Tnemec 434 Perma-Shield Specification

PART 1 - GENERAL

1.1 DESCRIPTION:

This section covers all workmanship, materials and quality requirements for concrete resurfacing and lining work. Provide and apply resinous (epoxy) resurfacing materials as specified and as indicated on drawings.

1.2 RELATED WORK:

A. Division 1 - General Requirements
B. Section 01300 - Submittals
C. Section 07150 - Sealants

1.3 REFERENCES:

This section contains references to the documents listed below. They are a part of this section as specified and modified. In case of conflict between the requirements of this section and those of the listed documents, the more stringent of the requirements shall prevail.

Unless otherwise specified, references to documents shall mean the documents in effect at the time of receipt of Bids. If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued. Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, whether or not the document has been superseded by a version with a later date, discontinued, or replaced.

Referenced publications found within this specification shall be the latest revision unless otherwise specified; and applicable parts of the referenced publications shall become a part of this specification as if fully included.

Reference	**Title**
ASTM (American Society for Testing and Materials)	
ASTM C 920	Specification for Elastomeric Joint Sealants.
ASTM D 3960	Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings
ASTM D 4259	Practice for Abrading Concrete.
ASTM E 337	Standard Practice Test Method for Measuring Humidity with a Psychrometer.
ASTM F 710	Practice for Preparing Concrete Floors and Other Monolithic Surfaces to Receive Resilient Flooring
FEDERAL STANDARD COLORS	
F 595 B	Federal Standard Colors
Guideline No. 03732	Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays
ICRI (International Concrete Restoration Institute)	
Guideline No. 03732	Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays

Reference	Title
NACE (National Association of Corrosion Engineers)	
NACE Publication 6D-173	"A Manual for Painter Safety"
NACE Publication 6G-164	"Surface Preparation Abrasives for Industrial Maintenance Painting"
NACE Publication 6G-164	"Surface Preparation Abrasives for Industrial Maintenance Painting"
NACE Publication TPC2	Coatings and Linings for Immersion Service: Chapter 1 Safety, Chapter Surface Preparation, Chapter 3 Curing, and Chapter 4 Inspection
NACE Publication 6F-163	"Surface Preparation of Steel or Concrete Tank Interiors."
NACE RP0892-92	Standard Recommended Practice, Lining over Concrete in Immersion Service.
NACE RP0288-88	Standard Recommended Practice, Inspection of Linings on Steel and Concrete.
SSPC (Steel Structures Painting Council)	
SSPC-SP 12	Surface Preparation and Cleaning of Steel and Other Hard Materials by High and Ultrahigh Pressure Water Jetting Prior to Recoating.
SSPC-SP13	Surface Preparation of Concrete
SSPC-PA-3	"A Guide to Safety in Paint Application"
SSPC-Guide 12	Guide for Illumination of Industrial Painting Project.
OSHA (Occupational Safety & Health Administration.)	
1915.35	Standards —29 CFR - Painting.
ANSI (American National Standards Institute)	
ANSI/ASC 29.4 Exhaust Systems	Abrasive Blasting Operations — Ventilation and Safe Practice

1.4 QUALITY ASSURANCE

A. Requirements:

1. Do not use or retain contaminated, outdated, or diluted materials for resurfacing. Do not use materials from previously opened containers.
2. Use only products of the approved Manufacturer. Use products of one manufacturer in any one resurfacing system with compatible materials. Provide same material product for touch- up as for original material.
3. If any requirements of this specification conflict with a referenced standard, the more stringent requirement shall apply.
4. Take available all locations and phases of the work for access by the Engineer or other personnel designated by the Engineer. The Contractor shall provide ventilation and egress to safely access the coating work areas for inspection.
5. Conduct work so that the resurfacing system is installed as specified herein. Inspect work continually to ensure that the resurfacing system is installed as specified herein. The Contractor shall inspect the work to determine conformance with the specifications and referenced documents. The Contractor shall inform the Engineer of the progress and the quality of the work through daily reports as specified below. Any nonconforming coating system work shall be corrected as specified herein or as recommended by the Manufacturer.
6. Summarize test data, work progress, areas covered, ambient conditions, quality control inspection test findings, and other information pertinent to the resurfacing system installation in daily reports to be submitted to the Engineer or the Engineer's Representative.
7. The methods of construction shall be in accordance with all requirements of this specification.

8. Employ only trades people who have at least **five years** of experience performing resurfacing work of similar size and complexity as the work specified in this Section. Submittals to verify these qualifications are to be made within thirty (30) days of the Notice-to-Proceed and are subject to approval by the Engineer.

1. 5 SUBMITTALS

A. Submit the following prior to commencing with any phase of the work covered by this Section:

1. Manufacturer's current printed recommendations and product data sheets for all coating system products supplied under this section including performance criteria, surface preparation and applications, volatile organic compound (V.O.C.) data, and safety requirements.
2. Material Safety Data Sheets (MSDS) for any materials brought on-site including all resurfacing system materials, solvents, and abrasive blast media.
3. Storage requirements including temperature, humidity, and ventilation for resurfacing system materials.
4. Manufacturer's requirements, including application procedures for resurfacing materials shall be in writing and shall be followed in detail. All safety precautions recommended by the Manufacturer shall be strictly adhered to at all times when work is in progress.
5. Color samples for all surfaces to be resurfaced that have been field-matched to existing colors.
6. Submit applicators' certification that resurfacing materials comply with Federal, State, and Local regulations for VOC (Volatile Organic Compounds).
7. Submit daily reports that contain the following information: Substrate conditions, ambient conditions, application procedures, work completed and location thereof. Mark-up drawings that show location of work.
8. Submit letter(s) with associated product data signed by Manufacturer certifying that submitted products are suitable for application on the surfaces to be resurfaced and for the service conditions.

1.6 DELIVERIES AND STORAGE

A. Materials shall be stored in accordance with Manufacturer's recommendations in enclosed structures and shall be protected from weather and adverse temperature conditions. Flammable materials shall be stored in accordance with state and local codes. Materials exceeding storage life recommended by the manufacturer shall be removed from the site.

1. Store all materials only in area or areas designated by the Engineer solely for this purpose. Confine mixing, thinning, clean-up and associated operations, and storage of materials-related debris before authorized disposal, to these areas. All materials are to be stored on pallets or similar storage/handling skids off the ground in sheltered areas in which the temperature is maintained between 70°F and 90°F.
2. Mix all resurfacing materials in an enclosed mixing area designated by the Engineer. This enclosed area must protect the mixing operation and materials from direct sunlight, inclement weather, freezing, or other means of damage or contamination. Protect all other concrete and metallic surfaces and finishes from any spillage of material(s) within the mixing area.
3. Do not use floor drains, dikes or storm drains for disposal of resurfacing systems materials.
4. The Contractor shall take all precautions and implement all measures necessary to avert potential hazards associated with the resurfacing system materials as described on the pertinent Material Safety Data Sheets or container labels.

B. Deliver all materials to the job site in their original, unopened containers. Each container shall bear the Manufacturer's name and label.
    1. Labels on all material containers must show the following information:
        a. Name or title of product.
        b. Federal Specification Number if applicable.
        c. Manufacturer's batch number and date of manufacture.
        d. Manufacturer s name.
        e. Generic type of material.
        f. Application and mixing instructions.
        g. Hazardous material identification label.
        h. Shelf life date.
        i. Storage requirements.
    2. All containers shall be clearly marked indicating any personnel safety hazards associated with the use of or exposure to the materials.
    3. All materials shall be handled and stored to prevent damage or loss of label.
    4. The Engineer shall designate resurfacing material storage and mixing areas.
    5. Do not use or retain contaminated, outdated, prematurely opened, diluted materials, or materials which have exceeded their shelf life.

1.7 COORDINATION OF WORK

A. Work Areas: The work areas on the job site will be designated by the Engineer. The Contractor's personnel shall not be permitted in any area other than those expressly designated by the Engineer.
B. Coordination: The contractor shall coordinate with the Engineer regarding availability of work areas, completion times, safety, access and other factors, which can impact plant operations.

1.8 SAFETY

The Contractor's work forces should comply with the provisions outlined in the following documents:

SSPC-PA-3 "A Guide to Safety in Paint Application"

NACE Pub. "A Manual for Painter Safety"

A. The Contractor shall provide personnel with all safety equipment necessary to protect them during any phase of the work. This shall include, but not be limited to safety glasses, goggles, earplugs, hard hats, steel toed work shoes, appropriate personal protective clothing, gloves, and plant approved escape respirators (where required).
B. No work shall be performed until the appropriate Work Requests and lockouts are approved by the Engineer. The Work Request system provides a mechanism to advise plant staff of a contractor's work activities. The Lockout system is a safety procedure to prevent unintended equipment activation.
C. Keep any flammable materials such as cleaning solvents, thinners, or resurfacing materials away from open flames, sparks or temperatures higher than 150°F. Drums containing flammable materials will be grounded. No solvent in any quantity shall be allowed inside containment enclosures or permitted confined spaces at any time during resurfacing work.
D. Power Tools are to be in good working order to avoid open sparking. No spark producing tools should be utilized in restricted areas as indicated herein.
E. The Contractor shall fireproof all work areas by maintaining a clean work area and having Underwriter's Laboratories approved fire extinguishers on-hand. The Contractor shall furnish these fire extinguishers.

F. Workers doing abrasive blasting operations shall wear a fresh air supplied protective helmet and hood and personal protective clothing acceptable to industry standards and all government regulations.
G. Dispose of rags used for wiping up resurfacing materials, solvents, and thinners by drenching them with water and placing in a metal container with a tight-fitting metal cover. Complete this disposal process at the end of each day. Final disposal of these materials is the Contractor's responsibility.
H. Matches, smoking, flames, or sparks resulting from any source including welding, must be remote from the work area during coating work. Smoking is permitted only in designated areas of the plant.

1.10 JOB CONDITIONS:

A. Edit as required for the specific project.

PART 2- PRODUCTS

2.1 MANUFACTURERS

A. Materials specified are those that have been evaluated for the specific service. Products of the Tnemec Company, Inc. are listed to establish a standard of performance and quality. Equivalent materials of other manufacturer's may be submitted on written approval of the Engineer. As part of the proof of equality, the Engineer will require at the cost of the Contractor, certified test reports from a nationally known, reputable, and independent testing laboratory conducting comparative tests as directed by the Engineer between the product specified and the requested substitution.
B. Requests for substitution shall include manufacturer's literature for each product giving name, product number, generic type, descriptive information, solids by volume, recommended dry film thickness and certified lab test reports showing results to equal the performance criteria of the products specified herein. In addition, a list of five projects shall be submitted in which each product has been used and rendered satisfactory service.
C. All requests for product substitution shall be made at least 10 days prior to the bid date.
D. Any material savings shall be passed to the owner in the form of a contract dollar reduction.

2.2 MATERIALS

A. Epoxy Lining System
    1. Materials specified herein are the only approved standard coating systems unless an "approved equal" is approved in writing by the Engineer 2 weeks prior to the bid date.
    2. The following list specifies the material requirements for resurfacing systems. The approved products are as follows:
        a. Deep Patching/Surfacing: Tnemec Series 217 MortarCrete
        b. Surfacing Mortar: Tnemec Series 218 MortarClad
        c. Lining: Tnemec Series 434 Perma-Shield H_2S
        d. Topcoat/gelcoat: Tnemec Series G435 Perma-Glaze (as required for specific exposures)

B. Sealants
    1. Refer to Section 07150.

C. Abrasive Blast Media
    1. If dry or wet abrasive blast cleaning is the selected method of surface preparation, provide slag grit of a sieve size, gradation, and quality necessary to produce the degree of cleanliness and surface profile required herein.

PART 3- EXECUTION

3.1 GENERAL

A. Hoisting, Scaffolding, Staging, and Planking:
   1. Provide, set-up, and maintain all required hoists, scaffolds, and staging and planking, and perform all access related hoisting work required to complete the work of this section as indicated and specified.
   2. Scaffolds shall have solid backs and floors to prevent dropping materials from there to the floors or ground below.

B. Environmental Requirements:
   1. Comply with the Manufacturer s recommendations as to environmental conditions under which resurfacing system materials can be applied.
   2. Do not apply resurfacing system materials when dust is in work site.
   3. The Contractor shall provide all temporary lighting during the work.

C. Protection:
   1. Cover or otherwise protect finish work or other surfaces not being resurfaced.
   2. Erect and maintain protective tarps, enclosures and/or masking to contain debris (such as dust or airborne particles resulting from surface preparation) generated during any and all work activities. This includes, but is not limited to the use of dust/debris collection apparatus as required.

D. Initial Inspection of Surfaces to Be Coated:
   1. It is the responsibility of the Contractor to inspect and report unacceptable concrete substrate surface conditions to the Engineer prior to the commencement of surface preparation activities. Unacceptable surface conditions are defined as the presence of cracked surfaces or concrete deteriorated to a depth of greater than 1” or otherwise unable to withstand surface preparation as specified herein.

E. Thinners and Solvents:
   1. The Contractor shall use only solvents and thinners as recommended by the Manufacturer.

3.2 SURFACE PREPARATION REQUIREMENTS

A. General:
   1. All specified surface preparation shall be performed in accordance with the latest version of the SSPC, NACE, ICRI and other standards referenced in this section.
   2. Concrete surfaces shall be prepared in accordance with SSPC-SP 13/ NACE 6. Reference ICRI CSP 6-7 visual standards for appropriate surface profile. This preparation will be followed by vacuum cleaning to remove all dust, dirt or friable substances leaving clean, dust free surfaces for resurfacing.
   3. Oil and grease shall be removed before mechanical cleaning is started via an alkaline- based emulsifying detergent as recommended by the resurfacing material manufacturer. Where mechanical cleaning is accomplished by blast cleaning, the abrasive used shall be washed, graded and free of contaminants that might interfere with the adhesion of the resurfacing materials.
   4. The air used for blast cleaning shall be free of oil and moisture to not cause contamination of the surfaces to be resurfaced.
   5. Clean cloths and clean fluids shall be used in solvent cleaning.
   6. Cleaning and resurfacing shall be scheduled so that dust and other contaminants from the cleaning process will not fall on wet, newly resurfaced areas.
   7. Prepare concrete joint and install sealant following resurfacing material installation per Section 07150.

B. Initial Cleaning/Decontamination:
   1. All existing areas to be resurfaced shall be pressure washed with a 2500-5000 PSI containing an alkaline - based detergent to remove all loose materials, acid constituents, grease, oil, and other contaminants (use potable water only, not plant water).
   2. Verify that the pH of the cleaned concrete surfaces to be coated is within the range of 10 to 11. Application of coating materials outside this range will not be permitted without written approval from the Engineer.

C. Abrasive Blast Cleaning
   1. Used or spent blast abrasive shall not be reused on work covered by this section.
   2. The compressed air used for blast cleaning will be filtered free of condensed water or oil. Moisture traps will be cleaned at least once every four hours or more frequently as is appropriate.
   3. Oil separators shall be installed just downstream of compressor discharge valves and at the discharge of the blast pot discharges. Oil separators shall be cleaned at least once every four hours or more frequently as is appropriate.
   4. A paper blotter test shall be performed by the Contractor when requested by the Engineer or the Engineer's representative to determine if the air is sufficiently free of oil and moisture.
   5. Regulators, gauges, filters, and separators will be in good working order for all the compressor air lines to blasting nozzles at all times during this work.
   6. An air dryer or drying unit shall be installed which dries the compressed air prior to blast connections. This dryer shall be used and maintained for the duration of surface preparation work.
   7. The quality, volume, and velocity of life support and ventilation air used during surface preparation shall be in accordance with applicable safety standards and as required to ensure adequate visibility and proper dissipation of volatiles without impacting the prepared surface or the health of the public or personnel working for the Contractor, Subcontractors, Engineer, Engineer's Representatives, or anyone who may be affected by on-site maintenance coating work activities.
   8. The abrasive blast nozzles used shall be the Venturi or other high velocity type supplied with a minimum of 100 psi air pressure and the necessary volume to obtain the required blast cleaning production rates and specified degree of cleanliness.
   9. The Contractor must provide adequate ventilation for airborne particulate evacuation and lighting (meeting all pertinent safety standards) to optimize visibility for both blast cleaning and observation of the substrate during surface preparation work.
   10. All phases of surface preparation work specified herein must be inspected by the Engineer before the Contractor proceeds with the subsequent phase of surface preparation.
   11. If, between final surface preparation work and coating application, contamination of the prepared and cleaned substrate occurs, or if the prepared steel's appearance darkens or changes color, reblasting will be required until the specified degree of cleanliness is established.

3.3 SPECIFIC SURFACE PREPARATION REQUIREMENTS

A. In addition to the Section 3.02 requirements, the Contractor will follow the requirements of this section.
B. Where the coating is specified to be terminated, the Contractor shall prepare and apply materials as outlined in Tnemec Drawing TLS-02 (included at end of Section).
C. For applications around penetrations and/or drains, the contractor shall prepare and apply coatings as detailed on Tnemec Drawing TLS-0l (included at end of Section).
D. When the floor area is scheduled to receive a mortar application to pitch the floor, the walls above the floor shall be saw cut to a depth of 1/2 inch at a height from 0'-0" to 0'-6" above the floor. The cut shall be straight and level.
E. The Contractor shall notify the Engineer should jobsite conditions prevent the above operations and/or applications.

3.4 APPLICATION REQUIREMENTS

A. General:

1. Areas not to be resurfaced shall be masked using duct tape or other protection materials to prevent these surfaces from being resurfaced.
2. Ensure straight even termination of resurfacing/topcoat materials on wall edges and flush with embedded steel. The Contractor must follow the minimum and maximum recoat.
3. Limitation times and related temperature range restrictions between successive lifts for all products specified herein per Manufacturer's stated requirements.
4. All equipment and procedures used for resurfacing system application shall be as recommended by the Manufacturer. Unless specified elsewhere herein, the Contractor shall comply with the Manufacturer's most recent written instructions with respect to the following:
    a. Mixing of All Materials.
    b. Protection and Handling of All Materials.
    c. Recoat Limitation and Cure Times.
    d. Minimum Ambient and Substrate Temperatures, Substrate's Degree of dryness, Relative Humidity, and Dew Point of Air.
    e. Application.
    f. Final Curing.
    g. Use of Proper Application Equipment.
5. Curing of Resurfacing System:

    The applied resurfacing system shall be protected from damage during curing and shall be cured as recommended by the Manufacturer. Ambient conditions shall be controlled by the Contractor during curing to ensure the minimum air temperature and minimum relative humidity as required by the Manufacturer is maintained.

B. Patching and Surfacing the Concrete:

1. Predampen concrete surfaces prior to applying Tnemec Series 217 MortarCrete and Tnemec Series 218 MortarClad.
2. Trowel apply Tnemec Series 217 MortarCrete on all ceilings, walls and floors as necessary to fill all large spalls, deep voids, greater than ¼" deep and wide, and rebuild concrete at joints etc.
3. Apply Tnemec Series 217 MortarCrete in maximum 1-1/2" lifts (layers) filling deepest areas first. (Reference Series 217 Application Guide. For additional information reference International Concrete Repair Institute (ICRI) Guidelines No. 310.1R (formerly No. 03730), "Guide for Surface Preparation for Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion," or No. 310.2 (formerly No. 03732), "Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Overlays," and the American Concrete Institute (ACI) RAP- Bulletin 6, "Field Guide to Concrete Repair Application Procedures: Vertical and Overhead Spall Repair by Hand Application".
4. Trowel apply Tnemec Series 218 MortarClad on all ceilings, walls, and floors as necessary to fill bug holes, and uniformly surface uneven concrete with exposed aggregate.
5. Apply Tnemec Series 218 MortarClad at minimum 1/16" and max ¼" as a surfacer and Max ½" as a hole filler.
6. Do not apply successive lifts until previous lift has cured for 12 hours minimum but not longer than 24 hours at 75ºF. If 24 hours has elapsed re-scarify surfaces to receive additional resurfacing materials.

C. Chemical Resistant Lining

1. General Note: The Contractor is advised that with all thick-film, quick curing materials applied to concrete surfaces, outgassing of the concrete can occur. Possible remedies include applying materials when the temperature of the concrete surfaces is descending, or applying a thin (1/8") layer of the specified surfacing material. Other remedies may exist, and may be submitted for the Engineer's approval.
2. When required, apply prime coat of Tnemec Series 201 Epoxoprime to all surfaces to be coated. If material is applied by spray, material will be back-rolled to ensure adequate penetration and sealing of the surface. Schedule application of primer so that mortar will be applied within such a time as the primer has not cured hard. Tnemec Series 201 Epoxoprime is typically required on sound, abrasive blasted concrete, where patching with Tnemec Series 217 MortarCrete or surfacing with Tnemec Series 218 MortarClad is not required.
3. Apply Tnemec Series 434 Perma-Shield H_2S chemical resistant lining to all ceiling, wall and floor areas scheduled to be coated at a nominal thickness of 125 mils. Application shall be either by trowel or spray. If spray applied, material shall be finish-toweled to a hard, dense film.

Note to specifier: *If the expected exposure to H_2S is less than 100-110 ppm, the final gelcoat can be deleted from the system. However, if the exposure is unknown, it is recommended that the gelcoat be utilized.*

4. Topcoat/gelcoat (G435 Perma-Glaze) when used over the Tnemec Series 434 Perma-Shield H_2S lining shall be a minimum of 15.0 mils thick upon cure regardless of the number of coats required.

D. Safety and Ventilation Requirements:

Requirements for safety and ventilation shall be in accordance with SSPC Paint Application Guide No. 3.

3.5 FIELD QUALITY CONTROL INSPECTION AND TESTING

A. Inspection by the Engineer or others does not limit the Contractor's responsibilities for quality control inspection and testing as specified herein or as required by the Manufacturer's instructions.
B. Perform the quality control procedures listed below in conjunction with the requirements of this Section.

1. Inspect all materials upon receipt to ensure that the Manufacturer supplies all.
2. Provide specified storage conditions for the resurfacing system materials, solvents, and abrasives.
3. Inspect and record findings for the degree of cleanliness of substrates using. The pH of the concrete substrate will be measured using pH-indicating papers. PH testing is to be performed once every 50-sq. ft. Acceptable pH values shall be between 10.0 and 11.0 as measured by a full range (1-12) color indicating pH paper with readable color calibrations and a scale at whole numbers (minimum). Use Hydrion Insta-Check Jumbo 0-13 or 1-12 or equal. The paper shall be touched to the surface once using moderate gloved finger pressure. The surface shall not be wiped or moved laterally to disturb the surface during pH testing. Following the one touch, lift the paper vertically to not "wipe" the surface. Compare the color indicated with the scale provided and record the ph.
4. Inspect and record substrate profile (anchor pattern). Surfaces shall be abraded, as a minimum, equal to the roughness of ICRI CSP-5.
5. Measure and record ambient air temperature once every two hours of each shift, using a thermometer and measure and record substrate temperature once every two hours using a surface thermometer.
6. Measure and record relative humidity every two hours of each shift using a sling psychrometer in accordance with ASTM E337.
7. Provide correct mixing of resurfacing materials in accordance with the manufacturer's instructions.
8. Inspect and record that the "pot life" of resurfacing materials are not exceeded during installation.

9. Verify curing of the resurfacing materials in accordance with the Manufacturer's instructions.
10. Upon full cure of the mortar and lining material, and before the topcoat/gelcoat is applied, the installed system shall be checked by high voltage spark detection in accordance with NACE RP0188-88BN to verify a pinhole-free surface. Areas, which do not pass the spark detection test, shall be corrected at no cost to the Owner and rechecked.
11. Upon completion of the lining system installation the lined area shall be cleaned and prepared to permit close visual inspection by the Engineer or the Engineer's Representative. Any and all deficiencies or defective work (not in compliance with this section or related sections) will be marked for repair or removal/replacement by the Contractor at no additional cost to the Owner.

3.6 ACCEPTANCE CRITERIA

A. Acceptance Criteria for Surface Preparation Work:
All surfaces shall be prepared in accordance with the specification and referenced standards therein.

B. Acceptance Criteria for Coating System Application Work

1. Acceptable coating work will be based upon the following:
    a. No pockmarks, trowel marks, depressions, unconsolidated areas, waviness or ridges, pinholes, or holidays in either size or frequency.
    b. No inter-coat bond failures between lifts.
    c. Proper curing of coatings.
2. Resurfaced areas shall pitch to drains.
3. There shall be no areas that puddle when flood tested.
4. The Engineer or Engineer's Representative shall, at their discretion, inspect the following:
    a. Profile and degree of cleanliness of substrate.
    b. Thickness of materials/coverage rate confirmation.
    c. Ambient temperature and humidity requirements and substrate temperature.
    d. Curing and recoat times.
    e. Proper curing of the resurfacing materials.
5. Rework required on any holidays or any other inadequacies found by the Engineer or the Engineer's representative in the quality of the coating work should be marked. Such areas shall be recleaned and reworked by the Contractor according to these specifications and the manufacturer's recommendations at no additional cost to the Owner.
6. The Contractor is responsible for keeping the Engineer informed of all progress so that inspection for quality can be achieved.
7. The Contractor is ultimately responsible for the quality performance of the applied materials and workmanship. Inspections by the Engineer or the Engineer's Representative do not limit this responsibility.

3.7 FINAL INSPECTION

Perform a final inspection to determine whether the resurfacing system work meets the requirements of the specifications. The Engineer and the Engineer's Representative will conduct final inspection with the Contractor.

3.8 CLEANUP

Upon completion of work, the Contractor shall remove surplus materials, equipment, protective coverings, and accumulated rubbish, and thoroughly clean all surfaces and repair any work-related damage. The surrounding surface areas including roadways and all other surfaces shall be restored to their pre-project condition.

Specifier Note: This product guide specification is written according to the Construction Specifications Institute (CSI) Format, including *Master Format*, *Section Format*, and *Page Format*, contained in the CSI *Manual of Practice.*

The section must be carefully reviewed and edited by the Architect to meet the requirements of the project and local building code. Coordinate this section with other specification sections and the drawings.

Delete all "Specifier Notes" when editing this section.

Specifier Notes: This section covers Tnemec high-performance coating systems for commercial facilities.

This specification is only a guide listing various coating system options for various environments and should not be used as a final specification. Additional coating systems not listed in this specification are available, and may be more appropriate for your coating application. To finalize this specification, please contact www.rightergroup.com

Most coatings specified contain organic solvents. Consult Righter Group for compliance to local VOC regulations.

Righter Group, Incorporated
187 Ballardvale Street, Suite A190
Wilmington, MA 01887
Phone: (800) 533-3003 Fax: (800) 988-9824

February 2018