

ACS CIC 4.0 was applied to the HVAC ducting that is located full sun subjecting it to solar heat loading

- **Product:** ACS CIC 4.0
- **Date:** 07/21/2016
- **Goals:** Prevent Solar Heat Loading, Bridge Gap at Expansion Joints, and Seal Joints

Reduce Solar Heat Loading to exterior rigid HVAC Ducting

Many HVAC ducts are located outdoors either on rooftops or at ground level like the ones in this project. Radiation from the sun heats the surface of the ducts far above ambient temperatures. A standard duct has an R-value of 3.8 – 8. ACS CIC 4.0 will add an additional 9 – 15 RvE (R-Value Equivalency) to the sprayed area blocking heat load, providing a continuous membrane, preventing moisture and condensation, lowers unit run time saving energy and money.

Details of the Lake Elsinore Unified School District Project

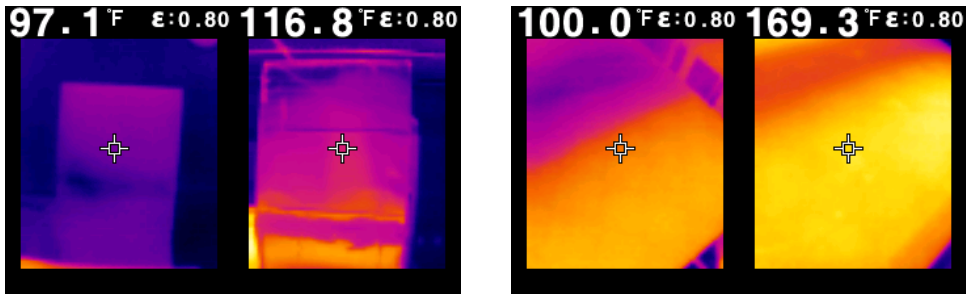
A 30 mil coating of ACS CIC 4.0 was sprayed on to one of the units using the CIC Flex Application Spray Gun.



Initial Results

Temperature was recorded with a FLIR TG155 comparing the temperature of the coated unit with the uncoated unit next to it as shown in the picture above. The readings were taken on 7/21/2016 at 12:00 pm. with an ambient temperature of 103°F.

- Front side of the ducting showed a reduction in temperature of 19.7°F
- Top of the ducting – Reduction of 69.3°F



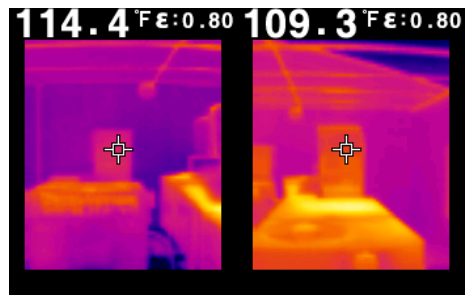
The FLIR image displays hotter areas in orange or yellow the cooler areas are purple to blue with a range in between. The number at the top of the screen is the temperature at the cross hairs. Infrared cameras do not measure surface temperatures, they actually measure the intensity of infrared radiation (radiant energy) being emitted by the surface it is aimed at. These images show energy loss and savings through the metal substrate of the duct.

Follow up results

Follow up temperature measurements were taken on 8/2/2016 at 2:00 PM. The ambient temperature was 89°F - Both units were running and in the sun

- Front of the coated ducting measured 5.1°F higher

This is an example of conduction. The sun does not directly shine on this surface. The cold air within the unsprayed duct was passing through the metal and lowering the temperature reading demonstrating a loss of cold air. The coated ducting was keeping the cold air within the duct resulting in a higher outside reading.



- The top of the units were both in full sun. The measurements demonstrated a 50.2°F reduction.
- Ducting attached to HVAC Unit showed a reduction of 23.5°F

