

5610000 COATING EXISTING STRUCTURAL STEEL  
**RESPONSE TO COMMENTS FROM INTERNAL/INDUSTRY REVIEW**

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Comment: (Internal Review comment 10-7-09)

1. Will section 560 be revised now that existing surfaces will not have to be addressed in section 560? Removing all relevance to existing surfaces in section 560 will help alleviate confusion in the field concerning what sections are applicable.
  
2. Also it would be beneficial to everyone if shop and field painting can be addressed separately for new steel in section 560.

Thank you for asking.

Response: (12-23-2009)

1. Section 560 implemented in the January 2009 Workbook only addresses painting new steel. No changes made.
  
2. Articles 560-5 and 560-6 differentiate between shop and field. In addition, the second paragraph in article 560-9.1 specifies which coats of the coating system must be shop applied and which ones may be shop or field applied. No changes made.

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Comments: (Internal Review comment 10-7-09)

1. 561-2.1: Spell out MSDS and ACGIH the first time it is used.

Response: Agree. Change made prior to Industry Review.

2. 561-2.1: The second paragraph is not clear enough about what tests are to be run for what elements.

Response: For overcoating systems, no tests are to be run. The overcoating system will be specified in the plans based on testing performed during the paint condition evaluation. The information required to be submitted by the Contractor will be used to verify the system to be applied is the system specified in the plans. No changes made.

3. 562-10.2.1: Add SSPC to the second sentence.

“The written plan must be in accordance with *SSPC* Project Design - Industrial Lead Paint Removal Handbook, Volume II, Phase 6, Environmental Monitoring, and specifically include,

but not be limited to, providing a scaled map of the work site layout showing the proposed number and location of soil sampling, TSP monitoring sites, waste storage areas, staging areas, temporary waste storage areas, and ambient air and personnel sampling frequency.

Response: Agree. Change made prior to Industry Review.

#### 4. 561-10.2.1 Second paragraph.

Comply with all applicable Federal, State, and Local rules and regulations. Immediately cease all operations in the event a violation of any environmental regulation occurs or *for* failure to properly execute any pollution control provision. Operations *may will* only resume after written proposed corrective procedures have been submitted to, and approved by, the Engineer and implemented.

Response: Language has been changed (prior to Industry Review) for clarity.

#### 5. 561-10.2.2 Second sentence.

Seek permit determination from these regulatory agencies to avoid any potential *permit* non-compliance ~~permit~~ issues during work activities.

Response: Agree. Change made prior to Industry Review.

#### 6. 561-10.2.3.

**561-10.2.3.1 Visible Emissions:** Assess the visible emissions using EPA Method 22, Timing of Emissions as defined by 40 CFR 60, Appendix A, Standards of Performance for New Stationary Sources. During abrasive blasting, do not allow visible emissions from *a* containment to exceed a random cumulative duration of more than one percent of the workday (SSPC Guide 6, Level 1 Emissions). During pressurized water cleaning, do not allow visible emissions from *a* containment to exceed a random cumulative duration of more than ten percent of the workday (SSPC Guide 6, Level 3 Emissions).

Response: Agree. Change made prior to Industry Review.

#### 7. 561-10.2.3.2.

**561-10.2.3.2 Total Suspended Particulate Matter:** Control emissions from the containment area to prevent exceeding the Total Suspended Particulate Lead [move this spelled out TSP to the first use of TSP in 561-10.2.1] (TSP Lead) of  $1.5 \mu\text{g}/\text{m}^3$  over a 90 day period, or the daily and adjusted daily allowances of SSPC-TU 7. Conduct TSP Lead monitoring in accordance with 40 CFR 50, Appendix B, Reference Method for Determination of Total Suspended Particulate Matter in the Atmosphere (high volume sampler required), and 40 CFR 50, Appendix G, Reference Method for Determination of Total Suspended Particulate Matter Collected from Ambient Air. Position the TSP Lead monitoring equipment in general accordance with 40 CFR 58, Ambient Air Quality Surveillance.

When lead is present in the coating, perform TSP Lead background monitoring for a period of three days prior to the beginning of abrasive blast cleaning operations. Submit the results from background monitoring and the first week of monitoring during abrasive blast

cleaning to the Engineer for review within five calendar days after the first week of work. Continue monitoring ~~unless until~~ otherwise directed by the Engineer.

Response: Agree. Change made prior to Industry Review.

#### 8. 561-10.2.3.3. Spell out NIOSH.

Response: Agree. Change made prior to Industry Review.

9.

**561-10.3 Containment System:** Submit a written containment system design plan in accordance with this section and the contract documents at the pre-construction *conference meeting* or as directed by the Engineer which clearly describes the proposed containment system applicable to the intended removal method and in accordance with the requirements outlined herein and SSPC Guide 6, Guide for Containing Debris Generated During Paint Removal Activities. Ensure the plan includes, but *is* not be limited to, removal method; methods for collecting debris; and containment enclosure components. Use fire retardant materials. Provide containment drawings, calculations, and assumptions, including ventilation criteria if applicable, signed and sealed by a Specialty Engineer. Provide a complete structural impact analysis prepared by a Specialty Engineer to verify the existing structure can withstand the dead, live and wind loads imposed upon the structure due to the containment system. *Provide a contingency plan addressing natural weather events such as tropical storms and hurricanes.* Ensure the lighting inside the containment is in accordance with SSPC Guide 12, Guide for Illumination of Industrial Painting Projects. Provide lighting to a minimum of 10 foot-candles for general, 20 foot-candles for work, and 50 foot-candles for inspection. All drawings and calculations must be submitted and accepted before any work begins. Include a clear description of the ventilation system components and information including the fan curve and design point on the proposed dust collector. Design to provide ventilation according to the notes provided in SSPC Guide 6: 100 feet per minute cross draft *and* 50-60 feet per minute downdraft.

Isolate the immediate area of the structure to ensure compliance with current and permit requirements for air, water, soil, and pollution prevention. Protect the containment system from vehicular and pedestrian traffic. Ensure that under no circumstances, *will* any paint, paint chips, or other debris fall outside of the containment area. Repair any damage created by fastening, bracing, or handling the scaffolding and staging, *on* ~~or~~ any surrounding property. If a suspended platform is constructed, use rigid and/or flexible materials as needed to create an air and dust impenetrable enclosure. Verify that the platform and its components are designed and constructed to support at least four times its maximum intended load without failure, with wire cables capable of supporting at least six times their maximum intended load without failure. Strictly comply with all applicable OSHA regulations regarding scaffolding. The category and class of containment shall be as required in the Contract Documents.

Response: Language has been changed (prior to Industry Review) for clarity.

#### 10. 561-11.2 Last sentence.

Keep solid and liquid waste separate and individual waste streams *and* separate *them* prior to identification and storage.

Response: Language has been changed (prior to Industry Review) for clarity.

11. 561-11.3. Spell out AIHA.

Response: Agree. Change made prior to Industry Review.

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Will Watts

Comments: (1-5-10)

Please consider the following comments.

1. 561-4.1: First sentence, between QP 1 and QP2 changing wording to “and/or”.

Response: “or” will be changed to “and”. Since the text “as appropriate” is included, either one or both could be used. (1-6-10)

2. 561-4.1: Second paragraph consider deleting since Section 102 of the spec book addresses MOT. If not deleted second sentence add “plan” after traffic control.

Response: Agree. Second sentence has been changed as follows: “Do not begin work until the traffic control *plan* is approved by the Engineer”.

3. 561-8.8: Thickness of coats. For primer coat when blasting steel in accordance with PA2 consider requiring the contractor to meet 100 – 120% of the primer thickness eliminating the 80% which could cause pin point corrosion.

Response: Thickness is measured above base metal and should not result in pin point rusting. No change made.

4. 561-10.2.1: Since SSPC Project Design Industrial Lead Paint Removal Handbook, Volume II is no longer available provide a copy to all of the districts for their use.

Response: The districts can purchase this text from several sources. Please call me if you have any problems (352-955-6649).

5. 561-10.3: Fourth sentence add “within the State of Florida” after Specialty Engineer.

Response: Article 1-3 Definitions of the Specifications defines Specialty Engineer as a Professional Engineer registered in the State of Florida. No changes made.

6. 561-10.3: Add requirements for the contractor to provide a plan for review and approval addressing tropical events specifically addressing tropical depressions, tropical storms and hurricanes. The plan should address how he will monitor these events, his actions removing tarps/containment, length of time for removal and etc.

Response: Agree. The following sentence has been added to the first paragraph of Subarticle 561-10.3: “Provide a contingency plan addressing natural weather events such as tropical storms and hurricanes.”

7. 561-10.4: Add machinery after deck grating.

Response: Agree. The first sentence has been modified as follows: “Protect all areas adjacent to abrasive blast cleaning, including *machinery and* deck grating.

8. 561-11.4: Fourth sentence add water after dust.

Response: Agree. Sentence has been modified as follows: “These waste streams include, but are not limited to, *water*, paint chips, dust, and paint chips mixed with disposable abrasives and debris.”

9. 561-11.4: Second paragraph, third sentence, should “Hexavalent Chromium” be added for testing.

Response: Agree. Sentence has been modified as follows: “Submit samples to an approved laboratory to be tested for arsenic, barium, cadmium, *hexavalent* chromium, lead, mercury, selenium, and silver in accordance with EPA Method 3050 and Method 6010 (content) and EPA Method 1311, Toxicity Characteristics Leaching Procedures (TCLP).”

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Comments: (1-19-10)

Section 561 Coating Existing Structural Steel – Specification

1. 561-2.1, second paragraph – Clarify that the MSDS, test reports etc are required only for the overcoat system.

Response: The paragraph begins, “For overcoating systems, ...” No changes made.

2. 561-4.1, first paragraph – If the painting subcontract has a Quality Control Plan already approved by SSPC, what is the purpose of a site specific Q.C. Plan. This increases cost for no reason that will then be passed onto the owner with no benefit.

Response: “Site specific” is detailed and incorporates waste handling issues that may only be relevant to the details present at that particular project. No changes made.

2. 561-4.1, second paragraph – If lane closures and traffic shifts are in accordance with Index 600, a separate traffic control plan should not be necessary. If the contractor is using the Maintenance of Traffic plans provided in the contract plans, there is no reason for the additional expense of signing and sealing a plan. That cost will be passed onto the owner with no benefit.

Response: Deviations from the standard design indices are sometimes necessary. Also, circumstances arise that are not covered in the standard indices. Flexibility is needed. No changes made.

3. 561-4.1, third paragraph - Only one work plan for the project should require Coast Guard approval. If there are channel restriction required of other work on the project, a second work plan that only specifically addresses painting is not required. Covered in Section 7 of the Standard Specifications.

Response: Some projects occur where the paint contractor is the only contractor. No changes made.

4. 561-6.1, first paragraph – Please define “feather back”. This could be interpreted to mean many things to the inspectors in the field without consistency.

Response: This is standard coatings industry language. NACE and SSPC inspectors will understand this directive. No changes made.

5. 561-6.1, second paragraph – Delete last two sentences in their entirety. Substitute “Surfaces shall meet the required degree of preparation prior to application of paint.”

Response: Application of paint is addressed in 561-8. No changes made.

6. 561-6.2 – Delete “remove all pack rust prior to solvent cleaning.” This is an extra cost that does not benefit the Department.

Response: Removal of pack rust is essential to adhesion. No changes made.

7. 561-6.5 – When is requirement supposed to be met? Before or after blasting?

Response: The specification is organized in order of coating operation. Requirement is prior to application of paint. If salt is embedded, then contractor must remove. No changes made.

8. 561-8.1, third paragraph – Is a stripe coat required? This is very expensive.

Response: Stripe coat is needed to seal and maintain coating thickness across sharp angles and is worth the extra cost. No changes made.

9. 561-8.3 – The requirement of 560-9.3 needs to be further defined to not require caulking around nuts and washers. Some inspectors have considered them faying surfaces and have required caulking which is not the intent.

Response: All cracks and crevices should be sealed including nuts and washers. If paint does not seal, then caulk should be used. No changes made.

10. 561-8.9 – Delete second sentence in its entirety. There is no handling since this specification is coating existing structural steel.

Response: The reference to inorganic zinc primer has been removed.

11. 561-9 – Clean and coating should also reference SP-11 as an option.

Response: SP-11 is implied through reference to Section 560. No changes made.

12. 561-10 – FDOT should have a standard plan that can be used for all projects. The plans referenced in this section cost between \$5,000 and \$20,000 per project. It is not necessary to have individual plans.

Response: Different projects have different requirements. Individual plans are necessary. No changes made.

13. 561-10.2.1 – FDOT should designate in the plans the waste storage areas, staging areas and temporary waste storage areas.

Response: These responsibilities are intentionally designated to the Contractor. No changes made.

14. 561-10.2.2 – The Department should provide a list of any permits required in the bidding documents. The Department should be aware of the permits required, since they have been work on the project document far longer than the contractor. The contractor only has limited time (one month) to review all the plans and specifications and accurately estimate the project cost.

Response: Permitting is a Contractor responsibility unless otherwise noted. No changes made.

15. 561-10.2.3.2 – The action level in the table of section 561-10.2.3.3 conflict with the TSP Lead level of section 561-10.2.3.2. Please make consistent.

Response: TSP is an elapsed time measurement. Action level is any instantaneous measurement. No changes made.

16. 561-10.2.3.2, last sentence – This requirement is too vague, why continue to monitor if ok. Very expensive to monitor for no reason.

Response: The Engineer will make the decision when to stop monitoring. No changes made.

17. 561-10.2.3.3 – The regulated area has to be within the enclosure (tarps). However, EPA specifications do not allow a “regulated area”. Please make consistent.

Response: No changes needed.

18. 561-10.2.4, second and third paragraphs – The sample requirements are excessive.

Response: Requirements have been reduced and deemed appropriate. We will continue to assess value and make any necessary changes to future revisions. No changes made.

19. 561-10.3, fourth sentence – Ventilation criteria is already covered in second paragraph.

Response: No changes needed.

20. 561-10.3, fourth sentence – Signed and sealed drawings and calculations should only be required if spent abrasive loads are placed on the structure.

Response: Scaffolding, wind and vehicle loads can be significant. No changes made.

21. 561-10.3, second paragraph – Light requirement should only pertain to the inspection. The Department should not dictate the lighting necessary to perform the work.

Response: Minimal lighting is prescribed and should not be an issue. No changes made.

22. 561-10.3, second paragraph – The ventilation section (fifth sentence) should be a new paragraph.

Response: No changes made.

23. 561-10.3 – Design is not required for the ventilation, just measure the airflow at site.

Response: Design is prudent. No changes made.

24. 561-10.4 – Please address the cleaning on top of flanges with grating.

Response: No changes made.

25. 561-11.3 – Change last sentence to read “Provide a copy of all sampling and test reports no later than 72 hours after receipt of test results”.

Response: 72 hours will provide ample time for feedback. No changes made.

26. 561-11.4~~5~~, third paragraph – What field logbook is referenced in this sentence?

Response: The Contractor’s field logbook is used for recording these values.

27. 561-11.5, second paragraph – Change last sentence to read “Do not store hazardous waste in the temporary ...”

Response: No changes made.

28. 561-11.5, first paragraph – waste should be allowed to be stored in bulk containers (roll offs) as well and not limited to drums.

Response: Roll-offs are not prohibited. No changes made.

29. 561-11.6, first sentence – Delete the word “treat”. The contractor doesn’t treat hazardous waste and non-hazardous waste does not get treated.

Response: The Contractor subs out the disposal and treatment (if recycled) of hazardous waste. No changes made.

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Comments: (1-20-10)

1. In general – based on an inspection by FDEP, FDOT as owner of the structure being painted, is responsible under 40 CFR 260-279 and FAC 62-710-740. This includes operations associated with paint removal and paint application.

Response: It is the intent to relieve the Department of as much responsibility as possible.

2. 561-2.5 – FDOT should require the use of steel grit and only allow other abrasives approved by the project manager/engineer when conditions prevent the use of steel grit. Steel grit reduces the amount of waste which is recyclable. It can be sent to Missouri and melted down for reuse. This discontinues the liability of FDOT, much better than waste sitting in landfills.

Response: Contractors are responsible for handling and disposing of the hazardous waste in most districts. Reducing the amount of waste is mutually beneficial to both parties. We will consult with other districts and consider this for future revisions. No changes made.

3. 561-4 Quality Control. SSPC QP 1 *and/or* QP 2 to cover paint application and removal.

Response: Language has been changed to “and”. Since the text “as appropriate” is included, either one or both could be used.

4. 561-2.1 When the contractor determines the paint and solvents and thinners to be used, is there any testing done to make sure it tests non-hazardous as waste as per 975-1.2? Isn't the allowable lead content of paint 600 ppm under the US Toxic Substance Act; 5 ppm is the hazardous level for TCLP tests?

Response: It is my understanding that there are no regulations regarding the amount of lead that can be used in paint manufacture. It is not a problem until it is being disposed of, whether liquid or solid. No changes made.

5. 561-10 Protection of the Environment, Public, and Workers.

a. 561-10.1 Provide a contingency plan for the remediation of water and land in the event of contamination by solid or liquid paint and contaminated water. *This should include the need for a site health and safety plan and a work plan with the need for a contingency plan. The contingency plan should also include emergency response by applicable agencies fire rescue and FDEP.*

Response: The first sentence states, "Establish plans and programs to protect, ..." This would include contingency plans. No changes made.

b. 561-10.2.1 Pollution Control *Include the painting operations, storage and handling of solvents, paints, thinners and equipment maintenance and operation. Require the contractor to apply for an EPA ID number for disposal of hazardous wastes associated with painting. (This makes them subject to FDEP inspections)*

Response: Currently, painters subcontract disposal. EPA regulations require any authority disposing of hazardous waste to have an EPA ID number. No changes made.

c. [561-10.2.2 Permits – There may be a NPDES permit needed in the future for a stationary industrial operation. A proposal in 1997 for this is in limbo]

Response: Agree. No changes made.

d. 561-10.2.3 Ambient Air - This should include emissions from solvents, paints and thinners. SSPC Guide 6 only covers removal of paints, not their application. There are training and management plans the contractor is required to use under 40CFR 262 so that the workers properly use and store these materials to reduce emissions.

Response: Language is included stating not to exceed VOC's. Addition of these materials increases the VOC content. No changes made.

e. 561-10.5 Worker Protection: Need to include solvents, paints and thinners? EPA has a bunch of regulations for protection of workers. Require the contractor to furnish training rosters indicating the required training for employees is up to date.

Response: Disagree. We cannot tell the Contactor which reagents to use, since the list is too large. Language has been included mandating that all local, state and federal regulations are to be adhered to. No changes made.

6. 561-11.2 Collection and Handling of Waste: Need to include solvent, paint and thinner, equipment operation and maintenance wastes (used oils and hydraulic fluids too). Need to require the contractor to provide dated signed inspection logs for weekly inspections of all containers and the work and staging areas.

Response: Language includes all solid and liquid waste. This includes solvents and thinners. No changes made.

7. 561-11.5 Waste Storage: Require the contractor to not mix blast media wastes. Aluminum and steel mixtures can cause explosions.

Response: 561-11.2 I requires all waste streams to be separate. No changes made.

8. 561-11.6 Waste Disposal: District 2 disposes of the hazardous paint removal wastes under the district-wide CAR contract. The contractor disposes of the other wastes. In the 1990's a contractor stored hazardous waste over the time limit and caused a problem with FDEP. Contractors don't usually use the most cost effective or long term reliable waste disposal facilities. A recent case, the contractor provided a higher estimate for disposal costs of hazardous large volume (black beauty abrasive generated the quantity). The facility the contractor provided was Sub Title D (non-hazardous). The wastes are going to a hazardous site for disposal.

The SSPC training indicates that the owner is the generator and should sign the hazardous waste manifests. EPA rules indicate training is required for anyone signing these manifests. Those in control of the contract would be the person signing. This is not in the training manual 8.9.1. This includes disposal of the solvent and paint and other wastes.

The best option for FDOT is to use steel grit and send the old paint (wastes) to Missouri for recycling.

Response: This is an area in which the Department can improve. Other districts need to provide input before implementing a blanket policy. We will research this and include any changes in future revisions. No changes made.

9. 561-11.7 Permits – The contractor is supposed to indemnify FDOT under 7-1.1, but this is contractually. EPA does not consider our contractual obligations applicable to their enforcement.

Response: Understood, EPA can even invoke criminal charges on individuals. No one, or any agency, is above their jurisdiction. No changes made.

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From the State Specifications Office (1-27-10): The following sentence will be added to 561-10.3 based on a comment from the State Construction and Structures Design Office.

*However, for cables stayed, suspension and truss bridges, or when the plans require it, provide containment drawings, calculations and assumptions signed and sealed by a Contractor's Engineer of Record qualified in Type Work Category 4.3, Complex Bridge Design or as required by the plans.*