Complete remediation and restoration
- Through calculated energy savings, the customer expects to see ROI on material costs within 11-13 months





Roof Details

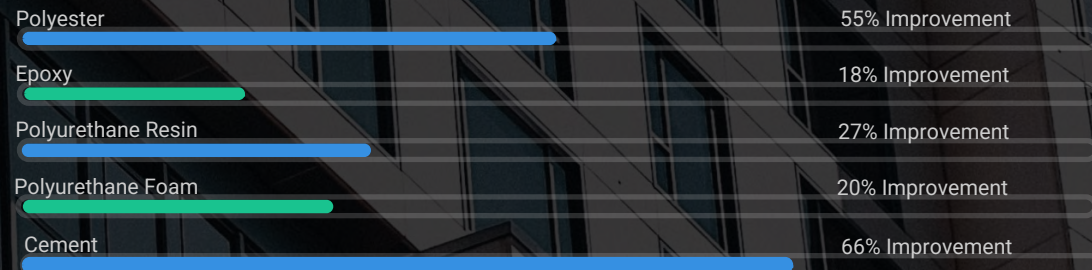
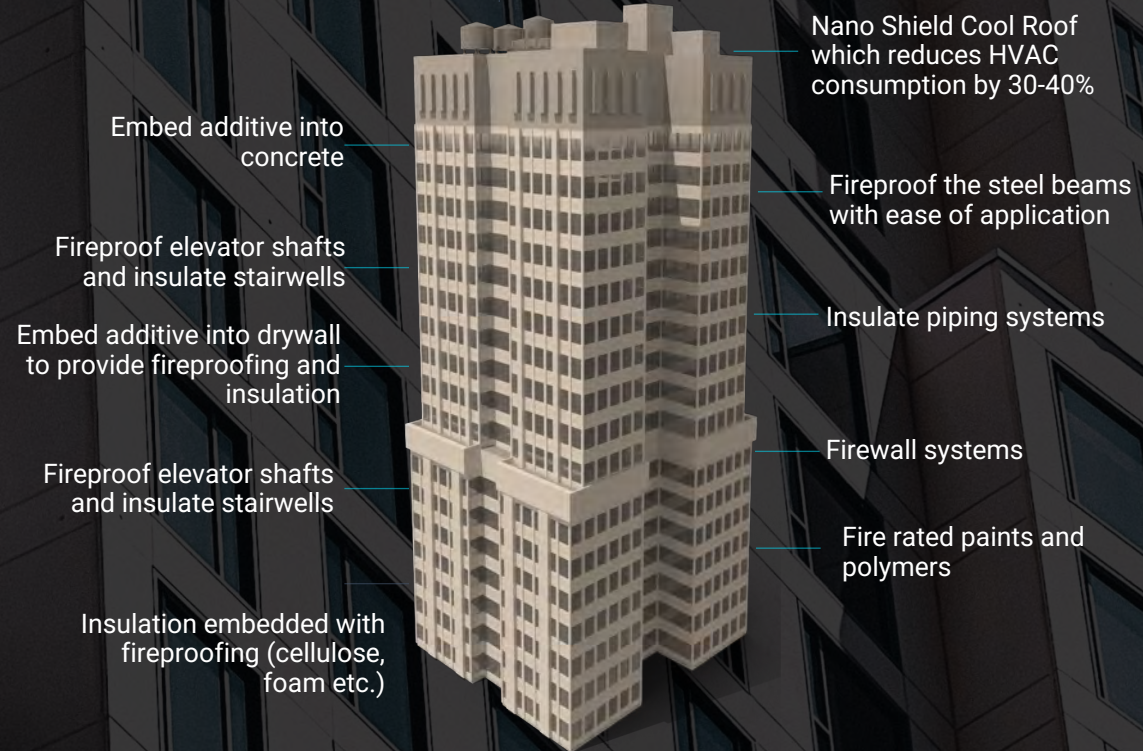
- Roof Type: Flat Metal
- Size: 2,000 ft²
- Application date: October 2022
- Customer Challenge: Leakage problem/HVAC use

Results

- Roof leakage stopped despite heavy rainfall events weeks after application
- Cool roof data still pending
- Also coated AC ducts and beer tanks – awaiting data



Beyond roofing,
our Nano Shield
particle can
enhance the entire
green building
structure by
improving thermal
efficiencies with
no change in
manufacturing
processes for the
chemical company



Leveraging our Particle as a Breakthrough Technology in Ceramics



Our Nano Shield Particle Solves for Key Inefficiencies in Ceramic Brick

01

100% ceramic
inorganic coating

02

No organic compounds
– it will not deteriorate

03

Fiber-reinforced for
added mechanical
strength

04

Adaptable formulation
to meet client needs

05

Able to withstand
thermal cycles

06

Thermal conductivity value
of $K = 0.037$ to 0.049
W/mK – can be increased
as much as 30%

07

Emissivity value of .97
or above

08

Combined properties of
low thermal
conductivity & high
emissivity ideal to save
energy in refractory
applications

09

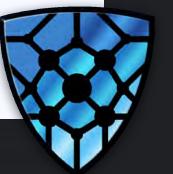
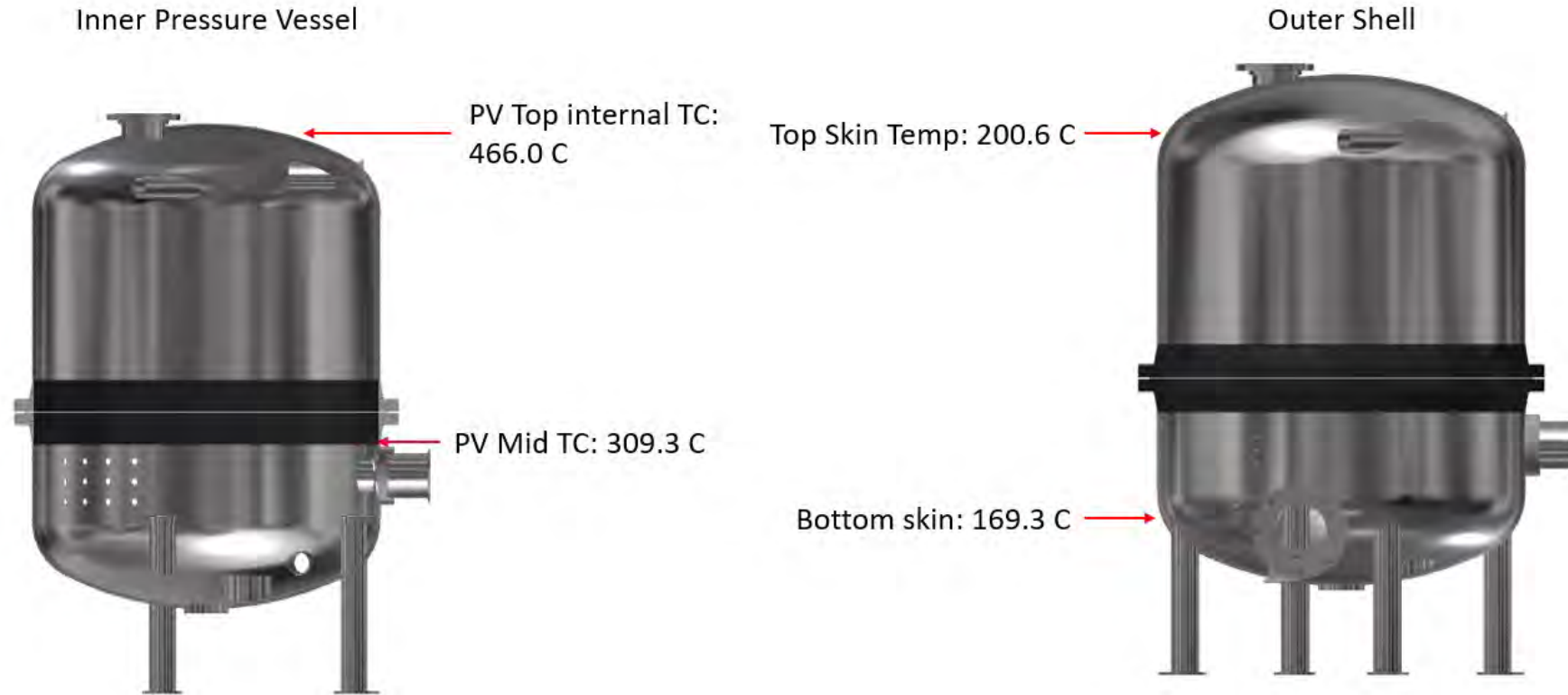
Adhesion depends on
substrate, may need
mechanical anchors



Example: Internal Combustion to Produce Electricity from Organic Matter

Skin Temp Time Stamp

6-22-2022 02:51

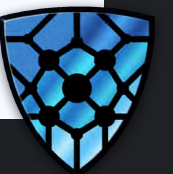


Example: Boiler Energy Efficiency



Results

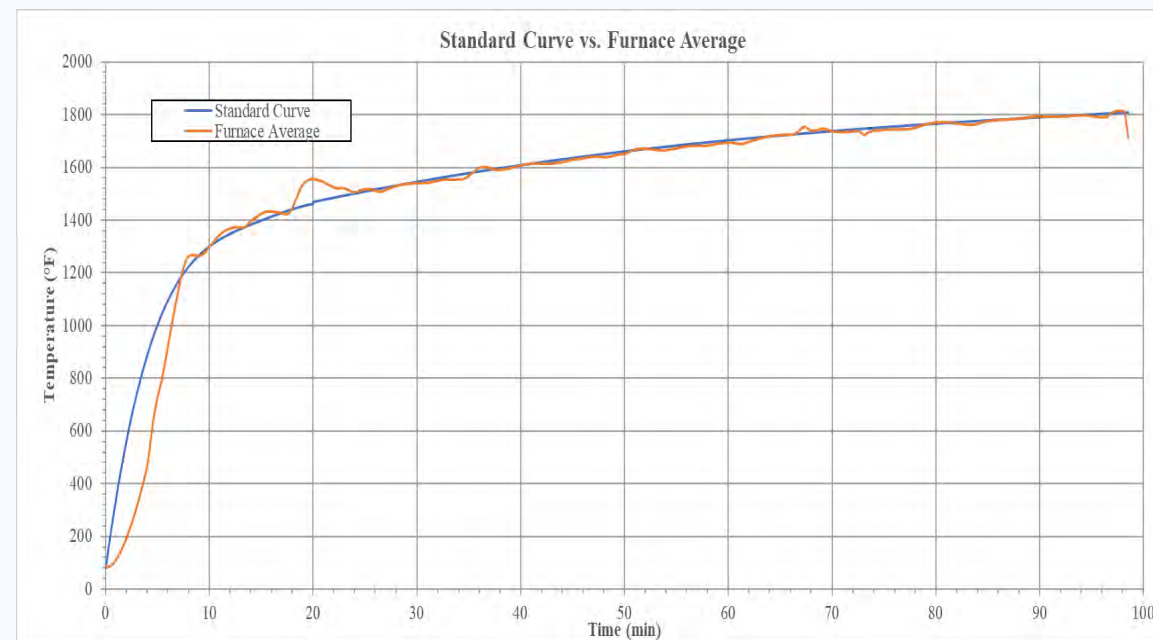
- Can reduce the number of strikes needed to heat the boiler by up to 40% creating massive energy efficiency gains



Example: Wood Floor Assemblies ASTM E119 on OSB – 2hrs



Ceramic coating was used in a floor assembly of OSB achieving a 2-hour rating at a 7 mm thickness.





Questions?

Thank You

NanoTech Inc.

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and Insulation*

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Mike@thenanoshield.com

