

SECTION 05 12 13 - ARCHITECTURALLY EXPOSED STRUCTURAL STEEL FRAMING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Architecturally exposed structural steel (AESS) at locations indicated on Drawings.

B. Related Requirements:

1. Refer to Division 01 Sections for requirements regarding:
 - a. LEED credit achievement goals as summarized by the LEED Scorecard attached to Section 01 81 13 "Sustainable Design Requirements."
 - b. Requirements for documentation of LEED credits.
 - c. Payment application requirements as they relate to LEED documentation requirements.
2. Section 01 91 19.43 "Exterior Enclosure Commissioning" for requirements related to exterior enclosure commissioning website, checklists, submittals, mockups, field observations, and testing".
3. Section 07 81 23 "Intumescent Fireproofing" for fire protection of AESS.

1.2 DEFINITIONS

A. AESS: Architecturally exposed structural steel.

B. Categories: As designated by ANSI/AISC 303, Section 10.

1. Category C AESS: AESS that has custom aesthetic requirements as defined in this Section and identified with the designation AESS-C#.

C. Coatings: Standard coating terms defined in ASTM D 16 apply to this Section.

1. Satin refers to low sheen finish with a gloss range between 10 and 20 when measured at a 60-degree meter.
2. Semigloss refers to medium-sheen finish with a gloss range between 35 and 70 when measured at a 60-degree meter.

1.3 COORDINATION

- A. Coordinate surface preparation requirements for shop-primed items.
- B. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
 - 1. Filler.
 - 2. Primer.
 - 3. Etching cleaner.
 - 4. Coatings.
- B. Sustainable Design Submittals:
 - 1. Completed "LEED Criteria Worksheet," for each component material of the product or assembly used in the installation of Work of this Section. Refer to Section 01 81 13 "Sustainable Design Requirements".
 - 2. Product Data: For coatings, indicating VOC.
 - 3. Laboratory Test Reports: For coatings, indicating compliance with requirements for low-emitting materials.
- C. Shop Drawings: Show fabrication of AESS components. Shop Drawings for structural steel may be used for AESS provided that items of AESS are specifically identified and requirements below are met.
 - 1. Identify AESS category for each steel member and connection, including transitions between AESS categories and between AESS and non-AESS.
 - 2. Include details of cuts, connections, splices, camber, holes, and other pertinent data.
 - 3. Include embedment Drawings.
 - 4. Indicate orientation of mill marks and HSS seams.

5. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld. Show backing bars that are to be removed and supplemental fillet welds where backing bars are to remain. Indicate grinding, finish, and profile of welds.
6. Indicate exposed surfaces and edges and surface preparation being used.
7. Indicate special tolerances and erection requirements.
8. Indicate weep holes for HSS and vent holes for galvanized HSS.
9. Indicate surface preparation, primer, and coating requirements, including systems specified in other Sections.

D. Samples:

1. Submit Samples to set quality standards for AESS.
 - a. Two steel plates, 3/8 by 8 by 4 inches, with long edges joined by a groove weld and with weld ground smooth. Include half of the sample finished with intumescent fireproofing, including welds.
 - b. Steel plate, 3/8 by 8 by 8 inches, with one end of a short length of rectangular steel tube, 4 by 6 by 3/8 inches, welded to plate with a continuous fillet weld and with weld ground smooth and blended. Include half of the sample finished with intumescent fireproofing, including welds.
 - c. Round steel tube or pipe, minimum 12 inches long by 4 inches in diameter, welded to a perpendicular steel tube or pipe of same size, with continuous fillet welds and with weld ground smooth and blended. Include half of the sample finished with intumescent fireproofing, including welds.
2. Coatings: For each type of coating system and each color and gloss of topcoat indicated.
 - a. Provide stepped Samples, defining each separate coat, including primers. Use representative colors when preparing Samples for review. Resubmit until required gloss, color, and texture are achieved.
 - b. Provide a list of materials and applications for each coat of each Sample. Label each Sample for location and application.
 - c. Submit paint samples on actual substrate to be painted, 12 inches square, of each color and texture required.

- E. Product List: Cross-reference to coating system and locations of application areas. Use same designations indicated on Drawings and in schedules. Include color designations.

1.6 INFORMATIONAL SUBMITTALS

- A. Coating Compatibility Certificates: From manufacturers of topcoats applied over shop primers, certifying that shop primers are compatible with topcoats.

1.7 QUALITY ASSURANCE

- A. Single Source Responsibility: Entity responsible for erection and installation of steel substrates shall repair damaged high-performance coatings as specified in this Section and as directed by high-performance coating manufacture, complying with established warranties.
- B. Fabricator Qualifications: A qualified fabricator that participates in the AISC Quality Certification Program and is designated an AISC-Certified Plant, Category STD, or is accredited by the IAS Fabricator Inspection Program for Structural Steel (AC 172).
- C. Installer Qualifications: A qualified Installer who participates in the AISC Quality Certification Program, is designated an AISC-Certified Erector, Category ACSE, and is experienced in erecting AESS similar to that indicated on this Project.
- D. Mockups: Build mockups of AESS to set quality standards for fabrication and installation.
 - 1. Build AESS mockups of type and extent shown on Drawings, or if not shown on Drawings, then as directed by Architect. Mockups shall include the following:
 - a. Typical steel connections of steel members, including welds.
 - b. Non-Fire Rated AESS:
 - 1) Include half of the mockup finished with high performance coatings indicated in this Section, including at welds.
 - c. Fire Rated AESS:
 - 1) Include intumescent fireproofing for full extent of mockup, including at welds.
 - 2) Include half of the mockup finished with intumescent fireproofing and half with interior paint finish compatible with intumescent fireproofing, including at welds.
 - 2. Coordinate fire protection requirements with Section 07 81 00 "Applied Fireproofing" and Section 07 81 23 "Intumescent Fireproofing".
 - 3. Coordinate painting requirements compatible with exposed intumescent fireproofing with Section 09 91 23 "Interior Painting."
- E. Testing of High Performance Coating Materials: Owner reserves the right to invoke the following procedure:

1. Owner will engage the services of a qualified testing agency to sample coating materials. Contractor will be notified in advance and may be present when samples are taken. If coating materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
2. Testing agency will perform tests for compliance with product requirements.
3. Owner may direct Contractor to stop applying coatings if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying coating materials from Project site, pay for testing, and recoat surfaces coated with rejected materials. Contractor will be required to remove rejected materials from previously coated surfaces if, on recoating with complying materials, the two coatings are incompatible.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Use special care in handling AESS to prevent twisting, warping, nicking, and other damage during fabrication, delivery, and erection. Store materials to permit easy access for inspection and identification. Keep AESS members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect AESS members and packaged materials from corrosion and deterioration.
 1. Do not store AESS materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

1.9 FIELD CONDITIONS

- A. Field Measurements: Where AESS is indicated to fit against other construction, verify actual dimensions by field measurements before fabrication.

1.10 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer and Installer agree(s) to repair or replace components of high-performance coating systems that fail in materials or workmanship within the specified period.
 1. Warranty Period: 15 years from date of Final Acceptance.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Comply with requirements of ANSI/AISC 303, Sections 1 through 9 and as modified in Section 10, "Architecturally Exposed Structural Steel."
- B. For field applications that are inside the weatherproofing membrane: Paints and Coatings must be tested and determined compliant in accordance with California Department of Public Health (CDPH) Standard Method v1.2-2017, using the applicable exposure scenario. The default scenario is the private office scenario.
- C. All paints and coatings wet-applied on site must meet the applicable VOC limits of the California Air Resources Board (CARB) 2007, Suggested Control Measure (SCM) for Architectural Coatings, or the South Coast Air Quality Management District (SCAQMD) Rule 1113, effective June 3, 2011.

2.2 FILLER

- A. Polyester filler intended for use in repairing dents in automobile bodies.

2.3 PRIMER

- A. Steel Primer:
 - 1. For Fire Rated AESS scheduled to receive intumescent fire-resistive materials: Comply with Article "Shop Coatings" in Section 05 12 00 "Structural Steel".
 - 2. For Non-Fire Rated AESS and Fire Rated AESS not scheduled to receive intumescent fire-resistive materials: Comply with "Shop Priming" in this Section.

2.4 FABRICATION

- A. Shop fabricate and assemble AESS to the maximum extent possible. Locate field joints at concealed locations if possible. Detail assemblies to minimize handling and to expedite erection.
 - 1. Use special care handling and fabricating AESS before and after shop painting to minimize damage to shop finish.
- B. Category AESS-C Custom: As defined below for each area of the Project.

1. Areas of the Project:
 - a. AESS-C1: "Tree Trunk" Bundled Y-Columns, V-Columns, and round columns at all levels.
 - b. AESS-C2: Braces, columns, and girts along Grid B. Steel tube horizontal girts for north and south curtain walls. Exposed structural steel framing including braced frames, columns, girts, and struts, adjacent to escalator openings.
 - c. AESS-C3: Exposed brace frames at arrivals levels; at grids 2, 6, 16, 20 H.4, and S, and including escalator openings.
 - d. AESS-C4: Steel tube horizontal girts at curtain wall supports at departures level.
 - e. AESS-C5: Infill framing at interior cantilevers at ticketing canopies.

2. General: For all AESS-C#:
 - a. Comply with overall profile dimensions of AWS D1.1/D1.1M for welded built-up members. Keep appearance and quality of welds consistent. Maintain true alignment of members without warp exceeding specified tolerances.
 - b. Prepare surfaces according to Part 2 "Shop Priming" Article and SSPC-SP 6 (WAB)/NACE WAB-3.
 - c. Grind sheared, punched, and flame-cut edges to remove burrs and provide smooth surfaces and eased edges.
 - d. Make intermittent welds appear continuous, using filler or additional welding.
 - e. Seal weld open ends of hollow structural sections with 3/8-inch closure plates.
 - f. Limit butt and plug weld projections to 1/16 inch.
 - g. Remove weld spatter, slivers, and similar surface discontinuities.
 - h. Remove blemishes and surface irregularities resulting from temporary braces or fixtures by filling or grinding, before cleaning, treating, and shop priming.
 - i. Grind tack welds smooth unless incorporated into final welds.
 - j. Remove backing and runoff tabs, and grind welds smooth.
 - k. Limit as-fabricated straightness tolerance to one-half that permitted for structural-steel materials in ANSI/AISC 303.
 - l. Limit as-fabricated curved structural steel tolerance to that permitted for structural-steel materials in ANSI/AISC 303.
 - m. Limit as-fabricated straightness tolerance of welded built-up members to one-half that permitted by AWS D1.1/D1.1M.
 - n. Conceal fabrication and erection markings from view in the completed structure.
 - o. Make welds uniform and smooth.
 - p. Cut out mill marks from mill material or hide these markings from view in the completed structure. Where neither method is possible, remove mill marks by grinding and filling surfaces as approved by Architect.
 - q. Grind butt and plug welds smooth or fill, removing weld splatter exposed to view.
 - r. Orient HSS seams as indicated on Drawings.
 - s. Fabricate with exposed surfaces smooth, square, and of surface quality approved by Architect.

3. Fireproofing AESS-C#: Where indicated.
 - a. Refer to Section 07 81 00 "Applied Fireproofing" or Section 07 81 23 "Intumescent Fireproofing".
4. AESS-C1: For exposed areas only.
 - a. Conceal fabrication and erection markings from view in the completed structure.
 - b. Treat HSS seams to appear seamless.
 - c. Align and match abutting member cross sections.
 - d. At visible open joints of copes, miters, and cuts, maintain uniform clear gaps of 1/8 inch. At closed joints, maintain uniform contact within 1/16 inch.
 - e. Contour and blend welds and weld transitions between members, removing splatter exposed to view.
 - f. Fill surface imperfections with filler and sand smooth to achieve surface quality approved by Architect.
 - g. Finish: High-performance coating as specified in this Section.
5. AESS-C2: For exposed areas only.
 - a. Conceal fabrication and erection markings from view in the completed structure.
 - b. Align and match abutting member cross sections.
 - c. At visible open joints of copes, miters, and cuts, maintain uniform clear gaps of 1/8 inch. At closed joints, maintain uniform contact within 1/16 inch.
 - d. Fireproofing: Intumescent coating, exposed, smooth.
6. AESS-C3:
 - a. For exposed areas only.
 - 1) Conceal fabrication and erection markings from view in the completed structure.
 - 2) Align and match abutting member cross sections.
 - 3) At visible open joints of copes, miters, and cuts, maintain uniform clear gaps of 1/8 inch. At closed joints, maintain uniform contact within 1/16 inch.
 - 4) Fireproofing: Intumescent coating, exposed, smooth.
 - b. For concealed areas:
 - 1) Steel treatment as indicated in Section 05 12 00 "Structural Steel".
 - 2) Fireproofing: Applied fireproofing.
7. AESS-C4: For exposed areas only.

- a. Conceal fabrication and erection markings from view in the completed structure.
 - b. Finish: High-performance coating as specified in this Section.
8. AESS-C5: For exposed areas only.
- a. Conceal fabrication and erection markings from view in the completed structure.
 - b. Align and match abutting member cross sections.
 - c. At visible open joints of copes, miters, and cuts, maintain uniform clear gaps of 1/8 inch. At closed joints, maintain uniform contact within 1/16 inch.
 - d. Finish: High-performance coating as specified in this Section.

2.5 SHOP CONNECTIONS

- A. Weld Connections: Comply with AWS D1.1/D1.1M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work, and comply with the following:
1. Assemble and weld built-up sections by methods that will maintain true alignment of axes without exceeding specified tolerances.
 2. Use weld sizes, fabrication sequence, and equipment for AESS that limit distortions to allowable tolerances.

2.6 SHOP PRIMING

- A. Shop prime steel surfaces, except the following:
1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches.
 2. Surfaces to be field welded.
 3. Surfaces to receive fire-resistive materials.
- B. Surface Preparation: Clean non-galvanized surfaces to be painted. Remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces according to the following specifications and standards:
1. Clean all surfaces of exposed steel in accordance with SSPC-SP 6 (WAB)/NACE WAB-3.
 2. Cleaning shall be done after fabrication and immediately prior to shop painting or shipment. Apply shop coat of paint within 4 hours after cleaning and before rust bloom occurs.

3. Blast cleaning operations for exposed steel shall not be conducted when the relative humidity of the air is greater than 85 percent or when the surface temperature of the steel is less than 5 degrees F. above the temperature at which condensation will occur, or when these conditions are anticipated, unless otherwise recommended by the primer and paint manufacturer. Remove all traces of blast residue and dust in a manner that will not contaminate the surfaces. Take every precaution to prevent contamination of surfaces. Workmen shall wear gloves free of grease and/or oil when handling blast cleaned steel.
- C. Priming: Immediately after surface preparation, apply primer according to manufacturer's written instructions and at rate recommended by SSPC. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.
 1. Stripe paint corners, crevices, welds, and eased edges.
 2. Apply two coats of shop paint to surfaces that are inaccessible after assembly or erection. Change color of second coat to distinguish it from first.

2.7 COATINGS FOR EXPOSED CARBON STEEL SURFACES

- A. High performance coatings for bare steel substrates.
 1. Location: As indicated on Drawings.
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 1. Tnemec Company, Inc.
 2. PPG Protective & Marine Coatings.
 3. Carboline.
- C. Carbon Steel Surfaces, Shop Finishing:
 1. Materials: Select one of the following:
 - a. Coating System: Metallic or Mica Colors: 4-coat fluoropolymer system composed of zinc-rich primer, modified epoxy intermediate coat, fluoropolymer top coat and manufacturer's recommended clear coat.
 - 1) Basis-of-Design: Subject to compliance with requirements, provide Tnemec Company, Inc. coating system #1 as specified in this Section, or comparable coating systems, acceptable to the Architect, as specified in this Section.
 - b. Primer: Moisture-cured, zinc-rich, aromatic urethane or epoxy primer containing not less than 80 percent zinc pigment by weight in dry film. Provide one of the following:

- 1) System 1: Tnemec; Series 94-H2O Hydro-Zinc.
 - a) Roll apply one coat at 3.0 mils Dry Film Thickness.
 - 2) System 2: PPG; Coraflon ADS 570 Zinc Rich Epoxy Primer
 - a) Roll apply in accordance with manufacturer's written instructions.
 - 3) System 3: Carboline; Carbozinc 859 VOC.
 - a) Roll apply one coat at 5.0 mils Dry Film Thickness.
- c. Intermediate Coat: A two-component, modified epoxy intermediate coat compatible with specified primer and top coat.
- 1) System 1: Tnemec; Series 27WB Typoxy.
 - a) Spray or roll apply one coat at 3.0 to 5.0 mils Dry Film Thickness.
 - 2) System 2: PPG; Coraflon ADS 573/574 Epoxy Intermediate Primer.
 - a) Spray or roll apply at 5.0 mils Dry Film Thickness.
 - 3) System 3: Carboline; Carboguard 60.
 - a) Spray or roll apply one coat at 3.0 to 10.0 Dry Film Thickness.
- d. Top Coat: A fluoropolymer top coating compatible with specified primer coat. Provide in one custom color matching Architect's paint sample; provide one of the following top coat system and matching primer system.
- 1) System 1: Tnemec; Series 1078 Fluoronar Metallic.
 - a) Spray apply one coat at 2.0 to 3.0 mils Dry Film Thickness.
 - b) 60.0 percent SBV minimum fluoropolymer.
 - c) Color: As indicated on Drawings.
 - d) Gloss Level: Semigloss or Satin where indicated on Drawings. Semigloss is acceptable if Gloss is not available.
 - 2) System 2: PPG; Coraflon ADS Intermix Fluoropolymer with Mica Finish.
 - a) Spray apply one coat at 2.2 mils Dry Film Thickness.
 - b) Color: As indicated on Drawings.
 - c) Gloss Level: Gloss or Satin where indicated on Drawings.

- 3) System 3: Carboline; Carboxane 950 Metallic.
 - a) Spray or roll apply one coat at 2.0 to 3.0 mils Dry Film Thickness.
 - b) Color: As indicated on Drawings.
 - c) Gloss Level: Gloss or Satin where indicated on Drawings.
- e. Clear Coat: Clear coat for metallic or mica finishes as recommended by manufacturer.
 - 1) System 1: Tnemec; Series 1079-0763 (satin).
 - a) Spray apply one coat at 1.0 to 2.0 mils Dry Film Thickness.
 - b) Gloss Level: Semigloss or Satin where indicated on Drawings.
 - 2) System 2: PPG; Coraflon ADS Intermix Fluoropolymer with Mica Finish.
 - a) Clear coat is not required.
 - 3) System 3: Carboline; Carboxane 950 Clear.
 - a) Spray apply one coat at 2.0 to 3.0 Dry Film Thickness.
 - b) Color: Clear.
 - c) Gloss Level: Gloss.
2. Do not deliver metal work until shop coats of paint have dried.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify, with steel erector present, elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments for compliance with requirements.
 1. Prepare a certified survey of bearing surfaces, anchor rods, bearing plates, and other embedments, showing dimensions, locations, angles, and elevations.
- B. Examine AESS for twists, kinks, warping, gouges, and other imperfections before erecting.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Provide temporary shores, guys, braces, and other supports during erection to keep AESS secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place unless otherwise indicated.

3.3 ERECTION

- A. Take special care during erection to avoid marking or distorting the AESS and to minimize damage to shop painting. Set AESS accurately in locations and to elevations indicated and according to ANSI/AISC 303 and ANSI/AISC 360.
 - 1. Remove welded tabs that were used for attaching temporary bracing and safety cabling and that are exposed to view in the completed Work. Take care to avoid any blemishes, holes, or unsightly surfaces resulting from the use or removal of temporary elements.
 - 2. Grind tack welds smooth.
 - 3. Remove backing and runoff tabs, and grind welds smooth.
 - 4. Orient bolt heads on the same side of each connection and maintain orientation consistently from one connection to another.
 - 5. Fill weld access holes in AESS with weld metal or filler and grind, or sand smooth to achieve surface quality as approved by Architect.
 - 6. Conceal fabrication and erection markings from view in the completed structure.
- B. In addition to ANSI/AISC 303, Section 10 requirements, comply with the following.
 - 1. Erection of Category AESS-C Custom:
 - a. Erect AESS to the standard frame tolerances specified in ANSI/AISC 303 for non-AESS.
 - b. Comply with AWS D1.1/D1.1M. Keep appearance and quality of welds consistent. Maintain true alignment of members without warp exceeding specified tolerances.
 - c. Remove weld spatter, slivers, and similar surface discontinuities.
 - d. Grind off butt and plug weld projections larger than 1/16 inch.
 - e. Continuous welds shall be of uniform size and profile.
 - f. Ream holes that must be enlarged. Use of drift pins or burning is not permitted. Replace misaligned connection plates where holes cannot be aligned with acceptable appearance.
 - g. Splice members only where indicated on Drawings.
 - h. No torch cutting or field fabrication is permitted.
 - i. Weld profiles, quality, and finish shall be as approved by Architect.
 - j. Make joint welds, including tack welds, appear continuous by filling intermittent welds.

- k. Grind welds smooth.
- l. Oversize welds where ground, contoured, or blended, and grind to provide a smooth transition, matching profile approved by Architect.

3.4 FIELD CONNECTIONS

- A. Weld Connections: Comply with requirements in Paragraph "Weld Connections" in Article "Shop Connections" in this Section.
 - 1. Remove backing bars or runoff tabs; back-gouge and grind steel smooth for AESS.
 - 2. Fill weld access holes in AESS and grind smooth.

3.5 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to inspect AESS as specified in Section 05 12 00 "Structural Steel Framing." The testing agency is not responsible for enforcing requirements relating to aesthetic effect.
- B. Architect will observe AESS in place to determine acceptability relating to aesthetic effect.
- C. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test coatings for dry film thickness.
 - 1. Provide non-destructive testing in accordance with ASTM D 7091, unless otherwise indicated by testing agency. Contractor shall touch up and restore coated surfaces damaged by testing.
 - 2. If test results show that dry film thickness of applied coating does not comply with coating manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with coating manufacturer's written recommendations.

3.6 PROTECTION

- A. Touchup:
 - 1. Painting:
 - a. Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop painting, to comply with SSPC-PA 1 for touching up shop-painted surfaces.
 - 1) Clean and prepare surfaces by SSPC-SP 2 hand-tool cleaning or SSPC-SP 3 power-tool cleaning.

2. Intumescent Fireproofing: Touchup in accordance with Section 07 81 23 "Intumescent Fireproofing".

3.7 SCHEDULE - AESS CATEGORY MATRIX

CATEGORY CHARACTERISTICS

	C1	C2	C3	C4	C5
Surface preparation to SSPC-SP 6	X	X	X	X	X
Sharp edges ground smooth	X	X	X	X	X
Continuous weld appearance	X	X	X	X	X
Standard structural bolts					
Weld spatters removed	X	X	X	X	X
Visual Samples	mock-up required				
One-half standard fabrication tolerances	X	X	X		X
Fabrication marks not apparent	X	X	X	X	X
Welds uniform and smooth	X	X	X	X	X
Mill marks removed	X	X	X	X	X
Butt and plug welds ground smooth and filled	X	X	X	X	X
HSS weld seam oriented <i>per contract documents</i>	X	X	X	X	X
Cross sectional abutting surface aligned	X	X	X		X
Joint gap tolerances minimized	X	X	X		X
All welded connections	X	X	X	X	X
HSS seam not apparent	X				
Welds contoured and blended	X				
Surfaces filled and sanded	X				
Weld show-through minimized					

Additional characteristics may be added for custom elements. The AESS matrix included in Table 10.1 of the 2016 AISC Code of Standard Practice shall be used to specify the required treatment of the elements.

Special care in fabrication and erection

X	X	X	X	X
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CURVED STRUCTURAL MEMBERS

Camber and sweep tolerances shall be equal to or less than straight members

X				
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PRIMER AND FINISH COATINGS

Finish A: Interior Environment - low end finish

Finish B: Interior environment - high end finish

Finish C: Exterior environment - low end finish

Finish D: Exterior environment - high end finish

ARCHITECTURALLY EXPOSED
STRUCTURAL STEEL FRAMING

Package Number: 12

Package Name: Deep Foundations and Steel Superstructure

ACAA Project Number: TBD

Project Manual Volume 3 of 3

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X				

END OF SECTION 05 12 13

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October 9, 2020
Issue #014: 100% CD Set

**Terminal Modernization
Program (TMP) - T2
Pittsburgh, Pennsylvania**

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STRUCTURAL STEEL FRAMING
Package Number: T2
Package Name: Deep Foundations and
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ACAA Project Number: TBD
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