GYPSUM BOARD

1. GENERAL

1.1 Related Sections

.1 Section 09911 - Interior Painting

1.2 References

.1 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-71.25-M88, Adhesive, for Bonding Drywall to Wood Framing and Metal Studs.

.2 AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

.1 ASTM C 36/C 36M-01, Specification for Gypsum Wallboard.

.2 ASTM C 475/C 475M-02, Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.

.3 ASTM C 630/C 630M-01, Specification for Water-Resistant Gypsum Backing Board.

.4 ASTM C 840-02, Specification and Finishing of Gypsum Board.

.5 ASTM C 1047-99, Accessories for Gypsum Wallboard and Gypsum Veneer.

.6 ASTM C 1280-99, Specification for Application of Gypsum Sheathing Board.

1.3 Environmental Requirements

.1 Maintain temperature minimum 10°C, maximum 21°C for 48 hours prior to and during application of gypsum boards and joint treatment, and for at least 48 hours after completion of joint treatment.

.2 Apply board and joint treatment to dry, frost free surfaces.

2. PRODUCTS

2.1 Materials

.1 Standard board: to ASTM C 36/C 36M-01 regular, 12.7 mm thick and Type X, 15.9 mm thick, 1200 mm wide x maximum practical length, ends square cut, edges bevelled.

.2 Water resistant board: to ASTM C 630/C 630M-01 regular, 12.7 mm thick and Type X, 15.9 mm thick, 1200 mm wide x maximum practical length.

.3 Drywall furring channels: 0.5 mm core thickness galvanized steel channels for screw attachment of gypsum board.

.4 Steel drill screws: to ASTM C 1002-01.

.5 Stud adhesive: to CAN/CGSB-71.25-M88 ASTM C 557-99.

.6 Laminating compound: as recommended by manufacturer, asbestos-free.

.7 Casing beads, corner beads and edge trim: to ASTM C 1047-99, metal, zinc-coated by hot-dip process, 0.5 mm base thickness, perforated flanges, one piece length per location.

.8 Acoustic sealant: As per Section 07900-Joint Sealers.

.9 Joint compound: to ASTM C 475/C 475M-02, asbestos-free.

2.2 Finishes

.1 Texture finish: asbestos-free standard white texture coating and primer-sealer, recommended by gypsum board manufacturer.

3. EXECUTION

3.1 Erection

.1 Do application and finishing of gypsum board in accordance with ASTM C 840-02 except where specified otherwise.

.2 Do application of gypsum sheathing in accordance with ASTM C 1280-99.

.3 Install work level to tolerance of 1:1200

.4 Frame with furring channels, perimeter of openings for access panels, light fixtures, diffusers and grilles.

.5 Install 19 x 64 mm furring channels parallel to, and at exact locations of steel stud partition header track.

.6 Furr for gypsum board faced vertical bulkheads within and at termination of ceilings.

.7 Furr above suspended ceilings for gypsum board fire and sound stops and to form plenum areas as indicated.

.8 Install wall furring for gypsum board wall finishes in accordance with ASTM C 840-02, except where specified otherwise.

.9 Furr openings and around built-in equipment, cabinets on four sides. Extend furring into reveals. Check clearances with equipment suppliers.

.10 Furr duct shafts, beams, columns, pipes and exposed services where indicated.

.11 Erect drywall resilient furring transversely across studs and joists, spaced maximum 600 mm oc and not more than 150 mm from ceiling/wall juncture. Secure to each support with 25 mm drywall screw.

.12 Install 150 mm continuous strip of 12.7 mm gypsum board along base of partitions where resilient furring installed.

3.2 Application

.1 Do not apply gypsum board until bucks, anchors, blocking, electrical and mechanical workare approved.

.2 Apply single layer gypsum board to wood or metal furring or framing using screw fasteners and stud adhesive.

.3 Apply water resistant gypsum board where indicated on drawings. Apply water-resistant sealant to edges, ends, cut-outs which expose gypsum core and to fastener heads. Do not apply joint treatment on areas to receive tile finish.

.4 Apply 12 mm diameter bead of acoustic sealant continuously around periphery of each face of partitioning to seal gypsum board/structure junction where partitions abut fixed building components. Seal full perimeter of cut-outs around electrical boxes, ducts, in partitions where perimeter sealed with acoustic sealant.

3.3 Installation

.1 Erect accessories straight, plumb or level, rigid and at proper plane. Use full length pieces where practical. Make joints tight, accurately aligned and rigidly secured. Mitre and fit corners accurately, free from rough edges. Secure at 150 mm oc using contact adhesive for full length.

.2 Install casing beads around perimeter of suspended ceilings.

.3 Install casing beads where gypsum board butts against surfaces having no trim concealing junction and where indicated. Seal joints with sealant.

.4 Install insulating strips continuously at edges of gypsum board and casing beads abutting metal window and exterior door frames, to provide thermal break.

.5 Install access doors to electrical and mechanical fixtures specified in respective Sections.

.1 Rigidly secure frames to furring or framing systems.

.6 Finish corner beads as required with two coats of joint compound and one coat of taping compound, feathered out onto panel faces.

.7 Fill screw head depressions with joint and taping compounds to bring flush with adjacent surface of gypsum board so as to be invisible after surface finish is completed.

.8 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.

.9 Completed installation to be smooth, level or plumb, free from waves and other defects and ready for surface finish.

.10 Apply one coat of white primer sealer over surface to be textured. When dry apply textured finish in accordance with manufacturer's instructions.

.11 Mix joint compound slightly thinner than for joint taping.

.12 Apply thin coat to entire surface using trowel or drywall broadknife to fill surface texture differences, variations or tool marks.

.13 Allow skim coat to dry completely.

.14 Remove ridges by light sanding or wiping with damp cloth.

END OF SECTION

RESILIENT FLOORING

1. GENERAL

1.1 Related Sections

.1 Section 07900 - Joint Sealers

1.2 References

.1 CSA A126.3-M84, Sheet Vinyl Flooring Products.

.2 CAN/CSA-A126.57-M87, Resilient Wall Base.

1.3 Samples

.1 Submit samples in accordance with Section 01300 - Submittals.

.2 Submit duplicate 300 x 300 mm sample pieces of sheet material, 300 mm long base, nosing and treads.

1.4 Closeout Submittals

.1 Provide maintenance data for resilient flooring for incorporation into manual specified in Section 01730 - Operations and Maintenance Manuals.

1.5 Extra Materials

.1 Provide extra materials of resilient sheet flooring and adhesives in accordance with Section 01700 - Contract Closeout.

.2 Provide 2 m^2 of each colour, pattern and type flooring material required for project for maintenance use.

.3 Extra materials to be in one piece and from same production run as installed materials.

.4 Clearly identify each roll of sheet flooring and each container of adhesive.

.5 Deliver to Engineer, upon completion of the work of this section.

.6 Store where directed by Engineer.

1.6 Environmental Requirements

.1 Maintain air temperature and structural base temperature at flooring installation area above 20°C for 48 hours before, during and 48 hours after installation.

2. PRODUCTS

2.1 Materials

.1 Linoleum sheet flooring: composed of natural ingredients which are mixed and calendered onto a jute backing:

.1 Pattern: marbleized.

.2 Thickness: 2.5 mm.

.3 Colour: selected by Engineer from manufacturers standard range.

.2 Resilient base: CAN/CSA-A126.57, continuous, top set, complete with premoulded end tops and external corners:

.1 Type: 1-rubber.

.2 Style: B-cove.

.3 Thickness: 2.36mm.

.4 Height: 101.6mm.

.5 Lengths: cut lengths minimum 2400 mm.

.6 Colour: selected by Engineer from manufacturers standard range.

.3 Primers and adhesives: waterproof, of types recommended by resilient flooring manufacturer for specific material on applicable substrate, above, on or below grade.

.4 Sub-floor filler and leveller: white premix latex requiring water only to produce cementitious paste as recommended by flooring manufacturer for use with their product.

.5 Metal edge strips:

.1 Aluminum extruded, smooth, mill finish stainless steel with lip to extend under floor finish, shoulder flush with top of adjacent floor finish.

.6 Edging to floor penetrations: stainless steel type recommended by flooring manufacturer.

.7 Sealer and wax: type recommended by resilient flooring material manufacturer for material type and location.

3. EXECUTION

3.1 Preparation

.1 Remove sub-floor ridges and bumps. Fill low spots, cracks, joints, holes and other defects with sub-floor filler.

.2 Clean floor and apply filler; trowel and float to leave smooth, flat hard surface. Prohibit traffic until filler cured and dry.

.3 Prime plywood sub-floor to resilient flooring manufacturer's printed instructions.

3.2 Application

.1 Apply adhesive uniformly using recommended Flooring trowel. Do not spread more adhesive than can be covered by flooring before initial set takes place.

.2 Lay flooring with seams parallel to building lines to produce a minimum number of seams. Border widths minimum 1/3 width of full material.

.3 Run sheets in direction of traffic.

.4 Heat weld seams of linoleum sheet flooring in accordance with manufacturer's printed instructions.

.5 As installation progresses, and after installation roll flooring with 45 kg minimum roller to ensure full adhesion.

.6 Cut flooring neatly around fixed objects.

.7 Continue flooring over areas which will be under built-in furniture.

.8 Terminate flooring at centerline of door in openings where adjacent floor finish or colour is dissimilar.

.9 Install metal edge strips at unprotected or exposed edges where flooring terminates.

3.3 Application Base

.1 Lay out base to keep number of joints at minimum.

.2 Clean substrate and prime with one coat of adhesive.

.3 Apply adhesive to back of base.

.4 Set base against wall and floor surfaces tightly by using 3 kg hand roller.

.5 Install straight and level to variation of 1:1000.

.6 Scribe and fit to door frames and other obstructions. Use premoulded end pieces at flush door frames.

.7 Cope internal corners. Use premoulded corner units for right angle external corners. Use formed straight base material for external corners of other angles.

.8 Heat weld base in accordance with manufacturer's printed instructions.

3.4 Cleaning

.1 Remove excess adhesive from floor, base and wall surfaces without damage.

.2 Clean, seal and wax floor and base surface to flooring manufacturer's printed instructions.

3.5 Protection

.1 Protect new floors from time of final set of adhesive until final inspection.

.2 Prohibit traffic on floor for 48 hours after installation.

END OF SECTION

PAINTING AND COATING SYSTEMS

1. GENERAL

1.1 Description

.1 This Section specifies coating systems, surface preparations, and application requirements. Galvanizing does not form part of this Section.

.2 Surface preparation, factory prime coating, factory finish coating and factory assembly and protection for all components to be provided with corrosion protection coatings.

.3 Coordination and cooperation with Independent Testing / Inspection Agencies to be retained by the Owner.

1.2 Definitions

.1 Specific coating terminology used in this Section is in accordance with definitions contained in ASTM D16, ASTM D3960, and the following definitions:

.1 Painting: the process of applying a coating system.

.2 Coating: covering layer(s) of protecting substance(s).

.3 Dry Film Thickness (DFT): the thickness of one fully cured continuous application of coating.

.4 Coating System Thickness: the total dry film thickness of primer and finish coats.

.5 Prime Coat: first full coating - does not include conditioners, vinyl acid wash coats, sealers or pre-treatment applications.

.6 Factory Applied Finish Coat: one or more coats applied in a shop or plant prior to shipment to the site, where only touch-ups are required.

.7 Field Coat: the application or the completion of application of the coating system after installation of the surface at the site of the work.

.8 Shop Coat: one or more coats applied in a shop or plant prior to shipment to the site, where the field or finishing coat is applied.

.9 Tie Coat: an intermediate coat used to bond different types of paint coats. Coatings used to improve the adhesion of a succeeding coat.

.10 Vinyl Acid Wash Coat: a coating supplied as one- or two-component systems on clean light alloy or ferrous surfaces, and on many non-ferrous surfaces, to provide adhesion with the substrates, and for the application of subsequent coats of paint.

.11 Photochemically Reactive Organic Material: any organic material that will react with oxygen, excited oxygen, ozone or other free radicals generated by the action of

sunlight on components in the atmosphere giving rise to secondary contaminants and reaction intermediates in the atmosphere which can have detrimental effects.

.12 Volatile Organic Content (VOC): the portion of the coating that is a compound of carbon, is photochemically reactive, and evaporates during drying or curing, expressed in grams per litre.

.13 Touch-Up: the application of a coating on areas of coated surfaces to repair marks, scratches, and areas where the coating has deteriorated to restore the coating film to an unbroken condition.

.14 COATSPEC: Coating system specification sheets.

.15 Submerged Service: equipment or material fully, partially or intermittently submerged in wastewater during routine plant operation.

.16 Splash Zone Service: equipment or material exposed to the normal range of atmospheric conditions and conditions common to wastewater treatment facilities (high humidity, H_2S, etc.).

.17 Indoor Service: equipment or material inside buildings or other ventilated spaces.

.18 Outdoor Service: equipment or material outside buildings or other ventilated spaces, exposed to weather elements.

.19 Independent Testing Agency: firm to be retained by the Owner to perform and/or witness surface preparation and/or coating system applications for specific equipment.

1.3 Reference Standards

.1 Conform to the following reference standards:

.1 ASTM D16, Standard Definitions of Terms Relating to Paint, Varnish, Lacquer, and Related Products.

.2 ASTM D2200, Pictorial Surface Preparation.

.3 ASTM D3359, Methods for Measuring Adhesion by Tape Test-Method A.

.4 ASTM D3960, Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings.

.5 ASTM D4417, Field Measurement of Surface Profile of Blast-Cleaned Steel.

.6 SSPC, Steel Structures Painting Council Specifications, Vol. 1, Good Painting Practice.

.7 SSPC, Steel Structures Painting Council Specifications, Vol. 2, Systems and Specifications.

.8 Industrial Health and Safety Regulations, Workers' Compensation Board of Alberta (WCB).

.9 NACE: 6Q187, Current Practices in Quality Control during Application of Protective Coating Materials.

.10 NACE: RP0178, Standard Recommended Practice - Fabrication Details, Surface Finish Requirements and Proper Design Considerations for Tanks and Vessels to be Lined for Immersion Service.

1.4 Restrictions

.1 Regardless of whatever else is specified in this Section, no paint containing a chromate based additive can be used. Substitute products of equal or greater quality.

.2 Prior to using of any grout or filler to smooth the metal surface, in the event that the surface is not accessible to grind smooth, obtain permission from the Engineer.

1.5 Submittals

.1 With the equipment shop drawings, the Contractor shall submit details of the factory applied prime and finish coat systems to be applied.

.2 Submit colour chart in accordance with Section 01300.

.3 Submit a complete list of all coatings used in this Contract in accordance with Section 01300. The list is to include the following information: location of application, system identification, manufacturer, product, (prime and finish coats) colour identification code, supplier and date of completion.

1.6 Quality Control

.1 Particular attention shall be paid to ensure the compatibility of each surface treatment with the preceding and subsequent surface treatments and coatings. The Contractor shall be responsible for the compatibility of all surface treatments and coatings.

.2 Provide materials and supplies that are the standard products of manufacturers. Provide materials in each coating system that are the products of a single manufacturer.

.3 Do not use coating products until the Engineer has inspected and reviewed the materials.

.4 Strictly adhere to all manufacturer's printed recommendations with respect to ambient conditions at time of application, drying times, application method, mixing instruction, application equipment, pot life, thinning and any other manufacturer's recommendations deemed applicable by the Engineer.

1.7 Shipment, Protection And Storage

.1 Coatings

.1 Deliver materials to the job site in their original, unopened containers. Provide on each container the manufacturer's name, coating type, batch number, date of manufacture, storage life, colour special directions and Manufacturer's material safety data sheets. Identify all toxic substances.

.2 When storage life is not specified, obtain manufacturers certification of paint integrity 1 year after date of manufacture, prior to use.

.3 Store materials in enclosed structures and protect from weather. Maintain temperature within manufacturer's recommended storage range. Store flammable materials in accordance with provincial and local codes.

.4 Use materials with oldest date of manufacture first.

.5 Remove from the site materials exceeding storage life recommended by the manufacturer.

.2 Coated Surfaces

.1 Items which are to be bolted together before shipment shall have their surfaces prepared and coated before the parts are assembled.

.2 All coated equipment shall be protected adequately against damage, dust, moisture and scratching during shipment, off-loading and storage on site.

.3 Damage to coatings occurring at any time shall be made good prior to the application of any further coatings.

.4 After delivery to the site and after permanent erection or installation, factory-coated metalwork shall be re-coated or retouched by the Contractor.

.5 Tag, lift and ship in such a manner as to minimize damage to equipment coatings.

.6 If, in the opinion of the Engineer, the coating is damaged during shipment to the extent that touch-up would not be satisfactory, the equipment shall be returned and re-coated at no change in the Contract Price.

1.8 Safety And Ventilation Requirements

.1 Meet requirements for safety and ventilation in accordance with SSPC and all applicable regulations and codes.

1.9 Warranty

.1 The Engineer will notify in advance of an inspection of applied coatings prior to expiry of the warranty period. A list of all coating defects and failures will be prepared and transmitted.

.2 All defective coatings to be repaired using coating materials, equipment and methods similar to those used in the original work. Materials to be of fresh manufacture and within the manufacturer's stated shelf life at the time of application.

.3 Within 90 calendar days of this inspection, the Contractor shall arrange to have all required coating repairs completed.

2. PRODUCTS

2.1 Acceptable Products

.1 The following list specifies the material requirements for coating systems. Coating systems are categorized by generic name followed by an identifying abbreviation. If an abbreviation has a suffix number, it is for the purpose of identifying subgroups within the coating system.

Coating System	Manufacturer	Product Designation	
		Prime Coat(s)	Finish Coat(s)
Epoxy			
E-1	Amercoat Canada *	Amercoat 385 or Amercoat 370	N/A
	Carboline	Caroboline 890	None (1 coat)
	Cloverdale	Clovaguard 83150	Clovaguard 83150 (if required)
	Devoe Coatings	Devran 224 or Bar Rust 235 (application in the field)	None (1 coat)
	Hempel	Hempadur Mastic 45880	None (1 coat)
	International	Intergard 345 FD or Interseal 670 HS	Intergard 345 or 670 HS
	Rust-Oleum	9100	None (1 coat)
	Sherwin Williams	N/A	N/A
	Tnemec	Series 1 Purple Prime	Series 161 Tneme-Fascure
E-2a	Amercoat Canada	Amerlock	Amerlock
	Carboline	Carboline 890	Carboline 890
	Cloverdale	Clovaliner 83295	Clovaliner 83295
	Devoe Coatings	Bar-Rust 236	Bar-Rust 236
	Hempel	Hempadur 15500	Hempadur 15500
	International	Interseal 670 HS	Interseal 670 HS
	Rust-Oleum	9100	9102
	Sherwin Williams	N/A	N/A
	Tnemec	Series 1 PurplePrime	Series 164 Epoxoline 80
E-2b	Amercoat Canada	Dimetcote 9 or Dimetcote 21-5 (inorganic zinc)	Amercoat 385 or Amercoat 370

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Coating System	Manufacturer	Product Designation	
		Prime Coat(s)	Finish Coat(s)
		Amercoat 68A (organic zinc)	
	Carboline	Carboline 859 (organic zinc)	Carboline 890 or Carbothane 133 HB (for lasting color)
	Cloverdale	Clovazinc 2 (inorganic)	Clovaliner 83295
		Clovazinc 3 (organic)	
	Devoe Coatings	CathaCoat 302H (organic zinc)	Devran 224 HS or Bar Rust 235, optional Devran 359
	Hempel	Hempel's Galvosil 15700	Hempadur Mastic 45880
	International	Interzinc 52	Intergard 345 or 670 HS
	Rust-Oleum	9100	9102
	Sherwin Williams	N/A	N/A
	Tnemec		
E-2c	Amercoat Canada	Amerlock	Amerlock
	Cloverdale	Clovaliner 83295	Clovaliner 83295
	Devoe Coatings	Bar Rust 236	Bar Rust 236
	Hempel	N/A (for acidic environment recommends vinyl ester)	N/A
	International	Interseal 670HS	Interseal 670HS
	Rust-Oleum	N/A	N/A
	Sherwin Williams	N/A	N/A
	Tnemec	Series 1 PurplePrime	Series 164 Epoxoline 80
High Heat			
HH-1	Amercoat Canada *	Dimecote 9 or Dimetcote 21-5 (waterborne)	PSX 892 (if required)
	Carboline	Carbozinc 11	4900, if required
	Cloverdale	Clovazinc 2	Clovatherm 83220
	Devoe Coatings	Cathacoat 304 L	Cathacoat 304 L plus HT-10 aluminum topcoat, if required
	Hempel	Hempel's Galvosil 15700	None (1 coat)
	International	Interzinc 22	None (1 coat)
	Rust-Oleum	N/A	N/A
	Sherwin Williams	Zinc Clad II ES	Kem Hi Temp 850
	Tnemec	Series 90-96 Tneme-Zinc	None (1 coat)
Latex			
L-1	Amercoat Canada	Amercoat 146	Amercoat 220

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Coating System	Manufacturer	Product Designation	
		Prime Coat(s)	Finish Coat(s)
	General Paint	51087 SuperSeal	58-020 High Performance 2000
	Carboline	Carbocrylic 120	Carbocrylic 3359
	Cloverdale	05250N	70625
	Devoe Coatings	36 600 ultra	94 800 ultra
	Hempel	Hemucryl TI-coat 18200	Hemucryl Enamel HI-Build 58030
	International	Intercryl 520	Intercryl 530
	Rust-Oleum	5200	5200
	Sherwin Williams	Heavy Duty Block Filler	Metalatex Semi-Gloss
	Tnemec	Series 130 Envirofill for concrete or masonry Series 51-792 PVA Sealer for drywall	Series 29 Tufcryl
L-2	Amercoat Canada	Amercoat 146	Amercoat 220
	General Paint	11011 Plastic Primer	15-020 Envirogard Semi gloss
	Carboline	Carbocrylic 120	Carbocrylic 3359
	Cloverdale	05910	706- Series
	Devoe Coatings	Gripper 3210, optional Devflex 659 DTM	Lifemaster – Pro 4216 semi-gloss, optional Devflex 659 DTM
	Hempel	Hemucryl TI-coat 18200	Hemucryl Enamel HI-Build 58030
	International	Intercryl 520	Intercryl 530
	Rust-Oleum	3100 or 3700 (not for plastic or fiberglass)	3100 or 3700
	Sherwin Williams	DTM Primer	DTM Finish
	Tnemec	Series 151 Elasto-Grip FC	Series 29 Tufcryl
L-3	Amercoat Canada	Amercoat 148	Amercoat 220
	General Paint	15-002 Envirogard Primer	15-020 Envirogard Semi gloss
	Carboline	Carbocrylic 3358	Carbocrylic 3359
	Cloverdale	15910	706 - Series
	Devoe Coatings	Devguard 4160 Series, optional Devflex 659 DTM	Lifemaster – Pro 4216 semi-gloss, optional Devflex 659 DTM
	Hempel	Hemucryl TI-Coat 18200	Hemucryl Enamel HI-Build 58030
	International	Intercryl 520	Intercryl 530
	Rust-Oleum	3100 or 3700 (not for plastic or fiberglass)	3100 or 3700

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Coating System	Manufacturer	Product Designation	
		Prime Coat(s)	Finish Coat(s)
	Sherwin Williams	DTM Primer	DTM Finish
	Tnemec	Series 18 Enviro-Prime	Series 29 Tufcryl
Urethane			
U-1	Amercoat Canada	Amercoat 385 or Amercoat 370	Amercoat 450HS Urethane
	General Paint	Amercoat 385 or Amercoat 370	General Paint Indurathane
	Carboline	Carboline 893 or 890	Carbothane 134 HG
	Cloverdale	Clovaguard 83150	Clovathane
	Devoe Coatings	Devran224 HS or Bar Rust 231	Devthane 369 or 359
	Hempel	Hempadur Mastic 45880	Hempel's Urethane 5595U (high gloss)
			Hempathane Topcoat 55210 (semi-gloss)
	International	Intergard 345	Interthane 990
	Rust-Oleum	9100	9700
	Sherwin Williams	Tile Clad II Epoxy Primer	Hi Build Aliphatic Polyurethane
	Tnemec	Series 1 PurplePrime	Series 73 Endura-Shield
U-2	Amercoat Canada	Amerlock Surface Tolerant Epoxy	Amercoat 450 HS
	Carboline	Carbomastic 15 or 15FC	Carbothane 134HS
	Cloverdale	Abrade surface or bonding primer	Clovathane
	Devoe Coatings	Devran224 HS or Bar Rust 231	Devthane 369 or 359
	Hempel	Hempadur Mastic 45880 (intermediate coat for repair)	Hempel's Urethane 5595U (high gloss)
			Hempathane Topcoat 55210 (semi-gloss)
	International	Abrade surface or bonding primer	Interthane 990
	Rust-Oleum	9100	9700
	Sherwin Williams	N/A	N/A
	Tnemec	Series 135 Chembuild	Series 73-Endura-Shield

.2 Colour additives are not to contain lead, or any lead compound which may be destroyed or affected by hydrogen sulphide or any other corrosive gas.

3. EXECUTION

3.1 General

.1 Coated Surfaces

.1 Items or areas which have been coated are not be handled, worked on, or otherwise disturbed, until the coat is completely dry and hard.

.2 Prime Coats

.1 Unless otherwise specified, prime coats may be shop or field-applied.

.2 Prime coat may be thinned and applied as recommended by the manufacturer, provided the coating, as applied, complies with prevailing air pollution control regularions.

.3 Shop-applied primer to be compatible with the specified coating system and applied at the minimum dry film thickness recommended by the manufacturer.

.4 Touch up factory prime coat before applying the finish coat(s) to achieve the specified film thickness and continuity.

.5 Provide product data sheets identifying the shop primer used, to the on-site finish coat applicator, if applicable.

.3 Finish Coats

.1 Unless otherwise specified, finish coats may be shop or field-applied.

.2 Unless otherwise specified, do not apply finish coats until all previous coats have been inspected.

.3 Do not apply finish coats until other work in the area is complete and until all previous coats have been inspected, unless otherwise specified.

.4 Electrical and Instrumentation Equipment

.1 Shop finish metal enclosure surfaces by application of rust resistant primer inside and outside, and at least two coats of finish enamel

.1 Paint outdoor electrical equipment "equipment green" finish to EEMAC Y1-1-1955.

.2 Paint indoor switchgear and distribution enclosures light grey to EEMAC 2Y-1-1958

.2 Clean and touch up surfaces of shop-painted equipment scratched or marred during shipment or installation, to match original paint.

.3 Clean and prime exposed non-galvanized hangers, racks and fastenings to prevent rusting.

3.2 Preparation

.1 Surfaces to be painted are to be clean and dry. Before applying coating or surface treatments, remove oil, grease, dirt, rust, loose mill scale, old weathered coatings, and other foreign substances except as specified.

.2 Where mechanical cleaning is accomplished by blast cleaning, the abrasive used is to be washed, graded and free of contaminants that might interfere with the adhesion of the coatings.

.3 No more surface is to be blasted than can be prime coated before visible or detrimental re-rusting occurs.

.4 Examine all surfaces to be painted and correct all surface defects before application. Remove weld splatter, high ridges and slag prior to painting.

.5 Use clean cloths and clean fluids in solvent cleaning.

.6 Schedule cleaning and painting so that dust and spray from the cleaning process will not fall on wet, newly painted surfaces.

.7 When field coating, remove or mask hardware, hardware accessories, nameplates, data tags, machined surfaces, sprinkler heads, electrical fixtures, and similar uncoated items which are in contact with coated surfaces prior to surface preparation and painting operations. Following completion of painting, reinstall removed items complete with all tags, labels and/or attached instruction or data sheets. Replace damaged items caused by removal at no expense to the Owner.

.8 In the field, disconnect and move equipment adjacent to walls such as cables or cover plates, to permit cleaning and painting of equipment and walls and replace and reconnect on completion. Mask and paint around large panels or equipment.

.9 Lightly sand glossy undercoats to provide a surface suitable for the proper application and adhesion of subsequent coats.

3.3 Painting Existing Facilities

.1 Paint existing equipment and metalwork in accordance with the appropriate coating system specified for new work.

.2 Modified work will require the full coating system. Other work will require cleaning followed by two finish coats of the appropriate system.

.3 Demonstrate that the existing coating is compatible with field coating by performing an adhesion test as specified herein. Where unacceptable test results are obtained, follow manufacturer's written instructions as to the necessity of a tie coat to provide a satisfactory bond between the existing coating and the specified field coating.

.4 Sandblast surfaces to be coated. On irregular concrete surfaces, apply surfacing material compatible with coating system as necessary to ensure a smooth level surface on which to apply coating system specified. Repair, clean, and finish surfaces to be coated or re-coated as specified herein.

3.4 Workmanship

.1 Coated surfaces to be free from runs, drops, ridges, waves, laps, and brush marks. Paint so as to produce an even film of uniform thickness completely coating corners and crevices. Paint in accordance with the requirements of SSPC.

.2 Coated surfaces to be free from gaps or holidays. Any gaps or holidays found during inspection to be touched-up by roughening surface around the fault and repainting at no expense to the Owner.

.3 Apply each coat of paint evenly and to a sharply cut line. Exercise care to avoid over-spraying or spattering paint on surfaces not to be coated.

.4 In the field, protect glass, hardware, floors, roofs, and other adjacent areas and installations with taping, drop cloths, or other suitable measures.

3.5 Mixing And Thinning

.1 Mixing and thinning to be performed by qualified personnel only.

.2 Coating material to be thoroughly stirred, strained, and kept at a uniform consistency during application.

.3 Mix coatings consisting of two or more components in accordance with the manufacturer's instructions.

.4 Thin coatings where necessary to suit the conditions of the surface, temperature, weather and method of application, immediately prior to use. The volatile organic content (VOC) of the coating as applied is to comply with prevailing regulations and codes.

.5 Do not reduce coating more than necessary to obtain the proper application characteristics. Thinner to be as recommended by the coating manufacturer.

3.6 Environmental Requirements

.1 Apply coating material only to surfaces that are dry, and only under conditions of evaporation rather than condensation.

.2 Do not apply materials during rainy, misty weather, or to surfaces upon which there is frost or moisture condensation.

.3 During damp weather, when the temperature of the surface to be coated is within 3°C of the dew point, heat surfaces to prevent moisture condensation thereon. Bare metal surfaces, except those which may be warped by heat, may be dehydrated by flame-heating devices immediately prior to coating application.

.4 During coating, and for a period of at least 8 hours after the coating material has been applied, maintain the temperature of the surfaces to be coated, the coated surfaces, and the atmosphere in contact at or above 10°C, and at least 3°C above the dew point.

.5 Coating material, when applied, to be approximately the same temperature as the surface on which it is applied.

.6 Fans or heaters to be used inside enclosed areas where conditions causing condensation are severe.

3.7 Equipment

.1 Ensure all coating equipment including but not limited to material pots, guns, fluid needles, air caps, brushes, and hoses are clean, in proper working order, and comply with the coating manufacturer's specifications. Clean any used equipment thoroughly with a solvent prior to being used with each new coating material and flush with solvents used in coating material. Contaminated hoses are to be promptly removed from service until cleaned or replaced.

.2 Use equipment designed for application of the materials specified. Compressors to have suitable traps and filters to remove water, solids and oils from the air.

.3 Perform a paper blotter test prior to application and when requested by the Engineer, to ensure the air contains less than the coating manufacturer's acceptable limits for oil and moisture.

.4 Equip spray equipment with mechanical agitators, pressure gages, and pressure regulators, and spray nozzles of the proper sizes.

3.8 Application

.1 The method of application used shall be governed by the coating manufacturer's recommendation for the particular coating being applied, and to the requirements of SSPC Good Painting Practice.

.2 Traps or separators shall be provided to remove oil, solids and water from the air. The air from the spray gun impinging onto the steel substrate shall show no condensed water or oil.

.3 All weld areas and hard to spray areas shall be hand brushed prior to the first spray coat application, with coating mixed to manufacturer's recommended procedures.

.4 No coatings shall be applied to a surface at a temperature that will cause blistering, separation or otherwise be detrimental to the life of the coating.

.5 Only thinners specified by the manufacturer shall be accepted.