

Improvements in Surface Preparation

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The Albany MCLB depot had switched from Methylene Chloride based chemical strippers to an n-Methyl Pyrrolidone paint stripping process.

- NMP is hydroscopic. Water contamination decreases NMP effectiveness. Recycle / filter system installed, but onerous to use. At time study initiated, all small parts stripping was being performed by mechanical methods.

⇒ Investigate alternatives to n-Methyl Pyrrolidone (NMP) paint remover system previously in use at the Albany MCLB.

Organic non-skid coatings are removed and re-applied at every availability. Removal costs are high.

- Lifecycle cost avoidance & non-skid performance (durability) enhancement.

⇒ Investigate the feasibility of using dual-wire arc spray metal coating to replace organic-based non-skid coatings.

Chemical Stripping Task

- Identify an environmentally acceptable chemical stripper (and process) capable of removing:
 - ⤴ Solvent-borne CARC
 - ⤴ Water-borne CARC
 - ⤴ Sea-foam green epoxy
 - ⤴ Powder coatings

Spray Metal Non-Skid Task

- Identify or develop a system and/or process capable of achieving non-skid texture at acceptable production rates.
- Evaluate potential surface preparation processes to achieve acceptable non-skid coating adhesion.

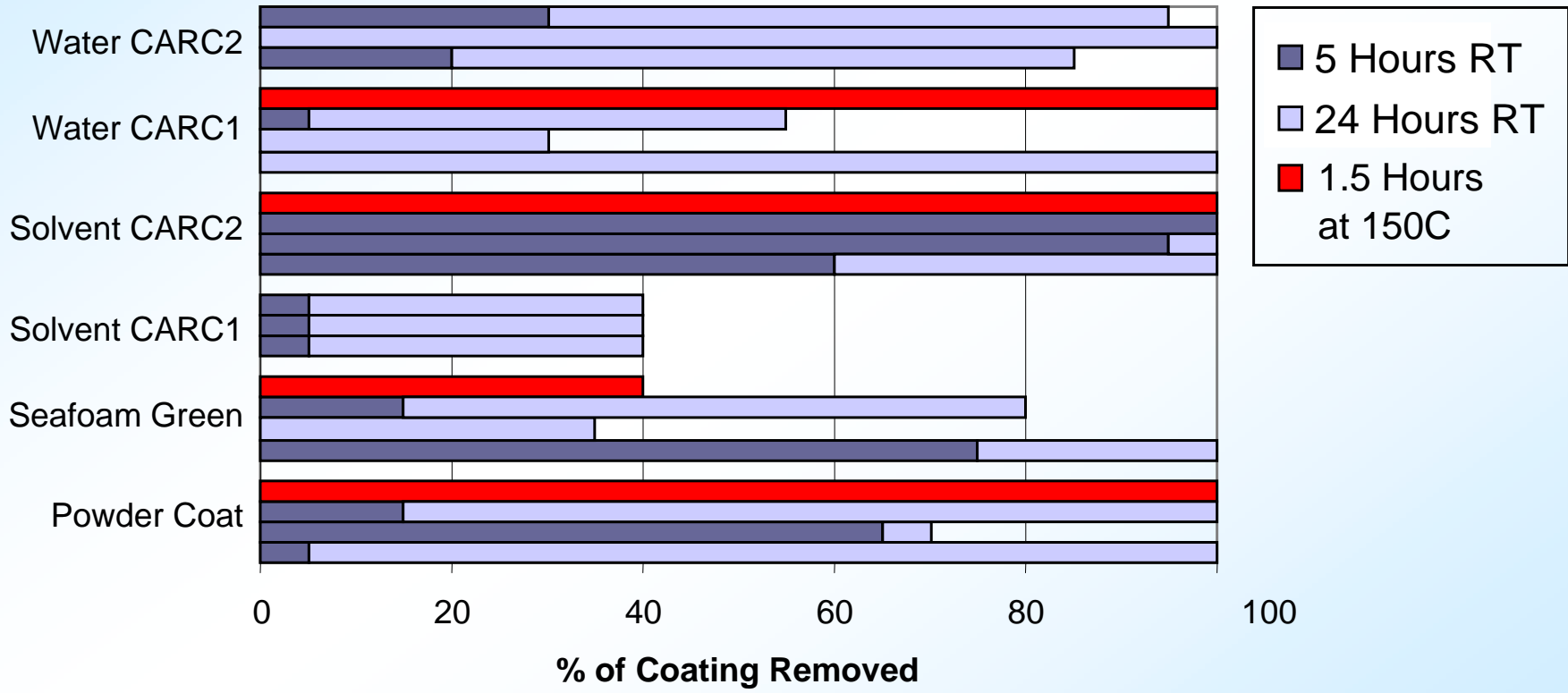
Chemical Stripping Task

- Thoroughly evaluated six (6) potential candidates
- Provided recommendation for best candidate and process (i.e., heating, agitation)

Spray Metal Non-Skid Task

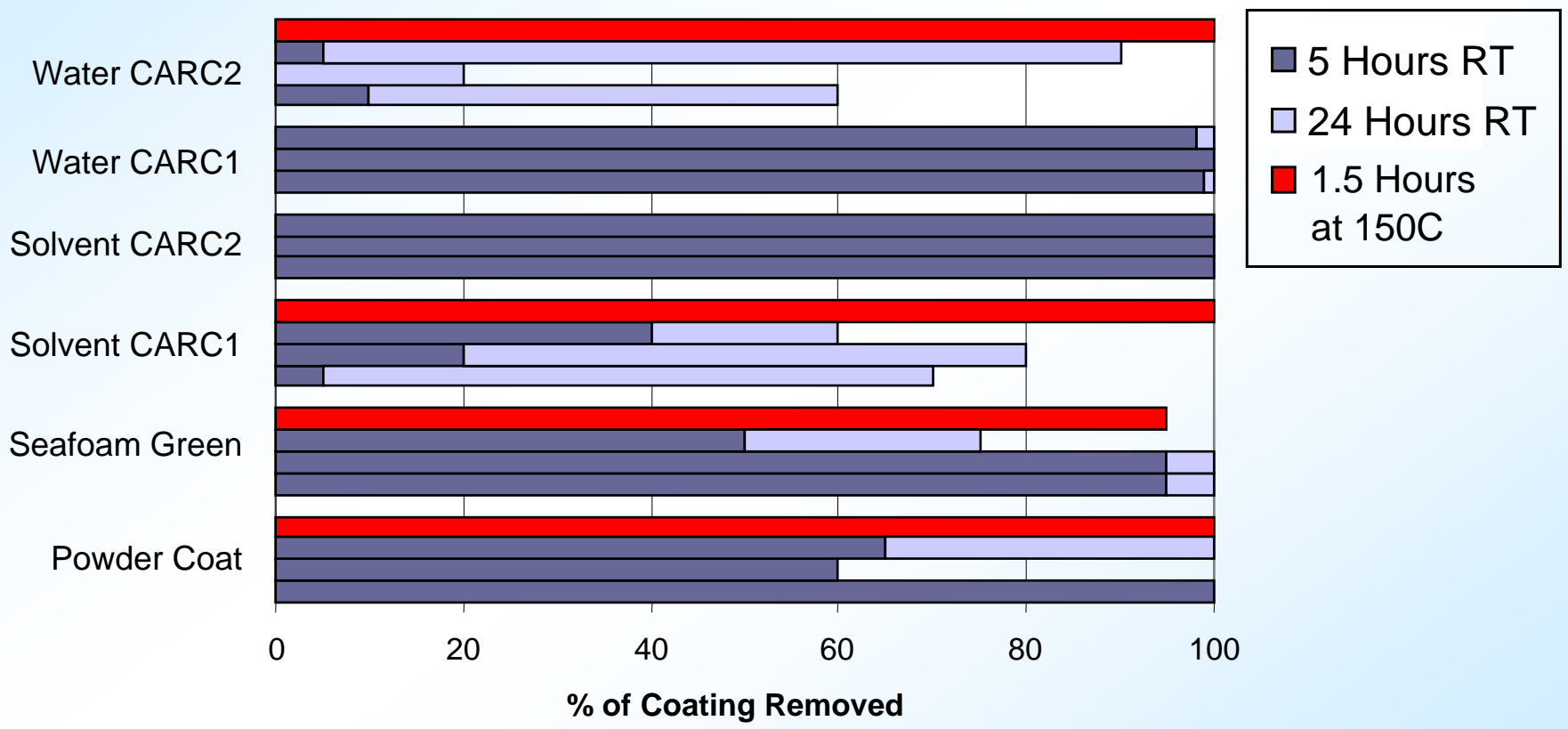
- Identified spray-metal application system (i.e., Thermion)
- Evaluated spray metal adhesion and corrosion protection for three (3) surface preparation processes
 - ⤴ Aluminum Oxide
 - ⤴ Black Beauty
 - ⤴ Crushed Glass

Brand "A" with Agitation



Brand "B" – Results

Brand "B", with Agitation



Three Point Flex Test

3.5" Span; 0.5" diameter mandrel; 20 inches/minute



Crushed Glass



Black Beauty

1.5" Displacement

Peel Test

ASTM 571-97 sec.11



Chemical Stripping Task

- Albany MCLB performed pilot-scale testing within the depot.
- Pilot-scale trials led to further process improvements that increased removal effectiveness while reducing energy cost and solvent loss.
- Albany is currently designing a dedicated chemical paint removal facility to house 3 basic paint stripping lines and expects to be able to handle parts up to 8' x 10' by 54" deep.

Spray Metal Non-Skid Task

- Approval to utilize spray-metal for non-skid on AAV deck-plates pending spray-metal training and certification of Marine Corps repair facilities.
- Training and certification of MCLB repair facilities planned for June 2002.