Demonstrating Viability of Low VOC E-coat Primers for General Depot Use

ESTCP WP-201620

THE PROBLEM

- Broad diversity of parts are currently primed by air spray application.
- VOC: Even water based products have significant VOC content.
- Overspray contributes to waste.
- Inefficient transfer efficiency. Higher material cost.
- Recessed areas of complex geometries not coated, protected.

THE SOLUTION - ECOAT -

- Cationic Epoxy Technology.
- Chrome free.
- Very low VOC (~85% reduction).
- Near 100% Transfer Efficiency.
- Waste stream reduction.
- Complete coverage of complex parts – corrosion protection.
- Highly automated process.
- Approved MIL-SPEC CARC primer.
- Proven industrial process.
- Currently no Ecoat at Depots.

DEMONSTRATION

- Proposed Demo Sites: ANAD and RRAD
- PHASE I: Needs assessment and pilot system design.
- PHASE II: Pilot system build, shakedown, and ecoat selection.
- PHASE III: Parts coating and testing, Cost, performance analysis.

The Problem

The Solution - Ecoat

Demonstration

Electrodeposition Painting

- Positively charged paint particles deposit on negatively charged parts
- Ideal for complex parts and recessed areas
- Closed loop system – very little waste
- “Throwpower” – coating seeks recessed areas and complex shapes
- Uniform and accurate film thickness control
- High solids, “dry” film – ideal for bulk coating process

Organizations and Personnel

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<th>Organization</th>
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<tr>
<td>ARL*</td>
<td>PI: Fred Lafferman</td>
<td>Project coordination and DoD oversight</td>
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<tr>
<td>PPG*</td>
<td>Matthew Scott</td>
<td>E-coat expertise, Project tasks execution</td>
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<tr>
<td>ANAD</td>
<td>Chris Coss</td>
<td>Facilitate depot needs assessment and demonstration activities</td>
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<tr>
<td>RRAD</td>
<td>Barry Henry</td>
<td>Facilitate depot needs assessment and demonstration activities</td>
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<tr>
<td>TARDEC</td>
<td>Dan Nymberg</td>
<td>Technical Support, demonstration oversight, communication with Program Managers/PEOs.</td>
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COMPACT ECOAT LINE

Pilot Ecoat Line