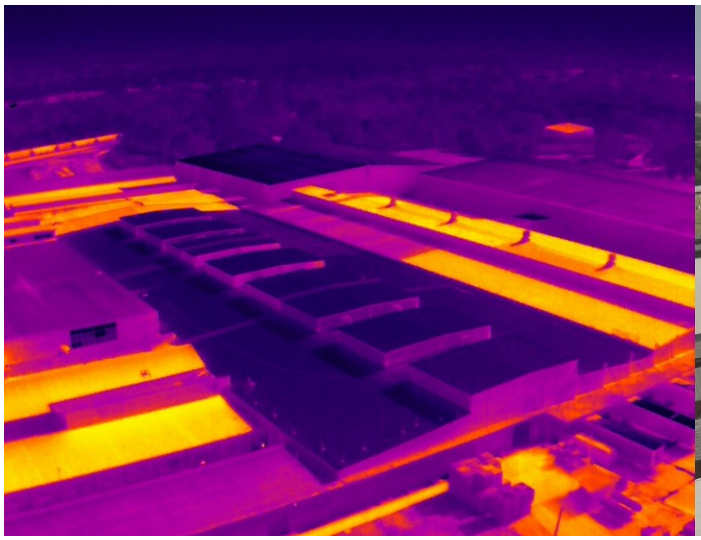
ROOFING AND WATERPROOFING SYSTEMS

POLYGLASS

MAPEI GROUP

Anchor Glass
Henryetta OK
10-1-2024

PUF Foam System Polybrite 90 Polyglass Silicone



Three site visits were preformed to evaluate the polyurethane foam roof system installation over the existing BUR gravel deck in Henryetta. The new system comprised of removing and spudding all loose gravel, Polybrite 780 primer, 1.5 inches of 2.5 pound roofing foam, a minimum of 35 dry mils of Polybrite 90 Series High Solids Silicone and roofing granules seeded to the point of refusion.

Site visits were conducted on the following days and time, ambient temperature was recorded.

1. 6-19-24, 2:00 PM, 90°F
2. 7-15-24, 5:30 PM, 99°F
3. 6-19-24, 3:30 PM, 97°F

At the time of visits both visual and thermal evaluations were preformed. As seen in the thermal images deck surface temperatures varied based on ambient conditions, time of day, atmospheric conditions, UV levels, solar radiation, sun angle, and air circulation.

On **6-19-24** the following surface temperatures were observed, SPF coated with Polybrite 90 is set as baseline temperature, 88°F to 93°F (Average 90.5°F)

Uncoated SPF, 100°F

*The uncoated SPF was 9.5°F warmer than coated surface resulting in a 10% warmer surface temperature

Gravel BUR, 126.5°F to 133.2°F (Average 129.5°F)

*The Gravel BUR was 39°F warmer than coated surface resulting in a 30% warmer surface temperature

EPDM, 133°F to 135°F (Average 134°F)

*The EPDM was 43.5°F warmer than coated surface resulting in a 33% warmer surface temperature

Capsheet BUR, 133°F to 135°F (Average 134°F)

*The Capsheet was 42°F warmer than coated surface resulting in a 32% warmer surface temperature

TPO, 106°F to 111°F (Average 108.5°F)

*The TPO was 18°F warmer than coated surface resulting in a 17% warmer surface temperature

Metal, 110°F to 135°F

*The Metal was 19.5°F warmer than coated surface resulting in a 18% warmer surface temperature

Overall the new polyurethane foam and Polybrite 90 system was 32.4 °F cooler than the rest of the roofing system, resulting in an average increased average surface temperature of 28% on the remaining sections of the roof.

On **7-15-24** the following surface temperatures were observed, SPF coated with Polybrite 90 is set as baseline temperature, 94°F to 99°F (Average 96.5°F)

Uncoated SPF, All SPF had been coated

*N/A

Gravel BUR, All Gravel BUR had been foamed

*N/A

EPDM, 119°F to 125°F (Average 122°F)

*The EPDM was 25.5°F warmer than coated surface resulting in a 21% warmer surface temperature

Capsheet BUR, 125°F to 126°F (Average 125.5°F)

*The Capsheet was 29°F warmer than coated surface resulting in a 23% warmer surface temperature

TPO, 103°F

*The TPO was 6.5°F warmer than coated surface resulting in a 7% warmer surface temperature

Metal, 110°F

*The Metal was 13.5°F warmer than coated surface resulting in a 12% warmer surface temperature

Overall the new polyurethane foam and Polybrite 90 system was 18.6 degress cooler than the rest of the roofing system, resulting in an average increased average surface temperature of 12% on the remaining sections of the roof.

On **8-21-24** the following surface temperatures were observed, SPF coated with Polybrite 90 is set as baseline temperature, 93°F to 99°F (Average 96°F)

Uncoated SPF, All SPF had been coated

*N/A

Gravel BUR, All Gravel BUR had been foamed

*N/A

EPDM, 130°F

*The EPDM was 34°F warmer than coated surface resulting in a 26% warmer surface temperature

Capsheet BUR, 129°F to 135°F (Average 132°F)

*The Capsheet was 36°F warmer than coated surface resulting in a 28% warmer surface temperature

TPO, 103°F to 114°F (Average 108.5°F)

*The TPO was 12.5°F warmer than coated surface resulting in a 12% warmer surface temperature

Metal, 111°F to 127°F (Average 119°F)

*The Metal was 23°F warmer than coated surface resulting in a 20% warmer surface temperature

Overall the new polyurethane foam and Polybrite 90 system was 26°F cooler than the rest of the roofing system, resulting in an average increased average surface temperature of 21.5% on the remaining sections of the roof.

Based on the observations the new system out preforms all existing systems on the facility regardless of the time of day however, in the heat of the day when the sun is at the highest point the new polyurethane spray foam and Polybrite 90 Silicone is far superior to all other systems averaging a cooler roof surface by over 20%, decreasing internal building temperatures.

Internal building temperatures were taken during the **7-15-24** observation, the readings were taken using a handheld infrared thermometer. Findings were as follows:

Underside of deck, new polyurethane spray foam and Polybrite 90, 93.4°F
Underside of deck, EPDM, 108.1°F
Underside of deck, BUR Capsheet, 104.5°F
Underside of deck, TPO, 100.9°F

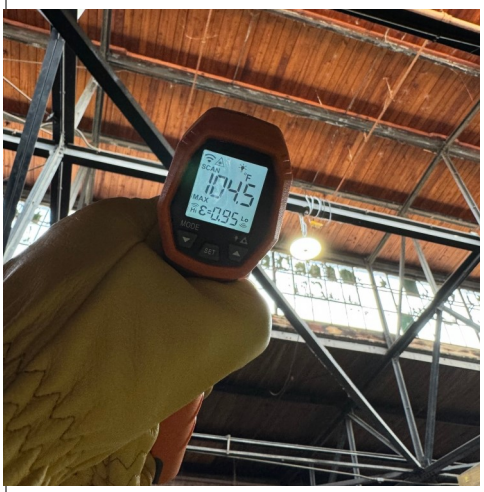
The new spray foam and Polybrite 90 system was 7.5°F to 14.7°F cooler inside the building than other systems.

Deck Temperatures—SPF and Polybrite 90

93.4F

Deck Temperatures—TPO

100.9F



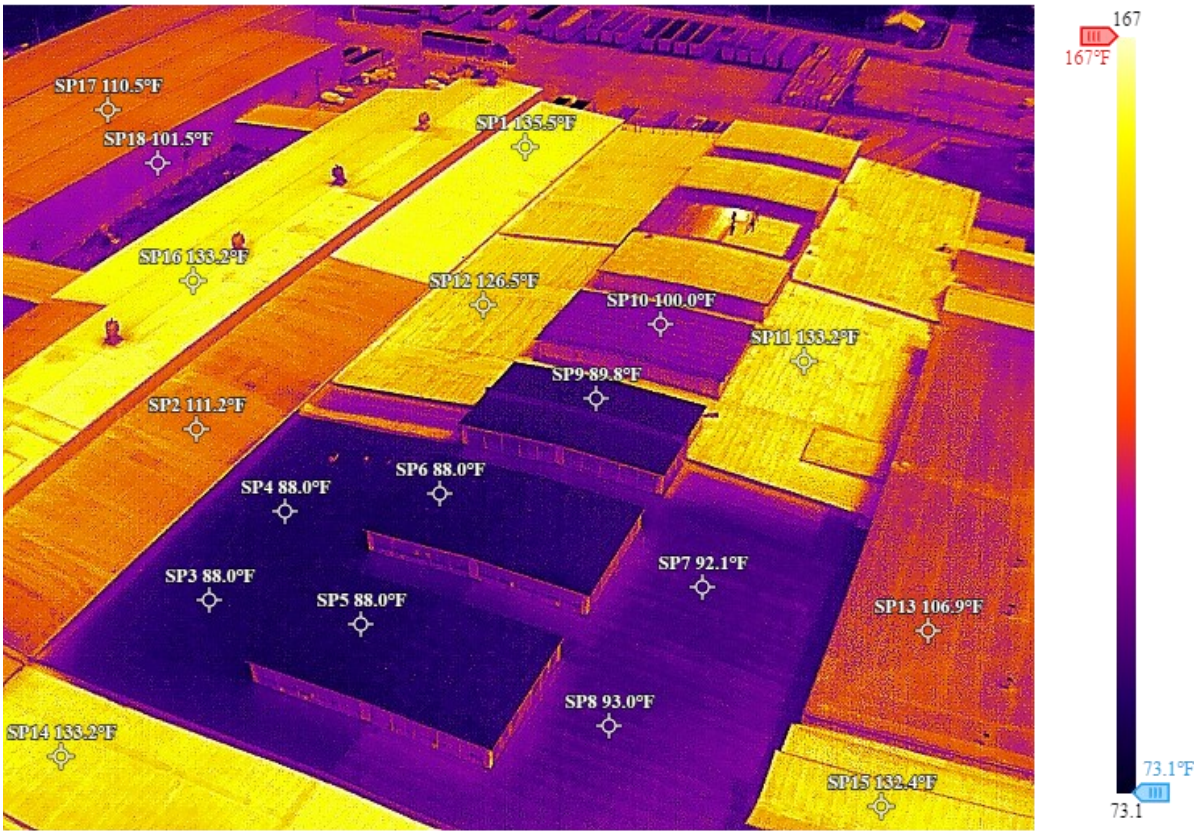
Deck Temperatures—BUR Capsheet

104.5F

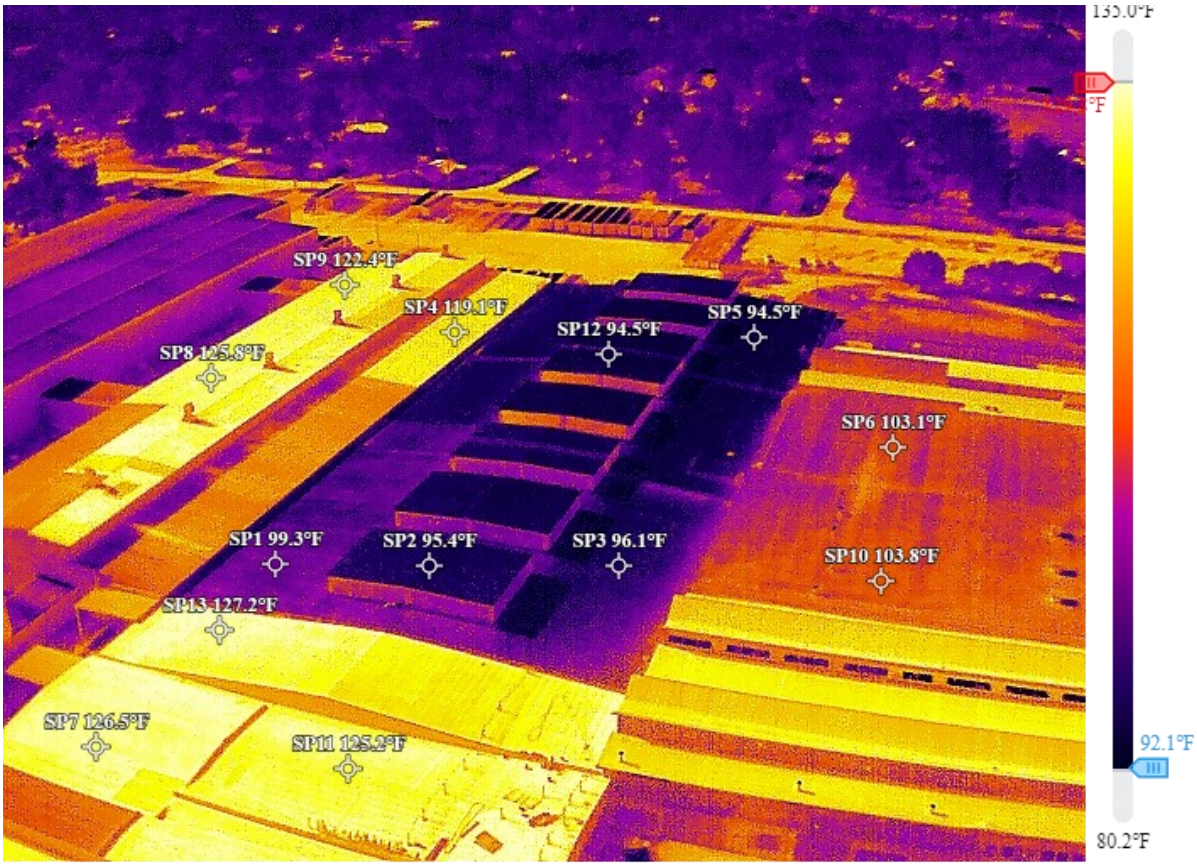
Deck Temperatures—Black EPDM

100.9F

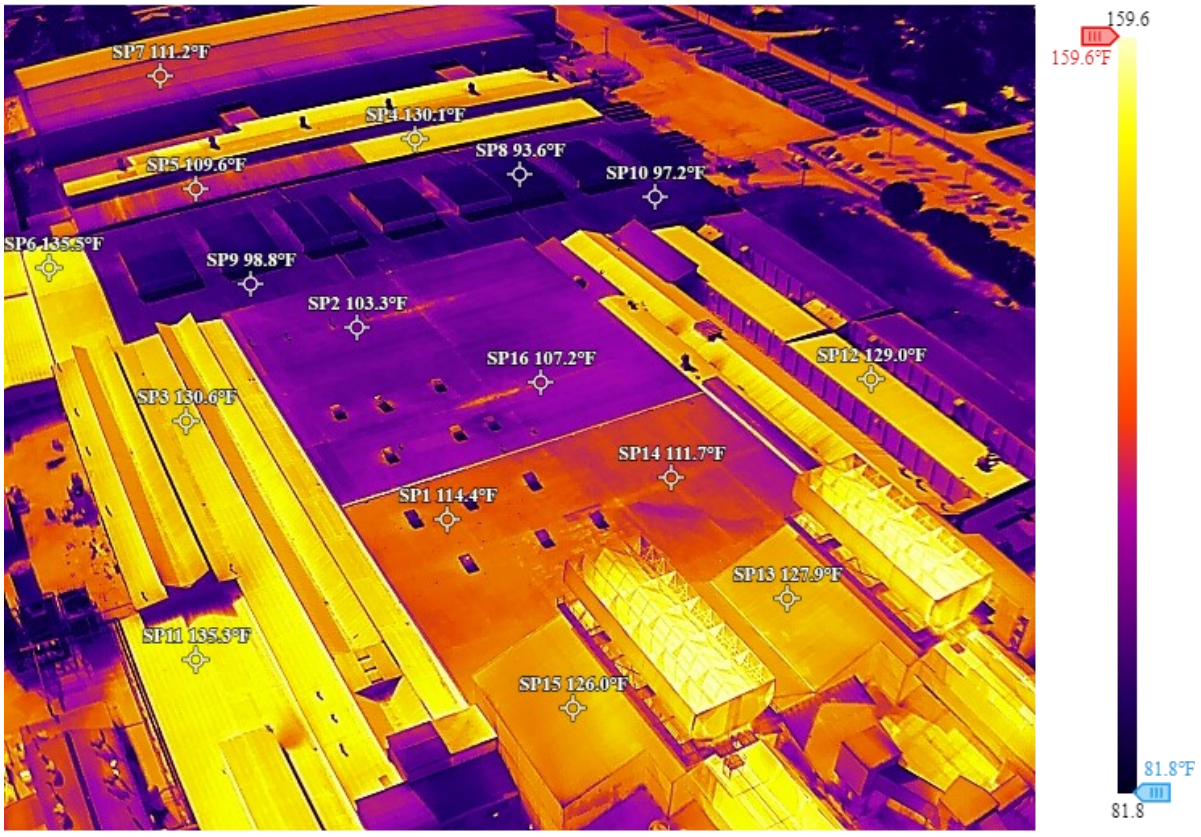
Observation Images 6-19-24



Observation Images 7-15-24



Observation Images 8-21-24



Additional Images

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