

Innovative Thermal Solutions

Quest Thermal Group

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Company Intro

Quest Thermal Group designs, develops and manufactures advanced thermal insulation, offering the highest performing thermal systems available.

Quest Thermal is a technology/product development engineering firm, specializing in high performance thermal insulation systems. Quest's team of engineers and scientists have been developing advanced thermal solutions since 2006, using proprietary Discrete Spacer Technology™ with low heat flux and unique structural capabilities.

High performance aerospace insulation systems are available for on-orbit, in-air, Mars and lunar surface operation. Commercial superinsulation provides low heat leak for liquid hydrogen tanks and residential/industrial applications. Quest creates advanced thermal products, such as Integrated Multilayer Insulation (IMLI), with substantial benefits over prior state of the art insulation.

Capabilities

- Innovative thermal solutions are our specialty and expertise
- Custom thermal engineering solutions meeting client/mission requirements
- Advanced thermal systems designed, developed, fabricated and installed
- Proprietary discrete spacer technology enables unique system capabilities
- Engineering services include:
 - Insulation system design
 - Thermal modeling and analysis
 - Structural design, analysis and testing
 - Thermal performance testing and analysis

Applications

- Cryogenic Fluid Management
 - Cryogenic Propellant Storage and Transfer
 - Cryopropellant tanks and feedlines for spacecraft and launch vehicles
 - LH₂ tanks for UAVs, aircraft, transportation, and maritime/road carriers
- Superinsulation for commercial and industrial applications
 - Commercial refrigerator/freezers for cold food supply chain
 - Consumer appliances
 - Scientific/lab cold storage
- High Temperature Insulation Systems
- Integrated MMOD shielding

Differentiators

- Discrete Spacer Technology™ solutions provide superior thermal performance and structural capabilities
- Quest Thermal products have robust structure, predictable performance, lower heat flux, lower mass
- Quest Thermal provides custom design, analysis, fabrication and installation of thermal systems
- Quest Thermal is the sole provider of IMLI & discrete spacer systems
- Quest Thermal works closely with clients for optimal results
- Discrete spacers and IMLI are the first real advance in MLI in 60 years

Programs/Missions

- IMLI has three successful spaceflights, at TRL 9
- Over 30 successful R&D programs with NASA
- IMLI and vapor cooling for Lunar Landers
- IMLI for lunar surface science payloads
- ISRU surface liquefaction and storage for lunar and Mars surface
- LH₂ UAV and aircraft tank insulation systems
- IMLI is baselined for NASA NEOSM and Roman Space Telescope

Products

- Integrated MultiLayer Insulation (IMLI) for cryogenic applications
- Insulation that operates both in-air and in-space
- Insulation with structural load bearing capabilities
- High performance cryogenic feedline insulation
- Advanced active and passive vapor cooled systems
- Integrated lightweight vacuum shell systems
- Integrated MMOD shielding with insulation
- Commercial high performance superinsulation

