



MEMORANDUM

DATE: July 1, 2022
TO: Reate Davis/Melissa Hoover
FROM: Rus Calhoun
RE: ADDENDUM 001 - FTFA 19-CR36 - REPAIR HANGAR DOORS
BUILDING #130

ADDENDUM 001

SPECIFICATIONS

Specification 08 51 13

Replace Specification in its entirety with attached revised specification.

Specification 08 34 16.10

2.1.7 – Delete “12 gauge” insert “14 gauge”

2.1.9.3 – Vertical Floating Head Top Guide Rollers - Delete in its entirety

2.3.4 – Third sentence, delete “keted” insert “keyed”

2.4.1 – Delete “Section 09 97 13.27” insert “Section 09 96 00”

3.1.1 – Delete “Section 09 97 13.27” insert “Section 09 96 00”

3.2.1 – Manufacturer’s Field Services add sentence: “This includes periodic inspections during construction and commissioning at end of project.”

Specification 09 06 00 Schedules for Finishes

2.2.1.2 – Delete “Elastomeric Paint”

2.1.4 Primer – Delete “Section 09 97 13.27” and insert “Section 09 96 00 High Performance Coatings”

2.4.1 Ferrous Metal – In all three locations, delete “Section 09 97 13.27” and insert “Section 09 96 00 High Performance Coatings”

Specification 09 90 00

Section 3.6.1.e., page 16 – Delete paragraph 3.6.1.e

Add new Specification 09 96 00 High Performance Coatings

~ End of Specification Addendum 001 Items ~

DRAWINGS

The following drawings were modified, see attached:

G001	GENERAL INFORMATION
S-001	GENERAL NOTES AND WIND LOAD DIAGRAM
S-401	FOUNDATION MODIFICATION DETAILS
A102	DEMOLITION ELEVATIONS
A301	NEW WORK ELEVATIONS
A302	ENLARGED ELEVATION
A401	WALL SECTIONS AND DETAILS
A402	DETAILS
P-101	HANGAR DOOR TRACK DRAINAGE PLAN-NORTH
P-401	ENLARGED HANGAR DOOR TRACK DRAINAGE PLAN-NORTH
P-402	ENLARGED HANGAR DOOR TRACK DRAINAGE PLAN-SOUTH
P-501	HANGAR DOOR TRACK DRAINAGE DETAILS

~ End of Drawing Addendum 001 Items ~

SECTION 08 51 13

ALUMINUM WINDOWS
05/11

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ALUMINUM ASSOCIATION (AA)

AA DAF45 (2003; Reaffirmed 2009) Designation System for Aluminum Finishes

AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA)

AAMA 1302.4 (1973) Specifications for Forced-Entry Resistant Aluminum Prime Windows

AAMA 1503 (2009) Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections

AAMA 2603 (2017a) Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels

AAMA 2604 (2017a) Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels

AAMA 2605 (2017a) Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels

AAMA 611 (2014) Voluntary Specification for Anodized Architectural Aluminum

AAMA 701/702 (2011) Voluntary Specification for Pile Weatherstripping and Replaceable Fenestration Weatherseals

AAMA 902 (2016) Voluntary Specification for Sash Balances

AAMA WSG.1 (1995) Window Selection Guide

AAMA/WDMA/CSA 101/I.S.2/A440 (2011; Update 1 2014) North American Fenestration Standard/Specification for

Windows, Doors, and Skylights

ASTM INTERNATIONAL (ASTM)

ASTM A276/A276M	(2017) Standard Specification for Stainless Steel Bars and Shapes
ASTM E1300	(2016) Standard Practice for Determining Load Resistance of Glass in Buildings
ASTM F1642/F1642M	(2017) Standard Test Method for Glazing and Glazing Systems Subject to Airblast Loadings
ASTM F2248	(2012) Standard Practice for Specifying an Equivalent 3-Second Duration Design Loading for Blast Resistant Glazing Fabricated with Laminated Glass

INTERNATIONAL WINDOW CLEANING ASSOCIATION (IWCA)

IWCA I-14.1	(2001) Window Cleaning Safety Standard
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NATIONAL FENESTRATION RATING COUNCIL (NFRC)

NFRC 100	(2014) Procedure for Determining Fenestration Product U-Factors
NFRC 200	(2014) Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 101	(2018; TIA 18-1) Life Safety Code
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1.2 CERTIFICATION

Each prime window unit must bear the AAMA Label warranting that the product complies with AAMA/WDMA/CSA 101/I.S.2/A440. Certified test reports attesting that the prime window units meet the requirements of AAMA/WDMA/CSA 101/I.S.2/A440, including test size, will be acceptable in lieu of product labeling.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.

SD-02 Shop Drawings

Windows; G, RO

Fabrication Drawings

SD-03 Product Data

Windows; G, RO

Hardware; G, RO

Fasteners; G, RO

Window Performance; G, RO

Thermal-Barrier Windows; G, RO

Mullions; G, RO

Applied Architectural Muntions; G, RO

Weatherstripping; G, RO

Accessories; G, RO

Adhesives

Submit manufacturer's product data, indicating VOC content.

Thermal Performance; G, RO

SD-04 Samples

Finish Sample

Window Sample

SD-05 Design Data

Structural Calculations for Deflection; G, RO

Design Analysis; G, RO

Submit design analysis with calculations showing that the design of each different size and type of aluminum window unit and its anchorage to the structure meets UFC 4-010-01 Standard 10 and wind loads. Calculations verifying the structural performance of each window proposed for use, under the given loads, must be prepared and signed by a registered Professional Engineer. The window components and anchorage devices to the structure, as determined by the design analysis, must be reflected in the shop drawings.

SD-06 Test Reports

Minimum Condensation Resistance Factor

Resistance to Forced Entry

The test results must demonstrate the ability of each window

proposed for use to meet UFC 4-010-01 Standard 10 and wind loads.

SD-10 Operation and Maintenance Data

Windows, Data Package 1; G, RO

Submit in accordance with Section 01 78 23 OPERATION AND MAINTENANCE DATA.

1.4 QUALITY ASSURANCE

1.4.1 Shop Drawing Requirements

Provide drawings that indicate elevations of windows, full-size sections, thickness and gages of metal, fastenings, proposed method of anchoring, size and spacing of anchors, details of construction, method of glazing, details of operating hardware, mullion details, method and materials for weatherstripping, installation details, and other related items.

1.4.2 Sample Requirements

1.4.2.1 Finish Sample Requirements

Submit color chart of standard factory color coatings when factory-finish color coating is to be provided.

1.4.2.2 Window Sample Requirements

Submit one full-size corner of each window type proposed for use. Where screens or weatherstripping is required, fit sample with such items that are to be used.

1.4.3 Design Data Requirements

Submit calculations to substantiate compliance with deflection requirements, UFC 4-010-01 Standard 10 and wind loads. A registered Professional Engineer must provide calculations.

Submit design analysis with calculations showing that the design of each different size and type of aluminum window unit and its anchorage to the structure meets the requirements of UFC 4-010-01 Standard 10 and wind loads. Calculations verifying the structural performance of each window proposed for use, under the given loads, must be prepared and signed by a registered professional engineer. Reflect the window components and anchorage devices to the structure, as determined by the design analysis, in the shop drawings.

1.4.4 Test Report Requirements

Submit test reports for each type of window attesting that identical windows have been tested and meet the requirements specified herein for conformance to AAMA/WDMA/CSA 101/I.S.2/A440 including test size, and minimum condensation resistance factor (CRF), and resistance to forced and, for ,UFC 4-010-01 Standard 10 and wind loads.

1.5 DELIVERY AND STORAGE

Deliver windows to project site in an undamaged condition. Use care in handling and hoisting windows during transportation and at the jobsite. Store windows and components out of contact with the ground, under a weathertight covering, so as to prevent bending, warping, or otherwise damaging the windows. Repair damaged windows to an "as new" condition as approved. If windows can not be repaired, provide a new unit.

1.6 PROTECTION

Protect finished surfaces during shipping and handling using the manufacturer's standard method. Do not apply coatings or lacquers to surfaces to which caulking and glazing compounds must adhere.

1.7 FIELD MEASUREMENTS

Take field measurements prior to preparation of the drawings and fabrication.

1.8 PERFORMANCE REQUIREMENTS

1.8.1 Wind Loading Design Pressure

Design window components, including mullions, hardware, and anchors, to withstand wind-loading design pressures as shown on structural drawings.

1.8.2 Tests

Test windows proposed for use in accordance with AAMA/WDMA/CSA 101/I.S.2/A440 for the particular type and quality window specified.

Perform tests by a nationally recognized independent testing laboratory equipped and capable of performing the required tests. Submit the results of the tests as certified laboratory reports required herein.

Minimum design load for a uniform-load structural test must be 50 psf.

1.9 DRAWINGS

Submit the Fabrication Drawings for aluminum window units showing complete window assembly including hardware, weatherstripping, and subframe assembly details.

1.10 WINDOW PERFORMANCE

Aluminum windows must meet the following performance requirements. Perform testing requirements by an independent testing laboratory or agency.

1.10.1 Structural Performance

- A. Structural Performance: Provide aluminum windows capable of withstanding the effects of the following loads, based on testing units representative of those indicated for Project that pass AAMA/WDMA 101/I.S.2/NAFS, Uniform Load Structural Test:
 1. Design Wind Loads: Determine design wind loads applicable to

Project from basic wind speed indicated in miles per hour at 33 feet above grade, according to ASCE 7, Section 6.5, "Method 2-Analytical Procedure," based on mean roof heights above grade indicated on Drawings.

- a. Basic Wind Speed: Per structural drawings.
- b. Importance Factor: Per structural drawings.
- c. Exposure Category: Per structural drawings.

2. Deflection: Design glass framing system to limit lateral deflections of glass edges to less than 1/175 of glass-edge length or 3/4 inch, whichever is less, at design pressure based on testing performed according to AAMA/WDMA 101/I.S.2/NAFS, Uniform Load Deflection Test or structural computations.

1.10.2 Minimum Antiterrorism Performance

Windows must meet the minimum antiterrorism performance as specified in UFC 4-010-01 Standard 10. Conformance to the performance requirements must be validated by product submittal data.

1.10.3 Air Infiltration

Air infiltration must not exceed the amount established by AAMA/WDMA/CSA 101/I.S.2/A440 for each window type.

1.10.4 Water Penetration

Water penetration must not exceed the amount established by AAMA/WDMA/CSA 101/I.S.2/A440 for each window type.

1.10.5 Thermal Performance

Non-residential aluminum windows (including frames and glass) must be certified by the National Fenestration Rating Council with a whole-window Solar Heat Gain Coefficient (SHGC) maximum of .31 determined according to NFRC 200 procedures and a U-factor maximum of 0.60 Btu/hr-ft²-F in accordance with NFRC 100.

1.11 QUALIFICATION

Window manufacturer must specialize in designing and manufacturing the type of aluminum windows specified in this section, and have a minimum of 10 years of documented successful experience. Manufacturer must have the facilities capable of meeting contract requirements, single-source responsibility and warranty.

1.12 WARRANTY

Provide Manufacturer's standard performance guarantees or warranties that extend beyond a 1 year period.

PART 2 PRODUCTS

2.1 PRODUCT SUSTAINABILITY CRITERIA

For products in this section, where applicable and to extent allowed by performance criteria, provide and document the following:

2.2 WINDOWS

Provide prime windows that comply with AAMA/WDMA/CSA 101/I.S.2/A440 and the requirements specified herein. In addition to compliance with AAMA/WDMA/CSA 101/I.S.2/A440, window framing members for each individual light of glass must not deflect to the extent that deflection perpendicular to the glass light exceeds L/175 of the glass edge length when subjected to uniform loads at specified design pressures. Provide Structural calculations for deflection to substantiate compliance with deflection requirements. Provide windows of types, performance classes, performance grades, combinations, and sizes indicated. Design windows to accommodate hardware, glass, weatherstripping, applied muntins, and accessories to be furnished. Each window must be a complete factory assembled unit with or without glass installed. Dimensions shown are minimum.

2.2.1 Glass and Glazing

Materials are specified in Section 08 81 00 GLAZING.

2.2.2 Caulking and Sealing

Are specified in Section 07 92 00 JOINT SEALANTS.

2.2.3 Weatherstripping

AAMA/WDMA/CSA 101/I.S.2/A440.

2.3 FABRICATION

Fabrication of window units must comply with AAMA/WDMA/CSA 101/I.S.2/A440.

2.3.1 Provisions for Glazing

Design windows and rabbets suitable for glass thickness shown or specified.

For minimum antiterrorism windows, attach glazing to its supporting frame using structural silicone sealant or adhesive glazing tape in accordance with ASTM F2248.

2.3.2 Weatherstripping

Provide for ventilating sections of all windows to ensure a weather-tight seal meeting the infiltration requirements specified in AAMA/WDMA/CSA 101/I.S.2/A440. Provide easily replaceable factory-applied weatherstripping. Use molded vinyl, molded or molded-expanded neoprene or molded or expanded Ethylene Propylene Diene Terpolymer (EPDM) compression-type weatherstripping for compression contact surfaces. Use treated woven pile or wool, or polypropylene or nylon pile bonded to nylon fabric and metal or plastic backing strip weatherstripping for sliding surfaces. Do not use neoprene or polyvinylchloride weatherstripping where exposed to direct sunlight.

2.3.3 Fasteners

Use window manufacturer's standard for windows, trim, and accessories. Self-tapping sheet-metal screws are not acceptable for material more than 1/16 inch thick.

2.3.4 Applied Architectural Muntins

1. Basis-of-Design: Bacon and Van Buskirk Muntin system. Grids are applied to exterior face of window only. Basis-of-Design: Bacon & Van Buskirk Champaign, Illinois phone: 217-356-6471, fax: 217-352-7267 www.bvbglass.com.

2.3.4.1 Warranty

Fully-assembled aluminum muntins grids shall be finished to match the aluminum frame it is placed within. Finish warranty of the aluminum framing system shall apply to the aluminum muntin grids.

2.3.4.2 Muntin Attachment

Screw-Attached System: Fully-assembled Muntin grids shall have a sloped perimeter anchoring flange member profiled to resemble the mid-muntins and must not interfere with the adjacent glazing vinyl. Muntin grids shall be screw-anchored at no less than at a total of four locations on the sides and/or top of the grids to the surrounding framing. Anchor screws shall be rust-proof aluminum or nickel and be removable by maintenance crews to allow for future glass washing or needed glass replacement. Anchor screws shall be touched-up to match the aluminum framing after installation as needed, and not be anchored through the sill or in a position as to cause leakage within the adjacent framing. Grids shall be manufactured to be approximately 1/16" to 1/8" smaller in width and height than the 'daylight opening' of the glazing area, be centered in width when installing, and be anchored up tight to the top of the opening so water and cleaning solutions may have a positive flow under the grid when running down glass surfaces. Clear or same-colored silicone cushion 'buttons' shall be applied on all grid intersections where the muntin rests against glass when the muntin grids are placed against each glass surface so as to prevent noise and allow for positive water-wash.

2.3.4.3 Samples

Manufacturers' samples of fully-assembled applied aluminum muntin grids must be reviewed and approved prior to bid. Mock-up of fully-assembled grids is required for architectural approval prior to muntins being permanently installed. Mock-ups may be incorporated within permanent construction with architect's approval. Contact information for Basis-of-Design: Bacon & Van Buskirk Champaign, Illinois phone: 217-356-6471, fax: 217-352-7267 www.bvbglass.com.

2.3.5 Adhesives

Provide joint sealants as specified in Section 07 92 00 JOINT SEALANTS. For interior application of joint sealants, comply with applicable regulations regarding reduced VOC's, and as specified in Section 07 92 00 JOINT SEALANTS.

2.3.6 Drips and Weep Holes

Provide continuous drips over heads of top ventilators. Where fixed windows adjoin ventilators, drips must be continuous across tops of fixed windows. Provide drips and weep holes as required to return water to the outside.

2.3.7 Combination Windows

Windows used in combination must be factory assembled of the same class and grade. Where factory assembly of individual windows into larger units is limited by transportation considerations, prefabricate, match mark, transport, and field assemble.

2.3.8 Accessories

Provide windows complete with necessary hardware, fastenings, clips, fins, anchors, glazing beads, and other appurtenances necessary for complete installation and proper operation. Furnish extruded aluminum subframe receptors and subsill with each window unit. Provide extruded architectural muntin grid system as shown on Drawings.

2.3.8.1 Hardware

AAMA/WDMA/CSA 101/I.S.2/A440. The item, type, and functional characteristics must be the manufacturer's standard for the particular window type. Provide hardware of suitable design and of sufficient strength to perform the function for which it is used. Equip all operating ventilators with a lock or latching device which can be secured from the inside.

2.3.8.2 Fasteners

Provide concealed anchors of the type recommended by the window manufacturer for the specific type of construction. Anchors and fasteners must be compatible with the window and the adjoining construction. Provide a minimum of three anchors for each jamb located approximately 6 inches from each end and at midpoint.

2.3.9 Finishes

Exposed aluminum surfaces must be factory finished with an anodic coating. Color as indicated in Specification 09 06 00 Schedule for Finishes. All windows must have the same finish.

2.3.9.1 Anodic Coating

Clean exposed aluminum surfaces and provide an anodized finish conforming to AA DAF45 and AAMA 611. Finish must be:

- b. Architectural Class I (0.7 mil or thicker), designation orAA-M10-C22-A41, clear (natural)A42, integral color or A44, electrolytically deposited color anodized.

2.4 THERMAL-BARRIER WINDOWS

Provide thermal-barrier windows, complete with accessories and fittings, where indicated.

Specify material and construction except as follows:

- a. Aluminum alloy must be 6063-T6.
- b. Frame construction, including operable sash, must be factory-assembled and factory-sealed inner and outer aluminum completely separated from metal-to-metal contact. Join assembly by a continuous, concealed, low conductance divider housed in an interlocking extrusion of the inner frame. Metal fasteners, straps, or anchors must not bridge the connection between the inner and outer frame.
- c. Operating hardware for each sash must consist of spring-loaded nylon cushion blocks and pin locks designed to lock in predetermined locations.
- d. Sash must be completely separated from metal-to-metal contact by means of woven-pile weatherstripping, plastic, or elastomeric separation members.
- e. Operating and storm sash must be factory-glazed with the type of glass indicated and of the quality specified in Section 08 81 00 GLAZING.

2.5 MULLIONS

Provide mullions between multiple-window units where indicated.

Provide profiles for mullions and mullion covers, reinforced as required for the specified wind loading, and securely anchored to the adjoining construction. Mullion extrusion will include serrations or pockets to receive weatherstripping, sealant, or tape at the point of contact with each window flange.

Mullion assembly must include aluminum window clamps or brackets screwed or bolted to the mullion and the mullion cover.

Mullion cover must be screw-fastened to the mullion unless otherwise indicated.

Mullion reinforcing members must be fabricated of the materials specified in AAMA/WDMA/CSA 101/I.S.2/A440 and meet the specified design loading.

PART 3 EXECUTION

3.2 INSTALLATION

3.2.1 Method of Installation

Install in accordance with the window manufacturer's printed instructions and details. Build in windows as the work progresses or install without forcing into prepared window openings. Set windows at proper elevation, location, and reveal; plumb, square, level, and in alignment; and brace, strut, and stay properly to prevent distortion and misalignment. Protect ventilators and operating parts against accumulation of dirt and building materials by keeping ventilators tightly closed and locked to frame. Bed screws or bolts in sill members, joints at mullions, contacts of windows with sills, built-in fins, and subframes in mastic sealant of a type recommended by the window manufacturer. Install and caulk windows in a

manner that will prevent entrance of water and wind. Fasten insect screens securely in place.

Any materials that show visual evidence of biological growth due to the presence of moisture must not be installed on the building project.

3.2.2 Dissimilar Materials

Where aluminum surfaces are in contact with, or fastened to masonry, concrete, wood, or dissimilar metals, except stainless steel or zinc, protect the aluminum surface from dissimilar materials as recommended in the Appendix to AAMA/WDMA/CSA 101/I.S.2/A440. Do not coat surfaces in contact with sealants after installation with any type of protective material.

3.2.3 Anchors and Fastenings

Make provision for securing units to each other, to masonry, and to other adjoining construction. Windows installed in masonry walls must have head and jamb members designed to recess into masonry wall not less than 7/16 inch.

3.2.4 Adjustments After Installation

After installation of windows and completion of glazing and field painting, adjust all ventilators and hardware to operate smoothly and to provide weathertight sealing when ventilators are closed and locked. Lubricate hardware and operating parts as necessary. Verify that products are properly installed, connected, and adjusted.

3.3 CLEANING

Clean interior and exterior surfaces of window units of mortar, plaster,

paint spattering spots, and other foreign matter to present a neat appearance, to prevent fouling of weathering surfaces and weather-stripping, and to prevent interference with the operation of hardware. Replace all stained, discolored, or abraded windows that cannot be restored to their original condition with new windows.

-- End of Section --

SECTION 09 96 00

HIGH-PERFORMANCE COATINGS

11/14

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM SI10 (2016) American National Standard for Use of the International System of Units (SI): The Modern Metric System

MASTER PAINTERS INSTITUTE (MPI)

MPI ASM (2019) Architectural Painting Specification Manual

SOCIETY FOR PROTECTIVE COATINGS (SSPC)

SSPC 7/NACE No.4 (2007) Brush-Off Blast Cleaning

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

QPL-TNT-AP-28 (2004) Paint, Aluminum, Heat Resisting (1200 Degrees F)

1.2 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are [for Contractor Quality Control approval.] [for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government.] Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Equipment List; G, RO

SD-03 Product Data

Epoxy Coatings; G, RO

Polyurethane Coatings; G, RO

SD-04 Samples

Color Chips; G, RO

SD-07 Certificates

Epoxy Coatings; G, RO

Polyurethane Coatings; G, RO

Manufacturer's Printed Instructions; G, RO

1.3 QUALITY CONTROL

Comply with Master Painters Institute (MPI) Standards indicated and listed in "MPI Approved Products List." Comply with the requirements in "MPI Architectural Painting Specification Manual" before any project is started.

Submit an equipment list consisting of a list of proposed equipment to be used in performance of construction work.

Submit three color chips 3-inch by 4-inch or manufacture's pull-down of each finish color and gloss as scheduled.

1.4 DELIVERY, STORAGE, AND HANDLING

Deliver special coating materials to the project in their original containers bearing manufacturer's name, descriptive label, and coating formulations. Provide new and unopened containers.

Store special coating materials in tightly closed containers in a covered, well-ventilated area where they are not exposed to excessive heat, fumes, sparks, flame, or direct sunlight. Protect water-based coatings against freezing.

Store solvents, thinners, and equipment cleaners with the same care as the coating materials with ambient temperatures continuously maintained at a minimum 45 degrees F.

PART 2 PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

Submit manufacturer's catalog data including manufacturer's name and identification. Include detailed data analysis of each special coating material required for the project, with all the coating constituents measured as percentages of the total weight of the coating. Also provide manufacturer's data concerning application, thinning, and average coverage per gallon

2.2 MATERIALS

2.2.1 Epoxy Coatings

Conform to MPI ASM, No. 116 for epoxy coatings.

Resins for finish coats are based on a polyamide-cured, epoxy-resin material. Apply finish coats with a dry-film thickness of not less than 4.5 to 5 mils per coat. Finish color and gloss are as indicated.

2.2.1.1 Ferrous and Galvanized Metal Surface Coatings

Coatings on ferrous and galvanized metal surfaces consist of a prime coat and not less than two finish coats. Comply with MPI ASM, No. 101 for an epoxy zinc rich primer with a metallic-zinc pigment for the substrate to be coated and the end use of the coated surface. Basis-of-Design: ZRC Cold Galvanizing Compound, www.zrcworldwide.com. Ensure resin solids and zinc pigment are not less than 90 percent of the total weight of the coating material. Apply prime coat with a total dry-film thickness of not less than 4 mils. Provide a two component epoxy-based finished coat.

PART 3 EXECUTION

3.1 PREPARATION

3.1.1 Surface Preparation

Protect adjacent materials and equipment against damage from spillage, dripping, and spatter of coating materials. Leave clean building materials and equipment with all damaged surfaces corrected. Provide "WET PAINT" signs to indicate newly painted surfaces.

Protect work of other trades against damage from coating operation. Correct damage by cleaning, repairing, replacing, and recoating, as approved by the Contracting Officer, and leave in an undamaged condition. At completion of construction activities of other trades, touch up and restore damaged or defaced coated surfaces.

Provide forced ventilation for interior spaces during application and drying of coatings to prevent the buildup of toxic or explosive concentrations of solvent vapors.

Provide fire extinguishers of the required quantity and correct type to combat flammable liquid fires.

Dispose of rags that are used to wipe up coating materials, solvents, and thinners by drenching with water and placing them in a covered metal container

3.1.2 Cleaning

At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

After completing coating application, clean spattered surfaces. Remove spattered coatings by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

Clean application equipment promptly and thoroughly with a suitable solvent after each use and stored in a clean, covered, well-ventilated container.

3.1.3 Steel Surfaces

3.1.3.1 Steel Surfaces

Remove rust and loose mill scale. Clean using methods recommended in writing by coating manufacturer. Conform to SSPC SP6 for sand blast cleaning.

3.1.3.2 Galvanized-Metal Substrates

Remove grease and oil residue from galvanized sheet metal fabricated from coil stock by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied coatings.

3.1.4 Coating Material Preparation

Mix and prepare coating materials in accordance with the coating manufacturer's printed instructions for applying the particular material and coat. Keep materials which are not in actual use in closed containers.

Coating materials that have been mixed with an automatic shaker are allowed to stand to let air bubbles escape, then given a final hand mixing before application. Stir materials so as to produce a mixture of uniform density. Stir at frequent intervals during application to prevent skinning. Do not stir film which may form on the surface of the material. Remove film and strain, if necessary.

3.1.4.1 Thinning

Thinning is done in accordance with coating manufacturer's printed directions for the particular material and coat.

3.1.4.2 Tinting

Ensure prime and intermediate coats of paint are slightly different tints from the finish coat to facilitate identification of each coat. Tinting is done by the coating manufacturer and clearly identified as to color and coat.

3.2 APPLICATION

Do not perform exterior painting in damp or rainy weather. Interior painting is not allowed until the building is enclosed and has thoroughly dried out. Painting is not allowed below 50 degrees F or above 95 degrees F. Apply paint in accordance with the coating manufacturer's recommendations, and as specified.

Ensure coating application is done by skilled applicators. Apply coatings to clean and properly prepared surfaces. Apply coatings with clean, high-quality application equipment. Allow sufficient time between coats to ensure complete drying and curing. Sand and dust surfaces between coatings, as required, to produce a surface free of visible defects. Lightly sand high gloss coatings and clear finishes between coats to ensure bond of following coats.

Apply coats to the surfaces in an even film. Cloudiness, spotting,

holidays, laps, application marks, runs, sags, and other similar surface imperfections are not acceptable. Remove defective coating applications and re-coat as directed.

Ensure coating lines such as wainscots are sharp, true, and well-defined. Tape may be used to establish coating lines, providing tape is removed before ragging or sawtooth edges form.

Ensure surfaces, including edges, corners, crevices, welds, and other similar changes in surface plane, meet the dry-film thickness not less than specified.

3.2.1 Brush Application

Use clean, proper size brushes for high-quality application of the specified coating materials. Brush out slow-dry coatings. Brush out quick-dry coatings only enough to spread out evenly.

3.2.2 Roller Application

Use clean roller covers of the proper nap length, nap texture, and material for high-quality application of the specified coating materials.

Ensure roller application is equivalent in all respects to the same coats applied by high-quality brush application.

3.3 FIELD QUALITY CONTROL

3.3.1 Field Test

Government may take dry-film tests from time to time on finished surfaces. Apply additional coatings to surfaces where there is less than the minimum specified dry-film thickness.

3.3.2 Repairing

Remove damaged and unacceptable portions of completed work and replace with new work to match adjacent surfaces at no additional cost to the Government.

-- End of Section --