EAST BAY
MUNICIPAL UTILITY DISTRICT

May 5, 2026

ADDENDUM NO. 2

TO PROSPECTIVE BIDDERS OF RFQ NO. 2607, "MAIN WASTEWATER TREATMENT PLANT (MWWTP) SECONDARY REACTORS BUTTERFLY VALVES"

Notice is hereby given that RFQ No. 2607 of the East Bay Municipal Utility District has been revised as set forth below:

1. Under I. STATEMENT OF WORK, A. SCOPE, page 3, 2nd paragraph **is deleted and replaced as shown below**:

   "District intends to award a contract for the fifteen valves of the same manufacturer, to the single lowest cost bidder(s) whose response meets the District's requirements."

2. Under EXHIBIT A – RFQ RESPONSE PACKET, BIDDING SHEET, page 5-8, **is deleted and replaced** with **BIDDING SHEET-Revised,** attached hereto.

   In addition to manufacturer and model information, each bidder must indicate on the bidding sheet the lining type proposed (high solids epoxy or fusion bonded epoxy), per Exhibit F7 – Specification Section 33 12 16.15 – AWWA Butterfly Valves.

3. Under EXHIBIT E – DRAWINGS, the drawing number RFQ#2607-M301 has been **deleted and is replaced with the attached revised drawing RFQ#2607-M301,rev.1**

Sheet No.	Drawing Number	Revision No.
2	RFQ#2607-M301	1

4. Under EXHIBIT F – LIST OF SPECIFICATIONS Table, **after** Exhibit F9 row, **the following row is added, as shown below**:

F10	09 90 00	Painting and Coatings

5. Under EXHIBIT F7 – SECTION 33 12 16.15 AWWA BUTTERFLY VALVES**,**

   a. **PART 1 – GENERAL**, **after** Article 1.1.H.8, page 2, **add** statement 9 as shown below:

      "9. Section 09 90 00 – Painting and Coatings (Exhibit F10)"

b. **PART 2 – PRODUCTS**, **Article 2.1.C.2.d**, page 11, **is deleted and replaced as shown below**:

"d. Discs, except for edges, shall be coated per Section 09 96 56.10 – Fusion Bonded Epoxy Coatings or per Section 09 90 00 – Painting and Coatings, System 4"

c. **PART 2 – PRODUCTS**, Article 2.1.;**I.1**, page 13, **is deleted and replaced as shown below**:

"1. All ferrous metal parts of the valve assembly including actuator (except those made of stainless steel) excluding the seating edge of the disc shall be coated or lined as follows:

a. Lining/in contact with media: Per Specification Section 09 96 56.10 – Fusion Bonded Epoxy Coatings or per Specification Section 09 90 00 – Painting and Coatings, System 4.

b. Coating/exterior: Per Specification Section 09 90 00 – Paintings and Coatings, System 1."

6. Under EXHIBIT F8 - HYDRAULIC AND PNEUMATIC VALVE ACTUATORS, PART 1 – GENERAL, **after** Article 1.1.G.8, page 2, **add** statement 9 as shown below:

"9. Section 09 90 00 – Painting and Coatings"

7. Under EXHIBIT F – LIST OF SPECIFICATIONS, the following **new specification is added in its entirety** and is attached hereto:

Exhibit F10 - 09 90 00 Painting and Coatings

THIS ADDENDUM LETTER MUST BE SUBMITTED WITH THE BID.

Thank you for your cooperation.

Kelley K. Smitch
Manager of Purchasing

BIDDING SHEET-Revised

Cost shall be submitted on this Bid Form as is. The prices quoted shall not include Sales Tax or Use Tax; said tax, wherever applicable, will be paid by the District to the contractor, if licensed to collect, or otherwise directly to the State.

No alterations or changes of any kind to the Bid Form(s) are permitted. RFQ responses that do not comply may be subject to rejection in total. The cost quoted below shall be the cost the District will pay for the term of any contract that is a result of this RFQ process.

Item	Description	Estimated Quantity	Valve Assembly Unit Cost with Lining Option	Extended cost
1	30" Butterfly Valve w/ Chainwheel Operator Connecting RAS A & B, as specified within. Butterfly Valve Manufacturer _____ Model _____ Lining (High solids or fusion bonded epoxy) _____	1 ea.	$ _____	$ _____
2	48" Butterfly Valve w/ Chainwheel Operator for Secondary Influent to Reactor 5, as specified within. Butterfly Valve Manufacturer _____ Model _____ Lining (High solids or fusion bonded epoxy) _____	1 ea.	$ _____	$ _____
3	42" Butterfly Valve w/ Electric Actuator for Secondary Influent to Reactor 5, as specified within. Butterfly Valve Manufacturer _____ Model _____ Lining (High solids or fusion bonded epoxy) _____ Electric Actuator Manufacturer _____ Model _____	1 ea.	$ _____	$ _____

Item	Description	Estimated Quantity	Valve Assembly Unit Cost with Lining Option	Extended cost
4	18” Butterfly Valve w/ Chainwheel Operator for RAS to Reactor 5, as specified within. Butterfly Valve Manufacturer _____ Model _____ Lining (High solids or fusion bonded epoxy) _____	1 ea.	$ _____	$ _____
5	18” Butterfly Valve w/ Electric Actuator for RAS to Reactor 5, as specified within. Butterfly Valve Manufacturer _____ Model _____ Lining (High solids or fusion bonded epoxy) _____ Electric Actuator Manufacturer _____ Model _____	1 ea.	$ _____	$ _____
6	18” Butterfly Valve w/ Handwheel Operator for Reactor 5 Drain, as specified within. Butterfly Valve Manufacturer _____ Model _____ Lining (High solids or fusion bonded epoxy) _____	1 ea.	$ _____	$ _____
7	48” Butterfly Valve w/ Chainwheel Operator for Secondary Influent to Reactor 6, as specified within. Butterfly Valve Manufacturer _____ Model _____ Lining (High solids or fusion bonded epoxy) _____	1 ea.	$ _____	$ _____

Item	Description	Estimated Quantity	Valve Assembly Unit Cost with Lining Option	Extended cost
8	42” Butterfly Valve w/ Electric Actuator for Secondary Influent to Reactor 6, as specified within. Butterfly Valve Manufacturer _____ Model _____ Lining (High solids or fusion bonded epoxy) _____ Electric Actuator Manufacturer _____ Model _____	1 ea.	$ _____	$ _____
9	18” Butterfly Valve w/ Chainwheel Operator for RAS to Reactor 6, as specified within. Butterfly Valve Manufacturer _____ Model _____ Lining (High solids or fusion bonded epoxy) _____	1 ea.	$ _____	$ _____
10	18” Butterfly Valve w/ Electric Actuator for RAS to Reactor 6, as specified within. Butterfly Valve Manufacturer _____ Model _____ Lining (High solids or fusion bonded epoxy) _____ Electric Actuator Manufacturer _____ Model _____	1 ea.	$ _____	$ _____
11	18” Butterfly Valve w/ Handwheel Operator for Reactor 6 Drain, as specified within. Butterfly Valve Manufacturer _____ Model _____ Lining (High solids or fusion bonded epoxy) _____	1 ea.	$ _____	$ _____

Item	Description	Estimated Quantity	Valve Assembly Unit Cost with Lining Option	Extended cost
12	30” Butterfly Valve w/ Pneumatic Actuator for RAS Pump 3, as specified within. Butterfly Valve Manufacturer _____ Model _____ Lining (High solids or fusion bonded epoxy) _____ Pneumatic Actuator Manufacturer _____ Model _____	1 ea.	$ _____	$ _____
13	30” Butterfly Valve w/ Handwheel Operator for RAS Pump 3, as specified within. Butterfly Valve Manufacturer _____ Model _____ Lining (High solids or fusion bonded epoxy) _____	1 ea.	$ _____	$ _____
14	30” Butterfly Valve w/ Pneumatic Actuator for RAS Pump 4, as specified within. Butterfly Valve Manufacture _____ Model _____ Lining (High solids or fusion bonded epoxy) _____ Pneumatic Actuator Manufacturer _____ Model _____	1 ea.	$ _____	$ _____
15	30” Butterfly Valve w/ Handwheel Operator for RAS Pump 4, as specified within. Lining (High solids or fusion bonded epoxy) _____ Butterfly Valve Manufacturer _____ Model _____	1 ea.	$ _____	$ _____
			TOTAL AMOUNT BID	$ _____

VALVE SCHEDULE

EQUIP TAG NO.					QNTY	DESCRIPTION	LOCATION	SIZE	OPERATING & TEST PRESSURE	GASKET MATERIAL	END CONNECTION	ACTUATOR		COATING SPECIFICATION	DRAWING NUMBER	ROTATION TO OPEN	SPARE PARTS
AREA	Sys	TYPE	ID #	MOD								TYPE	SPECIFICATION				
W-45-	RAS-	HV-	020		1	BUTTERFLY VALVE W/ CHAINWHEEL OPERATOR CONNECTING RAS A & B	SOUTH REACTOR GALLERY	30" DIAMTER	150B	BUNA-N-SEAT	GROOVED (MATCH VICTAULIC STYLE 44)	MANUAL; GEAR, CHAINWHEEL	33 12 16.15	09 96 56.10 OR 09 90 00	W4560-M110	COUNTER CLOCKWISE	NONE REQUESTED
W-45-	PEF-	HV-	501		1	BUTTERFLY VALVE W/ CHAINWHEEL OPERATOR FOR SECONDARY INFLUENT TO REACTOR 5	SOUTH REACTOR GALLERY - REACTOR 5	48" DIAMETER	150B	BUNA-N-SEAT	GROOVED (MATCH VICTAULIC STYLE 44)	MANUAL; GEAR, CHAINWHEEL	33 12 16.15	09 96 56.10 OR 09 90 00	W4560-M110	COUNTER CLOCKWISE	NONE REQUESTED
W-45-	PEF-	MOV-	502		1	BUTTERFLY VALVE W/ LIMITORQUE ACTUATOR FOR SECONDARY INFLUENT TO REACTOR 5	SOUTH REACTOR GALLERY - REACTOR 5	42" DIAMETER	150B	BUNA-N-SEAT	GROOVED (MATCH VICTAULIC STYLE 44)	ELECTRIC: GEAR	40 05 57.23	10 96 56.10 OR 09 90 00	W4560-M110	COUNTER CLOCKWISE	NONE REQUESTED
W-45-	RAS-	HV-	503		1	BUTTERFLY VALVE W/ CHAINWHEEL OPERATOR FOR RAS TO REACTOR 5	SOUTH REACTOR GALLERY - REACTOR 5	18" DIAMTER	150B	BUNA-N-SEAT	FLANGE	MANUAL; GEAR, CHAINWHEEL	33 12 16.15	11 96 56.10 OR 09 90 00	W4560-M111	COUNTER CLOCKWISE	NONE REQUESTED
W-45-	RAS-	MOV-	504		1	BUTTERFLY VALVE W/ LIMITORQUE ACTUATOR FOR RAS TO REACTOR 5	SOUTH REACTOR GALLERY - REACTOR 5	18" DIAMTER	150B	BUNA-N-SEAT	FLANGE	ELECTRIC: GEAR	40 05 57.23	12 96 56.10 OR 09 90 00	W4560-M111	COUNTER CLOCKWISE	NONE REQUESTED
W-45-	ML-	HV-	505		1	BUTTERFLY VALVE W/ HANDWHEEL OPERATOR FOR REACTOR 5 DRAIN	NORTH REACTOR GALLERY - REACTOR 5	18" DIAMTER	150B	BUNA-N-SEAT	FLANGE	MANUAL; GEAR, HANDWHEEL	33 12 16.15	13 96 56.10 OR 09 90 00	W4560-M105	COUNTER CLOCKWISE	NONE REQUESTED
W-45-	PEF-	HV-	601		1	BUTTERFLY VALVE W/ CHAINWHEEL OPERATOR FOR SECONDARY INFLUENT TO REACTOR 6	SOUTH REACTOR GALLERY - REACTOR 6	48" DIAMETER	150B	BUNA-N-SEAT	GROOVED (MATCH VICTAULIC STYLE 44)	MANUAL; GEAR, CHAINWHEEL	33 12 16.15	14 96 56.10 OR 09 90 00	W4560-M111	COUNTER CLOCKWISE	NONE REQUESTED
W-45-	PEF-	MOV-	602		1	BUTTERFLY VALVE W/ LIMITORQUE ACTUATOR FOR SECONDARY INFLUENT TO REACTOR 6	SOUTH REACTOR GALLERY - REACTOR 6	42" DIAMETER	150B	BUNA-N-SEAT	GROOVED (MATCH VICTAULIC STYLE 44)	ELECTRIC: GEAR	40 05 57.23	15 96 56.10 OR 09 90 00	W4560-M111	COUNTER CLOCKWISE	NONE REQUESTED
W-45-	RAS-	HV-	603		1	BUTTERFLY VALVE W/ CHAINWHEEL OPERATOR FOR RAS TO REACTOR 6	SOUTH REACTOR GALLERY - REACTOR 6	18" DIAMTER	150B	BUNA-N-SEAT	FLANGE	MANUAL; GEAR, CHAINWHEEL	33 12 16.15	16 96 56.10 OR 09 90 00	W4560-M111	COUNTER CLOCKWISE	NONE REQUESTED
W-45-	RAS-	MOV-	604		1	BUTTERFLY VALVE W/ LIMITORQUE ACTUATOR FOR RAS TO REACTOR 6	SOUTH REACTOR GALLERY - REACTOR 6	18" DIAMTER	150B	BUNA-N-SEAT	FLANGE	ELECTRIC: GEAR	40 05 57.23	17 96 56.10 OR 09 90 00	W4560-M111	COUNTER CLOCKWISE	NONE REQUESTED
W-45-	ML-	HV-	605		1	BUTTERFLY VALVE W/ HANDWHEEL OPERATOR FOR REACTOR 6 DRAIN	NORTH REACTOR GALLERY - REACTOR 6	18" DIAMTER	150B	BUNA-N-SEAT	FLANGE	MANUAL; GEAR, HANDWHEEL	33 12 16.15	18 96 56.10 OR 09 90 00	W4560-M106	COUNTER CLOCKWISE	NONE REQUESTED
W-54-	RAS-	AOV-	301		1	BUTTERFLY VALVE W/ PNEUMATIC ACTUATOR FOR RAS PUMP 3	OPS CENTER BASEMENT - RAS PUMP 3	30" DIAMETER	150B	BUNA-N-SEAT	FLANGE	PNEUMATIC	33 12 16.34	19 96 56.10 OR 09 90 00	W5400-M101.1	COUNTER CLOCKWISE	NONE REQUESTED
W-54-	RAS-	HV-	302		1	BUTTERFLY VALVE W/ HANDWHEEL OPERATOR FOR RAS PUMP 3	OPS CENTER BASEMENT - RAS PUMP 3	30" DIAMETER	150B	BUNA-N-SEAT	FLANGE	MANUAL; GEAR, HANDWHEEL	33 12 16.15	20 96 56.10 OR 09 90 00	W5400-M101.1	COUNTER CLOCKWISE	NONE REQUESTED
W-54-	RAS-	AOV-	401		1	BUTTERFLY VALVE W/ PNEUMATIC ACTUATOR FOR RAS PUMP 4	OPS CENTER BASEMENT - RAS PUMP 4	30" DIAMETER	150B	BUNA-N-SEAT	FLANGE	PNEUMATIC	33 12 16.34	21 96 56.10 OR 09 90 00	W5400-M101.1	COUNTER CLOCKWISE	NONE REQUESTED
W-54-	RAS-	HV-	402		1	BUTTERFLY VALVE W/ HANDWHEEL OPERATOR FOR RAS PUMP 4	OPS CENTER BASEMENT - RAS PUMP 4	30" DIAMETER	150B	BUNA-N-SEAT	FLANGE	MANUAL; GEAR, HANDWHEEL	33 12 16.15	22 96 56.10 OR 09 90 00	W5400-M101.1	COUNTER CLOCKWISE	NONE REQUESTED

NOTES:

1. MANUFACTURER SHALL CONFIRM END CONNECTIONS, SIZING, AND ACTUATOR TYPE AT SUBMITTAL PREPARATION SITE VISIT.
2. UNDER COATING SPECIFICATION, MANUFACTURER SHALL COMPLY WITH EITHER SPEC 09 96 56.10 - FUSION BONDED EPOXY COATINGS OR SPEC 09 90 00 - PAINTING AND COATING.

1

NO.	DATE	REVISION	BY	REC.	APP.
1	4MAY2026	ADDENDUM NO. 2	PL		JHT

RFQ#2607-PURCHASE OF MWWTP SECONDARY REACTORS BUTTERFLY VALVES

DESIGN
DESIGN BY: P. LAIKIJRUNG
DRAWN BY: J. TANG

REVIEW
DESIGN REVIEWER: R.P.E. No.
CONSTRUCTION REVIEWER: R.P.E. No.
ELECTRICAL REVIEWER: R.P.E. No.

MANAGEMENT
PROJECT ENGINEER R.P.E. No.
PROJECT MANAGER R.P.E. No.
RECOMMENDED: SR. ENGINEER R.P.E. No.

EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND. CALIFORNIA

MAIN WASTEWATER TREATMENT PLANT
REACTORS
MECHANICAL
VALVES SCHEDULE

SHEET NO. 2

SCALE NO SCALE
DATE 10/28/2025

RFQ#2607-M301
DRAWING NUMBER

0
REV.

USER Laikijrung, Pauline
DATE 4/29/2026 8:03:21 AM
FILE J:\SD Projects\SD462 Reactor Rehab Ph 2\RFQ#2607 drawing\RFQ#2607-M301.dwg

PAINTING AND COATINGS

PART 1 - GENERAL

1.1 DESCRIPTION

A. The term “Manufacturer” used herein is synonymous with the term “Bidder” and “Supplier” used in other documents in this Request for Quote (RFQ) package.

B. Work Included:

1. Surface preparation, furnishing, and application of paint and special protective coatings, complete.

2. The Supplier shall perform all painting and coatings work in accordance with applicable local, state and federal requirements.

3. Refer to Article 2.2 – PAINTING AND COATING SYSTEMS for a list of coating systems and Article 3.3 – COATING SYSTEM APPLICATION SCHEDULE for the locations where they are to be applied.

C. Related Sections

1. Section 09 96 56.10 – Fusion Bonded Epoxy Coatings

2. Section 33 12 16.15 – AWWA Butterfly Valves

3. Section 33 12 16.34 – Hydraulic and Pneumatic Valve Actuators

4. Section 40 05 57.23 – Electric Motor Valve Actuators

1.2 ABBREVIATIONS

ANSI	American National Standards Institute
AWWA	American Water Works Association
CSP	Concrete Surface Profile
FRP	Fiberglass Reinforced Plastic
HC 1	Hydrochloric Acid
ICRI	International Concrete Repair Institute
MC	Methylene Chloride
MDFT	Minimum Dry Film Thickness
MDFTPC	Minimum Dry Film Thickness Per Coat
mil	Thousandths of an Inch
MIL-P	Military Specification – Paint
NACE	National Association of Corrosion Engineers
NSF	National Sanitation Foundation
OSHA	Occupational Safety and Health Act
PSDS	Paint System Data Sheet

PVC	Polyvinyl Chloride
SFPG	Square Feet Per Gallon
PVDF	Polyvinylidene Fluoride
SFPGPC	Square Feet Per Gallon Per Coat
SP	Surface Preparation
SSPC	Steel Structures Painting Council

1.3 REFERENCES

A. American Society of Testing Materials (ASTM) standards.

B. International Concrete Repair Institute (ICRI) standards

1. ICRI 310.2 – Selecting and Specifying Concrete Surface Preparation.

C. Steel Structures Painting Council (SSPC)

1. SSPC Vol. 1 – Steel Structures Painting Manual, Volume 1, Good Painting Practice.

2. SSPC Vol. 2 – Steel Structures Painting Manual, Volume 2, Systems and Specifications.

3. SSPC-SP 1 – Solvent Cleaning.

4. SSPC-SP 3 –Power Tool Cleaning.

5. SSPC-SP 5/NACE No. 1 – White Metal Blast Cleaning.

6. SSPC-SP 6/NACE No. 3 – Commercial Blast Cleaning.

7. SSPC-SP 10/NACE No. 2 – Near White Blast Cleaning.

8. SSPC-SP 11 –Power Tool Cleaning to Bare Metal.

9. SSPC-SP13/NACE No. 6 – Surface Preparation of Concrete.

10. SSPC-PA 1 –Shop, Field, & Maintenance Painting.

11. SSPC-PA 2 – Measurement of Dry Paint Thickness with Magnetic Gages.

12. SSPC-PA – Guide to Safety in Paint Application Guide 3.

13. SSPC-VIS 1 – Pictorial Surface Preparation Standards for Painting Steel Surfaces.

14. SSPC-A31 – Mineral and Slag Abrasives.

15. SSPC-WJ 4/NACE WJ 4 – Light Waterjetting

16. SSPC Surface Preparation Commentary for Metal Substrates

D. National Association of Corrosion Engineers (NACE) standards

1. SP0892-2007 – Coatings and Linings over Concrete for Chemical Immersion and Containment Service.

1.4 PERFORMANCE REQUIREMENTS

A. Coating for final coats shall be fume resistant, compounded with pigment suitable for exposure to sewage gases, especially to hydrogen sulfide and to carbon dioxide. Coating material shall be able to handle harsh abrasives such as sand and grit.

B. Pigments shall be materials that do not darken, discolor, or fade due to action of sewage gases.

1.5 SUBMITTALS

A. Submit in accordance with Section 01 33 00 – Submittal Procedures.

B. Product Data: Furnish the following:

1. Data Sheets:

a. For each paint system used herein, furnish

1) Paint System Data Sheet. A sample PSDS form is appended to the end of this section.

2) Technical Data Sheets – Including:

a) Solids Content.

b) Ingredient analysis.

c) VOC content.

d) Chemical resistance.

e) Temperature resistance.

f) Typical exposures and limitations.

b. Manufacturer’s Instructions including:

1) Special requirements for transportation and storage.

2) Mixing instructions.

3) Shelf life.

4) Pot life of materials.

5) Precautions for application free of defects.

6) Surface preparation.

7) Method of application.

8) Recommended number of coats.

9) Recommended thickness of each coat.

10) Recommended total thickness.

11) Drying time for each coat, including prime coat.

12) Required prime coat.

13) Compatible and non-compatible prime coats.

14) Recommended thinners, when recommended.

15) Limits of ambient conditions during and after application.

16) Time allowed between coats.

17) Required protection from sun, wind, and other conditions.

18) Touch-up requirements and limitations.

c. Maintenance & Repair Instructions.

d. Regulatory Requirements: VOC compound limitations, coatings containing lead compounds, abrasive, abrasive blast cleaning techniques, and disposal.

e. Indiscriminate submittal of manufacturer's literature only is not acceptable.

2. Alternate Paint Systems: Furnish information as required for specified products if proposing to furnish alternate products.

3. Furnish manufacturer's written instructions for applying each type of paint or protective coating prior to application.

4. Also provide copies of paint system submittals to the coating applicator.

C. Samples: Furnish the following:

1. Reference Panel:

a. Prior to start of surface preparation, furnish a 4-inch by 4-inch steel panel for each grade of sandblast specified herein, prepared to specified requirements.

b. Provide panel representative of the steel used and prevent from deterioration of surface quality.

c. Upon approval by District, preserve panel as a reference source for inspection.

2. Unless otherwise specified, before painting work is started, prepare minimum 8- by 10-inch samples with type of paint and application specified on similar substrate to which paint is to be applied.

3. Furnish additional samples as required until colors, finishes, and textures are approved.

4. Retain approved samples to be used as the quality standard for final finishes.

D. Quality Control Submittals: Furnish the following:

1. Applicator's Experience: List of references substantiating the requirement as specified.

2. Factory Applied Coatings: Manufacturer's certification stating factory applied coating system meets or exceeds requirements specified herein.

3. If the manufacturer of finish coating differs from that of shop primer, provide manufacturer's written confirmation that materials are compatible.

4. Adhesion test documentation as applicable.

E. Substitute or “Or Equal” Submittals: Unless otherwise specified, materials shall be from catalogs of the companies listed herein. Materials from other manufacturers are acceptable provided that they are established as being compatible with and of equal quality to the coatings of the companies listed. The Supplier shall provide satisfactory proof from the firm manufacturing the proposed substitution.

1.6 QUALITY ASSURANCE

A. The paint manufacturer shall provide a representative to visit the jobsite at intervals during surface preparation and painting as may be required for product application quality assurance, and to determine compliance with manufacturer's instructions and these Specifications, and as may be necessary to resolve field problems attributable to, or associated with, the manufacturer's products furnished under this Contract.

B. Applicator's Experience: Minimum 5 years' practical experience in application of specified products.

C. Mockup:

1. Before proceeding with work under this section, finish one complete space or item of each color scheme required showing selected colors, finish texture, materials, and workmanship.

2. After approval, sample spaces or items shall serve as a standard for similar work throughout the project.

D. Standardization: Materials and supplies provided shall be the standard products of manufacturers. Materials in each coating system shall be the products of a single manufacturer.

1.7 PAINT DELIVERY, STORAGE, AND HANDLING

A. Deliver paint to project site in unopened containers that plainly show, at time of use, the designated name, date of manufacture, color, and name of manufacturer.

B. Store paints in a suitable protected area that is heated or cooled as required to maintain temperatures within the range recommended by paint manufacturer.

C. Shipping:

1. Where pre-coated items are to be shipped to the jobsite, protect coating from damage. Batten coated items to prevent abrasion.

2. Use nonmetallic or padded slings and straps in handling.

3. Items will be rejected for excessive damage.

1.8 SHOP PAINTING

A. All steel and iron surfaces shall be protected by suitable paint or coatings applied in the shop. Surfaces which will be inaccessible after assembly shall be protected for the life of the equipment. Exposed surfaces shall be finished smooth, thoroughly cleaned, and filled as necessary to provide a smooth uniform base for painting. Electric motors, speed reducers, starters, and other self-contained or enclosed components shall be shop primed or finished with a high-grade oil-resistant enamel suitable for coating in the field with an alkyd enamel. Coatings shall be suitable for the environment where the equipment is installed.

B. Surfaces to be painted after installation shall be prepared for painting as recommended by the paint manufacturer for the intended service, and then shop painted with one or more coats of the specified primer. Unless otherwise specified, the shop primer for steel and iron surfaces shall be Cook "391-N-167 Barrier Coat", Koppers "No. 10 Inhibitive Primer", Tnemec "77 Chem-Prime", Valspar "13-R-28 Chromox Primer", or equal as approved by the Engineer.

C. Machined, polished, and nonferrous surfaces which are not to be painted shall be coated with rust preventive compound, Houghton "Rust Veto 344", RustOleum "R9", or equal as approved by the Engineer.

PART 2 - PRODUCTS

2.1 GENERAL

A. Primer, intermediate, and finish coats shall be of same manufacturer.

B. Products shall meet federal, state, and local requirements limiting the emission of volatile organic compounds. Specific information may be secured through the office of the Bay Area Air Quality Management District (BAAQMD).

C. Coatings in contact with potable water shall be certified by the National Sanitation Foundation in accordance with ANSI/NSF Standard 61.

D. Protective interior coatings for valves and hydrants shall conform to the requirements of American Water Works Association coating standard C550.

E. Coating systems also apply to recoating of existing surfaces if specified to be recoated on the Drawings and/or in this specification.

F. Formulate with colorants free of lead, lead compounds, or other materials which might be affected by presence of hydrogen sulfide or other gases at the project site.

G. Liquid-epoxy coating for the interior and exterior of steel water pipelines shall conform to the requirements of American Water Works Association coating standard C210.

2.2 PAINTING AND COATING SYSTEMS

A. Generic coating systems, film thickness, and surface preparation requirements are shown as follows. Specific surface preparation and coating system for each item or area shown on drawings or specified in other specifications sections shall be submitted for review using specified Paint System Data Sheet.

B. Butterfly valves shall comply with the following requirements:

1. The interior surfaces of the butterfly valve shall conform to System No. 4 as specified in Table 1 – System Coatings.

2. The exterior surfaces of the butterfly valve shall conform to System No. 1 as specified in Table 1 – System Coatings.

2.3 PAINTING AND COATINGS MATERIALS

A. District-accepted manufacturer’s materials (or Equal) shall be used for the Painting and Coating Systems per Table 2 – Paintings and Coatings Materials.

B. NOT USED

C. Thinners and solvents as specified by the coating system manufacturer.

Table 1 - System Coatings

System No.	Paint Materials (Each line indicates one coat)	Required # of Coats, Min. Cover (MDFT)	Surface Prep.
1	Epoxy, Atmospheric	1 coat, 4 mil	For metal, SSPC-SP10/NACE No. 2. For plastic, refer to Article 3.7D
	Epoxy, Atmospheric	1 coat, 4 mil	
	Epoxy, Atmospheric	1 coat, 4 mil	
4	Epoxy, High Solids	1 coat, 8 mil	For metal, SSPC-SP10/NACE No. 2
	Epoxy, High Solids	1 coat, 8 mil	

Table 2 - Paintings and Coatings Materials

	Sherwin Williams	PPG Protective & Marine Coatings	Carboline Company	Tnemec Company, Inc	Devoe Coatings Company
Epoxy, Atmospheric	Macropoxy 646	Amerlock 2	Carboguard 890	Series L69 Hi-Build Epoxoline	Bar-Rust 235V
Epoxy, High Solids	SherGlass FF	Amercoat 240	Carboguard 891HS	Series 104 H.S. Epoxy	Bar-Rust 233H

2.4 COLORS

A. Equipment Colors:

1. Equipment shall include the machinery or vessel itself plus the structural supports and fasteners and attached electrical conduits.

2. Paint non-submerged portions of equipment the same color as the process piping it serves, except as itemized below:

   a. Dangerous Parts of Equipment and Machinery: OSHA Orange.

   b. Fire Protection Equipment and Apparatus: OSHA Red.

   c. Pressure Hazards: OSHA Purple.

   d. Physical Hazards in Normal Operating Area: OSHA Yellow.

3. Fiberglass reinforced plastic (FRP) equipment with an integral-colored gel coat does not require painting, provided the color is as specified and unless specified otherwise.

PART 3 - EXECUTION

3.1 GENERAL

A. Surface Preparation Inspection:

1. Inspect and provide substrate surfaces prepared in accordance with these Specifications and the printed directions and recommendations of paint manufacturer whose product is to be applied.

2. Provide District minimum 3 days' advance notice prior to start of surface preparation work or coating application work.

3. Perform such work only in presence of District, unless District grants prior approval to perform such work in District's absence.

B. Mix and apply all coatings in accordance with the manufacturer’s instructions, the applicable requirements of SSPC-PA 1, and as specified herein.

C. For coatings subject to immersion, obtain full cure for completed system. Consult coatings manufacturer's written instructions for these requirements. Do not immerse coating for any purpose until completion of curing cycle.

D. The intention of these Specifications is for new, interior and exterior metal and submerged metal surfaces to be painted, whether specifically mentioned or not, except as modified herein. All other concealed structural steel surfaces shall be coated as specified.

E. Do not apply paint in temperatures exceeding manufacturer's recommended maximum or minimum allowable, or in dust, smoke-laden atmosphere, damp or humid weather.

F. Do not perform abrasive blast cleaning whenever relative humidity exceeds 85 percent, or whenever surface temperature is less than 5 degrees F above dewpoint of ambient air.

G. Provide fans, heating devices, or other means recommended by coating manufacturer to prevent formation of condensate or dew on surface of substrate, coating between coats, and within curing time following application of last coat.

H. Provide adequate continuous ventilation and sufficient heating facilities to maintain a minimum of 45 degrees Fahrenheit for 24 hours before, during, and 48 hours after application of finishes.

I. After award of contract, the Supplier, and its coating subcontractor, shall attend a pre-job meeting at the job site prior to starting work or purchasing coating materials.

3.2 SURFACES NOT REQUIRING PAINTING

A. Unless otherwise stated herein or shown, the following areas or items will not require painting:

1. Nonferrous and corrosion-resistant ferrous alloys such as bronze, monel, aluminum, chromium plate, atmospherically exposed weathering steel, and stainless steel, except where:

a. Required for electrical insulation between dissimilar metals.

b. Aluminum and stainless steel are embedded in concrete or masonry, or aluminum is in contact with concrete or masonry.

2. Glass and porcelain.

3. Prefinished electrical and architectural items such as motor control centers, switchboards, switchgear, panel boards, transformers, disconnect switches, building louvers, wall panels, etc.; color coding of equipment is required.

4. Non-submerged electrical conduits attached to unpainted concrete surfaces

5. Items specified to be galvanized after fabrication unless specified elsewhere or subject to immersion or embedment in concrete.

6. Flexible Tubing (Tygon).

7. Stainless steel tubing.

8. Copper tubing less than or equal to ½-inch diameter.

9. Pipe and bolt threads.

B. Manufactured items and materials that are "factory" galvanized or existing galvanized surfaces shall be coated as specified hereinafter for the exposure condition of the item and for architectural purposes, unless specified herein.

C. HDPE Pipe.

D. Protection of materials not to be painted:

1. Remove, mask, or otherwise protect hardware, lighting fixtures, switch plates, aluminum surfaces, machined surfaces, couplings, shafts, bearings, nameplates on machinery, and other surfaces not intended to be painted.

2. Provide drop cloths to prevent paint materials from falling on or marring adjacent surfaces.

3. Protect working parts of mechanical and electrical equipment from damage during surface preparation and painting process.

4. Mask openings in motors to prevent paint and other materials from entering the motors.

3.3 COATING SYSTEM APPLICATION SCHEDULE

A. General:

1. Coat all exposed surfaces as shown in Table 3 – System Coatings Execution. Coordinate field and shop painting and surface preparation and application. Ensure shop applied primers and surface preparation conform to these specification requirements and are compatible with field applied finish coats.

2. Prepare shop applied coatings, damaged shop applied coating and exposed substrates prior to applying field finish coats.

3. The equipment and materials listed in Article 3.3 under each category are included to provide clarity for each category; however, they are only examples and all surfaces which meet the category shall be coated with the specified System.

Table 3 - System Coatings Execution

Surface /Location	Exposure	Interior /Exterior	Coating System	Example Locations
Metal		Interior to Structures	System 1	Pipe, valves and gates, valve and gate operators and stands, pipe hangers, wash down spray monitors, supports and saddles, conduit, cable tray hangers, dumpster guides, and supports.
				Miscellaneous metals in pumping station dry well
				Mechanical equipment supports, baseplates, drive units, and accessories
				Doors, door-frames, ventilators, louvers, grilles, exposed sheet metal, and flashing
	Subject to Submersion, medium corrosion, low or no acids, or medium flows	n/a	System 4 (or System 4F for Fast Cure)	Pipe, valves and gates, valve and gate operators and stands, pipe hangers, supports and saddles, conduit, cable tray hangers, and supports.
	Subject to Submersion, high corrosion, acids, or high flows	n/a	System 6 (or System 6F for Fast Cure)	Mechanical equipment supports, baseplates, drive units, and accessories Note: High corrosion refers to any surface within 10-ft of wastewater, or if enclosed within an airspace where there is wastewater.

3.4 APPLICATION SAFETY

A. Perform painting in accordance with recommendations of the following:

1. Paint manufacturer's instructions.

2. NACE, contained in the publication, Manual for Painter Safety.

3. Federal, state, and local agencies having jurisdiction.

3.5 PAINT MIXING

A. Multiple-Component Coatings:

1. Prepare using all the contents of the container for each component as specified and packaged by paint manufacturer. No partial batches will be permitted.

2. Do not use multiple-component coatings that have been mixed beyond their pot life.

3. Provide small quantity kits for touchup painting and for painting other small areas.

4. Do not intermix additional components for reasons of color or otherwise, even within the same generic type of coating.

B. Keep paint materials sealed when not in use.

C. Where more than one coat of a material is applied within a given system, alternate color to provide a visual reference that the required number of coats have been applied.

3.6 PREPARATION OF SURFACES

A. GENERAL

1. Prepare surfaces per manufacturer’s recommendation.

B. Metal Surface Preparation:

1. Do not perform a surface preparation blast prior to submission of samples. Workmanship for metal surface preparation as specified shall meet current SSPC Specifications as follows:

a. Solvent Cleaning: SP 1.

b. Hand Tool Cleaning: SP 2.

c. Power Tool Cleaning: SP 3.

d. White Metal Blast Cleaning: SP 5/NACE No. 1.

e. Commercial Blast Cleaning: SP 6/NACE No. 3.

f. Brush-Off Blast Cleaning: SP 7/ NACE No. 4.

g. Pickling: SP 8.

h. Near-White Blast Cleaning: SP 10/NACE No. 2.

i. Power Tool Cleaning to Bare Metal: SP 11

j. Light Waterjetting: SP WJ-4

2. Wherever the words "solvent cleaning", "hand tool cleaning", "wire brushing", or "blast cleaning", or similar words of equal intent are used in these Specifications or in paint manufacturer's specifications, they shall be understood to refer to the applicable SSPC Specifications listed above.

3. Where OSHA or EPA regulations preclude standard abrasive blast cleaning, wet or vacu-blast methods may be required. Coating manufacturers' recommendations for wet blast additives and first coat application shall apply.

4. Hand tool clean areas that cannot be cleaned by power tool cleaning.

5. Repair defects deeper than 12.5% of nominal thickness of steel by repair welding and grinding smooth.

C. Concrete Surface Preparation:

1. Remove excessive debris, sediment, roots, and other foreign materials that may impact effectiveness of surface preparation.

2. Repair, reset, or replace offset structural components, lids, covers, frames, etc. identified on the Drawings prior to surface preparation.

3. Remove oils, grease, incompatible existing coatings, waxes, form release, curing compounds, efflorescence, sealers, salts, or other contaminants that may affect adhesion of coating to substrate in accordance with SSPC-SP-1.

4. Use surface preparation method based on condition of surface, potential contaminants present, access to work area, required cleanliness, and required profile of substrate to receive coating. Surface preparation method or combination of methods may include high pressure water cleaning, water jetting, abrasive blasting, shot blasting, grinding, scarifying, detergent water cleaning, hot water cleaning, and others referenced in industry accepted standards such as SSPC SP-13/NACE No. 6, ASTM D4258, ASTM D4259, ICRI Technical Guideline No. 03732, NACE/SSPC standards for surface preparation of steel. Surface shall be

uniform, sound, clean, and neutralized.732, NACE/SSPC standards for surface preparation of steel. Surface shall be uniform, sound, clean, and neutralized.

5. Concrete substrate shall meet CSP (ICRI Technical Guideline No. 03732) recommended by manufacturer, typically CSP 4.

6. The Supplier shall check and verify that substrate surface shall meet pH recommended by manufacturer.

D. CPVC, PVC, and FRP Surface Preparation:

1. Solvent wipe to remove any dirt or residue off pipe to be coated.

2. Sand the area to be coated with 100-200 grit paper and then remove sanding residue with solvent wipe.

3. Large areas may be power sanded, or brushoff blasted, provided sufficient controls are employed so surface is roughened without removing excess material.

E. Preparation of Existing Coated or Primed Surfaces:

1. All surfaces to be Repainted or Final Coated: Pressure wash clean all surfaces per SP WJ-4.

2. Spot clean per SP 1 to remove visible oil, grease, soil, drawing and cutting compounds, and other soluble contaminants.

3. Clean loose, abraded, or damaged coatings to substrate by Hand or Power Tool, SP 2 or SP 3.

4. All previously coated and existing painted surfaces shall be thoroughly and completely abraded. Existing coatings shall be sufficiently deglossed and profiled for application of prime coats.

5. All corroded surfaces shall be mechanically cleaned per SP 11 to remove all corrosion or deteriorated material.

6. Feather surrounding intact coating.

7. Apply one spot coat of the specified primer to bare areas, overlapping prepared existing coating a minimum of one inch.

8. Apply one full intermediate and finish coat of the specified primer or finish coat(s) overall.

9. If an aged, plural-component material is to be top-coated, contact coating manufacturer concerned for additional surface preparation requirements.

10. Ductile iron pipe for above-ground installation shall be ordered with a primer coating. Ductile iron pipe designed for buried applications, which has a black

varnish coating, if used for above-ground installation, shall have its varnish coating removed by abrasive blasting prior to recoating with a suitable above-ground coating in accordance with Table 3.

11. Application of Cosmetic Coat:

    a. The exact nature of existing coatings is not known in all cases; however, the specifications assume they have oxidized sufficiently to prevent lifting or peeling when over-coated with paints specified.

    b. Check compatibility by application to a small area prior to starting painting.

    c. If lifting or other problems occur, request disposition from Engineer.

F. Pre-Blast Cleaning Requirements:

1. Remove oil, grease, welding fluxes, and other surface contaminants prior to blast cleaning.

2. Cleaning Methods: Steam, open flame, hot water, or cold water with appropriate detergent additives followed with clean water rinsing.

3. Clean small, isolated areas as above or solvent clean with suitable solvents and clean cloths.

4. Round or chamfer sharp edges and grind smooth burrs, jagged edges, and surface defects.

5. Welds and Adjacent Areas:

    a. Prepare such that there is: No undercutting or reverse ridges on weld bead. No weld spatter on or adjacent to weld or any other area to be painted. No sharp peaks or ridges along weld bead.

    b. Grind embedded pieces of electrode or wire flush with adjacent surface of weld bead.

G. Blast Cleaning Requirements:

1. Meet applicable federal, state, and local air pollution and environmental control regulations for aggregate types, blast cleaning procedures and disposition of spent aggregate and debris.

2. Select type and size of abrasive to produce a surface profile that meets coating manufacturer's recommendations for particular primer to be used.

3. Use only dry blast cleaning methods unless an approved abrasive recycling system is used that removes debris and spent abrasive.

4. Type of Equipment and Speed of Travel: Design to obtain specified degree of cleanliness.

H. Post-Blast Cleaning and Other Cleaning Requirements:

1. Clean surfaces of dust and residual particles from cleaning operations by dry (no oil or water vapor) air blast cleaning or other method prior to painting. Vacuum clean enclosed areas and other areas where dust settling is a problem and wipe with a tack cloth.

2. Paint surfaces the same day they are sandblasted. Reblast surfaces that have started to rust before they are painted.

I. Brushoff Blast Cleaning:

1. Equipment, procedure, and degree of cleaning shall meet SSPC-SP 7, Brushoff Blast Cleaning.

2. Abrasive: Either wet or dry blasting sand, grit, or nut shell.

3. Select various surface preparation parameters such as size and hardness of abrasive, nozzle size, air pressure, and nozzle distance from surface such that surface is cleaned without pitting, chipping, or other damage.

4. Verify parameter selection by blast cleaning a trial area that will not be exposed to view.

5. District shall approve trial blast cleaned area and shall use area as a representative sample of surface preparation.

6. Repair or replace surfaces damaged by blast cleaning.

J. Acid Etching:

1. After pre-cleaning, spread the following solution by brush or plastic sprinkling can: 1-part commercial muriatic acid reduced by 2 parts water by volume. Adding acid to water in these proportions gives an approximate 10 percent solution of HCl.

2. Application:

a. Application Rate: Approximately 2 gallons per 100 square feet.

b. Work acid solution into surface by hard-bristled brushes or brooms until complete wetting and coverage is obtained.

c. Acid will react vigorously for a few minutes, during which time brushing is continued.

d. After bubbling subsides (10 minutes), hose down the remaining slurry with high pressure clean water.

e. Rinse immediately to avoid formation of salts on the surface which are difficult to remove.

f. Thoroughly rinse to remove any residual acid surface condition which can impair adhesion.

3. Ensure surface is completely dry before application of coating.

4. After etching, surface shall be "grainy" to the touch. If not, repeat treatment.

K. SHOP BLAST CLEANING

1. Notify District at least 7 days prior to start of shop blast cleaning of any equipment or piping materials to allow for inspection of the work during surface preparation and shop application of paints. Work shall be subject to District's approval before shipment to jobsite.

2. Items such as structural steel, metal doors and frames, metal louvers, and similar items as reviewed by District may be shop prepared and primed. Centrifugal wheel blast cleaning is an acceptable alternate to shop blast cleaning. Blast clean and prime work in accordance with these Specifications.

3. Finish Painting at Jobsite: As specified herein.

4. For factory primed surfaces, pre-clean per SSPC-SP 1, lightly sand with 100 grit paper, and solvent clean per SSPC-SP 1 prior to applying High Build Epoxy

L. FIELD SANDBLASTING

1. Perform sandblasting for items and equipment where specified and as required to restore damaged surfaces previously shop or field blasted and primed. Materials, equipment, procedures shall meet requirements of Steel Structures Painting Council.

3.7 APPLICATION OF PAINT

A. General:

1. Inspection: Schedule with District in advance for cleaned surfaces and all coats prior to succeeding coat.

2. Apply coatings in accordance with paint manufacturer's recommendations, including environmental controls, product handling, mixing, application equipment, and coating methods. Allow sufficient time between coats to assure thorough drying of previously applied paint.

3. Fusion Bonded Coatings Method Application: Electrostatic, fluidized bed, or flocking.

4. For units or structures requiring assembly or installation: Paint the units to be bolted together and/or to the structures prior to assembly or installation.

5. Coating shall interface with adjoining construction materials/components to effectively seal and protect the substrate.

6. Stripe coat all angles, edges and welds in tanks and highly corrosive atmospheric exposure before applying specified painting system.

7. The Supplier shall employ mist coat/full coat spray techniques or other suitable measures to minimize blistering of finish coatings applied over inorganic zinc-primed surfaces.

8. Mist coat/full coat application shall be as follows: Mist coat shall consist of application of approximately 1 wet mil of coating and allowing it to stand for 30 seconds to 1 minute or until bubbling ceases. Then apply a wet coat in even, parallel passes, overlapping each pass 50 percent. If required, follow with a cross-spray pass at right angles to the first pass so that the full coat of material is applied to the surface.

9. Verify spray equipment is in working order and can accurately ratio and apply the coating product.

10. Verify only applicators meeting the proper quality assurance requirements are performing all aspects of the coating work.

B. Shop Primed or Factory Finished Surfaces:

1. Inspection: Schedule with District in advance for shop primed or factory finished items delivered to jobsite for compliance with Specifications.

2. Hand or power sand areas of chipped, peeled, or abraded coating, feathering the edges. Follow with a spot primer using specified primer.

3. For two-package or converted coatings, consult coatings manufacturer for specific procedures as relates to manufacturer's products.

4. Prior to application of finish coats, clean shop primed surfaces free of dirt, oil, and grease and apply mist coat of specified primer, 1-mil dry film thickness.

5. After welding, prepare and prime holdback areas as required for specified paint system. Apply primer in accordance with manufacturer's instructions.

C. Manufacturer Applied Paint Systems:

1. Repair abraded areas on factory finished items in accordance with the equipment manufacturer's directions.

2. Carefully blend repaired areas into original finish.

D. Porous Surfaces, Such As Concrete Masonry:

1. Prime Coat:

a. May be thinned to provide maximum penetration and adhesion.

b. Type and Amount of Thinning: Determined by paint manufacturer and dependent on surface density and type of coating.

2. Surfaces Specified to Receive Water Base Coating: Dampen, but keep free of running water, just prior to application of coating.

E. Film Thickness:

1. Coverage is listed as either total minimum dry film thickness in mils (MDFT) or the spreading rate in square feet per gallon (SFPG). Per coat determinations are listed as MDFTPC or SFPGPC.

2. Number of Coats: Minimum required irrespective of coating thickness. Additional coats may be required to obtain minimum required paint thickness, depending on method of application, differences in manufacturers' products, and atmospheric conditions.

3. Maximum film build per coat shall not exceed coating manufacturer's recommendations.

4. Check each coat for correct millage. Do not make measurement before a minimum of 8 hours after application of coating.

5. Visually inspect concrete, nonferrous metal, plastic, and wood surfaces to ensure proper and complete coverage has been attained.

6. Give particular attention to edges, angles, flanges, and other similar areas, where insufficient film thicknesses are likely to be present, and ensure proper millage in these areas.

7. All coats are subject to inspection by the District, or a District designated representative.

8. See Quality Control section below for Thickness Testing.

F. Damaged Coatings, Pinholes, and Holidays:

1. Feather edges and repair in accordance with recommendations of paint manufacturer.

2. Repair fusion bonded coatings as recommended by original applicator. Applicator shall provide liquid repair kits for this purpose as recommended by coating manufacturer.

3. Apply finish coats, including touchup and damage-repair coats in a manner which will present a uniform texture and color-matched appearance.

G. Unsatisfactory Application:

1. If item has an improper finish color, or insufficient film thickness, clean and top coat surface with specified paint material to obtain specified color and coverage. Obtain specific surface preparation information from coating manufacturer.

2. Hand or power sand visible areas of chipped, peeled, or abraded paint, and feather the edges. Follow with primer and finish coat in accordance with the Specifications. Depending on extent of repair and appearance, a finish sanding and topcoat may be required.

3. Evidence of runs, bridges, shiners, laps, or other imperfections shall be cause for rejection.

4. Repair defects in coating system per written recommendations of coating manufacturer.

3.8 QUALITY CONTROL

A. Measure relative humidity and metal surface temperature and determine dew point each day prior to painting. Repeat measurements as often as the District deems necessary but not less often than every four hours.

1. The District will also measure relative humidity and metal surface temperature and determine dew point at least once each day that painting is performed.

B. The District will evaluate surface preparation using SSPC-VIS 1 and replica tapes. Evaluation of cleanliness will be made immediately prior to coating application.

C. Verify cleanliness of all spray application equipment prior to, or no later than, time of mixing coating material.

D. District will evaluate cleanliness of coated surface immediately prior to application of a subsequent coat.

E. Leave all staging up until District has inspected surface or coating. Replace staging removed prior to approval by District.

F. Film Thickness Testing and Electrical Inspection of Coated Surfaces:

1. Perform with properly calibrated instruments.

2. Recoat and repair as necessary for compliance with the Specifications.

3. Measure coating thickness after each coat using non-destructive magnetic dry film gauges.

    a. Measure in accordance with SSPC-PA 2.

    b. District will also measure coating thickness, at random locations, after each coat.

4. Repair areas not meeting thickness requirements per Application Section above. Retest after coating repairs.

G. Holiday Testing

1. The Supplier shall test all coated surfaces for pinholes and holidays after application of the final coat.

2. Perform test in presence of the District.

3. Perform test after coating has cured per manufacturer’s recommendation.

4. As directed by the District, use either a low voltage wet sponge holiday detector or a high voltage holiday detector.

    a. Low voltage wet sponge holiday detector shall be equal to K-D Bird or Tinker & Rasor M-1. Add a non-sudsing wetting agent, such as Eastman Kodak Photo-Flo to the water used to saturate the sponge.

    b. High voltage holiday detector shall be equal to Tinker & Rasor AP-W or D. E. Stearns Model 14/20, for coatings greater than 20-mil thickness. Use in accordance with coating manufacturer's recommendations except use voltage of 150 volts per mil of coating.

    c. Repair holidays per Application Section above. Retest after coating repairs.

H. Pull (Adhesion) Testing for high-build epoxy coatings on steel.

1. Pull tests are required for high-build epoxy coatings on steel.

2. For coating on existing structures, pull tests are also required on substrate or substrate repair material prior to coating pull test.

3. Tests shall be conducted after the coating system has cured in accordance with manufacturer’s specifications.

4. Tests shall be conducted per ASTM D4541 or ASTM D7234 using a self-aligning Type V adhesion tester.

5. Testing shall be performed by NACE certified personnel using equipment calibrated per applicable manufacturer and/or ASTM standards.

6. Number of pull tests required shall be calculated as follows:

    a. One pull test per 250 square feet, minimum, of surface area coated.

    b. One pull test for each separate component with surface area less than 250 square feet.

7. Pull tests in each area shall meet or exceed 400 psi on coated metallic substrates.

8. If any test fails, a minimum of 3 additional locations in the section of failure shall be tested, as directed by the Engineer. If any of the retests fail, all loosely adhered or unadhered coating in the failed area, as determined by the Engineer, shall be removed and replaced at the Supplier's expense.

9. Adhesion tests shall be documented and submitted to Engineer in consistent format detailing location, test values, description of failure point/mode, scoring method employed, adhesive used, cure time of coating, adhesive, and other data as deemed necessary by Engineer.

3.9 CLEANUP

A. Remove all spattering, spits, and blemishes caused by work under this section.

B. Upon completion, remove from the premises all surplus paint materials, abrasive blast materials, equipment, rubbish, and debris resulting from work under this sections.

C. Remove spent abrasive blast material in accordance with Section 01 35 24 – Project Safety Requirements, regarding potential hazardous conditions and hazardous substances.

D. Place cloths and waste that might constitute a fire hazard in closed metal containers or destroy at the end of each day.

E. Upon completion of the work, remove staging, scaffolding, and containers from the site or destroy in a legal manner.

F. Completely remove paint spots, oil, or stains upon adjacent surfaces and floors and leave entire job clean.

[See Paint System Data Sheet (PSDP) form following this Section.]

PAINT SYSTEM DATA SHEET

Attached products' Technical Data Sheet (if applicable) to this sheet for each paint system submittal.

Paint System Number (from Spec.):		
Paint System Title (from Spec.):		
Coatings Supplier:		
Representative:		
Surface Preparation:		
Paint Material (Generic)	Product Name/Number (Proprietary)	Min. Coats Coverage

END OF SECTION