

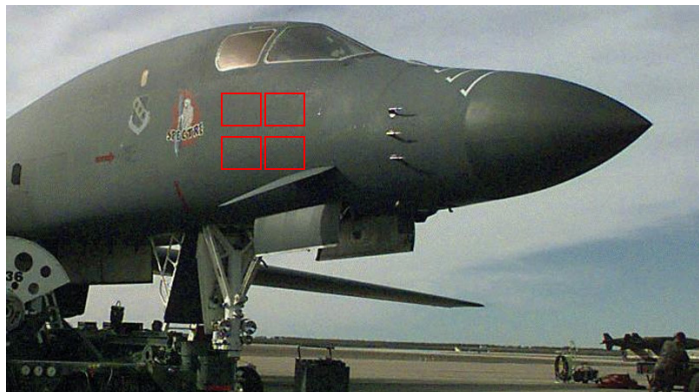


## Aircraft Skin Panel Repair Using Cold Spray

Repeated removal of fasteners and panels on aircraft result in wear to the fastener holes within the panels. Current repair processes are costly and may cause extensive downtime. Mid-America Aerotech offers a Cold Spray repair solution that's innovative, modern and fast.

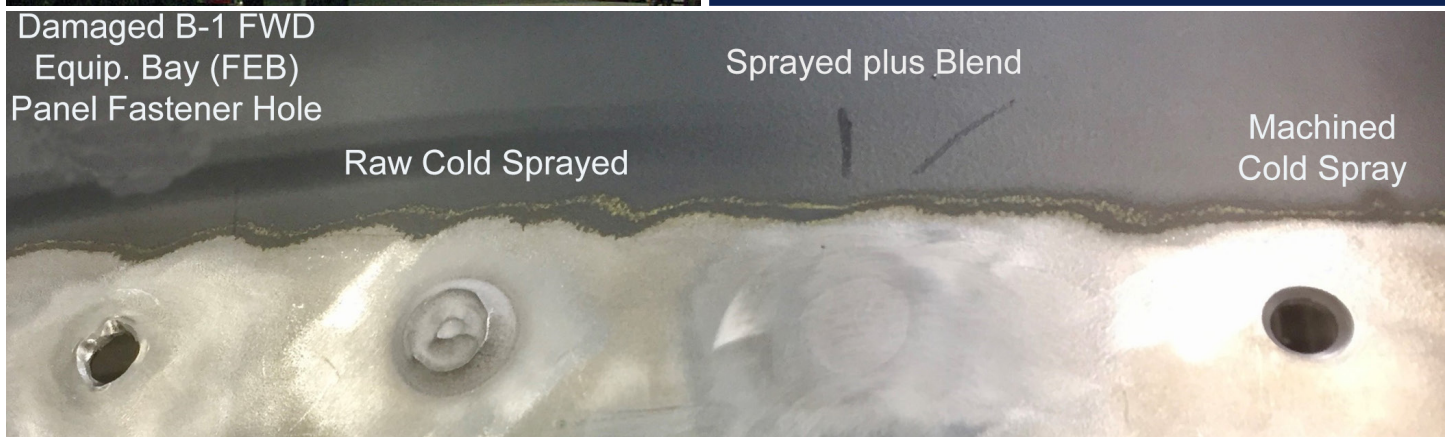
### ADVANTAGES OF COLD SPRAY FOR SKIN PANEL REPAIR

- Cold Spray technology is a cost-effective way of repairing skin panels
- Increase In-Service life of aging equipment
- Cold Spray is a Clean Technology - No toxic fumes and saves natural resources when repaired rather than replaced



- Decreased aircraft downtime
- Low heat input to the part
- Reduces the need for doubler repairs
- Minimal/negligible part distortion
- Does not disrupt the atomic copper and aluminum structure of conventional aircraft aluminum alloys

Below: Fastener Hole Repair Using Cold Spray



Damaged B-1 FWD  
Equip. Bay (FEB)  
Panel Fastener Hole

Raw Cold Sprayed

Sprayed plus Blend

Machined  
Cold Spray

# High-Pressure Cold Spray is the only thermal spray process that offers structural properties

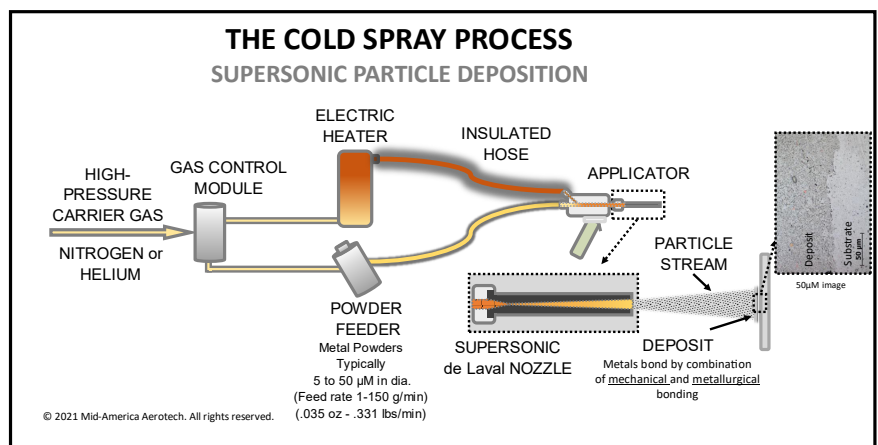
## Benefits of Cold Spray vs Traditional Thermal Spray

- Negligible oxidation of cold spray materials
- Spot repairable - Ability to reapply new cold spray over old coatings
- Superior coating adhesion, strength and toughness
- Fully-dense coatings
- Deposition thickness - no limit
- Minimal masking requirement due to focused particle spray plume
- Environmentally friendly
- Precise gas temperature control
- Compressive residual stresses

Cold spray operates at much lower temperatures than thermal spray and uses primarily kinetic energy to create solid-state bonded coatings, instead of melting and re-solidification.

## Certifications

- FAA Part 145 Repair Station: VM8R806L
- EASA Certificate for Aerospace work in the EU
- AS9100D and AS9110C Certified



Sales Dept:  
sales@maaero.com  
Ph:701-282-7782  
www.maaero.com