



COMPOSITE TECHNOLOGY DEVELOPMENT, INC.

ENGINEERED MATERIAL SOLUTIONS

CryoCoat™ 620T

INSULATION COATING AND ADHESIVE

A sprayable, syntactic insulative coating that delivers unmatched performance at cryogenic temperatures

CRYOGENIC APPLICATIONS

- PREVENTS FORMATION OF LIQUID AIR (LOX) ON THE OUTSIDE OF CRYOGENIC PIPES
- POTTING MATERIAL (SENSORS, VALVES)
- ADHESIVE FOR VARIOUS SUBSTRATES (METALS, COMPOSITES)
- COMPONENT INSULATION (TANKS, HEAT EXCHANGERS)
- ENVIRONMENTALLY RESISTANT PROTECTIVE COATING FOR STRUCTURES



The CryoCoat™ 620T resin exhibits excellent adhesive properties to a wide range of materials at cryogenic temperatures. This tough material withstands numerous thermal cycles, is UV and impact resistant over its life, and is non-sparking and self-extinguishing in LOX environments.

The resin can be applied with proper surface preparation, making it well-suited to retrofit and repair. It is extremely effective in a 1/8" – 1/2" layer, curing at or below room temperature and high humidity in less than eight hours.

The high strain-to-failure capability and bond strength across a wide temperature range makes it especially well-suited to space applications where thermal cycling causes other solutions to fail. Contact CTD today to learn more about the CryoCoat™ 600 series.

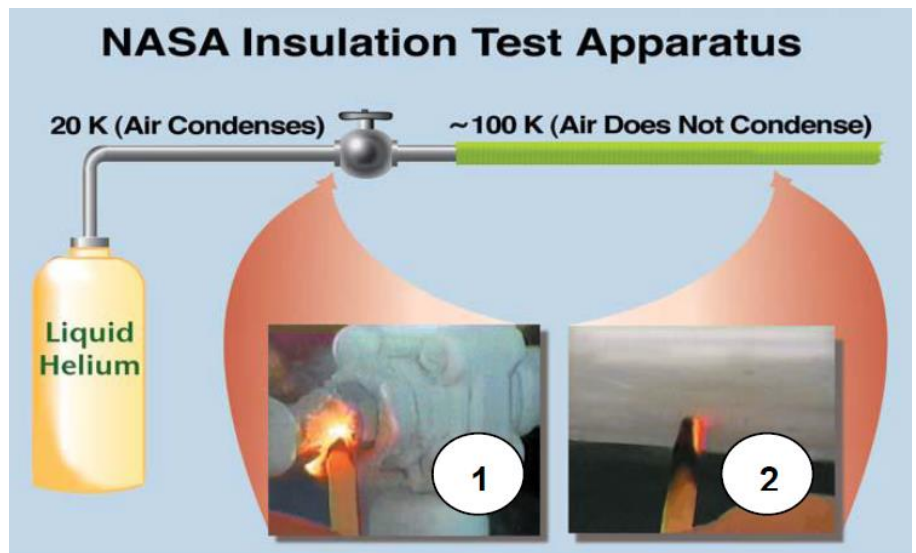


<i>CryoCoat™ 620T</i> <i>304 L Stainless Steel</i>	4K	77K	295K
Bond Shear Strength (ksi)	1.55 ± 0.11	1.71 ± 0.24	1.68 ± 0.39
Bond Shear Strength (MPa)	10.7 ± 0.8	11.8 ± 1.6	11.6 ± 2.7
<i>CryoCoat™ 620T</i> <i>6061-T6 Aluminum</i>	4K	77K	295K
Bond Shear Strength (ksi)	1.18 ± 0.11	1.21 ± 0.13	1.49 ± 0.07
Bond Shear Strength (MPa)	8.1 ± 0.8	8.3 ± 0.9	10.3 ± 0.5



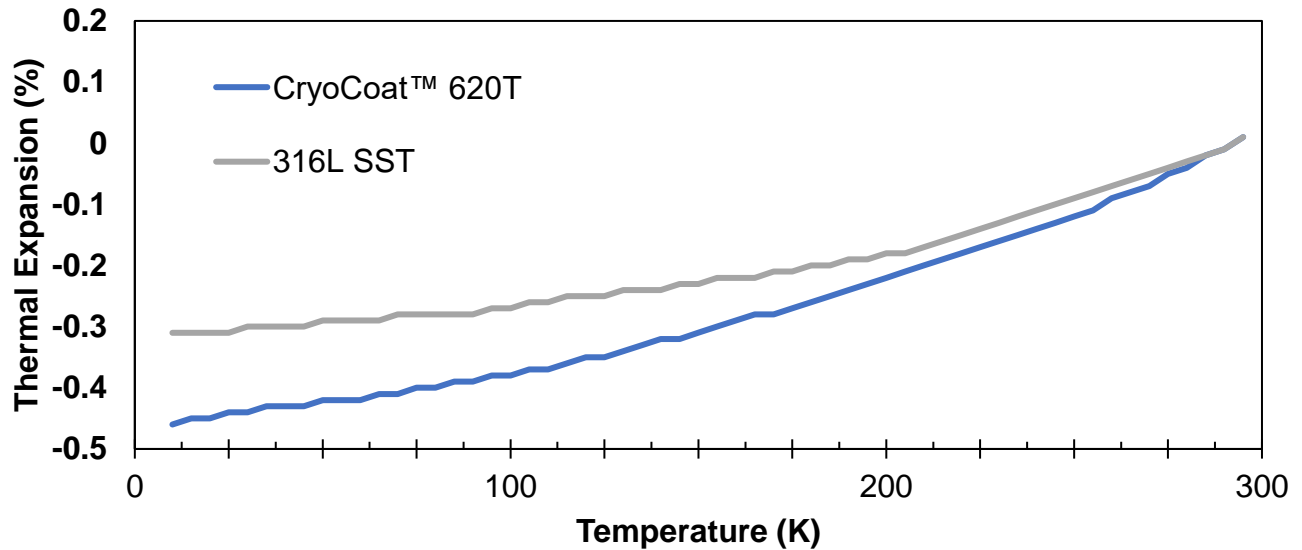
	<i>CryoCoat™ 620T</i>
Density, kg/m ³	910 ± 36
Density, lb./in ³	0.033 ± 0.001

1. Concentration of oxygen from condensed air on the uninsulated pipe indicated by the glowing ember
2. Thin layer of CryoCoat™ applied to pipe prevents condensation of liquid oxygen as indicated by lack of ember





Thermal Expansion of CryoCoat™ 620T vs Stainless



<i>CryoCoat™ 620T</i>	<i>4K</i>	<i>77K</i>	<i>295K</i>
Thermal Conductivity (W/m-K)	0.025	0.198	0.287

Cryogenic Cooling of a Stainless Steel Pipe coated with 0.3 cm of CryoCoat™ 620T

