SSPC Initiatives in Standards Development of Interest to NSRP Participants

NSRP SP-3 Panel

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SSPC Product Development

www.sspc.org

SSPC The Society For Protective Coatings

Standards

- SSPC-SP 12/NACE No. 5 (Surface Preparation and Cleaning of Metals by Waterjetting Prior to Painting) (joint SSPC/NACE standard)
- Surface Preparation by Wet Abrasive Blast Cleaning (proposed joint SSPC/NACE standard)
- Wet Abrasive Blast Cleaning Systems (joint SSPC/NACE report)
- Sponge Encapsulated Abrasive Media (proposed SSPC standard)
- Guide to Protection of Edges, Crevices, and Irregular Surfaces by Stripe Coating (SSPC guide)
- SSPC-QP 1 revision
- SSPC-AB 1 revision

Frequently Encountered Problems in the Marine Industry

- Visible and invisible contaminants present on surfaces
- Need to minimize dust and debris in sensitive areas
- Lots of bolts, crevices, sharp edges
- All combinations of above!

SSPC-SP 12/NACE No. 5 Surface Preparation and Cleaning of Metals by Waterjetting Prior to Recoating

- In existence for 13 years
- Defines levels of visible contaminant
- Defines levels of flash rust
- Problem is
  - > 4 WJ grades in 1 standard
  - > Specifier must select WJ and Flash rust grade

High- and Ultra-high Pressure Waterjetting (WJ)

- Removes coatings and corrosion products without changing existing surface profile
- Can help with control of airborne debris
- WJ definitions of surface cleanliness are not identical to those in dry blast cleaning standards
- Revision in development will separate current SSPC-SP 12/NACE No. 5 standard into separate standards for each degree of surface cleanliness
- Percentage of unit area requirement for distribution of visible contamination will be added (similar to current dry blast standards - 9 square inch area)

Waterjetting Standards

- Definitions
  - WJ 1 - Bare Metal Cleaning: all visible contamination removed
  - WJ 2 - Very Thorough Cleaning: allows stains of rust, tightly adherent thin coatings and tightly adherent foreign matter on maximum 5% of each 9 in2 unit area
  - WJ 3 - Thorough Cleaning: allows stains of rust, tightly adherent thin coatings and tightly adherent foreign matter on maximum 33% of each 9 in2 unit area
  - WJ 4 - Light Cleaning: all loose material removed, tightly adherent mill scale, rust, and coating can remain

Revise SP 12

- Separate WJ grades into individual standards
- Now can specify WJ 3 with Flash Rust Level desired
- Define 9 sq. in area for inspection criteria
- May refine descriptions of Flash Rust Levels (e.g, color, opacity, and adherence)

Current Flash Rusting Levels

- None - no flash rusting permitted
- Light - exhibits small quantities of a yellow-brown rust layer through which the steel substrate may be observed. The rust or discoloration may be evenly distributed or present in patches, but it is tightly adherent and not easily removed by lightly wiping with a cloth.

Current Flash Rusting Levels

- Moderate - exhibits a layer of yellow-brown rust that obscures the original steel surface. The rust layer may be evenly distributed or present in patches, but it is reasonably well adherent and leaves light marks on a cloth that is lightly wiped over the surface.
- Heavy - exhibits a layer of heavy red-brown rust that hides the initial surface condition completely. The rust may be evenly distributed or present in patches, but the rust is loosely adherent, easily comes off, and leaves significant marks on a cloth that is lightly wiped over the surface.

Light Flash Rust

Flash Rust Levels

- Standards define levels of flash rusting, but do not set requirements for amount of removal.
- “Flash rust and non-visible contaminants shall be removed to the extent specified in contract documents.”

New Standard for Wet Abrasive Blast Cleaning (WAB)

- Waterjetting great for dust control and removing many non-visible contaminants
- Waterjetting can’t create or modify profile but will reveal existing profile
- Solution: add some abrasive media
- This controls dust while enabling profile modification

SP by WAB

- Definitions of cleanliness determined immediately after cleaning (before flash rust develops) identical to definitions in dry blast cleaning standards
- Definitions of flash rusting levels will be the same as those in revised waterjetting standards
- Immediately before painting, surface shall be free of flash rust to the extent required by project specification (same as WJ)

SP WAB Concerns

- Standard is badly needed now - no standardized process exists
- Same problem as current SP 12 - 4 cleanliness levels in 1 standard
- May consider a similar separation into 4 standards

Modification of AB 1 (Mineral and Slag Abrasives)

- Clarifications of contractor testing requirements vs. supplier testing requirements
- Optional appendix that can be invoked to address US Navy requirements for friability, crystalline silica, hazardous waste minimization, and radioactivity
- References ASTM D 7393 - Standard Practice for Indicating Oil in Abrasive (“vial test”) - now a formal standard

Options for Dust Control

- Sometimes wet methods can't be used, but dust suppression is necessary
- Option: vacuum attachments
- Option: low-dust dry media (but there is no standard for these)

New Standard for Sponge Encapsulated Media

- Alternative to use of wet cleaning methods in applications where dust control is important
- Can reduce risk of damage to sensitive surroundings from ricochet of hard abrasive media
- Type of media in composite will affect cutting - can be varied to meet user needs

Sponge Encapsulated Abrasive Standard

- Sets performance requirements for various composite abrasives: grit or mineral cleaning media and a soft sponge-like material
- Standard also allows use of recycled media if the work mix continues to maintain required surface profile and cleanliness
- Standard also provides requirements for determining efficiency of recycling equipment for sponge media

New Guide to Protecting Edges, Crevices, and Irregular Steel Surfaces by Stripe Coating

- Problem: Coatings on sharp edges, outside corners, bolt heads often fail prematurely
- Guide provides specifier with information on current best practices for providing extra coating thickness, and thus additional corrosion protection, to these areas

New Guide to Protecting Edges, Crevices, and Irregular Steel Surfaces by Stripe Coating

- Guide discusses
  - > Modifying edges by grinding, chamfering
  - > Guidance on application and use of stripe coats:
    - how to stripe, when to stripe, selection of coatings
- Completed guide available from SSPC as SSPC-PA Guide 11

QP 1 2008 Revision

- Added requirements
  - > Training and routine evaluation of craftworkers; More systematic approach to training, qualifying and evaluation of craft worker performance
  - > Formal training of QC supervisors on Quality Principles
  - > Implementation of corrective action procedures as defined by the Quality Community (ASQ)
  - > Added record retention policy (minimum of 3 years unless otherwise required by contract)

To Participate in Review Process

- Contact Aimée Beggs at SSPC to
  - > Obtain drafts for review/comment
  - > Join a technical committee
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