SECTION 090561
COMMON WORK RESULTS FOR FLOORING PREPARATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. This section applies to floors identified in Contract Documents that are receiving the following types of floor coverings:

1. Resilient tile and sheet.

2. Carpet tile.

3. Setting thin-set ceramic tile.

B. Preparation of new concrete floor slabs for installation of floor coverings.

C. Testing of concrete floor slabs for moisture and alkalinity (pH).

D. Remediation of concrete floor slabs due to unsatisfactory moisture or alkalinity (pH) conditions.

1. Contractor shall perform all specified remediation of concrete floor slabs. If such remediation is indicated by testing agency's report and is due to a condition not under Contractor's control or could not have been predicted by examination prior to entering into the contract, a contract modification will be issued.

1.02 RELATED REQUIREMENTS

A. Section 012200 - Unit Prices: Bid pricing for remediation treatments if required.

B. Section 014000 - Quality Requirements: Additional requirements relating to testing agencies and testing.

C. Section 033000 - Cast-in-Place Concrete: Concrete admixture for slabs to receive adhered flooring, to prevent moisture content-related flooring failures.

D. Section 033000 - Cast-in-Place Concrete: Limitations on curing requirements for new concrete floor slabs.

1.03 PRICE AND PAYMENT PROCEDURES

A. Unit Prices: See Section 012200 - Unit Prices.

B. Unit Price for Remedial Floor Coating or Sheet Membrane: Do not include the cost of the floor coating or underlayment in the base bid; state on the bid form the unit price per square foot for the floor coating or underlayment, installed, in the event such remediation is required.

1.04 REFERENCE STANDARDS

A. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes 2019a.

1.05 ADMINISTRATIVE REQUIREMENTS

A. Coordinate scheduling of cleaning and testing, so that preliminary cleaning has been completed for at least 24 hours prior to testing.

1.06 SUBMITTALS

A. Floor Covering and Adhesive Manufacturers' Product Literature: For each specific combination of substrate, floor covering, and adhesive to be used; showing:

1. Relative Humidity limits and test methods.

2. Manufacturer's required bond/compatibility test procedure.

B. Adhesive Bond and Compatibility Test Report.

1.07 QUALITY ASSURANCE

A. Relative Humidity Testing shall be performed by an independent testing agency or the Contractor and shall be paid for by the Contractor.

B. Contractor to perform adhesive and bond test with his own personnel or hire a testing agency.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, handle, and protect products in accordance with manufacturer’s instructions and recommendations.

B. Deliver materials in manufacturer’s packaging; include installation instructions.

C. Keep materials from freezing.

1.09 FIELD CONDITIONS

A. Maintain ambient temperature in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 65 degrees F or more than 85 degrees F.

B. Maintain relative humidity in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 40 percent and not more than 60 percent.

PART 2 PRODUCTS

2.01 MATERIALS

A. Alternate Flooring Adhesive: Floor covering manufacturer's recommended product, suitable for the moisture and RH conditions present; low-VOC. In the absence of any recommendation

from flooring manufacturer, provide a product recommended by adhesive manufacturer as suitable for substrate and floor covering and for conditions present.

PART 3 EXECUTION

3.01 CONCRETE SLAB PREPARATION

A. Perform following operations in the order indicated:

1. Preliminary cleaning.
2. Relative Humidity Tests; 3 tests in the first 1000 square feet and one test in each additional 1000 square feet, unless otherwise indicated or required by flooring manufacturer.
    a. Depths for probes shall follow the Table provided in ASTM F2170.
    b. Drill bit diameter shall not exceed 0.04 in. (1 mm) larger than the external diameter of the hole liner.
    c. Hole shall be drilled dry. DO NOT use water for cooling or lubrication.
    d. Remove duct from hole using a vacuum cleaner.
    e. Insert hole liner to bottom of hole. Place rubber stopper into upper end of liner and seal around liner to concrete at concrete surface withg joint sealant, caulk or gasketed cover.
    f. Allow 72 hours to schieve moisture equilibrium with the hole before making relative humidity measurements.
3. Specified remediation, if required.
4. Patching, smoothing, and leveling, as required.
5. Other preparation specified.
6. Adhesive bond and compatibility test.
7. Protection.

3.02 INTERNAL RELATIVE HUMIDITY TESTING

A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.

B. Where this specification conflicts with the referenced test method, comply with the requirements of this section.

C. Test in accordance with ASTM F2170 Procedure A and as follows.

D. Testing with electrical impedance or resistance apparatus may not be substituted for the specified ASTM test method, as the values determined are not comparable to the ASTM test values and do not quantify the moisture content sufficiently.

E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if any test value exceeds 75 percent relative humidity.

F. Report: Report the information required by the test method per Section 11 of the ASTM F2170.

3.03 ADHESIVE BOND AND COMPATIBILITY TESTING

A. Comply with requirements and recommendations of floor covering manufacturer.

END OF SECTION

SECTION 090600
SCHEDULES FOR FINISHES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Finish List.

B. Room Finish Schedule.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 ATTACHMENTS

A. Finish List, Three (3) pages.

B. Room Finish Schedule, Two (2) pages.

Finish List **Putnam Valley Fire Station**

SYMBOL	DESCRIPTION	MANUFACTURER	STYLE	COLOR / FINISH	NOTES
FLOOR					
CFT-1	Porcelain Floor Tile - Field	Americal Olean	Unglazed Mosaics 2" x 2"	Color: Willow Speckle A94 (Grp 1)	Laticrete Grout #42 Platinum
CFT-2	Porcelain Floor Tile - Field	Florim USA	Unglazed Mosaics 2" x 2"	Color: Light Smoke Speckle A04 (Grp 1)	Laticrete Grout #42 Platinum
CPT-1	Carpet Tile - Field	Forbo	Flotex	Seagrass Almond 111003	Meeting Room
CPT-2	Carpet Tile - Field	Forbo	Flotex	131007 Steel	Offices
CPT-3	Carpet Tile - Field	Forbo	Flotex	570015 Storm	Bunk Rooms
EFC-1	Epoxy Floor Coating	Dur-A-Flex	Dur-a-Quartz	Q28-16	Apparatus bay
EFC-2	Epoxy Floor Coating	Dur-A-Flex	Dur-a-Quartz	Q28-37	Apparatus bay
EFC-3	Epoxy Floor Coating	Dur-A-Flex	Poly-crete MDB	Tile Red	Kitchen
EFC-4	Epoxy Floor Coating	Dur-A-Flex	Dur-a-Gard	Safety Red	Apparatus bay
EFC-5	Epoxy Floor Coating	Dur-A-Flex	Hybri-Flex EC	Galaxy	Shower Rooms & Members Room
RFP-1	Resilient Floor Tile	Forbo	Marmoleum Vivace	3405 Granada	Captains'
RFP-2	Resilient Floor Tile	Forbo	Marmoleum Real	3075 Shell	3rd Floor Lobby
RFP-3	Resilient Floor Tile	Forbo	Marmoleum Vivance	3426 Cork Tree	Corridors
RFP-4	Resilient Floor Tile	Forbo	Marmoleum Vivance	3405 Granada	Offices
RFP-5	Resilient Floor Tile	Forbo	Marmoleum Fresco	3203 Henna	Ready Room
RFP-6	LVT	Armstrong	Natural Creations Earth Cuts Delano	NA342 bisque	Not used
SF-1	Sports Flooring Tile	Regupol	Aktiv Recycled Roll Flooring	AK20106 Blue Blizzard	
SC-1	Sealed Concrete	Prosoco, Inc.	Salt guard	--	
RFT-1	Rubber Floor Tile	Burke Flooring	Endura Standard Sculptured	031 Volley	
RST-1	Rubber Stair Tread	Burke Flooring	Endura Uni-Step Single Piece Tread/Riser w V.I. Strip	021 Balanced Blue w/Yellow V.I. Strip	Sculptured Profile. Complementary color at top & bottom tread of each run of stairs
WO-1	Entrance Floor Grid	Construction Specialties	PediTred G4	9305 EXPRESSO	301
WO-2	Entrance Floor Mat	Construction Specialties	Powerpoint Carpet Tiles	Gray	118
WALL BASE/TRIM/PROTECTION					
WB-1	4" TPR cove base	Armstrong	4" rubber base	R4044 Cappuccino	
WB-2	4" TPR cove base	Armstrong	4" rubber base	R4046 Conch	
WB-3	Epoxy Cove Base	Dur-A-Flex	Dur-a-Quartz	Q28-16	
WB-4	Coved Ceramic Wall Tile Base	American Olean	Bright & Matt Wall Tile; 6" x 6"	Matt Smokey Quartz 0028	Inside & outside corners
WB-5	Epoxy Cove Base	Dur-A-Flex	Poly-crete MDB	Tile Red	Kitchen
WB-6	Epoxy Cove Base	Dur-A-Flex	Hybri-Flex EQ	Q28-35	Toilet & Bath
WB-7	Vinyl Floor Cove Base	Armstrong	4" rubber base	60 Jet Black	
WB-8	Coved Ceramic Wall Tile Base	American Olean	Bright & Matt Wall Tile; 6" x 6"	Matt Nutmeg 0039	Inside & outside corners
WB-9	Epoxy Cove Base	Dur-A-Flex	Hybri-Flex EC	Galaxy	Toilet & Bath
CR-1	Chairrail; PVC	Pawling Corporation	WG-4	369- Blue Fog	
CR-2	Chairrail; PVC	Pawling Corporation	WG-4	682- Khaki Brown	
WT-1	Wood Trim	Miniwax Interior Oil Stain		Stain to be applied by contractor, Color to match Doors	
WP-1	Rigid Sheet Wall Protection	ProTek Systems, Inc.	WC-60: .060" thick rigid PVC	682- Khaki Brown	8' high
WP-2	Stainless Steel Sheet Wall Protection	ProTek Systems, Inc.	WPS-12 Stainless Steel Wall System	Brushed Stainless Steel	See A700 Drawings
WP-3	Stainless Steel Corner Guards	Construction Specialties	CO-8 Series	Brushed Stainless Steel	See A700 Drawings
TS-1	Linoleum Tack Surface	Forbo	Bulletin Board	2186 Almond Buff	Display cases
FRP-1	FRP Wall Surface	Marlite	Blue Sky Digital Print	2718 Painted Planks	Service Bar Walls
FINISHES					
SOFFITS: Note : All horizontal surfaces shall be PT-10 and all vertical surfaces to match color and finish of adjacent wall.					
INTERIOR JOINTS: Note : All interior joints to be Pecora Co. AC-20 color Latex Calk- clear. Paint to match adjacent wall color.					
CONTROL JOINTS: Note : All control joints to be Master Seal #273 Limestone (to match color and finish of adjacent wall).					

SYMBOL	DESCRIPTION	MANUFACTURER	STYLE	COLOR / FINISH	NOTES
EXTERIOR IHM DOORS/FRAMES: Note : All exterior doors PT-11 u.n.o.					
EXTERIOR Lintels: All exterior lintels PT-11 u.n.o.					
EXTERIOR & INTERIOR OH Door Jamb Steel Plates: PT-14 u.n.o.					
PT-1	Interior Wall Paint	Sherwin-Williams	ProMar 200 Zero VOC Interior Latex Egg-Shell Enamel B20-2600 Series	SW 7008- Alabaster	
PT-2	Interior Wall Paint- Accent	Sherwin-Williams	ProMar 200 Zero VOC Interior Latex Egg-Shell Enamel B20-2600 Series	SW 6149 Relaxed Khaki	Wainscot paint
PT-3	Interior Wall Paint- Accent	Sherwin-Williams	ProMar 200 Zero VOC Interior Latex Egg-Shell Enamel B20-2600 Series	SW 9152 Let It Rain	Wainscot paint
PT-4	Interior Paint- Metal Door Frames, Painted Metal Doors	Sherwin-Williams	ProClassic Interior Acrylic semi-gloss B21 Series	SW 6249- Storm Cloud	
PT-5	Interior Paint- Metal Door Frames	Sherwin-Williams	ProClassic Interior Acrylic semi-gloss B21 Series	SW 2837- Aurora Brown	
PT-6	Interior Wall Paint - Apparatus Bay, Firematic Areas	Sherwin-Williams	Pro Industrial Pre-Catalyzed Waterbased Epoxy K46-150 Series	SW 7015 Repose Gray	
PT-7	Interior Wall Paint - Apparatus Bay: Accent	Sherwin-Williams	Pro Industrial Pre-Catalyzed Waterbased Epoxy K46-150 Series	SW 7600 Bolero	
PT-8	Interior Wall Paint	Sherwin-Williams	ProMar 200 Zero VOC Interior Latex Gloss Enamel B20-2600 Series	SW 7008- Alabaster	
PT-9	Interior Paint- Apparatus Bay: Metal Door Frames	Sherwin Williams	ProClassic Interior Acrylic semi-gloss B21 Series	SW 7019 Gaunlet Gray	
PT-10	Interior Paint - Ceilings and Soffits	Sherwin-Williams	ProMar 200 Zero VOC Interior Latex Flat Wall Paint B30-2600 Series	Ceiling White (No Alternative)	
PT-11	Exterior Paint - Metal, Galvanized	Sherman Williams	Urethane Alkyd Semi-Gloss Enamel	SW 7571 Casa Blanca	Exterior metal doors
PT-12	Exterior Paint - Trim	Sherwin-Williams	A-100 Exterior Latex Satin House & Trim Paint A82-100 Series	SW 7003 Toque White	
PT-13	Exterior Paint - Metal Bollards	Sherman Williams	Exterior Semi-Gloss	SW 6601 TANAGER (RED)	
PT-14	Exterior Paint - Metal, Galvanized	Sherman Williams	Urethane Alkyd Semi-Gloss Enamel	SW 7019 Gaunlet Gray	OH Door Jambs
PT-15	Interior Wall Paint - Apparatus Bay	Sherwin-Williams	Pro Industrial Pre-Catalyzed Waterbased Epoxy K46-150 Series	SW 7017 Dorian Gray	
PT-16	Interior Wall Paint - Apparatus Bay: Accent	Sherwin-Williams	Pro Industrial Pre-Catalyzed Waterbased Epoxy K46-150 Series	SW 7019 Gaunlet Gray	
PT-17	Interior Paint- Apparatus Bay: Painted Metal	Sherwin Williams	ProClassic Interior Acrylic semi-gloss B21 Series	SW 7600 Bolero	
PT-18	Dry Fall	Sherwin-Williams	I-OP-DF, Dry Fall	White	
PT-19	Interior Paint- Bottom of mezzanine	Sherwin Williams	ProClassic Interior Acrylic semi-gloss B21 Series	SW 7757 High Reflective White	
PT-20	Interior Paint: Painted Metal Ceilings	Sherwin Williams	ProClassic Interior Acrylic semi-gloss B21 Series	SW 6991 Black Magic	
PT-21	Interior Wall Paint	Sherwin-Williams	ProMar 200 Zero VOC Interior Latex Gloss Enamel B20-2600 Series	SW 9127 At Ease Soldier	
CWT-1A	Ceramic Wall Tile	American Olean	Bright & Matt Wall Tile; 6" x 6"	Matt Almond 0087	
CWT-1B	Ceramic Wall Tile Accent	American Olean	Bright & Matt Wall Tile; 6" x 6"	Matt Nutmeg 0039	Pair with WB-8
CWT-1C	Ceramic Wall Tile Accent	American Olean	Bright & Matt Wall Tile; 6" x 6"	Cappuccino 0078	
CWT-2A	Ceramic Wall Tile	American Olean	Bright & Matt Wall Tile; 6" x 6"	Matt Light Smoke 0004	
CWT-2B	Ceramic Wall Tile Accent	American Olean	Bright & Matt Wall Tile; 6" x 6"	Matt Smokey Quartz 0028	Pair with WB-4
CWT-2C	Ceramic Wall Tile Accent	American Olean	Bright & Matt Wall Tile; 6" x 6"	Summer Rain 0081	
W-1	Wainscoting	Marlite	Plank, BG2 score lines	5340 Sorrel	Not Used
WD-1	Wood Door Finish	Marshfield Door Systems	White birch	30-95 Amber	
PARTITIONS					
FP-1	Paired Panel Partition	Hufcore Inc.	600 Series	Sand 44-543	

Finish List **Putnam Valley Fire Station**

SYMBOL	DESCRIPTION	MANUFACTURER	STYLE	COLOR / FINISH	NOTES
TP-1	HDPE Toilet Partition	Global Partitions	Pebble Grained	9200 Gray	
CEILINGS					
GWB	Painted gypsum wall board	N/A	---	PT-10	
Exp	Exposed Deck & structure	N/A	---	PT-10	
SAC-1	Suspended Acoustical Ceiling Grid and Tile	Armstrong	Fine Fissured, 24" x 24"; angled tegular edge; 15/16" Grid	#1732 White	
SAC-2	Suspended Acoustical Ceiling Grid and Tile	Armstrong	Fine Fissured, 24" x 48"; angled tegular edge; 15/16" Grid	#1733 White	
SAC-3	Suspended Acoustical Ceiling Grid and Tile	Armstrong	Fine Fissured Ceramaguard, 24" x 48"	#608 White	
CASEWORK FINISHES					
PL-1	High Pressure Plastic Laminate	Wilsonart	Matte	4823-60 Antique Brush	Cabinets/casework
PL-2	High Pressure Plastic Laminate	Wilsonart	Matte	1530-60 Beige	Kitchen Cabinetry
PL-3	High Pressure Plastic Laminate	Wilsonart	Matte	4843-60 Misted Zephyr	Casework
PL-4	High Pressure Plastic Laminate	Wilsonart	Matte	4759-60 Mystique Marine	Cabinets/casework
PL-5	High Pressure Plastic Laminate	Wilsonart	Matte	4856-60 Cloud Zephyr	Display Cases
SS-1	Solid Surfacing Material	LG	Hi-Macs	Pluto T005	Window Sils & Counters
SS-2	Solid Surfacing Material	LG	Hi-Macs	Platinum Granite G007	Work surfaces
SS-3A	Solid Surfacing Material	LG	Hi-Macs	Understanding R538	Vanity tops
SS-3B	Solid Surfacing Material	LG	Hi-Macs	Hazelnut Shell GT934	Vanity tops
SS-4	Solid Surfacing Material	LG	Hi-Macs	Steel Gray S209	Kitchen Counters
SS-5	Solid Surfacing Material	LG	Hi-Macs	White Quartz G04	Counter & window sill
~~LB~~	~~Locker Room Bench~~			~~TBD~~	Not Used
THRESHOLDS					
MT	Marble Threshold	American Olean	Double Bevel Windowsill	White Marble	
TS	Rubber Transition Strip	Forbo	Varies	C03 carbon	

Room Finish Schedule **Putnam Valley Fire Station**

		FLOOR		NORTH WALL		EAST WALL		SOUTH WALL		WEST WALL		DOORS		ACCESSORIES		CEILING		WINDOW		
RM#	ROOM NAME	MATERIAL	FINISH	MAT.	FINISH	MAT.	FINISH	MAT.	FINISH	MAT.	FINISH	DOOR FRAME	DOOR FINISH	WALL BASE	WALL TRIM /PROT.	MAT.	FINISH	SILLS	NOTES	RM#
101	Apparatus Bay	CONC.	EFC-1/ EFC-2/ EFC-4	CMU	PT-6/ PT-7/ PT-15	CMU	PT-6/ PT-7/ PT-15	CMU	PT-6/ PT-7/ PT-15	CMU	PT-6/ PT-7/ PT-15	PT-9	PT-9	PT-16	-	Exp.	PT-18	-	See 3/A802 & 7/A800	101
101A	Vestibule	CONC.	EFC-1	GWB	PT-15	GWB	PT-15	GWB	PT-15	GWB	PT-15	PT-9	PT-9	PT-16	-	SAC-2	PRE-F	-		101A
102	Radio Room	CONC.	EFC-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PT-9	PT-9	WB-3	-	SAC-2	PRE-F	SS-4	See detail 6/A800.	102
103	Uni-sex Lavatory	CONC.	EFC-1	CMU	PT-6	CMU	PT-6	CMU	PT-6	CMU	PT-6	PT-9	PT-9	PT-16	-	SAC-2	PRE-F	-		103
104	Janitor	CONC.	SC-1	CMU	PT-6	CMU	PT-6	CMU	PT-6	CMU	PT-6	PT-9	PT-9	PT-16	WP-1	SAC-2	PRE-F	-	See 1/A712.	104
105	Red Bag	CONC.	EFC-1	CMU	PT-6	CMU	PT-6	CMU	PT-6	CMU	PT-6	PT-9	PT-9	PT-16		Exp.	Pt-19			105
106	Engineer's Work Room	CONC.	EFC-1	CMU	PT-6	CMU	PT-6	CMU	PT-6	CMU	PT-6	PT-9	PT-9	PT-16	-	Exp	Pt-19	-	See 6/A800	106
107	Laundry	CONC.	EFC-1	CMU	PT-6	CMU	PT-6	CMU	PT-6	CMU	PT-6	PT-9	PT-9	PT-16	-	Exp	Pt-19	-	See 6/A800 & 7/A800	107
108	SCBA Fill	CONC.	EFC-1	CMU	PT-6	CMU	PT-6	CMU	PT-6	CMU	PT-6	PT-9	PT-9	PT-16	-	Exp	Pt-19	-	See 6/A800 & 7/A800	108
109	Compressor	CONC.	EFC-1	CMU	PT-6	CMU	PT-6	CMU	PT-6	CMU	PT-6	PT-9	PT-9	PT-16	-	Exp	Pt-19	-	See 6/A800 & 7/A800	109
110	Gear Storage	CONC.	EFC-1	CMU	PT-6	CMU	PT-6	CMU	PT-6	CMU	PT-6	PT-9	PT-9	PT-16	-	Exp	Pt-19	-	See 6/A800 & 7/A800	110
111	Storage #1	CONC.	SC-1	CMU	PT-6	CMU	PT-6	CMU	PT-6	CMU	PT-6	PT-9	PT-9	PT-16	-	Exp	Pt-19	-		111
112	Hose Storage	CONC.	SC-1	CMU	PT-6	CMU	PT-6	CMU	PT-6	CMU	PT-6	PT-9	PT-9	PT-16	-	Exp	Pt-19	-		112
113	Electrical	CONC.	SC-1	CMU	PT-6	CMU	PT-6	GWB	PT-6	CMU	PT-6	PT-9	PT-9	PT-16	-	Exp	Pt-19	-		113
114	Fire Pump	CONC.	SC-1	CMU	PT-6	CMU	PT-6	CMU	PT-6	CMU	PT-6	PT-9	PT-9	PT-16	-	Exp	*	-	* Fire Rated Ceiling	114
115	Decon	CONC.	EFC-1	CMU	PT-6	CMU	PT-6	CMU	PT-6	CMU	PT-6	PT-9	PT-9	PT-16	-	Exp	Pt-19	-	See 6/A800 & 7/A800	115
116	Hydration Room	CONC.	EFC-1	CMU	PT-6	CMU	PT-6	CMU	PT-6	CMU	PT-6	PT-9	PT-9	PT-16	-	Exp	Pt-19	-	See 6/A800 & 7/A800	116
117	Day Room	CONC.	FRP-4/ CPT-2	GWB	PT-1/ Pt-2	GWB	PT-1	GWB	PT-1/ Pt-2	GWB	PT-1/ Pt-2	PT-4	WD-1	WB-1	WT-1/ WP-2	SAC-2	PRE-F	SS-2	SS-2 Counter, PL-4 Cabinets	117
118	Vestibule	CONC.	WO-2	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PT-4	WD-1	WB-1	-	SAC-2	PRE-F	-		118
118A	Closet	CONC.	RFP-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PT-4	WD-1	WB-1	-	SAC-2	PRE-F	-		118A
119	HK Storage	CONC.	RFP-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PT-4	WD-1	WB-1	-	SAC-2	PRE-F	-		119
120	Bunk Room #1	CONC.	CPT-3	GWB	PT-2	GWB	PT-1	GWB	PT-1	GWB	PT-1	PT-4	WD-1	WB-1	-	SAC-2	PRE-F	SS-1		120
121	Men's Lavatory/Shower	CONC.	EFC-5	TBB	CWT-2A/ CWT-2B/ CWT-2C	TBB	CWT-2A/ CWT-2B/ CWT-2C	TBB	CWT-2A/ CWT-2B/ CWT-2C	TBB	CWT-2A/ CWT-2B/ CWT-2C	PT-4	WD-1	WB-5	-	SAC-2	PRE-F	-	SS-3A vanity top, Partitions TP-1. See 1A/A712 & 4/A800.	121
122	Corridor	CONC.	RFP-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PT-4	WD-1	WB-1	-	SAC-1	PRE-F	-	PL-5 display case, PT-3 accent	122
123	Corridor	CONC.	RFP-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PT-4	WD-1	WB-1	-	SAC-1	PRE-F	-	PL-5 display case	123
124	Elevator	Pre Fab.	RFP-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	See specifications	124
125	HouseKeeping	CONC.	RFP-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PT-4	WD-1	WB-1	-	SAC-2	PRE-F	-		125
126	Bunk Room #2	CONC.	CPT-3	GWB	PT-1	GWB	PT-1	GWB	PT-2	GWB	PT-1	PT-4	WD-1	WB-1	-	SAC-2	PRE-F	SS-1		126
127	Women's Lavatory/Shower	CONC.	EFC-5	TBB	CWT-1A/ CWT-1B/ CWT-1C	TBB	CWT-1A/ CWT-1B/ CWT-1C	TBB	CWT-1A/ CWT-1B/ CWT-1C	TBB	CWT-1A/ CWT-1B/ CWT-1C	PT-4	WD-1	WB-5	-	SAC-2	PRE-F	-	SS-3A vanity top, Partitions TP-1. See 1A/A712 & 4/A800.	127
128	Stair	CONC.	EFC-1/ RFT-1/ RST-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	Pt-4/ PT-9	WD-1/ PT-9	WB-1	-	EXP.	Pt-19	-	Railings and stringers: PT-4	128
129	Exercise	CONC.	SF-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PT-4	WD-1	WB-1	-	EXP.	PT-20	-		129
130	Pump Room	CONC.	SC-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PT-4	WD-1	WB-1	-	EXP.	Pt-19	-		130
201	Boiler/Elec Room	CONC.	SC-1	GWB	PT-6	CMU	PT-6	CMU	PT-6	CMU	PT-6	PT-9	PT-9	-	-	EXP.	Pt-19	-		201
202	Elevator Machine Room	CONC.	SC-1	GWB	PT-6	CMU	PT-6	CMU	PT-6	CMU	PT-6	PT-9	PT-9	-	-	EXP.	Pt-19	-		202
203	Server	CONC.	SC-1	GWB	PT-6	CMU	PT-6	CMU	PT-6	CMU	PT-6	PT-9	PT-9	-	-	EXP.	Pt-19	-		203
204	Stair	CONC.	RST-1/ RFT-1	GWB	PT-6	CMU	PT-6	CMU	PT-6	CMU	PT-6	PT-9	PT-9	-	-	EXP.	Pt-19	-	Railings and stringers: PT-4	204
205	Elevator	Pre Fab.	RFP-1	-	-	-	-	-	-	-	-	-	-	-	-	-		-	See specifications	205
206	Mezzanine	CONC.	SC-1	GWB	PT-6	CMU	PT-6	CMU	PT-6	CMU	PT-6	PT-9	PT-9	-	-	EXP.	Pt-19	-	Railings: PT-17	206
207	Mechanical #1	CONC.	SC-1	GWB	PT-6	CMU	PT-6	CMU	PT-6	CMU	PT-6	PT-9	PT-9	-		EXP.	Pt-19	-		207
208	Mezzanine	CONC.	SC-1	CMU	PT-6	CMU	PT-6	CMU	PT-6	CMU	PT-6	PT-9	PT-9	-	-	EXP.	Pt-19	-	Railings: PT-17	208
209	Mechanical #2	CONC.	SC-1	GWB	PT-6	CMU	PT-6	CMU	PT-6	CMU	PT-6	PT-9	PT-9	-	-	EXP.	Pt-19	-		209
301	Vestibule	CONC.	WO-1/ RFP-2	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PT-4	PRE-F	WB-1	-	SAC-1	PRE-F	SS-2		301
302	Lobby	CONC.	RFP-2/ RFP-3/ RFP-5	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PT-4	WD-1	WB-1	-	SAC-1	PRE-F	-	PT-2 accent in corridor recesses, PL-5 display case. See 3/A800.	302
303	Public Men's Lavatory	CONC.	CFT-2	TBB	CWT-2A/ CWT-2B/ CWT-2C	TBB	CWT-2A/ CWT-2B/ CWT-2C	TBB	CWT-2A/ CWT-2B/ CWT-2C	TBB	CWT-2A/ CWT-2B/ CWT-2C	PT-4	WD-1	WB-4	-	SAC-2	PRE-F	-	SS-3B vanity top, Partitions TP-1. See 1A/A712 & 5/A800.	303

Room Finish Schedule **Putnam Valley Fire Station**

RM#	ROOM NAME	MATERIAL	FINISH	MAT.	FINISH	MAT.	FINISH	MAT.	FINISH	MAT.	FINISH	DOOR FRAME	DOOR FINISH	WALL BASE	WALL TRIM /PROT.	MAT.	FINISH	SILLS	NOTES	RM#
304	Public Womens Lavatory	CONC.	CFT-1	TBB	CWT-1A/ CWT-1B/ CWT-1C	TBB	CWT-1A/ CWT-1B/ CWT-1C	TBB	CWT-1A/ CWT-1B/ CWT-1C	TBB	CWT-1A/ CWT-1B/ CWT-1C	PT-4	WD-1	WB-8	-	SAC-2	PRE-F	-	SS-3B vanity top, Partitions TP-1. See 1A/A712 & 5/A800.	304
305	Coat Room	CONC.	RFP-2	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PT-4	WD-1	WB-1	-	SAC-1	PRE-F	-		305
306	Pantry	CONC.	EFC-3	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PRE-F	PRE-F	WB-5	-	SAC-3	PRE-F	SS-2	See Detail 3/A800.	306
307	Refrigerated Storage	CONC.	EFC-3	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PRE-F	PRE-F	WB-5	-	SAC-3	PRE-F	SS-2	See Detail 3/A800.	307
308	Dish Storage	CONC.	EFC-3	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PRE-F	PRE-F	WB-5	-	SAC-3	PRE-F	-	See Detail 3/A800.	308
309	Kitchen	CONC.	EFC-3	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PRE-F	PRE-F	WB-5	WP-2/ WP-3	SAC-3	PRE-F	-	See Detail 3/A800. SS-4 Counter, PL-2 Cabinets	309
309A	Dish Washing	CONC.	EFC-3	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PRE-F	PRE-F	WB-5	WP-3	SAC-3	PRE-F	-	See Detail 3/A800.	309A
310	Vestibule	CONC.	RFP-3	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PT-4	WD-1	WB-1	-	SAC-1	PRE-F	-		310
311	Service Center	CONC.	EFC-3	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PRE-F	PRE-F	WB-5		SAC-3	PRE-F	-	See Detail 3/A800.	311
312	Storage	CONC.	RFP-2	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PT-4	WD-1	WB-1	-	SAC-2	PRE-F	-		312
313	AV	CONC.	RFP-2	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PT-4	WD-1	WB-1	-	SAC-2	PRE-F	-	SS-2 Counter	313
314	Meeting/Training	CONC.	RFP-2/ RFP-3/ RFP-5	GWB	PT-1/ Pt-21	GWB	PT-1/ Pt-21	GWB	PT-1/ Pt-21	GWB	PT-1/ Pt-21	PT-4	WD-1	WB-1	WP-1	SAC-2/ GWB	PRE-F/ PT-10	SS-1	PL-5 display case	314
315	Members Room	CONC.	RFP-4/ CPT-1/ EFC-5	GWB	PT-1/ PT-3	GWB	PT-1/ PT-3	GWB	PT-1/ PT-3	GWB	PT-1/ PT-3	PT-4	PT-4	WB-1	WT-1	SAC-2/ GWB	PRE-F/ PT-10	SS-2	SS-2 Counter, PL-4 Cabinets	315
316	Kitchenette	CONC.	RFP-4	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-3	PT-4	PT-4	WB-1	WP-2	SAC-2/ GWB	PRE-F/ PT-10		SS-2 Counter, PL-4 Cabinets	316
316A	Pantry	CONC.	RFP-4	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PT-4	PT-4	WB-1		GWB	PT-10	-		316A
316B	Pantry	CONC.	RFP-4	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PT-4	PT-4	WB-1		GWB	PT-10	-		316B
317	Table/Chair Storage	CONC.	RFP-2	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PT-4	WD-1	WB-1	WP-1*	SAC-2	PRE-F	-	*WP-1 - 8'-0" high	317
318	Women's Lavatory	CONC.	CFT-1	TBB	CWT-1A/ CWT-1B/ CWT-1C	TBB	CWT-1A/ CWT-1B/ CWT-1C	TBB	CWT-1A/ CWT-1B/ CWT-1C	TBB	CWT-1A/ CWT-1B/ CWT-1C	PT-4	WD-1	WB-8	-	SAC-2	PRE-F	-	SS-3 vanity top, Partitions TP-1. See 1A/A712 & 5/A800.	318
319	Men's Lavatory	CONC.	CFT-2	TBB	CWT-2A/ CWT-2B/ CWT-2C	TBB	CWT-2A/ CWT-2B/ CWT-2C	TBB	CWT-2A/ CWT-2B/ CWT-2C	TBB	CWT-2A/ CWT-2B/ CWT-2C	PT-4	WD-1	WB-4	-	SAC-2	PRE-F	-	SS-3 vanity top, Partitions TP-1. See 1A/A712 & 5/A800.	319
320	Corridor	CONC.	RFP-2/ RFP-3	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PT-4	PT-4	WB-1	-	SAC-1	PRE-F	-	PT-2 accent in corridor recesses, PL-5 display case	320
321	Elevator	Pre Fab.	RFP-1	-	-	-	-	-	-	-	-	-	-	-	-	-		-	See specifications	321
322	Stair	CONC.	RST-1/ RFT-1	GWB	PT-6	CMU	PT-6	CMU	PT-6	CMU	PT-6	PT-9	PT-9	-	-	SAC-2	PRE-F	-	Railings and stringers: PT-4	322
323	Fire Prevention Storage	CONC.	RFP-2	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PT-4	PT-4	WB-1	-	SAC-2	PRE-F	-		323
324	Janitor	CONC.	SC-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PT-4	PT-4	WB-1	WP-1	SAC-2	PRE-F	-		324
325	Housekeeping	CONC.	RFP-2	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PT-4	PT-4	WB-1	-	SAC-2	PRE-F	-		325
326	Assistant Chief's	CONC.	RFP-4	GWB	PT-2	GWB	PT-1	GWB	PT-1	GWB	PT-1	PT-4	PT-4	WB-1	-	SAC-2	PRE-F	SS-2	SS-2 Counter, PL-1 Cabinets	326
327	Junior Officers	CONC.	RFP-2	GWB	PT-2	GWB	PT-1	GWB	PT-1	GWB	PT-1	PT-4	PT-4	WB-1	-	SAC-2	PRE-F	SS-2		327
328	Chief's Office	CONC.	RFP-4	GWB	PT-1	GWB	PT-2	GWB	PT-1	GWB	PT-1	PT-4	PT-4	WB-1	-	SAC-2	PRE-F	SS-2	SS-2 Counter, PL-1 Cabinets	328
329	Conference Room	CONC.	RFP-4	GWB	PT-1/ PT-3	GWB	PT-1/ PT-3	GWB	PT-1/ PT-3	GWB	PT-1/ PT-3	PT-4	PT-4	WB-1	WT-1	SAC-2	PRE-F	SS-2	SS-2 Counter, PL-1 Cabinets	329
330	Vestibule	CONC.	RFP-2	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PT-4	WD-1	WB-1	-	SAC-1	PRE-F	-		330
331	President/VP Office	CONC.	RFP-4	GWB	PT-1	GWB	PT-2	GWB	PT-1	GWB	PT-1	PT-4	PT-4	WB-1	-	SAC-2	PRE-F	SS-2	SS-2 Counter, PL-1 Cabinets	331
332	Business Office	CONC.	RFP-2	GWB	PT-1	GWB	PT-1	GWB	PT-1	GWB	PT-1	PT-4	PT-4	WB-1	-	SAC-2	PRE-F	SS-2	SS-2 Counter, PL-1 Cabinets	332
333	Work Area	CONC.	RFP-2	GWB	PT-2	GWB	PT-2	-	-	GWB	PT-2	PT-4	PT-4	WB-1	-	SAC-2	PRE-F	-	PT-2 accent in corridor recesses, SS-5 Counter, PL-3 Cabinets	333

END OF SECTION

SECTION 092116
GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Performance criteria for gypsum board assemblies.

B. Metal stud wall framing.

C. Metal channel ceiling framing.

D. Acoustic insulation.

E. Gypsum wallboard.

F. Joint treatment and accessories.

G. Water-resistive barrier over exterior wall sheathing.

1.02 RELATED REQUIREMENTS

A. Section 054000 - Cold-Formed Metal Framing: Structural steel stud framing.

B. Section 061000 - Rough Carpentry: Building framing and sheathing.

C. Section 072100 - Thermal Insulation: Acoustic insulation.

1.03 REFERENCE STANDARDS

A. AISI S100-12 - North American Specification for the Design of Cold-Formed Steel Structural Members 2012.

B. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units 2018.

C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.

D. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board 2017.

E. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members 2018.

F. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products 2020.

G. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board 2019b.

H. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs 2018.

I. ASTM C1047 - Standard Specification for Accessories For Gypsum Wallboard and Gypsum Veneer Base 2019.

J. ASTM C1178/C1178M - Standard Specification for Coated Glass Mat Water-Resistant Gypsum Backing Panel 2018.

K. ASTM C1396/C1396M - Standard Specification for Gypsum Board 2017.

L. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber 2016.

M. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements 2009 (Reapproved 2016).

N. ASTM E413 - Classification for Rating Sound Insulation 2016.

O. GA-216 - Application and Finishing of Gypsum Panel Products 2016.

P. GA-600 - Fire Resistance Design Manual 2015.

Q. UL (FRD) - Fire Resistance Directory Current Edition.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide data on gypsum board, glass mat faced gypsum board, accessories, and joint finishing system.

C. Product Data: Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing gypsum board installation and finishing, with minimum 5 years of experience.

B. Copies of Documents at Site: Maintain at the project site a copy of each referenced document that prescribes execution requirements.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Stack panels flat with spacers beneath and between each bundle to provide air circulation. Protect sheathing from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

A. Provide completed assemblies complying with ASTM C840 and GA-216.

1. See PART 3 for finishing requirements.

B. Interior Partitions, Indicated as Acoustic: Provide completed assemblies with the following characteristics:

1. Acoustic Attenuation: Insulation thickness as indicated in 072100 - Thermal Insulation.

2. Acoustical sealant: See Section {\id\#1000068} - {\t\#1000068}.

C. Fire-Resistance-Rated Assemblies: Provide completed assemblies with the following characteristics:

1. Fire-Resistance-Rated Partitions: UL listed assembly No. [_____]; [___] hour rating.

2. UL Assembly Numbers: Provide construction equivalent to that listed for the particular assembly in the current UL (FRD).

2.02 METAL FRAMING MATERIALS

A. Manufacturers - Metal Framing, Connectors, and Accessories:

1. Clarkwestern Dietrich Building Systems LLC: www.clarkdietrich.com.

2. Marino: www.marinoware.com.

3. Substitutions: See Section 016000 - Product Requirements.

B. Non-structural Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/120 at 5 psf.

1. Studs: C-shaped with knurled or embossed faces.

2. Runners: U shaped, sized to match studs.

3. Ceiling Channels: C-shaped.

4. Furring: Hat-shaped sections, minimum depth of 7/8 inch and 1 1/2 inch.

C. Shaft Wall Studs and Accessories: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 and specified performance requirements.

1. Products:

a. Same manufacturer as other framing materials.

b. Substitutions: See Section 016000 - Product Requirements.

D. Partition Head to Structure Connections: Provide mechanical anchorage devices that accommodate deflection using slotted holes, screws, and anti-friction bushings, preventing rotation of studs while maintaining structural performance of partition.

1. Structural Performance: Maintain lateral load resistance and vertical movement capacity required by applicable code, when evaluated in accordance with AISI S100-12.

E. Material: ASTM A653/A653M steel sheet, SS Grade 50/340, with G60/Z180 hot-dipped galvanized coating.

1. Provide top track preassembled with connection devices spaced to fit stud spacing indicated on drawings; minimum track length of 12 feet.

2.03 BOARD MATERIALS

A. Manufacturers - Gypsum-Based Board:

1. CertainTeed Corporation: www.certainteed.com.

2. Georgia-Pacific Gypsum: www.gpgypsum.com/#sle.

3. National Gypsum Company: www.nationalgypsum.com/#sle.

4. USG Corporation: www.usg.com/#sle.

B. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.

1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.

2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.

a. Mold resistant board is required at all locations.

3. At Assemblies Indicated with Fire-Resistance Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X board, UL or WH listed.

4. Thickness:

a. Vertical Surfaces: 1/2 inch.

b. Ceilings: 5/8 inch.

5. Mold Resistant Paper Faced Products:

a. Georgia-Pacific Gypsum; ToughRock Mold-Guard: www.gpgypsum.com/#sle.

b. National Gypsum Company; Gold Bond Brand XP Gypsum Board.

c. USG Corporation; Sheetrock Brand Mold Tough Gypsum Panels.

d. Substitutions: See Section 016000 - Product Requirements.

C. Backing Board For Wall Tile and Wet Areas:

1. Application: Surfaces behind all tile and in wet areas including tub and shower surrounds and shower ceilings.

2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.

3. Glass Mat Faced Board: Coated glass mat water-resistant gypsum backing panel as defined in ASTM C1178/C1178M.

a. Regular Type: Thickness 1/2 inch.

b. Fire-Resistance-Rated Type: Type X core, thickness 5/8 inch.

c. Products:

1) Georgia-Pacific Gypsum; DensShield Tile Backer: www.gpgypsum.com/#sle.

2) National Gypsum Company; Gold Bond eXP Tile Backer: www.nationalgypsum.com/#sle.

3) Temple-Inland Building Product by Georgia-Pacific, LLC; GreenGlass Tile Backer.

4) Substitutions: See Section 016000 - Product Requirements.

d. Locations: To be installed in all project shower areas for full wall heights as well as at all tile locations.

D. Ceiling Board: Special sag resistant gypsum ceiling board as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.

1. Application: Ceilings, unless otherwise indicated.

2. Thickness: 5/8 inch.

3. Edges: Tapered.

4. Products:

a. CertainTeed Corporation; ProRoc Interior Ceiling.

b. Georgia-Pacific Gypsum; ToughRock Span 24 Ceiling Board: www.gpgypsum.com/#sle.

c. National Gypsum Company; High Strength Brand Ceiling Board.

d. USG Corporation; Sheetrock Brand Sag-Resistant Interior Gypsum Ceiling Board.

e. Substitutions: See Section 016000 - Product Requirements.

2.04 GYPSUM BOARD SUSPENSION SYSTEM

A. Materials: Commercial quality, cold-rolled steel, hot dipped galvanized finish; main tees and cross tees

B. Hanger Wire: 12 ga., galvanized.

C. Tie Wire:18 gauge, galvanized.

D. Fasteners: Self-tapping truss-head lathing screws.

E. Casing and Corner Beads: As required.

F. Products:

1. USG Corporation; "Drywall Suspension System": www.usg.com

2. Substitutions: See Section 016000 - Product Requirements.

2.05 GYPSUM WALLBOARD ACCESSORIES

A. Acoustic Insulation: As specified in Section 072100 - Thermal Insulation.

B. Finishing Accessories: ASTM C1047, galvanized steel or rolled zinc, unless noted otherwise.

1. Types: As detailed or required for finished appearance.

2. Special Shapes: In addition to conventional corner bead and control joints, provide U-bead at exposed panel edges.

3. Products:

a. Same manufacturer as framing materials.

C. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.

1. Fiberglass Tape: 2 inch wide, coated glass fiber tape for joints and corners, except as otherwise indicated.

2. Paper Tape: 2 inch wide, creased paper tape for joints and corners, except as otherwise indicated.

D. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inches in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion-resistant.

E. Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.

F. Backing Plate: Clarkwestern Dietrich Building Systems LLC; Product "Danback Fire-Treated Wood Backing Plate": www.clarkdietrich.com

1. Use "Danback Trimmables" for off module spacing.

2. Substitutions: See Section 016000 - Product Requirements.

G. Bridging: Flat straps, 20 gauge, 2" wide.

H. Column and Beam Clips: Grabber Construction Products; Product "GRABBER® Steel Column & Beam Drywall Clips": www.grabberman.com

I. Isolation Strip at Exterior Walls: Provide one of the following:

1. Asphalt-Saturated Organic Felt: ASTM D 226, Type I (No. 15 asphalt felt), nonperforated.

2. Foam Gasket: Adhesive-backed, closed-cell vinyl foam strips that allow fastener penetration without foam displacement, 1/8 inch (3.2 mm) thick, in width to suit steel stud size.

J. Foam Flute Closure Strips:

1. Material: EPDM foam rubber.

2. Width: 3 inches.

3. Format: 36 inch composite strip made to fit the deck size being used on the project.

4. Manufacturer: Steven F. O'Donnell, Inc., 3" Composite Strip: https://odonnellmetaldeck.com/products/deck-accessories/foam-closure.

5. Substitutions: See Section016000-Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that project conditions are appropriate for work of this section to commence.

3.02 SHAFT WALL INSTALLATION

A. Shaft Wall Framing: Install in accordance with manufacturer's installation instructions.

B. Shaft Wall Liner: Cut panels to accurate dimensions and install sequentially between special friction studs.

3.03 FRAMING INSTALLATION

A. Metal Framing: Install in accordance with ASTM C754 and manufacturer's instructions.

B. Suspended Ceilings and Soffits: Space framing and furring members as indicated.

1. Level ceiling and soffit system to a tolerance of 1/1200.

2. Laterally brace entire suspension system.

3. Install bracing as required at exterior locations to resist wind uplift.

4. Partitions Terminating at Structure: Attach top runner to structure, maintain clearance between top of studs and structure, and connect studs to track using specified mechanical devices in accordance with manufacturer's instructions; verify free movement of top of stud connections; do not leave studs unattached to track.

C. Openings: Reinforce openings as required for weight of doors or operable panels, using not less than double studs at jambs.

D. Standard Wall Furring: Install at concrete and masonry walls scheduled to receive gypsum board, not more than 4 inches from floor and ceiling lines and abutting walls. Secure in place on alternate channel flanges at maximum 16 inch on center.

1. Orientation: Vertical.

2. Spacing: As indicated.

E. Furring for Fire-Resistance Ratings: Install as required for fire-resistance ratings indicated and to GA-600 requirements.

F. Isolation Strip: Install between studs and exterior wall where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls.

G. Blocking: Install specified backing plate for support of:

1. Wall-mounted cabinets.

2. Plumbing fixtures.

3. Toilet partitions.

4. Toilet accessories.

5. Wall-mounted door hardware.

6. Equipment services.

7. Heavy trim.

3.04 ACOUSTIC ACCESSORIES INSTALLATION

A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.

B. Acoustic Sealant: Install in accordance with manufacturer's instructions.

1. Place one bead continuously on substrate before installation of perimeter framing members.

2. Place continuous bead at perimeter of each layer of gypsum board.

3. Seal around all penetrations by conduit, pipe, ducts, and rough-in boxes, except where firestopping is provided.

3.05 BOARD INSTALLATION

A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.

B. Single-Layer Nonrated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.

C. Double-Layer, Nonrated: Use gypsum board for first layer, placed parallel to framing or furring members, with ends and edges occurring over firm bearing. Use glass mat faced gypsum board at exterior walls and at other locations as indicated. Place second layer perpendicular to framing or furring members. Offset joints of second layer from joints of first layer.

D. Fire-Resistance-Rated Construction: Install gypsum board in strict compliance with requirements of assembly listing.

E. All rated partitions ans all partitions with sound attenuation insulation must go up to structure above.

F. Exposed Gypsum Board in Interior Wet and Tile Areas: Seal joints, cut edges, and holes with water-resistant sealant.

G. Cementitious Backing Board: Install over steel framing members and plywood substrate where indicated, in accordance with ANSI A108.11 and manufacturer's instructions.

H. Installation on Metal Framing: Use screws for attachment of gypsum board.

3.06 INSTALLATION OF TRIM AND ACCESSORIES

A. Control Joints: Place control joints consistent with lines of building spaces and as follows:

1. Not more than 30 feet apart on walls and ceilings over 50 feet long.

2. At exterior soffits, not more than 30 feet apart in both directions.

B. Corner Beads: Install at external corners, using longest practical lengths.

C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

3.07 JOINT TREATMENT

A. Glass Mat Faced Gypsum Board and Exterior Glass Mat Faced Sheathing: Use fiberglass joint tape, embed and finish with setting type joint compound.

B. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:

1. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.

2. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.

3. Level 1: Fire-resistance-rated wall areas above finished ceilings, whether or not accessible in the completed construction.

C. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.

1. Feather coats of joint compound so that camber is maximum 1/32 inch.

3.08 TOLERANCES

A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

END OF SECTION

SECTION 093000
TILING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Tile for floor applications.

B. Tile for wall applications.

C. Ceramic accessories.

D. Ceramic trim.

1.02 RELATED REQUIREMENTS

A. Section 090561 - Common Work Results for Flooring Preparation

B. Section 079200 - Joint Sealants: Sealing joints between tile work and adjacent construction and fixtures.

C. Section 090561 - Common Work Results for Flooring Preparation: Concrete slab moisture and alkalinity testing and remediation procedures.

D. Section 092116 - Gypsum Board Assemblies: Tile backer board.

1.03 REFERENCE STANDARDS

A. ANSI A108.1a - American National Standard Specifications for Installation of Ceramic Tile in the Wet-Set Method, with Portland Cement Mortar 2017.

B. ANSI A108.1b - American National Standard Specifications for Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex-Portland Cement Mortar 2017.

C. ANSI A108.1c - Specifications for Contractors Option: Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar or Installation of Ceramic Tile on a Cured Portland Cement Mortar Bed with Dry-Set or Latex-Portland Cement 1999 (Reaffirmed 2016).

D. ANSI A108.2 - American National Standard General Requirements: Materials, Environmental and Workmanship 2019.

E. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesives or Water Cleanable Tile-Setting Epoxy Adhesive 2009 (Revised).

F. ANSI A108.5 - American National Standard Specifications for Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar 1999 (Reaffirmed 2010).

G. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy 1999 (Reaffirmed 2010).

H. ANSI A108.8 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant Furan Resin Mortar and Grout 1999 (Reaffirmed 2010).

I. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout 1999 (Reaffirmed 2010).

J. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework 2017.

K. ANSI A108.12 - American National Standard for Installation of Ceramic Tile with EGP (Exterior Glue Plywood) Latex-Portland Cement Mortar 1999 (Reaffirmed 2010).

L. ANSI A108.13 - American National Standard for Installation of Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone 2005 (Reaffirmed 2016).

M. ANSI A108.19 - American National Standard Specifications for Interior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs by the Thin-Bed Method Bonded with Modified Dry-Set Cement Mortar or Improved Modified Dry-Set Cement Mortar 2017.

N. ANSI A118.3 - American National Standard Specifications for Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy and Water Cleanable Tile-Setting Epoxy Adhesive 2013 (Revised).

O. ANSI A118.4 - American National Standard Specifications for Modified Dry-Set Cement Mortar 2012 (Revised).

P. ANSI A118.7 - American National Standard Specifications for High Performance Cement Grouts for Tile Installation 2010 (Reaffirmed 2016).

Q. ANSI A118.10 - American National Standard Specifications for Load Bearing, Bonded, Waterproof Membranes For Thin-Set Ceramic Tile And Dimension Stone Installation 2014.

R. ANSI A118.12 - American National Standard Specifications for Crack Isolation Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation 2014.

S. ANSI A137.1 - American National Standard Specifications for Ceramic Tile 2019.

T. ASTM C373 - Standard Test Methods for Determination of Water Absorption and Associated Properties by Vacuum Method for Pressed Ceramic Tiles and Glass Tiles and Boil Method for Extruded Ceramic Tiles and Non-tile Fired Ceramic Whiteware Products 2018.

U. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes 2019a.

V. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring 2019, with Editorial Revision (2020).

W. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes 2019a.

X. TCNA (HB) - Handbook for Ceramic, Glass, and Stone Tile Installation 2019.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by affected installers.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, and accessories. Include instructions for using grouts and adhesives.

C. Shop Drawings: Indicate tile layout, patterns, color arrangement, perimeter conditions, junctions with dissimilar materials, control and expansion joints, thresholds, ceramic accessories, and setting details

D. Submit 1 sample(s) 2" x 2" size.

1. All colors from Manufacturer's full color pallet.

E. Maintenance Data: Include recommended cleaning methods, cleaning materials, and stain removal methods.

F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1. See Section 016000 - Product Requirements, for additional provisions.

2. Extra Tile: 1 percent of each size, color, and surface finish combinationbut not less than 1 box of each type.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the types of products specified in this section, with minimum five years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

1.08 FIELD CONDITIONS

A. Do not install solvent-based products in an unventilated environment.

B. Maintain ambient and substrate temperature above 50 degrees F and below 100 degrees F during installation and curing of setting materials.

PART 2 PRODUCTS

2.01 TILE

A. Manufacturers: All products by the same manufacturer.

1. American Olean Corporation: www.americanolean.com/#sle.

2. Dal-Tile Corporation: www.daltile.com/#sle.

B. Ceramic Mosaic Tile, Type CFT-1, CFT-2: ANSI A137.1 standard grade.

1. Moisture Absorption: 0 to 0.5 percent as tested in accordance with ASTM C373.

2. Size: 2 by 2 inch, nominal.

3. Shape: Square.

4. Edges: Cushioned.

5. Surface Finish: Unglazed.

6. Color(s): To be selected by Architect from manufacturer's standard range.

7. Products:

a. See schedule in 090600 - Schedules for Finishes.

b. Substitutions: See Section 016000 - Product Requirements.

C. Glazed Wall Tile, Type CWT-1A, CWT-1B, CWT-1C, CWT-2A, CWT-2B, CWT-2C: ANSI A137.1, standard grade.

1. Moisture Absorption: 7.0 to 20.0 percent as tested in accordance with ASTM C373.

2. Size: 6 by 6 inch, nominal.

3. Edges: Cushioned.

4. Surface Finish: Matt & Bright.

5. Color(s): To be selected by Architect from manufacturer's standard range.

6. Trim Units: Matching bead, bullnose, cove, and base shapes in sizes coordinated with field tile.

7. Products:

a. See schedule in 090600 - Schedules for Finishes.

b. Substitutions: See Section 016000 - Product Requirements.

2.02 TRIM AND ACCESSORIES

A. Ceramic Accessories: Unglazed finish, same color and finish as adjacent field tile; same manufacturer as tile.

1. Soap Dish: With handle, clam shell design, recess mounted; cast strength sufficient to resist lateral pull force of 75 lbs.

B. Ceramic Trim: Matching bullnose, double bullnose, cove base, and cove ceramic shapes in sizes coordinated with field tile.

1. Applications:

a. Open Edges: Bullnose.

b. Inside Corners: Jointed.

c. Floor to Wall Joints: Cove base.

2. Manufacturers: Same as for tile.

C. Thresholds: Granite or Marble, white, honed finish; 2 inches wide by full width of wall or frame opening; 1/2 inch thick; beveled one long edge with radiused corners on top side; without holes, cracks, or open seams.

1. Applications:

a. At doorways where tile terminates.

2.03 SETTING MATERIALS

A. Provide setting materials made by the same manufacturer as grout.

B. Latex-Portland Cement Mortar Bond Coat: ANSI A118.4.

1. Applications: At wall tile.

2. LATICRETE International, Inc; LATICRETE 254 Planinum: www.laticrete.com/#sle.

C. Epoxy Adhesive and Mortar Bond Coat: ANSI A118.3.

1. Applications: At floor tile.

2. Products:

a. LATICRETE International, Inc; LATICRETE LATAPOXY 300 Adhesive: www.laticrete.com/#sle.

b. Substitutions: See Section 016000 - Product Requirements.

2.04 GROUTS

A. Manufacturers:

1. LATICRETE International, Inc; LATICRETE PERMACOLOR Grout: www.laticrete.com/#sle.

2. Substitutions: See Section 016000 - Product Requirements.

B. High Performance Polymer Modified Grout: ANSI A118.7 polymer modified cement grout.

1. Applications: Use this type of grout where indicated and where no other type of grout is indicated.

2. Use sanded grout for joints 1/8 inch wide and larger; use unsanded grout for joints less than 1/8 inch wide.

3. Color(s): As selected by Architect from manufacturer's full line.

4. Products:

a. LATICRETE International, Inc; LATICRETE PERMACOLOR Grout: www.laticrete.com/#sle.

b. Substitutions: See Section 016000 - Product Requirements.

C. Epoxy Grout: ANSI A118.3 chemical resistant and water-cleanable epoxy grout.

1. Applications: At floor tile.

2. Color(s): As selected by Architect from manufacturer's full line.

3. Products:

a. LATICRETE International, Inc; LATICRETE SPECTRALOCK PRO Premium Grout: www.laticrete.com/#sle.

b. Substitutions: See Section 016000 - Product Requirements.

D. Mortar Bed Materials: Portland cement, sand, latex additive, and water.

1. Products:

a. LATICRETE International, Inc; LATICRETE 3701 Fortified Mortar Bed: www.laticrete.com.

b. Substitutions: See Section 016000 - Product Requirements.

E. Waterproofing Membrane Over Mortar Bed: Latex-Portland Cement Mortar Bond Coat.

2.05 MAINTENANCE MATERIALS

A. Tile Sealant: Gunnable, silicone, siliconized acrylic, or urethane sealant; moisture and mildew resistant type.

1. Applications: Between tile and plumbing fixtures.

2. Color(s): As selected by Architect from manufacturer's full line.

3. Products:

a. LATICRETE International, Inc; LATICRETE LATASIL: www.laticrete.com/#sle.

b. Substitutions: See Section 016000 - Product Requirements.

2.06 ACCESSORY MATERIALS

A. Concrete Floor Slab Crack Isolation Membrane: Material complying with ANSI A118.12; not intended as waterproofing.

1. Crack Resistance: No failure at 1/8 inch gap, minimum.

B. Waterproofing Membraneat 2nd & 3rd floors: Specifically designed for bonding to cementitious substrate under thick mortar bed or thin-set tile; complying with ANSI A118.10.

1. Fluid or Trowel Applied Type:

a. Thickness: 25 mils, minimum, dry film thickness.

b. Products:

1) Custom Building Products; RedGard Crack Prevention and Waterproofing Membrane: www.custombuildingproducts.com/#sle.

2) LATICRETE International, Inc; LATICRETE HYDRO BAN: www.laticrete.com/#sle.

3) Merkrete, by Parex USA, Inc; Merkrete BFP Waterproofing Membrane: www.merkrete.com.

4) Substitutions: See Section 016000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that subfloor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive tile.

B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive tile.

C. Verify that subfloor surfaces are dust free and free of substances that could impair bonding of setting materials to subfloor surfaces.

D. Cementitious Subfloor Surfaces: Verify that substrates are ready for tiling installation by testing for moisture and alkalinity (pH).

1. Test in accordance with Section 090561.

2. Obtain instructions if test results are not within limits recommended by tiling material manufacturer and setting material manufacturer.

E. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

A. Protect surrounding work from damage.

B. Vacuum clean surfaces and damp clean.

C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.

D. Prepare substrate surfaces for adhesive installation in accordance with adhesive manufacturer's instructions.

3.03 INSTALLATION - GENERAL

A. Install tile, thresholds, and stair treads and grout in accordance with applicable requirements of ANSI A108.1a through ANSI A108.19 , manufacturer's instructions, and TCNA (HB) recommendations.

B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings. Center tile patterns unless otherwise indicated. Obtain Architect approval of all layouts before proceeding.

C. Layout tile wainscots to the next full tile beyond the dimensions indicated.

D. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor joints.

E. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make grout joints without voids, cracks, excess mortar or excess grout, or too little grout.

1. Make joints between tile sheets the same width as joints within tile sheets so that the extent of each sheet is not apparent in finished work.

F. Form internal angles square and external angles bullnosed.

G. Install ceramic accessories rigidly in prepared openings.

H. Install thresholds where indicated.

I. Sound tile after setting. Replace hollow sounding units.

J. Keep control and expansion joints free of mortar, grout, and adhesive.

K. Prior to grouting, allow installation to completely cure; minimum of 48 hours.

L. Grout tile joints unless otherwise indicated. Use standard grout unless otherwise indicated.

M. At changes in plane and tile-to-tile control joints, use tile sealant instead of grout, with either bond breaker tape or backer rod as appropriate to prevent three-sided bonding.

3.04 INSTALLATION - FLOORS - THIN-SET METHODS

A. Over interior concrete substrates, install in accordance with TCNA (HB) Method F113, dry-set or latex-Portland cement bond coat, with standard grout, unless otherwise indicated.

1. Where epoxy bond coat and grout are indicated, install in accordance with TCNA (HB) Method F131.

3.05 INSTALLATION - WALL TILE

A. Over coated glass mat backer board on studs, install in accordance with TCNA (HB) Method W245.

B. Over interior concrete and masonry install in accordance with TCNA (HB) Method W202, thin-set with dry-set or latex-Portland cement bond coat.

3.06 CLEANING

A. Clean excess mortar/epoxy from tile and grout surfaces with water before they harden and as work progresses.

B. Do not contaminate open grout/caulk joints while cleaning.

C. Sponge and wash veneers diagonally across joints.

D. Do not use acids for cleaning.

E. Polish with clean dry cloth.

F. Remove surplus materials and leave premises broom clean.

3.07 PROTECTION

A. Do not permit traffic over finished floor surface for seven days after installation.

B. Leave finished installation clean and free of cracked, chipped, broken, unbonded, and otherwise defective tile work.

C. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear.

D. Protect all walls from impact or vibration from impact to adjacent or opposite walls for fourteen days minimum.

E. Protect all tile installation from freezing or total water immersion for twenty-one days minimum.

3.08 SCHEDULE- SEE SECTION 090600

END OF SECTION

SECTION 095100
ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Suspended metal grid ceiling system, except for gypsum board ceilings.

B. Acoustical units.

1.02 RELATED REQUIREMENTS

A. Section 092116 - Gypsum Board Assemblies: Suspension system for gypsum board ceilings.

B. Section 211313 - Wet Pipe Sprinkler Systems: Sprinkler heads in ceiling system.

C. Section 233713 - Diffusers, Registers, and Grilles: Air diffusion devices in ceiling.

D. Section 265100 - Interior Lighting : Light fixtures in ceiling system.

E. Section 283111 - DigitalAddressable Fire-Alarm System: Fire alarm components in ceiling system.

1.03 REFERENCE STANDARDS

A. ASTM C635/C635M - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings 2013a.

B. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels 2013.

C. ASTM E1264 - Standard Classification for Acoustical Ceiling Products 2014.

D. CISCA - Ceiling Systems Handbook; Ceilings & Interior Systems Construction Association; 2012

1.04 ADMINISTRATIVE REQUIREMENTS

A. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.

B. Do not install acoustical units until after interior wet work is dry.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on suspension system components and acoustical units.

C. Samples: Submit two samples 6 x 6 inch in size illustrating material and finish of acoustical units.

D. Samples: Submit two samples each, 8 inches long, of suspension system main runner, cross runner, and perimeter molding.

E. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1. See Section 016000 - Product Requirements, for additional provisions.

2. Extra Acoustical Units: Quantity equal to 5 percent of total installed.

1.06 QUALITY ASSURANCE

A. Suspension System Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

B. Acoustical Unit Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1.07 FIELD CONDITIONS

A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.

PART 2 PRODUCTS

2.01 ACOUSTICAL UNITS

A. Manufacturers:

1. Basis of Design: Armstrong World Industries, Inc.: www.armstrong.com.

2. CertainTeed Corporation: www.certainteed.com.

3. USG: www.usg.com.

4. Substitutions: See Section 01 60 00 - Product Requirements.

B. Acoustical Units - General: ASTM E1264, Class A.

C. Acoustical PanelsType SAC-1, SAC-2: Painted mineral fiber, ASTM E1264 Type III, with the following characteristics:

1. Size: 24 x 24 inches and 24 by 48 inches as indicated on the drawings.

2. Thickness: 15/16 inches.

3. Composition: Wet felted.

4. Light Reflectance: 85 percent, determined in accordance with ASTM E1264.

5. NRC Range: 0.50 to 0.60, determined in accordance with ASTM E1264.

6. Ceiling Attenuation Class (CAC): 35, determined in accordance with ASTM E1264.

7. Broad Spectrum Antimicrobial Fungicide and Bactericide Treatment: Provide acoustical panels treated with manufacturer's standard antimicrobial formulation that inhibits fungus, mold, mildew, and gram-positive and gram-negative bacteria and showing no mold, mildew, or bacterial growth when tested according to ASTM D3273 and evaluated according to ASTM D 3274 or ASTM G 21.

8. Edge: Angled Tegular.

9. Surface Color: White.

10. Surface Pattern: Perforated, small holes and Lightly textured.

11. Product: Fine Fissured #1732 by Armstrong World Industries, Inc..

12. Substitutions: See Section 016000 - Product Requirements.

13. Suspension System: Exposed gridType SS-1.

D. Acoustical PanelsType SAC-3: Plastic faced mineral fiber, ASTM E1264 Type XX with the following characteristics:

1. Size: 24 by 48 inches.

2. Thickness: 15/16 inches.

3. Composition: High density ceramic-like composition with scrubbable finish.

4. Light Reflectance: 88 percent, determined in accordance with ASTM E1264.

5. Ceiling Attenuation Class (CAC): 40, determined in accordance with ASTM E1264.

6. Edge: Square.

7. Surface Color: White.

8. Surface Pattern: Lightly textured.

9. Product: Ceramaguard Fine Fissured #608 by Armstrong World Industries, Inc..

10. Substitutions: See Section 016000 - Product Requirements.

11. Suspension System: Exposed gridType SS-1.

2.02 SUSPENSION SYSTEM(S)

A. Manufacturers:

1. Same as for acoustical units.

2. Substitutions: See Section 01 60 00 - Product Requirements.

B. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with stabilizer bars as required.

C. ExposedSteel Suspension SystemType SS-1: Formed steel, commercial quality cold rolled; heavy-duty.

1. Profile: Tee; 15/16 inch wide face.

2. Construction: Double web.

3. Finish: White painted.

4. Products:

a. Prelude XL 15/16" Exposed Tee by Armstrong World Industries inc..

5. Substitutions: See Section 016000 - Product Requirements.

2.03 ACCESSORIES

A. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.

B. Hanger Wire: 12 gage galvanized steel wire.

C. Perimeter Moldings: Same material and finish as grid.

1. At Exposed Grid: Provide 1 1/4 inch by 1 1/4 inch L-shaped molding with hemmed edges for mounting at same elevation as face of grid.

D. Touch-up Paint: Type and color to match acoustical and grid units.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that layout of hangers will not interfere with other work.

3.02 INSTALLATION - SUSPENSION SYSTEM

A. Install suspension system in accordance with ASTM C636/C636M, manufacturer's instructions, and CISCA's "Ceiling Systems Handbook" and as supplemented in this section.

B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.

C. Lay out system to a balanced grid design with edge units no less than 50 percent of acoustical unit size.

D. Locate system on room axis according to reflected plan.

E. Install after major above-ceiling work is complete. Coordinate the location of hangers with other work.

F. Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.

G. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.

H. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.

I. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.

J. Do not eccentrically load system or induce rotation of runners.

K. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.

1. Install in bed of acoustical sealant.

2. Use longest practical lengths.

3. Screw to substrate at intervals not more than 16 inches o.c. and not more than 3 inches from ends.

4. Level with suspension system to a tolerance of 1/8 inch in 12 feet.

5. Miter corners.

6. Do not use exposed fasteners.

3.03 INSTALLATION - ACOUSTICAL UNITS

A. Install acoustical units in accordance with manufacturer's instructions.

B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.

C. Fit border trim neatly against abutting surfaces.

D. Install units after above-ceiling work is complete.

E. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.

F. Cutting Acoustical Units:

1. Make field cut edges of same profile as factory edges.

2. Double cut and **field paint exposed reveal edges**.

G. Where round obstructions occur, provide preformed closures to match perimeter molding.

H. Install hold-down clips on panels within 20 ft of an exterior door.

3.04 TOLERANCES

A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.

B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

END OF SECTION

SECTION 096500
RESILIENT FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Resilient sheet flooring.

B. Resilient tile flooring.

C. Resilient base.

D. Resilient stair accessories.

E. Installation accessories.

1.02 RELATED REQUIREMENTS

A. Section : 012200 - Unit Prices: Bid pricing for remediation treatments if required.

B. Section 033000 - Cast-in-Place Concrete: Restrictions on curing compounds for concrete slabs and floors to receive adhesive-applied resilient flooring.

1.03 PRICE AND PAYMENT PROCEDURES

A. Unit Prices: See Section 012200 - Unit Prices.

B. Unit Price for Remedial Floor Coating: Do not include the cost of the floor coating in the base bid; state on the bid form the unit price per square foot for the floor coating, installed, in the event such remediation is required.

1.04 REFERENCE STANDARDS

A. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring 2019, with Editorial Revision (2020).

B. ASTM F1861 - Standard Specification for Resilient Wall Base 2016.

C. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.

D. ASTM F2034 - Standard Specification for Sheet Linoleum Floor Covering 2018.

E. ASTM F2169 - Standard Specification for Resilient Stair Treads 2015 (Reapproved 2020).

F. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source 2019.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.

C. Shop Drawings: Indicate seaming plans and floor patterns.

D. Selection Samples: Submit manufacturer's complete set of actual material color samples for Architect's initial selection for all specified items..

E. Verification Samples: Submit two samples, 3 by 3 inch in size illustrating color and pattern for each resilient flooring product specified.

F. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.

1. For linoleum flooring, report rapidly-renewable content and urea-formaldehyde content.

G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1. See Section 016000 - Product Requirements, for additional provisions.

2. Extra Flooring Material: 45 square feet of each type and color.

3. Extra Wall Base: 25 linear feet of each type and color.

4. Extra Corners: 5 each, inside and outside corners.

5. Extra Stair Materials: Quantity equivalent to 5 percent of each type and color.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing specified flooring with minimum three years documented experience.

B. Installer Qualifications: Company specializing in installing specified flooring with minimum three years documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Store all materials off of the floor in an acclimatized, weather-tight space.

B. Maintain temperature in storage area between 55 degrees F and 90 degrees F.

C. Store flooring and installation materials in dry spaces protected from the weather.

D. Protect roll materials from damage by storing on end.

E. Protect floor tiles from damage by storing on flat surfaces.

1.08 FIELD CONDITIONS

A. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.

B. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 degrees F nor more than 95 degrees F, in spaces to receive flooring during the following time periods:

1. 72 hours before installation.

2. During installation.

3. 72 hours after installation.

C. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 degrees F nor more than 95 degrees F.

D. Close spaces to traffic during flooring installation.

E. Close spaces to traffic for 72 hours after flooring installation.

F. Install flooring after other finishing operations, including painting, have been completed.

1.09 WARRANTY

A. General: Special warranties specified in this Section shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Limited Warranty: Written warranty, signed by manufacturer agreeing to repair or replace resilient flooring, installed according to manufacturer's written recommendations, that fails in performance, materials, or workmanship within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

2. Exclusions from warranty include the following:

a. Problems caused by moisture, hydrostatic pressure, or alkali in the subfloor.

b. Damage to flooring products from high heels or spiked shoes.

PART 2 PRODUCTS

2.01 SHEET FLOORING

A. Linoleum Sheet Flooring: Homogeneous wear layer bonded to backing, with color and pattern through wear layer thickness.

1. Manufacturers:

    a. Forbo Flooring, Inc: www.forboflooringna.com.

    b. Johnsonite, a Tarkett Company: www.johnsonite.com.

    c. Substitutions: See Section 016000 - Product Requirements.

2. Minimum Requirements: Comply with ASTM F2034, Type corresponding to type specified.

3. Backing: Jute fabric.

4. Thickness: 0.100 inch, minimum, excluding backing.

5. Color: To be selected by Architect from manufacturer's full range.

2.02 TILE FLOORING

A. Flocked Textile Sheet Tile : 100% nylon type wear layer with an intermediate fiberglass layer, bonded to backing, with color and pattern through wear layer thickness:

1. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with NFPA 253.

2. Surface Flammability Ignition: Pass DOC FF-1 “pill test” (CPSC 16 CFR, Part 1630).

3. VOC Content: Certified as Low Emission by one of the following :

    a. SCS Floorscore; www.scscertified.com.

4. Backing: Recycled Vinyl Cushioned.

5. Wear Layer Thickness: 0.098 inch, minimum, excluding backing.

6. Tile Size: 20 by 20 inches nominal.

7. Total Thickness: 0.21 inch.

8. Pattern: As selected by Architect from manufacturer's full range.

9. Color: To be selected by Architect from manufacturer's full range.

10. Manufacturers:

    a. Forbo Flooring Systems; Product "Flotex": www.forboflooringna.com.

    b. Substitutions: See Section 016000 - Product Requirements.

2.03 STAIR COVERING

A. Stair Treads: Rubber; full width and depth of stair tread in one piece; tapered thickness.

1. Manufacturers:

a. Johnsonite, a Tarkett Company: Angle Fir Stair Treads with Integraqted Riser: www.johnsonite.com.

b. Flexco: Rubber Heavy Duty Hammered One-Piece Tread with Riser: www.flexcofloors.com.

c. Burke Flooring: www.burkeflooring.com.

d. Roppe Corp: www.roppe.com.

e. Substitutions: See Section 016000 - Product Requirements.

2. Nosing: Square.

3. Striping: 1 inch wide contrasting color abrasive strips.

4. Color: To be selected by Architect from manufacturer's full range. Top and bottom trread of each riser shall be a different, contrasting color to the rest of the stair treads.

5. Texture: Sculptured Surface: Hammered.

B. Stair Landings: Rubber, size as detailed on drawings in largest available tile size

1. Manufacturers:

a. Johnsonite, a Tarkett Company; Solid Color Rubber Tile: www.johnsonite.com.

b. Flexco: FlexTones® rubber tile www.flexcofloors.com.

c. Burke Flooring: www.burkeflooring.com.

d. Roppe Corp: www.roppe.com.

e. Substitutions: See Section 016000 - Product Requirements.

2. Nominal Thickness: 0.125 inch.

3. Color: Solid.

4. Texture: Sculptured Surface: Hammered.

2.04 RESILIENT BASE

A. Resilient Base: ASTM F1861, Type TS rubber, vulcanized thermoset; style as scheduled.

1. Manufacturers:

    a. Armstrong Flooring: www.armstrongflooring.com.

    b. Johnsonite, a Tarkett Company: www.johnsonite.com.

    c. Substitutions: See Section 016000 - Product Requirements.

2. Height: 4 inch.

3. Thickness: 0.125 inch.

4. Finish: Satin.

5. Length: Roll.

6. Color: To be selected by Architect from manufacturer's full range.

7. Accessories: Premolded external corners and internal corners.

8. Provide top set Style A, Straight at carpeted areas.

2.05 ACCESSORIES

A. Subfloor Filler: Latex-modified, portland-cement-based formulation; type recommended by adhesive material manufacturer.

B. Primers, Adhesives, and Seam Sealer: Waterproof; types recommended by flooring manufacturer.

    1. Adhesives: Provide, under BASE PROJECT SCOPE, the use of high relative humidity (RH) moisture-mitigation adhesive with a minimum ability of use on concrete slabs with a tested RH of 92% for all resilient flooring materials.

C. Moldings, Transition and Edge Strips: As indicated on the drawings.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.

B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.

C. Cementitious Sub-floor Surfaces: Verify that substrates are dry enough and ready for resilient flooring installation by testing for Relative Humidity.

1. Test in accordance with Section 090561 - Common Work Results for Flooring Preparation.

2. Obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.

D. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

A. Prepare floor substrates for installation of flooring in accordance with Section 090561 - Common Work Results for Flooring Preparation.

3.03 INSTALLATION - GENERAL

A. Starting installation constitutes acceptance of subfloor conditions.

B. Install in accordance with manufacturer's written instructions.

C. Adhesive-Applied Installation:

1. Fit joints and butt seams tightly.

2. Set flooring in place, press with heavy roller to attain full adhesion.

D. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

E. Extend flooring into toe spaces, door reveals, closets, and similar openings.

3.04 INSTALLATION - SHEET FLOORING

A. Lay flooring with joints and seams parallel to longer room dimensions, to produce minimum number of seams. Lay out seams to avoid widths less than 1/3 of roll width; match patterns at seams.

B. Cut sheet at seams in accordance with manufacturer's instructions.

C. Seal seams by heat welding where indicated.

3.05 INSTALLATION - TILE FLOORING

A. Mix tile from container to ensure shade variations are consistent when tile is placed, unless otherwise indicated in manufacturer's installation instructions.

B. Lay flooring with joints and seams parallel to building lines to produce symmetrical pattern.

C. Install square tile to ashlar pattern. Allow minimum 1/2 full size tile width at room or area perimeter.

3.06 INSTALLATION - RESILIENT BASE

A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.

B. Miter internal corners. At external corners, use premolded units. At exposed ends, use premolded units.

C. Install base on solid backing. Bond tightly to wall and floor surfaces.

D. Scribe and fit to door frames and other interruptions.

3.07 INSTALLATION - STAIR COVERINGS

A. Install stair coverings in one piece for full width and depth of tread.

B. Adhere over entire surface. Fit accurately and securely.

3.08 CLEANING

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

B. Clean in accordance with manufacturer's written instructions.

C. Perform the following operations immediately after completing linoleum flooring installation:

1. Remove adhesive and other blemishes from exposed surfaces.

2. Sweep and vacuum surfaces thoroughly.

3. Damp-mop surfaces to remove marks and soil.

3.09 PROTECTION

A. Prohibit traffic on resilient flooring for 48 hours after installation.

B. Cover resilient flooring until Substantial Completion after allowing drying room film (yellow film caused by linseed oil oxidation) to disappear.

END OF SECTION

SECTION 096566
RESILIENT ATHLETIC FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Interlocking, loose-laid rubber tile.

1.02 RELATED REQUIREMENTS

A. Section 033000 - Cast-in-Place Concrete: Restrictions on curing compounds for concrete slabs and floors to receive adhesive-applied flooring.

B. Section 090561 - Common Work Results for Flooring Preparation: Removal of existing floor coverings, cleaning, and preparation.

1.03 REFERENCE STANDARDS

A. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers--Tension 2016.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Manufacturer's printed data sheets for products specified.

C. Shop Drawings: Fabrication and installation details, and layout, colors, and widths of game lines and equipment locations.

D. Selection Samples: Manufacturer's color charts for flooring materials specified and game line paints, indicating full range of colors and textures available.

E. Verification Samples: Actual flooring material specified, not less than 12 inch square, mounted on solid backing.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer certified in writing by the flooring manufacturer to be qualified for installation of specified flooring system.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to project site in unopened containers clearly labeled with manufacturer's name and identification of contents.

B. Store materials in dry and clean location until needed for installation. During installation, handle in a manner that will prevent marring and soiling of finished surfaces.

PART 2 PRODUCTS

2.01 PREFORMED ATHLETIC FLOORING

A. Rubber Tile Flooring: Recycled SBR (styrene butadiene rubber) and colored EPDM granules with urethane binder.

1. Thickness: Minimum 3/8 inch.

2. Size: Nominal 24 x 24 inch square.

3. Tensile Strength: Minimum 150 psi, per ASTM D412.

4. Surface Texture: Smooth.

5. Color: As selected from manufacturer's standard range.

6. Products:

a. Regupol America LLC; AktivLok tiles; www.regupol.com.

b. Substitutions: See Section 016000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine substrates for conditions detrimental to installation of athletic flooring. Proceed with installation only after unsatisfactory conditions have been corrected.

B. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of athletic flooring to substrate.

3.02 PREPARATION

A. Prepare floor substrates for installation of flooring in accordance with Section 090561.

3.03 INSTALLATION

A. Starting installation constitutes acceptance of subfloor conditions.

B. Install in accordance with manufacturer's written instructions.

C. Rubber Tile Flooring:

1. Lay out center lines in spaces to receive tile flooring, based on location of principal walls. Start tile installation from center, and adjust as necessary to avoid tiles less than one-half width at perimeter.

2. Lay tiles square with room axis, matching for color and pattern by selecting from cartons and mixing as recommended by manufacturer.

3.04 CLEANING

A. Clean flooring using methods recommended by manufacturer.

3.05 PROTECTION

A. Protect finished athletic flooring from construction traffic to ensure that it is without damage upon Date of Substantial Completion.

B. Repair minor damage to finish in accordance with manufacturer's recommendations.

C. Replace products having damage to function, and products having damage to finishes which cannot be repaired to Architect's acceptance

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END OF SECTION

SECTION 096700
FLUID-APPLIED FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fluid-applied flooring and base.

B. See Part 2 "Performance Criteria" for specific work performance criteria required for this contract as part of the Work of this section.

1.02 RELATED REQUIREMENTS

A. Section 090561 - Common Work Results for Flooring Preparation: Concrete slab moisture and alkalinity testing and remediation procedures.

B. Section 079005 - Joint Sealers: Sealing joints between fluid-applied flooring and adjacent construction and fixtures.

1.03 REFERENCE STANDARDS

A. ASTM D522 - Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings; 2013.

B. ASTM D523 - Standard Test Method for Specular Gloss; 2014.

C. ASTM D638 - Standard Test Method for Tensile Properties of Plastics 2014.

D. ASTM D695 - Standard Test Method for Compressive Properties of Rigid Plastics 2015.

E. ASTM D790 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials; 2010.

F. ASTM D3363 - Standard Test Method for Film Hardness by Pencil Test; 2011.

G. ASTM D4060 - Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser 2019.

H. ASTM D4541 - Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers; 2009.

I. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2013a.

J. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes; 2011.

K. SSPC-TU 10 - Procedures for Applying Thick Film Coatings and Surfacings Over Concrete Floors; 2004.

L. All work of this section shall conform to industry standards, such as SSPC-TU 10 of the Society for Protective Coatings, and manufacturer's recommendations.

M. All safety precautions, as outlined or indicated by OSHA, including on-site Material Safety Data Sheets, are to be taken.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns and colors available; and testing standard compliance.

C. Shop Drawings: Provide drawings of intended treatment of control joints and system terminations.

D. Samples: Submit two samples, 3 x 3 inch in size illustrating color and pattern for each floor material for each color specified from manufacturer's full line.

E. Manufacturer's written certification of Applicator.

F. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

G. Manufacturer's Qualification Statement.

H. Maintenance Data: Include maintenance procedures, recommended maintenance materials, procedures for stain removal, repairing surface, and suggested schedule for cleaning.

I. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1. See Section 016000 - Product Requirements, for additional provisions.

J. A list of five (5) installations of this type and size completed by the bidders firm. The list is to include a contact name and phone number for each installation.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

B. Applicator Qualifications: Company specializing in performing the work of this section.

1. Approved by manufacturer.

C. Supervisor Qualifications: Trained by product manufacturer , under direct full time supervision of manufacturer's own foreman.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Pursuant to manufacturer’s published instructions, with clearly legible manufacturer identification and labels or other identifying devices securely attached to packaging.

B. Protect against moisture exposure and damage.

C. Store resin materials in a dry, secure area in manufacturer's original unopened containers.

D. Store materials for three days prior to installation in area of installation to achieve temperature stability.

1.07 FIELD CONDITIONS

A. Maintain minimum temperature in storage area of 60 degrees F.

B. Maintain ambient temperature required by manufacturer 72 hours prior to, during, and 72 hours after installation of materials.

1.08 WARRANTY

A. See Section 017800 - Closeout Submittals for warranty requirements.

B. Warranty: Manufacturer's standard, including a specific claim that the system is capable of sustaining the normal operating heat and loading of the vehicle tires without physical damage. Provide two (2) copies listing the Owner as beneficiary.

PART 2 PRODUCTS

2.01 PERFORMANCE CRITERIA

A. Provide labor and materials necessary to provide a complete system.

B. Perform all work of this section with experienced workmen familiar with the work, and in accordance with industry standards and manufacturer's recommendations.

2.02 MANUFACTURERS

A. Fluid-Applied Flooring:

1. Dur-A-Flex, Inc.: www.dur-a-flex.com.

2. Sherwin-Williams Company: General Polymers Brand: www.generalpolymers.com.

3. Stonehard, Inc.: http://www.stonhard.com.

4. Substitutions: See Section 016000 - Product Requirements.

2.03 FLUID-APPLIED FLOORING SYSTEMS

A. Fluid-Applied Flooring Type: **Dur-A-Quartz**: Epoxy base coat(s) with embedded quartz aggregate.

1. Locations: Firematic spaces as indicated on Drawings.

2. Top Coat: Urethane.

3. System Thickness: 1/8 inch, nominal, when dry.

4. Texture: Slip resistant.

5. Sheen: Satin.

6. Color: As selected by Architect.

7. Aggregate Type: "Q28 Dur-A-Quartz Aggregate" by Dur-A-Flex, Inc.

   a. Substitutions: See Section 016000 - Product Requirements.

8. Aggregate Application Method: Double Broadcast.

9. Color additives shall be supplied by the same manufacturer as the epoxy resin components.

10. Products:

    a. Dur-A-Flex, Inc.; Dur-A-Quartz Epoxy Broadcast System with "ARMOR TOP" Urethane Topcoat: www.dur-a-flex.com.

    b. Dur-A-Flex, Inc.: Dur-A-Gard, Epoxy-Based seamless flooring system with "ARMOR TOP" Urethane Topcoat: www.dur-a-flex.com.

    c. Substitutions: See Section 016000 - Product Requirements.

11. Primer; Product "Dur-A-Glaze WB":

Percent Solids	56%
VOC	2 g/L
Bond Strength to Concrete, ASTM D4541	550 psi, substrate fails
Hardness, ASTM D3363	3H
Elongation, ASTM D2370	9%
Flexibility (1/4: Cylindrical mandrel), ASTM D522	Pass
Impact Resistance, MIL D-2794	>160
Abrasion Resistance, ASTM D4060; CS 17 wheel, 1,000 g load	30 mg loss

    a. Use water-borne system if conditions warrant.

12. Broadcast Coat, Grout Coat, and any intermediate coats; Product "Dur-A-Glaze #4":

Percent Solids	100%
VOC	3.8 g/L
Compressive Strength, ASTM D695	11,200 psi
Tensile Strength, ASTM D638	2,100 psi
Flexural Strength, ASTM D790	5,100 psi
Abrasion Resistance, ASTM D4060; CS 17 wheel, 1,000 g load, 1,000 cycles	29 mg loss
Flame Spread/NFPA 101, ASTM E84	Class A
Impact Resistance, MIL D-24613	0.0007 inches, no cracking or delamination
Water Absorption, MIL D-24613	Nil
Potlife @ 70 degrees F	20 minutes

13. Topcoat; Product "Armor Top":

Percent Solids	95%
VOC	0 g/L
Tensile Strength, ASTM D2370	7,000 psi
Adhesion, ASTM 4541	Substrate Failure
Hardness, ASTM D3363	4H
60 degree Gloss, ASTMD523	70
Abrasion Resistance, ASTM D4060; CS 17 wheel, 1,000 g load, 1,000 cycles	Gloss Satin 4 8 mg loss with grit 10 12 mg loss w/o grit
Pot Life, 70 degrees F, 50% RH	2 hours
Full Chemical Resistance	7 days

B. Floor Accent Striping - Type: **Dur-A-Gard**, Epoxy-Based seamless flooring system

1. Locations: In Apparatus Bay as indicated on Drawings.

2. System Materials:

a. Primer: Dur-A-Flex, Inc., Dur-A-Glaze #4 WB resin and hardener

1) Percent Solids: 56%

2) Bond Strength to Concrete ASTM D 4541: 550 psi, substrate fails

3) Hardness, ASTM D 3363: 3H

4) Impact Resistance, MIL D-2794: >160

b. Base Coat: Dur-A-Flex, Inc., Dur-A-Gard resin and hardener

1) Percent Solids: 100%

2) Compressive Strength, ASTM D 695: 16,000 psi

3) Tensile Strength, ASTM D 638: 3,800 psi

4) Flexural Strength, ASTM D 790: 4,000 psi

5) Abrasion Resistance, ASTM D 4060, C-10 Wheel, 1,000 gm load, 1,000 cycles: 35 mg loss

(a) Backroll aluminum oxide to provide slip resistance of 0.8 (orange peel)

6) Impact Resistance MIL D-3134: 0.025 inch Max

7) Water Absorbtion MIL D-3134: 0.04%

c. Topcoat: Dur-A-Flex, Inc., Armor Top resin, hardener and grit.

1) See above for Product Requirements

3. Patch Materials

a. Shallow Fill and Patching: Use Dur-A-Flex, Inc., Dur-A-Glaze Rapid-Patch

b. Deep Fill and Sloping Material (over 1/4 inch): Use Dur-A-Flex, Inc., Dur-A-Crete.

4. Accent Striping Width: 6 inch or as indicated on the Drawings.

C. Fluid-Applied Flooring Type: **Hybri-Flex EC**; (self leveling chip broadcast), epoxy/aliphatic urethane topcoat seamless flooring system.

1. Location: Shower and toilet rooms and lounge as indicated on Drawings.

2. System Materials:

a. Topping: Dur-A-Flex, Inc, Poly-Crete MD resin, hardener and SL aggregate.

b. The broadcast aggregate shall be Dur-A-Flex, Inc. Macro or Micro chip.

c. Broadcast: Dur-A-Flex, Inc. Dur-A-Glaze #4, epoxy based two-component resin.

d. Seal coats: Dur-A-Flex, Inc Dur-A-Glaze #4, epoxy-based, two-component resin.

e. Top coat: Dur-A-Flex, Inc. Armor Top aliphatic urethane 2 component resin with grit.

3. Patch Materials:

a. Shallow Fill and Patching: Use Dur-A-Flex, Inc. Poly-Crete MD (up to ¼ inch).

b. Deep Fill and Sloping Material (over ¼ inch): Use Dur-A-Flex, Inc. Poly-Crete WR.

4. Thickness: 1/4 inch inch, nominal, when dry.

5. Texture: Slip resistant.

6. Sheen: Semi-Gloss.

7. Color: As selected by Architect.

8. Products:

a. Topping; Product "Poly-Crete MD":

Percent Reactive	100%
VOC	0 g/L
Bond Strength to Concrete, ASTM D4541	400 psi, substrate fails
Compressive Strength, ASTM C579	7,400 psi
Tensile Strength, ASTM D638	1,800 psi
Impact Resistance @ 125 mils, MIL D-3134; No visible damage or deterioration	>160 inch lbs

b. Broadcast Coat: Product "Dur-A-Glaze #4 Resin":

Percent Reactive	100 %
VOC	<4 g/L
Water Absorption, ASTM D 570	0.04%
Tensile Strength, ASTM D 638	4000psi
Coefficient of thermal expansion ASTM D 696	2 x 10-5 in/in/F
Flammability ASTM D-635	Self-Extinguishing
Flame Spread/ NFPA 101 ASTM E-84	Class A

c. Topcoat: Product "Armor Top":

VOC	0 g/L
60 Degree Gloss ASTM D523	75+/-5
Mixed Viscosity, (Brookfield 25oC)	500 cps
Tensile strength, ASTM D 638	7,000 psi
Abrasion Resistance, ASTM D4060 CS 17 wheel (1,000 g load) 1,000 cycles	Gloss: 4 mg loss with grit, 10 mg loss without grit. Satin: 8 mg loss with grit, 12 mg loss without grit.
Pot life @ 70o F 50% RH	2 hours

Dry properties, 70oF, 50% R.H.	8 hours tack free, 12 hours Dry
Dry properties, 60oF, 30% RH	12 hours tack free, 18 hours Dry
Dry properties, 80oF, 70%RH	4 hours tack free, 6 hours Dry
Flash Point PMCC	186oF
Full Chemical resistance	7 days

D. Fluid-Applied Flooring Type: **Poly-Crete MDB**; Polyurethane base coat(s) with embedded quartz aggregate.

1. Location: Kitchen as indicated on Drawings.

2. Topcoat: Urethane.

3. System Thickness: 1/4 inch, nominal, when dry.

4. Texture: Slip resistant.

5. Sheen: Semi-Gloss.

6. Color: As selected by Architect.

7. Products:

   a. Dur-A-Flex, Inc.; Poly-Crete MDB and Poly-Crete Color-Fast Topcoat (Flintshot): www.dur-a-flex.com.

   b. Substitutions: See Section 016000 - Product Requirements.

8. Topping; Product "Poly-Crete MD":

Percent Reactive	100%
VOC	0 g/L
Bond Strength to Concrete, ASTM D4541	400 psi, substrate fails
Compressive Strength, ASTM C579	7,400 psi
Tensile Strength, ASTM D638	1,800 psi
Impact Resistance @ 125 mils, MIL D-3134; No visible damage or deterioration	>160 inch lbs

9. Topcoat; Product "Poly-Crete Color-Fast":

Percent Solids	100%
VOC	0 g/L
Compressive Strength, ASTM D579	7,800 psi
Tensile Strength, ASTM D638	4,200 psi

Flexural Strength, ASTM D790	1,000 psi
Abrasion Resistance, ASTM D4060; CS 17 wheel, 1,000 g load, 1,000 cycles	30 mg loss
Impact Resistance, ASTM D1709	160 inch lbs
Shore D Hardness, ASTM D2240	65
Gloss, ASTM D523, 60 degree	Semi-gloss appearance

2.04 FINISHES

A. Finish coat color shall be selected by Architect from manufacturer's standard solid colors, chip color blends, and speckled blends. Texture selected by the Architect.

2.05 ACCESSORIES

A. Transitions:

1. Manufacturer: Schluter Systems; Schiene trim Stainless Steel

2. Locations: At room to room transitions of different fluid-applied finishes.

B. **Moisture Mitigating Primer: If the moisture emission rate exceeds the requirements set forth in Part 3 below, then Dur-A-Flex, Inc. Dur-A-Glaze MVP Primer moisture mitigation system must be installed prior to resinous flooring installation as additional services. Section 012200 Unit Pricing shall apply.**

C. Subfloor Filler for Shallow Fill and Patching: Thixotropic thermosetting epoxy; type recommended by flooring material manufacturer.

D. Subfloor Filler for Deep Fill and Sloping Material (over 1/4 inch): Heavy-duty, trowel-applied, 100% solids epoxy resin; type recommended by flooring material manufacturer.

E. Primers and Adhesives: Waterproof; types recommended by flooring manufacturer .

PART 3 EXECUTION

3.01 EXAMINATION

A. Ensure substrates are clean, dry, level, and structurally sound, with no projections from surfaces.

B. Ensure substrates free from irregularities greater than 1/8 inch.

C. Verify that subfloor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive flooring.

D. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive flooring.

E. Verify that subfloor surfaces are dust-free and free of substances that could impair bonding of materials to subfloor surfaces.

F. Verify that concrete sub-floor surfaces are ready for flooring installation by Owner's Testing Agency for moisture emission rate and alkalinity; obtain instructions if test results are not within the following limits:

1. **Perform in-situ Relative Humidity (RH) testing in accordance with ASTM F2170. Results must be under 75 percent. Provide complete set of testing results per ASTM F2170 including a location plan of all probe locations. Provide probe identification numbers and individual test results per probe.**

2. If RH testing is over 75 percent, follow manufacturer's recommendations for moisture mitigation systems. The mitigation system will be an additional cost per Unit Pricing.

G. Verify that required floor-mounted utilities are in correct location.

H. Do not proceed with work until unsatisfactory conditions detrimental to the proper and timely completion of the work have been corrected. Commencement of work constitutes installer's acceptance of substrates and conditions.

3.02 PREPARATION

A. Clean and degrease all substrate(s) receiving fluid-applied flooring systems.

B. Prepare all concrete surfaces scheduled to receive fluid-applied flooring by the "blast track" method. "Blast track" cleaning shall be provided by mechanics experienced in this operation Profile concrete according to International Concrete Repair Institute Guideline 03732, having a minimum profile of CSP 4-5.

C. Mechanically abrade floor areas inaccessible to the mobile blast machines to the same degree of cleanliness, soundness and profile using diamond grinders, needle guns, bush hammers, scarifiers, rotary impact tools, or other suitable equipment.

D. Remove subfloor ridges and bumps. Fill low spots, cracks, joints, holes, and other defects with subfloor filler.

E. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Grind irregularities above the surface level. Prohibit traffic until filler is cured.

F. Filling of bug holes and surface defects: Pre-detail concrete surface with 100% solids epoxy mortar as manufactured by the floor system Manufacturer

G. Existing expansion joints and control joints shall be cut clear of any existing material, and shall be treated as outlined by Manufacturer's recommendations.

H. Vacuum clean substrate.

I. Apply primer to surfaces required by flooring manufacturer.

3.03 INSTALLATION - FLOORING - GENERAL

A. Apply in accordance with manufacturer's instructions.

B. Do not contaminate adjacent surfaces, finishes, etc.

C. Dry surfaces prior to application of any system component. Remove any remaining dust or loose particles using a vacuum or clean, dry, oil-free compressed air.

D. Remove all existing thresholds and terminate flooring finish so that the thresholds will cover the termination. Replace thresholds at completion.

E. Cut key slots a minimum of 1/2 inch by 1/2 inch wherever a free edge will occur, including but not limited to all drains, other fittings set into the floor surface, across all termination lines not covered by thresholds, transitions to other floor systems, doorways, wall perimeters, expansion joints, columns, and equipment pads. Cut key slot at all Apparatus Bay doors lined up with bottom door seal at interior side.

F. Chisel or chip-out and repair cracks and joints (non-moving) greater than 1/2 inch wide in accordance with manufacturer’s recommendations.

G. Apply primer by using a flat squeegee and back-roll with a 3/8" nap roller cover.

H. Power sand floor to remove any high spots and re-prime.

I. Mix, handle, and add components in a safe manner to achieve the desired results in accordance with the manufacturer's recommendations.

J. Apply each coat to minimum thickness required by manufacturer.

K. Follow the contour of the substrate unless pitching or other leveling work in indicated otherwise in the contract documents.

L. Finish to smooth level surface. Provide a neat finish with well-defined boundaries and straight edges.

M. Install flooring in recessed type floor access covers.

N. Fillet and cove at vertical surfaces.

3.04 INSTALLATION - EPOXYAND SHOP EPOXY TYPE FLOORING

A. Apply basecoat after prime coat has sufficiently cured, as outlined by manufacturer. The base coat shall be mixed with color additive and sufficiently blended to ensure a thoroughly homogenized material. Do not introduce air bubbles or other contaminants during mixing. Apply mixed material at the rate of 80 square feet per gallon to a thickness of approximately 20 mils.

B. First Broadcast - broadcast quartz aggregate evenly to saturation.

C. For Areas Designated As Double Broadcast

1. Intermediate Coat - intermediate coat shall be as base coat, resin to be water clear.

2. Second Broadcast - broadcast colored quartz aggregate evenly to saturation.

3. Top Coat - top coat shall be applied at a rate of approximately 100 square feet per gallon using a high quality 3/8" nap roller to give a uniform thickness and even appearance. (Standard textured finish.)

4. Total base coat plus aggregate plus lock coat shall total approximately 125 mils (min. 120 mils).

3.05 INSTALLATION - URETHANE TYPE FLOORING

A. The system shall be applied in two distinct steps as listed below:

1. Substrate preparation

2. Topping application

B. Wherever a free edge will occur, including doorways, wall perimeters, expansion joints, columns and equipment pads, a ¼ inch by ¼ inch keyway shall be cut in. At edges such as doorways, drains and transitions to other floor systems a ½ inch by ½ inch keyway shall be cut in.

C. Cracks and joints (non-moving) greater than 1/2 inch wide are to be chiseled or chipped-out and repaired per manufacturer's recommendations.

D. Immediately prior to the application of any component of the system, the surface shall be dry and any remaining dust or loose particles shall be removed using a vacuum or clean, dry, oil-free compressed air.

E. The handling, mixing and addition of components shall be performed in a safe manner to achieve the desired results in accordance with the Manufacturer's recommendations.

F. The system shall follow the contour of the substrate unless pitching or other leveling work has been specified by the Architect.

G. A neat finish with well-defined boundaries and straight edges shall be provided by the Applicator.

H. Topping

1. The topping shall be a trowel applied as specified. The topping shall be applied in one lift with a nominal thickness of 1/4 inch.

2. The topping shall be comprised of three components, a resin, hardener and filler as supplied by the Manufacturer.

3. The hardener shall be added to the resin and thoroughly dispersed by suitably approved mechanical means. HF Aggregate shall then be added to the catalyzed mixture and mixed in a manner to achieve a homogenous blend.

4. The topping shall be applied over horizontal surfaces using a screed box, trowels or other systems approved by the Manufacturer.

I. Install cove base of the same material, to a height of 4" located as indicated on the drawing(s). Cove at a minimum radius of ½".

3.06 CLEANING

A. Remove masking. Perform detail cleaning at floor termination, to leave cleanable surface for subsequent work of other sections.

B. Clean up all debris and dirt resulting from work.

3.07 PROTECTION

A. Cure flooring material in compliance with manufacturer's directions, taking care to prevent their contamination during stages of application and prior to completion of the curing process.

B. Prohibit traffic on floor finish for 48 hours after installation.

C. Barricade area to protect flooring until fully cured.

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SECTION 097200
WALL COVERINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Wall coverings.

1.02 RELATED REQUIREMENTS

A. Section 079200 - Joint Sealants for FRP panel joints.

B. Section 099123 - Interior Painting: Preparation and priming of substrate surfaces.

1.03 REFERENCE STANDARDS

A. ASTM D1308 - Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes 2002 (Reapproved 2013).

B. ASTM A167 - Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip; 1999 (Reapproved 2009).

C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2020.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on wall covering and adhesive.

C. Shop Drawings: Indicate wall elevations with seaming layout.

D. Samples: Submit two samples of wall covering, 2 by 2 inch in size illustrating color, finish, and texture.

E. Test Reports: Indicate verification of flame and smoke ratings, when tested by UL.

F. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

G. Maintenance Data: Submit data on cleaning, touch-up, and repair of covered surfaces.

H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1. See Section 016000 - Product Requirements, for additional provisions.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Inspect roll materials at arrival on site, to verify acceptability.

B. Protect packaged adhesive from temperature cycling and cold temperatures.

C. Do not store roll goods on end.

1.07 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the adhesive or wall covering product manufacturer.

B. Maintain these conditions 24 hours before, during, and after installation of adhesive and wall covering.

C. Provide lighting level of 80 ft candles measured mid-height at substrate surfaces.

PART 2 PRODUCTS

2.01 WALL COVERINGS

A. General Requirements:

1. Surface Burning Characteristics: Flame spread/Smoke developed index of 25/450, maximum, when tested in accordance with ASTM E84.

2. Chemical and Stain Resistance: No visible staining or discoloration and no damage to surface texture when tested in accordance with ASTM D1308.

B. Wall Covering - Type WP-1: Rigid vinyl panel.

1. Panel Size: 4 feet by 8 feet.

2. Rigid Vinyl Thickness: 60 mils (0.060 inch).

3. Panel Edge Treatment: Square.

4. Color: As selected from manufacturer's full range; colored throughout.

5. Surface Texture: As selected from manufacturer's full range.

6. Mounting: Adhesive.

7. Product: ProTek WC-60 Rigid Wallcovering by ProTek Systems, Inc.: www.proteksystem.com.

    a. Substitutions: See Section 016000 - Product Requirements.

C. Wall Covering - Type WP-2: Stainless steel.

1. Panel Size: As indicated on drawings.

2. Materials: Stainless steel; ASTM A167, 304.

3. Panel Edge Treatment: Square.

4. Mounting: Adhesive.

5. Finish: No. 4, satin.

6. Product: "WPS-12 Stainless Steel Wall System" by ProTek Systems, Inc.: www.proteksystem.com.

    a. Substitutions: See Section 016000 - Product Requirements.

D. Wall Covering - Type TS-1: Linoleum.

1. Materials: Homogeneous tackable surface material made of primary natural materials consisting of linseed oil, cork, rosin binders and dry pigments mixed and calendared onto a natural jute backing.

2. Width: 72 inch.

3. Length: Roll.

4. Total Thickness: 1/4 inch.

5. Mounting: Adhesive.

6. Color: As scheduled; colored throughout.

7. Pattern: As scheduled.

8. Product: "Forbo Bulletin Board" by Forbo Flooring, Inc.: www.forboflooringna.com.

    a. Substitutions: See Section 016000 - Product Requirements.

E. Wall Covering: FRP-1, complying with the following:

1. Total Thickness: 3/32 inch.

2. Size: 4 x 8 feet.

3. Color: As selected by Architect from manufacturers's full line.

F. Adhesive: Type recommended by wall covering manufacturer to suit application to substrate.

G. Substrate Filler: As recommended by adhesive and wall covering manufacturers; compatible with substrate.

H. Product: Aritzan FRP featuring Blue Sky technology by marlite: ww.marlite.com.

1. Substitutions: See Section 016000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces are prime painted and ready to receive work, and comply with requirements of wall covering manufacturer.

B. Measure moisture content of surfaces using an electronic moisture meter. Do not apply wall coverings if moisture content of substrate exceeds level recommended by wall covering manufacturer.

C. Verify flatness tolerance of surfaces does not vary more than 1/8 inch in 10 feet nor vary at a rate greater than 1/16 inch/ft.

3.02 PREPARATION

A. Fill cracks in substrate and smooth irregularities with filler; sand smooth.

B. Wash impervious surfaces with tetra-sodium phosphate, rinse and neutralize; wipe dry.

C. Surface Appurtenances: Remove or mask electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.

D. Surfaces: Correct defects and clean surfaces that affect work of this section. Remove existing coatings that exhibit loose surface defects.

E. Vacuum clean surfaces free of loose particles.

3.03 INSTALLATION

A. Apply adhesive and wall covering in accordance with manufacturer's instructions.

B. Install wall covering with texture running in the same direction for uniform appearance.

C. Razor trim edges on flat work table. Do not razor cut on gypsum board surfaces.

D. Install wall covering before installation of bases, cabinets, and hardware and items attached to or spaced slightly from wall surface.

E. Remove excess adhesive while wet from seam before proceeding to next wall covering sheet. Wipe clean with dry cloth.

3.04 INSTALLATION OF FRP

A. Install FRP panels according to manufacturer's instructions.

B. Provide no-trim joints using black marker and silicon caulk.

3.05 CLEANING

A. Clean wall coverings of excess adhesive, dust, dirt, and other contaminants.

B. Reinstall wall plates and accessories removed prior to work of this section.

3.06 PROTECTION

A. Do not permit construction activities at or near finished wall covering areas.

3.07 SCHEDULES- SEE SECTION 090600

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END OF SECTION

SECTION 099113
EXTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints.

C. Materials for backpriming woodwork.

D. Scope: Finish exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.

1. Both sides and edges of plywood backboards for electrical and telecom equipment before installing equipment.

2. Exposed surfaces of steel lintels and ledge angles.

3. Both sides of access panels, removable or hinged covers, and similar hinged items to match exposed, adjacent surfaces.

4. Hollow metal doors and frames that do not have a factory provided finish.

a. As directed by Architect, hollow metal frames and doors may be different colors on each side of frame and/or door.

b. Finish door tops, bottoms and side edges same as faces, unless otherwise indicated.

E. **Do Not Paint or Finish the Following Items:**

1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.

2. Items indicated to receive other finishes.

3. Items indicated to remain unfinished.

4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.

5. Non-metallic roofing and flashing.

6. Stainless steel, anodized aluminum, bronze, terne coated stainless steel, zinc, and lead.

7. Marble, granite, slate, and other natural stones.

8. Floors, unless specifically indicated.

9. Brick, glass unit masonry, architectural concrete, cast stone, integrally colored plaster and stucco.

10. Exterior insulation and finish system (EIFS).

11. Glass.

12. Concealed pipes, ducts, and conduits.

1.02 RELATED REQUIREMENTS

A. Section 055000 - Metal Fabrications: Shop-primed items.

B. Section 055100 - Metal Stairs: Shop-primed items.

C. Section 099123 - Interior Painting.

1.03 DEFINITIONS

A. Comply with ASTM D16 for interpretation of terms used in this section.

B. The term “Paint”, as used herein, includes enamels, paints, sealers, fillers, emulsions, stains, varnishes and other coatings whether used as prime, intermediate, or finish coats.

C. "MDF" equals minimum dry film thickness. The numbers specified denote the thickness of each coat.

1.04 REFERENCE STANDARDS

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency current edition.

B. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications 2016.

C. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials 2020.

D. SSPC-SP 1 - Solvent Cleaning 2015, with Editorial Revision (2016).

E. SSPC-SP 2 - Hand Tool Cleaning 2018.

F. SSPC-SP 3 - Power Tool Cleaning 2018.

G. SSPC-SP 6 - Commercial Blast Cleaning 2007.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide complete list of products to be used, with the following information for each:

1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").

2. Cross-reference to specified paint system(s) product is to be used in; include description of each system.

3. Manufacturer's installation instructions.

4. If proposal of substitutions is allowed under submittal procedures, explanation of substitutions proposed.

C. Product List: For each product indicated, include the following:

1. Cross-reference to paint system and locations of application areas. Use same designations indicated on drawings and in schedules.

2. VOC content.

D. Samples for Initial Selection: (2) Complete decks of Manufacturer's latest array of full range of colors.

E. Certification: By manufacturer that paints and finishes comply with VOC limits specified.

F. Manufacturer's Instructions: Indicate special surface preparation procedures.

G. Maintenance Data: Submit data including care and cleaning instructions, touch-up procedures, and repair of painted and finished surfaces.

H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1. See Section 016000 - Product Requirements, for additional provisions.

2. Extra Paint and Finish Materials: 1 gallon of each color; from the same product run, store where directed.

3. Label each container with color in addition to the manufacturer's label.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years documented experience.

B. Applicator Qualifications: Company specializing in performing the type of work specified with minimum five years experience and approved by manufacturer.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Pursuant to manufacturer's published instructions.

B. Deliver products to site in sealed and labeled containers; inspect to verify acceptability. Reuse of any containers for any reason is prohibited and will result in work not being acceptable.

C. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

D. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

E. Protect against moisture exposure and damage.

1.08 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Environmental conditions can be modified only if such requirements are a part of manufacturer's published application instructions.

D. Apply paint materials only when surface and ambient temperatures are above 50 degrees F for 48 hours before, during, and after the paint application.

E. Apply paint materials only when relative humidity is lower than 85 percent and surface temperature is at least 5 degrees F above dew point.

1. Conditions must remain acceptable to manufacturer’s recommendations during drying time.

F. Apply paint materials only to surfaces that are free of surface moisture.

G. Do not apply exterior paint and finishes during rain, snow, fog or mist, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.

H. Do not apply materials in direct sunlight.

I. Do not apply materials in areas with airborne dust or where dust can be generated.

J. Minimum Application Temperatures for Latex Paints: 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.

K. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 PERFORMANCE CRITERIA

A. Provide labor and materials necessary to provide a complete system.

B. Perform all work of this section with experienced workmen familiar with the work, and in accordance with industry standards and manufacturer's recommendations.

2.02 MANUFACTURERS

A. Provide paints and finishes from the same manufacturer.

1. In the event that a single manufacturer cannot provide specified products, minor exceptions will be permitted provided approval by Architect is obtained using the specified procedures for substitutions.

2. Substitution of other products by the same manufacturer is preferred over substitution of products by a different manufacturer.

B. Paints:

1. Base Manufacturer: Sherwin-Williams Company: www.sherwin-williams.com/#sle..

2. Behr Process Corporation: www.behr.com/#sle.

3. Benjamin Moore & Co.: www.benjaminmoore.com.

C. Transparent Finishes:

1. Base Manufacturer: Sherwin-Williams Company: www.sherwin-williams.com/#sle..

2. Benjamin Moore & Co.: www.benjaminmoore.com.

3. Glidden Professional: www.gloddenprofessional.com.

D. Stains:

1. Base Manufacturer: PPG Olympic Stain: www.olympic.com.

E. Primer Sealers: Same manufacturer as top coats.

F. Substitutions: See Section 016000 - Product Requirements.

2.03 PAINTS AND FINISHES - GENERAL

A. Provide paints specifically formulated for geographical area in which Project is located.

B. Paints and Finishes: Ready mixed, unless required to be a field-catalyzed paint.

1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.

2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

3. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color.

4. Supply each paint material in quantity required to complete entire project's work from a single production run.

5. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.

C. Volatile Organic Compound (VOC) Content:

1. Provide paints and finishes that comply with the most stringent requirements specified in the following:

a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.

b. Architectural coatings VOC limits of State in which the project is located.

2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.

D. Flammability: Comply with applicable code for surface burning characteristics.

E. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.

F. Colors: To be selected from manufacturer's full range of available colors.

1. Selection to be made by Architect after award of contract.

2. Extend colors to surface edges; colors may change at any edge as directed by Architect.

2.04 PAINT SYSTEMS - EXTERIOR

A. Paint EC-OP All Exterior Surfaces to be Painted, Unless Otherwise Indicated: Including primed wood and primed metal.

1. Two top coats and one coat primer.

2. Top Coat(s): Exterior Latex Enamel.

a. Products:

1) Sherwin Williams All Surface Enamel Exterior Satin (2 coats at 1.52 DFT).

2) Substitutions: Section 016000 - Product Requirements.

B. Paint E-TR-W - Stain on Wood:

1. 2 coats stain.

2. Stain: Exterior Semi-Transparent Stain for Wood.

a. Products:

1) PPG Olympic Stain ELITE Advanced Stain + Sealant in One No. OLYST12.

C. Paint CE-OP-3A - Concrete/Masonry, Opaque, Alkyd, 3 Coat:

1. One coat of block filler. Sherwin-Williams Kem Cati-Coat HS Epoxy (10.0-20.0 mils DFT) Filler/Sealer as needed to fill voids and provide a continuous substrate.

2. Semi-gloss: Two coats of alkyd enamel; Sherwin Williams Pro Industrial Urethane Alkyd Enamel, B54W Seriesl; DFT 1.5-2.5 per coat.

D. Paint ME-OP-3A - Ferrous Metals, Unprimed, Alkyd, 3 Coat:

1. One coat of alkyd primer: Sherwin Williams Kem Bond HS Primer B50 Series.

2. Gloss: Two coats of alkyd enamel; Sherwin Williams Pro Industrial Urethane Alkyd Enamel, B54W Seriesl; DFT 1.5-2.5 per coat.

E. Paint MgE-OP-3A - Galvanized Metals, Alkyd, 3 Coat:

1. One coat galvanize primer.

2. Gloss: Two coats of alkyd enamel; Sherwin- Williams P22 Urethane Alkyd Gloss Enamel; DFT 1.5-2.5 per coat.

F. Paint MgE-OP-3L - Galvanized Metals, Latex, 3 Coat:

1. One coat galvanize primer.

2. Semi-gloss: Two coats of latex enamel; Sherwin Williams Resilience Exterior Latex K44 Series; DFT 1.5-2.5 per coat.

2.05 PRIMERS

A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.

1. Interior/Exterior Latex Block Filler; MPI #4.

a. Products:

1) Sherwin-Williams Kem Cati-Coat HS Epoxy (10.0-20.0 mils DFT) Filler/Sealer as needed to fill voids and provide a continuous substrate.

2) Substitutions: Section 016000 - Product Requirements.

2. Anti-Corrosive Alkyd Primer for Metal; MPI #79.

a. Products:

1) Sherwin Williams Kem Bond HS Primer B50 Series; DFT 1.5-2.5.

2) Substitutions: Section 016000 - Product Requirements.

3. Water Based Primer for Galvanized Metal; MPI #134.

a. Products:

1) Substitutions: Section 016000 - Product Requirements.

4. Latex Primer for Exterior Wood; MPI #6.

a. Products:

1) Sherwin Williams Pro Industrial Pro Cryl Universal Primer B66 Series.

2) Substitutions: Section 016000 - Product Requirements.

2.06 ACCESSORY MATERIALS

A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

B. Patching Material: Latex filler.

C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin application of paints and finishes until substrates have been properly prepared.

B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.

D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

E. Test shop-applied primer for compatibility with subsequent cover materials.

F. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:

1. Exterior Plaster and Stucco: 12 percent.

2. Masonry, Concrete, and Concrete Masonry Units: 12 percent.

3. Exterior Wood: 15 percent, measured in accordance with ASTM D4442.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces for finishing.

D. Seal surfaces that might cause bleed through or staining of topcoat.

E. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

F. Masonry:

1. Remove efflorescence and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces or if alkalinity of mortar joints exceed that permitted in manufacturer's written instructions. Allow to dry.

2. Prepare surface as recommended by top coat manufacturer.

G. Exterior Gypsum Board: Fill minor defects with exterior filler compound. Spot prime defects after repair.

H. Exterior Plaster: Fill hairline cracks, small holes, and imperfections with exterior patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.

I. Galvanized Surfaces:

1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.

2. Prepare surface according to SSPC-SP 2.

J. Ferrous Metal:

1. Solvent clean according to SSPC-SP 1.

2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.

3. Remove rust, loose mill scale, and other foreign substances using using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 "Commercial Blast Cleaning". Protect from corrosion until coated.

K. Exterior Wood Surfaces to Receive Opaque Finish: Remove dust, grit, and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted exterior calking compound after prime coat has been applied. Back prime concealed surfaces before installation.

L. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

3.03 APPLICATION

A. Beginning of installation means acceptance of existing surfaces.

B. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.

C. Exterior Wood to Receive Opaque Finish: If final painting must be delayed more than 2 weeks after installation of woodwork, apply primer within 2 weeks and final coating within 4 weeks.

D. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

E. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

F. Apply each coat to uniform appearance.

G. Dark Colors and Deep Clear Colors: Regardless of number of coats specified, apply additional coats until complete hide is achieved.

H. Sand wood and metal surfaces lightly between coats to achieve required finish.

I. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

J. Wood to Receive Transparent Finishes: Tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.

K. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements, for general requirements for field inspection.

B. Samples of materials being used on the job may be taken at any time at the discretion of the Architect and checked for compliance with the specifications.

C. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint Work not in compliance with specified requirements.

3.05 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

B. Clean glass and other spattered surfaces. Remove spattered paints by washing, scraping, or other approved methods. Do not scratch or damage adjacent finished surfaces.

3.06 PROTECTION

A. Protect finishes until completion of project.

B. Protect adjacent surfaces, whether to be painted or not, and work of other trades against damage from paint application. Correct damages by cleaning, repairing, replacing, and refinishing, as directed and approved by Architect. Restore damaged surfaces and work of other trades to their original conditions prior to paint application.

C. Coordinate the maintenance and subsequent removal of temporary protective wrappings.

D. Touch-up damaged finishes after Substantial Completion.

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SECTION 099123
INTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints.

C. Scope: Finish interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.

1. Both sides and edges of plywood backboards for electrical and telecom equipment before installing equipment.

2. Exposed surfaces of steel lintels and ledge angles.

3. All exposed exterior and interior piping, bollards, frames, conduit, ductwork, steel grilles, and related fittings identical with room or ceiling color or adjacent surfaces, unless specifically noted otherwise.

4. In Apparatus Bay and adjacent rooms, finish all bollards, overhead door steel channel framing, exposed steel structure, galvanized decking, conduit, exterior and interior piping, steel grilles, ductwork and framing, and related fittings and accessories, unless specifically noted otherwise; identical with room or ceiling color or adjacent surfaces.

5. Elevator pit ladders.

6. Both sides of access panels, removable or hinged covers, and similar hinged items to match exposed, adjacent surfaces.

7. Surfaces behind movable equipment and furniture to match exposed, adjacent surfaces.

8. Hollow metal doors and frames that do not have a factory provided finish.

a. As directed by Architect, hollow metal frames and doors may be different colors on each side of frame and/or door.

b. Finish door tops, bottoms and side edges same as faces, unless otherwise indicated.

9. Finish recesses same as adjoining rooms. Finish all other surfaces same as nearest or adjoining surfaces unless specifically noted otherwise.

10. Mechanical and Electrical:

a. In finished areas, paint insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, and hangers, brackets, collars and supports, unless otherwise indicated.

b. In all areas, paint shop-primed items.

c. Paint interior surfaces of air ducts and convector and baseboard heating cabinets that are visible through grilles and louvers with one coat of flat black paint to visible surfaces.

d. Paint dampers exposed behind louvers, grilles, and convector and baseboard cabinets to match face panels.

D. **Do Not Paint or Finish the Following Items:**

1. Items fully factory-finished unless specifically so indicated, including but not limited to plastic laminate finished components, metal or plastic toilet partitions, acoustical materials, light fixtures, wiring devices, electrical device plates, fire detection and alarm and suppression devices; materials and products having factory-applied primers are not considered factory finished.

2. Items indicated to receive other finishes.

3. Items indicated to remain unfinished.

4. Fire rating labels, equipment serial number and capacity labels, bar code labels,sensing devices, fusible links and operating parts of equipment.

5. Stainless steel, anodized or electrostatically painted aluminum, chrome plating, copper, bronze, terne coated stainless steel, and lead items.

6. Marble, granite, slate, and other natural stones.

7. Floors, unless specifically indicated.

8. Ceramic and other tiles.

9. Brick, architectural concrete, cast stone, integrally colored plaster and stucco.

10. Glass.

11. Acoustical materials, unless specifically indicated.

12. Concealed pipes, ducts, and conduits.

13. Chases, concealed wall or ceiling spaces, or similar inaccessible spaces, unless otherwise indicated.

1.02 RELATED REQUIREMENTS

A. Section 055000 - Metal Fabrications: Shop-primed items.

B. Section 055100 - Metal Stairs: Shop-primed items.

C. Section 099113 - Exterior Painting.

1.03 DEFINITIONS

A. Comply with ASTM D16 for interpretation of terms used in this section.

B. The term “Paint”, as used herein, includes enamels, paints, sealers, fillers, emulsions, stains, varnishes and other coatings whether used as prime, intermediate, or finish coats.

C. "MDF" equals minimum dry film thickness. The numbers specified denote the thickness of each coat.

1.04 REFERENCE STANDARDS

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency current edition.

B. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications 2016.

C. ASTM D4258 - Standard Practice for Surface Cleaning Concrete for Coating 2005 (Reapproved 2017).

D. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials 2020.

E. SSPC V1 (PM1) - Good Painting Practice: Painting Manual, Volume 1 2016.

F. SSPC-SP 1 - Solvent Cleaning 2015, with Editorial Revision (2016).

G. SSPC-SP 2 - Hand Tool Cleaning 2018.

H. SSPC-SP 3 - Power Tool Cleaning 2018.

I. SSPC-SP 6 - Commercial Blast Cleaning 2007.

J. SSPC-SP 13 - Surface Preparation of Concrete 1997 (Reaffirmed 2003).

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide complete list of products to be used, with the following information for each:

1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").

2. Cross-reference to specified paint system(s) product is to be used in; include description of each system.

3. Manufacturer's installation instructions.

4. If proposal of substitutions is allowed under submittal procedures, explanation of substitutions proposed.

C. Samples for Initial Selection: (2) Complete decks of Manufacturer's latest array of full range of colors.

D. Certification: By manufacturer that paints and finishes comply with VOC limits specified.

E. Manufacturer's Instructions: Indicate special surface preparation procedures.

F. Maintenance Data: Submit data including finish schedule showing where each product/color/finish was used, product technical data sheets, material safety data sheets (MSDS), care and cleaning instructions, touch-up procedures, repair of painted and finished surfaces, and color samples of each color and finish used.

G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1. See Section 016000 - Product Requirements, for additional provisions.

2. Extra Paint and Finish Materials: 1 gallon of each color; from the same product run, store where directed.

3. Label each container with color in addition to the manufacturer's label.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years documented experience.

B. Applicator Qualifications: Company specializing in performing the type of work specified with minimum five years experience and approved by manufacturer.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.08 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Do not apply materials when relative humidity exceeds 85 percent; at temperatures less than 5 degrees F above the dew point; or to damp or wet surfaces.

D. Minimum Application Temperatures for Paints: 50 degrees F for interiors unless required otherwise by manufacturer's instructions.

E. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Provide paints and finishes from the same manufacturer to the greatest extent possible.

1. In the event that a single manufacturer cannot provide specified products, minor exceptions will be permitted provided approval by Architect is obtained using the specified procedures for substitutions.

2. Substitution of other products by the same manufacturer is preferred over substitution of products by a different manufacturer.

B. Paints:

1. Base Manufacturer: Sherwin-Williams Company: www.sherwin-williams.com.

2. Behr Process Corporation: www.behr.com/#sle.

3. Benjamin Moore & Co: www.benjaminmoore.com.

C. Transparent Finishes:

1. Base Manufacturer: Sherwin-Williams Company: www.sherwin-williams.com.

2. Glidden Professional: www.gliddenprofessional.com.

3. Benjamin Moore & Co: www.benjaminmoore.com.

D. Stains:

1. PPG Paints: www.ppgpaint.com.

2. Olympic: www.olympicstains.ca.

E. Primer Sealers: Same manufacturer as top coats.

F. Substitutions: See Section 016000 - Product Requirements.

2.02 PAINTS AND FINISHES - GENERAL

A. Paints and Finishes: Ready mixed, unless intended to be a field-catalyzed paint.

1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.

2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

3. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color.

4. Supply each paint material in quantity required to complete entire project's work from a single production run.

5. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.

B. Volatile Organic Compound (VOC) Content:

1. Provide paints and finishes that comply with the most stringent requirements specified in the following:

a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.

b. Architectural coatings VOC limits of New York.

2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.

C. Flammability: Comply with applicable code for surface burning characteristics.

D. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.

E. Colors: To be selected from manufacturer's full range of available colors.

1. Selection to be made by Architect after award of contract.

2. In finished areas, finish pipes, ducts, conduit, and equipment the same color as the wall/ceiling they are mounted on/under.

2.03 PAINT SYSTEMS - INTERIOR

A. Paint I-OP - Interior Surfaces to be Painted, Unless Otherwise Indicated: Including gypsum board, concrete, concrete masonry units, brick, wood, plaster, uncoated steel, shop primed steel, and galvanized steel.

1. Two top coats and one coat primer.

2. Top Coat(s): Interior Latex.

a. Products:

1) Sherwin-Williams ProMar 200 Zero VOC Interior Latex, Flat.

2) Sherwin-Williams ProMar 200 Zero VOC Interior Latex, Semi-Gloss. (MPI #43)

3) Sherwin-Williams ProMar 200 Zero VOC Interior Latex, Eg-Shel. (MPI #52)

4) Substitutions: Section 016000 - Product Requirements.

3. Top Coat Sheen:

a. Flat; use this sheen where scheduled.

b. Eggshell: MPI gloss level 3; use this sheen where scheduled.

c. Semi-Gloss: MPI gloss level 5; use this sheen where scheduled.

4. Primer: As specified under "PRIMERS" below.

B. Paint I-OP-DF - Dry Fall: Metals; exposed structure and overhead-mounted services in utilitarian spaces, including shop primed steel deck, structural steel, metal fabrications, galvanized ducts, galvanized conduit, and galvanized piping.

1. Shop primer by others.

2. Two top coats; white.

3. Top Coat: Alkyd Dry Fall.

a. Products:

1) Sherwin-Williams Pro Industrial Waterborne Acrylic Dryfall B42 Series.

2) Substitutions: Section 016000 - Product Requirements.

C. Paint WI-OP-3L - Wood, Opaque, Latex, 3 Coat:

1. One coat of latex primer sealer. Sherwin Williams Pro Mar 200 Zero VOC Primer B28W Series.

2. Semi-gloss: Two coats of latex enamel; Sherwin Williams Pro Mar 200 Zero VOC Semi Gloss B31W Series.

D. Paint WI-TR-VS - Wood, Transparent, Varnish, Stain:

1. Filler coat (for open grained wood only).

2. One coat of stain; Sherwin Williams Minwax Performance Series Wood Stain.

3. Satin: Two coats of varnish; Sherwin Williams Minwax Water Based Oil Modified Polyurethane.

E. Paint CI-OP-2L - Concrete/Masonry, Opaque, Latex, 2 Coat:

1. One coat of Sherwin Williams Loxon Masonry Primer (2.1-3.2 mils DFT).

2. Two coats of Sherwin Williams Pro Industrial Acrylic Eg-Shell (2.5-4.0 mils DFT per coat).

F. Paint CmI-OP-2E - Concrete Masonry, Opaque, Epoxy, 3 Coat:

1. Sherwin-Williams Kem Cati-Coat HS Epoxy (10.0-20.0 mils DFT) Filler/Sealer as needed to fi ll voids and provide a continuous substrate.

2. Semi-gloss: One coat of latex enamel; Sherwin-Williams Macropoxy 646 Fast Cure Epoxy (5.0-10.0 mils DFT per coat).

G. Paint MI-OP-3A - Ferrous Metals, Unprimed, Alkyd, 3 Coat:

1. One coat of alkyd primerr: Sherwin Williams Kem Bond HS Primer B50N Series.

2. Gloss: Two coats of alkyd enamel; Sherwin Williams Pro Industrial Urethane Alkyd Enamel B54W Series.

H. Paint MI-OP-2A - Ferrous Metals, Primed, Alkyd, 2 Coat:

1. Touch-up with alkyd primer: Sherwin Williams All Surface Enamel Primer A11 Series.

2. Semi-gloss: Two coats of alkyd enamel; Sherwin Williams All Surface Enamel Interior/Exterior Alkyd A11 Series.

I. Paint MgI-OP-3A - Galvanized Metals, Alkyd, 3 Coat:

1. One coat galvanize primer: Sherwin Williams Galvite HS B50W Series.

2. Gloss: Two coats of alkyd enamel; Sherwin Williams Pro Industrial Urethane Alkyd Enamel B54W Series.

J. Paint GI-OP-3L - Gypsum Board/Plaster, Latex, 3 Coat:

1. One coat of latex primer sealer.

2. Eggshell: Two coats of latex enamel; Sherwin Williams Pro Mar 200 Zero VOC Latex Eggshell B20W Series.

K. Paint GI-OP02E -Gypsum Board/Plaster, Wet Environments, Epoxy, 2 Coat:

1. One coat of Multi-purpose Latex primer sealer: Sherwin Williams Pro Mar 200 Zero VOC Primer B28W Series.

2. Gloss: One coat of waterborne polymide epoxy;; Sherwin Williams Pro Industrial Waterbased Catalyzed Epoxy B73 Series.

2.04 PRIMERS

A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.

2.05 ACCESSORY MATERIALS

A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

B. Patching Material: Latex filler.

C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin application of paints and finishes until substrates have been properly prepared.

B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.

D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

E. Test shop-applied primer for compatibility with subsequent cover materials.

F. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:

1. Gypsum Wallboard: 12 percent.

2. Masonry, Concrete, and Concrete Masonry Units: 12 percent.

3. Interior Wood: 15 percent, measured in accordance with ASTM D4442.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.

D. Seal surfaces that might cause bleed through or staining of topcoat.

E. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

F. Concrete:

1. Remove release agents, curing compounds, efflorescence, and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.

2. Clean concrete according to ASTM D4258. Allow to dry.

3. Prepare surface as recommended by top coat manufacturer and according to SSPC-SP 13.

G. Masonry:

1. Remove efflorescence and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces or if alkalinity of mortar joints exceed that permitted in manufacturer's written instructions. Allow to dry.

2. Prepare surface as recommended by top coat manufacturer.

3. Clean surfaces with pressurized water. Use pressure range of 600 to 1,500 psi at 6 to 12 inches. Allow to dry.

H. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.

I. Plaster: Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.

J. Insulated Coverings: Remove dirt, grease, and oil from canvas and cotton.

K. Galvanized Surfaces:

1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.

2. Prepare surface according to SSPC-SP 2.

L. Ferrous Metal:

1. Solvent clean according to SSPC-SP 1.

2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.

3. Remove rust, loose mill scale, and other foreign substances using using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 "Commercial Blast Cleaning". Protect from corrosion until coated.

M. Wood Surfaces to Receive Opaque Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.

N. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

3.03 APPLICATION

A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.

B. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

C. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

D. Apply each coat to uniform appearance in thicknesses specified by manufacturer.

E. Dark Colors and Deep Clear Colors: Regardless of number of coats specified, apply as many coats as necessary for complete hide.

F. Sand wood and metal surfaces lightly between coats to achieve required finish.

G. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

H. Wood to Receive Transparent Finishes: Tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.

I. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements, for general requirements for field inspection.

B. Samples of materials being used on the job may be taken at any time at the discretion of the Architect and checked for compliance with specifications.

C. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint Work not in compliance with specified requirements.

3.05 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

B. Clean glass and other spattered surfaces. Remove spattered paints by washing, scraping, or other approved methods. Do not scratch or damage adjacent finished surfaces.

3.06 PROTECTION

A. Protect finishes until completion of project.

B. Protect adjacent surfaces, whether to be painted or not, and work of other trades against damage from paint application. Correct damages by cleaning, repairing, replacing, and refinishing, as directed and approved by the Architect. Restore damaged surfaces and work of other trades to their original conditions prior to paint application.

C. Touch-up damaged finishes after Substantial Completion.

END OF SECTION

SECTION 099656
EPOXY WALL COATING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This section includes the following:

1. Epoxy wall coating system as shown on the drawings.

B. Related sections include the following:

1. Unit Masonry, section 042000

1.03 SYSTEM DESCRIPTION

A. The work shall consist of preparation of the substrate, the furnishing and application of a epoxy based wall coating system, with decorative colored chips and urethane topcoats. The system shall have the color and texture as specified by the Owner with a nominal thickness of 55 - 60 mils. It shall be applied to the prepared area(s) as defined in the plans strictly in accordance with the Manufacturer's recommendations.

1.04 SUBMITTALS

A. Product Data: Latest edition of Manufacturer's literature including performance data and installation procedures.

B. Manufacturer’s Material Safety Data Sheet (MSDS) for each product being used.

C. Samples: A 3 x 3 inch square sample of the proposed system. Color, texture, and thickness shall be representative of overall appearance of finished system subject to normal tolerances.

1.05 QUALITY ASSURANCE

A. The Manufacturer shall have a minimum of 10 years experience in the production, sales, and technical support of epoxy and urethane industrial flooring and related materials.

B. The Applicator shall have experience in installation of the flooring system as confirmed by the manufacturer in all phases of surface preparation and application of the product specified.

C. No requests for substitutions shall be considered that would change the generic type of the specified System.

D. A pre-installation conference shall be held between Applicator, General Contractor and the Owner to review and clarification of this specification, application procedure, quality control, inspection and acceptance criteria and production schedule.

1.06 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Packing and Shipping

1. All components of the system shall be delivered to the site in the Manufacturer's packaging, clearly identified with the product type and batch number.

B. Storage and Protection

1. The Applicator shall be provided with a storage area for all components. The area shall be between 60 degrees F and 90 degrees F, dry, out of direct sunlight and in accordance with the Manufacturer's recommendations and relevant health and safety regulations.

2. Copies of Material Safety Data Sheets (MSDS) for all components shall be kept on site for review by the Architect or other personnel.

C. Waste Disposal

1. The Applicator shall be provided with adequate disposal facilities for non-hazardous waste generated during installation of the system.

1.07 PROJECT CONDITIONS

A. Site Requirements

1. Application may proceed while air, material and substrate temperatures are between 60 degrees F and 90 degrees F providing the substrate temperature is above the dew point. Outside of this range, the Manufacturer shall be consulted.

2. The relative humidity in the specific location of the application shall be less than 80 % and the surface temperature shall be at least 5 F above the dew point.

3. The Applicator shall ensure that adequate ventilation is available for the work area.

4. The Applicator shall be supplied with adequate lighting equal to the final lighting level during the preparation and installation of the system.

B. Conditions of substrate to be coated with epoxy material.

1. Block wall mortar joints have cured no less than 7 days under good conditions.

2. Sealers and curing agents should not to be used.

C. Safety Requirements

1. All open flames and spark-producing equipment shall be removed from the work area prior to commencement of application.

2. "No Smoking" signs shall be posted at the entrances to the work area.

3. Non-related personnel in the work area shall be kept to a minimum.

1.08 WARRANTY

A. Manufacturer warrants that material shipped to buyers at the time of shipment substantially free from material defects and will perform substantially to manufacturer's published literature if used in accordance with the latest prescribed procedures and prior to the expiration date.

B. Manufacturer liability with respect to this warranty is strictly limited to the value of the material purchase.

PART 2 - PRODUCTS

2.01 COATING

A. Dur-A-Flex, Inc, Dur-A-Wall VC, epoxy-based, urethane topcoat, chip seamless wall system

1. System Materials:

a. 1st Broadcast Coat: Dur-A-Flex, Inc, Dur-A-Gard No Sag resin and hardener.

b. 2nd Broadcast Coat: Dur-A-Flex, Inc, Dur-A-Glaze # 4 Water Clear resin and hardener.

c. Chips: Dur-A-Flex, Inc, decorative chips (Micro or Macro)

d. Grout Coat: Dur-A-Flex, Inc, Dur-A-Glaze #4 Water Clear resin and hardener.

e. Topcoats: Dur-A-Flex, Inc. Armor Top resin and hardener

2. Patch Materials

a. Shallow Fill and Patching: Use Dur-A-Flex, Inc. Dur-A-Glaze #4 Cove Rez.

2.02 MANUFACTURER

A. Dur-A-Flex, Inc., 95 Goodwin Street, East Hartford, CT 06108, Phone: (860) 528-9838, Fax: (860) 528-2802, www.dur-a-flex.com

B. Manufacturer of Approved System shall be single source and made in the USA.

C. Substitutions: See Section 016000 - Product Requirements.

2.03 PRODUCT REQUIREMENTS

A. First Broadcast Coat: **Dur-A-Gard No Sag**

1. Percent Solids: 100 %
2. VOC: 3.45 g/L
3. Compressive Strength, ASTM D 695: 16,000 psi
4. Tensile Strength, ASTM D 638: 3,800 psi
5. Flexural Strength, ASTM D 790: 4,000 psi
6. Abrasion Resistance, ASTM D 4060
    a. C-10 Wheel, 1,000 gm load, 1,000 cycles: 35 mg loss
7. Flame Spread/NFPA-101, ASTM E 84: Class A
8. Flammability, ASTM D 635: Self Extinguishing
9. Impact Resistance MIL D-3134: 0.025 inch Max
10. Water Absorption. MIL D-3134: 0.04 %
11. Potlife @ 70 deg. F: 20-25 minutes

B. Second Broadcast Coat and Grout Coat: **Dur-A-Glaze #4 Water Clear**

1. Percent Solids: 100 %
2. VOC: 3.8 g/L
3. Compressive Strength, ASTM D 695: 11,200 psi
4. Tensile Strength, ASTM D 638: 2,100 psi
5. Flexural Strength, ASTM D 790: 5,100 psi
6. Abrasion Resistance, ASTM D 4060
    a. C-10 Wheel, 1,000 gm load, 1,000 cycles: 29 mg loss
7. Flame Spread/NFPA-101, ASTM E 84: Class A
8. Impact Resistance MIL D-24613: 0.0007 inches, no cracking or delamination
9. Water Absorption. MIL D-24613: Nil
10. Potlife @ 70 deg. F: 20 minutes

C. Topcoats: **Armor Top**

1. VOC: 0 g/L

2. 60 Degree Gloss ASTM D523: 75+/-5
3. Mixed Viscosity, (Brookfield 25 deg. C): 500 cps
4. Tensile strength, ASTM D 638: 7,000 psi
5. Abrasion Resistance, ASTM D4060
    a. CS 17 wheel (1,000 g load) 1,000 cycles
        1) Gloss, loss with grit: 4 mg
        2) Gloss, loss without grit: 10 mg
        3) Satin, loss with grit: 8 mg
        4) Satin, loss without grit: 12 mg
6. Pot life @ 70 deg. F 50% RH: 2 hours
7. Dry properties
    a. 70 deg. F, 50% R.H: 8 hours tack free, 12 hours Dry
    b. 60 deg. F, 30% RH: 12 hours tack free, 18 hours Dry
    c. 80 deg. F, 70% RH: 4 hours tack free, 6 hours Dry
8. Flash Point PMCC: 186 deg. F
9. Full Chemical resistance: 7 days

2.04 ACCESSORIES

A. Primers
    1. Concrete block primer: DUR-A-FLEX, DUR-A-WALL HP Block Filler.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates, areas and conditions, with Applicator present, for compliance with requirements for maximum moisture content, installation tolerances and other conditions affecting coating performance.

B. Verify that substrates and conditions are satisfactory for installation and comply with requirements specified.

3.02 PREPARATION

A. General

1. New and existing concrete surfaces shall be free of oil, grease, curing compounds, loose particles, moss, algae growth, laitance, friable matter, and dirt.

2. There shall be no visible moisture present on the surface at the time of application of the system.

3. Remove loose mortar spatter, joint compounds etc.

4. Masonry block shall be clean, dry and coated with a high solids block filler.

3.03 APPLICATION

A. General

1. The system shall be applied in six distinct steps as listed below:

a. Substrate preparation

b. Priming

c. Broadcast coats application with chip broadcast

d. Second broadcast coat application with chip broadcast

e. Grout coat application

f. Topcoat applications

2. The handling, mixing and addition of components shall be performed in a safe manner to achieve the desired results in accordance with the Manufacturer's recommendations.

3. The system shall follow the contour of the substrate.

4. A neat finish with well-defined boundaries and straight edges shall be provided by the Applicator.

B. Priming

1. DUR-A-FLEX DUR-A-WALL HP BLOCK FILLER is recommended to fill any pores in the substrate when applying over concrete or concrete block walls.

C. 1st Broadcast Coat

1. The broadcast coat shall be comprised of the specified two components, a resin, and hardener.

2. The resin shall be added to the hardener and thoroughly mixed by suitably approved mechanical means.

3. The base coat shall be applied by a roller at the rate of 200 sf/gal to yield a dry film thickness of 8 mils.

4. The chip will be broadcast into the wet resin at the rate of 0.1-0.12 lb/SF.

D. 2nd Broadcast Coat

1. A second broadcast coat will be applied as the first.

E. Grout Coat

1. The grout coat shall be comprised of the specified two components, a resin, and hardener.

2. The resin shall be added to the hardener and thoroughly mixed by suitably approved mechanical means.

3. The grout coat shall be applied using a roller at the rate of 200 sf/gal to yield a dry film thickness of 8 mils.

F. Topcoats

1. The topcoat of Armor Top is typically applied using the dip and roll method at the rate of 500 sf/gal. Armor Top should not be applied more than 3 mils wet.

2. The topcoat shall be comprised of a liquid resin and hardener that is mixed at the ratio per the manufacturer's instructions.

3. Repeat steps 1 and 2.

4. The finish coating will have a nominal thickness of 55-60 mils.

3.04 FIELD QUALITY CONTROL

A. Tests, Inspection

1. The following tests shall be conducted by the Applicator:

a. Temperature

1) Air, substrate temperatures and, if applicable, dew point.

b. Coverage Rates

1) Rates for all layers shall be monitored by checking quantity of material used against the area covered.

3.05 CLEANING AND PROTECTION

A. Cure material in compliance with manufacturer's directions, taking care to prevent their contamination during stages of application and prior to completion of the curing process.

B. Remove masking. Perform detail cleaning to leave cleanable surface for subsequent work of other sections.

END OF SECTION