SECTION 072400 - EXTERIOR INSULATION FINISH SYSTEM

A. GENERAL
1.01 SECTION INCLUDES
1. MATERIALS AND INSTALLATION OF EIFS.

1.02 RELATED SECTIONS
1. SECTION 07210: BUILDING INSULATION
2. SECTION 07560: ROOF REPAIRS
3. SECTION 07600: FLASHING AND SHEET METAL
4. SECTION 07900: JOINT SEALERS
5. SECTION 08410: ALUMINUM FRAMED STOREFRONTS
6. SECTION 08800: GLAZING
7. SECTION 09260: GYPSUM BOARD ASSEMBLIES

1.03 DESIGN REQUIREMENTS
1. WIND LOAD: DESIGN FOR MAXIMUM ALLOWABLE SYSTEM DEFLECTING, NORMAL TO THE PLANE OF THE WALL, OF L/240. DESIGN FOR WIND LOAD IN CONFORMANCE WITH CODE REQUIREMENTS.

2. MOISTURE CONTROL: PREVENT THE ACCUMULATION OF WATER BEHIND THE EIF SYSTEM, EITHER BY CONDENSATION OR LEAKAGE THROUGH THE WALL CONSTRUCTION, IN THE DESIGN AND DETAILING OF THE WALL ASSEMBLY.
   a. PROVIDE FLASHING TO DIRECT WATER TO THE EXTERIOR WHERE IT IS LIKELY TO PENETRATE COMPONENTS IN THE WALL ASSEMBLY, INCLUDING, ABOVE WINDOW AND DOOR HEADS, BENEATH WINDOW AND DOOR SILLS, AT ROOF/WALL INTERSECTIONS, DECKS, ABUTMENTS OF LOWER WALLS WITH HIGHER WALLS, ABOVE PROJECTING FEATURES, AND AT THE BASE OF THE WALL.
   b. VAPOR DIFFUSION AND CONDENSATION: PERFORM A DEW POINT ANALYSIS OF THE WALL ASSEMBLY TO DETERMINE THE POTENTIAL FOR ACCUMULATION OF MOISTURE IN THE WALL ASSEMBLY AS A RESULT OF WATER VAPOR DIFFUSION AND CONDENSATION. ADJUST INSULATION THICKNESS AND/OR OTHER WALL ASSEMBLY COMPONENTS ACCORDINGLY TO MINIMIZE THE RISK OF CONDENSATION. AVOID THE USE OF VAPOR RETARDERS ON THE INTERIOR SIDE OF THE WALL IN WARM, HUMID CLIMATES.

3. IMPACT RESISTANCE
   a. PROVIDE ULTRA-HIGH IMPACT RESISTANCE TO A MINIMUM HEIGHT OF 6'-0" (1.8 M) ABOVE FINISHED GRADE AT ALL AREAS ACCESSIBLE TO PEDESTRIAN TRAFFIC AND OTHER AREAS EXPOSED TO ABNORMAL STRESS OR IMPACT

4. JOINTS
   a. DESIGN MINIMUM 3/4" WIDE EXPANSION JOINTS IN THE EIFS WHERE THEY EXIST IN THE SUBSTRATE OR SUPPORTING CONSTRUCTION, WHERE THE EIFS ADJOINS DISSIMILAR CONSTRUCTION OR MATERIALS, AT CHANGES IN BUILDING HEIGHT, AND AT FLOOR LINES IN MULTI-LEVEL WOOD FRAME CONSTRUCTION.
   b. MINIMUM 1/2" WIDE SEALANT JOINTS AT ALL PENETRATIONS THROUGH THE EIFS (WINDOWS, DOORS, ETC.).
   c. INSTALL BACKER ROD AND SEALANT THAT HAS BEEN EVALUATED IN ACCORDANCE WITH ASTM C 1382, "TEST METHOD FOR DETERMINING TENSILE ADHESION PROPERTIES OF SEALANTS WHEN USED IN EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS) JOINTS," AND THAT MEETS MINIMUM 50% ELONGATION AFTER CONDITIONING.
   d. DESIGN JOINTS WITH SECONDARY MOISTURE PROTECTION AND DRAIN JOINTS TO THE EXTERIOR.

5. TRIM, PROJECTING ARCHITECTURAL FEATURES & REVEALS
   a. ALL TRIM AND PROJECTING ARCHITECTURAL FEATURES MUST HAVE A MINIMUM 1:2 (27°) SLOPE ALONG THEIR TOP SURFACE. ALL HORIZONTAL REVEALS MUST HAVE A MINIMUM 1:2 (27°) SLOPE ALONG THEIR BOTTOM SURFACE.

6. FIRE PROTECTION
   a. DO NO USE FOAM PLASTIC IN EXCESS OF 1" THICK. WHERE A FIRE-RESISTANCE RATING IS REQUIRED BY CODE USE EIFS OVER RATED ASSEMBLY.

1.04 SUBMITTALS
1. SAMPLES FOR APPROVAL AS DIRECTED BY SDMC PROJECT MANAGER.

2. PREPARE AND SUBMIT PROJECT-SPECIFIC DETAILS (WHEN REQUIRED BY CONTRACT DOCUMENTS).

1.05 QUALITY ASSURANCE
1. MANUFACTURER REQUIREMENTS
   a. MEMBER IN GOOD STANDING OF THE EIFS INDUSTRY MEMBERS ASSOCIATION (EIMA).
   b. SYSTEM MANUFACTURER FOR A MINIMUM OF TWENTY (20) YEARS. MANUFACTURING FACILITIES ISO 9002 CERTIFIED.
   c. MANUFACTURER'S WALL ASSEMBLY LISTED IN GYPSUM ASSOCIATION FIRE RESISTANCE DESIGN MANUAL.

2. CONTRACTOR REQUIREMENTS
   a. ENGAGED IN APPLICATION OF EIFS FOR A MINIMUM OF THREE (3) YEARS.
   b. KNOWLEDGEABLE IN THE PROPER USE AND HANDLING OF STO MATERIALS AND LISTED BY STO AS HAVING ATTENDED STO EIFS CONTINUING EDUCATION.
   c. EMPLOY SKILLED MECHANICS WHO ARE EXPERIENCED AND KNOWLEDGEABLE IN EIFS APPLICATION, AND FAMILIAR WITH THE REQUIREMENTS OF THE SPECIFIED WORK.
   d. SUCCESSFUL COMPLETION OF MINIMUM OF THREE (3) PROJECTS OF SIMILAR SIZE AND COMPLEXITY TO THE SPECIFIED PROJECT.
   e. PROVIDE THE PROPER EQUIPMENT, MANPOWER AND SUPERVISION ON THE JOB SITE TO INSTALL THE SYSTEM IN COMPLIANCE WITH STO'S PUBLISHED SPECIFICATIONS AND DETAILS AND THE PROJECT PLANS AND SPECIFICATIONS.

3. INSULATION BOARD MANUFACTURER REQUIREMENTS
   a. RECOGNIZED BY STO AS CAPABLE OF PRODUCING INSULATION BOARD TO MEET SYSTEM REQUIREMENTS, AND HOLD A VALID LICENSING AGREEMENT WITH STO.
   b. LISTED BY AN APPROVED AGENCY.
   c. LABEL INSULATION BOARD WITH INFORMATION REQUIRED BY STO, THE APPROVED LISTING AGENCY AND THE APPLICABLE BUILDING CODE.

1.06 DELIVERY, STORAGE AND HANDLING
1. DELIVER ALL MATERIALS IN THEIR ORIGINAL SEALED CONTAINERS BEARING MANUFACTURER'S NAME AND IDENTIFICATION OF PRODUCT.

2. PROTECT COATINGS (AIL PRODUCTS) FROM FREEZING AND TEMPERATURES IN EXCESS OF 90°F STORE AWAY FROM DIRECT SUNLIGHT.

3. PROTECT PORTLAND CEMENT BASED MATERIALS (BAG PRODUCTS) FROM MOISTURE AND HUMIDITY. STORE UNDER COVER OFF THE GROUND IN A DRY LOCATION.

1.07 PROJECT/SITE CONDITIONS
1. MAINTAIN AMBIENT AND SURFACE TEMPERATURES ABOVE 40°F DURING APPLICATION AND DRYING PERIOD, MINIMUM 24 HOURS AFTER APPLICATION OF EIFS.

2. PROVIDE SUPPLEMENTARY HEAT FOR INSTALLATION IN TEMPERATURES LESS THAN 40°F (4°C).

3. PROVIDE PROTECTION OF SURROUNDING AREAS AND ADJACENT SURFACES FROM APPLICATION OF MATERIALS.

1.08 COORDINATION/SCHEDULING
1. PROVIDE SITE GRADING SUCH THAT EIFS TERMINATES ABOVE FINISHED GRADE A MINIMUM OF 8" (203 MM) OR AS REQUIRED BY CODE.

2. PROVIDE PROTECTION OF ROUGH OPENINGS BEFORE INSTALLING WINDOWS, DOORS, AND OTHER PENETRATIONS THROUGH THE WALL AND PROVIDE SILL FLASHING.

3. INSTALL WINDOW AND DOOR HEAD FLASHING IMMEDIATELY AFTER WINDOWS AND DOORS ARE INSTALLED.

4. INSTALL DIVERTER FLASHING WHEREVER WATER CAN ENTER THE WALL ASSEMBLY TO DIRECT WATER TO THE EXTERIOR.

5. INSTALL COPINGS AND SEALANT IMMEDIATELY AFTER INSTALLATION OF THE EIF SYSTEM AND WHEN EIFS COATINGS ARE DRY.

6. ATTACH PENETRATIONS THROUGH EIFS TO STRUCTURAL SUPPORT AND PROVIDE WATER TIGHT SEAL AT PENETRATIONS.

1.09 WARRANTY
1. PROVIDE MANUFACTURER'S STANDARD LABOR AND MATERIAL WARRANTY.

B. PRODUCTS

2.01 MANUFACTURERS
1. PROVIDE EIF SYSTEM AND ACCESSORIES FROM SINGLE SOURCE MANUFACTURER OR APPROVED SUPPLIER.

2. THE FOLLOWING ARE ACCEPTABLE MANUFACTURERS:
   a. STO CORP. - EIF SYSTEM
   b. PLASTIC COMPONENTS, INC - ACCESSORIES

3. INDUSTRY STANDARD SYSTEM:
   a. INTERIOR: STOLIT CLASSIC
   b. EXTERIOR: STO CLASSIC NEXT 12 YEAR WARRANTY

2.02 SURFACE PREPARATION
1. LEVELER: STO LEVELER - ONE-COMPONENT, POLYMER MODIFIED, CEMENT BASED LEVELER WITH FIBER REINFORCEMENT IF REQUIRED IN UNEVEN RESTORATION SURFACE.

2.03 ADHESIVE
1. CEMENTITIOUS ADHESIVE
   a. STO BTS PLUS-ONE-COMPONENT, POLYMER-MODIFIED, CEMENT BASED HIGH BUILD ADHESIVE.
2. NON-CEMENTITIOUS ADHESIVE
   a. STO DISPERSION ADHESIVE-NON-CEMENTITIOUS, ACRYLIC BASED ADHESIVE

2.04 INSULATION BOARD
1. NOMINAL 1.0 LB/FT3 EXPANDED POLYSTYRENE (EPS) INSULATION BOARD IN COMPLIANCE WITH ASTM C 578 TYPE I REQUIREMENTS, AND EIMA GUIDELINE SPECIFICATION FOR EXPANDED POLYSTYRENE (EPS) INSULATION BOARD. USE NEWLY PACKAGED INSULATION BOARD ONLY.

2.05 BASE COAT
1. CEMENTITIOUS BASE COATS
   a. STO BTS PLUS-ONE-COMPONENT POLYMER MODIFIED CEMENT BASED HIGH BUILD BASE COAT WITH LESS THAN 33 ± PORTLAND CEMENT CONTENT BY WEIGHT AND CAPABLE OF ACHIEVING MINIMUM 1/16" (1.6 MM) THICKNESS IN ONE PASS.
2. NONCEMENTITIOUS BASE COAT
   a. STO REP-ONE COMPONENT READY MIXED NON-CEMENTITIOUS, FIBER REINFORCED ACRYLIC BASE COAT.
3. WATERPROOF BASE COAT
   a. STO FLEXYL - TWO COMPONENT FIBER REINFORCED ACRYLIC BASED WATERPROOF BASE COAT MIXED WITH PORTLAND CEMENT.

2.06 REINFORCING MESHES
1. ULTRA-HIGH IMPACT MESH (0' TO 6'-0")
   a. STO MESH: NOMINAL 4.5 OZ./YD2 (390 G/M2), OVER STO ARMOR MAT - NOMINAL 15 OZ/YD2 INTERWOVEN, OPEN WEAVE GLASS FIBER FABRIC WITH ALKALINE RESISTANT COATING FOR COMPATIBILITY WITH STO MATERIALS.
2. INTERMEDIATE MESH (ABOVE 6'-0")
   b. STO INTERMEDIATE MESH: NOMINAL 11 OZ./YD2 INTERWOVEN, OPEN WEAVE GLASS FIBER FABRIC WITH ALKALINE RESISTANT COATING FOR COMPATIBILITY WITH STO MATERIALS

2.07 PRIMER
1. STO PRIMER ACRYLIC BASED TINTED PRIMER.

2.08 FINISH COAT
1. STOLIT: .75 FREEFORM ACRYLIC BASED TEXTURED WALL COATING WITH GRADED MARBLE AGGREGATE. CUSTOM FINISH AS INDICATED ON STOREFRONT DRAWINGS (A08 SERIES).

2.09 MIXED INGREDIENTS
1. WATER: CLEAN AND POTABLE.
2. PORTLAND CEMENT: TYPE I IN CONFORMANCE WITH ASTM C 150.

2.10 ACCESSORIES
1. STARTER TRACK RIGID PVC (POLYVINYL CHLORIDE) PLASTIC TRACK PART NO. STDE AS FURNISHED BY PLASTIC COMPONENTS, INC. 8321 NW 97TH TERRACE, MIAMI, FLORIDA 33178 (1-800-327-7077).

2.11 MIXING
1. STO PLEX 91: ADD WATER AS DIRECTED ON LABELING.
2. STO LEVELER: MIX RATIO WITH WATER 6 QUARTS (5.7-6.6 L) OF CLEAN WATER PER 60 POUND (27.3 KG) BAG OF STO LEVELER. POUR WATER INTO A CLEAN MIXING PAIL. ADD STO LEVELER, MIX TO A UNIFORM CONSISTENCY AND ALLOW TO SET FOR APPROXIMATELY 5 MINUTES. ADJUST MIX IF NECESSARY WITH ADDITIONAL STO LEVELER OR WATER AND REMIX TO A UNIFORM TROWEL CONSISTENCY. AVOID RETEMPERING. KEEP MIX RATIO CONSISTENT. DO NO EXCEED MAXIMUM WATER AMOUNT IN MIX RATIO.
3. STO RFP: MIX WITH A CLEAN, RUST-FREE HIGH SPEED MIXER TO A UNIFORM CONSISTENCY.
4. STO FLEXYL: MIX RATIO WITH PORTLAND CEMENT: 1:1 RATIO BY WEIGHT. POUR STO FLEXYL INTO A CLEAN MIXING PAIL. ADD PORTLAND CEMENT, MIX TO A UNIFORM CONSISTENCY AND ALLOW TO SET FOR APPROXIMATELY FIVE MINUTES. ADJUST MIX IF NECESSARY WITH ADDITIONAL STO FLEXYL AND REMIX TO A UNIFORM TROWEL CONSISTENCY. AVOID RETEMPERING. KEEP MIX RATIO CONSISTENT.
5. STO PRIMER: MIX WITH A CLEAN, RUST-FREE HIGH SPEED MIXER TO A UNIFORM CONSISTENCY.
6. STOLIT: MIX WITH A CLEAN, RUST-FREE HIGH SPEED MIXER TO A UNIFORM CONSISTENCY. A SMALL AMOUNT OF WATER MAY BE ADDED TO ADJUST WORKABILITY. LIMIT ADDITION OF WATER TO AMOUNT NEEDED TO ACHIEVE THE FINISH TEXTURE.
7. MIX ONLY AS MUCH MATERIAL AS CAN READILY BE USED.
8. DO NOT USE ANTI-FREEZE COMPOUNDS OR OTHER ADDITIVES.

C. EXECUTION

3.01 ACCEPTABLE INSTALLERS
1. PREQUALIFY UNDER QUALITY ASSURANCE REQUIREMENTS OF THIS SPECIFICATION (SECTION 1.07.B).

3.02 EXAMINATION
1. INSPECT SURFACES FOR:
   a. CONTAMINATION: ALGAE, CHALKINESS, DIRT, DUST, EFFLORESCENCE, FORM OIL, FUNGUS, GREASE, LAITANCE, MILDEW OR OTHER FOREIGN SUBSTANCES.
   b. SURFACE ABSORPTION AND CHALKINESS.
   c. CRACKS: MEASURE CRACK WIDTH AND RECORD LOCATION OF CRACKS.
   d. DAMAGE AND DETERIORATION.
   e. MOISTURE CONTENT AND MOISTURE DAMAGE: USE A MOISTURE METER TO DETERMINE IF THE SURFACE IS DRY ENOUGH TO RECEIVE THE EIFS AND RECORD ANY AREAS OF MOISTURE DAMAGE.
   f. COMPLIANCE WITH SPECIFICATION TOLERANCES: RECORD AREAS THAT ARE OUT OF TOLERANCE (GREATER THAN 1/4" IN 8'-0" DEVIATION IN PLANE).
2. INSPECT SHEATHING APPLICATION FOR COMPLIANCE WITH APPLICABLE REQUIREMENT:
   a. EXTERIOR GYPSUM SHEATHING: GA-253
   b. EXTERIOR GRADE AND EXPOSURE 1 WOOD BASED SHEATHING: APA ENGINEERED WOOD ASSOCIATION E 30.
   c. GLASS MAT FACED GYPSUM SHEATHING: GEORGIA PACIFIC PUBLICATION 101514
   d. CEMENTITIOUS SHEATHING: CONSULT MANUFACTURER'S PUBLISHED RECOMMENDATIONS
3. REPORT DEVIATIONS FROM THE REQUIREMENTS OF PROJECT SPECIFICATIONS OR OTHER CONDITIONS THAT MIGHT ADVERSELY AFFECT THE EIFS INSTALLATION TO THE GENERAL CONTRACTOR. DO NOT START WORK UNTIL DEVIATIONS ARE CORRECTED.

3.03 SURFACE PREPARATION
1. REMOVE SURFACE CONTAMINANTS ON CONCRETE AND CONCRETE MASONRY SURFACES (REFER TO ASTM D 4258 ADN D 4261).
2. APPLY CONDITIONER BY SPRAYER OR ROLLER TO CHALKING OR EXCESSIVELY ABSORPTIVE SURFACES.
3. REPLACE WEATHER-DAMAGED SHEATHING AND REPAIR DAMAGED OR CRACKED SURFACES.
4. LEVEL SURFACES TO COMPLY WITH REQUIRED TOLERANCES.

3.04 INSTALLATION
1. INSTALL EIFS IN COMPLIANCE WITH MANUFACTURER'S PUBLISHED INSTRUCTIONS (SEE ADDENDUM).

3.05 PROTECTION
1. PROVIDE PROTECTION OF INSTALLED MATERIALS FROM WATER INFILTRATION INTO OR BEHIND THEM.
2. PROVIDE PROTECTION OF INSTALLED MATERIALS FROM DUST, DIRT, PRECIPITATION, FREEZING AND CONTINUOUS HIGH HUMIDITY UNTIL THEY ARE FULLY DRY.

SECTION 075900 - ROOF REPAIRS

1. GENERAL: REPAIR EXISTING ROOFING SYSTEM AS REQUIRED FOR NEW CONSTRUCTION, WITH COMPONENTS AND ACCESSORIES AS REQUIRED FOR COMPLETE WEATHER TIGHT INSTALLATION.

2. STANDARDS: CONFORM TO NATIONAL ROOFING CONTRACTOR'S ASSOCIATION ROOFING AND WATERPROOFING MANUAL, 4TH OR 5TH EDITION.

3. WARRANTY: MAINTAIN ALL EXISTING WARRANTIES. PROVIDE FOR CORRECTING FAILURE OF ROOF REPAIRS TO RESIST PENETRATION OF WATER AND DAMAGE FROM WIND; WARRANTY PERIOD OF TWO YEARS.

4. ROOFING SYSTEM: MATCH EXISTING ROOFING, NO SUBSTITUTIONS PERMITTED; PROVIDE MATERIALS CAPABLE OF MAINTAINING EXISTING WARRANTIES; CONFORM TO REQUIREMENTS OF NRCA ROOFING MANUAL.
   a. SYSTEM: PROVIDE COMPLETE SYSTEM WITH ACCESSORIES AS REQUIRED FOR REPAIRS, INCLUDING INSULATION WHERE EXISTING ROOFING IS INSULATED.

5. ROOF SYSTEM REPAIRS: COMPLY WITH MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS AND NRCA RECOMMENDATIONS FOR ROOF TYPE SPECIFIED.
   b. REMOVE EXISTING ROOFING AS REQUIRED FOR PROJECT; REMOVE ONLY AS MUCH ROOFING AS CAN BE REPLACED IN SAME DAY UNLESS OTHERWISE APPROVED IN ADVANCE BY OWNER'S PROJECT MANAGER.
   c. INSPECT SUBSTRATES AND ROOF DECK TO ENSURE SUBSTRATES AND DECK ARE CLEAN AND SMOOTH, FREE OF DEPRESSIONS, WAVES OR PROJECTS, AND ARE PROPERLY SLOPE TO DRAINS, VALLEY, OR EAVES.
   d. INSULATION APPLICATION: ATTACH INSULATION IN ACCORDANCE WITH INSULATION MANUFACTURER'S INSTRUCTIONS AND NRCA RECOMMENDATIONS FOR INSTALLATION OF INSULATION ON DECK INVOLVED.
   e. COMPLY WITH MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION OF COMPOSITE TYPE BASE, WALL AND FILED FLASHING.
   f. COORDINATE METAL FLASHING AND COUNTERFLASHING.
   g. COORDINATE INSTALLATION OF ROOF DRAINS AND RELATED FLASHING.
   h. MOP IN AND SEAL FLASHING AND FLANGES OF ITEMS PROJECTING THROUGH MEMBRANE.

SECTION 076000 - FLASHING AND SHEET METAL

A. GENERAL: PROVIDE FLASHING AND SHEET METAL, REGLETS, AND ACCESSORIES AS REQUIRED FOR ROOF REPAIRS AS REQUIRED FOR COMPLETE, WEATHER TIGHT INSTALLATION.

B. STANDARDS: CONFORM TO SMACNA "ARCHITECTURAL SHEET METAL MANUAL" REQUIREMENTS FOR FLASHING AND SHEET METAL.

C. DESIGN REQUIREMENTS: ALLOW FOR MOVEMENT OF COMPONENTS WITHOUT CAUSING BUCKLING, FAILURE OF JOINT SEALS, UNDUE STRESS ON FASTENERS OR OTHER DETRIMENTAL EFFECTS, WHEN SUBJECT TO 100 YEAR SEASONAL TEMPERATURE RANGES.

D. SUBMITTALS: FURNISH PRODUCT DATA FOR MANUFACTURED PRODUCTS.

E. WARRANTY: MAINTAIN ALL EXISTING WARRANTIES. CORRECT FAILURE OF METAL FLASHING SYSTEM TO RESIST PENETRATION OF WATER AND DAMAGE FROM WIND, WARRANTY PERIOD TWO YEARS.

F. FLASHING AND SHEET METAL: MATCH EXISTING, BUT NOT LESS THAT FOLLOWING.
1. GALVANIZED METAL FLASHING: ASTM A526 GALVANIZED STEEL WITH MINIMUM 0.02 AND WITH MINIMUM G90 GALVANIZED COATING; MINIMUM 24 GAGE.
2. PREFINISHED METAL FLASHING: 24 GAGE GALVANIZED STEEL WITH FACTORY FINISHED KYNAR 500 TYPE FLUROPOLYMER COATING AND STRIPPABLE PROTECTIVE FILM; COLOR AS SELECTED FROM MANUFACTURER'S FULL RANGE OF COLORS.
3. ALUMINUM FLASHING: ASTM B209, ALLOY AS REQUIRED TO MATCH FINISH SPECIFIED FOR OTHER ALUMINUM COMPONENTS; THICKNESS MINIMUM 0.050" AT FLASHING.
4. STAINLESS STEEL SHEET METAL: ASTM A666, 2D ANNEALED FINISH, SOFT TEMPER EXCEPT WHERE HARDER TEMPER IS REQUIRED FOR FORMING OR PERFORMANCE; 0.015" (28 GAGE) TYPICAL.
5. COPPER SHEET METAL: ASTM B370, COLD ROLLED 16 OZ. (0.0216") THICK; SOFT TEMPER WHERE REQUIRED FOR FORMING.

G. REGLETS: FRY/SPRINGLOK OR MM SYSTERMS/SNAP-TITE REGLETS, FABRICATE OF SAME METAL AS ADJACENT FLASHING AND SHEET METAL.

H. METAL TO METAL SEALANT: BUTYL TYPE: NON-STAINING, NON-CORROSIVE, NON-SHRINKING, NON-SAGGING, ULTRAVIOLET AND OZONE RESISTANT.

I. INSTALLATION: COMPLY WITH SMACNA MANUAL.
1. INSTALL METAL FLASHING AND SHEET METAL IN ACCORDANCE WITH SMACNA ARCHITECTURAL SHEET METAL MANUAL; TIGHT IN PLACE, WITH CORNER SQUARE, SURFACES TRUE AND STRAIGHT IN PLANES, AND LINES ACCURATE TO PROFILES AS INDICATED ON DRAWINGS.
2. INSTALL SEALANT WHERE REQUIRED TO PREVEN DIRECT WEATHER PENETRATION
3. COMPLETED INSTALLATION SHALL BE FREE OF RATTLES, NOISE DUE TO THERMAL AND AIR MOVEMENT, AND WIND WHISTLES.

SECTION 078100 - APPLIED FIREPROOFING

A. GENERAL: PATCH EXISTING FIREPROOFING AS REQUIRED BY APPLICABLE CODES FOR CONSTRUCTION TYPE; NO ASBESTOS PERMITTED.

B. DESIGN REQUIREMENTS: PROVIDE MATERIALS CAPABLE OF ATTAINING FIRE RATINGS AS REQUIRED FOR TYPE I, FIRE RESISTIVE CONSTRUCTION.

C. PERFORMANCE REQUIREMENTS: PROVIDE MATERIALS LISTED BY UL OR INDEPENDENT TESTING AND INSPECTION AGENCY ACCEPTABLE TO APPLICABLE AUTHORITIES.
1. FIRE RESISTANCE RATINGS: COMPLY WITH REQUIRED RATINGS BASED
2. SURFACE BURNING CHARACTERISTICS. MAXIMUM 25 FLAME SPREAD AND 25 SMOKE DENSITY WHEN TESTED IN ACCORDANCE WITH ASTM E84.

D. CERTIFICATE: SUBMIT MANUFACTURER CERTIFICATION INDICATING APPLICATOR ACCEPTABILITY AND MATERIAL COMPLACENT WITH APPLICABLE CODES AND CONTRACT DOCUMENTS.
1. CERTIFICATION SHALL INDICATE NEW MATERIALS USED TO PATCH EXISTING FIREPROOFED MEMBERS AT NEW AND EXISTING WORK ARE COMPATIBLE WITH EXISTING FIREPROOFING MATERIALS AND MEET ALL PERFORMANCE REQUIREMENTS.

E. QUALIFICATION OF APPLICATOR: FIRM ACCEPTABLE TO MANUFACTURER OF FIREPROOFING MATERIALS WITH MINIMUM FIVE YEARS SUCCESSFUL EXPERIENCE ON PROJECTS OF SIMILAR SCOPE.

F. MANUFACTURERS/PRODUCTS: MATCH EXISTING BUT NOT LESS THAN W.R. GRACE/MONOKOTE OR ALBI MANUFACTURING DIVISION STANCHEM/DURASPRAY.

G. INSTALLATION: INSTALL IN ACCORDANCE MANUFACTURER RECOMMENDATIONS AND FIRE TEST RESULTS AS REQUIRED TO PROVIDE REQUIRED FIRE RATINGS.
1. PROTECT ADJACENT SURFACES AND EQUIPMENT FROM DAMAGE BY OVER SPRAY, FALLOUT, AND DUSTING; MASK ADJACENT WORK AS REQUIRED. CLOSE OFF AND SEAL DUCT WORK IN AREAS WHERE FIREPROOFING IS BEING APPLIED.
2. CLEAN SUBSTRATE OF DIRT, DUST, GREASE, OIL, LOOSE MATERIAL, PAINTS, PRIMERS, AND OTHER MATTER WHICH AFFECTS BOND OF SPRAYED FIREPROOFING.
3. APPLY FIREPROOFING IN SUFFICIENT THICKNESS AND DENSITY TO ACHIEVE REQUIRED FIRE RATINGS.
4. APPLY FIREPROOFING OVER SUBSTRATE, BUILDING TO REQUIRED THICKNESS WITH AS MANY PASSES OR STAGES NECESSARY TO COVER WITH MONOLITHIC BLANKET OF UNIFORM DENSITY AND TEXTURE.

SECTION 078400 - FIRE STOPPING

A. GENERAL: PROVIDE PENETRATION-TYPE FIRE STOPPING FOR TIME-RATED FLOOR, WALL AND PARTITION ASSEMBLIES CAPABLE OF PREVENTING PASSAGE OF FLAME, SMOKE AND HOT GASES.

B. CODES: CONFORM TO APPLICABLE CODE REQUIREMENTS FOR BOTH F AND T RATINGS.

C. STANDARDS: PASS ASTM E814 THROUGH-PENETRATION FIRE STOPS, ASTM E119 FIRE TESTS AND ASTM E84 FLAME SPREAD/SMOKE CONSTRICTION MAXIMUM 25/25.

D. SUBMITTALS: FURNISH SHOP DRAWINGS, PRODUCT DATA, AND CERTIFICATES OF COMPLIANCE WITH CONTRACT DOCUMENTS, AND APPLICABLE CODES.

E. MANUFACTURERS: 3M/FIRE BARRIER, STI/SPECSEAL OR PENSIL, OR HILTI/FIRESTOP SYSTEMS.

F. GENERAL: CHOOSE PRODUCTS AND METHODS MEETING APPLICABLE CODES AND SPECIFICATION REQUIREMENTS FOR EACH FIRE STOPPING APPLICATION, SUBJECT TO OWNER'S PROJECT MANAGER'S ACCEPTANCE.

G. FIRE STOPPING MATERIALS: FURNISH MATERIALS FOR PENETRATIONS IN TIME-RATED FLOOR, WALL, AND PARTITION ASSEMBLIES CAPABLE OF PREVENT PASSAGE OF FLAME, SMOKE, AND HOT GASES.
1. PENETRATION TEST: FURNISH MATERIALS PASSING ASTM E814 FOR PENETRATION FIRE STOPPING INDICATING MAINTENANCE OF TIME-RATED ADJACENT ASSEMBLIES.
2. FIRE STOPPING: MAINTAIN FIRE RATING OF ASSEMBLY IN WHICH FIRE STOPPING IS INSTALLED, SUCH AS FLOOR, PARTITION, OR WALL, IN ACCORDANCE WITH ASTM E119 TEST.

H. INSTALLATION: INSTALL IN ACCORDANCE MANUFACTURER RECOMMENDATIONS AND FIRE TEST RESULTS AS REQUIRED TO PROVIDE REQUIRED FIRE RATINGS.
1. FIELD INSPECTIONS: MAINTAIN COPY OF MANUFACTURER'S INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS AT EACH WORK AREA..

SECTION 079200 - JOINT SEALERS

A. GENERAL: PROVIDE EXTERIOR AND INTERIOR JOINT SEALERS NOT PROVIDED ELSEWHERE; TYPE SUITABLE FOR APPLICATION INDICATED WITH ACCESSORIES AS REQUIRED FOR COMPLETE INSTALLATION.

B. INSTALLER QUALIFICATIONS: FIRM WITH MINIMUM FIVE YEARS SUCCESSFUL EXPERIENCE ON PROJECTS OF SIMILAR TYPE AND SIZE, USING SPECIFIED PRODUCTS.

C. WARRANTY: REPAIR OR REPLACE JOINT SEALERS WHICH FAIL TO PERFORM AS INTENDED BECAUSE OF LEAKING, CRUMBLING, HARDENING, SHRINKAGE, BLEEDING, SAGGING, STAINING AND LOSES OF ADHESION; WARRANTY PERIOD TWO YEARS.

D. EXTERIOR NON-TRAFFIC JOINTS: GE/SILPRUF, DOW/790-795, OR PECORA/854, LOW MODULES SILICONE SEALANT.

E. TRAFFIC BEARING JOINTS: MAMECO/VULKEM 245, OR PECORA/NR-200 UREXPAN, MULTI-COMPONENT POLYURETHANE, SELF-LEVELING JOINT SEALER.

F. MILDEW-RESISTANT SANITARY SEALANTS: GE/SANITARY SEALANT, DOW/BATHTUB CAULK, OR PECORA/863 #345 WHITE; PROVIDE AT INTERIOR AREAS WHERE SEALANT WILL BE EXPOSED TO WATER.

G. GENERAL INTERIOR JOINT SEALER: PECORA/AC-20 OR SONNEBORN/SONOLAC, ACRYLIC OR LATEX EMULSION.

H. MISCELLANEOUS MATERIALS: PRIMERS, SEALERS, JOINT CLEANERS, BOND BREAKER TAPE, AND SEALANT BACKER RODS AS RECOMMENDED BY SEALANT MANUFACTURER FOR APPLICATIONS INDICATED.
1. OVERSIZE BACKER ROD MINIMUM 30% TO 50% OF JOINT OPENING.

I. COLORS: AS INDICATED OR AS SELECTED BY OWNER'S PROJECT MANAGER FROM MANUFACTURER'S FULL RANGER OF COLORS.

J. PREPARATION: CLEAN JOINT SURFACES IMMEDIATELY BEFORE INSTALLATION OF JOINT SEALER, AND PRIME OR SEAL JOINT SURFACES AS RECOMMENDED BY MANUFACTURER.

K. INSTALLATION: COMPLY WITH MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS AND ASTM C1193.
1. EMPLOY INSTALLATION TECHNICIANS WHICH WILL ENSURE JOINT SEALERS ARE DEPOSITED IN UNIFORM, CONTINUOUS RIBBONS WITHOUT GAPS OR AIR POCKETS, WITH COMPLETE "WETTING" OF BOND SURFACES.

DIVISION 08 - DOORS AND WINDOWS

SECTION 081000 - METAL DOORS AND FRAMES

A. GENERAL: PROVIDE STEEL DOORS AND FRAMES AND ACCESSORIES AS REQUIRED FOR COMPLETE INSTALLATION; COORDINATE WITH SECTION 08700 - HARDWARE.

B. STANDARDS: COMPLY WITH STEEL DOOR INSTITUTE "STANDARD STEEL DOORS AND FRAMES OR NAAMM HOLLOW METAL MANUFACTURER'S ASSOCIATION "HOLLOW METAL MANUAL"
1. FIRE RATED STANDARDS: FURNISH MATERIALS TESTED, LABELED AND INSPECTED BY UL, WARNOCK HERESY, OR TESTING AGENCY ACCEPTABLE TO APPLICABLE AUTHORITIES.

C. SUBMITTALS: SUBMIT PRODUCT DATA.

D. MANUFACTURERS: AMWELD, CECO, PIONEER, OR APPROVED EQUAL.

E. HOLLOW METAL DOORS: FLUSH HOLLOW METAL DOORS FULL FLUSH TYPE; SDI MODEL 1, NAAMM TYPE B FULL FLUSH WITH UNFILLED EDGE; CLOSE TOP AT EXTERIOR DOORS.
1. CORE: PROVIDE STEEL STIFFENED CORE; INSULATED AT EXTERIOR DOORS.
2. GAGE: PROVIDE MINIMUM 18 GAGE AT INTERIOR DOORS, MINIMUM 16 GAGE AT EXTERIOR DOORS.

F. PRESSED STEEL (HOLLOW METAL) FRAMES. MINIMUM 16 GAGE KNOCKDOWN (FIELD-ASSEMBLED) FRAMES.

G. FIRE RATED UNITS: CONFORM TO NFPA 80; PROVIDE UL OR HARNOCK HERESY LABELED DOORS AND FRAMES AS REQUIRED.

H. ACCESSORIES: PROVIDE DOOR SILENCERS, ANCHORS, AND ACCESSORIES.

I. FABRICATION: CONFORM TO REQUIREMENTS OF SDI OR NAAMM.
1. DOOR SILENCERS: PLACE MINIMUM THREE SINGLE BUMPERS ON SINGLE DOOR FRAMES, SPACE EQUALLY ALONG STRIKE JAMBS; PLACE TWO SINGLE BUMPERS ON DOUBLE DOOR FRAME HEADS.

J. FINISH: PRIME PAINT INTERIOR UNITS, GALVANIZE AND PRIME PAINT EXTERIOR UNITS; MINIMUM A60 GALVANIZING; CLEAN, DEGREASE AND FACTORY PRIME PAINT.

K. INSTALLATION: COMPLY WITH MANUFACTURER RECOMMENDATIONS AND EITHER SDI OR NAAMM STANDARDS.
1. INSTALL FIRE RATED UNITS IN CONFORMANCE WITH FIRE LABEL REQUIREMENTS AND NFPA 80.
2. INSTALL DOORS AND FRAMES PLUMB AND SQUARE, AND WITH MAXIMUM DIAGONAL DISTORTION OF 1/16".

SECTION 081400 - WOOD DOORS

A. GENERAL: INSTALL WOOD DOORS AND WOOD DOOR FRAMES AS REQUIRED FOR COMPLETE INSTALLATION; COORDINATE WITH HARDWARE IN SECTION 08700.

B. STANDARDS: COMPLY WITH NATIONAL WOOD WINDOW AND DOOR ASSOCIATION (NWWDA) INDUSTRY STANDARDS FOR WOOD DOORS.

C. PROJECT CONDITIONS: DO NOT DELIVER OR INSTALL DOORS UNTIL CONDITIONS FOR TEMPERATURE AND RELATIVE