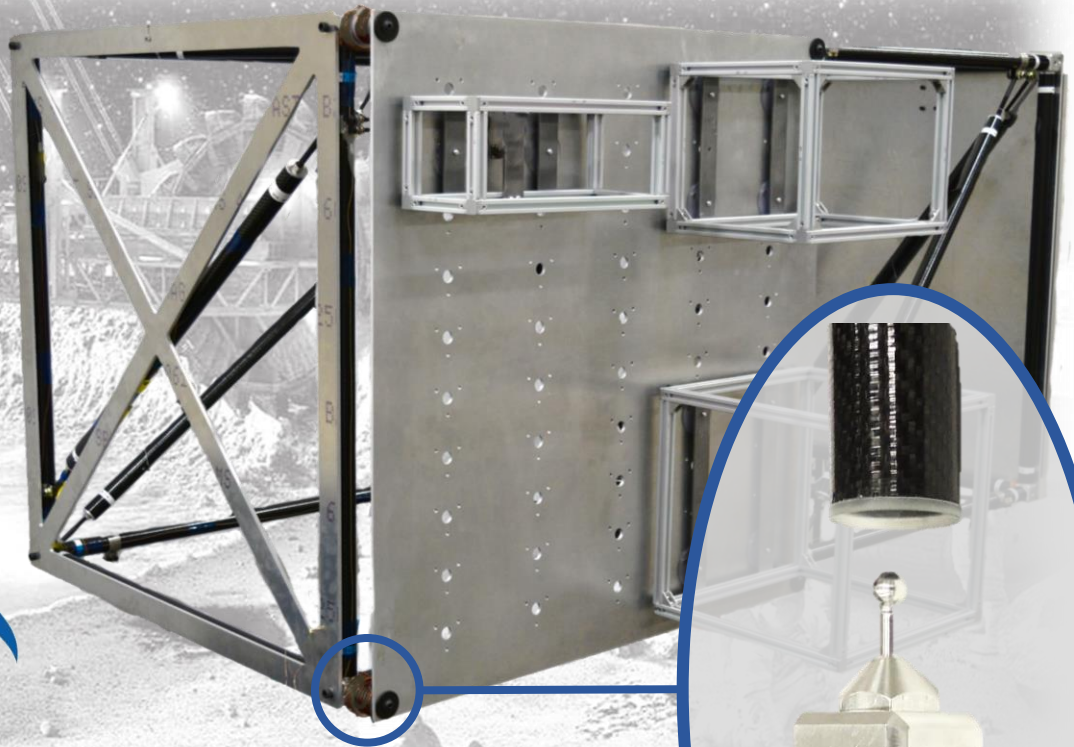


patent Pending  
**PATENT PENDING**  
Patent Pending



## Introducing CRG's Dust Tolerant Joint

CRG has developed a multifunctional, thermally-activated shape memory polymer (SMP) joint that is suitable for various extraterrestrial construction activities. Its low insertion force, high ultimate load capacity, and dust tolerant features allow for ease of autonomous assembly by robotic end effectors or low dexterity option for astronauts as well.

The SMP joint's many features make it suitable for various in-space construction activities on lunar, Martian, and asteroid surfaces



### Dust Tolerant

Joint attachment/detachment capabilities in the presence of dust/regolith



### Scalable Technology

Engineering parameters of the joint can be tailored for desired applications



### In-Space Applications

Truss, payloads, pallets, rovers, landers, deployment/release mechanisms, in-space construction



### Reusable Design

Joint function is reversible, allowing for cyclic operations



### Self-Aligning

Unique SMP material properties and geometries accommodate misalignment for easier assembly



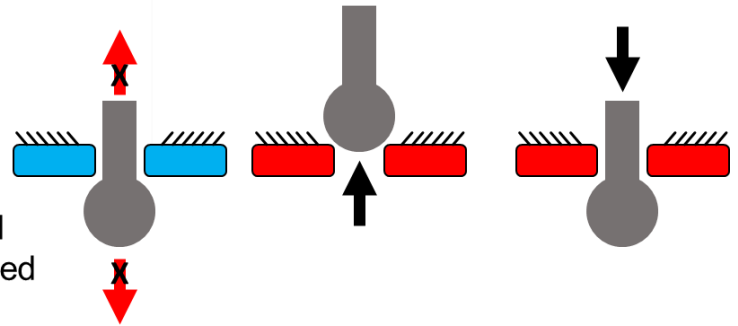
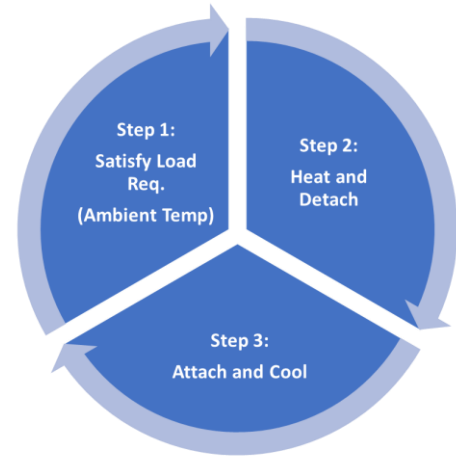
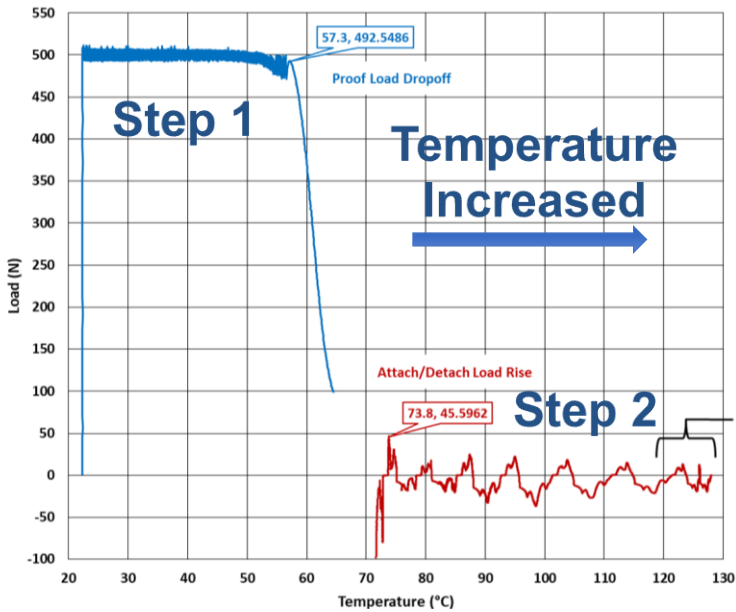
### Electrically-Isolating

To ensure compatibility with autonomous assembly/maneuverability CONOPS

# Enabling Assembly in Pervasive Dust Environments

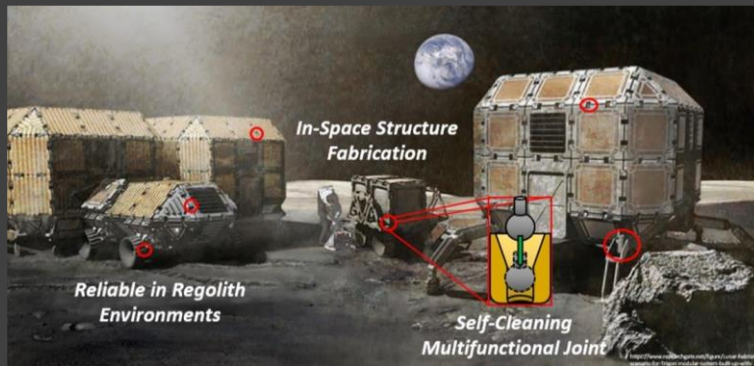
*via a robust, self-aligning, thermally activated reversible joint*

Example of Locked State vs. Activated State



## Dust Tolerant Joint Technology Status:

Technology Readiness Level:



Rendering Source: Scott Howe Design, AIAA, 2006



CRG can tailor and optimize joints for your application.  
 Contact us at [sales@crgrp.com](mailto:sales@crgrp.com)