DEPARTMENT OF AEROSPACE ENGINEERING

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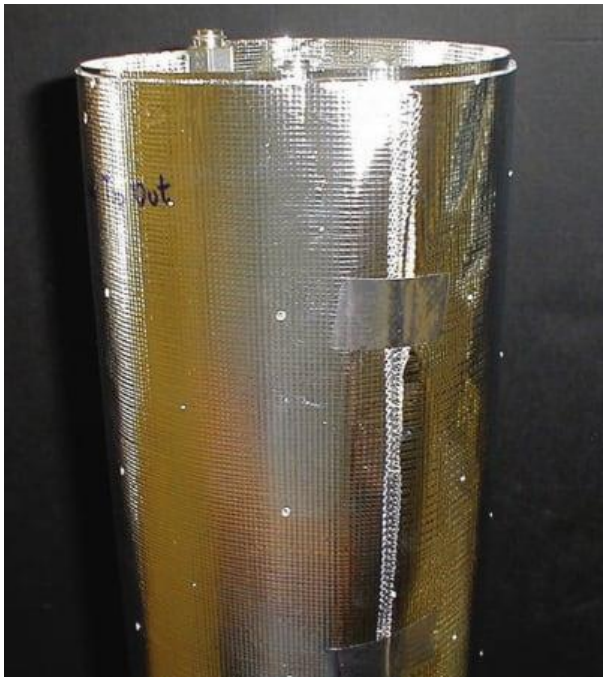
UNIT III - CRYOGENIC ENGINEERING

Composite insulation in cryogenic technology is used in a variety of applications, including piping, tanks, and other components, and is designed to meet the demands of low temperatures. Here are some examples of composite insulation for cryogenic applications:

- Layered Composite Thermal Insulation System (LCX): This system is made up of multiple layers of functional materials, including a primary insulation blanket layer and a compressible radiant barrier layer. LCX systems are designed for complex cryogenic components that can't be vacuum-jacketed. They can be applied to tanks, piping, valves, and more. LCX systems can have thermal performance that's equal to or better than polyurethane foam systems, and they don't require glues, sealants, or expansion joints.



- Composite aerogel insulation: This type of insulation is used for cryogenic liquid storage.

- Composite insulators: These insulators are made up of at least two insulating materials, one of which provides electrical properties and the other mechanical properties.

Cryogenic insulation materials need to be able to withstand low temperatures, absorb high mechanical forces, and have low thermal conductivity