



Cd Alternatives Workshop

Findings on Electrical Connectors and Fasteners

Report Documentation Page

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- People have honed in on
 - ❑ Electroless Ni-PTFE – galvanic issues?
 - ❑ ZnNi – fails conductivity after corrosion (is this true for Zn16Ni?)
 - ❑ Pure Al (AlumiPlate) – incompatible with Sn and Ni?
- Electroless Ni -PTFE would be expected to be galvanically incompatible
 - ❑ Testing says otherwise, but no details available
 - ❑ Does PTFE “inert” the surface, change galvanic potential or galvanic current?

- See briefings by Rich Misiaszek and Jeri Brunson
- Vessels (esp) and aircraft need back compatibility
- Connectors often maltreated (stood, climbed on)
- Ships: sailors handle connectors to check
 - Exposure to Cd and Cr⁶⁺

- Galvanic compatibility most important issue, especially for EN-PTFE
 - Testing for all alt coatings, back compatibility with existing coating systems
 - Testing should be whole system, including backplane
- Beach testing (under way, Steve Brown)
 - What additional tests needed?
- Large test matrix planned by Jeri Brunson
 - Input?
- Other?

- OEMs implement clean alternatives, but Cd keeps coming back through parts bins
- Aircraft mostly Ti, CRES (match composites)
- Dip spin on BAE Systems MMPV – good but not universal
 - Called out by drawing (same for Rock Island FRS)
- Boeing “all but qual” Atotech ZnNi on fasteners
- TARDEC trying to get AlumiPlate onto vehicle systems
 - Could LHE ZnNi or AlumiPlate + non-Cr sealer be universal?
- DLA: New finishes need new NSNs
 - Can get an Interchangeable Number that provides products to a second “clean product” NSN when ordered on old NSN
 - Make sure specify as “Green” when create new NSN

Fasteners – DoD-specific requirements

- See briefing by Louie Tran
- Friction: Torque-tension, locking, run-on torque are most critical to avoid different torques
 - ❑ AlumiPlate requires DFL
 - ❑ ZnNi no DFL?
 - ❑ Dip spin no DFL

- Do we need any more fastener testing?
 - We have 3 alts tested and ready
 - Dip spin for vehicles
 - LHE ZnNi for aircraft – universal?
 - AlumiPlate for vehicles, some aircraft – universal?
 - Are we ready to implement/field test?
- What more testing needed?