

COMPLETED WORK:	
A. DELIVER COMPLETED WORK AS CALLED FOR BY THE CONTRACT TO THE OWNER FREE FROM LIENS, CLAIMS OR ENCUMBRANCES OF ANY DESCRIPTION WHATSOEVER AGAINST THE OWNER. ACCEPTANCE OF SUCH WORK IS DEFINED AS APPROVAL OF FINAL PAYOUT.	
B. IF OWNER RECEIVES "NOTICE OF CLAIM" TO BE FILED OR IF A CLAIM IS FILED AS A RESULT OF CONTRACTOR'S NON-PAYMENT, OWNER POSSESSES THE RIGHT UNDER THE CONSTRUCTION CONTRACT TO EITHER SETTLE THE CLAIM AND DEDUCT SOME FROM THE CONTRACT SUM OR TO REQUIRE THE CONTRACTOR TO BOND OVER SUCH SMALL CLAIMS, INCLUDING ANY ASSOCIATED EXPENSES AS DEFINED IN THE CONSTRUCTION CONTRACT AND TO PROMPTLY DEFEND TO CONCLUSION OWNER AND OWNER'S INTEREST AGAINST SAID CLAIM OF CLAIMS.	
C. COMPLETION OF WORK ON THE PROJECT REQUIRES THE SUBMISSION BY THE CONTRACTOR OF CERTAIN DOCUMENTATION IN ORDER FOR THE FINAL RETENTION DRAW TO BE PAID TO THE CONTRACTOR. THE SUBMISSION OF THESE DOCUMENTS IS DEFINED IN THE CONSTRUCTION CONTRACT AND IS INCLUSIVE OF THE FOLLOWING ITEMS: RECORD DRAWINGS AND SPECIFICATIONS INCLUDING MICROFICHE COPIES; LIEN WAIVERS FROM CONTRACTOR AND SUB-CONTRACTORS AND MATERIAL MEN; LIST OF ALL SUBCONTRACTORS AND MATERIAL MEN; CONTRACTOR'S GUARANTEE AND COMPLETION AFFIDAVIT; FINAL SIGNED PUNCH LIST; ANY WORK ORDERS AND ASSOCIATED CONTRACT CHANGE ORDERS; CERTIFICATE OF OCCUPANCY AND ANY RELATED PUBLIC AGENCY; CERTIFICATION OF PROJECT COMPLETION; COPIES OF PROJECT INSPECTION REPORTS; PERMITTED SET OF DRAWINGS AND SPECIFICATION; ALL WARRANTIES; ALL CERTIFICATIONS NOTED IN THE DRAWINGS INCLUDING CIVIL DRAWINGS, THE BID DOCUMENTS AND CONSTRUCTION CONTRACT; AND ANY REQUIRED TEST AND/OR ENGINEERING REPORTS.	
MAINTENANCE AND CLEANING:	
A. THROUGHOUT THE PERIOD OF CONSTRUCTION, BE RESPONSIBLE FOR SATISFACTORILY MAINTAINING THE PREMISES IN A NEAT AND CLEAN CONDITION. THIS MEANS THE TIMELY REMOVAL OF ALL REFUSE AND DEBRIS FROM THE PREMISES.	
B. STORE ALL EQUIPMENT AND MATERIALS IN A NEAT MANNER AND PROTECT THEM FROM ANY DAMAGE FROM THE ELEMENTS. MAINTAIN BUILDING IN A GENERALLY CLEAN CONDITION DURING THE PERIOD OF CONSTRUCTION, AND UPON FINAL COMPLETION PROVIDE A PROFESSIONAL SERVICE TO THOROUGHLY CLEAN ALL GLASS, FLOORS, FURNITURE AND EQUIPMENT.	
CHANGES:	
A. THE OWNER, WITHOUT INVALIDATING THE CONTRACT, MAY ORDER CHANGES IN THE WORK WITHIN THE GENERAL SCOPE OF THE CONTRACT, CONSISTING OF ADDITIONS, DELETIONS, OR OTHER REVISION. THE CONTRACT SUM AND THE CONTRACT TIME WILL BE ADJUSTED ACCORDINGLY. AN OWNER CONTRACT CHANGE ORDER MAY BE ISSUED BY AN OWNER'S CONSTRUCTION MANAGER BUT MUST BE APPROVED BY THE VICE PRESIDENT FACILITY DEVELOPMENT PRIOR TO PAYMENT, FOR CORPORATE PROJECTS.	
B. THE COST OR CREDIT TO THE OWNER RESULTING FROM A CHANGE IN THE WORK WILL BE DETERMINED BY MUTUAL AGREEMENT. PERFORM ALL WORK UNDER THE APPLICABLE CONDITONS OF THE CONTRACT DOCUMENTS.	
C. OBTAIN WRITTEN AUTHORIZATION FOR CHANGES IN THE WORK (CONSTRUCTION WORK ORDER) FROM THE OWNER'S CONSTRUCTION MANAGER PRIOR TO COMPLETION OF THE WORK.	
GUARANTEE:	
A. A FULLY AND UNCONDITIONALLY GUARANTEE ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED BY THE OWNER - CONTRACTOR AGREEMENT(S) FOR A PERIOD OF ONE (1) YER FROM THE DATE OF FINAL ACCEPTANCE OR THE DATE THE RESTAURANT IS OPENED FOR BUSINESS BY THE OWNER.	
SECTION 030000 - CAST-IN-PLACE CONCRETE	
REFER TO STRUCTURAL DRAWINGS FOR SPECIFICATION	
SECTION 047200 - CAST STONE MASONRY	
1.1 SUMMARY	
A. THIS SECTION INCLUDES THE FOLLOWING:	
1. CAST STONE TRIM.	
1.2 SUBMITTALS	
A. PRODUCT DATA: INCLUDE DIMENSIONS OF INDIVIDUAL COMPONENTS.	
B. SAMPLES: FOR EACH COLOR AND TEXTURE OF CAST STONE REQUIRED.	
1.3 QUALITY ASSURANCE	
A. MANUFACTURER QUALIFICATIONS: A QUALIFIED MANUFACTURER OF CAST STONE UNITS SIMILAR TO THOSE INDICATED FOR THIS PROJECT, WITH SUFFICIENT PRODUCTION CAPACITY TO MANUFACTURE REQUIRED UNITS.	
B. PROVIDE CAST STONE UNITS COMPLYING WITH ASTM C 1364 USING THE VIBRANT DRY TAMP OR WET-CAST METHOD.	
1.4 MANUFACTURERS	
A. AS SPECIFIED ON DRAWINGS.	
B. COLOR AND TEXTURES AS INDICATED ON THE DRAWINGS.	
1.5 ACCESSORIES	
A. ANCHORS AND DOWELS: TYPE 304 STAINLESS STEEL OR HOT-DIP GALVANIZED STEEL.	
B. PROPRIETARY ACIDIC CLEANER: MANUFACTURER'S STANDARD-STRENGTH, GENERAL-PURPOSE CLEANER COMPLYING WITH REQUIREMENTS IN DIVISION 04 SECTION "UNIT MASONRY ASSEMBLIES" AND APPROVED FOR INTENDED USE BY CAST STONE MANUFACTURER AND APPROVED BY CLEANER MANUFACTURER FOR USE ON CAST STONE AND ADJACENT MASONRY MATERIALS.	
1.6 MORTAR	
A. COMPLY WITH REQUIREMENTS IN DIVISION 04 SECTION "UNIT MASONRY" FOR MORTAR MATERIALS AND MIXES	
1. FOR SETTING MORTAR, USE TYPE N.	
2. FOR POINTING MORTAR, USE TYPE N.	
3. PIGMENTED MORTAR: AS INDICATED ON DRAWINGS.	
PART 2 - EXECUTION	
2.1 SETTING CAST STONE IN MORTAR	
A. INSTALL CAST STONE UNITS TO COMPLY WITH REQUIREMENTS IN DIVISION 04 SECTION "UNIT MASONRY ASSEMBLIES."	
B. SET UNITS IN FULL BED OF MORTAR WITH FULL HEAD JOINTS, UNLESS OTHERWISE INDICATED	
1. FILL DOWEL HOLES AND ANCHOR SLOTS WITH MORTAR.	
2. FILL COLLAR JOINTS SOLID AS UNITS ARE SET.	
3. BUILD CONCEALED FLASHING INTO MORTAR JOINTS AS UNITS ARE SET.	
4. KEEP HEAD JOINTS IN COPING AND OTHER UNITS WITH EXPOSED HORIZONTAL SURFACES OPEN TO RECEIVE SEALANT.	
5. KEEP JOINTS AT SHELF ANGLES OPEN TO RECEIVE SEALANT.	
C. RAKE OUT JOINTS FOR POINTING WITH MORTAR TO DEPTHS OF NOT LESS THAN 3/4 INCH (19 MM). RAKE JOINTS TO UNIFORM DEPTHS WITH SQUARE BOTTOMS AND CLEAN SIDES. SCRUB FACES OF UNITS TO REMOVE EXCESS MORTAR AS JOINTS ARE RAKED.	
D. TOOL EXPOSED JOINTS SLIGHTLY CONCAVE WHEN THUMBPRINT HARD, USING A JOINTER LARGER THAN JOINT THICKNESS, UNLESS OTHERWISE INDICATED.	
E. PROVIDE EXPANSION, CONTROL, AND PRESSURE-RELIEVING JOINTS OF WIDTHS AND AT LOCATIONS INDICATED. KEEP JOINTS FREE OF MORTAR AND OTHER RIGID MATERIALS.	
F. PREPARE JOINTS INDICATED TO RECEIVE SEALANT AND APPLY SEALANT OF TYPE AND AT LOCATIONS INDICATED TO COMPLY WITH APPLICABLE REQUIREMENTS IN DIVISION 07 SECTION "JOINT SEALANTS."	

2.2 SETTING ANCHORED CAST STONE WITH SEALANT-FILLED JOINTS	
A. SET CAST STONE UNITS ACCURATELY IN LOCATIONS INDICATED WITH EDGES AND FACES ALIGNED.	
1. INSTALL ANCHORS, SUPPORTS, FASTENERS, AND OTHER ATTACHMENTS TO SECURE UNITS IN PLACE.	
2. SHIM AND ADJUST ANCHORS, SUPPORTS, AND ACCESSORIES.	
B. FILL ANCHOR HOLES WITH SEALANT. WHERE DOWEL HOLES OCCUR AT PRESSURE-RELIEVING JOINTS, PROVIDE COMPRESSIBLE MATERIAL AT ENDS OF DOWELS.	
C. SET CAST STONE SUPPORTED ON CLIP OR CONTINUOUS ANGLES ON RESILIENT SETTING SHIMS. HOLD SHIMS BACK FROM FACE OF CAST STONE A DISTANCE AT LEAST EQUAL TO WIDTH OF JOINT.	
D. KEEP JOINTS FREE OF MORTAR AND OTHER RIGID MATERIALS. REMOVE TEMPORARY SPACERS FROM JOINTS AFTER ANCHORS AND SUPPORTS ARE SECURED IN PLACE AND CAST STONE UNITS ARE ANCHORED.	
E. PREPARE JOINTS AND APPLY SEALANT OF TYPE AND AT LOCATIONS INDICATED TO COMPLY WITH APPLICABLE REQUIREMENTS IN DIVISION 07 SECTION "JOINT SEALANTS."	
2.3 ADJUSTING AND CLEANING	
A. REMOVE AND REPLACE STAINED AND OTHERWISE DAMAGED UNITS NOT MATCHING APPROVED SAMPLES. CAST STONE MAY BE REPAIRED IF METHODS AND RESULTS ARE APPROVED BY ARCHITECT.	
1. REPLACE UNITS IN A MANNER THAT SHOWS NO EVIDENCE OF REPLACEMENT.	
B. IN-PROGRESS CLEANING: CLEAN CAST STONE AS WORK PROGRESSES.	
1. REMOVE MORTAR FINS AND SMEARS BEFORE TOOLING JOINTS.	
2. REMOVE EXCESS SEALANT IMMEDIATELY, INCLUDING SPILLS, SMEARS, AND SPATTER.	
C. FINAL CLEANING: AFTER MORTAR IS THOROUGHLY SET AND CURED, CLEAN EXPOSED CAST STONE TO COMPLY WITH REQUIREMENTS IN DIVISION 04 SECTION "UNIT MASONRY."	
SECTION 048100 - UNIT MASONRY	
PART 1 - GENERAL	
1.1 SUMMARY	
A. THIS SECTION INCLUDES UNIT MASONRY ASSEMBLIES CONSISTING OF THE FOLLOWING:	
1. CONCRETE MASONRY UNITS.	
2. FACE BRICK.	
B. SEE DIVISION 5 SECTION "METAL FABRICATIONS" FOR FURNISHING STEEL LINTELS INSTALLED IN UNIT MASONRY ASSEMBLIES.	
C. DIVISION 07 SECTION "SHEET METAL FLASHING AND TRIM" FOR FURNISHING MANUFACTURED REGLETS INSTALLED IN MASONRY JOINTS FOR METAL FLASHING.	
1.2 PROJECT CONDITIONS	
A. COLD-WEATHER REQUIREMENTS: DO NOT USE FROZEN SUBSTRATES. REMOVE AND REPLACE UNIT MASONRY DAMAGED BY FROST OR BY FREEZING CONDITIONS. COMPLY WITH COLD-WEATHER CONSTRUCTION REQUIREMENTS CONTAINED IN ACI 530.1/ASCE 6/TMS 602.	
B. HOT-WEATHER REQUIREMENTS: WHEN AMBIENT TEMPERATURE EXCEEDS 100 DEG F, OR 90 DEG F WITH A WIND VELOCITY GREATER THAN 8 MPH, DO NOT SPREAD MORTAR BEDS MORE THAN 48 INCHES AHEAD OF MASONRY. SET MASONRY UNITS WITHIN ONE MINUTE OF SPREADING MORTAR. COMPLY WITH HOT-WEATHER CONSTRUCTION REQUIREMENTS CONTAINED IN ACI 530.1/ASCE 6/TMS 602.	
PART 2 - PRODUCTS	
2.1 MANUFACTURER, COLOR, AND TEXTURE	
A. AS SPECIFIED ON DRAWINGS.	
2.2 MASONRY UNITS	
A. CONCRETE MASONRY UNITS: ASTM C 90.	
1. UNIT COMPRESSIVE STRENGTH: 2800 PSI MINIMUM, AVERAGE NET-AREA COMPRESSIVE STRENGTH.	
2. WEIGHT CLASSIFICATION: NORMAL WEIGHT BELOW GRADE AND ABOVE GRADE FOR EXTERIOR EXPOSURE.	
3. SPECIAL SHAPES: PROVIDE FOR LINTELS, CORNERS, JAMBS, SASH, CONTROL JOINTS, HEADERS, BONDING, AND OTHER SPECIAL CONDITIONS.	
4. INTEGRAL WATER REPELLENT: PROVIDE UNITS MADE WITH LIQUID POLYMERIC, INTEGRAL WATER REPELLENT ADMIXTURE THAT DOES NOT FLEXURAL BOND STRENGTH FOR EXPOSED UNITS.	
6. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS	
1. ACM CHEMISTRIES; RAINBLOC	
2. BASF; RHEOPEL PLUS	
3. W.R. GRACE & CO.; DRY-BLOCK	
B. BRICK, GENERAL:	
1. PROVIDE UNITS WITHOUT CORES OR FROGS AND WITH EXPOSED SURFACES FINISHED FOR ENDS OF SILLS AND CAPS AND FOR SIMILAR APPLICATIONS THAT WOULD OTHERWISE EXPOSE UNFINISHED BRICK SURFACES.	
2. PROVIDE SPECIAL SHAPES FOR APPLICATIONS REQUIRING BRICK OF SIZE, FORM, COLOR, AND TEXTURE ON EXPOSED SURFACES THAT CANNOT BE PRODUCED BY SAWING.	
C. FACE BRICK: ASTM C 216, GRADE SW, TYPE FBS.	
1. UNIT COMPRESSIVE STRENGTH: 4400 PSI MINIMUM AVERAGE, NET-AREA COMPRESSIVE STRENGTH.	
2. INITIAL RATE OF ABSORPTION: LESS THAN 20 G/30 SQ. IN. PER MINUTE WHEN TESTED PER ASTM C 67.	
3. EFFLORESCENCE: WHEN TESTED PER ASTM C 67 AND BRICK IS RATED "NOT EFFLORESCED."	
4. SURFACE COLORING: BRICK WITH SURFACE COLORING, OTHER THAN FLASHED OR SAND-FINISHED BRICK, WILL WITHSTAND 50 CYCLES OF FREEZING AND THAWING PER ASTM C 67 WITH NO OBSERVABLE DIFFERENCE IN THE APPLIED FINISH WHEN VIEWED FROM 10 FEET.	
5. SIZE: AS INDICATED ON DRAWINGS.	
2.3 MORTAR AND GROUT MATERIALS	
A. PORTLAND CEMENT: ASTM C 150, TYPE I OR II, EXCEPT TYPE III MAY BE USED FOR COLD-WEATHER CONSTRUCTION.	
B. HYDRATED LIME: ASTM C 207, TYPE S.	
C. AGGREGATE FOR MORTAR: ASTM C 144; EXCEPT FOR JOINTS LESS THAN 1/4 INCH THICK, USE AGGREGATE GRADED WITH 100 PERCENT PASSING THE NO. 16 SIEVE.	
D. AGGREGATE FOR GROUT: ASTM C 404.	
E. MORTAR PIGMENTS: AS SPECIFIED ON DRAWINGS.	
F. WATER: POTABLE.	
2.4 REINFORCING STEEL	
A. UNCOATED STEEL REINFORCING BARS: ASTM A 615; ASTM A 615M.	
B. MASONRY JOINT REINFORCEMENT: ASTM A 951; MIL GALVANIZED, CARBON-STEEL WIRE FOR INTERIOR WALLS AND HOT-DIP GALVANIZED, CARBON-STEEL WIRE FOR EXTERIOR WALLS.	
4. WIRE SIZE FOR SIDE RODS: W1.7 OR 0.148-INCH DIAMETER.	
5. WIRE SIZE FOR CROSS RODS: W1.7 OR 0.148-INCH DIAMETER.	
6. SINGLE-WYTHE MASONRY: USE EITHER LADDER OR TRUSS TYPE WITH SINGLE PAIR OF SIDE RODS AND CROSS RODS SPACED NOT MORE THAN 16 INCHES O.C.	
2.5 TIES AND ANCHORS	
A. MATERIALS, GENERAL: AS FOLLOWS, UNLESS OTHERWISE INDICATED.	
1. GALVANIZED, CARBON-STEEL WIRE: ASTM A 82; WITH ASTM A 153, CLASS B-2 COATING FOR EXTERIOR WALLS AND CLASS 1 COATING FOR INTERIOR WALLS.	
2. GALVANIZED STEEL SHEET: ASTM A 366 COLD-ROLLED, CARBON-STEEL SHEET HOT-DIP GALVANIZED AFTER FABRICATION TO COMPLY WITH ASTM A 153 AT EXTERIOR WALLS; AND ASTM A 653, G60, COMMERCIAL-QUALITY, STEEL SHEET ZINC COATED BY HOT-DIP PROCESS ON CONTINUOUS LINES BEFORE FABRICATION AT INTERIOR WALLS.	
B. ADJUSTABLE MASONRY-VENEER ANCHORS	
1. PROVIDE 2-PIECE ASSEMBLIES THAT ALLOW VERTICAL OR HORIZONTAL ADJUSTMENT BUT RESIST TENSION AND COMPRESSION FORCES PERPENDICULAR TO WALL, FOR ATTACHMENT OVER SHEATHING TO WOOD OR METAL STUDS, AND THAT ARE CAPABLE OF WITHSTANDING A 100-LBF LOAD IN BOTH TENSION AND COMPRESSION WITHOUT DEFORMING OR DEVELOPING PLAY IN EXCESS OF 0.05 INCH.	

2.6 EMBEDDED FLASHING MATERIALS	
A. CONCEALED FLASHING: FOR FLASHING PARTLY EXPOSED TO THE EXTERIOR, USE METAL FLASHING SPECIFIED ABOVE. FOR FLASHING NOT EXPOSED TO THE EXTERIOR, USE THE FOLLOWING, UNLESS OTHERWISE INDICATED:	
1. COPPER-LAMINATED FLASHING: MANUFACTURER'S STANDARD LAMINATED FLASHING CONSISTING OF 7-0Z/SQ FT. SHEET COPPER BONDED WITH ASPHALT BETWEEN 2 LAYERS OF GLASS-FIBER CLOTH.	
2.7 MISCELLANEOUS MASONRY ACCESSORIES	
A. COMPRESSIBLE FILLER: PREMOULDED FILLER STRIPS COMPLYING WITH ASTM D 1056, GRADE 2A1; COMPRESSIBLE UP TO 35 PERCENT; FORMULATED FROM NEOPRENE.	
B. RECTANGULAR PLASTIC WEEP/VENT TUBING: CLEAR BUTYRATE, 3/8 BY 1-1/2 BY 3-1/2 INCHES.	
2.8 MASONRY CLEANERS	
A. PROPRIETARY ACIDIC CLEANER: MANUFACTURER'S STANDARD-STRENGTH CLEANER DESIGNED FOR REMOVING MORTAR/GROUT STAINS, EFFLORESCENCE, AND OTHER NEW CONSTRUCTION STAINS FROM NEW MASONRY WITHOUT DISCOLORING OR DAMAGING SURFACES. USE PRODUCT APPROVED FOR INTENDED USE BY CLEANER MANUFACTURER AND MANUFACTURER OF MASONRY UNITS BEING CLEANED.	
2.9 CAVITY DRAINAGE MATERIAL	
A. FREE-DRAINING MESH, MADE FROM POLYMER STRANDS THAT WILL NOT DEGRADE WITHIN THE WALL. PROVIDE ONE OF THE FOLLOWING CONFIGURATIONS:	
1. PROVIDE ONE OF THE FOLLOWING CONFIGURATIONS:	
a. STRIPS, FULL-DEPTH OF CAVITY AND 10 INCHES (250 MM) WIDE, WITH DOVETAIL SHAPED NOTCHES 7 INCHES (175 MM) DEEP.	
b. STRIPS, NOT LESS THAN 1-1/2 INCHES (38 MM) THICK AND 10 INCHES (250 MM) WIDE, WITH DIMPLED SURFACE DESIGNED TO CATCH MORTAR DROPPINGS AND PREVENT WEEP HOLES FROM BEING CLOGGED WITH MORTAR.	
c. SHEETS OR STRIPS FULL DEPTH OF CAVITY AND INSTALLED TO FULL HEIGHT OF CAVITY.	
2. AVAILABLE PRODUCTS:	
a. ADVANCED BUILDING PRODUCTS INC.; MORTAR BREAK OR MORTAR BREAK II.	
b. ARCHVOATIONS, INC.; CAVCLCAR MASONRY MAT.	
c. DAYTON SUPERIOR CORPORATION, DUR-O-WAL DIVISION; POLYTITE MORTARSTOP.	
d. MORTAR NET USA, LTD.; MORTAR NET.	
2.10 MORTAR AND GROUT MIXES	
A. GENERAL: DO NOT USE ADMIXTURES, UNLESS OTHERWISE INDICATED. DO NOT USE CALCIUM CHLORIDE IN MORTAR OR GROUT.	
B. MORTAR FOR UNIT MASONRY: COMPLY WITH ASTM C 270, PROPORTION SPECIFICATION.	
C. GROUT FOR UNIT MASONRY: COMPLY WITH ASTM C 476.	
1. PROVIDE GROUT WITH A SLUMP OF 8 TO 11 INCHES AS MEASURED ACCORDING TO ASTM C 143.	
D. WATER REPELLENT ADMIXTURE: LIQUID WATER-REPELLENT MORTAR ADMIXTURE INTENDED FOR USE WITH CMU'S CONTAINING INTEGRAL WATER REPELLENT BY SAME MANUFACTURER.	
PART 3 - EXECUTION	
3.1 INSTALLATION, GENERAL	
A. CUT MASONRY UNITS WITH MOTOR-DRIVEN SAWS. ALLOW UNITS CUT WITH WATER-COOLED SAWS TO DRY BEFORE PLACING, UNLESS WETTING OF UNITS IS SPECIFIED. INSTALL CUT UNITS WITH CUT SURFACES AND, WHERE POSSIBLE, CUT EDGES CONCEALED.	
B. SELECT AND ARRANGE UNITS FOR EXPOSED UNIT MASONRY TO PRODUCE A UNIFORM BLEND OF COLORS AND TEXTURES.	
C. WETTING OF BRICK: WET BRICK BEFORE LAYING IF THE INITIAL RATE OF ABSORPTION EXCEEDS 30 G/30 SQ. IN. PER MINUTE WHEN TESTED PER ASTM C 67. ALLOW UNITS TO ABSORB WATER SO THEY ARE DAMP BUT NOT WET AT TIME OF LAYING. DO NOT WET CONCRETE MASONRY UNITS.	
D. COMPLY WITH TOLERANCES IN ACI 530.1/ASCE 6/TMS 602 AND THE FOLLOWING:	
1. FOR CONSPICUOUS VERTICAL LINES, SUCH AS EXTERNAL CORNERS, DOOR JAMBS, REVEALS, AND EXPANSION AND CONTROL JOINTS, DO NOT VARY FROM PLUMB BY MORE THAN 1/4 INCH IN 20 FEET OR 1/2 INCH MAXIMUM.	
2. FOR CONSPICUOUS HORIZONTAL LINES, SUCH AS LINTELS, SILLS, PARAPETS, AND REVEALS, DO NOT VARY FROM LEVEL BY MORE THAN 1/4 INCH IN 20 FEET, OR 1/2 INCH MAXIMUM.	
3.2 LAYING MASONRY WALLS	
A. LAY OUT WALLS IN ADVANCE FOR ACCURATE SPACING OF SURFACE BOND PATTERNS WITH UNIFORM JOINT THICKNESSES AND FOR ACCURATE LOCATION OF OPENINGS, MOVEMENT-TYPE JOINTS, RETURNS, AND OFFSETS. AVOID USING LESS-THAN-HALF-SIZE UNITS, PARTICULARLY AT CORNERS, JAMBS, AND, WHERE POSSIBLE, AT OTHER LOCATIONS.	
1. CONCRETE MASONRY UNITS: ONE-HALF RUNNING BOND.	
2. FACE BRICK: AS INDICATED ON DRAWINGS.	
3.3 JOINTING	
A. TOOL EXPOSED JOINTS SLIGHTLY CONCAVE WHEN THUMBPRINT HARD, USING A JOINTER LARGER THAN JOINT THICKNESS, UNLESS OTHERWISE INDICATED.	
3.4 CAVITIES	
A. KEEP CAVITIES CLEAN OF MORTAR DROPPINGS AND OTHER MATERIALS DURING CONSTRUCTION.	
3.5 ANCHORING MASONRY	
A. ANCHOR MASONRY VENEERS TO WALL FRAMING WITH MASONRY-VENEER ANCHORS TO COMPLY WITH THE FOLLOWING REQUIREMENTS:	
1. FASTEN EACH ANCHOR SECTION THROUGH TO WALL FRAMING WITH TWO METAL FASTENERS OF TYPE INDICATED.	
2. SPACE ANCHORS AS INDICATED, BUT NOT MORE THAN 16 INCHES O.C. VERTICALLY AND 16 INCHES O.C. HORIZONTALLY WITH NOT LESS THAN 1 ANCHOR FOR EACH 1.77 SQ. FT. OF WALL AREA. INSTALL ADDITIONAL ANCHORS WITHIN 12 INCHES OF OPENINGS AND AT INTERVALS, NOT EXCEEDING 36 INCHES, AROUND PERIMETER.	
3.6 FLASHING, WEEP HOLES AND VENTS	
A. GENERAL: INSTALL EMBEDDED FLASHING AND WEEP HOLES IN MASONRY AT SHELF ANGLES, LINTELS, LEDGES, OTHER OBSTRUCTIONS TO DOWNWARD FLOW OF WATER IN WALL, AND WHERE INDICATED.	
1. EXTEND FLASHING 4 INCHES AT ENDS AND TURN FLASHING UP NOT LESS THAN 2 INCHES TO FORM A PAN.	
B. INSTALL WEEP HOLES IN THE HEAD JOINTS IN EXTERIOR WYTHES OF THE FIRST COURSE OF MASONRY IMMEDIATELY ABOVE EMBEDDED FLASHING. INSTALL VENTS IN VERTICAL HEAD JOINTS AT THE TOP OF EACH CONTINUOUS CAVITY AT SPACING INDICATED.	
1. USE RECTANGULAR PLASTIC TUBING TO FORM WEEP HOLES.	
2. SPACE WEEP HOLES 24 INCHES O.C.	
3. TRIM WICKING MATERIAL USED IN WEEP HOLES FLUSH WITH OUTSIDE FACE OF WALL AFTER MORTAR HAS SET.	
3.7 CLEANING	
A. CLEAN UNIT MASONRY BY DRY BRUSHING TO REMOVE MORTAR FINS AND SMEARS BEFORE TOOLING JOINTS, AS WORK PROGRESSES.	
B. AFTER MORTAR IS THOROUGHLY SET AND CURED, CLEAN EXPOSED MASONRY AS FOLLOWS:	
1. PROTECT ADJACENT SURFACES FROM CONTACT WITH CLEANER.	
2. WET WALL SURFACES WITH WATER BEFORE APPLYING CLEANERS; REMOVE CLEANERS PROMPTLY BY RINSING SURFACES THOROUGHLY WITH CLEAR WATER.	
3. CLEAN MASONRY WITH A PROPRIETARY ACIDIC CLEANER APPLIED ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.	
3.8 MASONRY WASTE DISPOSAL	
A. WASTE DISPOSAL: DISPOSE OF CLEAN MASONRY WASTE, INCLUDING BROKEN MASONRY UNITS, WASTE MORTAR AND EXCESS OR SOIL-CONTAMINATED SAND, AND OTHER MASONRY WASTE, AND LEGALLY DISPOSE OF OFF OWNER'S PROPERTY.	

SECTION 051200 - STRUCTURAL STEEL FRAMING	
REFER TO STRUCTURAL DRAWINGS FOR SPECIFICATION	
SECTION 054000 - COLD FORMED METAL FRAMING	
REFER TO STRUCTURAL DRAWINGS FOR SPECIFICATION	
SECTION 055000 - METAL FABRICATIONS	
PART 1 - GENERAL	
1.1 SUMMARY	
A. THIS SECTION INCLUDES THE FOLLOWING:	
1. MISCELLANEOUS STEEL FRAMING AND SUPPORTS.	
2. LOOSE BEARING AND LEVELING PLATES.	
3. STEEL LADDERS.	
4. LOOSE STEEL LINTELS. (REFER TO STRUCTURAL DRAWINGS FOR LOOSE STEEL LINTEL SPECIFICATION)	
5. SHELF ANGLES.	
6. TRASH ENCLOSURE GATES.	
7. CATCH BASIN FRAME AND GRATE. (REFER TO CIVIL PLANS.)	
8. PIPE GUARDS.	
9. PIPE BOLLARDS.	
PART 2 - PRODUCTS	
2.1 METALS	
A. METAL SURFACES, GENERAL: PROVIDE MATERIALS WITH SMOOTH, FLAT SURFACES WITHOUT BLEMISHES.	
B. FERROUS METALS:	
1. STEEL PLATES, SHAPES, AND BARS: ASTM A 36.	
2. STEEL PIPE: ASTM A 53, STANDARD WEIGHT (SCHEDULE 40), UNLESS ANOTHER WEIGHT IS INDICATED OR REQUIRED BY STRUCTURAL LOADS.	
2.2 PAINT	
A. SHOP PRIMER FOR FERROUS METAL (INTERIOR APPLICATIONS): FAST-CURING, LEAD- AND CHROMATE-FREE, UNIVERSAL MODIFIED-ALKYD PRIMER COMPLYING WITH PERFORMANCE REQUIREMENTS IN FS-TT-P-664 AND COMPATIBLE WITH FINISH PAINT SYSTEMS INDICATED.	
2.3 FABRICATION	
A. CONNECTIONS, GENERAL: USE CONNECTIONS THAT MAINTAIN STRUCTURAL VALUE OF JOINED PIECES.	
1. SHEAR AND PUNCH METALS CLEANLY AND ACCURATELY. REMOVE BURRS.	
2. WELD CORNERS AND SEAMS CONTINUOUSLY. USE MATERIALS AND METHODS THAT MINIMIZE DISTORTION AND DEVELOP STRENGTH AND CORROSION RESISTANCE OF BASE METALS. OBTAIN FUSION WITHOUT UNDERCUT OR OVERLAP. REMOVE WELDING FLUX IMMEDIATELY. FINISH EXPOSED WELDS SMOOTH AND BLENDED.	
3. FABRICATE JOINTS THAT WILL BE EXPOSED TO WEATHER IN A MANNER TO EXCLUDE WATER, OR PROVIDE WEEP HOLES.	
4. FORM EXPOSED CONNECTIONS WITH HAIRLINE JOINTS, FLUSH AND SMOOTH, USING CONCEALED FASTENERS WHERE POSSIBLE. LOCATE JOINTS WHERE LEAST CONSPICUOUS.	
B. STEEL LADDERS: COMPLY WITH ANSI A14.3, UNLESS OTHERWISE INDICATED.	
C. CATCH BASIN FRAME AND GRATE: PROVIDE CATCH BASIN FRAME WITH TYPE "A" GRATE.	
D. PIPE BOLLARDS: FABRICATE FROM SCHEDULE 40 STEEL PIPE.	
E. TRASH ENCLOSURE GATES. AS SPECIFIED AND DETAILED ON DRAWINGS.	
2.4 FINISHES	
A. FINISH METAL FABRICATIONS AFTER ASSEMBLY. COMPLY WITH NAAMM'S "METAL FINISHES MANUAL FOR ARCHITECTURAL AND METAL PRODUCTS" FOR RECOMMENDATIONS FOR APPLYING AND DESIGNATING FINISHES. SHOP PRIME FERROUS-METAL ITEMS NOT INDICATED TO BE GALVANIZED.	
PART 3 - EXECUTION	
3.1 INSTALLATION	
1. GENERAL: PROVIDE ANCHORAGE DEVICES AND FASTENERS WHERE METAL FABRICATIONS ARE REQUIRED TO BE FASTENED TO IN-PLACE CONSTRUCTION.	
2. FIT EXPOSED CONNECTIONS ACCURATELY TOGETHER. WELD CONNECTIONS, UNLESS OTHERWISE INDICATED. DO NOT WELD, CUT, OR ABRADE GALVANIZED SURFACES.	
B. BOLLARDS:	
1. ANCHOR IN CONCRETE WITH PIPE SLEEVES PRESET AND ANCHORED INTO CONCRETE. FILL SPACE BETWEEN AND SLEEVE SOLIDLY WITH NONSHRINK, NONMETALLIC GROUT.	
2. FILL BOLLARDS SOLIDLY WITH CONCRETE, MOUNDING TOP SURFACE.	
C. TOUCH UP SURFACES AND FINISHES AFTER ERECTION.	
1. PAINTED SURFACES: CLEAN FIELD WELDS, BOLTED CONNECTIONS, AND ABRADED AREAS AND TOUCH UP PAINT WITH THE SAME MATERIAL AS USED FOR SHOP PAINTING.	
SECTION 061000 - ROUGH CARPENTRY	
PART 1 - GENERAL	
1.1 SUMMARY	
A. THIS SECTION INCLUDES THE FOLLOWING:	
1. WOOD FRAMING (REFER TO STRUCTURAL DRAWINGS FOR WOOD FRAMING SPECIFICATIONS)	
2. WOOD SUPPORTS	
3. WOOD BLOCKING	
4. WOOD CANTS	
5. WOOD NAILERS	
6. WOOD FURRING	
7. WOOD GROUNDS	
8. WOOD SHEATHING (REFER TO STRUCTURAL DRAWINGS FOR WOOD SHEATHING SPECIFICATIONS)	
9. PLYWOOD BACKING PANELS	
10. BUILDING WRAP	
PART 2 - PRODUCTS	
2.1 WOOD PRODUCTS, GENERAL	
A. LUMBER: DOC PS 20 AND APPLICABLE RULES OF GRADING AGENCIES CERTIFIED BY THE AMERICAN LUMBER STANDARDS COMMITTEE BOARD OF REVIEW.	
1. FACTORY MARK EACH PIECE OF LUMBER WITH GRADE STAMP OF GRADING AGENCY.	
2. FOR EXPOSED LUMBER INDICATED TO RECEIVE A STAINED OR NATURAL FINISH, MARK GRADE STAMP ON END OR BACK OF EACH PIECE OR OMIT GRADE STAMP AND PROVIDE CERTIFICATES OF GRADE COMPLIANCE ISSUED BY GRADING AGENCY.	
3. PROVIDE DRY LUMBER WITH 15 PERCENT MAXIMUM MOISTURE CONTENT AT TIME OF DRESSING FOR 2-INCH NOMINAL THICKNESS OR LESS, UNLESS OTHERWISE INDICATED.	
B. ENGINEERED WOOD PRODUCTS: ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION AND FOR WHICH CURRENT MODEL CODE RESEARCH OR EVALUATION REPORTS EXIST THAT SHOWS COMPLIANCE WITH BUILDING CODE IN EFFECT FOR PROJECT.	
C. WOOD STRUCTURAL PANELS:	
1. PLYWOOD: DOC PS 1.	
2. ORIENTED STRAND BOARD: DOC PS 2.	
2.2 WOOD-PRESERVATIVE-TREATED LUMBER	
A. PRESERVATIVE TREATMENT BY PRESSURE PROCESS: AWPAC C2 (LUMBER) AND AWPAC C9 (PLYWOOD), EXCEPT THAT LUMBER THAT IS NOT IN CONTACT WITH THE GROUND AND IS CONTINUOUSLY PROTECTED FROM LIQUID WATER MAY BE TREATED ACCORDING TO AWPAC C31 WITH INORGANIC BORON (SBX).	
B. PRESSURE TREAT ALL LUMBER DESIGNATED AS "TREATED" ON THE DRAWINGS AND/OR OTHER SECTIONS OF THESE SPECIFICATIONS TO CONFORM TO AWPAC STANDARD C2. THE PRESENCE OF AWPB QUALITY MARK LP2 SHALL BE ACCEPTABLE AS EVIDENCE OF CONFORMANCE TO THIS SPECIFICATION.	

2.3

DIMENSION LUMBER

A.

GENERAL: OF GRADES INDICATED ACCORDING TO THE AMERICAN LUMBER STANDARDS COMMITTEE NATIONAL GRADING RULE PROVISIONS OF THE GRADING AGENCY INDICATED.

B.

NON-LOAD-BEARING INTERIOR PARTITIONS: NO. 2 GRADE AND ANY OF THE FOLLOWING SPECIES:

1.

MIXED SOUTHERN PINE; SPIB.

2.

NORTHERN SPECIES; NLGA.

3.

WESTERN WOODS; WCLIB OR WWPA.

2.4

MISCELLANEOUS LUMBER

A.

PROVIDE MISCELLANEOUS LUMBER FOR SUPPORT OR ATTACHMENT OF OTHER CONSTRUCTION, INCLUDING THE FOLLOWING:

1.

ROOFTOP EQUIPMENT BASES AND SUPPORT CURBS.

2.

BLOCKING

3.

CANTS

4.

NAILERS

5.

FURRING

6.

GROUNDS

B.

FOR ITEMS OF DIMENSION LUMBER SIZE, PROVIDE NO. 2 GRADE LUMBER WITH15 PERCENT MAXIMUM MOISTURE CONTENT.

2.5

ENGINEERED WOOD PRODUCTS

A.

LAMINATED-VENEER LUMBER: COMPOSITE OF WOOD VENEERS WITH GRAIN PRIMARILY PARALLEL TO MEMBER LENGTHS, MANUFACTURED WITH EXTERIOR-TYPE ADHESIVE COMPLYING WITH ASTM D 2559. ALLOWABLE DESIGN VALUES DETERMINED ACCORDING TO ASTM D 5456.

2.6

PLYWOOD BACKING PANELS

A.

TELEPHONE AND ELECTRICAL EQUIPMENT BACKING PANELS: DOC PS 1, EXPOSURE 1, C-D PLUGGED, FIRE-RETARDANT TREATED, IN THICKNESS INDICATED OR, IF NOT INDICATED, NOT LESS THAN 1/2-INCH THICK.

2.7

MISCELLANEOUS MATERIALS

A.

FASTENERS:

1.

WHERE ROUGH CARPENTRY IS EXPOSED TO WEATHER, IN GROUND CONTACT, OR IN AREA OF HIGH RELATIVE HUMIDITY, PROVIDE FASTENERS WITH HOT-DIP ZINC COATING COMPLYING WITH ASTM A 153.

B.

METAL FRAMING ANCHORS: MADE FROM HOT-DIP, ZINC-COATED STEEL SHEET COMPLYING WITH ASTM A 653 G60 COATING DESIGNATION.

C.

BUILDING WRAP: AIR RETARDER SHEETING MADE FROM POLYOLEFINS; CROSS LAMINATED FILMS, WOVEN STRANDS, OR SPUN-BONDED FIBERS; COATED OR UNCOATED, WITH OR WITHOUT PERFORATIONS; AND COMPLYING WITH ASTM E 1677, TYPE 1.

1.

MANUFACTURERS: TYVEK COMMERCIAL WRAP. BY DUPONT COMPANY, WILMINGTON, DE.

D.

SHEATHING TAPE: PRESSURE-SENSITIVE PLASTIC TAPE FOR SEALING JOINTS AND PENETRATIONS IN SHEATHING AND RECOMMENDED BY SHEATHING MANUFACTURER FOR USE WITH TYPE OF SHEATHING REQUIRED.

E.

SILL-SEALER GASKETS: GLASS-FIBER-RESILIENT INSULATIN, FABRICATED IN STRIP FORM, FOR USE AS A SILL SEALER, 1-INCH NOMINAL THICKNESS, COMPRESSIBLE TO 1/32 INCH; SELECTED FROM MANUFACTURER'S STANDARD WIDTHS TO SUIT WIDTH OF SILL MEMBERS INDICATED.

F.

TERMITE SHIELD: PROVIDE 20 GAGE SHEET METAL WITH A HOT-DIP ZINC COATING AT ALL EXTERIOR WALLS. MECHANICALLY BRAKE TO CONFIGURATION INDICATED.

PART 3 -

EXECUTION

3.1

INSTALLATION

A.

SET ROUGH CARPENTRY TO REQUIRED LEVELS AND LINES, WITH MEMBERS PLUMB, TRUE TO LINE, CUT, AND FITTED. FIT ROUGH CARPENTRY TO OTHER CONSTRUCTION; SCRIBE AND COPE AS NEEDED FOR ACCURATE FIT. LOCATE FURRING, NAILERS, BLOCKING, GROUNDS, AND SIMILAR SUPPORTS TO COMPLY WITH REQUIREMENTS FOR ATTACHING OTHER CONSTRUCTION.

B.

APPLY FIELD TREATMENT COMPLYING WITH AWPAC M4 TO CUT SURFACES OF PRESERVATIVE-TREATED LUMBER AND PLYWOOD.

C.

SECURELY ATTACH ROUGH CARPENTRY WORK TO SUBSTRATE BY ANCHORING AND FASTENING AS INDICATED.

D.

FRAMING STANDARD: COMPLY WITH APFA'S "MANUAL FOR WOOD FRAME CONSTRUCTION," UNLESS OTHERWISE INDICATED.

E.

FRAMING WITH ENGINEERED WOOD PRODUCTS: INSTALL ENGINEERED WOOD PRODUCTS TO COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.

F.

COMPLY WITH APPLICABLE RECOMMENDATIONS CONTAINED IN APA FORM NO. E30K, "APA DESIGN/CONSTRUCTION GUIDE: RESIDENTIAL & COMMERCIAL," FOR TYPES OF STRUCTURAL-USE PANELS AND APPLICATIONS INDICATED.

G.

BUILDING WRAP APPLICATION: COVER WALL SHEATHING WITH BUILDING WRAP AS INDICATED. COVER UPSTANDING FLASHING WITH 4-INCH OVERLAP. SEAL SEAMS, EDGES, AND PENETRATIONS WITH TAPE. INSERT STORING & TRUSS INSTALLATION FROM 24X36 SPECS.

SECTION 061753 -

SHOP FABRICATED WOOD TRUSSES

REFER TO STRUCTURAL DRAWINGS FOR SPECIFICATION

SECTION 064023 -

INTERIOR ARCHITECTURAL WOODWORK

PART 1 -

GENERAL

1.1

SUMMARY

A.

THIS SECTION INCLUDES INTERIOR WOODWORK INCLUDING FOR THE FOLLOWING APPLICATIONS:

1.

STANDING AND RUNNING TRIM.

2.

SOLID SURFACING MATERIAL WINDOW STOOLS.

3.

PLASTIC LAMINATE WOOD SHELF AND BRACKETS.

4.

SHOP FINISHING OF WOODWORK.

B.

INTERIOR ARCHITECTURAL WOODWORK INCLUDES WOOD FURRING, BLOCKING, SHIMS, AND HANGING STRIPS UNLESS CONCEALED WITHIN OTHER CONSTRUCTION BEFORE WOODWORK INSTALLATION.

C.

SEE DIVISION 9 SECTION "PAINTING" FOR FIELD FINISHING.

1.2

SUBMITTALS

A.

SAMPLES:

1.

LUMBER AND PANEL PRODUCTS FOR TRANSPARENT FINISH, FOR EACH SPECIES AND CUT, FINISHED ON ONE SIDE AND ONE EDGE.

2.

LUMBER AND PANEL PRODUCTS WITH SHOP-APPLIED OPAQUE FINISH, FOR EACH FINISH SYSTEM AND COLOR, WITH EXPOSED SURFACE FINISHED.

3.

PLASTIC LAMINATES, FOR EACH TYPE, COLOR, PATTERN, AND SURFACE FINISH.

4.

SOLID-SURFACING MATERIALS.

1.3

QUALITY ASSURANCE

A.

QUALITY STANDARD: UNLESS OTHERWISE INDICATED, COMPLY WITH AIA'S "ARCHITECTURAL WOODWORK QUALITY STANDARDS" FOR GRADES OF INTERIOR ARCHITECTURAL WOODWORK, CONSTRUCTION, FINISHES, AND OTHER REQUIREMENTS.

1.

PROVIDE AIA CERTIFICATION LABELS OR COMPLIANCE CERTIFICATE INDICATING THAT WOODWORK COMPLIES WITH REQUIREMENTS OF GRADES SPECIFIED.

1.4

PROJECT CONDITIONS

A.

ENVIRONMENTAL LIMITATIONS: DO NOT DELIVER OR INSTALL WOODWORK UNTIL BUILDING IS ENCLOSED, WET WORK IS COMPLETE, AND HVAC SYSTEM IS OPERATING AND MAINTAINING TEMPERATURE AND RELATIVE HUMIDITY AT OCCUPANCY LEVELS DURING THE REMAINDER OF THE CONSTRUCTION PERIOD.

PART 2 -	PRODUCTS
2.1	MATERIALS
A.	WOOD FOR TRANSPARENT FINISH:
1.	SPECIES AND CUT: REFER TO DECOR DRAWING.
B.	WOOD FOR OPAQUE FINISH:
1.	SPECIES: REFER TO DECOR DRAWING.
C.	WOOD PRODUCTS:
1.	HARDBOARD: AHA A135.4.
2.	MEDIUM-DENSITY FIBERBOARD: ANSI A208.2, GRADE MD-EXTERIOR GLUE.
3.	PARTICLEBOARD: ANSI A208.1, GRADE M-2-EXTERIOR GLUE.
4.	SOFTWOOD PLYWOOD: DOC PS 1, MEDIUM DENSITY OVERLAY.
5.	HARDWOOD PLYWOOD AND FACE VENEERS: HVA HP-1.
D.	HIGH-PRESSURE DECORATIVE LAMINATE: NEMA LD 3.
1.	MANUFACTURERS AND PRODUCTS: PLEASE REFER TO DECOR DRAWINGS.
E.	SOLID-SURFACING MATERIAL: HOMOGENEOUS SOLID SHEETS OF FILLED PLASTIC RESIN COMPLYING WITH ANSI Z124.3, FOR TYPE 5 OR TYPE 6 MATERIAL AND PERFORMANCE REQUIREMENTS, WITHOUT A PRECOATED FINISH.
1.	PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
a.	DU PONT POLYMERS; CORIAN.

2.2	INSTALLATION MATERIALS
A.	FURRING, BLOCKING, SHIMS, AND HANGING STRIPS: SOFTWOOD OR HARDWOOD LUMBER, KILN-DRIED TO LESS THAN 15 PERCENT MOISTURE CONTENT.

2.3	FABRICATION
A.	GENERAL: COMPLETE FABRICATION TO MAXIMUM EXTENT POSSIBLE BEFORE SHIPMENT TO PROJECT SITE. WHERE NECESSARY FOR FITTING AT SITE, PROVIDE ALLOWANCE FOR SCRIBING, TRIMMING, AND FITTING.
1.	INTERIOR WOODWORK GRADE: CUSTOM COMPLYING WITH THE REFERENCED QUALITY STANDARD.
2.	SHOP CUT OPENINGS TO MAXIMUM EXTENT POSSIBLE. SAND EDGES OF CUTOUTS TO REMOVE SPLINTERS AND BURRS.
3.	FOR TRIM ITEMS WIDER THAN AVAILABLE LUMBER, USE VENEERED CONSTRUCTION. DO NOT GLUE FOR WIDTH.
4.	BACKOUT OR GROOVE BACKS OF FLAT TRIM MEMBERS AND KERF BACKS OF OTHER WIDE, FLAT MEMBERS, EXCEPT FOR MEMBERS WITH ENDS EXPOSED IN FINISHED WORK.
B.	SOLID-SURFACING-MATERIAL WINDOW STOOLS:
1.	SOLID-SURFACING-MATERIAL THICKNESS: AS INDICATED ON DRAWINGS.
2.	COLORS, PATTERNS, AND FINISHES: AS INDICATED ON DRAWINGS.
C.	PLASTIC-LAMINATE WOOD SHELF:
1.	SIZE: AS INDICATED ON DRAWINGS.
2.	COLOR AND PATTERN: AS INDICATED ON DRAWINGS.

2.4	SHOP FINISHING
A.	FINISH ARCHITECTURAL WOODWORK AT FABRICATION SHOP. DEFER ONLY FINAL TOUCHUP, CLEANING, AND POLISHING UNTIL AFTER INSTALLATION.
B.	BACKPRIMING: APPLY ONE COAT OF SEALER OR PRIMER, COMPATIBLE WITH FINISH COATS, TO CONCEALED SURFACES OF WOODWORK. APPLY TWO COATS TO BACK OF PANELING.
C.	TRANSPARENT FINISH: COMPLY WITH REQUIREMENTS INDICATED BELOW FOR GRADE, FINISH SYSTEM, STAINING, AND SHEEN, WITH SHEEN MEASURED ON 60-DEGREE GLOSS METER PER ASTM D 523:
1.	GRADE: CUSTOM.
2.	AWI FINISH SYSTEM: TR-6, CATALYZED POLYURETHANE.
3.	STAINING: AS INDICATED ON DECOR DRAWINGS.
4.	SHEEN: AS INDICATED ON DECOR DRAWINGS.

PART 3 -	EXECUTION
3.1	INSTALLATION
A.	CONDITION WOODWORK TO AVERAGE PREVAILING HUMIDITY CONDITIONS IN INSTALLATION AREAS AND EXAMINE AND COMPLETE WORK AS REQUIRED, INCLUDING REMOVAL OF PACKING AND BACKPRIMING BEFORE INSTALLATION.
B.	QUALITY STANDARD: INSTALL WOODWORK TO COMPLY WITH AWI SECTION 1700 FOR THE SAME GRADE SPECIFIED IN THIS SECTION FOR TYPE OF WOODWORK INVOLVED.
C.	INSTALL WOODWORK LEVEL, PLUMB, TRUE, AND STRAIGHT TO A TOLERANCE OF 1/8 INCH IN 6 INCHES (3 MM IN 2400 MM). SHIM AS REQUIRED WITH CONCEALED SHIMS.
D.	SCRIBE AND CUT WOODWORK TO FIT ADJOINING WORK, AND REFINISH CUT SURFACES, AND REPAIR DAMAGED FINISH AT CUTS.
E.	ANCHOR WOODWORK TO ANCHORS OR BLOCKING BUILT IN OR DIRECTLY ATTACHED TO SUBSTRATES. SECURE WITH COUNTERSUNK, CONCEALED FASTENERS AND BLIND NAILING AS REQUIRED FOR COMPLETE INSTALLATION. USE FINE FINISHING NAILS OR FINISHING SCREWS FOR EXPOSED FASTENING, COUNTERSUNK AND FILLED FLUSH WITH WOODWORK AND MATCHING FINAL FINISH IF TRANSPARENT FINISH IS INDICATED.
F.	STANDING AND RUNNING TRIM: INSTALL WITH MINIMUM NUMBER OF JOINTS POSSIBLE, USING FULL-LENGTH PIECES (FROM MAXIMUM LENGTH OF LUMBER AVAILABLE) TO GREATEST EXTENT POSSIBLE. FILL GAPS, IF ANY, BETWEEN TOP OF BASE AND WALL WITH PLASTIC WOOD FILLER, SAND SMOOTH, AND FINISH SAME AS WOOD BASE IF FINISHED.
G.	REPAIR DAMAGED OR DEFECTIVE WOODWORK WHERE POSSIBLE TO ELIMINATE FUNCTIONAL OR VISUAL DEFECTS. WHERE NOT POSSIBLE TO REPAIR, REPLACE WOODWORK. ADJUST JOINERY FOR UNIFORM APPEARANCE.
H.	FINISHING: FIELD FINISH INTERIOR ARCHITECTURAL WOODWORK ITEMS AS SPECIFIED IN DIVISION 9 SECTION "PAINTING".

SECTION 066400 -	PLASTIC PANELING
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PART 1 -	GENERAL
1.1	SUMMARY
A.	SECTION INCLUDES GLASS-FIBER REINFORCED PLASTIC (FRP) WALL PANELING AND TRIM ACCESSORIES.
1.2	SUBMITTALS
A.	PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.
B.	SAMPLES: FOR PLASTIC PANELING AND TRIM ACCESSORIES.
1.3	QUALITY ASSURANCE
A.	SURFACE-BURNING CHARACTERISTICS: AS DETERMINED BY TESTING IDENTICAL PRODUCTS ACCORDING TO ASTM E 84 BY A QUALIFIED TESTING AGENCY. IDENTIFY PRODUCTS WITH APPROPRIATE MARKINGS OF APPLICABLE TESTING AGENCY.
1.	FLAME-SPREAD INDEX: 25 OR LESS.
2.	SMOKE-DEVELOPED INDEX: 450 OR LESS.

PART 2 -	PRODUCTS
2.1	PLASTIC SHEET PANELING
A.	GENERAL: GELCOAT-FINISHED, GLASS-FIBER REINFORCED PLASTIC PANELS COMPLYING WITH ASTM D 5319.
1.	MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
a.	KEMILITE COMPANY INC.
b.	MARLITE.
C.	NUDO PRODUCTS, INC.
2.	NOMINAL THICKNESS: NOT LESS THAN 0.075 INCH (1.9 MM).
3.	SURFACE FINISH: PEBBLED.
4.	COLOR: WHITE.

2.2	ACCESSORIES
A.	TRIM ACCESSORIES: MANUFACTURER'S STANDARD ONE-PIECE VINYL EXTRUSIONS DESIGNED TO RETAIN AND COVER EDGES OF PANELS. PROVIDE DIVISION 5 BARS, INSIDE CORNERS, OUTSIDE CORNERS, AND CAPS AS NEEDED TO CONCEAL EDGES.
1.	COLOR: WHITE.
B.	ADHESIVE: AS RECOMMENDED BY PLASTIC PANELING MANUFACTURER.
1.	VOC CONTENT: 50 G/L OR LESS WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METHOD 24).
C.	SEALANT: SINGLE-COMPONENT, MILDEW-RESISTANT, NEUTRAL-CURING SILICONE SEALANT RECOMMENDED BY PLASTIC PANELING MANUFACTURER AND COMPLYING WITH REQUIREMENTS IN DIVISION 07 SECTION "JOINT SEALANTS."
1.	VOC CONTENT: 250 G/L OR LESS WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METHOD 24).

PART 3 -	EXECUTION
3.1	PREPARATION
A.	CLEAN SUBSTRATES OF SUBSTANCES THAT COULD IMPAIR BOND OF ADHESIVE, INCLUDING OIL, GREASE, DIRT, AND DUST.
B.	CONDITION PANELS BY UNPACKING AND PLACING IN INSTALLATION SPACE BEFORE INSTALLATION ACCORDING TO MANUFACTURER'S WRITTEN RECOMMENDATIONS.
C.	LAY OUT PANELING BEFORE INSTALLING. LOCATE PANEL JOINTS TO PROVIDE EQUAL PANELS AT ENDS OF WALLS NOT LESS THAN HALF THE WIDTH OF FULL PANELS SO THAT TRIMMED PANELS AT CORNERS ARE NOT LESS THAN 12 INCHES (300 MM) WIDE.

3.2	INSTALLATION
A.	INSTALL PLASTIC PANELING ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
B.	INSTALL PANELS IN A FULL SPREAD OF ADHESIVE.
C.	INSTALL TRIM ACCESSORIES WITH ADHESIVE AND NAILS. DO NOT FASTEN THROUGH PANELS.
D.	FILL GROOVES IN TRIM ACCESSORIES WITH SEALANT BEFORE INSTALLING PANELS AND BED INSIDE CORNER TRIM IN A BEAD OF SEALANT.
E.	MAINTAIN UNIFORM SPACE BETWEEN PANELS AND WALL FIXTURES. FILL SPACE WITH SEALANT.
F.	REMOVE EXCESS SEALANT AND SMEARS AS PANELING IS INSTALLED. CLEAN WITH SOLVENT RECOMMENDED BY SEALANT MANUFACTURER AND THEN WIPE WITH CLEAN DRY CLOTHS UNTIL NO RESIDUE REMAINS.

SECTION 072100 -	THERMAL INSULATION
PART 1 -	GENERAL
1.1	SUMMARY
A.	THIS SECTION INCLUDES THE FOLLOWING:
1.	PERIMETER INSULATION UNDER SLABS-ON-GRADE.
2.	CAVITY-WALL INSULATION.
3.	CONCEALED BUILDING INSULATION.
4.	VAPOR RETARDERS (BELOW SLAB).
5.	SOUND ATTENUATION INSULATION.
B.	FOR BUILT-UP ROOF INSULATION, REFER TO SECTION 075213.
1.2	QUALITY ASSURANCE
A.	RETAIN ASTM TEST METHOD BELOW BASED ON PRODUCT AND KIND OF FIRE-RESISTANCE CHARACTERISTIC SPECIFIED FOR EACH PRODUCT IN PART 2. FIRE-TEST-RESPONSE CHARACTERISTICS: PROVIDE INSULATION AND RELATED MATERIALS WITH THE FIRE-TEST-RESPONSE CHARACTERISTICS INDICATED, AS DETERMINED BY TESTING IDENTICAL PRODUCTS PER ASTM E 84 FOR SURFACE-BURNING CHARACTERISTICS AND OTHER METHODS INDICATED WITH PRODUCT, BY UL OR ANOTHER TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION. IDENTIFY MATERIALS WITH APPROPRIATE MARKINGS OF APPLICABLE TESTING AND INSPECTING AGENCY.

PART 2 -	PRODUCTS
2.1	MANUFACTURERS
A.	IN OTHER PART 2 ARTICLES WHERE TITLES BELOW INTRODUCE LISTS, THE FOLLOWING REQUIREMENTS APPLY TO PRODUCT SELECTION:
1.	MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS; PROVIDE PRODUCTS BY ONE OF THE MANUFACTURERS SPECIFIED.
2.2	FOAM-PLASTIC BOARD INSULATION
A.	EXTRUDED-POLYSTYRENE BOARD INSULATION: ASTM C 578, TYPE IV, 1.60 LB/CU. FT. (26 KG/CU. M) WITH MAXIMUM FLAME-SPREAD AND SMOKE-DEVELOPED INDEXES OF 75 AND 450, RESPECTIVELY:
1.	MANUFACTURERS:
a.	DOW CHEMICAL COMPANY.
b.	OWENS CORNING.

2.3	GLASS-FIBER BLANKET INSULATION
A.	MANUFACTURERS:
1.	CERTAINTEED CORPORATION.
2.	JOHNS MANVILLE.
3.	OWENS CORNING.
B.	UNFACED, GLASS-FIBER BLANKET INSULATION: ASTM C 665, TYPE I (BLANKETS WITHOUT MEMBRANE FACING); CONSISTING OF FIBERS; WITH MAXIMUM FLAME-SPREAD AND SMOKE-DEVELOPED INDEXES OF 25 AND 50, RESPECTIVELY; PASSING ASTM E 136 FOR COMBUSTION CHARACTERISTICS.
C.	WHERE GLASS-FIBER BLANKET INSULATION IS INDICATED BY THE FOLLOWING THICKNESSES, PROVIDE BLANKETS IN BATT OR ROLL FORM WITH THE FOLLOWING:
1.	3-1/2 INCHES (89 MM) THICK WITH A THERMAL RESISTANCE OF 11 DEG F X H X SQ. FT./BTU AT 75 DEG F (1.9 K X SQ. M/W AT 24 DEG C).
2.	3-5/8 INCHES (92 MM) THICK WITH A THERMAL RESISTANCE OF 11 DEG F X H X SQ. FT./BTU AT 75 DEG F (1.9 K X SQ. M/W AT 24 DEG C).
3.	5-1/2 INCHES (140 MM) THICK WITH A THERMAL RESISTANCE OF 19 DEG F X H X SQ. FT./BTU AT 75 DEG F (3.3 K X SQ. M/W AT 24 DEG C).
4.	6-1/2 INCHES (165 MM) THICK WITH A THERMAL RESISTANCE OF 21 DEG F X H X SQ. FT./BTU AT 75 DEG F (3.7 K X SQ. M/W AT 24 DEG C).

2.4	VAPOR RETARDERS & BARRIERS
A.	POLYETHYLENE VAPOR RETARDERS & BARRIERS: ASTM D 4397, 10 MILS THICK, BELOW CONCRETE SLABS.
B.	VAPOR-RETARDER TAPE: PRESSURE-SENSITIVE TAPE OF TYPE RECOMMENDED BY VAPOR-RETARDER MANUFACTURER FOR SEALING JOINTS AND PENETRATIONS IN VAPOR RETARDER.
C.	POLYETHYLENE VAPOR BARRIR: ASTM D 4397, 2 MILS THICK AS VAPOR BARRIER IN WALLS.

PART 3 -	EXECUTION
3.1	INSTALLATION, GENERAL
A.	COMPLY WITH INSULATION MANUFACTURER'S WRITTEN INSTRUCTIONS APPLICABLE TO PRODUCTS AND APPLICATION INDICATED.
B.	INSTALL INSULATION THAT IS UNDAMAGED, DRY, AND UNSOILED AND THAT HAS NOT BEEN LEFT EXPOSED AT ANY TIME TO ICE, RAIN, AND SNOW.
C.	EXTEND INSULATION IN THICKNESS INDICATED TO ENVELOP ENTIRE AREA TO BE INSULATED. CUT AND FIT TIGHTLY AROUND OBSTRUCTIONS AND FILL VOIDS WITH INSULATION. REMOVE PROJECTIONS THAT INTERFERE WITH PLACEMENT.
D.	WATER-PIPING COORDINATION: IF WATER PIPING IS LOCATED WITHIN INSULATED EXTERIOR WALLS, COORDINATE LOCATION OF PIPING TO ENSURE THAT IT IS PLACED ON WARM SIDE OF INSULATION AND INSULATION ENCAPSULATES PIPING.
E.	FOR PREFORMED INSULATING UNITS, PROVIDE SIZES TO FIT APPLICATIONS INDICATED AND SELECTED FROM MANUFACTURER'S STANDARD THICKNESSES, WIDTHS, AND LENGTHS. APPLY SINGLE LAYER OF INSULATION UNITS TO PRODUCE THICKNESS INDICATED UNLESS

MULTIPLE LAYERS ARE OTHERWISE SHOWN OR REQUIRED TO MAKE UP TOTAL THICKNESS.	
3.2	INSTALLATION OF PERIMETER AND UNDER-SLAB INSULATION
A.	ON VERTICAL SURFACES, SET INSULATION UNITS IN ADHESIVE APPLIED ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS. USE ADHESIVE RECOMMENDED BY INSULATION MANUFACTURER.
1.	IF NOT OTHERWISE INDICATED, EXTEND INSULATION A MINIMUM OF 24 INCHES (610 MM) BELOW EXTERIOR GRADE LINE.
B.	ON HORIZONTAL SURFACES, LOOSELY LAY INSULATION UNITS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS. STAGGER END JOINTS AND TIGHTLY ABUT INSULATION UNITS.
C.	PROTECT BELOW-GRADE INSULATION ON VERTICAL SURFACES FROM DAMAGE DURING BACKFILL BY APPLYING PROTECTION COURSE WITH JOINTS BUTTED. SET IN ADHESIVE ACCORDING TO INSULATION MANUFACTURER'S WRITTEN INSTRUCTIONS.
D.	PROTECT TOP SURFACE OF HORIZONTAL INSULATION FROM DAMAGE DURING CONCRETE WORK BY APPLYING PROTECTION COURSE WITH JOINTS BUTTED.

3.3	INSTALLATION OF GENERAL BUILDING INSULATION
A.	SET VAPOR-RETARDER-FACED UNITS WITH VAPOR RETARDER BARRIER TO WARM-IN-WINTER SIDE OF CONSTRUCTION, UNLESS OTHERWISE INDICATED.
1.	TAPE JOINTS AND RUPTURES IN VAPOR RETARDER BARRIER, AND SEAL EACH CONTINUOUS AREA OF INSULATION TO SURROUNDING CONSTRUCTION TO ENSURE AIRTIGHT INSTALLATION.
B.	INSTALL MINERAL-FIBER INSULATION IN CAVITIES FORMED BY FRAMING MEMBERS ACCORDING TO THE FOLLOWING REQUIREMENTS:
1.	USE INSULATION WIDTHS AND LENGTHS THAT FILL THE CAVITIES FORMED BY FRAMING MEMBERS. IF MORE THAN ONE LENGTH IS REQUIRED TO FILL CAVITY, PROVIDE LENGTHS THAT WILL PRODUCE A SNUG FIT BETWEEN ENDS.
2.	PLACE INSULATION IN CAVITIES FORMED BY FRAMING MEMBERS TO PRODUCE A FRICTION FIT BETWEEN EDGES OF INSULATION AND ADJOINING FRAMING MEMBERS.
3.	MAINTAIN 3-INCH (76-MM) CLEARANCE OF INSULATION AROUND RECESSED LIGHTING FIXTURES.

3.4	INSTALLATION OF INSULATION IN CEILINGS & WALLS FOR SOUND ATTENUATION
A.	INSTALL 3" THICK, UNFACED GLASS-FIBER BLANKET INSULATION OVER CEILINGS SO THAT INSULATION EXTENDS OVER ENTIRE CEILING, AND INTERIOR WALLS AS INDICATED IN THE PLANS.

3.5	INSTALLATION OF VAPOR RETARDERS & VAPOR BARRIERS
A.	GENERAL: EXTEND VAPOR RETARDER TO EXTREMITIES OF AREAS TO BE PROTECTED FROM VAPOR TRANSMISSION. SECURE IN PLACE WITH ADHESIVES OR OTHER ANCHORAGE SYSTEM AS INDICATED. EXTEND VAPOR RETARDER TO COVER MISCELLANEOUS VOIDS IN INSULATED SUBSTRATES.
B.	SEAL VERTICAL JOINTS IN VAPOR RETARDERS OVER FRAMING BY LAPPING NOT LESS THAN TWO WALL STUDS. FASTEN VAPOR RETARDERS AT TOP, END, AND BOTTOM EDGES; AT PERIMETER OF WALL OPENINGS; AND AT LAP JOINTS. SPACE FASTENERS 16 INCHES (400 MM) O.C.
C.	SEAL JOINTS CAUSED BY PIPES, CONDUITS, ELECTRICAL BOXES, AND SIMILAR ITEMS PENETRATING VAPOR RETARDERS WITH VAPOR-RETARDER TAPE TO CREATE AN AIRTIGHT SEAL BETWEEN PENETRATING OBJECTS AND VAPOR RETARDER.
D.	REPAIR TEARS OR PUNCTURES IN VAPOR RETARDERS IMMEDIATELY BEFORE CONCEALMENT BY OTHER WORK. COVER WITH VAPOR-RETARDER TAPE OR ANOTHER LAYER OF VAPOR RETARDER.

SECTION 072419 -	WATER-DRAINAGE EXTERIOR INSULATION AND FINISH SYSTEM (EIFS)
PART 1 -	GENERAL
1.1	SUMMARY
A.	SECTION INCLUDES WATER-DRAINAGE EXTERIOR INSULATION AND FINISH SYSTEM (EIFS) APPLIED OVER WATER-RESISTIVE COATING OVER SHEATHING.
1.2	PERFORMANCE REQUIREMENTS
A.	CLASS PB EIFS: PHYSICAL PROPERTIES AND STRUCTURAL PERFORMANCE THAT COMPLY WITH ICC-ES AC235.
1.3	SUBMITTALS
A.	PRODUCT DATA: FOR EACH TYPE AND COMPONENT OF EIFS INDICATED.
B.	SAMPLES: FOR EACH EXPOSED PRODUCT AND FOR EACH COLOR AND TEXTURE SPECIFIED.
1.4	QUALITY ASSURANCE
A.	INSTALLER QUALIFICATIONS: AN INSTALLER WHO IS CERTIFIED IN WRITING BY EIFS MANUFACTURER AS QUALIFIED TO INSTALL MANUFACTURER'S SYSTEM USING TRAINED WORKERS.
B.	SOURCE LIMITATIONS: OBTAIN EIFS FROM SINGLE SOURCE FROM SINGLE EIFS MANUFACTURER AND FROM SOURCES APPROVED BY EIFS MANUFACTURER AS COMPATIBLE WITH SYSTEM COMPONENTS.
C.	PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT THE PROJECT SITE AT A DATE AND TIME TO BE ESTABLISHED.
D.	WARRANTY: PROVIDE MANUFACTURER'S STANDARD 10 YEAR WARRANTY ON MATERIALS.

PART 2 -	PRODUCTS
2.1	MANUFACTURERS
A.	MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY THE SPECIFIED MANUFACTURER AS FOLLOWS THE FOLLOWING:
1.	DRYVIT SYSTEMS, INC.: OUTSULATION PLUS SYSTEM
2.2	MATERIALS
A.	COMPATIBILITY: PROVIDE WATER-RESISTIVE COATING, ADHESIVE, FASTENERS, BOARD INSULATION, REINFORCING MESHES, BASE- AND FINISH-COAT SYSTEMS, SEALANTS, AND ACCESSORIES THAT ARE COMPATIBLE WITH ONE ANOTHER AND WITH SUBSTRATES AND APPROVED FOR USE BY EIFS MANUFACTURER FOR PROJECT.
B.	WATER-RESISTIVE COATINGS: EIFS MANUFACTURER'S STANDARD FORMULATION AND ACCESSORIES FOR USE AS WATER/WEATHER-RESISTIVE BARRIERS, COMPATIBLE WITH SUBSTRATE, AND COMPLYING WITH PHYSICAL AND PERFORMANCE CRITERIA OF ICC-ES AC212.
1.	VOC CONTENT OF COATINGS USED AS INSULATION ADHESIVE: 50 G/L OR LESS WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METHOD 24).
C.	FLEXIBLE-MEMBRANE FLASHING: COLD-APPLIED; FULLY SELF-ADHERING, SELF-HEALING, RUBBERIZED-ASPHALT AND POLYETHYLENE-FILM COMPOSITE SHEET; OR TAPE AND PRIMER; EIFS MANUFACTURER'S STANDARD OR PRODUCT RECOMMENDED IN WRITING BY EIFS MANUFACTURER.
D.	INSULATION ADHESIVE: STANDARD FORMULATION.
E.	MOLDED, RIGID CELLULAR POLYSTYRENE BOARD INSULATION: COMPLY WITH ASTM C 578, TYPE I; EIFS MANUFACTURER'S REQUIREMENTS; AND EIMA'S "EIMA GUIDELINE SPECIFICATION FOR EXPANDED POLYSTYRENE (EPS) INSULATION BOARD."
1.	CHANNELLED BOARD INSULATION: EIFS MANUFACTURER'S STANDARD FACTORY-FABRICATED PROFILE WITH LINEAR, VERTICAL DRAINAGE CHANNELS, SLOTS, OR WAVES ON THE BACK SIDE OF BOARD.
2.	FOAM SHAPES: PROVIDE WITH PROFILES AND DIMENSIONS INDICATED ON DRAWINGS.
F.	REINFORCING MESH: BALANCED, ALKALI-RESISTANT, OPEN-WEAVE, GLASS-FIBER MESH; COMPLYING WITH ASTM D 578 AND THE FOLLOWING:
1.	STANDARD-IMPACT REINFORCING MESH: NOT LESS THAN 4.0 OZ./SQ. YD. (136 G/SQ. M).
2.	DETAIL REINFORCING MESH: NOT LESS THAN 4.0 OZ. /SQ. YD. (136 G/SQ. M).
G.	BASE-COAT MATERIALS: STANDARD FORMULATION.
H.	FINISH-COAT MATERIALS: FACTORY-MIXED, STANDARD ACRYLIC-BASED COATING WITH ENHANCED MILDEW RESISTANCE.
1.	COLORS: AS INDICATED ON THE DRAWINGS.
I.	TRIM ACCESSORIES: MANUFACTURED FROM UV-STABILIZED PVC AND COMPLYING WITH ASTM D 1784 AND ASTM C 1063.

PART 3 -	EXECUTION
3.1	INSTALLATION
A.	COMPLY WITH EIFS MANUFACTURER'S WRITTEN INSTRUCTIONS FOR INSTALLATION OF EIFS AS APPLICABLE TO EACH TYPE OF SUBSTRATE INDICATED.
B.	WATER-RESISTIVE COATINGS: APPLY OVER SUBSTRATES TO PROTECT SUBSTRATES FROM DEGRADATION AND TO PROVIDE WATER-/WEATHER-RESISTIVE BARRIER.
C.	FLEXIBLE-MEMBRANE FLASHING: INSTALL OVER WEATHER-RESISTIVE BARRIER, APPLIED AND LAPPED TO SHED WATER; SEAL AT OPENINGS, PENETRATIONS, TERMINATIONS, AND WHERE INDICATED BY EIFS MANUFACTURER'S WRITTEN INSTRUCTIONS TO PROTECT WALL ASSEMBLY FROM DEGRADATION. PRIME SUBSTRATES, IF REQUIRED, AND INSTALL FLASHING TO COMPLY WITH EIFS MANUFACTURER'S WRITTEN INSTRUCTIONS AND DETAILS.
D.	TRIM: APPLY TRIM ACCESSORIES AT LOCATIONS INDICATED ON DRAWINGS.
E.	BOARD INSULATION: ADHESIVELY ATTACH TO SUBSTRATE USING VERTICAL NOTCHED TROWEL CONFIGURATION FOR DRAINAGE.
F.	BASE COAT: APPLY TO EXPOSED SURFACES OF INSULATION AND FOAM SHAPES IN MINIMUM THICKNESS RECOMMENDED IN WRITING BY EIFS MANUFACTURER, BUT NOT LESS THAN 1/16-INCH (1.6-MM) DRY-COAT THICKNESS.
G.	REINFORCING MESH: COMPLETELY EMBED MESH IN WET BASE COAT, APPLYING ADDITIONAL BASE-COAT MATERIAL IF NECESSARY, SO REINFORCING-MESH COLOR AND PATTERN ARE NOT VISIBLE.
1.	STANDARD-IMPACT REINFORCING MESH UNLESS OTHERWISE INDICATED.
H.	FINISH COAT: APPLY OVER DRY BASE COAT, MAINTAINING A WET EDGE AT ALL TIMES FOR UNIFORM APPEARANCE, IN THICKNESS REQUIRED BY EIFS MANUFACTURER TO PRODUCE A UNIFORM FINISH OF COLOR AND TEXTURE MATCHING APPROVED SAMPLE AND FREE OF COLD JOINTS, SHADOW LINES, AND TEXTURE VARIATIONS.
1.	TEXTURE: AS INDICATED ON THE DRAWINGS.
3.2	FIELD QUALITY CONTROL

A.	TESTING AGENCY: OWNER MAY ENGAGE A QUALIFIED TESTING AGENCY TO PERFORM TESTS AND INSPECTIONS.
B.	EIFS TESTS AND INSPECTIONS: FOR THE FOLLOWING:
1.	ACCORDING TO ICC-ES AC235.
C.	REMOVE AND REPLACE EIFS WHERE TEST RESULTS INDICATE THAT EIFS DO NOT COMPLY WITH SPECIFIED REQUIREMENTS.
D.	PREPARE TEST AND INSPECTION REPORTS.

SECTION 075213 - ATACTIC-POLYPROPYLENE (APP) MODIFIED BITUMINOUS MEMBRANE ROOFING
(APPROVED ALTERNATE ROOFING. G.C. IS TO CONFIRM WITH OWNER/FRANCHISEE IF G.C. IS TO PROVIDE A BID WITH THIS OPTION. THE STANDARD ROOFING IS TO BE THE THERMOPLASTIC MEMBRANE ROOFING SPECIFIED IN SECTION 075400.)

PART 1 -	GENERAL
1.1	SUMMARY
A.	THIS SECTION INCLUDES APP-MODIFIED BITUMINOUS MEMBRANE ROOFING.
1.2	DEFINITIONS
A.	HOT ROOFING ASPHALT: ROOFING ASPHALT HEATED TO ITS EQUIVISCIOUS TEMPERATURE, THE TEMPERATURE AT WHICH ITS VISCOSITY IS 125 CENTIPOISE FOR MOP-APPLIED ROOFING ASPHALT AND 75 CENTIPOISE FOR MECHANICAL SPREADER-APPLIED ROOFING ASPHALT, WITHIN A RANGE OF PLUS OR MINUS 25 DEG F (14 DEG C), MEASURED AT THE MOP CART OR MECHANICAL SPREADER IMMEDIATELY BEFORE APPLICATION.
1.3	SUBMITTALS
A.	PRODUCT DATA: FOR EACH PRODUCT INDICATED.
B.	SHOP DRAWINGS: INCLUDE PLANS, ELEVATIONS, SECTIONS, DETAILS, AND ATTACHMENTS TO OTHER WORK.
C.	SAMPLES: FOR EACH PRODUCT INCLUDED IN ROOFING SYSTEM.
1.4	QUALITY ASSURANCE
A.	INSTALLER QUALIFICATIONS: A QUALIFIED INSTALLER, APPROVED BY MANUFACTURER TO INSTALL MANUFACTURER'S PRODUCTS.
B.	SOURCE LIMITATIONS: OBTAIN COMPONENTS FOR ROOFING SYSTEM FROM ROOFING SYSTEM MANUFACTURER.
C.	FIRE-TEST-RESPONSE CHARACTERISTICS: PROVIDE ROOFING MATERIALS WITH THE FIRE-TEST-RESPONSE CHARACTERISTICS INDICATED AS DETERMINED BY TESTING IDENTICAL PRODUCTS PER TEST METHOD BELOW BY UL, FMG, OR ANOTHER TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
1.	EXTERIOR FIRE-TEST EXPOSURE: CLASS A, ASTM E 108, FOR APPLICATION AND ROOF SLOPES INDICATED.
D.	PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT THE PROJECT SITE AT A DATE AND TIME TO BE ESTABLISHED.
1.5	WARRANTY
A.	SPECIAL WARRANTY: US INTEC'S "NO DOLLAR LIMIT (NDL) GUARANTEE" - NEW INTEC NDL GUARANTEE: 12. A FULL REPAIR OR REPLACEMENT, NO LIMITS GUARANTEE, FOR 12 YEARS FROM DATE OF SUBSTANTIAL COMPLETION AGAINST FAILURE OF MATERIALS OR WORKMANSHIP.

PART 2 -	PRODUCTS
2.1	MANUFACTURERS
A.	MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
1.	APP-MODIFIED BITUMINOUS MEMBRANE ROOFING:
a.	GAF MATERIALS CORP., APP TORCH APPLIED GB-2B-N (2) PLY WITH NAILABLE DECK (B-SP-400-N).
2.2	APP-MODIFIED ASPHALT-SHEET MATERIALS
A.	ROOFING MEMBRANE SHEET: ASTM D 6222, GRADE S, TYPE I OR II, POLYESTER-REINFORCED, APP-MODIFIED ASPHALT SHEET; SMOOTH SURFACED; SUITABLE FOR APPLICATION METHOD SPECIFIED.
B.	ROOFING MEMBRANE CAP SHEET: ASTM D 6222, GRADE G, TYPE I OR II, POLYESTER-REINFORCED, APP-MODIFIED ASPHALT SHEET; GRANULAR SURFACED; SUITABLE FOR APPLICATION METHOD SPECIFIED, AND AS FOLLOWS:
1.	GRANULE COLOR: WHITE.

2.3	BASE-SHEET MATERIALS
A.	SHEATHING PAPER: RED-ROSIN TYPE, MINIMUM 3 LB/100 SQ. FT. (0.16 KG/SQ. M).
B.	BASE SHEET: ASTM D 4897, TYPE II, VENTING, NONPERFORATED, HEAVYWEIGHT, ASPHALT-IMPREGNATED AND -COATED, GLASS-FIBER BASE SHEET WITH COARSE GRANULAR SURFACING OR EMBOSSED VENTING CHANNELS ON BOTTOM SURFACE.
2.4	BASE FLASHING SHEET MATERIALS
A.	BACKER SHEET: ASTM D 6222, GRADE S, TYPE I OR II, POLYESTER-REINFORCED, APP-MODIFIED ASPHALT SHEET; SMOOTH SURFACED; SUITABLE FOR APPLICATION METHOD SPECIFIED.
B.	FLASHING SHEET: ASTM D 6222, GRADE G, TYPE I OR II, POLYESTER-REINFORCED, APP-MODIFIED ASPHALT SHEET; GRANULAR SURFACED; SUITABLE FOR APPLICATION METHOD SPECIFIED, AND AS FOLLOWS:
1.	GRANULE COLOR: WHITE.

2.5	AUXILIARY ROOFING MEMBRANE MATERIALS
A.	GENERAL: AUXILIARY MATERIALS RECOMMENDED BY ROOFING SYSTEM MANUFACTURER FOR INTEREDED USE AND COMPATIBLE WITH ROOFING MEMBRANE.
B.	ASPHALT PRIMER: ASTM D 41.
C.	ROOFING ASPHALT: ASTM D 312, TYPE III OR IV AS RECOMMENDED BY ROOFING SYSTEM MANUFACTURER FOR APPLICATION.
D.	ASPHALT ROOFING CEMENT: ASTM D 4586, ASBESTOS FREE, OF CONSISTENCY REQUIRED BY ROOFING SYSTEM MANUFACTURER FOR APPLICATION.
E.	FASTENERS: FACTORY-COATED STEEL FASTENERS AND METAL OR PLASTIC PLATES MEETING CORROSION-RESISTANCE PROVISIONS IN FMG 4470, DESIGNED FOR FASTENING ROOFING MEMBRANE COMPONENTS TO SUBSTRATE, TESTED BY MANUFACTURER FOR REQUIRED PULLOUT STRENGTH, AND ACCEPTABLE TO ROOFING SYSTEM MANUFACTURER.
2.6	ROOF INSULATION
A.	POLYISOCYANURATE BOARD INSULATION: ASTM C 1289, TYPE II, FELT OR GLASS-FIBER MAT FACER ON BOTH MAJOR SURFACES.
B.	TAPERED INSULATION: PROVIDE FACTORY-TAPERED INSULATION BOARDS FABRICATED TO SLOPE OF 1/4 INCH PER 12 INCHES (1:48), UNLESS OTHERWISE INDICATED.
C.	PROVIDE PREFORMED SADDLES, CRICKETS, TAPERED EDGE STRIPS, AND OTHER INSULATION SHAPES WHERE INDICATED FOR SLOPING TO DRAIN. FABRICATE TO SLOPES INDICATED.

2.7	INSULATION ACCESSORIES
A.	FASTENERS: FACTORY-COATED STEEL FASTENERS AND METAL OR PLASTIC PLATES MEETING CORROSION-RESISTANCE PROVISIONS IN FMG 4470, DESIGNED FOR FASTENING ROOF INSULATION TO SUBSTRATE, AND ACCEPTABLE TO ROOFING SYSTEM MANUFACTURER.
B.	INSULATION CANT STRIPS: ASTM C 208, TYPE II, GRADE 1, CELLULOSIC-FIBER INSULATION BOARD.
C.	WOOD NAILER STRIPS: COMPLY WITH REQUIREMENTS

- 2.1 MANUFACTURERS
- A. IN OTHER PART 2 ARTICLES WHERE TITLES BELOW INTRODUCE LISTS, THE FOLLOWING REQUIREMENTS APPLY FOR PRODUCT SELECTION:
1. AVAILABLE MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE MANUFACTURERS SPECIFIED.
2. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY THE MANUFACTURERS SPECIFIED.

- 2.2 PVC ROOFING MEMBRANE
- A. PVC SHEET: ASTM D 4434, TYPE IV, FABRIC REINFORCED.
1. MANUFACTURERS:
- a. DURO-LAST ROOFING, INC.
2. THICKNESS: 50 MILS, NOMINAL.
3. EXPOSED FACE COLOR: WHITE.

- 2.3 AUXILIARY MATERIALS
- A. GENERAL: AUXILIARY MATERIALS RECOMMENDED BY ROOFING SYSTEM MANUFACTURER FOR INTENDED USE AND COMPATIBLE WITH MEMBRANE ROOFING.
1. ADHESIVES AND SEALANTS THAT ARE USED INSIDE OF THE WEATHERPROOFING SYSTEM SHALL COMPLY WITH THE FOLLOWING LIMITS FOR VOC CONTENT WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METHOD 24):
- a. PLASTIC FOAM ADHESIVES: 50 G/L.
- b. GYPSUM BOARD AND PANEL ADHESIVES: 50 G/L.
- c. MULTIPURPOSE CONSTRUCTION ADHESIVES: 70 G/L.
- d. FIBERGLASS ADHESIVES: 80 G/L.
- e. CONTACT ADHESIVES: 80 G/L.
- f. PLASTIC CEMENT WELDING COMPOUNDS: 350 G/L.
- g. PVC WELDING COMPOUNDS: 510 G/L.
- h. OTHER ADHESIVES: 250 G/L.
- i. SINGLE-PLY ROOF MEMBRANE SEALANTS: 450 G/L.
- j. NONMEMBRANE ROOF SEALANTS: 300 G/L.
- k. SEALANT PRIMERS FOR NONPOROUS SUBSTRATES: 250 G/L.
- l. SEALANT PRIMERS FOR POROUS SUBSTRATES: 775 G/L.

- B. SHEET FLASHING: MANUFACTURER'S STANDARD SHEET FLASHING OF SAME MATERIAL, TYPE, REINFORCEMENT, THICKNESS, AND COLOR AS PVC SHEET MEMBRANE.
- C. BONDING ADHESIVE: MANUFACTURER'S STANDARD SOLVENT-BASED BONDING ADHESIVE FOR MEMBRANE, AND SOLVENT-BASED BONDING ADHESIVE FOR BASE FLASHINGS.
- D. METAL TERMINATION BARS: MANUFACTURER'S STANDARD PREDRILLED STAINLESS-STEEL OR ALUMINUM BARS, APPROXIMATELY 1 BY 1/8 INCH (25 BY 3 MM) THICK; WITH ANCHORS.
- E. METAL BATTENS: MANUFACTURER'S STANDARD ALUMINUM-ZINC-ALLOY-COATED OR ZINC-COATED STEEL SHEET, APPROXIMATELY 1 INCH (25 MM) WIDE BY 0.05 INCH (1.3 MM) THICK, PREPUNCHED.
- F. FASTENERS: FACTORY-COATED STEEL FASTENERS AND METAL OR PLASTIC PLATES MEETING CORROSION-RESISTANCE PROVISIONS IN FMG 4470, DESIGNED FOR FASTENING MEMBRANE TO SUBSTRATE, AND ACCEPTABLE TO MEMBRANE ROOFING SYSTEM MANUFACTURER.
- G. MISCELLANEOUS ACCESSORIES: PROVIDE POURABLE SEALERS, PREFORMED CONE AND VENT SHEET FLASHINGS, PREFORMED INSIDE AND OUTSIDE CORNER SHEET FLASHINGS, T-JOINT COVERS, TERMINATION REGLETS, COVER STRIPS, SLIP SHEET, AND OTHER ACCESSORIES.

- 2.4 ROOF INSULATION
- A. EXTRUDED-POLYSTYRENE BOARD INSULATION: ASTM C 578, TYPE IV, 1.6-LB/CU. FT. (26-KG/CU. M) MINIMUM DENSITY, SQUARE EDGED.
- B. TAPERED INSULATION: PROVIDE FACTORY-TAPERED INSULATION BOARDS FABRICATED TO SLOPE OF 1/4 INCH PER 12 INCHES (1:48), UNLESS OTHERWISE INDICATED.
- C. PROVIDE PREFORMED SADDLES, CRICKETS, TAPERED EDGE STRIPS, AND OTHER INSULATION SHAPES WHERE INDICATED FOR SLOPING TO DRAIN. FABRICATE TO SLOPES INDICATED.

- 2.5 INSULATION ACCESSORIES
- A. FASTENERS: FACTORY-COATED STEEL FASTENERS AND METAL OR PLASTIC PLATES MEETING CORROSION-RESISTANCE PROVISIONS IN FMG 4470, DESIGNED FOR FASTENING ROOF INSULATION TO SUBSTRATE, AND ACCEPTABLE TO ROOFING SYSTEM MANUFACTURER.
- B. COLD FLUID-APPLIED ADHESIVE: MANUFACTURER'S STANDARD COLD FLUID-APPLIED ADHESIVE FORMULATED TO ADHERE ROOF INSULATION TO SUBSTRATE.
- C. COVER BOARD: ASTM C 208, TYPE II, GRADE 2, CELLULOSIC-FIBER INSULATION BOARD, 1/2 INCH (13 MM) THICK.
- 2.6 WALKWAYS
- A. FLEXIBLE WALKWAYS: FACTORY-FORMED, NONPOROUS, HEAVY-DUTY, SOLID-RUBBER, SLIP-RESISTING, SURFACE-TEXTURED WALKWAY PADS OR ROLLS, APPROXIMATELY 3/16 INCH (5 MM) THICK, AND ACCEPTABLE TO MEMBRANE ROOFING SYSTEM MANUFACTURER.

PART 3 - EXECUTION

1. SUBSTRATE BOARD INSTALLATION
- A. INSTALL SUBSTRATE BOARD WITH LONG JOINTS IN CONTINUOUS STRAIGHT LINES, PERPENDICULAR TO ROOF SLOPES WITH END JOINTS STAGGERED BETWEEN ROWS. TIGHTLY BUTT SUBSTRATE BOARDS TOGETHER.
1. FASTEN SUBSTRATE BOARD TO TOP FLANGES OF STEEL DECK ACCORDING TO MEMBRANE ROOFING SYSTEM MANUFACTURER'S WRITTEN INSTRUCTIONS.

- 3.2 INSULATION INSTALLATION
- A. COORDINATE INSTALLING MEMBRANE ROOFING SYSTEM COMPONENTS SO INSULATION IS NOT EXPOSED TO PRECIPITATION OR LEFT EXPOSED AT THE END OF THE WORKDAY.
- B. COMPLY WITH MEMBRANE ROOFING SYSTEM MANUFACTURER'S WRITTEN INSTRUCTIONS FOR INSTALLING ROOF INSULATION.
- C. INSTALL TAPERED INSULATION UNDER AREA OF ROOFING TO CONFORM TO SLOPES INDICATED.
- D. INSTALL ONE OR MORE LAYERS OF INSULATION UNDER AREA OF ROOFING TO ACHIEVE REQUIRED THICKNESS. WHERE OVERALL INSULATION THICKNESS IS 2 INCHES (50 MM) OR GREATER, INSTALL 2 OR MORE LAYERS WITH JOINTS OF EACH SUCCEEDING LAYER STAGGERED FROM JOINTS OF PREVIOUS LAYER A MINIMUM OF 6 INCHES (150 MM) IN EACH DIRECTION.
- E. MECHANICALLY FASTENED INSULATION: INSTALL EACH LAYER OF INSULATION AND SECURE TO DECK USING MECHANICAL FASTENERS SPECIFICALLY DESIGNED AND SIZED FOR FASTENING SPECIFIED BOARD-TYPE ROOF INSULATION TO DECK TYPE.
1. FASTEN INSULATION TO RESIST UPLIFT PRESSURE AT CORNERS, PERIMETER, AND FIELD OF ROOF.
- F. INSTALL COVER BOARDS OVER INSULATION WITH LONG JOINTS IN CONTINUOUS STRAIGHT LINES WITH END JOINTS STAGGERED BETWEEN ROWS. LOOSELY BUTT COVER BOARDS TOGETHER AND FASTEN TO ROOF DECK.
1. FASTEN TO RESIST UPLIFT PRESSURE AT CORNERS, PERIMETER, AND FIELD OF ROOF.

- 3.3 MECHANICALLY FASTENED ROOFING MEMBRANE INSTALLATION
- A. INSTALL ROOFING MEMBRANE OVER AREA TO RECEIVE ROOFING ACCORDING TO ROOFING SYSTEM MANUFACTURER'S WRITTEN INSTRUCTIONS. UNROLL ROOFING MEMBRANE AND ALLOW TO RELAX BEFORE INSTALLING.
1. INSTALL SHEET ACCORDING TO ASTM D 5082.
- B. MECHANICALLY OR ADHESIVELY FASTEN ROOFING MEMBRANE SECURELY AT TERMINATIONS, PENETRATIONS, AND PERIMETER OF ROOFING.
- C. SEAMS: CLEAN SEAM AREAS, OVERLAP ROOFING MEMBRANE, AND HOT-AIR WELD SIDE AND END LAPS OF ROOFING MEMBRANE ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS TO ENSURE A WATERTIGHT SEAM INSTALLATION.
1. REPAIR TEARS, VOIDS, AND LAPPED SEAMS IN ROOFING MEMBRANE THAT DOES NOT MEET REQUIREMENTS.
- D. IN-SPUCE ATTACHMENT: SECURE ONE EDGE OF ROOFING MEMBRANE USING FASTENING PLATES OR METAL BATTENS CENTERED WITHIN MEMBRANE SPICE AND MECHANICALLY FASTEN ROOFING MEMBRANE TO ROOF DECK. FIELD-SPICE SEAM.
- E. THROUGH-MEMBRANE ATTACHMENT: SECURE ROOFING MEMBRANE USING FASTENING PLATES OR METAL BATTENS AND MECHANICALLY FASTEN ROOFING MEMBRANE TO ROOF DECK. COVER BATTENS AND FASTENERS WITH A CONTINUOUS COVER STRIP.

- 3.4 BASE FLASHING INSTALLATION
- A. INSTALL SHEET FLASHINGS AND PREFORMED FLASHING ACCESSORIES AND ADHERE TO SUBSTRATES ACCORDING TO MEMBRANE ROOFING SYSTEM MANUFACTURER'S WRITTEN INSTRUCTIONS.
- B. APPLY SOLVENT-BASED BONDING ADHESIVE TO SUBSTRATE AND UNDERSIDE OF SHEET FLASHING AT REQUIRED RATE AND ALLOW TO PARTIALLY DRY. DO NOT APPLY BONDING ADHESIVE TO SEAM AREA OF FLASHING.
- C. FLASH PENETRATIONS AND FIELD-FORMED INSIDE AND OUTSIDE CORNERS WITH SHEET FLASHING.
- D. CLEAN SEAM AREAS AND OVERLAP AND FIRMLY ROLL SHEET FLASHINGS INTO THE ADHESIVE. WELD SIDE AND END LAPS TO ENSURE A WATERTIGHT SEAM INSTALLATION.
- E. TERMINATE AND SEAL TOP OF SHEET FLASHINGS AND MECHANICALLY ANCHOR TO SUBSTRATE THROUGH TERMINATION BARS.

- 3.5 WALKWAY INSTALLATION
- A. FLEXIBLE WALKWAYS: INSTALL WALKWAY PRODUCTS IN LOCATIONS INDICATED. ADHERE WALKWAY PRODUCTS TO SUBSTRATE WITH COMPATIBLE ADHESIVE ACCORDING TO ROOFING SYSTEM MANUFACTURER'S WRITTEN INSTRUCTIONS.
- 3.6 FIELD QUALITY CONTROL
- A. TESTING AGENCY: OWNER WILL ENGAGE A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY TO PERFORM ROOF TESTS AND INSPECTIONS AND TO PREPARE TEST REPORTS.
- B. FINAL ROOF INSPECTION: ARRANGE FOR ROOFING SYSTEM MANUFACTURER'S TECHNICAL PERSONNEL TO INSPECT ROOFING INSTALLATION ON COMPLETION AND SUBMIT REPORT TO ARCHITECT.
- C. REPAIR OR REMOVE AND REPLACE COMPONENTS OF MEMBRANE ROOFING SYSTEM WHERE TEST RESULTS OR INSPECTIONS INDICATE THAT THEY DO NOT COMPLY WITH SPECIFIED REQUIREMENTS.

SECTION 076100 - SHEET METAL ROOFING

PART 1 - GENERAL

1.1 SUMMARY

- A. SECTION INCLUDES:
1. STANDING-SEAM METAL ROOFING.

1.2 PERFORMANCE REQUIREMENTS

- A. WIND-UPLIFT RESISTANCE: CAPABLE OF PRODUCING SHEET METAL ROOFING ASSEMBLIES THAT COMPLY WITH UL 580 FOR CLASS 90 WIND-UPLIFT RESISTANCE.

1.3 SUBMITTALS

- A. SHOP DRAWINGS: SHOW INSTALLATION LAYOUT OF SHEET METAL ROOFING, INCLUDING PLANS, ELEVATIONS, EXPANSION JOINT LOCATIONS, AND KEYED DETAILS. DISTINGUISH BETWEEN SHOP- AND FIELD-ASSEMBLED WORK.
1. INCLUDE DETAILS FOR FORMING, JOINING, AND SECURING SHEET METAL ROOFING, INCLUDING PATTERN OF SEAMS, TERMINATION POINTS, FIXED POINTS, EXPANSION JOINTS, ROOF PENETRATIONS, EDGE CONDITIONS, SPECIAL CONDITIONS, CONNECTIONS TO ADJOINING WORK, AND DETAILS OF ACCESSORY ITEMS.
- B. SAMPLES: FOR EACH EXPOSED PRODUCT AND FOR EACH FINISH SPECIFIED.
- C. PORTABLE ROLL-FORMING EQUIPMENT CERTIFICATE: ISSUED BY UL FOR EQUIPMENT MANUFACTURER'S PORTABLE ROLL-FORMING EQUIPMENT CAPABLE OF PRODUCING PANELS THAT COMPLY WITH UL REQUIREMENTS.

1.4 QUALITY ASSURANCE

- A. INSTALLER QUALIFICATIONS: FABRICATOR OF SHEET METAL ROOFING.
- B. ROLL-FORMED SHEET METAL ROOFING FABRICATOR QUALIFICATIONS: AN AUTHORIZED REPRESENTATIVE OF ROLL-FORMED SHEET METAL ROOFING MANUFACTURER FOR FABRICATION AND INSTALLATION OF UNITS.
- C. SHEET METAL ROOFING STANDARD: COMPLY WITH SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL".

1.5 WARRANTY

- A. SPECIAL WARRANTY ON FINISHES: MANUFACTURER'S STANDARD FORM IN WHICH MANUFACTURER AGREES TO REPAIR FINISH OR REPLACE SHEET METAL ROOFING THAT SHOWS EVIDENCE OF DETERIORATION OF FACTORY-APPLIED FINISHES WITHIN SPECIFIED WARRANTY PERIOD.
1. FLUOROPOLYME FINISH WARRANTY PERIOD: 20 YEARS FROM DATE OF SUBSTANTIAL COMPLETION.
- B. SPECIAL INSTALLER'S WARRANTY: SPECIFIED FORM IN WHICH ROOFING INSTALLER AGREES TO REPAIR OR REPLACE COMPONENTS OF CUSTOM- FABRICATED SHEET METAL ROOFING THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN TWO YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

PART 2 - PRODUCTS

- 2.1 ROOFING SHEET METALS
- A. MANUFACTURERS AND PRODUCTS:
1. BERRIDGE MANUFACTURING CO.
- B. METALLIC-COATED STEEL SHEET: RESTRICTED FLATNESS STEEL SHEET, METALLIC COATED BY THE HOT-DIP PROCESS AND PREPAINTED BY THE COIL-COATING PROCESS TO COMPLY WITH ASTM A 755/A 755M.
1. ZINC-COATED (GALVANIZED) STEEL SHEET: ASTM A 653/A 653M, G90 (Z275) COATING DESIGNATION; STRUCTURAL QUALITY.
2. SURFACE: SMOOTH, FLAT FINISH.
3. THICKNESS: 24 GAUGE, UNLESS OTHERWISE INDICATED.
4. EXPOSED FINISHES:
- a. HIGH-PERFORMANCE ORGANIC FINISH: THREE-COAT WITH FLUOROPOLYMER COATS CONTAINING NOT LESS THAN 70 PERCENT POLYVINYLIDENE FLUORIDE RESIN BY WEIGHT; COMPLYING WITH PHYSICAL PROPERTIES AND COATING PERFORMANCE REQUIREMENTS OF AAMA 2604, EXCEPT AS MODIFIED BELOW:
- 1) HUMIDITY RESISTANCE: 2000 HOURS.
- 2) WATER RESISTANCE: 2000 HOURS.
- 3) COLOR: AS INDICATED ON DRAWINGS.

2.2 UNDERLAYMENT MATERIALS

- A. POLYETHYLENE SHEET: 6-MIL- (0.15-MM-) THICK POLYETHYLENE SHEET COMPLYING WITH ASTM D 4397.
- B. FELTS: ASTM D 226, TYPE II (NO. 30), ASPHALT-SATURATED ORGANIC FELTS.
1. SELF-ADHERING, HIGH-TEMPERATURE SHEET: MINIMUM 30 TO 40 MILS (0.76 TO 1.0 MM) THICK, CONSISTING OF SLIP-RESISTING POLYETHYLENE-FILM TOP SURFACE LAMINATED TO LAYER OF BUTYL OR SBS-MODIFIED ASPHALT ADHESIVE, WITH RELEASE-PAPER BACKING; COLD APPLIED.
- C. SLIP SHEET: BUILDING PAPER, 3-LB/100 SQ. FT. (0.16-KG/SQ. M) MINIMUM, ROSIN SIZED.

2.3 MISCELLANEOUS MATERIALS

- A. FASTENERS: SELF-TAPPING SCREWS, SELF-LOCKING RIVETS AND BOLTS AND OTHER SUITABLE

FASTENERS DESIGNED TO WITHSTAND DESIGN LOADS.

1. EXPOSED FASTENERS: HEADS MATCHING COLOR OF SHEET METAL ROOFING USING PLASTIC CAPS OR FACTORY-APPLIED COATING.
2. FASTENERS FOR FLASHING AND TRIM: BLIND FASTENERS OR SELF- DRILLING SCREWS WITH HEX- WASHER HEAD.
3. BLIND FASTENERS: HIGH-STRENGTH ALUMINUM OR STAINLESS- STEEL RIVETS.
- B. SEALING TAPE: PRESSURE-SENSITIVE, 100 PERCENT SOLIDS, POLYISOBUTYLENE COMPOUND SEALING TAPE WITH RELEASE-PAPER BACKING. PROVIDE PERMANENTLY ELASTIC, NONSAG, NONTXOIC, NONSTAINING TAPE.
- C. ELASTOMERIC JOINT SEALANT: ASTM C 920, OF BASE POLYMER, TYPE, GRADE, CLASS, AND USE CLASSIFICATIONS REQUIRED TO PRODUCE JOINTS IN SHEET METAL ROOFING AND REMAIN WATERTIGHT.
- D. EXPANSION JOINT SEALANT: FOR HOOKED-TYPE EXPANSION JOINTS, WHICH MUST BE FREE TO MOVE, PROVIDE NONSETTING, NONHARDENING, NONMIGRATING, HEAVY-BODIED POLYISOBUTYLENE SEALANT.
- E. BITUMINOUS COATING: COLD-APPLIED ASPHALT MASTIC, SSPC-PAINT 12, COMPOUNDED FOR 15-MIL (0.4-MM) DRY FILM THICKNESS PER COAT.

2.4 ACCESSORIES

- A. SHEET METAL ACCESSORIES: PROVIDE COMPONENTS REQUIRED FOR A COMPLETE SHEET METAL ROOFING ASSEMBLY INCLUDING TRIM, COPINGS, FASCIAE, CORNER UNITS, CLIPS, FLASHINGS, SEALANTS, GASKETS, FILLERS, METAL CLOSURES, CLOSURE STRIPS, AND SIMILAR ITEMS. MATCH MATERIAL AND FINISH OF SHEET METAL ROOFING UNLESS OTHERWISE INDICATED.
1. CLEATS: FOR MECHANICALLY SEAMING INTO JOINTS AND FORMED FROM THE FOLLOWING MATERIALS:
- a. METALLIC-COATED STEEL ROOFING: 0.0250-INCH- (0.65-MM-) THICK STAINLESS STEEL OR NYLON-COATED ALUMINUM SHEET.
2. CLIPS: MINIMUM 0.0625-INCH- (1.6-MM-) THICK, STAINLESS-STEEL PANEL CLIPS DESIGNED TO WITHSTAND NEGATIVE-LOAD REQUIREMENTS.
3. CLOSURES: CLOSED-CELL, EXPANDED, CELLULAR, RUBBER OR CROSSLINKED, POLYOLEFIN FOAM OR CLOSED-CELL LAMINATED POLYETHYLENE; MINIMUM 1-INCH- (25-MM-) THICK, FLEXIBLE-CLOSURE STRIPS; CUT OR PREMOLED TO MATCH SHEET METAL ROOFING PROFILE. PROVIDE CLOSURE STRIPS WHERE INDICATED OR NECESSARY TO ENSURE WEATERTIGHT CONSTRUCTION.
4. FLASHING AND TRIM: FORMED FROM 0.0179 INCH (0.45 MM) THICK, METALLIC COATED STEEL SHEET. PROVIDE FLASHING AND TRIM AS REQUIRED TO SEAL AGAINST WEATHER AND TO PROVIDE FINISHED APPEARANCE. LOCATIONS INCLUDE, BUT ARE NOT LIMITED TO, EAVES, RAKES, CORNERS, BASES, FRAMED OPENINGS, RIDGES, FASCIAE, AND FILLERS. FINISH FLASHING AND TRIM WITH SAME FINISH SYSTEM AS ADJACENT SHEET METAL ROOFING.

2.5 FABRICATION

- A. GENERAL: CUSTOM FABRICATE SHEET METAL ROOFING TO COMPLY WITH DETAILS SHOWN AND RECOMMENDATIONS IN SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL" THAT APPLY TO THE DESIGN, DIMENSIONS (PANEL WIDTH AND SEAM HEIGHT), GEOMETRY, METAL THICKNESS, AND OTHER CHARACTERISTICS OF INSTALLATION INDICATED. FABRICATE SHEET METAL ROOFING AND ACCESSORIES AT THE SHOP TO GREATEST EXTENT POSSIBLE.
1. STANDING-SEAM ROOFING: FORM STANDING-SEAM PANELS WITH FINISHED SEAM HEIGHT OF 1-1/2 INCHES (38 MM).
- B. GENERAL: FABRICATE ROLL-FORMED SHEET METAL ROOFING PANELS TO COMPLY WITH DETAILS SHOWN AND ROLL-FORMED SHEET METAL ROOFING MANUFACTURER'S WRITTEN INSTRUCTIONS.
- C. FABRICATE SHEET METAL ROOFING TO ALLOW FOR EXPANSION IN RUNNING WORK SUFFICIENT TO PREVENT LEAKAGE, DAMAGE, AND DETEIORATION OF THE WORK. FORM EXPOSED SHEET METAL WORK TO FIT SUBSTRATES WITHOUT EXCESSIVE OIL CANNING, BUCKLING, AND TOOL MARKS, TRUE TO LINE AND LEVELS INDICATED, AND WITH EXPOSED EDGES FOLDED BACK TO FORM HEMS.
1. LAY OUT SHEET METAL ROOFING SO CROSS SEAMS, WHEN REQUIRED, ARE MADE IN DIRECTION OF FLOW WITH HIGHER PANS OVERLAPPING LOWER PANS. STAGGER CROSS SEAMS.
2. FOLD AND CLEAT EAVES AND TRANSVERSE SEAMS IN THE SHOP.
3. FORM AND FABRICATE SHEETS, SEAMS, STRIPS, CLEATS, VALLEYS, RIDGES, EDGE TREATMENTS, INTEGRAL FLASHINGS, AND OTHER COMPONENTS OF METAL ROOFING TO PROFILES, PATTERNS, AND DRAINAGE ARRANGEMENTS SHOWN AND AS REQUIRED FOR LEAKPROOF CONSTRUCTION.
- D. METAL PROTECTION: WHERE DISSIMILAR METALS WILL CONTACT EACH OTHER, PROTECT AGAINST GALVANIC ACTION BY PAINTING CONTACT SURFACES WITH BITUMINOUS COATING, BY APPLYING SELF-ADHERING SHEET UNDERLAYMENT TO EACH CONTACT SURFACE, OR BY OTHER PERMANENT SEPARATION AS RECOMMENDED BY FABRICATOR OF SHEET METAL ROOFING OR MANUFACTURERS OF THE METALS IN CONTACT.
- E. SHEET METAL ACCESSORIES: CUSTOM FABRICATE FLASHINGS AND TRIM TO COMPLY WITH RECOMMENDATIONS IN SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL" THAT APPLY TO DESIGN, DIMENSIONS, METAL, AND OTHER CHARACTERISTICS OF ITEM INDICATED. OBTAIN FIELD MEASUREMENTS FOR ACCURATE FIT BEFORE SHOP FABRICATION.

PART 3 - EXECUTION

3.1 PREPARATION

- A. INSTALL FLASHINGS AND OTHER SHEET METAL TO COMPLY WITH REQUIREMENTS SPECIFIED IN DIVISION 7 SECTION "SHEET METAL FLASHING AND TRIM."

3.2 UNDERLAYMENT INSTALLATION

- A. FELT UNDERLAYMENT: INSTALL FELT UNDERLAYMENT ON ROOF SHEATHING UNDER SHEET METAL ROOFING. USE ADHESIVE FOR TEMPORARY ANCHORAGE. APPLY AT LOCATIONS INDICATED ON DRAWINGS, IN SHINGLE FASHION TO SHED WATER, WITH LAPPED JOINTS OF NOT LESS THAN 2 INCHES (50 MM).
- B. SELF-ADHERING SHEET UNDERLAYMENT: INSTALL SELF-ADHERING SHEET UNDERLAYMENT, WRINKLE FREE, ON ROOF SHEATHING UNDER SHEET METAL ROOFING. COMPLY WITH TEMPERATURE RESTRICTIONS OF UNDERLAYMENT MANUFACTURER FOR INSTALLATION; USE PRIMER RATHER THAN NAILS FOR INSTALLING UNDERLAYMENT AT LOW TEMPERATURES. APPLY OVER ENTIRE ROOF, IN SHINGLE FASHION TO SHED WATER, WITH END LAPS OF NOT LESS THAN 6 INCHES (150 MM) STAGGERED 24 INCHES (600 MM) BETWEEN COURSES. OVERLAP SIDE EDGES NOT LESS THAN 3-1/2 INCHES (90 MM). ROLL LAPS WITH ROLLER. COVER UNDERLAYMENT WITHIN 14 DAYS.
1. INSTALL FOR A MINIMUM OF 36" AT PERIMETER AND WHERE INDICATED ON DRAWINGS.
- C. APPLY SLIP SHEET BEFORE INSTALLING SHEET METAL ROOFING.

3.3 INSTALLATION, GENERAL

- A. GENERAL: ANCHOR SHEET METAL ROOFING AND OTHER COMPONENTS OF THE WORK SECURELY IN PLACE, WITH PROVISIONS FOR THERMAL AND STRUCTURAL MOVEMENT. INSTALL FASTENERS, SOLDER, WELDING RODS, PROTECTIVE COATINGS, SEPARATORS, SEALANTS, AND OTHER MISCELLANEOUS ITEMS AS REQUIRED FOR A COMPLETE ROOFING SYSTEM AND AS RECOMMENDED BY FABRICATOR FOR SHEET METAL ROOFING.
1. FIELD CUTTING OF SHEET METAL ROOFING BY TORCH IS NOT PERMITTED.
2. RIGIDLY FASTEN EAVE END OF SHEET METAL ROOFING AND ALLOW RIDGE AND FREE MOVEMENT DUE TO THERMAL EXPANSION AND CONTRACTION. PREDRILL ROOFING.
3. PROVIDE METAL CLOSURES AT PEAKS AND EACH SIDE OF RIDGE CAPS.
4. FLASH AND SEAL SHEET METAL ROOFING WITH WEATHER CLOSURES AT EAVES, RAKES, AND PERIMETER OF ALL OPENINGS. FASTEN WITH SELF-TAPPING SCREWS.
5. LOCATE ROOFING SPLICES OVER, BUT NOT ATTACHED TO, STRUCTURAL SUPPORTS. STAGGER ROOFING SPLICES AND END LAPS TO AVOID A FOUR-PANEL LAP SPLICE CONDITION.
6. LAP METAL FLASHING OVER SHEET METAL ROOFING TO ALLOW MOISTURE TO RUN OVER AND OFF THE MATERIAL.
- B. FASTENERS: USE FASTENERS OF SIZES THAT WILL NOT PENETRATE COMPLETELY THROUGH SUBSTRATE.
1. STEEL ROOFING: USE STAINLESS-STEEL FASTENERS.
- C. METAL PROTECTION: WHERE DISSIMILAR METALS WILL CONTACT EACH OTHER OR CORROSIVE SUBSTRATES, PROTECT AGAINST GALVANIC ACTION BY PAINTING CONTACT SURFACES WITH BITUMINOUS COATING, BY APPLYING RUBBERIZED-ASPHALT UNDERLAYMENT TO EACH CONTACT SURFACE, OR BY OTHER PERMANENT SEPARATION AS RECOMMENDED BY FABRICATOR OF SHEET METAL ROOFING OR MANUFACTURERS OF DISSIMILAR METALS.
- D. CONCEAL FASTENERS AND EXPANSION PROVISIONS WHERE POSSIBLE IN EXPOSED WORK AND LOCATE TO MINIMIZE POSSIBILITY OF LEAKAGE. COVER AND SEAL FASTENERS AND

ANCHORS AS REQUIRED FOR A TIGHT INSTALLATION.

3.4 ON-SITE, ROLL-FORMED SHEET METAL ROOFING INSTALLATION

- A. GENERAL: INSTALL ON-SITE, ROLL-FORMED SHEET METAL ROOFING FABRICATED FROM UL-CERTIFIED EQUIPMENT TO COMPLY WITH EQUIPMENT MANUFACTURER'S WRITTEN INSTRUCTIONS FOR UL WIND UPLIFT RESISTANCE CLASS INDICATED. PROVIDE SHEET METAL ROOFING OF FULL LENGTH FROM EAVE TO RIDGE UNLESS OTHERWISE RESTRICTED BY ON-SITE OR SHIPPING LIMITATIONS.
- B. STANDING-SEAM SHEET METAL ROOFING: FASTEN SHEET METAL ROOFING TO SUPPORTS WITH CONCEALED CLIPS AT EACH STANDING-SEAM JOINT AT LOCATION, AT SPACING, AND WITH FASTENERS RECOMMENDED BY MANUFACTURER OF PORTABLE ROLL-FORMING EQUIPMENT.
1. INSTALL CLIPS TO SUBSTRATE WITH SELF-TAPPING FASTENERS.
2. BEFORE PANELS ARE JOINED, APPLY CONTINUOUS BEAD OF SEALANT TO TOP OF FLANGE OF LOWER PANEL.
3. SEAMED JOINT: CRIMP STANDING SEAMS WITH MANUFACTURER-APPROVED MOTORIZED SEAMER TOOL SO CLEAT, SHEET METAL ROOFING, AND FIELD-APPLIED SEALANT ARE COMPLETELY ENGAGED.

3.5 ACCESSORY INSTALLATION

- A. GENERAL: INSTALL ACCESSORIES WITH POSITIVE ANCHORAGE TO BUILDING AND WEATERTIGHT MOUNTING AND PROVIDE FOR THERMAL EXPANSION. COORDINATE INSTALLATION WITH FLASHINGS AND OTHER COMPONENTS.
1. INSTALL COMPONENTS REQUIRED FOR A COMPLETE SHEET METAL ROOFING ASSEMBLY INCLUDING TRIM, COPINGS, SEAM COVERS, FLASHINGS, SEALANTS, GASKETS, FILLERS, METAL CLOSURES, CLOSURE STRIPS, AND SIMILAR ITEMS.
2. COMPLY WITH PERFORMANCE REQUIREMENTS, MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS, AND SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL." PROVIDE CONCEALED FASTENERS WHERE POSSIBLE AND SET UNITS TRUE TO LINE AND LEVEL AS INDICATED. INSTALL WORK WITH LAPS, JOINTS, AND SEAMS THAT WILL BE PERMANENTLY WATERTIGHT AND WEATHER RESISTANT.
- 3.6 CLEANING AND PROTECTION
- A. REMOVE TEMPORARY PROTECTIVE COVERINGS AND STRIPPABLE FILMS, IF ANY, AS SHEET METAL ROOFING IS INSTALLED. ON COMPLETION OF SHEET METAL ROOFING INSTALLATION, CLEAN FINISHED SURFACES, INCLUDING REMOVING UNUSED FASTENERS, METAL FILINGS, POP RIVET STEMS, AND PIECES OF FLASHING. MAINTAIN IN A CLEAN CONDITION DURING CONSTRUCTION.

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

- A. SECTION INCLUDES:
1. FORMED LOW-SLOPE ROOF SHEET METAL FABRICATIONS.
2. FORMED WALL SHEET METAL FABRICATIONS.

1.2 SUBMITTALS

- A. SHOP DRAWINGS: SHOW INSTALLATION LAYOUTS OF SHEET METAL FLASHING AND TRIM, INCLUDING PLANS, ELEVATIONS, EXPANSION JOINT LOCATIONS, AND KEYED DETAILS. DISTINGUISH BETWEEN SHOP- AND FIELD-ASSEMBLED WORK.
1. INCLUDE DETAILS FOR FORMING, JOINING, SUPPORTING, AND SECURING SHEET METAL FLASHING AND TRIM, INCLUDING PATTERN OF SEAMS, TERMINATION POINTS, FIXED POINTS, EXPANSION JOINTS, EXPANSION-JOINT COVERS, EDGE CONDITIONS, SPECIAL CONDITIONS, AND CONNECTIONS TO ADJOINING WORK.
- B. SAMPLES: FOR EACH EXPOSED PRODUCT AND FOR EACH FINISH SPECIFIED.
- 1.3 QUALITY ASSURANCE
- A. SHEET METAL FLASHING AND TRIM STANDARD: COMPLY WITH SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL" UNLESS MORE STRINGENT REQUIREMENTS ARE SPECIFIED OR SHOWN ON DRAWINGS.

PART 2 - PRODUCTS

2.1 SHEET METALS

- A. ZINC-COATED (GALVANIZED) STEEL SHEET: ASTM A 653 G90 COATING DESIGNATION; STRUCTURAL QUALITY, MILL PHOSPHATIZED FOR FIELD PAINTING.
1. ZINC-COATED (GALVANIZED) STEEL SHEET: ASTM A 653 G90 COATING DESIGNATION; STRUCTURAL QUALITY.
2. EXPOSED FINISHES: APPLY THE FOLLOWING COIL COATINGS:
- a. HIGH-PERFORMANCE ORGANIC FINISH: THREE-COAT THERMOCURRED SYSTEM CONTAINING NOT LESS THAN 70 PERCENT POLYVINYLIDENE FLUORIDE RESIN BY WEIGHT; COMPLYING WITH PHYSICAL PROPERTIES AND COATING PERFORMANCE REQUIREMENTS OF AAMA 2604, EXCEPT AS MODIFIED FOR BELOW:
- 1) HUMIDITY AND SALT SPRAY RESISTANCE: 2000 HOURS
- 2) COLOR: AS SELECTED BY OWNER'S REPRESENTATIVE FROM MANUFACTURER'S FULL RANGE.
- B. LEAD SHEET: ASTM B 749, TYPE L51121, COPPER-BEARING LEAD SHEET.

2.2 MISCELLANEOUS MATERIALS

- A. GENERAL: PROVIDE MATERIALS AND TYPES OF FASTENERS, SOLDER, WELDING RODS, PROTECTIVE COATINGS, SEPARATORS, SEALANTS, AND OTHER MISCELLANEOUS ITEMS AS REQUIRED FOR COMPLETE SHEET METAL FLASHING AND TRIM INSTALLATION.
- B. FELT UNDERLAYMENT: ASTM D 226, TYPE II (NO. 30), ASPHALT-SATURATED ORGANIC FELT, NONPERFORATED.
1. SLIP SHEET: ROSIN-SIZED PAPER, MINIMUM 5 LB/100 SQ.FT.
- C. FASTENERS: WOOD SCREWS, ANNULAR THREADED NAILS, SELF-LOCKING RIVETS AND BOLTS, AND OTHER SUITABLE FASTENERS DESIGNED TO WITHSTAND DESIGN LOADS.
- a. EXPOSED FASTENERS: HEADS MATCHING COLOR OF SHEET METAL USING PLASTIC CAPS OR FACTORY-APPLIED COATING.
- b. FASTENERS FOR FLASHING AND TRIM: BLIND FASTENERS OR SELF-DRILLING SCREWS, GASKETED, WITH HEX WASHER HEAD.
- c. BLIND FASTENERS: HIGH-STRENGTH STAINLESS-STEEL RIVETS.
- d. MATCH FINISH OF MATERIAL BEING FASTENED.
- D. SEALING TAPE: PRESSURE-SENSITIVE, 100 PERCENT SOLIDS, POLYISOBUTYLENE COMPOUND SEALING TAPE WITH RELEASE-PAPER BACKING. PROVIDE PERMANENTLY ELASTIC, NONSAG, NONTXOIC, NONSTAINING TAPE.
- E. ELASTOMERIC SEALANT: ASTM C 920, ELASTOMERIC POLYMER SEALANT AS RECOMMENDED BY SHEET METAL MANUFACTURER AND FABRICATOR OF COMPONENTS BEING SEALED, COMPLYING WITH DIVISION 7 SECTION "JOINT SEALANTS", OF TYPE, GRADE, CLASS, AND USE CLASSIFICATIONS REQUIRED TO SEAL JOINTS IN SHEET METAL FLASHING AND TRIM AND REMAIN WATERTIGHT.
- F. BUTYL SEALANT: ASTM C 1311, SINGLE-COMPONENT, SOLVENT-RELEASE BUTYL RUBBER SEALANT; POLYISOBUTYLENE PLASTICIZED; HEAVY BODIED FOR HOOKED-TYPE EXPANSION JOINTS WITH LIMITED MOVEMENT.
- G. BITUMINOUS COATING: COLD-APPLIED ASPHALT MASTIC, SSPC-PAINT 12, COMPOUNDED FOR 15-MIL DRY FILM THICKNESS PER COAT.
- 2.3 REGLETS
- A. REGLETS: UNITS OF TYPE, MATERIAL, AND PROFILE INDICATED, FORMED TO PROVIDE SECURE INTERLOCKING OF SEPARATE REGLET AND COUNTERFLASHING PIECES, AND COMPATIBLE WITH FLASHING INDICATED WITH FACTORY-MITERED AND -WELDED CORNERS AND JUNCTIONS.
1. MATERIAL: GALVANIZED STEEL, 0.217 INCH THICK.

2.4 FABRICATION, GENERAL

- A. GENERAL: CUSTOM FABRICATE SHEET METAL FLASHING AND TRIM TO COMPLY WITH RECOMMENDATIONS IN SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL" THAT APPLY TO DESIGN, DIMENSIONS, METAL AND OTHER CHARACTERISTICS OF ITEM INDICATED. SHOP FABRICATE ITEMS WHERE PRACTICABLE. OBTAIN FIELD MEASUREMENTS FOR ACCURATE FIT BEFORE SHOP FABRICATION.
- B. FABRICATE SHEET METAL FLASHING AND TRIM WITHOUT EXCESSIVE OIL CANNING, BUCKLING, AND TOOL MARKS AND TRUE TO LINE AND LEVELS INDICATED, WITH EXPOSED EDGES FOLDED BACK TO FORM HEMS.
1. SEAMS: FABRICATE NONMOVING SEAMS IN ACCESSORIES WITH FLAT-LOCK SEAMS. TIN EDGES TO BE SEAMED, FORM SEAMS, AND SOLDER.
- C. SEALED JOINTS: FORM NONEXPANSION BUT MOVABLE JOINTS IN METAL TO ACCOMMODATE ELASTOMERIC SEALANT TO COMPLY WITH SMACNA RECOMMENDATIONS.
- D. EXPANSION PROVISIONS: WHERE LAPPED OR BAYONET-TYPE EXPANSION PROVISIONS IN THE WORK CANNOT BE USED, FORM EXPANSION JOINTS OF INTERMESHING HOOKED FLANGES, NOT LESS THAN 1 INCH (25 MM) DEEP, FILLED WITH ELASTOMERIC SEALANT CONCEALED WITHIN JOINTS.
- E. CONCEALED FASTENERS AND EXPANSION PROVISIONS WHERE POSSIBLE ON EXPOSED-TO-VIEW SHEET METAL FLASHING AND TRIM, UNLESS OTHERWISE INDICATED.
- F. FABRICATE CLEATS AND ATTACHMENT DEVICES FROM SAME MATERIAL AS ACCESSORY BEING ANCHORED OR FROM COMPATIBLE, NONCORROSIVE METAL, AND IN THICKNESS NOT LESS THAN THAT OF METAL BEING SECURED.

2.5 ROOF DRAINAGE SHEET METAL FABRICATIONS

- A. PARAPET SCUPPERS: FABRICATE SCUPPERS OF DIMENSIONS REQUIRED WITH CLOSURE FLANGE TRIM TO EXTERIOR, 4-INCH- (100-MM-) WIDE WALL FLANGES TO INTERIOR, AND BASE EXTENDING 4 INCHES (100 MM) BEYOND CANT OR TAPERED STRIP INTO FIELD OF ROOF. FASTEN GRAVEL GUARD ANGLES TO BASE OF SCUPPER.
- 2.6 LOW-SLOPE ROOF SHEET METAL FABRICATIONS
- A. ROOF-EDGE FLASHING (GRAVEL STOP) AND FASCIA CAP: FABRICATE IN MINIMUM 96-INCH- (2400-MM-) LONG, BUT NOT EXCEEDING 10-FOOT- (3-M-) LONG, SECTIONS. FURNISH WITH 6-INCH- (150-MM-) WIDE, JOINT COVER PLATES.
1. FABRICATE SCUPPERS FROM PREPAINTED, METALLIC-COATED STEEL: 0.0276 INCH THICK..
- B. BASE FLASHING: FABRICATE FROM THE FOLLOWING MATERIAL:
1. GALVANIZED STEEL: 0.0276 INCH THICK.
- C. COUNTERFLASHING AND FLASHING RECEIVERS: FABRICATE FROM THE FOLLOWING MATERIAL:
1. PREPAINTED, METALLIC-COATED STEEL: 0.0217 INCH THICK.
- D. ROOF-PENETRATION FLASHING: FABRICATE FROM THE FOLLOWING MATERIAL:
1. LEAD: 4.0 LB/SQ.FT., HARD TEMPERED.
- E. ROOF-DRAIN FLASHING: FABRICATE FROM THE FOLLOWING MATERIAL:
1. LEAD: 4.0 LB/SQ.FT., HARD TEMPERED.

PART 3 - EXECUTION

- 3.1 INSTALLATION, GENERAL
- A. GENERAL: ANCHOR SHEET METAL FLASHING AND TRIM AND OTHER COMPONENTS OF THE WORK SECURELY IN PLACE, WITH PROVISIONS FOR THERMAL AND STRUCTURAL MOVEMENT. USE FASTENERS, SOLDER, WELDING RODS, PROTECTIVE COATINGS, SEPARATORS, SEALANTS, AND OTHER MISCELLANEOUS ITEMS AS REQUIRED TO COMPLETE SHEET METAL FLASHING AND TRIM SYSTEM.
1. TORCH CUTTING OF SHEET METAL FLASHING AND TRIM IS NOT PERMITTED.
- B. METAL PROTECTION: WHERE DISSIMILAR METALS WILL CONTACT EACH OTHER OR CORROSIVE SUBSTRATES, PROTECT AGAINST GALVANIC ACTION BY PAINTING CONTACT SURFACES WITH BITUMINOUS COATING OR BY OTHER PERMANENT SEPARATION AS RECOMMENDED BY FABRICATOR MANUFACTURERS OF DISSIMILAR METALS.
- C. INSTALL EXPOSED SHEET METAL FLASHING AND TRIM WITHOUT EXCESSIVE OIL CANNING, BUCKLING, AND TOOL MARKS.
- D. INSTALL SHEET METAL FLASHING AND TRIM TRUE TO LINE AND LEVELS INDICATED. PROVIDE UNIFORM, NEAT SEAMS WITH MINIMUM EXPOSURE OF SOLDER, WELDS, AND ELASTOMERIC SEALANT.
- E. INSTALL SHEET METAL FLASHING AND TRIM TO FIT SUBSTRATES AND TO RESULT IN WATERTIGHT PERFORMANCE. VERIFY SHAPES AND DIMENSIONS OF SURFACES TO BE COVERED BEFORE FABRICATING SHEET METAL.
1. SPACE CLEATS NOT MORE THAN 12 INCHES APART. ANCHOR EACH CLEAT WITH TWO FASTENERS.
- F. EXPANSION PROVISIONS: PROVIDE FOR THERMAL EXPANSION OF EXPOSED FLASHING AND TRIM. SPACE MOVEMENT JOINTS AT A MAXIMUM OF 10 FEET (3 M) WITH NO JOINTS ALLOWED WITHIN 24 INCHES (600 MM) OF CORNER OR INTERSECTION. WHERE LAPPED OR BAYONET-TYPE EXPANSION PROVISIONS CANNOT BE USED OR WOULD NOT BE SUFFICIENTLY WATERTIGHT, FORM EXPANSION JOINTS OF INTERMESHING HOOKED FLANGES, NOT LESS THAN 1 INCH (25 MM) DEEP, FILLED WITH ELASTOMERIC SEALANT CONCEALED WITHIN JOINTS.
- G. FASTENERS: USE FASTENERS OF SIZES THAT WILL PENETRATE SUBSTRATE NOT LESS THAN 1-1/4 INCHES (32 MM) FOR NAILS AND NOT LESS THAN 3/4 INCH (19 MM) FOR WOOD SCREWS.
1. GALVANIZED OR PREPAINTED, METALLIC-COATED STEEL: USE STAINLESS-STEEL FASTENERS.
- H. SEAL JOINTS WITH ELASTOMERIC SEALANT AS REQUIRED FOR WATERTIGHT CONSTRUCTION.
- I. SOLDERED JOINTS: CLEAN SURFACES TO BE SOLDERED, REMOVING OILS AND FOREIGN MATTER. PRE-TIN EDGES OF SHEETS TO BE SOLDERED TO A WIDTH OF

- E. ROOF-PENETRATION FLASHING: COORDINATE INSTALLATION OF ROOF-PENETRATION FLASHING WITH INSTALLATION OF ROOFING AND OTHER ITEMS PENETRATING ROOF. INSTALL FLASHING AS FOLLOWS:
1. TURN LEAD FLASHING DOWN INSIDE VENT PIPING, BEING CAREFUL NOT TO BLOCK VENT PIPING WITH FLASHING.
2. SEAL WITH ELASTOMERIC SEALANT AND CLAMP FLASHING TO PIPES PENETRATING ROOF EXCEPT FOR LEAD FLASHING ON VENT PIPING.

SECTION 077200 - ROOF ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

- A. THIS SECTION INCLUDES THE FOLLOWING:

1. ROOF HATCHES.

1.2 SUBMITTALS

- A. PRODUCT DATA: FOR EACH TYPE OF ROOF ACCESSORY INDICATED.
- B. SHOP DRAWINGS: SHOW FABRICATION AND INSTALLATION DETAILS FOR ROOF ACCESSORIES.
- C. SAMPLES: FOR EACH TYPE OF EXPOSED FACTORY-APPLIED COLOR FINISH REQUIRED AND FOR EACH TYPE OF ROOF ACCESSORY INDICATED, PREPARED ON SAMPLES OF SIZE TO ADEQUATELY SHOW COLOR.

1.3 QUALITY ASSURANCE

- A. SHEET METAL STANDARD: COMPLY WITH SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL" DETAILS FOR FABRICATION OF UNITS, INCLUDING FLANGES AND CAP FLASHING TO COORDINATE WITH TYPE OF ROOFING INDICATED.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. AVAILABLE MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS. MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, MANUFACTURERS LISTED IN OTHER PART 2 ARTICLES.

2.2 METAL MATERIALS

- A. GALVANIZED STEEL SHEET: ASTM A 653/A 653M, G90 (Z275) COATED AND MILL PHOSPHATIZED FOR FIELD PAINTING.

2.3 ROOF HATCHES

- A. ROOF HATCHES: FABRICATE ROOF HATCHES WITH INSULATED DOUBLE-WALL LIDS AND INSULATED DOUBLE-WALL CURB FRAME WITH INTEGRAL DECK MOUNTING FLANGE AND LID FRAME COUNTERFLASHING. FABRICATE WITH WELDED OR MECHANICALLY FASTENED AND SEALED CORNER JOINTS. PROVIDE CONTINUOUS WEATERTIGHT PERIMETER GASKETING AND EQUIP WITH CORROSION-RESISTANT OR HOT-DIP GALVANIZED HARDWARE.
1. MANUFACTURERS:
- a. BILCO COMPANY (THE).
2. CURB AND LID MATERIAL: STAINLESS-STEEL SHEET, 0.078 INCH (1.98 MM) THICK.
- a. FINISH: MILL.
3. INSULATION: GLASS-FIBER OR POLYISOCYANURATE BOARD.
4. INTERIOR LID LINER: MANUFACTURER'S STANDARD METAL LINER OF SAME MATERIAL AND FINISH AS OUTER METAL LID.
5. EXTERIOR CURB LINER: MANUFACTURER'S STANDARD METAL LINER OF SAME MATERIAL AND FINISH AS METAL CURB.
6. FABRICATE UNITS TO MINIMUM HEIGHT OF 12 INCHES (300 MM), UNLESS OTHERWISE INDICATED.
7. SLOPING ROOFS: WHERE SLOPE OR ROOF DECK EXCEEDS 1:48, FABRICATE HATCH CURBS WITH HEIGHT CONSTANT.
8. HARDWARE: GALVANIZED STEEL OR STAINLESS-STEEL SPRING LATCH WITH TURN HANDLES, BUTT- OR PINTLE-TYPE HINGE SYSTEM, AND PADLOCK HASPS INSIDE AND OUTSIDE.
9. LADDER SAFETY POST: MANUFACTURER'S STANDARD LADDER SAFETY POST. POST TO LOCK IN PLACE ON FULL EXTENSION. PROVIDE RELEASE MECHANISM TO RETURN POST TO CLOSED POSITION.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. GENERAL: INSTALL ROOF ACCESSORIES ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS. ANCHOR ROOF ACCESSORIES SECURELY IN PLACE AND CAPABLE OF RESISTING FORCES SPECIFIED. USE FASTENERS, SEPARATORS, SEALANTS, AND OTHER MISCELLANEOUS ITEMS AS REQUIRED FOR COMPLETING ROOF ACCESSORY INSTALLATION. INSTALL ROOF ACCESSORIES TO RESIST EXPOSURE TO WEATHER WITHOUT FAILING, RATTLING, LEAKING, AND FASTENER DISENGAGEMENT.
- B. INSTALL ROOF ACCESSORIES TO FIT SUBSTRATES AND TO RESULT IN WATERTIGHT PERFORMANCE.
- C. METAL PROTECTION: WHERE DISSIMILAR METALS WILL CONTACT EACH OTHER OR CORROSIVE SUBSTRATES, PROTECT AGAINST GALVANIC ACTION BY PAINTING CONTACT SURFACES WITH BITUMINOUS COATING OR BY OTHER PERMANENT SEPARATION AS RECOMMENDED BY MANUFACTURER.
1. COAT CONCEALED SIDE OF UNCOATED ALUMINUM OR STAINLESS-STEEL ROOF ACCESSORIES WITH BITUMINOUS COATING WHERE IN CONTACT WITH WOOD, FERROUS METAL, OR CEMENTITIOUS CONSTRUCTION.
2. UNDERLAYMENT: WHERE INSTALLING EXPOSED-TO-VIEW COMPONENTS OF ROOF ACCESSORIES DIRECTLY ON CEMENTITIOUS OR WOOD SUBSTRATES, INSTALL A COURSE OF FELT UNDERLAYMENT AND COVER WITH A SLIP SHEET, OR INSTALL A COURSE OF POLYETHYLENE UNDERLAYMENT.
3. BED FLANGES IN THICK COAT OF ASPHALT ROOFING CEMENT WHERE REQUIRED BY ROOF ACCESSORY MANUFACTURERS FOR WATERPROOF PERFORMANCE.
- D. INSTALL ROOF ACCESSORIES LEVEL, PLUMB, TRUE TO LINE AND ELEVATION, AND WITHOUT WARPING, JOGS IN ALIGNMENT, EXCESSIVE OIL CANNING, BUCKLING, OR TOOL MARKS.
- E. SEAL JOINTS WITH ELASTOMERIC OR BUTYL SEALANT AS REQUIRED BY MANUFACTURER OF ROOF ACCESSORIES.

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

- A. THIS SECTION INCLUDES JOINT SEALANTS FOR THE FOLLOWING APPLICATIONS, INCLUDING THOSE SPECIFIED BY REFERENCE TO THIS SECTION:
1. EXTERIOR JOINTS IN VERTICAL SURFACES AND HORIZONTAL NONTRAFFIC SURFACES.
2. EXTERIOR JOINTS IN HORIZONTAL TRAFFIC SURFACES.
3. INTERIOR JOINTS IN VERTICAL SURFACES AND HORIZONTAL NONTRAFFIC SURFACES.
4. INTERIOR JOINTS IN HORIZONTAL TRAFFIC SURFACES.
- B. SEE DIVISION 32 SECTION "CONCRETE PAVING JOINT SEALANTS" FOR SEALING JOINTS IN PAVEMENTS, WALKWAYS, AND CURBING.
- C. SEE DIVISION 08 SECTION "GLAZING" FOR GLAZING SEALANTS.

1.2 PERFORMANCE REQUIREMENTS

- A. PROVIDE ELASTOMERIC JOINT SEALANTS THAT ESTABLISH AND MAINTAIN WATERTIGHT AND AIRTIGHT CONTINUOUS JOINT SEALS WITHOUT STAINING OR DETERIORATING JOINT SUBSTRATES.

- B. PROVIDE JOINT SEALANTS FOR INTERIOR APPLICATIONS THAT ESTABLISH AND MAINTAIN AIRTIGHT AND WATER-RESISTANT CONTINUOUS JOINT SEALS WITHOUT STAINING OR DETERIORATING JOINT SUBSTRATES.
- 1.3 SUBMITTALS
- A. PRODUCT DATA: FOR EACH JOINT-SEALANT PRODUCT INDICATED.
- B. SAMPLES: FOR EACH TYPE AND COLOR OF JOINT SEALANT REQUIRED, PROVIDE SAMPLES WITH JOINT SEALANTS IN 1/2-INCH- (13-MM-) WIDE JOINTS FORMED BETWEEN TWO 6-INCH- (150-MM-) LONG STRIPS OF MATERIAL MATCHING THE APPEARANCE OF EXPOSED SURFACES ADJACENT TO JOINT SEALANTS.

1.4 QUALITY ASSURANCE

- A. PRECONSTRUCTION FIELD-ADHESION TESTING: BEFORE INSTALLING ELASTOMERIC SEALANTS, FIELD TEST THEIR ADHESION TO PROJECT JOINT SUBSTRATES ACCORDING TO THE METHOD IN ASTM C 1193 THAT IS APPROPRIATE FOR THE TYPES OF PROJECT JOINTS.

1.5 WARRANTY

- A. SPECIAL INSTALLER'S WARRANTY: INSTALLER'S STANDARD FORM IN WHICH INSTALLER AGREES TO REPAIR OR REPLACE ELASTOMERIC JOINT SEALANTS THAT DO NOT COMPLY WITH PERFORMANCE AND OTHER REQUIREMENTS SPECIFIED IN THIS SECTION WITHIN SPECIFIED WARRANTY PERIOD.
1. WARRANTY PERIOD: TWO YEARS FROM DATE OF SUBSTANTIAL COMPLETION.
- B. SPECIAL MANUFACTURER'S WARRANTY: MANUFACTURER'S STANDARD FORM IN WHICH ELASTOMERIC SEALANT MANUFACTURER AGREES TO FURNISH ELASTOMERIC JOINT SEALANTS TO REPAIR OR REPLACE THOSE THAT DO NOT COMPLY WITH PERFORMANCE AND OTHER REQUIREMENTS SPECIFIED IN THIS SECTION WITHIN SPECIFIED WARRANTY PERIOD.
1. WARRANTY PERIOD: 20 YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. IN OTHER PART 2 ARTICLES WHERE SUBPARAGRAPH TITLES BELOW INTRODUCE LISTS, THE FOLLOWING REQUIREMENTS APPLY FOR PRODUCT SELECTION:
- B. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PRODUCTS BY ONE OF THE MANUFACTURERS SPECIFIED.
1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE THE PRODUCT OR AN EQUIVALENT PRODUCT BY ONE OF THE MANUFACTURERS SPECIFIED FOR THAT TYPE OF SEALANT.
- C. MANUFACTURERS - GENERAL
1. SILICONE SEALANT: TREMCO.
2. POLYURETHANE SEALANT: TREMCO.
3. BUTYL RUBBER SEALANT: TREMCO.
4. AND AS SPECIFIED HEREIN.
- 2.2 MATERIALS, GENERAL
- A. COMPATIBILITY: PROVIDE JOINT SEALANTS, BACKINGS, AND OTHER RELATED MATERIALS THAT ARE COMPATIBLE WITH ONE ANOTHER AND WITH JOINT SUBSTRATES UNDER CONDITIONS OF SERVICE AND APPLICATION, AS DEMONSTRATED BY SEALANT MANUFACTURER, BASED ON TESTING AND FIELD EXPERIENCE.
- B. COLORS OF EXPOSED JOINT SEALANTS: AS INDICATED ON DRAWINGS. IF NOT INDICATED, AS SELECTED BY OWNER'S REPRESENTATIVE FROM MANUFACTURERS FULL RANGE OF COLORS.

2.3 ELASTOMERIC JOINT SEALANTS

- A. ELASTOMERIC SEALANTS, GENERAL: ASTM C 920.
1. CONTINUOUS-IMMERSION SEALANTS: FOR IMMERSION IN WATER, PRODUCTS TESTED ACCORDING TO ASTM C 1247, INCLUDING INITIAL SIX-WEEK IMMERSION PERIOD AND TWO ADDITIONAL IMMERSION FOUR WEEK IMMERSION PERIOD(S), WITHOUT FAILING IN ADHESION OR COHESION WHEN TESTED WITH SUBSTRATES INDICATED.
2. SEALANTS FOR CONTACT WITH FOOD: COMPLY WITH 21 CFR 177.2600.
- B. LOW-MODULUS NONACID-CURING SILICONE SEALANT: DOW CORNING CORP., 790 SILICONE BUILDING SEALANT.
1. TYPE AND GRADE: S (SINGLE COMPONENT) AND NS (NONSAG).
2. CLASS: 25.
3. ADDITIONAL MOVEMENT CAPABILITY: CAPABLE OF 100 PERCENT MOVEMENT IN EXTENSION AND 50 PERCENT MOVEMENT IN COMPRESSION WHEN TESTED FOR ADHESION AND COHESION UNDER MAXIMUM CYCLIC MOVEMENT PER ASTM C 719.
4. EXPOSURE: USE NT (NONTRAFFIC).
5. SUBSTRATES: USES M, G, A, AND, AS APPLICABLE TO JOINT SUBSTRATES INDICATED, O.
6. NONSTAINING TO POROUS SUBSTRATES WHEN TESTING PER ASTM C 1248 FOR SUBSTRATES INDICATED.
- C. MEDIUM-MODULUS NEUTRAL-CURING SILICONE SEALANT: DOW CORNING CORP., 795 SILICONE BUILDING SEALANT.
1. TYPE AND GRADE: S (SINGLE COMPONENT) AND NS (NONSAG).
2. CLASS: 25.
3. EXPOSURE: USE NT (NONTRAFFIC).
4. SUBSTRATES: USES M, G & A.
5. NONSTAINING TO POROUS SUBSTRATES WHEN TESTING PER ASTM C 1248 FOR SUBSTRATES INDICATED.
- D. MILDEW-RESISTANT SILICONE SEALANT: DOW CORNING CORP., 786 MILDEW-RESISTANT SILICONE SEALANT.
1. TYPE AND GRADE: S (SINGLE COMPONENT) AND NS (NONSAG).
2. CLASS: 25.
3. EXPOSURE: USE NT (NONTRAFFIC).
4. SUBSTRATES: USES G, A AND, AS APPLICABLE TO JOINT SUBSTRATES INDICATED, O.
- E. POURABLE SILICONE SEALANT: DOW CORNING CORP., 890-SL SELF-LEVELING SILICONE JOINT SEALANT.
1. TYPE AND GRADE: S (SINGLE COMPONENT) AND P (POURABLE).
2. CLASS: 25.
3. ADDITIONAL MOVEMENT CAPABILITY: 100 PERCENT MOVEMENT IN EXTENSION AND 50 PERCENT IN COMPRESSION WHEN TESTED FOR ADHESION AND COHESION UNDER MAXIMUM CYCLIC MOVEMENT PER ASTM C 719.
4. EXPOSURE: USE T (TRAFFIC).
5. SUBSTRATES: M AND, AS APPLICABLE TO JOINT SUBSTRATES INDICATED, O.
- F. MULTICOMPONENT NONSAG URETHANE SEALANT: SONNEBORN BUILDING PRODUCTS DIVISION, CHEMREX, INC., SONOLASTIC NP 2.
1. TYPE AND GRADE: M (MULTICOMPONENT) AND NS (NONSAG).
2. CLASS: 25.
3. ADDITIONAL MOVEMENT CAPABILITY: 50 PERCENT MOVEMENT IN EXTENSION AND 50 PERCENT IN COMPRESSION WHEN TESTED FOR ADHESION AND COHESION UNDER MAXIMUM CYCLIC MOVEMENT PER ASTM C 719.
4. EXPOSURE: USE NT (NONTRAFFIC) AND T (TRAFFIC).
5. SUBSTRATES: M, G, A, AND, AS APPLICABLE TO JOINT SUBSTRATES INDICATED, O.
- G. MULTICOMPONENT POURABLE URETHANE SEALANT: SONNEBORN BUILDING PRODUCTS DIVISION, CHEMREX, INC. SONOLASTIC SL 2.
1. TYPE AND GRADE: M (MULTICOMPONENT) AND P (POURABLE).
2. CLASS: 25.
3. EXPOSURE: T (TRAFFIC).
4. SUBSTRATE: USE M.
- H. SINGLE-COMPONENT NONSAG URETHANE SEALANT: SONNEBORN BUILDING PRODUCTS DIVISION, CHEMREX, INC., SONOLASTIC NP 1.
1. TYPE AND GRADE: S (SINGLE COMPONENT) AND NS (NONSAG).
2. CLASS: 25.
3. EXPOSURE: NT (NONTRAFFIC).
4. SUBSTRATES: M, G, A, AND, AS APPLICABLE TO JOINT SUBSTRATES INDICATED, O.

- I. SINGLE-COMPONENT POURABLE URETHANE SEALANT: SONNEBORN BUILDING PRODUCTS DIVISION, CHEMREX, INC., SONOLASTIC SL 1.
1. TYPE AND GRADE: S (SINGLE COMPONENT) AND P (POURABLE).
2. CLASS: 25.
3. EXPOSURE: T (TRAFFIC).
4. SUBSTRATE: M.

2.4 SOLVENT-RELEASE JOINT SEALANTS

- A. BUTYL-RUBBER-BASED SOLVENT-RELEASE JOINT SEALANT: ASTM C 1085, PECORA CORPORATION; BC-158 BUTYL RUBBER SEALANT.
1. TYPE AND GRADE: S (SINGLE COMPONENT) AND NS (NONSAG).
2. CLASS: 25.
3. EXPOSURE: NT (NONTRAFFIC).

2.5 JOINT-SEALANT BACKING

- A. GENERAL: PROVIDE SEALANT BACKINGS OF MATERIAL AND TYPE THAT ARE NONSTAINING; ARE COMPATIBLE WITH JOINT SUBSTRATES, SEALANTS, PRIMERS, AND OTHER JOINT FILLERS; AND ARE APPROVED FOR APPLICATIONS INDICATED BY SEALANT MANUFACTURER BASED ON FIELD EXPERIENCE AND LABORATORY TESTING.
- B. CYLINDRICAL SEALANT BACKINGS: ASTM C 1330, OF SIZE AND DENSITY TO CONTROL SEALANT DEPTH AND OTHERWISE CONTRIBUTE TO PRODUCING OPTIMUM SEALANT PERFORMANCE:
1. TYPE: C (CLOSED-CELL MATERIAL WITH A SURFACE SKIN).
- C. ELASTOMERIC TUBING SEALANT BACKINGS: NEOPRENE, BUTYL, EPDM, OR SILICONE TUBING COMPLYING WITH ASTM D 1056, NONABSORBENT TO WATER AND GAS, AND CAPABLE OF REMAINING RESILIENT AT TEMPERATURES DOWN TO MINUS 26 DEG F. PROVIDE PRODUCTS WITH LOW COMPRESSION SET AND OF SIZE AND SHAPE TO PROVIDE A SECONDARY SEAL, TO CONTROL SEALANT DEPTH, AND TO OTHERWISE CONTRIBUTE TO OPTIMUM SEALANT PERFORMANCE.
- D. BOND-BREAKER TAPE: POLYETHYLENE TAPE OR OTHER PLASTIC TAPE RECOMMENDED BY SEALANT MANUFACTURER FOR PREVENTING SEALANT FROM ADHERING TO RIGID, INFLEXIBLE JOINT-FILLER MATERIALS OR JOINT SURFACES AT BACK OF JOINT WHERE SUCH ADHESION WOULD RESULT IN SEALANT FAILURE. PROVIDE SELF-ADHESIVE TAPE WHERE APPLICABLE.

2.6 MISCELLANEOUS MATERIALS

- A. PRIMER: MATERIAL RECOMMENDED BY JOINT-SEALANT MANUFACTURER WHERE REQUIRED FOR ADHESION OF SEALANT TO JOINT SUBSTRATES INDICATED, AS DETERMINED FROM PRECONSTRUCTION JOINT-SEALANT-SUBSTRATE TESTS AND FIELD TESTS.
- B. CLEANERS FOR NONPOROUS SURFACES: CHEMICAL CLEANERS ACCEPTABLE TO MANUFACTURERS OF SEALANTS AND SEALANT BACKING MATERIALS, FREE OF OILY RESIDUES OR OTHER SUBSTANCES CAPABLE OF STAINING OR HARMING JOINT SUBSTRATES AND ADJACENT NONPOROUS SURFACES IN ANY WAY, AND FORMULATED TO PROMOTE OPTIMUM ADHESION OF SEALANTS TO JOINT SUBSTRATES.
- C. MASKING TAPE: NONSTAINING, NONABSORBENT MATERIAL COMPATIBLE WITH JOINT SEALANTS AND SURFACES ADJACENT TO JOINTS.

PART 3 - EXECUTION

3.1 PREPARATION

- A. SURFACE CLEANING OF JOINTS: CLEAN OUT JOINTS IMMEDIATELY BEFORE INSTALLING JOINT SEALANTS.
1. REMOVE ALL FOREIGN MATERIAL FROM JOINT SUBSTRATES THAT COULD INTERFERE WITH ADHESION OF JOINT SEALANT.
2. CLEAN POROUS JOINT SUBSTRATE SURFACES BY BRUSHING, GRINDING, BLAST CLEANING, MECHANICAL ABRADING, OR A COMBINATION OF THESE METHODS TO PRODUCE A CLEAN, SOUND SUBSTRATE CAPABLE OF DEVELOPING OPTIMUM BOND WITH JOINT SEALANTS. REMOVE LOOSE PARTICLES REMAINING AFTER CLEANING OPERATIONS ABOVE BY VACUUMING OR BLOWING OUT JOINTS WITH OIL-FREE COMPRESSED AIR.
3. REMOVE LAITANCE AND FORM-RELEASE AGENTS FROM CONCRETE.
4. CLEAN NONPOROUS SURFACES WITH CHEMICAL CLEANERS OR OTHER MEANS THAT DO NOT STAIN, HARM SUBSTRATES, OR LEAVE RESIDUES CAPABLE OF INTERFERING WITH ADHESION OF JOINT SEALANTS.
- B. JOINT PRIMING: PRIME JOINT SUBSTRATES, WHERE RECOMMENDED IN WRITING BY JOINT-SEALANT MANUFACTURER, BASED ON PRECONSTRUCTION JOINT-SEALANT-SUBSTRATE TESTS OR PRIOR EXPERIENCE. APPLY PRIMER TO COMPLY WITH JOINT-SEALANT MANUFACTURER'S WRITTEN INSTRUCTIONS. CONFINE PRIMERS TO AREAS OF JOINT-SEALANT BOND; DO NOT ALLOW SPILLAGE OR MIGRATION ONTO ADJOINING SURFACES.
- C. MASKING TAPE: USE MASKING TAPE WHERE REQUIRED TO PREVENT CONTACT OF SEALANT WITH ADJOINING SURFACES THAT OTHERWISE WOULD BE PERMANENTLY STAINED OR DAMAGED BY SUCH CONTACT OR BY CLEANING METHODS REQUIRED TO REMOVE SEALANT SMEARS. REMOVE TAPE IMMEDIATELY AFTER TOOLING WITHOUT DISTURBING JOINT SEAL.
- D. SEALANT INSTALLATION: COMPLY WITH RECOMMENDATIONS IN ASTM C 1193 FOR USE OF JOINT SEALANTS AS APPLICABLE TO MATERIALS, APPLICATIONS, AND CONDITIONS INDICATED.
- E. ACOUSTICAL SEALANT APPLICATION STANDARD: COMPLY WITH RECOMMENDATIONS IN ASTM C 919 FOR USE OF JOINT SEALANTS IN ACOUSTICAL APPLICATIONS AS APPLICABLE TO MATERIALS, APPLICATIONS, AND CONDITIONS INDICATED.
- F. INSTALL SEALANT BACKINGS OF TYPE INDICATED TO SUPPORT SEALANTS DURING APPLICATION AND AT POSITION REQUIRED TO PRODUCE CROSS-SECTIONAL SHAPES AND DEPTHS OF INSTALLED SEALANTS RELATIVE TO JOINT WIDTHS THAT ALLOW OPTIMUM SEALANT MOVEMENT CAPABILITY.
1. DO NOT LEAVE GAPS BETWEEN ENDS OF SEALANT BACKINGS.
2. DO NOT STRETCH, TWIST, PUNCTURE, OR TEAR SEALANT BACKINGS.
3. REMOVE ABSORBENT SEALANT BACKINGS THAT HAVE BECOME WET BEFORE SEALANT APPLICATION AND REPLACE THEM WITH DRY MATERIALS.
- G. INSTALL BOND-BREAKER TAPE BEHIND SEALANTS WHERE SEALANT BACKINGS ARE NOT USED BETWEEN SEALANTS AND BACKS OF JOINTS.
1. PLACE SEALANTS SO THEY DIRECTLY CONTACT AND FULLY WET JOINT SUBSTRATES.
2. COMPLETELY FILL RECESSES IN EACH JOINT CONFIGURATION.
3. PRODUCE UNIFORM, CROSS-SECTIONAL SHAPES AND DEPTHS RELATIVE TO JOINT WIDTHS THAT ALLOW OPTIMUM SEALANT MOVEMENT CAPABILITY.
- H. TOOLING OF NONSAG SEALANTS: IMMEDIATELY AFTER SEALANT APPLICATION AND BEFORE SKINNING OR CURING BEGINS, TOOL SEALANTS ACCORDING TO REQUIREMENTS SPECIFIED BELOW TO FORM SMOOTH, UNIFORM BEADS OF CONFIGURATION INDICATED; TO ELIMINATE AIR POCKETS; AND TO ENSURE CONTACT AND ADHESION OF SEALANT WITH SIDES OF JOINT.
1. REMOVE EXCESS SEALANT FROM SURFACES ADJACENT TO JOINTS.
2. USE TOOLING AGENTS THAT ARE APPROVED IN WRITING BY SEALANT MANUFACTURER AND THAT DO NOT DISCOLOR SEALANTS OR ADJACENT SURFACES.
3. JOINT CONFIGURATION: CONCAVE JOINT CONFIGURATION PER FIGURE 5A IN ASTM C 1193, UNLESS OTHERWISE INDICATED.

2.6 FABRICATION

- A. TOLERANCES: FABRICATE HOLLOW METAL WORK TO TOLERANCES INDICATED IN SDI 117.
- B. HOLLOW METAL DOORS:
1. EXTERIOR DOORS: PROVIDE WEEP-HOLE OPENINGS IN BOTTOM OF EXTERIOR DOORS. SEAL JOINTS IN TOP EDGES OF DOORS AGAINST WATER PENETRATION.
- C. HOLLOW METAL FRAMES: WHERE FRAMES ARE FABRICATED IN SECTIONS, PROVIDE ALIGNMENT PLATES OR ANGLES AT EACH JOINT, FABRICATED OF SAME THICKNESS METAL AS FRAMES.
1. WELDED FRAMES: WELD FLUSH FACE JOINTS CONTINUOUSLY; GRIND, FILL, DRESS, AND MAKE SMOOTH, FLUSH, AND INVISIBLE.
2. PROVIDE COUNTERSUNK, FLAT- OR OVAL-HEAD EXPOSED SCREWS AND BOLTS FOR EXPOSED FASTENERS UNLESS OTHERWISE INDICATED.
3. GROUT GUARDS: WELD GUARDS TO FRAME AT BACK OF HARDWARE MORTISES IN FRAMES TO BE GROUTED.
4. FLOOR ANCHORS: WELD ANCHORS TO BOTTOM OF JAMBS AND MULLIONS WITH AT LEAST FOUR SPOT WELDS PER ANCHOR.
5. JAMB ANCHORS: PROVIDE NUMBER AND SPACING OF ANCHORS AS FOLLOWS:
- a. MASONRY TYPE: LOCATE ANCHORS NOT MORE THAN 18 INCHES (457 MM) FROM TOP AND BOTTOM OF FRAME. SPACE ANCHORS NOT MORE THAN 32 INCHES (813 MM) O.C. AND AS FOLLOWS:
- 1) THREE ANCHORS PER JAMB FROM 60 TO 90 INCHES (1524 TO 2286 MM) HIGH.
- b. STUD-WALL TYPE: LOCATE ANCHORS NOT MORE THAN 18 INCHES (457 MM) FROM TOP AND BOTTOM OF FRAME. SPACE ANCHORS NOT MORE THAN 32 INCHES (813 MM) O.C. AND AS FOLLOWS:
- 1) FOUR ANCHORS PER JAMB FROM 60 TO 90 INCHES (1524 TO 2286 MM) HIGH.
- c. COMPRESSION TYPE: NOT LESS THAN TWO ANCHORS IN EACH JAMB.
- d. POSTINSTALLED EXPANSION TYPE: LOCATE ANCHORS NOT MORE THAN 6 INCHES (152 MM) FROM TOP AND BOTTOM OF FRAME. SPACE ANCHORS NOT MORE THAN 26 INCHES (660 MM) O.C.
6. DOOR SILENCERS: EXCEPT ON WEATHER-STRIPPED DOORS, DRILL STOPS TO RECEIVE DOOR SILENCERS.
- a. SINGLE-DOOR FRAMES: THREE DOOR SILENCERS.
- D. HARDWARE PREPARATION: FACTORY PREPARE HOLLOW METAL WORK TO RECEIVE TEMPLATED MORTISED HARDWARE ACCORDING TO THE DOOR HARDWARE SCHEDULE AND TEMPLATES FURNISHED AS SPECIFIED IN DIVISION 08 SECTION "DOOR HARDWARE."
1. LOCATE HARDWARE AS INDICATED, OR IF NOT INDICATED, ACCORDING TO ANSI/SDI A250.8.
2. REINFORCE DOORS AND FRAMES TO RECEIVE NONTEMPLATED, MORTISED AND SURFACE-MOUNTED DOOR HARDWARE.
3. COMPLY WITH APPLICABLE REQUIREMENTS IN ANSI/SDI A250.6 AND ANSI/DHI A115 SERIES SPECIFICATIONS FOR PREPARATION OF HOLLOW METAL WORK FOR HARDWARE.
4. COORDINATE LOCATIONS OF CONDUIT AND WIRING BOXES FOR ELECTRICAL CONNECTIONS WITH DIVISION 26 ELECTRICAL SECTIONS.

3.2 JOINT-SEALANT SCHEDULE

- A. EXTERIOR JOINTS:
1. GENERAL USE:URETHANE, MULTI COMPONENT, NONSAG.
2. WOOD/WOOD, WOOD/BRICK: URETHANE, MULTI COMPONENT, NONSAG.
3. METAL/METAL, METAL/WOOD: URETHANE, MULTI COMPONENT, NONSAG.
4. BRICK/BRICK: URETHANE, MULTI COMPONENT, NONSAG.
5. UNDER METAL DOOR THRESHOLDS: BUTYL RUBBER, SNGL COMPONENT, NONSAG.
6. HORIZONTAL WEARING SURFACES: SEE DIVISION 2 SECTION "PAVEMENT JOINT SEALANTS"

7. GLAZING: SILICONE, SINGLE COMPONENT, NONSAG.
- B. INTERIOR JOINTS:
1. GENERAL USE:URETHANE, SINGLE COMPONENT, NONSAG.
2. PLUMBING FIXTURES, COUNTERTOPS, WET AREAS: SILICONE, SINGLE COMPONENT, NONSAG, MILDEW RESISTANT.
3. CERAMIC TILE: SILICONE, SINGLE COMPONENT, NONSAG, MILDEW RESISTANT.
4. HORIZONTAL WEARING SURFACES: URETHANE, SINGLE COMPONENT, POURABLE OR NONSAG.
5. UNDER DOOR THRESHOLDS: BUTYL RUBBER, SINGLE COMPONENT, NONSAG.

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 SUMMARY

- A. SECTION INCLUDES:
1. STANDARD HOLLOW METAL DOORS AND FRAMES.

1.2 SUBMITTALS

- A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.
- B. SCHEDULE: PREPARED BY OR UNDER THE SUPERVISION OF SUPPLIER, USING SAME REFERENCE NUMBERS FOR DETAILS AND OPENINGS AS THOSE ON DRAWINGS.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING
1. AMWELD BUILDING PRODUCTS, LLC.
2. CECO DOOR PRODUCTS; AN ASSA ABLOY GROUP COMPANY.
3. CURRIES COMPANY; AN ASSA ABLOY GROUP COMPANY.
4. STEELCRAFT; AN INGERSOLL-RAND COMPANY.

2.2 MATERIALS

- A. COLD-ROLLED STEEL SHEET: ASTM A 1008/A 1008M, CS, TYPE B; SUITABLE FOR EXPOSED APPLICATIONS.
- B. METALLIC-COATED STEEL SHEET: ASTM A 653/A 653M, COMMERCIAL STEEL (CS), TYPE B; WITH MINIMUM A40 (ZF120) METALLIC COATING.
- C. FRAME ANCHORS: ASTM A 591/A 591M, COMMERCIAL STEEL (CS), 40Z (12G) COATING DESIGNATION; MILL PHOSPHATIZED.
1. FOR ANCHORS BUILT INTO EXTERIOR WALLS, STEEL SHEET COMPLYING WITH ASTM A 1008/A 1008M OR ASTM A 1011/A 1011M, HOT-DIP GALVANIZED ACCORDING TO ASTM A 153/A 153M, CLASS B.
- D. INSERTS, BOLTS, AND FASTENERS: HOT-DIP GALVANIZED ACCORDING TO ASTM A 153/A 153M.
- E. GROUT: ASTM C 476, EXCEPT WITH A MAXIMUM SLUMP OF 4 INCHES (102 MM), AS MEASURED ACCORDING TO ASTM C 143/C 143M.
- F. MINERAL-FIBER INSULATION: ASTM C 665, TYPE I.
- G. GLAZING: DIVISION 08 SECTION "GLAZING."

2.3 STANDARD HOLLOW METAL DOORS

- A. GENERAL: COMPLY WITH ANSI/SDI A250.8.
1. DESIGN: FLUSH PANEL.
2. CORE CONSTRUCTION: MANUFACTURER'S STANDARD POLYSTYRENE OR POLYURETHANE.
- a. THERMAL-RATED (INSULATED) DOORS: R-VALUE OF NOT LESS THAN 19 WHEN TESTED ACCORDING TO ASTM C 1363.
3. VERTICAL EDGES FOR SINGLE-ACTING DOORS: SQUARE EDGE.
4. TOP AND BOTTOM EDGES: CLOSED WITH FLUSH OR INVERTED 0.042-INCH- (1.0-MM-) THICK, END CLOSURES OR CHANNELS OF SAME MATERIAL AS FACE SHEETS.
5. TOLERANCES: SDI 117, "MANUFACTURING TOLERANCES FOR STANDARD STEEL DOORS AND FRAMES."
- B. EXTERIOR DOORS: FACE SHEETS FABRICATED FROM METALLIC-COATED STEEL SHEET. COMPLY WITH ANSI/SDI A250.8 FOR LEVEL AND MODEL AND ANSI/SDI A250.4 FOR PHYSICAL PERFORMANCE LEVEL:
1. LEVEL 1 AND PHYSICAL PERFORMANCE LEVEL C (STANDARD DUTY).
- a. WIDTH: 1-3/4 INCHES (44.5 MM) OR AS INDICATED ON DRAWINGS.
2. LEVEL 3 AND PHYSICAL PERFORMANCE LEVEL A (EXTRA HEAVY DUTY), MODEL 1 (FULL FLUSH).
- C. HARDWARE REINFORCEMENT: ANSI/SDI A250.6.

2.4 STANDARD HOLLOW METAL FRAMES

- A. GENERAL: COMPLY WITH ANSI/SDI A250.8.
- B. EXTERIOR FRAMES: FABRICATED FROM METALLIC-COATED STEEL SHEET.
1. FABRICATE FRAMES WITH MITERED OR COPED CORNERS.
2. FABRICATE FRAMES AS KNOCKED DOWN UNLESS OTHERWISE INDICATED.
4. FABRICATE FRAMES WITH MITERED OR COPED CORNERS.
4. FRAMES FOR WOOD DOORS: 0.067-INCH- (1.7-MM-) THICK STEEL SHEET.
- C. HARDWARE REINFORCEMENT: ANSI/SDI A250.6.
- 2.5 FRAME ANCHORS

A. JAMB ANCHORS:

1. MASONRY TYPE: ADJUSTABLE STRAP-AND-STIRRUP OR T-SHAPED ANCHORS TO SUIT FRAME SIZE, NOT LESS THAN 0.042 INCH (1.0 MM) THICK, WITH CORRUGATED OR PERFORATED STRAPS NOT LESS THAN 2 INCHES (50 MM) WIDE BY 10 INCHES (250 MM) LONG; OR WIRE ANCHORS NOT LESS THAN 0.177 INCH (4.5 MM) THICK.
2. STUD-WALL TYPE: DESIGNED TO ENGAGE STUD, WELDED TO BACK OF FRAMES; NOT LESS THAN 0.042 INCH (1.0 MM) THICK.
3. COMPRESSION TYPE FOR DRYWALL SLIP-ON FRAMES: ADJUSTABLE COMPRESSION ANCHORS.
- B. FLOOR ANCHORS: FORMED FROM SAME MATERIAL AS FRAMES, NOT LESS THAN 0.042 INCH (1.0 MM) THICK, AND AS FOLLOWS:
1. MONOLITHIC CONCRETE SLABS: CLIP-TYPE ANCHORS, WITH TWO HOLES TO RECEIVE FASTENERS.

2.6 FABRICATION

- A. TOLERANCES: FABRICATE HOLLOW METAL WORK TO TOLERANCES INDICATED IN SDI 117.
- B. HOLLOW METAL DOORS:
1. EXTERIOR DOORS: PROVIDE WEEP-HOLE OPENINGS IN BOTTOM OF EXTERIOR DOORS. SEAL JOINTS IN TOP EDGES OF DOORS AGAINST WATER PENETRATION.
- C. HOLLOW METAL FRAMES: WHERE FRAMES ARE FABRICATED IN SECTIONS, PROVIDE ALIGNMENT PLATES OR ANGLES AT EACH JOINT, FABRICATED OF SAME THICKNESS METAL AS FRAMES.
1. WELDED FRAMES: WELD FLUSH FACE JOINTS CONTINUOUSLY; GRIND, FILL, DRESS, AND MAKE SMOOTH, FLUSH, AND INVISIBLE.
2. PROVIDE COUNTERSUNK, FLAT- OR OVAL-HEAD EXPOSED SCREWS AND BOLTS FOR EXPOSED FASTENERS UNLESS OTHERWISE INDICATED.
3. GROUT GUARDS: WELD GUARDS TO FRAME AT BACK OF HARDWARE MORTISES IN FRAMES TO BE GROUTED.
4. FLOOR ANCHORS: WELD ANCHORS TO BOTTOM OF JAMBS AND MULLIONS WITH AT LEAST FOUR SPOT WELDS PER ANCHOR.
5. JAMB ANCHORS: PROVIDE NUMBER AND SPACING OF ANCHORS AS FOLLOWS:
- a. MASONRY TYPE: LOCATE ANCHORS NOT MORE THAN 18 INCHES (457 MM) FROM TOP AND BOTTOM OF FRAME. SPACE ANCHORS NOT MORE THAN 32 INCHES (813 MM) O.C. AND AS FOLLOWS:
- 1) THREE ANCHORS PER JAMB FROM 60 TO 90 INCHES (1524 TO 2286 MM) HIGH.
- b. STUD-WALL TYPE: LOCATE ANCHORS NOT MORE THAN 18 INCHES (457 MM) FROM TOP AND BOTTOM OF FRAME. SPACE ANCHORS NOT MORE THAN 32 INCHES (813 MM) O.C. AND AS FOLLOWS:
- 1) FOUR ANCHORS PER JAMB FROM 60 TO 90 INCHES (1524 TO 2286 MM) HIGH.
- c. COMPRESSION TYPE: NOT LESS THAN TWO ANCHORS IN EACH JAMB.
- d. POSTINSTALLED EXPANSION TYPE: LOCATE ANCHORS NOT MORE THAN 6 INCHES (152 MM) FROM TOP AND BOTTOM OF FRAME. SPACE ANCHORS NOT MORE THAN 26 INCHES (660 MM) O.C.
6. DOOR SILENCERS: EXCEPT ON WEATHER-STRIPPED DOORS, DRILL STOPS TO RECEIVE DOOR SILENCERS.
- a. SINGLE-DOOR FRAMES: THREE DOOR SILENCERS.
- D. HARDWARE PREPARATION: FACTORY PREPARE HOLLOW METAL WORK TO RECEIVE TEMPLATED MORTISED HARDWARE ACCORDING TO THE DOOR HARDWARE SCHEDULE AND TEMPLATES FURNISHED AS SPECIFIED IN DIVISION 08 SECTION "DOOR HARDWARE."
1. LOCATE HARDWARE AS INDICATED, OR IF NOT INDICATED, ACCORDING TO ANSI/SDI A250.8.
2. REINFORCE DOORS AND FRAMES TO RECEIVE NONTEMPLATED, MORTISED AND SURFACE-MOUNTED DOOR HARDWARE.
3. COMPLY WITH APPLICABLE REQUIREMENTS IN ANSI/SDI A250.6 AND ANSI/DHI A115 SERIES SPECIFICATIONS FOR PREPARATION OF HOLLOW METAL WORK FOR HARDWARE.
4. COORDINATE LOCATIONS OF CONDUIT AND WIRING BOXES FOR ELECTRICAL CONNECTIONS WITH DIVISION 26 ELECTRICAL SECTIONS.

- MM) O.C. AND AS FOLLOWS:
- 1) THREE ANCHORS PER JAMB FROM 60 TO 90 INCHES (1524 TO 2286 MM) HIGH.
- b. STUD-WALL TYPE: LOCATE ANCHORS NOT MORE THAN 18 INCHES (457 MM) FROM TOP AND BOTTOM OF FRAME. SPACE ANCHORS NOT MORE THAN 32 INCHES (813 MM) O.C. AND AS FOLLOWS:
- 1) FOUR ANCHORS PER JAMB FROM 60 TO 90 INCHES (1524 TO 2286 MM) HIGH.
- c. COMPRESSION TYPE: NOT LESS THAN TWO ANCHORS IN EACH JAMB.
- d. POSTINSTALLED EXPANSION TYPE: LOCATE ANCHORS NOT MORE THAN 6 INCHES (152 MM) FROM TOP AND BOTTOM OF FRAME. SPACE ANCHORS NOT MORE THAN 26 INCHES (660 MM) O.C.
6. DOOR SILENCERS: EXCEPT ON WEATHER-STRIPPED DOORS, DRILL STOPS TO RECEIVE DOOR SILENCERS.
- a. SINGLE-DOOR FRAMES: THREE DOOR SILENCERS.
- D. HARDWARE PREPARATION: FACTORY PREPARE HOLLOW METAL WORK TO RECEIVE TEMPLATED MORTISED HARDWARE ACCORDING TO THE DOOR HARDWARE SCHEDULE AND TEMPLATES FURNISHED AS SPECIFIED IN DIVISION 08 SECTION "DOOR HARDWARE."
1. LOCATE HARDWARE AS INDICATED, OR IF NOT INDICATED, ACCORDING TO ANSI/SDI A250.8.
2. REINFORCE DOORS AND FRAMES TO RECEIVE NONTEMPLATED, MORTISED AND SURFACE-MOUNTED DOOR HARDWARE.
3. COMPLY WITH APPLICABLE REQUIREMENTS IN ANSI/SDI A250.6 AND ANSI/DHI A115 SERIES SPECIFICATIONS FOR PREPARATION OF HOLLOW METAL WORK FOR HARDWARE.
4. COORDINATE LOCATIONS OF CONDUIT AND WIRING BOXES FOR ELECTRICAL CONNECTIONS WITH DIVISION 26 ELECTRICAL SECTIONS.

2.7 STEEL FINISHES

- A. PRIME FINISH: APPLY MANUFACTURER'S STANDARD PRIMER IMMEDIATELY AFTER CLEANING AND PRETREATING.
1. SHOP PRIMER: ANSI/SDI A250.10.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. HOLLOW METAL FRAMES: COMPLY WITH ANSI/SDI A250.11.
1. SET FRAMES ACCURATE

PART 2 -	PRODUCTS
2.1	MANUFACTURERS
A.	MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING: 1. EGGERS INDUSTRIES. 2. MARSHFIELD DOOR SYSTEMS, INC. 3. MOHAWK FLUSH DOORS, INC.; A MASONITE COMPANY.
2.2	DOOR CONSTRUCTION, GENERAL
A.	LOW-EMITTING MATERIALS: PROVIDE DOORS MADE WITH ADHESIVES AND COMPOSITE WOOD PRODUCTS THAT DO NOT CONTAIN UREA FORMALDEHYDE.
B.	WDMA I.S.1-A PERFORMANCE GRADE: 1. HEAVY DUTY UNLESS OTHERWISE INDICATED.
C.	PARTICLEBOARD-CORE DOORS: 1. PARTICLEBOARD: ANSI A208.1, [GRADE LD-1] [OR] [GRADE LD-2] [, MADE WITH BINDER CONTAINING NO UREA-FORMALDEHYDE RESIN] 2. BLOCKING: PROVIDE WOOD BLOCKING IN PARTICLEBOARD-CORE DOORS AS NEEDED TO ELIMINATE THROUGH-BOLTING HARDWARE.
D.	STRUCTURAL-COMPOSITE-LUMBER-CORE DOORS: 1. STRUCTURAL COMPOSITE LUMBER: WDMA I.S.10. a. SCREW WITHDRAWAL, FACE: 700 LBF (3100 N). b. SCREW WITHDRAWAL, EDGE: 400 LBF (1780 N).
2.3	PLASTIC-LAMINATE-FACED DOORS
A.	INTERIOR SOLID-CORE DOORS 1. GRADE: CUSTOM. 2. PLASTIC-LAMINATE FACES: HIGH-PRESSURE DECORATIVE LAMINATES COMPLYING WITH NEMA LD 3, GRADE HGS. 3. COLORS, PATTERNS, AND FINISHES: AS INDICATED ON THE DÉCOR DRAWINGS. 4. EXPOSED VERTICAL EDGES: PLASTIC LAMINATE THAT MATCHES FACES. 5. CORE: PARTICLEBOARD. 6. CONSTRUCTION: THREE PLYS. STILES AND RAILS ARE BONDED TO CORE, THEN ENTIRE UNIT ABRASIVE PLANED BEFORE FACES ARE APPLIED.
2.4	FABRICATION
A.	FACTORY FIT DOORS TO SUIT FRAME-OPENING SIZES INDICATED. COMPLY WITH CLEARANCE REQUIREMENTS OF REFERENCED QUALITY STANDARD FOR FITTING UNLESS OTHERWISE INDICATED.
B.	FACTORY MACHINE DOORS FOR HARDWARE THAT IS NOT SURFACE APPLIED.
C.	OPENINGS: CUT AND TRIM OPENINGS THROUGH DOORS IN FACTORY. 1. LIGHT OPENINGS: TRIM OPENINGS WITH MOLDINGS OF MATERIAL AND PROFILE INDICATED. 2. GLAZING: FACTORY INSTALL GLAZING IN DOORS INDICATED TO BE FACTORY FINISHED. COMPLY WITH APPLICABLE REQUIREMENTS IN DIVISION 08 SECTION "GLAZING." 3. LOUVERS: FACTORY INSTALL LOUVERS IN PREPARED OPENINGS.

PART 3 - EXECUTION

3.1	INSTALLATION
A.	HARDWARE: FOR INSTALLATION, SEE DIVISION 08 SECTION "DOOR HARDWARE."
B.	INSTALLATION INSTRUCTIONS: INSTALL DOORS TO COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND THE REFERENCED QUALITY STANDARD, AND AS INDICATED.
C.	JOB-FITTED DOORS: ALIGN AND FIT DOORS IN FRAMES WITH UNIFORM CLEARANCES AND BEVELS; DO NOT TRIM STILES AND RAILS IN EXCESS OF LIMITS SET BY MANUFACTURER OR PERMITTED FOR FIRE-RATED DOORS. MACHINE DOORS FOR HARDWARE. SEAL EDGES OF DOORS, EDGES OF CUTOUTS, AND MORTISES AFTER FITTING AND MACHINING. 1. CLEARANCES: PROVIDE 1/8 INCH (3.2 MM) AT HEADS, JAMBS, AND BETWEEN PAIRS OF DOORS. PROVIDE 1/8 INCH (3.2 MM) FROM BOTTOM OF DOOR TO TOP OF DECORATIVE FLOOR FINISH OR COVERING UNLESS OTHERWISE INDICATED. WHERE THRESHOLD IS SHOWN OR SCHEDULED, PROVIDE 1/4 INCH (6.4 MM) FROM BOTTOM OF DOOR TO TOP OF THRESHOLD UNLESS OTHERWISE INDICATED.

SECTION 083113 - ACCESS DOORS AND FRAMES

PART 1 - GENERAL

1.1	SUMMARY
A.	THIS SECTION INCLUDES ACCESS DOORS AND FRAMES FOR CEILINGS.
1.2	SUBMITTALS
A.	PRODUCT DATA: FOR EACH TYPE OF ACCESS DOOR AND FRAME INDICATED.
B.	SHOP DRAWINGS: INCLUDE PLANS, ELEVATIONS, SECTIONS, DETAILS, AND ATTACHMENTS TO OTHER WORK.
1.3	QUALITY ASSURANCE
A.	SIZE AND LOCATION VERIFICATION: DETERMINE SPECIFIC LOCATIONS AND SIZES FOR ACCESS DOORS NEEDED TO GAIN ACCESS TO CONCEALED EQUIPMENT, AND INDICATE ON THE DRAWINGS.

PART 2 - PRODUCTS

2.1	MATERIALS
A.	STEEL PLATES, SHAPES, AND BARS: ASTM A 36. 1. HOT-DIP GALVANIZED STEEL: COAT TO COMPLY WITH ASTM A 123 FOR STEEL AND IRON PRODUCTS AND ASTM A 153 FOR STEEL AND IRON HARDWARE.
B.	STEEL SHEET. 1.ELECTROLYTIC ZINC-COATED: ASTM A 591 COMMERCIAL STEEL (CS) WITH CLASS C COATING AND PHOSPHATE TREATMENT TO PREPARE SURFACE FOR PAINTING. C. DRYWALL BEADS: EDGE TRIM FORMED FROM 0.0299-INCH (0.76-MM) ZINC-COATED STEEL SHEET FORMED TO RECEIVE JOINT COMPOUND AND IN SIZE TO SUIT THICKNESS OF GYPSUM WALL AND/OR CEILING PANELS INDICATED.
2.2	ACCESS DOORS AND FRAMES
A.	MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING: 1. LARSEN'S MANUFACTURING COMPANY. B. FLUSH ACCESS DOORS AND THIMBLESS FRAMES: 1. MATERIAL: PRIME-PAINTED STEEL SHEET. 2. SURFACE TYPE: GYPSUM BOARD. 3. LOCATIONS: WALLS AS INDICATED. 4. DOOR: MINIMUM 0.060-INCH THICK SHEET METAL SET FLUSH WITH SURROUNDING FINISH SURFACES TO RECEIVE GYPSUM BOARD FACE. 5. FRAME: MINIMUM 0.060-INCH THICK SHEET METAL WITH BEAD FOR TYPE OF SURFACE INDICATED. 6. HINGES: CONTINUOUS PIANO HINGE. 7. LATCH: SCREWDRIVER - OPERATED CAM LATCH. 8. LOCK: KEY-OPERATED CYLINDER LOCK.
2.3	FABRICATION
A.	LATCHING MECHANISMS: FURNISH NUMBER REQUIRED TO HOLD DOORS IN FLUSH, SMOOTH PLANE WHEN CLOSED. 1. FOR RECESSED PANEL DOORS, PROVIDE ACCESS SLEEVES FOR EACH LOCKING DEVICE. FURNISH PLASTIC GROMMETS AND INSTALL IN HOLES CUT THROUGH FINISH.

PART 3 - EXECUTION

3.1	INSTALLATION
A.	ADVISE INSTALLERS OF OTHER WORK ABOUT SPECIFIC REQUIREMENTS RELATING TO ACCESS DOOR AND FLOOR DOOR INSTALLATION, INCLUDING SIZES OF OPENINGS TO RECEIVE ACCESS DOOR AND FRAME, AS WELL AS LOCATIONS OF SUPPORTS, INSERTS, AND ANCHORING DEVICES.
B.	SET FRAMES ACCURATELY IN POSITION AND ATTACH SECURELY TO SUPPORTS WITH PLANE OF FACE PANELS ALIGNED WITH ADJACENT FINISH SURFACES.
C.	INSTALL ACCESS DOORS WITH TRIMLESS FRAMES FLUSH WITH ADJACENT FINISH SURFACES OR RECESSED TO RECEIVE FINISH MATERIAL.
D.	ADJUST DOORS AND HARDWARE AFTER INSTALLATION FOR PROPER OPERATION.

SECTION 084113 - ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

PART 1 - GENERAL

1.1	SUMMARY
A.	SECTION INCLUDES: 1. EXTERIOR AND INTERIOR STOREFRONT FRAMING.
1.2	PERFORMANCE REQUIREMENTS
A.	GENERAL PERFORMANCE: ALUMINUM-FRAMED SYSTEMS SHALL WITHSTAND THE EFFECTS OF THE FOLLOWING PERFORMANCE REQUIREMENTS WITHOUT EXCEEDING PERFORMANCE CRITERIA OR FAILING DUE TO DEFECTIVE MANUFACTURE, FABRICATION, INSTALLATION, OR OTHER DEFECTS IN CONSTRUCTION: 1. MOVEMENTS OF SUPPORTING STRUCTURE INDICATED ON DRAWINGS INCLUDING, BUT NOT LIMITED TO, STORY DRIFT AND DEFLECTION FROM UNIFORMLY DISTRIBUTED AND CONCENTRATED LIVE LOADS. 2. DIMENSIONAL TOLERANCES OF BUILDING FRAME AND OTHER ADJACENT CONSTRUCTION. 3. FAILURE INCLUDES THE FOLLOWING: a. DEFLECTION EXCEEDING SPECIFIED LIMITS. b. THERMAL STRESSES TRANSFERRING TO BUILDING STRUCTURE. c. FRAMING MEMBERS TRANSFERRING STRESSES, INCLUDING THOSE CAUSED BY THERMAL AND STRUCTURAL MOVEMENTS TO GLAZING. d. NOISE OR VIBRATION CREATED BY WIND AND BY THERMAL AND STRUCTURAL MOVEMENTS. e. LOOSENING OR WEAKENING OF FASTENERS, ATTACHMENTS, AND OTHER COMPONENTS. f. FAILURE OF OPERATING UNITS.
B.	WIND LOADS: AS INDICATED ON DRAWINGS.
1.3	SUBMITTALS
A.	PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.
B.	SHOP DRAWINGS: FOR ALUMINUM-FRAMED SYSTEMS. INCLUDE PLANS, ELEVATIONS, SECTIONS, DETAILS, AND ATTACHMENTS TO OTHER WORK. 1. INCLUDE DETAILS OF PROVISIONS FOR SYSTEM EXPANSION AND CONTRACTION AND FOR DRAINAGE OF MOISTURE IN THE SYSTEM TO THE EXTERIOR.
C.	SAMPLES: FOR EACH TYPE OF EXPOSED FINISH REQUIRED.

1.4	QUALITY ASSURANCE
A.	INSTALLER QUALIFICATIONS: MANUFACTURER'S AUTHORIZED REPRESENTATIVE WHO IS TRAINED AND APPROVED FOR INSTALLATION OF UNITS REQUIRED FOR THIS PROJECT.
B.	ENGINEERING RESPONSIBILITY: PREPARE DATA FOR ALUMINUM-FRAMED SYSTEMS, INCLUDING SHOP DRAWINGS, BASED ON TESTING AND ENGINEERING ANALYSIS OF MANUFACTURER'S STANDARD UNITS IN SYSTEMS SIMILAR TO THOSE INDICATED FOR THIS PROJECT.
C.	PRODUCT OPTIONS: INFORMATION ON DRAWINGS AND IN SPECIFICATIONS ESTABLISHES REQUIREMENTS FOR SYSTEMS' AESTHETIC EFFECTS AND PERFORMANCE CHARACTERISTICS. AESTHETIC EFFECTS ARE INDICATED BY DIMENSIONS, ARRANGEMENTS, ALIGNMENT, AND PROFILES OF COMPONENTS AND ASSEMBLIES AS THEY RELATE TO SIGHTLINES, TO ONE ANOTHER, AND TO ADJOINING CONSTRUCTION. PERFORMANCE CHARACTERISTICS ARE INDICATED BY CRITERIA SUBJECT TO VERIFICATION BY ONE OR MORE METHODS INCLUDING PRECONSTRUCTION TESTING, FIELD TESTING, AND IN-SERVICE PERFORMANCE.
D.	ACCESSIBLE ENTRANCES: COMPLY WITH APPLICABLE PROVISIONS IN THE U.S. ARCHITECTURAL & TRANSPORTATION BARRIERS COMPLIANCE BOARD'S ADA-ABA ACCESSIBILITY GUIDELINES AND ICC/ANSI A117.1.
E.	SOURCE LIMITATIONS FOR ALUMINUM-FRAMED SYSTEMS: OBTAIN FROM SINGLE SOURCE FROM SINGLE MANUFACTURER.
F.	PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT A DATE AND TIME TO BE ESTABLISHED.

1.5 WARRANTY

A.	SPECIAL WARRANTY: MANUFACTURER'S STANDARD FORM IN WHICH MANUFACTURER AGREES TO REPAIR OR REPLACE COMPONENTS OF ALUMINUM-FRAMED SYSTEMS THAT DO NOT COMPLY WITH REQUIREMENTS OR THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN SPECIFIED WARRANTY PERIOD.
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PART 2 - PRODUCTS

2.1	MANUFACTURERS
A.	BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCT INDICATED ON DRAWINGS. 1. YKK AP AMERICA INC.
2.2	MATERIALS
A.	ALUMINUM: ALLOY AND TEMPER RECOMMENDED BY MANUFACTURER FOR TYPE OF USE AND FINISH INDICATED. 1. SHEET AND PLATE: ASTM B 209. 2. EXTRUDED BARS, RODS, PROFILES, AND TUBES: ASTM B 221 3. EXTRUDED STRUCTURAL PIPE AND TUBES: ASTM B 429. 4. STRUCTURAL PROFILES: ASTM B 308/B 308M. 5. WELDING RODS AND BARE ELECTRODES: AWS A5.10/A5.10M.
B.	STEEL REINFORCEMENT: MANUFACTURER'S STANDARD ZINC-RICH CORROSION-RESISTANT PRIMER, COMPLYING WITH SSPC-PS GUIDE NO. 12,00; APPLIED IMMEDIATELY AFTER SURFACE PREPARATION AND PRETREATMENT. SELECT SURFACE PREPARATION METHODS ACCORDING TO RECOMMENDATIONS IN SSPC-SP COM AND PREPARE SURFACES ACCORDING TO APPLICABLE SSPC STANDARD. 1. STRUCTURAL SHAPES, PLATES, AND BARS: ASTM A 36/A 36M. 2. COLD-ROLLED SHEET AND STRIP: ASTM A 1008/A 1008M. 3. HOT-ROLLED SHEET AND STRIP: ASTM A 1011/A 1011M.
2.3	FRAMING SYSTEMS
A.	FRAMING MEMBERS: MANUFACTURER'S STANDARD EXTRUDED-ALUMINUM FRAMING MEMBERS OF THICKNESS REQUIRED AND REINFORCED AS REQUIRED TO SUPPORT IMPOSED LOADS. 1. CONSTRUCTION: THERMALLY BROKEN. 2. GLAZING SYSTEM: RETAINED MECHANICALLY WITH GASKETS ON FOUR SIDES. 3. GLAZING PLANE: AS INDICATED.
B.	BRACKETS AND REINFORCEMENTS: MANUFACTURER'S STANDARD HIGH-STRENGTH ALUMINUM WITH NONSTAINING, NONFERROUS SHIMS FOR ALIGNING SYSTEM COMPONENTS.
C.	FASTENERS AND ACCESSORIES: MANUFACTURER'S STANDARD CORROSION-RESISTANT, NONSTAINING, NONBLEEDING FASTENERS AND ACCESSORIES COMPATIBLE WITH ADJACENT MATERIALS.
D.	CONCEALED FLASHING: MANUFACTURER'S STANDARD CORROSION-RESISTANT, NONSTAINING, NONBLEEDING FLASHING COMPATIBLE WITH ADJACENT MATERIALS.
E.	FRAMING SYSTEM GASKETS AND SEALANTS: MANUFACTURER'S STANDARD, RECOMMENDED BY MANUFACTURER FOR JOINT TYPE. 1. PROVIDE SEALANTS FOR USE INSIDE OF THE WEATHERPROOFING SYSTEM THAT HAVE A VOC CONTENT OF 250 g/L OR LESS WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METHOD 24).
2.4	GLAZING SYSTEMS

A.	GLAZING: AS SPECIFIED IN DIVISION 08 SECTION "GLAZING."
B.	GLAZING GASKETS: MANUFACTURER'S STANDARD COMPRESSION TYPES; REPLACEABLE, MOLDED OR EXTRUDED, OF PROFILE AND HARDNESS REQUIRED TO MAINTAIN WATERTIGHT SEAL.
C.	SPACERS AND SETTING BLOCKS: MANUFACTURER'S STANDARD ELASTOMERIC TYPE.
2.5	ENTRANCE DOOR SYSTEMS
A.	ENTRANCE DOORS: MANUFACTURER'S STANDARD GLAZED ENTRANCE DOORS FOR MANUAL-SWING OPERATION. 1. DOOR CONSTRUCTION: 1-3/4-INCH (44.5-MM) OVERALL THICKNESS, WITH MINIMUM 0.125-INCH- (3.2-MM) THICK, EXTRUDED ALUMINUM TUBULAR RAIL AND STILE MEMBERS. MECHANICALLY FASTEN CORNERS WITH REINFORCING BRACKETS THAT ARE DEEPLY PENETRATED AND FILLET WELDED OR THAT INCORPORATE CONCEALED TIE RODS. a. THERMAL CONSTRUCTION: HIGH-PERFORMANCE PLASTIC CONNECTORS SEPARATE ALUMINUM MEMBERS EXPOSED TO THE EXTERIOR FROM MEMBERS EXPOSED TO THE INTERIOR. 2. DOOR DESIGN: AS INDICATED. a. ACCESSIBLE DOORS: SMOOTH SURFACED FOR WIDTH OF DOOR IN AREA WITHIN 10 INCHES (255 MM) ABOVE FLOOR OR GROUND PLANE. b. GLAZING STOPS AND GASKETS: MANUFACTURER STANDARD, SNAP-ON, EXTRUDED-ALUMINUM STOPS AND PREFORMED GASKETS. a. PROVIDE NONREMOVABLE GLAZING STOPS ON OUTSIDE OF DOOR.
B.	ENTRANCE DOOR HARDWARE: AS SPECIFIED AND ON THE DRAWINGS AS INDICATED.
2.6	ENTRANCE DOOR HARDWARE
A.	GENERAL: PROVIDE ENTRANCE DOOR HARDWARE AND ENTRANCE DOOR HARDWARE SETS INDICATED IN DOOR AND FRAME SCHEDULE FOR EACH ENTRANCE DOOR TO COMPLY WITH REQUIREMENTS IN THIS SECTION. 1. ENTRANCE DOOR HARDWARE SETS: PROVIDE QUANTITY, ITEM, SIZE, FINISH OR COLOR INDICATED. 2. OPENING-FORCE REQUIREMENTS: a. EGRESS DOORS: NOT MORE THAN 15 LBF (67N) TO RELEASE THE LATCH AND NOT MORE THAN 30 LBF (133N) TO SET THE DOOR IN MOTION AND NOT MORE THAN 15 LBF (67N) TO OPEN THE DOOR TO ITS MINIMUM REQUIRED WIDTH. b. ACCESSIBLE INTERIOR DOORS: NOT MORE THAN 5 LBF (22.2 N) TO FULLY OPEN DOOR. 3. LATCHES AND EXIT DEVICES: NOT MORE THAN 15 LBF (67 N) REQUIRED TO RELEASE LATCH. B. BUTT HINGES: BHMA A156.1, GRADE 1, RADIUS CORNER. 1. NONREMOVABLE PINS: PROVIDE SET SCREW IN HINGE BARREL THAT, WHEN TIGHTENED INTO A GROOVE IN HINGE PIN, PREVENTS REMOVAL OF PIN WHILE ENTRANCE DOOR IS CLOSED. 2. EXTERIOR HINGES: AS INDICATED ON THE DRAWING. 3. QUANTITIES: a. FOR DOORS UP TO 87 INCHES (2210 MM) HIGH, PROVIDE 3 HINGES PER LEAF. C. PANIC EXIT DEVICES: BHMA A156.3, GRADE 1, LISTED AND LABELED BY A TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITY HAVING JURISDICTION, FOR PANIC PROTECTION, BASED ON TESTING ACCORDING TO UL 305, AND AS INDICATED ON THE DRAWING. D. CYLINDERS: BHMA A156.5, GRADE 1. 1. KEYING: MASTER KEY SYSTEM. PERMANENTLY INSCRIBE EACH KEY WITH A VISUAL KEY CONTROL NUMBER AND INCLUDE NOTATION "DO NOT DUPLICATE." E. STRIKES: PROVIDE STRIKE WITH BLACK-PLASTIC DUST BOX FOR EACH LATCH OR LOCK BOLT; FABRICATED FOR ALUMINUM FRAMING. F. OPERATING TRIM: BHMA A156.6. G. CLOSERS: BHMA A156.4, GRADE 1, WITH ACCESSORIES REQUIRED FOR A COMPLETE INSTALLATION, SIZED AS REQUIRED BY DOOR SIZE, EXPOSURE TO WEATHER, AND ANTICIPATED FREQUENCY OF USE; ADJUSTABLE TO MEET FIELD CONDITIONS AND REQUIREMENTS FOR OPENING FORCE. H. DOOR STOPS: BHMA A156.16, GRADE 1, FLOOR OR WALL MOUNTED, AS APPROPRIATE FOR DOOR LOCATION INDICATED, WITH INTEGRAL RUBBER BUMPER. I. WEATHER STRIPPING: MANUFACTURER'S STANDARD REPLACEABLE COMPONENTS. J. WEATHER SWEEPS: MANUFACTURER'S STANDARD EXTERIOR-DOOR BOTTOM SWEEP WITH CONCEALED FASTENERS ON MOUNTING STRIP. K. SILENCERS: BHMA A156.16, GRADE 1. L. THRESHOLDS: BHMA A156.21, RAISED THRESHOLDS BEVELED WITH A SLOPE OF NOT MORE THAN 1:2, WITH MAXIMUM HEIGHT OF 1/2 INCH (13 MM).

2.7	ACCESSORY MATERIALS
A.	BITUMINOUS PAINT: COLD-APPLIED, ASPHALT-MASTIC PAINT COMPLYING WITH SSPC-PAINT 12 REQUIREMENTS EXCEPT CONTAINING NO ASBESTOS; FORMULATED FOR 30-MIL (0.762-MM) THICKNESS PER COAT.

2.8	FABRICATION
A.	FORM OR EXTRUDE ALUMINUM SHAPES BEFORE FINISHING.
B.	WELD IN CONCEALED LOCATIONS TO GREATEST EXTENT POSSIBLE TO MINIMIZE DISTORTION OR DISCOLORATION OF FINISH. REMOVE WELD SPATTER AND WELDING OXIDES FROM EXPOSED SURFACES BY DESCALING OR GRINDING.
C.	FRAMING MEMBERS, GENERAL: FABRICATE COMPONENTS THAT, WHEN ASSEMBLED, HAVE THE FOLLOWING CHARACTERISTICS: 1. PROFILES THAT ARE SHARP, STRAIGHT, AND FREE OF DEFECTS OR DEFORMATIONS. 2. ACCURATELY FITTED JOINTS WITH ENDS COPED OR MITERED. 3. MEANS TO DRAIN WATER PASSING JOINTS, CONDENSATION WITHIN FRAMING MEMBERS, AND MOISTURE MIGRATING WITHIN THE SYSTEM TO EXTERIOR. 4. PHYSICAL AND THERMAL ISOLATION OF GLAZING FROM FRAMING MEMBERS. 5. ACCOMMODATIONS FOR THERMAL AND MECHANICAL MOVEMENTS OF GLAZING AND FRAMING TO MAINTAIN REQUIRED GLAZING EDGE CLEARANCES. 6. PROVISIONS FOR FIELD REPLACEMENT OF GLAZING FROM EXTERIOR. 7. FASTENERS, ANCHORS, AND CONNECTION DEVICES THAT ARE CONCEALED FROM VIEW TO GREATEST EXTENT POSSIBLE.
D.	MECHANICALLY GLAZED FRAMING MEMBERS: FABRICATE FOR FLUSH GLAZING WITHOUT PROJECTING STOPS.
E.	ENTRANCE DOOR FRAMES: REINFORCE AS REQUIRED TO SUPPORT LOADS IMPOSED BY DOOR OPERATION AND FOR INSTALLING ENTRANCE DOOR HARDWARE.
F.	ENTRANCE DOORS: REINFORCE DOORS AS REQUIRED FOR INSTALLING ENTRANCE DOOR HARDWARE.

2.9 ALUMINUM FINISHES

A.	BAKED-ENAMEL OR POWDER-COAT FINISH: AAMA 2603 EXCEPT WITH A MINIMUM DRY FILM THICKNESS OF 1.5 MILS (0.04 MM). 1. COLOR AND GLOSS: AS INDICATED BY MANUFACTURER'S DESIGNATIONS.
B.	HIGH-PERFORMANCE ORGANIC FINISH: 3 OR 4 COAT FLUOROPOLYMER FINISH COMPLYING WITH AAMA 2605 AND CONTAINING NOT LESS THAN 70 PERCENT PVDF RESIN BY WEIGHT IN BOTH COLOR COAT AND CLEAR TOPCOAT. 1. COLOR AND GLOSS: AS INDICATED ON THE DRAWINGS.

PART 3 - EXECUTION

3.1	INSTALLATION
A.	GENERAL: 1. COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. 2. DO NOT INSTALL DAMAGED COMPONENTS. 3. FIT JOINTS TO PRODUCE HAIRLINE JOINTS FREE OF BURRS AND DISTORTION. 4. RIGIDLY SECURE NONMOVEMENT JOINTS. 5. INSTALL ANCHORS WITH SEPARATORS AND ISOLATORS TO PREVENT METAL CORROSION AND ELECTROLYTIC DETERIORATION. 6. SEAL JOINTS WATERTIGHT UNLESS OTHERWISE INDICATED.
B.	METAL PROTECTION: 1. WHERE ALUMINUM WILL CONTACT DISSIMILAR METALS, PROTECT AGAINST GALVANIC ACTION BY PAINTING CONTACT SURFACES WITH PRIMER OR APPLYING SEALANT OR TAPE, OR BY INSTALLING NONCONDUCTIVE SPACERS AS RECOMMENDED BY MANUFACTURER FOR THIS PURPOSE. 2. WHERE ALUMINUM WILL CONTACT CONCRETE OR MASONRY, PROTECT AGAINST CORROSION BY PAINTING CONTACT SURFACES WITH BITUMINOUS PAINT.

C.	INSTALL COMPONENTS TO DRAIN WATER PASSING JOINTS, CONDENSATION OCCURRING WITHIN FRAMING MEMBERS, AND MOISTURE MIGRATING WITHIN THE SYSTEM TO EXTERIOR.
D.	SET CONTINUOUS SILL MEMBERS AND FLASHING IN FULL SEALANT BED AS SPECIFIED IN DIVISION 07 SECTION "JOINT SEALANTS" TO PRODUCE WEATHERTIGHT INSTALLATION.
E.	INSTALL COMPONENTS PLUMB AND TRUE IN ALIGNMENT WITH ESTABLISHED LINES AND GRADES, AND WITHOUT WARP OR RACK.
F.	INSTALL GLAZING AS SPECIFIED IN DIVISION 08 SECTION "GLAZING."
G.	ENTRANCE DOORS: INSTALL DOORS TO PRODUCE SMOOTH OPERATION AND TIGHT FIT AT CONTACT POINTS. 1. EXTERIOR DOORS: INSTALL TO PRODUCE WEATHERTIGHT ENCLOSURE AND TIGHT FIT AT WEATHER STRIPPING. 2. FIELD-INSTALLED ENTRANCE DOOR HARDWARE: INSTALL SURFACE-MOUNTED ENTRANCE DOOR HARDWARE ACCORDING TO ENTRANCE DOOR HARDWARE MANUFACTURERS' WRITTEN INSTRUCTIONS USING CONCEALED FASTENERS TO GREATEST EXTENT POSSIBLE.
3.2	FIELD QUALITY CONTROL
A.	REPAIR OR REMOVE WORK IF TEST RESULTS AND INSPECTIONS INDICATE THAT IT DOES NOT COMPLY WITH SPECIFIED REQUIREMENTS.
B.	ALUMINUM-FRAMED ASSEMBLIES WILL BE CONSIDERED DEFECTIVE IF THEY DO NOT PASS TESTS AND INSPECTIONS.

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1	SUMMARY
A.	THIS SECTION INCLUDES THE FOLLOWING: 1. COMMERCIAL DOOR HARDWARE. 2. CYLINDERS FOR DOORS SPECIFIED IN OTHER SECTIONS. B. SEE DIVISION 08 DOOR SECTIONS FOR DOOR SILENCERS.
1.2	SUBMITTALS
A.	PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.
B.	SAMPLES: FOR EACH EXPOSED FINISH.
C.	OTHER ACTION SUBMITTALS: 1. DOOR HARDWARE SETS: PREPARED BY OR UNDER THE SUPERVISION OF INSTALLER, DETAILING FABRICATION AND ASSEMBLY OF DOOR HARDWARE, AS WELL AS PROCEDURES AND DIAGRAMS. a. FORMAT: USE SAME SCHEDULING SEQUENCE AND FORMAT AND USE SAME DOOR NUMBERS AS IN THE CONTRACT DOCUMENTS. b. CONTENT: INCLUDE THE FOLLOWING INFORMATION: 1) IDENTIFICATION NUMBER, LOCATION, HAND, FIRE RATING, AND MATERIAL OF EACH DOOR AND FRAME. 2) TYPE, STYLE, FUNCTION, SIZE, QUANTITY, AND FINISH OF EACH DOOR HARDWARE ITEM, INCLUDE DESCRIPTION AND FUNCTION OF EACH LOCKSET AND EXIT DEVICE. 3) COMPLETE DESIGNATIONS OF EVERY ITEM REQUIRED FOR EACH DOOR OR OPENING INCLUDING NAME AND MANUFACTURER.
2.	KEYING SCHEDULE: PREPARED BY OR UNDER THE SUPERVISION OF INSTALLER, DETAILING OWNER'S FINAL KEYING INSTRUCTIONS FOR LOCKS.
1.3	QUALITY ASSURANCE

A.	INSTALLER QUALIFICATIONS: AN EMPLOYER OF WORKERS TRAINED AND APPROVED BY LOCK MANUFACTURER. 1. INSTALLER'S RESPONSIBILITIES INCLUDE SUPPLYING AND INSTALLING DOOR HARDWARE AND PROVIDING A QUALIFIED ARCHITECTURAL HARDWARE CONSULTANT AVAILABLE DURING THE COURSE OF THE WORK TO CONSULT WITH CONTRACTOR, ARCHITECT, AND OWNER ABOUT DOOR HARDWARE AND KEYING. B. ARCHITECTURAL HARDWARE CONSULTANT QUALIFICATIONS: A PERSON WHO IS CURRENTLY CERTIFIED BY DHI AS AN ARCHITECTURAL HARDWARE CONSULTANT AND WHO IS EXPERIENCED IN PROVIDING CONSULTING SERVICES FOR DOOR HARDWARE INSTALLATIONS THAT ARE COMPARABLE IN MATERIAL, DESIGN, AND EXTENT TO THAT INDICATED FOR THIS PROJECT. C. KEYING CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE TO COMPLY WITH REQUIREMENTS IN DIVISION 01 SECTION "PROJECT MANAGEMENT AND COORDINATION." INCORPORATE KEYING CONFERENCE DECISIONS INTO FINAL KEYING SCHEDULE AFTER REVIEWING DOOR HARDWARE KEYING SYSTEM.
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1.4	DELIVERY, STORAGE, AND HANDLING
A.	DELIVER KEYS TO MANUFACTURER OF KEY CONTROL SYSTEM FOR SUBSEQUENT DELIVERY TO OWNER.
B.	DELIVER KEYS AND PERMANENT CORES TO OWNER BY REGISTERED MAIL OR OVERNIGHT PACKAGE SERVICE.

1.5 COORDINATION

A.	TEMPLATES: DISTRIBUTE DOOR HARDWARE TEMPLATES FOR DOORS, FRAMES, AND OTHER WORK SPECIFIED TO BE FACTORY PREPARED FOR INSTALLING DOOR HARDWARE. CHECK SHOP DRAWINGS OF OTHER WORK TO CONFIRM THAT ADEQUATE PROVISIONS ARE MADE FOR LOCATING AND INSTALLING DOOR HARDWARE TO COMPLY WITH INDICATED REQUIREMENTS.
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1.6	WARRANTY
A.	SPECIAL WARRANTY: MANUFACTURER'S STANDARD FORM IN WHICH MANUFACTURER AGREES TO REPAIR OR REPLACE COMPONENTS OF DOOR HARDWARE THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN SPECIFIED WARRANTY PERIOD. 1. WARRANTY PERIOD: THREE YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

PART 2 - PRODUCTS

2.1	SCHEDULED DOOR HARDWARE
A.	GENERAL: PROVIDE DOOR HARDWARE FOR EACH DOOR TO COMPLY WITH REQUIREMENTS IN THIS SECTION, DOOR HARDWARE SETS INDICATED IN DOOR SCHEDULE ON THE DRAWINGS, AND THE DOOR HARDWARE SCHEDULE AT THE END OF PART 3. 1. DOOR HARDWARE SETS: PROVIDE QUANTITY, ITEM, SIZE, FINISH AND COLOR INDICATED AND NAMED MANUFACTURERS' PRODUCTS.

2.2 HINGES AND PIVOTS

A.	GENERAL: FULL MORTISE, RADIUSUED CORNERS, FIVE (5) KNUCKLE BALL BEARING, HEAVYWEIGHT, 4-1/2 BY 4-1/2 INCHES, BUTYRAC, WITH STAINLESS STEEL TO BE INSTALLED ENTIRELY (BOTH LEAVES) INTO WOOD DOORS AND FRAMES, PROVIDE ONLY TEMPLATE-PRODUCED UNITS. B. HINGE BASE METAL: AS INDICATED IN DOOR HARDWARE SCHEDULE AT THE END OF PART 3, OR IF NOT INDICATED, PROVIDE THE FOLLOWING: 1. EXTERIOR HINGES: STAINLESS STEEL, WITH STAINLESS-STEEL PIN. 2. INTERIOR HINGES: STEEL, WITH STEEL PIN STAINLESS STEEL, WITH STAINLESS-STEEL PIN. C. NONREMOVABLE PINS: PROVIDE SET SCREW IN HINGE BARREL THAT PREVENTS REMOVAL OF PIN WHILE DOOR IS CLOSED; FOR OUTSWINGING EXTERIOR DOORS. D. SCREWS: PHILLIPS FLAT-HEAT SCREWS; SCREW HEADS FINISHED TO MATCH SURFACE OF HINGES. 1. METAL DOORS AND FRAMES: MACHINE SCREWS (DRILLED AND TAPPED HOLES). 2. WOOD DOORS AND FRAMES: WOOD SCREWS.
2.3	MECHANICAL LOCKS AND LATCHES
A.	LOCKSET DESIGN: AS SCHEDULED.
B.	DUMMYY TRIM: MATCH LEVER LOCK TRIM AND ESCUTCHEONS.
C.	LOCK THROW: COMPLY WITH LABELED FIRE DOOR REQUIREMENTS.
D.	BACKSET: 2-3/4", UNLESS OTHERWISE INDICATED.

2.4	EXIT DEVICES
A.	PANIC EXIT DEVICES: LISTED AND LABELED FOR PANIC PROTECTION, BASED ON TESTING ACCORDING TO UL 305.
B.	FIRE EXIT DEVICES: COMPLYING WITH NFPA 80 THAT ARE LISTED AND LABELED FOR FIRE AND PANIC PROTECTION, BASED ON TESTING ACCORDING TO UL 305 AND NFPA 252.
C.	DUMMYY PUSH BAR: NONFUNCTIONING PUSH BAR MATCHING FUNCTIONAL PUSH BAR.
D.	OUTSIDE TRIM: PULL WITH CYLINDER; MATERIAL, FINISH AND DESIGN TO MATCH LOCKSETS AND LATCHSETS, UNLESS OTHERWISE INDICATED.
E.	THROUGH BOLTS: FOR EXIT DEVICES AND TRIM ON METAL DOORS.

2.5 OPERATING TRIM

A.	PUSH-PULL DESIGN: AS INDICATED ON DRAWINGS.
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2.6 CLOSERS

A.	SURFACE MOUNTED CLOSERS: AS INDICATED ON DRAWINGS.
B.	CLOSER HOLDER RELEASE DEVICES: BHMA A156.15.
C.	SIZE OF UNITS: FACTORY-SIZED, ADJUSTABLE TO MEET FIELD CONDITIONS AND REQUIREMENTS FOR OPENING FORCE.

2.7 PROTECTIVE TRIM UNITS

A.	SIZED 2 INCHES LESS THAN DOOR WIDTH, BEVELED 3 SIDES, BY HEIGHT SCHEDULED OR INDICATED. MATCH WITH EXPOSED MACHINE OR SELF-TAPPING SCREWS, COUNTERSUNK, FINISH TO FASTEN PLATE. 1. MATERIAL: METAL.
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2.8 STOPS AND HOLDERS

A.	STOPS AND HOLDERS: PROVIDE FLOOR STOPS FOR DOORS, UNLESS WALL OR OTHER TYPE STOPS ARE SCHEDULED OR INDICATED. DO NOT MOUNT FLOOR STOPS WHERE THEY WILL IMPEDE TRAFFIC. WHERE FLOOR OR WALL STOPS ARE NOT APPROPRIATE, PROVIDE OVERHEAD HOLDERS.
B.	SILENCERS FOR DOOR FRAMES: NEOPRENE OR RUBBER; FABRICATED FOR DRILLED-IN APPLICATION TO FRAME.

2.9 DOOR GASKETING AND THRESHOLDS

A.	DOOR GASKETING: PROVIDE CONTINUOUS POLYURETHANE WEATHER-STRIP GASKETING ON EXTERIOR DOORS AND PROVIDE SMOKE, LIGHT, OR SOUND GASKETING ON INTERIOR DOORS WHERE INDICATED OR SCHEDULED. PROVIDE NONCORROSIVE FASTENERS FOR EXTERIOR APPLICATIONS AND ELSEWHERE AS INDICATED. 1. AIR LEAKAGE: NOT TO EXCEED 0.50 CFM PER FOOT OF CRACK LENGTH FOR GASKETING OTHER THAN FOR SMOKE CONTROL, AS TESTED ACCORDING TO ASTM E 283. 2. SMOKE-LABELED GASKETING: ASSEMBLIES COMPLYING WITH NFPA 105 THAT ARE LISTED AND LABELED, BASED ON TESTING ACCORDING TO UL 1784. 3. FIRE-LABELED GASKETING: ASSEMBLIES COMPLYING WITH NFPA 80 THAT ARE LISTED AND LABELED, BASED ON TESTING ACCORDING TO UL 108 OR NFPA 252. 4. SOUND-RATED GASKETING: ASSEMBLIES THAT ARE LISTED AND LABELED BASED ON TESTING ACCORDING TO ASTM E 1408. 5. GASKETING MATERIALS: COMPLY WITH ASTM D 2000 AND AAMA 701/702.
B.	THRESHOLDS: OF TYPE SCHEDULED OR INDICATED.

2.10 CYLINDERS, KEYING, AND STRIKES

A.	CYLINDERS: TUMBLER TYPE, CONSTRUCTED FROM BRASS OR BRONZE, STAINLESS STEEL, OR NICKEL SILVER. 1. NUMBER OF PINS: SEVEN 2. HIGH-SECURITY GRADE: BHMA GRADE 1A, LISTED AND LABELED AS COMPLYING WITH UL 437 (SUFFIX A). 3. PERMANENT CORES: MANUFACTURER'S STANDARD; FINISH FACE TO MATCH LOCKSET; INTERCHANGEABLE CORES. 4. CONSTRUCTION CORES: PROVIDE CONSTRUCTION CORES THAT ARE REPLACEABLE BY PERMANENT CORES. PROVIDE 5 CONSTRUCTION MASTER KEYS. a.REPLACE CONSTRUCTION CORES WITH PERMANENT CORES, AS INDICATED IN KEYING SCHEDULE AND AS DIRECTED BY OWNER. a. FURNISH PERMANENT CORES TO OWNER FOR INSTALLATION. B. KEYING SYSTEM: FACTORY-REGISTERED KEYING SYSTEM; MASTER KEY SYSTEM. 1. KEYS: PROVIDE NICKEL-SILVER KEYS PERMANENTLY INSCRIBED WITH A VISUAL KEY CONTROL NUMBER AND "DO NOT DUPLICATE" NOTATION. IN ADDITION TO ONE EXTRA BLANK KEY FOR EACH LOCK, PROVIDE THREE CHANGE KEYS AND FIVE MASTER KEYS. D. KEY CONTROL SYSTEM: INCLUDE KEY-HOLDING HOOKS, LABELS, KEY TAGS WITH SELF-LOCKING KEY HOLDERS, ENVELOPES, AND MARKERS. CONTAIN SYSTEM IN WALL-MOUNTED TYPE METAL CABINET WITH BAKED ENAMEL FINISH. INCLUDE CROSS-INDEX SYSTEM SET UP BY KEY CONTROL MANUFACTURER, WITH CARD INDEX. E. STRIKES: MANUFACTURER'S STANDARD STRIKE WITH STRIKE BOX FOR EACH LATCH OR LOCK BOLT, WITH CURVED TIP EXTENDED TO PROTECT FRAME, FINISHED TO MATCH DOOR HARDWARE SET.
2.11	FABRICATION
A.	BASE METALS: FURNISH METALS OF A QUALITY EQUAL TO OR GREATER THAN THAT OF SPECIFIED UNIFORM TYP E PIN. EXCEPT FOR HINGES TO BE INSTALLED ENTIRELY (BOTH LEAVES) INTO WOOD DOORS AND FRAMES, PROVIDE ONLY TEMPLATE-PRODUCED UNITS. B. FASTENERS: PHILLIPS FLAT-HEAT SCREWS WITH FINISHED HEADS TO MATCH SURFACE OF DOOR HARDWARE, UNLESS OTHERWISE INDICATED. PROVIDE STEEL MACHINE OR WOOD SCREWS OR STEEL THROUGH BOLTS FOR FIRE-RATED APPLICATIONS. C. SPACERS OR SEX BOLTS: FOR THROUGH BOLTING OF HOLLOW METAL DOORS. D. FASTENERS FOR WOOD DOORS: COMPLY WITH REQUIREMENTS OF DHI WDHS.2, "RECOMMENDED FASTENERS FOR WOOD DOORS." E. FINISHES: COMPLY WITH BHMA A156.18.

PART 3 - EXECUTION

3.1	INSTALLATION
A.	STEEL DOORS AND FRAMES: COMPLY WITH DHI A115 SERIES. DRILL AND TAP DOORS AND FRAMES FOR SURFACE-APPLIED HARDWARE ACCORDING TO SDI 107.
B.	EXAMINE DOORS AND FRAMES FOR COMPLIANCE WITH REQUIREMENTS FOR INSTALLATION TOLERANCES, LABELED FIRE DOOR ASSEMBLY CONSTRUCTION, WALL AND FLOOR CONSTRUCTION, AND OTHER CONDITIONS AFFECTING PERFORMANCE. EXAMINE ROUGHING-IN FOR ELECTRICAL POWER SYSTEMS TO VERIFY ACTUAL LOCATIONS OF WIRING CONNECTIONS BEFORE ELECTRIFIED DOOR HARDWARE INSTALLATION.
C.	WOOD DOOR PREPARATION: COMPLY WITH DHI A115-W SERIES.
D.	MOUNTING HEIGHTS: COMPLY WITH THE FOLLOWING REQUIREMENTS, UNLESS OTHERWISE INDICATED

SECTION 092900 - GYPSUM BOARD

PART 1 - GENERAL

1.1 SUMMARY

- A. THIS SECTION INCLUDES THE FOLLOWING:
1. INTERIOR GYPSUM BOARD, WALL AND CEILINGS.
 2. TILE BACKING PANELS.
 3. CEMENTITIOUS BACKER UNITS.

1.2 SUBMITTALS

- A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.

1.3 QUALITY ASSURANCE

- A. FIRE-RESISTANCE-RATED ASSEMBLIES: FOR FIRE-RESISTANCE-RATED ASSEMBLIES, PROVIDE MATERIALS AND CONSTRUCTION IDENTICAL TO THOSE TESTED IN ASSEMBLY INDICATED ACCORDING TO ASTM E 119 BY AN INDEPENDENT TESTING AGENCY.
- B. STC-RATED ASSEMBLIES: FOR STC-RATED ASSEMBLIES, PROVIDE MATERIALS AND CONSTRUCTION IDENTICAL TO THOSE TESTED IN ASSEMBLY INDICATED ACCORDING TO ASTM E 90 AND CLASSIFIED ACCORDING TO ASTM E 413 BY AN INDEPENDENT TESTING AGENCY.

PART 2 - PRODUCTS

2.1 INTERIOR GYPSUM BOARD

- A. GENERAL: COMPLYING WITH ASTM C 36/C 36M OR ASTM C 1396/C 1396M, AS APPLICABLE TO TYPE OF GYPSUM BOARD INDICATED AND WHICHEVER IS MORE STRINGENT.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
- a.AMERICAN GYPSUM CO.
 - b.BPB AMERICA INC.
 - c.G-P GYPSUM.
 - d. LAFARGE NORTH AMERICA INC.
 - e. NATIONAL GYPSUM COMPANY.
 - f. PABCO GYPSUM.
 - g. TEMPLE.
 - h. USG CORPORATION.
- B. REGULAR TYPE:
1. THICKNESS: 1/2 INCH (12.7 MM).
 2. LONG EDGES: TAPERED.
- C. TYPE X:
1. THICKNESS: 5/8 INCH (15.9 MM).
 2. LONG EDGES: TAPERED.
- D. CEILING TYPE: MANUFACTURED TO HAVE MORE SAG RESISTANCE THAN REGULAR-TYPE GYPSUM BOARD.
1. THICKNESS: 1/2 INCH (12.7 MM).
 2. LONG EDGES: TAPERED.
- E. MOISTURE- AND MOLD-RESISTANT TYPE: WITH MOISTURE- AND MOLD-RESISTANT CORE AND SURFACES.
1. CORE: 5/8 INCH (15.9 MM), TYPE MR.
 2. LONG EDGES: TAPERED.

2.2 TILE BACKING PANELS

- A. WATER-RESISTANT GYPSUM BACKING BOARD: ASTM C 630/C 630M OR ASTM C 1396/C 1396M.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
- a. AMERICAN GYPSUM CO.
 - b. BPB AMERICA INC.
 - c. G-P GYPSUM.
 - d. LAFARGE NORTH AMERICA INC.
 - e. NATIONAL GYPSUM COMPANY.
 - f. PABCO GYPSUM.
 - g. TEMPLE.
 - h. USG CORPORATION.
- B. CEMENTITIOUS BACKER UNITS: ANSI A108.1.
1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
 - a. CUSTOM BUILDING PRODUCTS; WONDERBOARD.
 - b. FINPAN, INC.; UTIL-A-CRETE CONCRETE BACKER BOARD.
 - c. USG CORPORATION; DUROCK CEMENT BOARD. 2. THICKNESS: AS INDICATED ON DRAWINGS.

2.3 TRIM ACCESSORIES

- A. INTERIOR TRIM: ASTM C 1047.
1. MATERIAL: GALVANIZED OR ALUMINUM-COATED STEEL SHEET.
 2. SHAPES:
 - a. CORNERBEAD.
 - b. BULLNOSE BEAD.
 - c. LC-BEAD: J-SHAPED; EXPOSED LONG FLANGE RECEIVES JOINT COMPOUND.
 - d. L-BEAD: L-SHAPED; EXPOSED LONG FLANGE RECEIVES JOINT COMPOUND.
 - e. U-BEAD: J-SHAPED; EXPOSED SHORT FLANGE DOES NOT RECEIVE JOINT COMPOUND.
 - f. CURVED-EDGE CORNERBEAD: WITH NOTCHED OR FLEXIBLE FLANGES.
- B. ALUMINUM TRIM: EXTRUDED ACCESSORIES OF PROFILES AND DIMENSIONS INDICATED.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
 - a. FRY REGLET CORP.
 - b. GORDON, INC.
 - c. PITTCO INDUSTRIES. 2. ALUMINUM: ALLOY AND TEMPER WITH NOT LESS THAN THE STRENGTH AND DURABILITY PROPERTIES OF ASTM B 221 (ASTM B 221M), ALLOY 6063-T5.
 3. FINISH: CORROSION-RESISTANT PRIMER COMPATIBLE WITH JOINT COMPOUND AND FINISH MATERIALS SPECIFIED.

2.4 JOINT TREATMENT MATERIALS

- A. GENERAL: COMPLY WITH ASTM C 475/C 475M.
- B. JOINT TAPE:
1. INTERIOR GYPSUM WALLBOARD: PAPER.
 2. TILE BACKING PANELS: AS RECOMMENDED BY PANEL MANUFACTURER.
- C. JOINT COMPOUND FOR INTERIOR GYPSUM WALLBOARD: FOR EACH COAT USE FORMULATION THAT IS COMPATIBLE WITH OTHER COMPOUNDS APPLIED ON PREVIOUS OR FOR SUCCESSIVE COATS.
1. PREFILLING: AT OPEN JOINTS, ROUNDED OR BEVELED PANEL EDGES, AND DAMAGED SURFACE AREAS, USE SETTING-TYPE TAPING COMPOUND.
 2. EMBEDDING AND FIRST COAT: FOR EMBEDDING TAPE AND FIRST COAT ON JOINTS, FASTENERS, AND TRIM FLANGES, USE SETTING-TYPE TAPING COMPOUND.
 - a. USE SETTING-TYPE COMPOUND FOR INSTALLING PAPER-FACED METAL TRIM ACCESSORIES.
 3. FILL COAT: FOR SECOND COAT, USE SETTING-TYPE, SANDABLE TOPPING COMPOUND.
 4. FINISH COAT: FOR THIRD COAT, USE SETTING-TYPE, SANDABLE TOPPING COMPOUND.
- D. JOINT COMPOUND FOR TILE BACKING PANELS:
1. WATER-RESISTANT GYPSUM BACKING BOARD: USE SETTING-TYPE TAPING COMPOUND AND SETTING-TYPE, SANDABLE TOPPING COMPOUND.
 2. CEMENTITIOUS BACKER UNITS: AS RECOMMENDED BY BACKER UNIT MANUFACTURER.

2.5 AUXILIARY MATERIALS

- A. GENERAL: PROVIDE AUXILIARY MATERIALS THAT COMPLY WITH REFERENCED INSTALLATION STANDARDS AND MANUFACTURER'S WRITTEN RECOMMENDATIONS.
- B. STEEL DRILL SCREWS: ASTM C 1002, UNLESS OTHERWISE INDICATED.
1. USE SCREWS COMPLYING WITH ASTM C 954 FOR FASTENING PANELS TO STEEL MEMBERS FROM 0.033 TO 0.112 INCH (0.84 TO 2.84 MM) THICK.
 2. FOR FASTENING CEMENTITIOUS BACKER UNITS, USE SCREWS OF TYPE AND SIZE RECOMMENDED BY PANEL MANUFACTURER.
- C. SOUND ATTENUATION BLANKETS: ASTM C 665, TYPE I (BLANKETS WITHOUT MEMBRANE FACING) PRODUCED BY COMBINING THERMOSETTING RESINS WITH MINERAL FIBERS MANUFACTURED FROM GLASS, SLAG WOOL, OR ROCK WOOL.
1. FIRE-RESISTANCE-RATED ASSEMBLIES: COMPLY WITH MINERAL-FIBER REQUIREMENTS OF ASSEMBLY.
- D. ACOUSTICAL SEALANT: AS SPECIFIED IN DIVISION 07 SECTION "JOINT SEALANTS."
1. PROVIDE SEALANTS THAT HAVE A VOC CONTENT OF 250 G/L OR LESS WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METHOD 24).
- E. THERMAL INSULATION: AS SPECIFIED IN DIVISION 07 SECTION "THERMAL INSULATION."
- F. VAPOR RETARDER: AS SPECIFIED IN DIVISION 07 SECTION "THERMAL INSULATION."

PART 3 - EXECUTION

3.1 APPLYING AND FINISHING PANELS, GENERAL

- A. COMPLY WITH ASTM C 840.
- B. EXAMINE PANELS BEFORE INSTALLATION. REJECT PANELS THAT ARE WET, MOISTURE DAMAGED, AND MOLD DAMAGED.
- C. ISOLATE PERIMETER OF GYPSUM BOARD APPLIED TO NON-LOAD-BEARING PARTITIONS AT STRUCTURAL ABUTMENTS, EXCEPT FLOORS. PROVIDE 1/4- TO 1/2-INCH- (6.4- TO 12.7-MM-) WIDE SPACES AT THESE LOCATIONS, AND TRIM EDGES WITH EDGE TRIM WHERE EDGES OF PANELS ARE EXPOSED. SEAL JOINTS BETWEEN EDGES AND ABUTTING STRUCTURAL SURFACES WITH ACOUSTICAL SEALANT.
- D. WOOD FRAMING: INSTALL GYPSUM PANELS OVER WOOD FRAMING, WITH FLOATING INTERNAL CORNER CONSTRUCTION. DO NOT ATTACH GYPSUM PANELS ACROSS THE FLAT GRAIN OF WIDE-DIMENSION LUMBER, INCLUDING FLOOR JOISTS AND HEADERS. FLOAT GYPSUM PANELS OVER THESE MEMBERS, OR PROVIDE CONTROL JOINTS TO COUNTERACT WOOD SHRINKAGE.

3.2 APPLYING INTERIOR GYPSUM BOARD

- A. INSTALL INTERIOR GYPSUM BOARD IN THE FOLLOWING LOCATIONS:
1. REGULAR TYPE: AS INDICATED ON DRAWINGS.
 2. TYPE X: AS INDICATED ON DRAWINGS.
 3. CEILING TYPE: AS INDICATED ON DRAWINGS.
 4. MOISTURE- AND MOLD-RESISTANT TYPE: AS INDICATED ON DRAWINGS.

3.3 APPLYING TILE BACKING PANELS

- A. WATER-RESISTANT GYPSUM BACKING BOARD: INSTALL WHERE INDICATED. INSTALL WITH 1/4-INCH (6.4-MM) GAP WHERE PANELS ABUT OTHER CONSTRUCTION OR PENETRATIONS.
- B. CEMENTITIOUS BACKER UNITS: ANSI A108.1, AT INDICATED TILE.
- C. AREAS NOT SUBJECT TO WETTING: INSTALL REGULAR-TYPE GYPSUM WALLBOARD PANELS TO PRODUCE A FLAT SURFACE EXCEPT AT LOCATIONS INDICATED TO RECEIVE WATER-RESISTANT PANELS.
- D. WHERE TILE BACKING PANELS ABOUT OTHER TYPES OF PANELS IN SAME PLANE, SHIM SURFACES TO PRODUCE A UNIFORM PLANE ACROSS PANEL SURFACES.

3.4 INSTALLING TRIM ACCESSORIES

- A. GENERAL: FOR TRIM WITH BACK FLANGES INTENDED FOR FASTENERS, ATTACH TO FRAMING WITH SAME FASTENERS USED FOR PANELS. OTHERWISE, ATTACH TRIM ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
- B. CONTROL JOINTS: INSTALL CONTROL JOINTS AT LOCATIONS INDICATED ON DRAWINGS, INCLUDING ARBY'S DÉCOR DRAWINGS.
- C. INTERIOR TRIM: INSTALL IN THE FOLLOWING LOCATIONS:
1. CORNERBEAD: USE AT OUTSIDE CORNERS.
 2. BULLNOSE BEAD: USE AT OUTSIDE CORNERS.
 3. LC-BEAD: USE AT EXPOSED PANEL EDGES.
 4. L-BEAD: USE WHERE INDICATED.
 - 5 U-BEAD: USE AT EXPOSED PANEL EDGES WHERE INDICATED.
- D. ALUMINUM TRIM: INSTALL IN LOCATIONS INDICATED ON DRAWINGS.

3.5 FINISHING GYPSUM BOARD

- A. GENERAL: TREAT GYPSUM BOARD JOINTS, INTERIOR ANGLES, EDGE TRIM, CONTROL JOINTS, PENETRATIONS, FASTENER HEADS, SURFACE DEFECTS, AND ELSEWHERE AS REQUIRED TO PREPARE GYPSUM BOARD SURFACES FOR DECORATION. PROMPTLY REMOVE RESIDUAL JOINT COMPOUND FROM ADJACENT SURFACES.
- B. PREFILL OPEN JOINTS, ROUNDED OR BEVELED EDGES, AND DAMAGED SURFACE AREAS.
- C. APPLY JOINT TAPE OVER GYPSUM BOARD JOINTS, EXCEPT THOSE WITH TRIM HAVING FLANGES NOT INTENDED FOR TAPE.
- D. GYPSUM BOARD FINISH LEVELS: FINISH PANELS TO LEVELS INDICATED BELOW:
1. LEVEL 2: PANELS THAT ARE SUBSTRATE FOR TILE WHERE INDICATED ON DRAWINGS.
 2. LEVEL 3: WHERE INDICATED ON DRAWINGS
 3. LEVEL 4: AT PANEL SURFACES THAT WILL BE EXPOSED TO VIEW, UNLESS OTHERWISE INDICATED.
- E. PRIMER AND ITS APPLICATION TO SURFACES ARE SPECIFIED IN OTHER DIVISION 09 SECTIONS.
- F. CEMENTITIOUS BACKER UNITS: FINISH ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

3.6 APPLYING TEXTURE FINISHES

- A. SURFACE PREPARATION AND PRIMER: PREPARE AND APPLY PRIMER TO GYPSUM PANELS AND OTHER SURFACES RECEIVING FINISHES. APPLY PRIMER TO SURFACES THAT ARE CLEAN, DRY, AND SMOOTH.

3.7 PROTECTION

- A. PROTECT INSTALLED PRODUCTS FROM DAMAGE FROM WEATHER, CONDENSATION, DIRECT SUNLIGHT, CONSTRUCTION, AND OTHER CAUSES DURING REMAINDER OF THE CONSTRUCTION PERIOD.
- B. REMOVE AND REPLACE PANELS THAT ARE WET, MOISTURE DAMAGED, AND MOLD DAMAGED.
1. INDICATIONS THAT PANELS ARE WET OR MOISTURE DAMAGED INCLUDE, BUT ARE NOT LIMITED TO, DISCOLORATION, SAGGING, OR IRREGULAR SHAPE.
 2. INDICATIONS THAT PANELS ARE MOLD DAMAGED INCLUDE, BUT ARE NOT LIMITED TO, FUZZY OR SPLOTCHY SURFACE CONTAMINATION AND DISCOLORATION.

SECTION 093000 - TILING

PART 1 - GENERAL

1.1 SUMMARY

- A. THIS SECTION INCLUDES THE FOLLOWING:
1. CERAMIC MOSAIC TILE.
 2. QUARRY TILE.
 3. GLAZED WALL TILE.
 4. METAL EDGE STRIPS INSTALLED AS PART OF TILE INSTALLATIONS.

1.2 SUBMITTALS

- A. PRODUCT DATA: FOR EACH PRODUCT INDICATED.
- B. SHOP DRAWINGS: SHOW LOCATIONS OF EACH TYPE OF TILE AND TILE PATTERN. SHOW WIDTHS, DETAILS, AND LOCATIONS OF EXPANSION, CONTRACTION, CONTROL, AND ISOLATION JOINTS.
- C. SAMPLES:
1. EACH TYPE, COMPOSITION, COLOR, AND FINISH OF TILE AND GROUT.

1.3 EXTRA MATERIALS

- A. FURNISH EXTRA MATERIALS DESCRIBED BELOW THAT MATCH PRODUCTS INSTALLED AND THAT ARE PACKAGED WITH PROTECTIVE COVERING FOR STORAGE AND IDENTIFIED WITH LABELS DESCRIBING CONTENTS.
1. TILE AND TRIM UNITS: FURNISH QUANTITY OF FULL-SIZE UNITS EQUAL TO 3 PERCENT OF AMOUNT INSTALLED, FOR EACH TYPE, COMPOSITION, COLOR, PATTERN, AND SIZE INDICATED.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. IN OTHER PART 2 ARTICLES WHERE TITLES BELOW INTRODUCE LISTS, THE FOLLOWING REQUIREMENTS APPLY FOR PRODUCT SELECTION:
1. AVAILABLE PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE PRODUCTS SPECIFIED.

2.2 TILE PRODUCTS

- A. MANUFACTURERS:
1. AMERICAN OLEAN; DIV. OF DAL-TILE INTERNATIONAL CORP.
 2. DALTILE; DIV. OF DAL-TILE INTERNATIONAL INC.
 3. CUSTOM BUILDING PRODUCTS (GROUT).
- B. ANSI CERAMIC TILE STANDARD: PROVIDE STANDARD GRADE TILE THAT COMPLIES WITH ANSI A137.1, "SPECIFICATIONS FOR CERAMIC TILE," FOR TYPES, COMPOSITIONS, AND OTHER CHARACTERISTICS INDICATED.
- C. PROVIDE TILE, GROUT AND OTHER ACCESSORY ITEMS AS INDICATED ON THE DRAWINGS AND ARBY'S "DÉCOR" PLANS.

2.3 ACCESSORY MATERIALS

- A. LATEX-PORTLAND CEMENT PRODUCT: FLEXIBLE MORTAR WITH ACRYLIC-LATEX ADDITIVE.
1. PRODUCTS:
- 1) MAPEI CORPORATION; PRP 315.
 - 2) SOUTHERN GROUTS & MORTARS, INC.; SOUTHCRETE 1100.

2.4 SETTING AND GROUTING MATERIALS

- A. MANUFACTURERS:
1. CUSTOM BUILDING PRODUCTS.
 2. PORTLAND CEMENT MORTAR (THICKSET) INSTALLATION MATERIALS: ANSI A108.1A.
 3. DRY-SET PORTLAND CEMENT MORTAR (THIN SET): ANSI A118.1.
1. FOR WALL APPLICATIONS, PROVIDE NONSAGGING MORTAR.
- D. LATEX-PORTLAND CEMENT MORTAR (THIN SET): ANSI A118.4.
1. PREPACKAGED DRY-MORTAR MIX CONTAINING DRY ADDITIVE TO WHICH ONLY WATER MUST BE ADDED.
 2. PREPACKAGED DRY-MORTAR MIX COMBINED WITH LIQUID-LATEX ADDITIVE.
 3. FOR WALL APPLICATIONS, PROVIDE NONSAGGING MORTAR.
- E. CHEMICAL-RESISTANT, WATER-CLEANABLE, TILE-SETTING AND -GROUTING EPOXY: ANSI A118.3.
- F. STANDARD SANDED CEMENT GROUT: ANSI A118.6, COLOR AS INDICATED ON ARBY'S "DÉCOR" PLANS.
- G. STANDARD UNSANDED CEMENT GROUT: ANSI A118.6, COLOR AS INDICATED ON ARBY'S "DÉCOR" PLANS.
- H. POLYMER-MODIFIED TILE GROUT: ANSI A118.7, COLOR AS INDICATED ON ARBY'S "DÉCOR" PLANS.
1. POLYMER TYPE: DRY, REDISPERSIBLE FORM, PREPACKAGED WITH OTHER DRY INGREDIENTS.
 2. POLYMER TYPE: LIQUID-LATEX FORM FOR ADDITION TO PREPACKAGED DRY-GROUT MIX.

2.5 MISCELLANEOUS MATERIALS

- A. ELASTOMERIC SEALANTS: ELASTOMERIC SEALANTS OF BASE POLYMER AND CHARACTERISTICS INDICATED THAT COMPLY WITH APPLICABLE REQUIREMENTS IN DIVISION 07 SECTION "JOINT SEALANTS."
- B. TROWELABLE UNDERLAYMENTS AND PATCHING COMPOUNDS: LATEX-MODIFIED, PORTLAND CEMENT-BASED FORMULATION PROVIDED OR APPROVED BY MANUFACTURER OF TILE-SETTING MATERIALS.
- C. METAL EDGE STRIPS: ANGLE OR L-SHAPE, WHITE ZINC ALLOY EXPOSED-EDGE MATERIAL.
- D. GROUT SEALER: MANUFACTURER'S STANDARD SILICONE PRODUCT FOR SEALING GROUT JOINTS THAT DOES NOT CHANGE COLOR OR APPEARANCE OF GROUT.

PART 3 - EXECUTION

3.1 PREPARATION

- A. REMOVE COATINGS, INCLUDING CURING COMPOUNDS AND OTHER SUBSTANCES THAT CONTAIN SOAP, WAX, OIL, OR SILICONE, THAT ARE INCOMPATIBLE WITH TILE-SETTING MATERIALS.
- B. FILL CRACKS, HOLES, AND DEPRESSIONS WITH TROWELABLE LEVELING AND PATCHING COMPOUND ACCORDING TO TILE-SETTING MATERIAL MANUFACTURER'S WRITTEN INSTRUCTIONS.
- C. REMOVE PROTRUSIONS, BUMPS, AND RIDGES BY SANDING OR GRINDING.
- D. BLENDING: FOR TILE EXHIBITING COLOR VARIATIONS, USE FACTORY BLENDED TILE OR BLEND TILES AT PROJECT SITE BEFORE INSTALLING.
- E. FIELD-APPLIED TEMPORARY PROTECTIVE COATING: WHERE INDICATED UNDER TILE TYPE OR NEEDED TO PREVENT GROUT FROM STAINING OR ADHERING TO EXPOSED TILE SURFACES, PRECOAT THEM WITH CONTINUOUS FILM OF TEMPORARY PROTECTIVE COATING, TAKING CARE NOT TO COAT UNEXPOSED TILE SURFACES.

3.2 INSTALLATION, GENERAL

- A. ANSI TILE INSTALLATION STANDARDS: COMPLY WITH PARTS OF ANSI A108 SERIES "SPECIFICATIONS FOR INSTALLATION OF CERAMIC TILE" THAT APPLY TO TYPES OF SETTING AND GROUTING MATERIALS AND TO METHODS INDICATED IN CERAMIC TILE INSTALLATION SCHEDULES.
- B. TCA INSTALLATION GUIDELINES: TCA'S "HANDBOOK FOR CERAMIC TILE INSTALLATION." COMPLY WITH TCA INSTALLATION METHODS INDICATED IN CERAMIC TILE INSTALLATION SCHEDULES.
- C. EXTEND TILE WORK INTO RECESSES AND UNDER OR BEHIND EQUIPMENT AND FIXTURES TO FORM COMPLETE COVERING WITHOUT INTERRUPTIONS, UNLESS OTHERWISE INDICATED. TERMINATE WORK NEATLY AT OBSTRUCTIONS, EDGES, AND CORNERS WITHOUT DISRUPTING PATTERN OR JOINT ALIGNMENTS.
- D. ACCURATELY FORM INTERSECTIONS AND RETURNS. PERFORM CUTTING AND DRILLING OF TILE WITHOUT MARRING VISIBLE SURFACES. GRIND CUT EDGES OF TILE ABUTTING TRIM, FINISH, OR BUILD-IN ITEMS. FIT TILE CLOSELY TO ELECTRICAL OUTLETS, PIPING, FIXTURES, AND OTHER PENETRATIONS SO PLATES, COLLARS, OR COVERS OVERLAP TILE.
- E. JOINTING PATTERN: LAY TILE IN GRID PATTERN, AS INDICATED. ALIGN JOINTS WHEN ADJOINING TILES ON FLOOR, BASE, WALLS, AND TRIM ARE SAME SIZE. LAY OUT TILE WORK AND CENTER TILE FIELDS IN BOTH DIRECTIONS IN EACH SPACE OR ON EACH WALL AREA. ADJUST TO MINIMIZE TILE CUTTING. PROVIDE UNIFORM JOINT WIDTHS, UNLESS OTHERWISE INDICATED.
- F. LAY OUT TILE MAINSCOTS TO NEXT FULL TILE BEYOND DIMENSIONS INDICATED.
- G. EXPANSION JOINTS: LOCATE EXPANSION JOINTS AND OTHER SEALANT-FILLED JOINTS DURING INSTALLATION OF SETTING MATERIALS, MORTAR BEDS, AND TILE. DO NOT SAW-CUT JOINTS AFTER INSTALLING TILES.
1. LOCATE JOINTS IN TILE SURFACES DIRECTLY ABOVE JOINTS IN CONCRETE SUBSTRATES.
 2. PREPARE JOINTS AND APPLY SEALANTS TO COMPLY WITH REQUIREMENTS IN DIVISION 07 SECTION "JOINT SEALANTS."
- H. GROUT TILE TO COMPLY WITH REQUIREMENTS OF ANSI A108.10, UNLESS OTHERWISE INDICATED.
1. FOR CHEMICAL-RESISTANT EPOXY GROUTS, COMPLY WITH ANSI A108.6.

SECTION 095113 - ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. THIS SECTION INCLUDES ACOUSTICAL PANELS AND EXPOSED SUSPENSION SYSTEMS FOR CEILINGS.

1.2 SUBMITTALS

- A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.
- B. SAMPLES: FOR EACH EXPOSED FINISH.

1.3 QUALITY ASSURANCE

1. SURFACE-BURNING CHARACTERISTICS: ACOUSTICAL PANELS COMPLYING WITH ASTM E 1264 FOR CLASS A MATERIALS, WHEN TESTED PER ASTM E 84.
 - a. SMOKE-DEVELOPED INDEX: 450 OR LESS.
- C. SEISMIC STANDARD: COMPLY WITH THE FOLLOWING:
 1. STANDARD FOR CEILING SUSPENSION SYSTEMS REQUIRING SEISMIC RESTRAINT: COMPLY WITH ASTM E 580.
 2. CISCA'S RECOMMENDATIONS FOR ACOUSTICAL CEILINGS: COMPLY WITH CISCA'S "RECOMMENDATIONS FOR DIRECT-HUNG ACOUSTICAL TILE AND LAY-IN PANEL CEILINGS--SEISMIC ZONES 0-2."
 3. CISCA'S GUIDELINES FOR SYSTEMS REQUIRING SEISMIC RESTRAINT: COMPLY WITH CISCA'S "GUIDELINES FOR SEISMIC RESTRAINT" OF DIRECT-HUNG SUSPENDED CEILING ASSEMBLIES--SEISMIC ZONES 3 & 4."
 4. ASCE 7, "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES": SECTION 9, "EARTHQUAKE LOADS."
- D. PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE AT A DATE AND TIME TO BE ESTABLISHED.

1.4 EXTRA MATERIALS

- A. FURNISH EXTRA MATERIALS DESCRIBED BELOW THAT MATCH PRODUCTS INSTALLED AND THAT ARE PACKAGED WITH PROTECTIVE COVERING FOR STORAGE AND IDENTIFIED WITH LABELS DESCRIBING CONTENTS.
1. ACOUSTICAL CEILING PANELS: FULL-SIZE PANELS EQUAL TO 2.0 PERCENT OF QUANTITY INSTALLED.
 2. SUSPENSION SYSTEM COMPONENTS: QUANTITY OF EACH EXPOSED COMPONENT EQUAL TO 2.0 PERCENT OF QUANTITY INSTALLED.

PART 2 - PRODUCTS

2.1 ACOUSTICAL PANEL CEILINGS, GENERAL

- A. ACOUSTICAL PANEL STANDARD: COMPLY WITH ASTM E 1264.
- B. METAL SUSPENSION SYSTEM STANDARD: COMPLY WITH ASTM C 635.
- C. ATTACHMENT DEVICES: SIZE FOR FIVE TIMES THE DESIGN LOAD INDICATED IN ASTM C 635, TABLE 1, "DIRECT HUNG" WILL BE LESS THAN YIELD STRESS OF WIRE, BUT PROVIDE NOT LESS THAN 0.106-INCH- (2.69-MM-) DIAMETER WIRE.
- D. WIRE HANGERS, BRACES, AND TIES: ZINC-COATED CARBON-STEEL WIRE; ASTM A 641/A 641M, CLASS 1 ZINC COATING, SOFT TEMPER.
1. SIZE: SELECT WIRE DIAMETER SO ITS STRESS AT 3 TIMES HANGER DESIGN LOAD (ASTM C 635, TABLE 1, "DIRECT HUNG") WILL BE LESS THAN YIELD STRESS OF WIRE, BUT PROVIDE NOT LESS THAN 0.106-INCH- (2.69-MM-) DIAMETER WIRE.
- E. SEISMIC PERIMETER STABILIZER BARS, SEISMIC STRUTS, AND SEISMIC CLIPS WHERE REQUIRED.
- F. METAL EDGE MOLDINGS AND TRIM: TYPE AND PROFILE INDICATED OR, IF NOT INDICATED, MANUFACTURER'S STANDARD MOLDINGS FOR EDGES AND PENETRATIONS THAT COMPLY WITH SEISMIC DESIGN REQUIREMENTS; FORMED FROM SHEET METAL OF SAME MATERIAL, FINISH, AND COLOR AS THAT USED FOR EXPOSED FLANGES OF SUSPENSION SYSTEM RUNNERS.

2.2 ACOUSTICAL PANELS FOR ACOUSTICAL PANEL CEILING

- A. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
1. ARMSTRONG WORLD INDUSTRIES, INC
 2. USG INTERIORS, INC.
- B. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE THE PRODUCT INDICATED ON DRAWINGS:

2.3 METAL SUSPENSION SYSTEM FOR ACOUSTICAL PANEL CEILING

- A. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
1. ARMSTRONG WORLD INDUSTRIES, INC.; PRELUDE XL 15/16 INCH EXPOSED TEE.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. COMPLY WITH ASTM C 636 AND SEISMIC DESIGN REQUIREMENTS INDICATED, PER MANUFACTURER'S WRITTEN INSTRUCTIONS AND CISCA'S "CEILING SYSTEMS HANDBOOK."
- B. MEASURE EACH CEILING AREA AND ESTABLISH LAYOUT OF ACOUSTICAL PANELS TO BALANCE BORDER WIDTHS AT OPPOSITE EDGES OF EACH CEILING. AVOID USING LESS-THAN-HALF-WIDTH PANELS AT BORDERS.
- C. SUSPEND CEILING HANGERS FROM BUILDING'S STRUCTURAL MEMBERS, PLUMB AND FREE FROM CONTACT WITH INSULATION OR OTHER OBJECTS WITHIN CEILING PLENUM. SPRAY HANGERS ONLY WHERE REQUIRED AND, IF PERMITTED WITH FIRE-RESISTANCE-RATED CEILINGS, TO MISS OBSTRUCTIONS; OFFSET RESULTING HORIZONTAL FORCES BY BRACING, COUNTERPLAYING, OR OTHER EQUALLY EFFECTIVE MEANS. WHERE WIDTH OF DUCTS AND OTHER CONSTRUCTION WITHIN CEILING PLENUM PRODUCES HANGER SPACINGS THAT INTERFERE WITH LOCATION OF HANGERS, USE TRAPEZES OR EQUIVALENT DEVICES. WHEN STEEL FRAMING DOES NOT PERMIT INSTALLATION OF HANGER WIRES AT SPACING REQUIRED, INSTALL CARRYING CHANNELS OR OTHER SUPPLEMENTAL SUPPORT FOR ATTACHMENT OF HANGER WIRES.
- D. INSTALL EDGE MOLDINGS AND TRIM OF TYPE INDICATED AT PERIMETER OF ACOUSTICAL CEILING AREA AND WHERE NECESSARY TO CONCEAL EDGES OF ACOUSTICAL PANELS. SCREW ATTACH MOLDINGS TO SUBSTRATE AT INTERVALS NOT MORE THAN 16 INCHES (400 MM) O.C. AND NOT MORE THAN 3 INCHES (75 MM) FROM ENDS, LEVELING WITH CEILING SUSPENSION SYSTEM TO A TOLERANCE OF 1/8 INCH IN 12 FEET (3.2 MM IN 3.6 M). MITER CORNERS ACCURATELY AND CONNECT SECURELY.
- E. INSTALL SUSPENSION SYSTEM RUNNERS SO THEY ARE SQUARE AND SECURELY INTERLOCKED WITH ONE ANOTHER. REMOVE AND REPLACE DENTED, BENT, OR KINKED MEMBERS.
- F. INSTALL ACOUSTICAL PANELS WITH UNDAMAGED EDGES AND FIT ACCURATELY INTO SUSPENSION SYSTEM RUNNERS AND EDGE MOLDINGS. SCRIBE AND CUT PANELS AT BORDERS AND PENETRATIONS TO PROVIDE A NEAT, PRECISE FIT.

SECTION 096816 - SHEET CARPETING

PART 1 - GENERAL

1.1 SUMMARY

- A. THIS SECTION INCLUDES WOVEN CARPET.

1.2 SUBMITTALS

- A. SHOP DRAWINGS: INCLUDE THE FOLLOWING:
1. SEAM LOCATIONS.
 2. PATTERN TYPE, REPEAT, LOCATION, DIRECTION, AND STARTING POINT.
 3. PILE DIRECTION.
 4. INSETS AND BORDERS.
 5. TRANSITION, AND OTHER ACCESSORY STRIPS.
 6. TRANSITION DETAILS TO OTHER FLOORING MATERIALS.

1.3 QUALITY ASSURANCE

- A. INSTALLER QUALIFICATIONS: A SPECIFIED INSTALLER WHO IS CERTIFIED BY THE FLOOR COVERING INSTALLATION BOARD OR WHO CAN DEMONSTRATE COMPLIANCE WITH ITS CERTIFICATION PROGRAM REQUIREMENTS.

- 1.4 DELIVERY, STORAGE, AND HANDLING
- A. COMPLY WITH CRI 104, SECTION 5, "STORAGE AND HANDLING."

1.5 PROJECT CONDITIONS

- A. GENERAL: COMPLY WITH CRI 104, SECTION 7.2, "SITE CONDITIONS; TEMPERATURE AND HUMIDITY" AND SECTION 7.12, "VENTILATION."
- B. ENVIRONMENTAL LIMITATIONS: DO NOT INSTALL CARPET UNTIL WET WORK IN SPACES IS COMPLETE AND DRY, AND AMBIENT TEMPERATURE AND HUMIDITY CONDITIONS ARE MAINTAINED AT THE LEVELS INDICATED FOR PROJECT WHEN OCCUPIED FOR ITS INTENDED USE.
- C. DO NOT INSTALL CARPET OVER CONCRETE SLABS UNTIL SLABS HAVE CURED AND ARE SUFFICIENTLY DRY TO BOND WITH ADHESIVE AND CONCRETE SLABS HAVE PH RANGE RECOMMENDED BY MANUFACTURER.

- D. WHERE PARTITIONS OR OTHER ITEMS ARE INDICATED FOR INSTALLATION ON TOP OF CARPET, INSTALL CARPET BEFORE INSTALLING THESE ITEMS.

1.6 WARRANTY

- A. SPECIAL WARRANTY FOR CARPET: MANUFACTURER'S STANDARD FORM IN WHICH MANUFACTURER AGREES TO REPLACE CARPET THAT DOES NOT COMPLY WITH REQUIREMENTS OR THAT FAILS WITHIN TEN (10) YEARS FROM DATE OF SUBSTANTIAL COMPLETION. WARRANTY DOES NOT INCLUDE DETERIORATION OR FAILURE OF CARPET FROM UNUSUAL TRAFFIC, FAILURE OF SUBSTRATE, VANDALISM, OR ABUSE. FAILURES INCLUDE, BUT ARE NOT LIMITED TO, MORE THAN 10 PERCENT LOSS OF FACE FIBER, EDGE REVEALING, SNAGS, RUNS, AND DELAMINATION.

PART 2 - PRODUCTS

2.1 CARPET

- A. PRODUCT: AS INDICATED ON DÉCOR DRAWINGS.
1. COLOR AND PATTERN: AS INDICATED ON DÉCOR DRAWINGS.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. COMPLY WITH CRI 104, SECTION 8, "DIRECT GLUE-DOWN-".
- B. MAINTAIN UNIFORMITY OF CARPET DIRECTION AND LAY OF PILE. AT DOORWAYS, CENTER SEAMS UNDER DOOR IN CLOSED POSITION. BIND OR SEAL CUT EDGES AS RECOMMENDED BY CARPET MANUFACTURER.
- C. INSTALL PATTERN PARALLEL TO WALLS AND BORDERS.

SECTION 097200 - WALL COVERINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. SECTION INCLUDES:
1. VINYL WALL COVERING.
 - B. OWNER-FURNISHED MATERIALS: AS INDICATED ON ARBY'S "DÉCOR" DRAWINGS.

1.2 SUBMITTALS

- A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.
- B. SHOP DRAWINGS: SHOW LOCATION AND EXTENT OF EACH WALL-COVERING TYPE.
- C. SAMPLES: FOR EACH TYPE OF WALLCOVERING, AND FOR EACH COLOR, TEXTURE, AND PATTERN REQUIRED.
- D. MAINTENANCE DATA: FOR WALL COVERINGS TO INCLUDE IN MAINTENANCE MANUALS.

1.3 QUALITY ASSURANCE

- A. FIRE-TEST-RESPONSE CHARACTERISTICS: AS DETERMINED BY TESTING IDENTICAL WALL COVERINGS ADAPED WITH IDENTICAL ADHESIVES TO SUBSTRATES ACCORDING TO TEST METHOD INDICATED BELOW BY A QUALIFIED TESTING AGENCY. IDENTIFY PRODUCTS WITH APPROPRIATE MARKINGS OF APPLICABLE TESTING AGENCY.
1. SURFACE-BURNING CHARACTERISTICS: AS FOLLOWS, PER ASTM E 84:
 - a. FLAME-SPREAD INDEX: 25 OR LESS.
 - b. SMOKE-DEVELOPED INDEX: 450 OR LESS.
 2. FIRE-GROWTH CONTRIBUTION: TEXTILE WALL COVERINGS TESTED ACCORDING TO NFPA 265 AND COMPLYING WITH TEST PROTOCOL AND CRITERIA IN THE 2003 IBC.

1.4 EXTRA MATERIALS

- A. FURNISH EXTRA MATERIALS THAT MATCH PRODUCTS INSTALLED AND THAT ARE PACKAGED WITH PROTECTIVE COVERING FOR STORAGE AND IDENTIFIED WITH LABELS DESCRIBING CONTENTS.
1. WALL-COVERING MATERIALS: FOR EACH TYPE, FULL-SIZE UNITS EQUAL TO 5 PERCENT OF AMOUNT INSTALLED.

PART 2 - PRODUCTS

- 2.3 ACCESSORIES
- A. ADHESIVE: MILDEW-RESISTANT, NONSTAINING, STRIPPABLE ADHESIVE, FOR USE WITH SPECIFIC WALL COVERING AND SUBSTRATE APPLICATION; AS RECOMMENDED IN WRITING BY WALL-COVERING MANUFACTURER.
- B. PRIMER/SEALER: MILDEW RESISTANT, COMPLYING WITH REQUIREMENTS IN DIVISION 09 SECTION "INTERIOR PAINTING" AND RECOMMENDED IN WRITING BY WALL-COVERING MANUFACTURER FOR INTENDED SUBSTRATE.
- C. SEAM TAPE: AS RECOMMENDED IN WRITING BY WALL-COVERING MANUFACTURER.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. CLEAN SUBSTRATES OF SUBSTANCES THAT COULD IMPAIR BOND OF WALL COVERING, INCLUDING DIRT, OIL, GREASE, MOLD, MILDEW, AND INCOMPATIBLE PRIMERS.
- B. PREPARE SUBSTRATES TO ACHIEVE A SMOOTH, DRY, CLEAN, STRUCTURALLY SOUND SURFACE FREE OF FLAKING, UNSOUND COATINGS, CRACKS, AND DEFECTS.
1. MOISTURE CONTENT: MAXIMUM OF 5 PERCENT ON NEW PLASTER, CONCRETE, AND CONCRETE MASONRY UNITS WHEN TESTED WITH AN ELECTRONIC MOISTURE METER.
2. GYPSUM BOARD: PRIME WITH PRIMER AS RECOMMENDED IN WRITING BY PRIMER/SEALER MANUFACTURER AND WALL-COVERING MANUFACTURER.
3. PAINTED SURFACES: TREAT AREAS SUSCEPTIBLE TO PIGMENT BLEEDING.
- C. REMOVE HARDWARE AND HARDWARE ACCESSORIES, ELECTRICAL PLATES AND COVERS, LIGHT FIXTURE TRIMS, AND SIMILAR ITEMS.
- D. ACCLIMATIZE WALL-COVERING MATERIALS BY REMOVING THEM FROM PACKAGING IN THE INSTALLATION AREAS NOT LESS THAN 24 HOURS BEFORE INSTALLATION.
- E. INSTALL WALL LINER, WITH NO GAPS OR OVERLAPS, WHERE REQUIRED BY WALL-COVERING MANUFACTURER. FORM SMOOTH WRINKLE-FREE SURFACE FOR FINISHED INSTALLATION. DO NOT BEGIN WALL-COVERING INSTALLATION UNTIL WALL LINER HAS DRIED.
- F. CUT WALL-COVERING STRIPS IN ROLL NUMBER SEQUENCE. CHANGE ROLL NUMBERS AT PARTITION BREAKS AND CORNERS.
- G. INSTALL STRIPS IN SAME ORDER AS CUT FROM ROLL.
- H. INSTALL WALL COVERING WITH NO GAPS OR OVERLAPS, NO LIFTED OR CURLING EDGES, AND NO VISIBLE SHRINKAGE.
- I. MATCH PATTERN 72 INCHES (1830 MM) ABOVE THE FINISH FLOOR.
- J. INSTALL SEAMS VERTICAL AND PLUMB AT LEAST 6 INCHES (150 MM) FROM OUTSIDE CORNERS AND 3 INCHES FROM INSIDE CORNERS UNLESS A CHANGE OF PATTERN OR COLOR EXISTS AT CORNER. NO HORIZONTAL SEAMS ARE PERMITTED.
- K. FULLY BOND WALL COVERING TO SUBSTRATE. REMOVE AIR BUBBLES, WRINKLES, BLISTERS, AND OTHER DEFECTS.
- L. TRIM EDGES AND SEAMS FOR COLOR UNIFORMITY, PATTERN MATCH, AND TIGHT CLOSURE. BUTT SEAMS WITHOUT ANY OVERLAY OR SPACING BETWEEN STRIPS.
- M. REMOVE EXCESS ADHESIVE AT FINISHED SEAMS, PERIMETER EDGES, AND ADJACENT SURFACES.
- N. REINSTALL HARDWARE AND HARDWARE ACCESSORIES, ELECTRICAL PLATES AND COVERS, LIGHT FIXTURE TRIMS, AND SIMILAR ITEMS.

SECTION 099113 - EXTERIOR PAINTING

PART 1 - GENERAL

1.1 SUMMARY

- A. THIS SECTION INCLUDES SURFACE PREPARATION AND THE APPLICATION OF PAINT SYSTEMS ON THE FOLLOWING EXTERIOR SUBSTRATES:
- 1.CONCRETE.
- 2.CLAY MASONRY.
3. CONCRETE MASONRY UNITS (CMU).
4. STEEL.
5. GALVANIZED METAL.
6. ALUMINUM (NOT ANODIZED OR OTHERWISE COATED).
7. WOOD.
8. PLASTIC TRIM FABRICATIONS.
9. EXTERIOR PORTLAND CEMENT (STUCCO).

1.2 SUBMITTALS

- A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.
- B. SAMPLES: FOR EACH FINISH AND FOR EACH COLOR AND TEXTURE REQUIRED.

1.3 QUALITY ASSURANCE

- A. MPI STANDARDS:
1. PRODUCTS: COMPLYING WITH MPI STANDARDS INDICATED AND LISTED IN "MPI APPROVED PRODUCTS LIST."
2. PREPARATION AND WORKMANSHIP: COMPLY WITH REQUIREMENTS IN "MPI ARCHITECTURAL PAINTING SPECIFICATION MANUAL" FOR PRODUCTS AND PAINT SYSTEMS INDICATED.

1.4 EXTRA MATERIALS

- A. FURNISH EXTRA MATERIALS DESCRIBED BELOW THAT ARE FROM SAME PRODUCTION RUN (BATCH MIX) AS MATERIALS APPLIED AND THAT ARE PACKAGED FOR STORAGE AND IDENTIFIED WITH LABELS DESCRIBING CONTENTS.
1. QUANTITY: FURNISH AN ADDITIONAL 5 PERCENT, BUT NOT LESS THAN 1 GAL. (3.8 L) OF EACH MATERIAL AND COLOR APPLIED.

PART 2 - PRODUCTS

2.1 PAINT, GENERAL

- A. MATERIAL COMPATIBILITY:
1. PROVIDE MATERIALS FOR USE WITHIN EACH PAINT SYSTEM THAT ARE COMPATIBLE WITH ONE ANOTHER AND SUBSTRATES INDICATED, UNDER CONDITIONS OF SERVICE AND APPLICATION AS DEMONSTRATED BY MANUFACTURER, BASED ON TESTING AND FIELD EXPERIENCE.
2. FOR EACH COAT IN A PAINT SYSTEM, PROVIDE PRODUCTS RECOMMENDED IN WRITING BY MANUFACTURERS OF TOPCOAT FOR USE IN PAINT SYSTEM AND ON SUBSTRATE INDICATED.
- B. COLORS: AS INDICATED IN THE DRAWINGS.

2.2 BLOCK FILLERS

- A. INTERIOR/EXTERIOR LATEX BLOCK FILLER: MPI #4.
- 2.3 PRIMERS/SEALERS

- A. ALKALI-RESISTANT PRIMER: MPI #3.
- B. BONDING PRIMER (WATER BASED): MPI #17.
- C. BONDING PRIMER (SOLVENT BASED): MPI #69.

2.4 METAL PRIMERS

- A. ALKYD ANTICORROSIVE METAL PRIMER: MPI #79.
- B. QUICK-DRYING ALKYD METAL PRIMER: MPI #76.
- C. CEMENTITIOUS GALVANIZED-METAL PRIMER: MPI #26.
- D. WATERBORNE GALVANIZED-METAL PRIMER: MPI #134.
- E. QUICK-DRYING PRIMER FOR ALUMINUM: MPI #95.

2.5 WOOD PRIMERS

- A. EXTERIOR LATEX WOOD PRIMER: MPI #6.
- B. EXTERIOR ALKYD WOOD PRIMER: MPI #5.
- C. EXTERIOR OIL WOOD PRIMER: MPI #7.

2.6 EXTERIOR LATEX PAINTS

- A. EXTERIOR LATEX (FLAT): MPI #10 (GLOSS LEVEL 1).
- B. EXTERIOR LATEX (SEMIGLOSS): MPI #11 (GLOSS LEVEL 5).
- C. EXTERIOR LATEX (GLOSS): MPI #119 (GLOSS LEVEL 6, EXCEPT MINIMUM GLOSS OF 65 UNITS AT 60 DEG).

2.7 EXTERIOR ALKYD PAINTS

- A. EXTERIOR ALKYD ENAMEL (FLAT): MPI #8 (GLOSS LEVEL 1).
- B. EXTERIOR ALKYD ENAMEL (SEMIGLOSS): MPI #94 (GLOSS LEVEL 5).
- C. EXTERIOR ALKYD ENAMEL (GLOSS): MPI #9 (GLOSS LEVEL 6).

2.8 ALUMINUM PAINT

- A. ALUMINUM PAINT: MPI #1.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. EXAMINE SUBSTRATES AND CONDITIONS, WITH APPLICATOR PRESENT, FOR COMPLIANCE WITH REQUIREMENTS FOR MAXIMUM MOISTURE CONTENT AND OTHER CONDITIONS AFFECTING PERFORMANCE OF WORK.
- B. MAXIMUM MOISTURE CONTENT OF SUBSTRATES: WHEN MEASURED WITH AN ELECTRONIC MOISTURE METER AS FOLLOWS:
- 1.CONCRETE: 12 PERCENT.
- 2.MASONRY (CLAY AND CMU): 12 PERCENT.
3. WOOD: 15 PERCENT.
4. PLASTER: 12 PERCENT.
- C. VERIFY SUITABILITY OF SUBSTRATES, INCLUDING SURFACE CONDITIONS AND COMPATIBILITY WITH EXISTING FINISHES AND PRIMERS.
- D. BEGIN COATING APPLICATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED AND SURFACES ARE DRY.
- 1.BEGINNING COATING APPLICATION CONSTITUTES CONTRACTOR'S ACCEPTANCE OF SUBSTRATES AND CONDITIONS.

3.2 PREPARATION AND APPLICATION

- A.COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS IN "MPI ARCHITECTURAL PAINTING SPECIFICATION MANUAL" APPLICABLE TO SUBSTRATES AND PAINT SYSTEMS INDICATED.
- B. CLEAN SUBSTRATES OF SUBSTANCES THAT COULD IMPAIR BOND OF PAINTS, INCLUDING DIRT, OIL, GREASE, AND INCOMPATIBLE PAINTS AND ENCAPSULANTS.
1. REMOVE INCOMPATIBLE PRIMERS AND REPRIME SUBSTRATE WITH COMPATIBLE PRIMERS AS REQUIRED TO PRODUCE PAINT SYSTEMS INDICATED.
- C.APPLY PAINTS TO PRODUCE SURFACE FILMS WITHOUT CLOUDINESS, SPOTTING, HOLIDAYS, LAPS, BRUSH MARKS, ROLLER TRACKING, RUNS, SAGS, ROPINESS, OR OTHER SURFACE IMPERFECTIONS. CUT IN SHARP LINES AND COLOR BREAKS.
- D. PROTECT WORK OF OTHER TRADES AGAINST DAMAGE FROM PAINT APPLICATION. CORRECT DAMAGE TO WORK OF OTHER TRADES BY CLEANING, REPAIRING, REPLACING, AND REFINISHING, AS APPROVED BY ARCHITECT, AND LEAVE IN AN UNDAMAGED CONDITION.
- E. AT COMPLETION OF CONSTRUCTION ACTIVITIES OF OTHER TRADES, TOUCH UP AND RESTORE DAMAGED OR DEFACED PAINTED SURFACES.

3.3 EXTERIOR PAINTING SCHEDULE - REFER TO ELEVATIONS SHEET

- A. CONCRETE SUBSTRATES, NONTRAFFIC SURFACES:
1. LATEX SYSTEM: MPI EXT 3.1A.
- a.PRIME COAT: EXTERIOR LATEX MATCHING TOPCOAT.
- b.INTERMEDIATE COAT: EXTERIOR LATEX MATCHING TOPCOAT.
- c.TOPCOAT: EXTERIOR LATEX (FLAT).
2. LATEX OVER ALKALI-RESISTANT PRIMER SYSTEM: MPI EXT 3.1K.
- a.PRIME COAT: ALKALI-RESISTANT PRIMER.
- b.INTERMEDIATE COAT: EXTERIOR LATEX MATCHING TOPCOAT.
- c.TOPCOAT: EXTERIOR LATEX (FLAT).
- B. CONCRETE SUBSTRATES, TRAFFIC SURFACES:
1. LATEX FLOOR PAINT SYSTEM: MPI EXT 3.2A.
- a.PRIME COAT: INTERIOR/EXTERIOR LATEX FLOOR AND PORCH PAINT (LOW GLOSS).
- b.INTERMEDIATE COAT: INTERIOR/EXTERIOR LATEX FLOOR AND PORCH PAINT (LOW GLOSS).
- c.TOPCOAT: INTERIOR/EXTERIOR LATEX FLOOR AND PORCH PAINT (LOW GLOSS).
2. ALKYD FLOOR ENAMEL SYSTEM: MPI EXT 3.2D.
- a.PRIME COAT: EXTERIOR/INTERIOR ALKYD FLOOR ENAMEL (GLOSS).
- b.INTERMEDIATE COAT: EXTERIOR/INTERIOR ALKYD FLOOR ENAMEL (GLOSS).
- c.TOPCOAT: EXTERIOR/INTERIOR ALKYD FLOOR ENAMEL (GLOSS).
- C. CLAY-MASONRY SUBSTRATES:
1. LATEX SYSTEM: MPI EXT 4.1A.
- a.PRIME COAT: EXTERIOR LATEX MATCHING TOPCOAT.
- b.INTERMEDIATE COAT: EXTERIOR LATEX MATCHING TOPCOAT.
- c.TOPCOAT: EXTERIOR LATEX [[FLAT]] [[SEMIGLOSS]] [[GLOSS]].
- D. CMU SUBSTRATES:
1. LATEX SYSTEM: MPI EXT 4.2A.
- a.PRIME COAT: INTERIOR/EXTERIOR LATEX BLOCK FILLER.
- b.INTERMEDIATE COAT: EXTERIOR LATEX MATCHING TOPCOAT.
- c.TOPCOAT: EXTERIOR LATEX [[FLAT]] [[SEMIGLOSS]] [[GLOSS]].
2. LATEX OVER ALKALI-RESISTANT PRIMER SYSTEM: MPI EXT 4.2L.
- a.PRIME COAT: ALKALI-RESISTANT PRIMER.
- b.INTERMEDIATE COAT: EXTERIOR LATEX MATCHING TOPCOAT.
- c.TOPCOAT: EXTERIOR LATEX [[FLAT]] [[SEMIGLOSS]] [[GLOSS]].
- E. STEEL SUBSTRATES:
1. ALKYD SYSTEM: MPI EXT 5.1D.
- a.PRIME COAT: ALKYD ANTICORROSIVE METAL PRIMER.
- b.INTERMEDIATE COAT: EXTERIOR ALKYD ENAMEL MATCHING TOPCOAT.
- c.TOPCOAT: EXTERIOR ALKYD ENAMEL [[FLAT]] [[SEMIGLOSS]] [[GLOSS]].
- F. GALVANIZED-METAL SUBSTRATES:
1. ALKYD SYSTEM: MPI EXT 5.3B.
- a.PRIME COAT: CEMENTITIOUS GALVANIZED-METAL PRIMER.
- b.INTERMEDIATE COAT: EXTERIOR ALKYD ENAMEL MATCHING TOPCOAT.
- c.TOPCOAT: EXTERIOR ALKYD ENAMEL [[FLAT]] [[SEMIGLOSS]] [[GLOSS]].
- G. ALUMINUM SUBSTRATES:
1. ALKYD SYSTEM: MPI EXT 5.4F.
- a.PRIME COAT: QUICK-DRYING PRIMER FOR ALUMINUM.
- b.INTERMEDIATE COAT: EXTERIOR ALKYD ENAMEL MATCHING TOPCOAT.
- c.TOPCOAT: EXTERIOR ALKYD ENAMEL [[FLAT]] [[SEMIGLOSS]] [[GLOSS]].
- H. DIMENSION LUMBER SUBSTRATES, NONTRAFFIC SURFACES: INCLUDING FENCING.
1. ALKYD SYSTEM: MPI EXT 6.2C.
- a.PRIME COAT: EXTERIOR ALKYD WOOD PRIMER.
- b.INTERMEDIATE COAT: EXTERIOR ALKYD ENAMEL MATCHING TOPCOAT.
- c.TOPCOAT: EXTERIOR ALKYD ENAMEL (FLAT).
- I. PLASTIC TRIM FABRICATION SUBSTRATES:
1. LATEX SYSTEM: MPI EXT 6.8A.
- a.PRIME COAT: BONDING PRIMER (WATER BASED).
- b.INTERMEDIATE COAT: EXTERIOR LATEX MATCHING TOPCOAT.
- c.TOPCOAT: EXTERIOR LATEX (FLAT).
2. ALKYD SYSTEM: MPI EXT 6.8B.
- a.PRIME COAT: BONDING PRIMER (SOLVENT BASED).
- b.INTERMEDIATE COAT: EXTERIOR ALKYD ENAMEL MATCHING TOPCOAT.
- c.TOPCOAT: EXTERIOR ALKYD ENAMEL (FLAT).

J. STUCCO SUBSTRATES:

1. LATEX SYSTEM: MPI EXT 9.1A.
- a.PRIME COAT: EXTERIOR LATEX MATCHING TOPCOAT.
- b.INTERMEDIATE COAT: EXTERIOR LATEX MATCHING TOPCOAT.
- c. TOPCOAT: EXTERIOR LATEX (FLAT).
2. LATEX OVER ALKALI-RESISTANT PRIMER SYSTEM: MPI EXT 9.1J.
- a.PRIME COAT: ALKALI-RESISTANT PRIMER.
- b.INTERMEDIATE COAT: EXTERIOR LATEX MATCHING TOPCOAT.
- c.TOPCOAT: EXTERIOR LATEX (FLAT).

SECTION 099123 - INTERIOR PAINTING

PART 1 - GENERAL

1.1 SUMMARY

- A. THIS SECTION INCLUDES SURFACE PREPARATION AND THE APPLICATION OF PAINT SYSTEMS ON THE FOLLOWING INTERIOR SUBSTRATES:
1. STEEL.
2. GALVANIZED METAL.
3. ALUMINUM (NOT ANODIZED OR OTHERWISE COATED).
4. WOOD.
5. GYPSUM BOARD.
6. SPRAY-TEXTURED CEILINGS.

1.2 SUBMITTALS

- A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.
- B. SAMPLES: FOR EACH FINISH AND FOR EACH COLOR AND TEXTURE REQUIRED.

1.3 QUALITY ASSURANCE

- A. MPI STANDARDS:
1. PRODUCTS: COMPLYING WITH MPI STANDARDS INDICATED AND LISTED IN "MPI APPROVED PRODUCTS LIST."
2. PREPARATION AND WORKMANSHIP: COMPLY WITH REQUIREMENTS IN "MPI ARCHITECTURAL PAINTING SPECIFICATION MANUAL" FOR PRODUCTS AND PAINT SYSTEMS INDICATED.

1.4 EXTRA MATERIALS

- A. FURNISH EXTRA MATERIALS DESCRIBED BELOW THAT ARE FROM SAME PRODUCTION RUN (BATCH MIX) AS MATERIALS APPLIED AND THAT ARE PACKAGED FOR STORAGE AND IDENTIFIED WITH LABELS DESCRIBING CONTENTS.
1. QUANTITY: FURNISH AN ADDITIONAL 5 PERCENT, BUT NOT LESS THAN 1 GAL. (3.8 L) OF EACH MATERIAL AND COLOR APPLIED.

PART 2 - PRODUCTS

2.1 PAINT, GENERAL

- A. MATERIAL COMPATIBILITY:
1. PROVIDE MATERIALS FOR USE WITHIN EACH PAINT SYSTEM THAT ARE COMPATIBLE WITH ONE ANOTHER AND SUBSTRATES INDICATED, UNDER CONDITIONS OF SERVICE AND APPLICATION AS DEMONSTRATED BY MANUFACTURER, BASED ON TESTING AND FIELD EXPERIENCE.
2. FOR EACH COAT IN A PAINT SYSTEM, PROVIDE PRODUCTS RECOMMENDED IN WRITING BY MANUFACTURERS OF TOPCOAT FOR USE IN PAINT SYSTEM AND ON SUBSTRATE INDICATED.
- B. VOC CONTENT OF FIELD-APPLIED INTERIOR PAINTS AND COATINGS: PROVIDE PRODUCTS THAT COMPLY WITH THE FOLLOWING LIMITS FOR VOC CONTENT, EXCLUSIVE OF COLORANTS ADDED TO A TINT BASE, WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METHOD 24); THESE REQUIREMENTS DO NOT APPLY TO PAINTS AND COATINGS THAT ARE APPLIED IN A FABRICATION OR FINISHING SHOP:
1. FLAT PAINTS, COATINGS, AND PRIMERS: VOC CONTENT OF NOT MORE THAN 50 G/L.
2. NONFLAT PAINTS, COATINGS, AND PRIMERS: VOC CONTENT OF NOT MORE THAN 150 G/L.
3. ANTI-CORROSIVE AND ANTI-RUST PAINTS APPLIED TO FERROUS METALS: VOC NOT MORE THAN 250 G/L.
4. FLOOR COATINGS: VOC NOT MORE THAN 100 G/L.
5. SHELLACS, CLEAR: VOC NOT MORE THAN 730 G/L.
6. SHELLACS, PIGMENTED: VOC NOT MORE THAN 500 G/L.
7. FLAT TOPCOAT PAINTS: VOC CONTENT OF NOT MORE THAN 50 G/L.
8. NONFLAT TOPCOAT PAINTS: VOC CONTENT OF NOT MORE THAN 150 G/L.
9. ANTI-CORROSIVE AND ANTI-RUST PAINTS APPLIED TO FERROUS METALS: VOC NOT MORE THAN 250 G/L.
10. FLOOR COATINGS: VOC NOT MORE THAN 100 G/L.
11. SHELLACS, CLEAR: VOC NOT MORE THAN 730 G/L.
12. SHELLACS, PIGMENTED: VOC NOT MORE THAN 550 G/L.
13. PRIMERS, SEALERS, AND UNDERCOATERS: VOC CONTENT OF NOT MORE THAN 200 G/L.
14. DRY-FOG COATINGS: VOC CONTENT OF NOT MORE THAN 400 G/L.
15. ZINC-RICH INDUSTRIAL MAINTENANCE PRIMERS: VOC CONTENT OF NOT MORE THAN 340 G/L.
16. PRE-TREATMENT WASH PRIMERS: VOC CONTENT OF NOT MORE THAN 420 G/L.
- C. CHEMICAL COMPONENTS OF FIELD-APPLIED INTERIOR PAINTS AND COATINGS: PROVIDE TOPCOAT PAINTS AND ANTI-CORROSIVE AND ANTI-RUST PAINTS APPLIED TO FERROUS METALS THAT COMPLY WITH THE FOLLOWING CHEMICAL RESTRICTIONS; THESE REQUIREMENTS DO NOT APPLY TO PAINTS AND COATINGS THAT ARE APPLIED IN A FABRICATION OR FINISHING SHOP:
1. AROMATIC COMPOUNDS: PAINTS AND COATINGS SHALL NOT CONTAIN MORE THAN 1.0 PERCENT BY WEIGHT OF TOTAL AROMATIC COMPOUNDS (HYDROCARBON COMPOUNDS CONTAINING ONE OR MORE BENZENE RINGS).
2. RESTRICTED COMPONENTS: PAINTS AND COATINGS SHALL NOT CONTAIN ANY OF THE FOLLOWING:
- a. ACROLEIN.
- b. ACRYLONITRILE.
- c. ANTIMONY.
- d. BENZENE.
- e. BUTYL BENZYL PHTHALATE.
- f. CADMIUM.
- g. DI (2-ETHYLHEXYL) PHTHALATE.
- h. DI-N-BUTYL PHTHALATE.
- i. DI-N-OCTYL PHTHALATE.
- j. 1,2-DICHLOROBENZENE.
- k. DIETHYL PHTHALATE.
- l. DIMETHYL PHTHALATE.
- m. ETHYLBENZENE.
- n. FORMALDEHYDE.
- o. HEXAVALENT CHROMIUM.
- p. ISOPHORONE.
- q. LEAD.
- r. MERCURY.
- s. METHYL ETHYL KETONE.
- t. METHYL ISOBUTYL KETONE.
- u. METHYLENE CHLORIDE.
- v. NAPHTHALENE.
- w. TOLUENE (METHYLBENZENE).
- x. 1,1,1-TRICHLOROETHANE.
- y. VINYL CHLORIDE.

- D. COLORS: AS INDICATED ON THE DRAWINGS.

2.2 BLOCK FILLERS

- A. INTERIOR/EXTERIOR LATEX BLOCK FILLER: MPI #4.

2.3 PRIMERS/SEALERS

- A. INTERIOR LATEX PRIMER/SEALER: MPI #50.
- B. INTERIOR ALKYD PRIMER/SEALER: MPI #45.
- C. WOOD-KNOT SEALER: SEALER RECOMMENDED IN WRITING BY TOPCOAT MANUFACTURER FOR USE IN PAINT SYSTEMS INDICATED.

2.4 METAL PRIMERS

- A. ALKYD ANTICORROSIVE METAL PRIMER: MPI #79.
- B. QUICK-DRYING ALKYD METAL PRIMER: MPI #76.
- C. RUST-INHIBITIVE PRIMER (WATER BASED): MPI #107.
- D. CEMENTITIOUS GALVANIZED-METAL PRIMER: MPI #26.
- E. WATERBORNE GALVANIZED-METAL PRIMER: MPI #134.
- F. VINYL WASH PRIMER: MPI #80.
- G. QUICK-DRYING PRIMER FOR ALUMINUM: MPI #95.

2.5 WOOD PRIMERS

- A. INTERIOR LATEX-BASED WOOD PRIMER: MPI #39.

2.6 LATEX PAINTS

- A. INTERIOR LATEX (FLAT): MPI #53 (GLOSS LEVEL 1).
- B. INTERIOR LATEX (LOW SHEEN): MPI #44 (GLOSS LEVEL 2).
- C. INTERIOR LATEX (EGGSHELL): MPI #52 (GLOSS LEVEL 3).
- D. INTERIOR LATEX (SATIN): MPI #43 (GLOSS LEVEL 4).
- E. INTERIOR LATEX (SEMIGLOSS): MPI #54 (GLOSS LEVEL 5).
- F. INTERIOR LATEX (GLOSS): MPI #114 (GLOSS LEVEL 6, EXCEPT MINIMUM GLOSS OF 65 UNITS AT 60 DEG).
- G. HIGH-PERFORMANCE ARCHITECTURAL LATEX (LOW SHEEN): MPI #138 (GLOSS LEVEL 2).
- H. HIGH-PERFORMANCE ARCHITECTURAL LATEX (EGGSHELL): MPI #139 (GLOSS LEVEL 3).
- I. HIGH-PERFORMANCE ARCHITECTURAL LATEX (SATIN): MPI #140 (GLOSS LEVEL 4).
- J. HIGH-PERFORMANCE ARCHITECTURAL LATEX (SEMIGLOSS): MPI #141 (GLOSS LEVEL 5).
- K. EXTERIOR LATEX (FLAT): MPI #10 (GLOSS LEVEL 1).
- L. EXTERIOR LATEX (SEMIGLOSS): MPI #11 (GLOSS LEVEL 5).
- M. EXTERIOR LATEX (GLOSS): MPI #119 (GLOSS LEVEL 6, EXCEPT MINIMUM GLOSS OF 65 UNITS AT 60 DEG).

2.7 ALKYD PAINTS

- A. INTERIOR ALKYD (FLAT): MPI #49 (GLOSS LEVEL 1).
- B. INTERIOR ALKYD (EGGSHELL): MPI #51 (GLOSS LEVEL 3).
- C. INTERIOR ALKYD (SEMIGLOSS): MPI #47 (GLOSS LEVEL 5).
- D. INTERIOR ALKYD (GLOSS): MPI #48 (GLOSS LEVEL 6).

2.8 QUICK-DRYING ENAMELS

- A. QUICK-DRYING ENAMEL (SEMIGLOSS): MPI #81 (GLOSS LEVEL 5).
- B. QUICK-DRYING ENAMEL (HIGH GLOSS): MPI #96 (GLOSS LEVEL 7).

2.9 TEXTURED COATING

- A. LATEX STUCCO AND MASONRY TEXTURED COATING: MPI #42.

2.10 ALUMINUM PAINT

- A. ALUMINUM PAINT: MPI #1.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. EXAMINE SUBSTRATES AND CONDITIONS, WITH APPLICATOR PRESENT, FOR COMPLIANCE WITH REQUIREMENTS FOR MAXIMUM MOISTURE CONTENT AND OTHER CONDITIONS AFFECTING PERFORMANCE OF WORK.
- B. MAXIMUM MOISTURE CONTENT OF SUBSTRATES: WHEN MEASURED WITH AN ELECTRONIC MOISTURE METER AS FOLLOWS:
1. WOOD: 15 PERCENT.
2. GYPSUM BOARD: 12 PERCENT.
- C. VERIFY SUITABILITY OF SUBSTRATES, INCLUDING SURFACE CONDITIONS AND COMPATIBILITY WITH EXISTING FINISHES AND PRIMERS.
- D. BEGIN COATING APPLICATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED AND SURFACES ARE DRY.
1. BEGINNING COATING APPLICATION CONSTITUTES CONTRACTOR'S ACCEPTANCE OF SUBSTRATES AND CONDITIONS.

3.2 PREPARATION AND APPLICATION

- A. COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS IN "MPI ARCHITECTURAL PAINTING SPECIFICATION MANUAL" APPLICABLE TO SUBSTRATES INDICATED.
- B. CLEAN SUBSTRATES OF SUBSTANCES THAT COULD IMPAIR BOND OF PAINTS, INCLUDING DIRT, OIL, GREASE, AND INCOMPATIBLE PAINTS AND ENCAPSULANTS.
1. REMOVE INCOMPATIBLE PRIMERS AND REPRIME SUBSTRATE WITH COMPATIBLE PRIMERS AS REQUIRED TO PRODUCE PAINT SYSTEMS INDICATED.
- C. APPLY PAINTS TO PRODUCE SURFACE FILMS WITHOUT CLOUDINESS, SPOTTING, HOLIDAYS, LAPS, BRUSH MARKS, ROLLER TRACKING, RUNS, SAGS, ROPINESS, OR OTHER SURFACE IMPERFECTIONS. CUT IN SHARP LINES AND COLOR BREAKS.
- D. PAINTING MECHANICAL AND ELECTRICAL WORK: PAINT ITEMS EXPOSED IN EQUIPMENT ROOMS AND OCCUPIED SPACES INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:
1. MECHANICAL WORK:
- a. UNINSULATED METAL PIPING.
- b. UNINSULATED PLASTIC PIPING.
- c. PIPE HANGERS AND SUPPORTS.
- d. TANKS THAT DO NOT HAVE FACTORY-APPLIED FINAL FINISHES.
- e. VISIBLE PORTIONS OF INTERNAL SURFACES OF METAL DUCTS, WITHOUT LINER, BEHIND AIR INLETS AND OUTLETS.
- f. DUCT, EQUIPMENT, AND PIPE INSULATION HAVING COTTON OR CANVAS INSULATION COVERING OR OTHER PAINTABLE JACKET MATERIAL.
- g. MECHANICAL EQUIPMENT THAT IS INDICATED TO HAVE A FACTORY-PRIMED FINISH FOR FIELD PAINTING.
2. ELECTRICAL WORK:
- a. SWITCHGEAR.
- b. PANELBOARDS.
- c. ELECTRICAL EQUIPMENT THAT IS INDICATED TO HAVE A FACTORY-PRIMED FINISH FOR FIELD PAINTING.
- E. PROTECT WORK OF OTHER TRADES AGAINST DAMAGE FROM PAINT APPLICATION. CORRECT DAMAGE TO WORK OF OTHER TRADES BY CLEANING, REPAIRING, REPLACING, AND REFINISHING, AS APPROVED BY ARCHITECT, AND LEAVE IN AN UNDAMAGED CONDITION.
- F. AT COMPLETION OF CONSTRUCTION ACTIVITIES OF OTHER TRADES, TOUCH UP AND RESTORE DAMAGED OR DEFACED PAINTED SURFACES.

3.3 INTERIOR PAINTING SCHEDULE - REFER TO DECOR DRAWINGS

- A. CLAY-MASONRY SUBSTRATES:
- B. STEEL SUBSTRATES:

1. QUICK-DRYING ENAMEL SYSTEM: MPI INT 5.1A.
- a. PRIME COAT: QUICK-DRYING ALKYD METAL PRIMER.
- b. INTERMEDIATE COAT: QUICK-DRYING ENAMEL MATCHING TOPCOAT.
- c. TOPCOAT: QUICK-DRYING ENAMEL (SEMIGLOSS).
2. WATER-BASED DRY-FALL SYSTEM: MPI INT 5.1C.
- a. PRIME COAT: ALKYD ANTICORROSIVE METAL PRIMER.
- b. TOPCOAT: LATEX DRY FOG/FALL.
3. ALKYD DRY-FALL SYSTEM: MPI INT 5.1D.
- a. PRIME COAT: ALKYD ANTICORROSIVE METAL PRIMER.
- b. TOPCOAT: INTERIOR ALKYD DRY FOG/FALL.
4. LATEX OVER ALKYD PRIMER SYSTEM: MPI INT 5.1Q.
- a. PRIME COAT: ALKYD ANTICORROSIVE METAL PRIMER.
- b. INTERMEDIATE COAT: INTERIOR LATEX MATCHING TOPCOAT.
- c. TOPCOAT: INTERIOR LATEX [[FLAT]] [[LOW SHEEN]] [[EGGSHELL]] [[SATIN]] [[SEMIGLOSS]] [[GLOSS]].
5. ALKYD SYSTEM: MPI INT 5.1E.
- a. PRIME COAT: ALKYD ANTICORROSIVE METAL PRIMER.
- b. INTERMEDIATE COAT: INTERIOR ALKYD MATCHING TOPCOAT.
- c. TOPCOAT: INTERIOR ALKYD [[FLAT]] [[EGGSHELL]] [[SEMIGLOSS]] [[GLOSS]].
6. ALUMINUM PAINT SYSTEM: MPI INT 5.1M.
- a. PRIME COAT: ALKYD ANTICORROSIVE METAL PRIMER.
- b. INTERMEDIATE COAT: ALUMINUM PAINT.
- c. TOPCOAT: ALUMINUM PAINT.
7. HIGH-PERFORMANCE ARCHITECTURAL LATEX SYSTEM: MPI INT 5.1R.
- a. PRIME COAT: ALKYD ANTICORROSIVE METAL PRIMER.
- b. INTERMEDIATE COAT: HIGH-PERFORMANCE ARCHITECTURAL LATEX MATCHING TOPCOAT.
- c. TOPCOAT: HIGH-PERFORMANCE ARCHITECTURAL LATEX [[LOW SHEEN]] [[EGGSHELL]] [[SATIN]] [[SEMIGLOSS]] [[GLOSS]].
- C. GALVANIZED-METAL SUBSTRATES:
1. WATER-BASED DRY-FALL SYSTEM: MPI INT 5.3H.
- a. PRIME COAT: WATERBORNE DRY FALL.
- b. TOPCOAT: WATERBORNE DRY FALL.
2. ALKYD DRY-FALL SYSTEM: MPI INT 5.3F.
- a. PRIME COAT: CEMENTITIOUS GALVANIZED-METAL PRIMER.
- b. TOPCOAT: INTERIOR ALKYD DRY FOG/FALL.
3. LATEX SYSTEM: MPI INT 5.3A.
- a. PRIME COAT: CEMENTITIOUS GALVANIZED-METAL PRIMER.
- b. INTERMEDIATE COAT: INTERIOR LATEX MATCHING TOPCOAT.
- c. TOPCOAT: INTERIOR LATEX [[FLAT]] [[LOW SHEEN]] [[EGGSHELL]] [[SATIN]] [[SEMIGLOSS]] [[GLOSS]].
4. LATEX OVER WATERBORNE PRIMER SYSTEM: MPI INT 5.3I.
- a. PRIME COAT: WATERBORNE GALVANIZED-METAL PRIMER.
- b. INTERMEDIATE COAT: INTERIOR LATEX MATCHING TOPCOAT.
- c. TOPCOAT: INTERIOR LATEX [[FLAT]] [[LOW SHEEN]] [[EGGSHELL]] [[SATIN]] [[SEMIGLOSS]] [[GLOSS]].
5. ALKYD SYSTEM: MPI INT 5.3C.
- a. PRIME COAT: CEMENTITIOUS GALVANIZED-METAL PRIMER.
- b. INTERMEDIATE COAT: INTERIOR ALKYD MATCHING TOPCOAT.
- c. TOPCOAT: INTERIOR ALKYD [[FLAT]] [[EGGSHELL]] [[SEMIGLOSS]] [[GLOSS]].
6. ALUMINUM PAINT SYSTEM: MPI INT 5.3G.
- a. PRIME COAT: CEMENTITIOUS GALVANIZED-METAL PRIMER.
- b. INTERMEDIATE COAT: ALUMINUM PAINT.
- c. TOPCOAT: ALUMINUM PAINT.
7. HIGH-PERFORMANCE ARCHITECTURAL LATEX SYSTEM: MPI INT 5.3M.
- a. PRIME COAT: WATERBORNE GALVANIZED-METAL PRIMER.
- b. INTERMEDIATE COAT: HIGH-PERFORMANCE ARCHITECTURAL LATEX MATCHING TOPCOAT.
- c. TOPCOAT: HIGH-PERFORMANCE ARCHITECTURAL LATEX [[LOW SHEEN]] [[EGGSHELL]] [[SATIN]] [[SEMIGLOSS]].
- D. ALUMINUM (NOT ANODIZED OR OTHERWISE COATED) SUBSTRATES:
1. LATEX SYSTEM: MPI INT 5.4H.
- a. PRIME COAT: QUICK-DRYING PRIMER FOR ALUMINUM.
- b. INTERMEDIATE COAT: INTERIOR LATEX MATCHING TOPCOAT.
- c. TOPCOAT: INTERIOR LATEX [[FLAT]] [[LOW SHEEN]] [[EGGSHELL]] [[SATIN]] [[SEMIGLOSS]] [[GLOSS]].
2. ALKYD OVER VINYL WASH PRIMER SYSTEM: MPI INT 5.4A.
- a. PRIME COAT: VINYL WASH PRIMER.
- b. INTERMEDIATE COAT: INTERIOR ALKYD MATCHING TOPCOAT.
- c. TOPCOAT: INTERIOR ALKYD [[FLAT]] [[EGGSHELL]] [[SEMIGLOSS]] [[GLOSS]].
3. ALUMINUM PAINT SYSTEM: MPI INT 5.4D.
- a. PRIME COAT: VINYL WASH PRIMER.
- b. INTERMEDIATE COAT: ALUMINUM PAINT.
- c. TOPCOAT: ALUMINUM PAINT.
4. HIGH-PERFORMANCE ARCHITECTURAL LATEX SYSTEM: MPI INT 5.4F.
- a. PRIME COAT: QUICK-DRYING PRIMER FOR ALUMINUM.
- b. INTERMEDIATE COAT: HIGH-PERFORMANCE ARCHITECTURAL LATEX MATCHING TOPCOAT.
- c. TOPCOAT: HIGH-PERFORMANCE ARCHITECTURAL LATEX [[LOW SHEEN]] [[EGGSHELL]] [[SATIN]] [[SEMIGLOSS]].
- E. DRESSED LUMBER SUBSTRATES: INCLUDING ARCHITECTURAL WOODWORK, DOORS.
1. LATEX SYSTEM: MPI INT 6.3T.
- a. PRIME COAT: INTERIOR LATEX-BASED WOOD PRIMER.
- b. INTERMEDIATE COAT: INTERIOR LATEX MATCHING TOPCOAT.
- c. TOPCOAT: INTERIOR LATEX [[SEMIGLOSS]] [[GLOSS]].
2. LATEX OVER ALKYD PRIMER SYSTEM: MPI INT 6.3U.
- a. PRIME COAT: INTERIOR ALKYD PRIMER/SEALER.
- b. INTERMEDIATE COAT: INTERIOR LATEX MATCHING TOPCOAT.
- c. TOPCOAT: INTERIOR LATEX [[SEMIGLOSS]] [[GLOSS]].
3. ALKYD SYSTEM: MPI INT 6.3B.
- a. PRIME COAT: INTERIOR ALKYD PRIMER/SEALER.
- b. INTERMEDIATE COAT: INTERIOR ALKYD MATCHING TOPCOAT.
- c. TOPCOAT: INTERIOR ALKYD [[EGGSHELL]] [[SEMIGLOSS]] [[GLOSS]].
4. HIGH-PERFORMANCE ARCHITECTURAL LATEX SYSTEM: MPI INT 6.3A.
- a. PRIME COAT: INTERIOR LATEX-BASED WOOD PRIMER.
- b. INTERMEDIATE COAT: HIGH-PERFORMANCE ARCHITECTURAL LATEX MATCHING TOPCOAT.
- c. TOPCOAT: HIGH-PERFORMANCE ARCHITECTURAL LATEX [[LOW SHEEN]] [[EGGSHELL]] [[SATIN]] [[SEMIGLOSS]] [[GLOSS]].
- F. WOOD PANEL SUBSTRATES: INCLUDING [PAINTED PLYWOOD] [MEDIUM-DENSITY FIBERBOARD] [HARDBOARD].
1. LATEX SYSTEM: MPI INT 6.4R.
- a. PRIME COAT: INTERIOR LATEX-BASED WOOD PRIMER.
- b. INTERMEDIATE COAT: INTERIOR LATEX MATCHING TOPCOAT.
- c. TOPCOAT: INTERIOR LATEX [[SEMIGLOSS]] [[GLOSS]].
2. LATEX OVER ALKYD PRIMER SYSTEM: MPI INT 6.4A.
- a. PRIME COAT: INTERIOR ALKYD PRIMER/SEALER.
- b. INTERMEDIATE COAT: INTERIOR LATEX MATCHING TOPCOAT.
- c. TOPCOAT: INTERIOR LATEX [[FLAT]] [[LOW SHEEN]] [[EGGSHELL]] [[SATIN]] [[SEMIGLOSS]] [[GLOSS]].
3. ALKYD SYSTEM: MPI INT 6.4B.
- a. PRIME COAT

