ARCHITECTURAL GENERAL SPECIFICATIONS:

6.0 THERMAL AND MOISTURE PROTECTION - BUILDING INSULATION:

PART 1 - GENERAL

1.01 SUMMARY

A. PROVIDE BUILDING INSULATION AND VAPOR RETARDERS WHERE INDICATED:
1. UNDER SLABS-ON-GRADE AND FOUNDATION WALLS, BOARD TYPE IF APPLICABLE.
2. THERMAL INSULATION IN EXTERIOR WALLS, BLANKET TYPE.
3. THERMAL INSULATION AT UNDERSIDE OF ROOFS, OVER HEATED SPACES AND OVER SOFFITS, BLANKET TYPE.
4. PRE-ENGINEERED METAL BUILDING INSULATION, BLANKET TYPE.
5. INSULATION IN INTERIOR WALLS, BLANKET TYPE.
6. THERMAL INSULATION IN EXTERIOR MASONRY WALLS, FOAM IN PLACE TYPE.
7. SIMPLE SAVER SYSTEM.
8. SHEET VAPOR RETARDERS.

1.02 SUBMITTALS

A. NONE REQUIRED UNLESS SUBMITTING FOR APPROVED EQUALS.

1.03 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
B. STANDARDS: COMPLY WITH THE PROVISIONS OF THE FOLLOWING SPECIFICATIONS AND STANDARDS, EXCEPT AS OTHERWISE NOTED OR SPECIFIED, OR AS ACCEPTED OR DIRECTED BY THE OWNER.
1. ASHRA STANDARD 90.1, "ENERGY CONSERVATION CODE".
2. ASTM C518-10, STANDARD TEST METHOD FOR STEADY STATE THERMAL TRANSMISSION PROPERTIES BY MEANS OF THE HEAT FLOW METER APPARATUS
3. ASTM C578-12B, SPECIFICATION FOR PREFORMED, CELLULAR POLYSTYRENE THERMAL INSULATION.
4. ASTM C665-12, SPECIFICATION FOR MINERAL-FIBER THERMAL INSULATION FOR LIGHT FRAME CONSTRUCTION AND MANUFACTURED HOUSING.
5. ASTM C1363-11, STANDARD TEST METHOD FOR THERMAL PERFORMANCE OF BUILDING MATERIALS AND ENVELOPE ASSEMBLIES BY MEANS OF A HOT BOX APPARATUS.
6. ASTM D2842-12, STANDARD TEST METHOD FOR WATER ABSORPTION OF RIGID CELLULAR PLASTICS.
7. ASTM D4397-10, STANDARD SPECIFICATION FOR POLYETHYLENE SHEETING FOR CONSTRUCTION, INDUSTRIAL, AND AGRICULTURAL APPLICATIONS.
8. ASTM E84-13A, STANDARD TEST METHOD FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS.
9. NAIMA, NORTH AMERICAN INSULATION MANUFACTURERS ASSOCIATION - STANDARDS OF PRODUCTS.
10. UL 1479, FIRE TESTS OF THROUGH-PENETRATION FIRESTOPS.

PART 2 - PRODUCTS

2.01 MATERIALS

A. GENERAL: REFER TO DRAWINGS FOR MINIMUM "R" VALUE AND/OR THICKNESS REQUIREMENTS AND LOCATIONS.
B. BLANKET/BATT INSULATION:
1. MANUFACTURERS:
a. PRE-ENGINEERED METAL BUILDING WALL AND ROOF: GBP SILVERCOTE, INC., (NO SUBSTITUTES).
b. ALL OTHER LOCATIONS: OWENS-CORNING, MANVILLE, CERTAINTEED, USG, KNAUF FIBER GLASS. SCHULLER, OR APPROVED EQUAL FOR APPLICATION.
2. TYPE:
a. INTERIOR WALLS: GLASS FIBER, ASTM C665-12, TYPE I, CLASS A, UNFACED.
b. EXTERIOR STUD WALLS, SOFFITS AND ROOF INSULATION: GLASS FIBER, ASTM C665-12, TYPE I, CLASS A, WITH FOIL FACED VAPOR-RETARDER MEMBRANE.
c. PRE-ENGINEERED METAL BUILDING INSULATION:
1). EXTERIOR WALLS: GLASS FIBER, ASTM C665-12, TYPE I, CLASS A, WITH "LAMTEC" WMP-10 WOVEN REINFORCED POLYPROPYLENE FACED VAPOR-RETARDER MEMBRANE (WHITE), ASTM D4397-10, 6 MILS, 0.13 PERM VAPOR TRANSMISSION RATING.
2). ROOF: GLASS FIBER, ASTM C665-12, TYPE I, CLASS A, WITH "LAMTEC" WMP-10 WOVEN REINFORCED POLYPROPYLENE FACED VAPOR-RETARDER MEMBRANE (WHITE), ASTM D4397-10, 6 MILS, 0.13 PERM VAPOR TRANSMISSION RATING. WHERE TWO LAYERS OF INSULATION ARE USED TO ATTAIN REQUIRED "R" FACTOR, ONLY LAYER TOWARDS INTERIOR OF BUILDING SHALL HAVE FACING AND MULTI LAYERS SHALL BE ORIENTED PERPENDICULAR TO EACH OTHER.
3). STEEL STRAPS: 80 KSI TEMPERED, HIGH TENSILE STRENGTH STEEL, GALVANIZED, PRIMED WITH 0.7 MILS OF LOW GLOSS WHITE BAKED ON POLYESTER PAINT ON EXPOSED SIDE, 0.2 MILS OF MEDIUM GLOSS POLYESTER BACKER ON NON EXPOSED SIDE. MINIMUM SIZE SHALL BE 0.019 INCH THICK BY 3/4-INCH WIDE BY CONTINUOUS LENGTH.
4). CRACK SEALERS AND TAPES FOR APPLICATION PER MANUFACTURER'S RECOMMENDATIONS.
3. FLAME SPREAD AND SMOKE DEVELOPMENT RATINGS:
a. TESTED IN ACCORDANCE WITH ASTM E84-13A STANDARDS.
b. EXPOSED AND CONCEALED INSULATION: FLAME SPREAD RATING OF 0 TO 25, SMOKE DEVELOPMENT RATING OF 0 TO 450.
4. WIDTH:
a. STUD FRAMING: PROVIDE IN SAME WIDTH AS STUD SPACING.
b. METAL BUILDING FRAMING: PROVIDE LARGEST WIDTH POSSIBLE TO REDUCE NUMBER OF SEAMS AND JOINTS IN MANUFACTURERS STANDARD WIDTHS.
5. VAPOR RETARDER: INTEGRAL OR SEPARATE COMPONENT VAPOR RETARDER AS INDICATED.
C. BOARD INSULATION:
1. MANUFACTURERS: DOW "STYROFOAM SM", ZONOLITE "STYRENE FOAM" OR EQUIVALENT PRODUCTS OF AMOCO FOAM, UC FOAM, AND MINNESOTA DIVERSIFIED.
2. TYPE: EXTRUDED POLYSTYRENE, RIGID, ASTM C578-12A, "R" OF 5.0 PER NOMINAL INCH PER ASTM C518-10, COMPRESSIVE STRENGTH 30 PSI MINIMUM, WATER ABSORPTION 0.3 PERCENT BY VOLUME MAXIMUM PER ASTM D2842-12, SQUARE EDGES. REFER TO DRAWINGS FOR THICKNESS AND/OR "R" VALUE REQUIRED.
3. VAPOR RETARDER: INTEGRAL VAPOR RETARDER AS REQUIRED FOR APPLICATION.
D. FOAMED IN PLACE INSULATION:
1. MANUFACTURERS: CFI FOAM "CORE FOAM MASONRY FOAM INSULATION", POLYMASTER "R501", TAILORED CHEMICAL "CORE-FILL 500", OR APPROVED EQUAL.
2. TYPE: NON-TOXIC AMINO PLASTIC FOAM OR MULTI-PART PLASTIC POLYMER RESINS, ASTM C518-10, "R" OF 4.6 PER NOMINAL INCH AT 75 DEGREES F MEAN TEMPERATURE, WATER ABSORPTION 5% BY VOLUME MAXIMUM, WATER VAPOR TRANSMISSION 7 PERMS PER INCH MAXIMUM PER ASTM D2842-12.
3. THERMAL PERFORMANCE: ASTM C1363-11, 8" CMU AT 105 PCF, R-11.0 MINIMUM.
4. FLAME SPREAD AND SMOKE DEVELOPMENT RATINGS: ASTM E84-13A, CLASS 1 OR CLASS A, FLAME SPREAD RATING OF 0 TO 25, SMOKE DEVELOPMENT RATING OF 0 TO 450.
E. SIMPLE SAVER SYSTEM:
1. MANUFACTURERS: THERMAL DESIGN, RETROFIT , OR APPROVED EQUAL.
2. TYPE: INTERIOR LINER SYSTEM FABRIC OF THE COLOR "WHITE", SUPPORTING STRAPPING OF THE COLOR "WHITE", FASTENERS OF THE COLOR "WHITE", SEALANTS, THERMAL BREAK MATERIALS AND FORMALDEHYDE FREE THERMAL INSULATION OF THE APPROPRIATE TYPE TO INSULATE THE ROOF AND WALL AREAS TO THE FULL DESIGNED R-VALUE OF THE BUILDING WHERE INDICATED.
3. THERMAL PERFORMANCE: ASTM C991 TYPE 1, ASTM E136 AND ASTM E84
4. FLAME SPREAD; ALL EXPOSED PARTS OF THE LINER SYSTEM SHALL BE CLASS A MATERIAL AND HAVE FLAME SPREAD OF 25 OR LESS BASED ON ASTM E84 STANDARDS.
F. ACCESSORIES:
1. ADHESIVES, MECHANICAL ANCHORS, HANGERS AND CLIPS FOR APPLICATION PER MANUFACTURER'S RECOMMENDATIONS.
2. CRACK SEALERS AND TAPES FOR APPLICATION PER MANUFACTURER'S RECOMMENDATIONS.

PART 3 - EXECUTION

3.01 INSTALLATION

A. INSTALL MATERIALS AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. INSTALL MATERIALS AND SYSTEMS IN PROPER RELATION WITH ADJACENT CONSTRUCTION. COORDINATE WITH WORK OF OTHER SECTIONS. PROVIDE FULL THICKNESS IN ONE LAYER OVER ENTIRE AREA, TIGHTLY FITTING AROUND PENETRATIONS.
B. INSTALL VAPOR RETARDER OVER ENTIRE AREA OF INSIDE FACE OF EXTERIOR WALLS AND ELSEWHERE AS INDICATED. SEAL ALL SEAMS AND AROUND PERIMETER AND PENETRATIONS WITH DUCT TAPE TO FORM A CONTINUOUS VAPOR RETARDER FREE OF HOLES, LEAVE NO GAPES IN INSULATION/VAPOR ENVELOPE. REPAIR PUNCTURES AND TEARS IMMEDIATELY BEFORE CONCEALMENT OF WORK.
C. PROTECT INSTALLED INSULATION AND VAPOR RETARDER.

6.1 THERMAL AND MOISTURE PROTECTION - WEATHER BARRIERS:

PART 1 - GENERAL

1.01 SUMMARY

A. PROVIDE WEATHER BARRIERS AND ACCESSORIES, COMPLETE, WHERE INDICATED.

1.02 SUBMITTALS

A. NONE REQUIRED UNLESS SUBMITTING FOR APPROVED EQUALS.

1.03 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
B. STANDARDS:
1. ASTM D 1117; STANDARD GUIDE FOR EVALUATING NON-WOVEN FABRICS
2. ASTM E 84; TEST METHOD FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS
3. ASTM E 96; TEST METHOD FOR WATER VAPOR TRANSMISSION OF MATERIALS
4. ASTM E 1677; SPECIFICATION FOR AIR RETARDER MATERIAL OR SYSTEM FOR FRAMED BUILDING WALLS
5. ASTM E 2178; TEST METHOD FOR AIR PERMEANCE OF BUILDING MATERIALS
6. AATCC - AMERICAN ASSOCIATION OF TEXTILE CHEMISTS & COLORISTS
7. AATCC - TEST METHOD 127 WATER RESISTANCE: HYDROSTATIC PRESSURE TEST
8. TAPPI - TEST METHOD T-410; GRAMS OF PAPER AND PAPERBOARD (WEIGHT PER UNIT AREA)
9. TAPPI - TEST METHOD T-460; AIR RESISTANCE OF PAPER (GURLEY HILL METHOD)

PART 2 - PRODUCTS

2.01 MANUFACTURER

A. DUPONT SPECIFIED. SUBMIT OTHERS TO ARCHITECT FOR PRIOR APPROVAL.

2.02 MATERIALS (CAVITY WALL APPLICATIONS)

A. BASIS OF DESIGN: HIGH-PERFORMANCE, FLASH SPUN-BONDED OLEFIN, NON-WOVEN, NON-PERFORATED, SECONDARY WEATHER BARRIER IS BASED UPON DUPONT™ TYVEK® COMMERCIALWRAP® D AND RELATED ASSEMBLY COMPONENTS.
B. PERFORMANCE CHARACTERISTICS:
1. AIR PENETRATION: TYPE 1 WHEN TESTED IN ACCORDANCE WITH ASTM E 1677.
2. WATER VAPOR TRANSMISSION: 30 PERMS, WHEN TESTED IN ACCORDANCE WITH ASTM E 96, METHOD B.
3. WATER PENETRATION RESISTANCE: 235 CM WHEN TESTED IN ACCORDANCE WITH AATCC TEST METHOD 127.
4. BASIS WEIGHT: 2.4 OZ/YD2, WHEN TESTED IN ACCORDANCE WITH TAPPI TEST METHOD T_410.
5. AIR INFILTRATION RESISTANCE: AIR INFILTRATION AT >750 SECONDS, WHEN TESTED IN ACCORDANCE WITH TAPPI TEST METHOD T-460.
6. TENSILE STRENGTH: 33/41 LBS/IN., WHEN TESTED IN ACCORDANCE WITH ASTM D822, METHOD A.
7. SURFACE BURNING CHARACTERISTICS: CLASS A, WHEN TESTED IN ACCORDANCE WITH ASTM E 84 . FLAME SPREAD: 15, SMOKE DEVELOPED: 25.

2.03 MATERIALS (STUCCO OR EXTERIOR INSULATION FINISH SYSTEM APPLICATIONS)

A. BASIS OF DESIGN: TEXTURED, SPUNBONDED POLYOLEFIN, NON-WOVEN, NON-PERFORATED, WEATHER BARRIER IS BASED UPON DUPONT™ TYVEK® STUCCOWRAP® AND RELATED ASSEMBLY COMPONENTS.
B. PERFORMANCE CHARACTERISTICS:
1. AIR PENETRATION: 0.004 CFM/FT2 AT 75 PA, WHEN TESTED IN ACCORDANCE WITH ASTM E2178. TYPE I PER ASTM E1677.
2. WATER VAPOR TRANSMISSION: 50 PERMS, WHEN TESTED IN ACCORDANCE WITH ASTM E96, METHOD B.
3. WATER PENETRATION RESISTANCE: 210 CM WHEN TESTED IN ACCORDANCE WITH AATCC TEST METHOD 127.
4. BASIS WEIGHT: 2.1 OZ/YD2, WHEN TESTED IN ACCORDANCE WITH TAPPI TEST METHOD T-410.
5. AIR RESISTANCE: 300 SECONDS, WHEN TESTED IN ACCORDANCE WITH TAPPI TEST METHOD T-460.
6. TENSILE STRENGTH: 30/30 LBS/IN., WHEN TESTED IN ACCORDANCE WITH ASTM D882, METHOD A.
7. TEAR RESISTANCE: 7/9 LBS, WHEN TESTED IN ACCORDANCE WITH ASTM D1117.
8. SURFACE BURNING CHARACTERISTICS. CLASS A, WHEN TESTED IN ACCORDANCE WITH ASTM E84. FLAME SPREAD: 5, SMOKE DEVELOPED: 25

2.04 ACCESSORIES

A. SEAM TAPE: 3" DUPONT™ TYVEK® TAPE AS MANUFACTURED BY DUPONT.
B. FASTENERS: (TYPES AS RECOMMENDED BY MANUFACTURER FOR PROJECT CONDITIONS).
1. TYVEK® WRAP CAP SCREWS,: 1-5/8 INCH RUST RESISTANT SCREW WITH 2-INCH DIAMETER PLASTIC CAP FASTENERS.
2. STEEL FRAME CONSTRUCTION: DUPONT™ TYVEK® WRAP CAP SCREWS, AS MANUFACTURED BY DUPONT BUILDING INNOVATIONS: 1-5/8 INCH RUST RESISTANT SCREW WITH 2-INCH DIAMETER PLASTIC CAP OR MANUFACTURER APPROVED 1-1/4" OR 2" METAL GASKETED WASHER.
3. WOOD FRAME CONSTRUCTION: DUPONT™ TYVEK® WRAP CAPS: #4 NAILS WITH LARGE 1-INCH PLASTIC CAP FASTENERS OR 1-INCH MINIMUM PLASTIC CAP STAPLE WITH A 7/8" MINIMUM STAPLE LENGTH AS REQUIRED FOR PROJECT CONDITIONS AS RECOMMENDED BY MANUFACTURER.
4. MASONRY CONSTRUCTION: MASONRY TAP-CON FASTENERS WITH DUPONT™ TYVEK® WRAP CAPS: 2-INCH DIAMETER PLASTIC CAP FASTENERS.
C. SEALANTS:
1. COMPLY WITH SECTION 07 92 00.
2. PROVIDE SEALANTS THAT COMPLY WITH ASTM C 920, ELASTOMERIC POLYMER SEALANT TO MAINTAIN WATERTIGHT CONDITIONS.
3. PRODUCTS:
a. TREMCO 830
b. TREMCO BUTYL
c. SEALANTS RECOMMENDED BY THE WEATHER BARRIER MANUFACTURER
D. ADHESIVES:
1. PROVIDE ADHESIVE RECOMMENDED BY WEATHER BARRIER MANUFACTURER.
2. PRODUCTS:
a. LIQUID NAILS® LN-109
b. POLYGLAZE® SM 5700
c. DENSO BUTYL LIQUID
d. 3M HIGH STRENGTH 90
e. SIA 655
f. ADHESIVES RECOMMEND BY THE WEATHER BARRIER MANUFACTURER.
E. PRIMERS:
1. PROVIDE FLASHING MANUFACTURER RECOMMENDED PRIMER TO ASSIST IN ADHESION BETWEEN SUBSTRATE AND FLASHING.
2. PRODUCTS:
a. 3M HIGH STRENGTH 90
b. DENSO BUTYL SPRAY
c. SIA 655
d. PERMAGRIP 105
e. ITW TACC STA' PUT SPH
f. PRIMERS RECOMMENDED BY THE FLASHING MANUFACTURER
F. FLASHING: (AS RECOMMENDED BY MANUFACTURER FOR PROJECT CONDITIONS).
1. DUPONT™ FLEXWRAP™: FLEXIBLE MEMBRANE FLASHING MATERIALS FOR WINDOW OPENINGS AND PENETRATIONS.
2. DUPONT™ STRAIGHTFLASH™: STRAIGHT FLASHING MEMBRANE MATERIALS FOR FLASHING WINDOWS AND DOORS AND SEALING PENETRATIONS SUCH AS MASONRY TIES, ETC.
3. DUPONT™ STRAIGHTFLASH™ VF: DUAL-SIDED FLASHING MEMBRANE MATERIALS FOR BRICK MOLD AND NON-FLANGED WINDOWS AND DOORS.
4. DUPONT™ THRU-WALL SURFACE ADHERED MEMBRANE WITH INTEGRATED DRIP EDGE: THRU-WALL FLASHING MEMBRANE MATERIALS FOR FLASHING AT CHANGES IN DIRECTION OR ELEVATION (SHELF ANGLES, FOUNDATIONS, ETC.) AND AT TRANSITIONS BETWEEN DIFFERENT ASSEMBLY MATERIALS.
5. PREFORMED INSIDE AND OUTSIDE CORNERS AND END DAMS AS MANUFACTURED BY DUPONT: PREFORMED THREE-DIMENSIONAL SHAPES TO COMPLETE THE FLASHING SYSTEM USED IN CONJUNCTION WITH DUPONT™ THRU-WALL FLASHING.

PART 3 - EXECUTION

3.01 EXAMINATION

A. VERIFY SUBSTRATE AND SURFACE CONDITIONS ARE IN ACCORDANCE WITH WEATHER BARRIER MANUFACTURER RECOMMENDED TOLERANCES PRIOR TO INSTALLATION OF WEATHER BARRIER AND ACCESSORIES.

6.1 THERMAL AND MOISTURE PROTECTION - WEATHER BARRIERS (CONT.):

3.02 INSTALLATION - WEATHER BARRIER

A. INSTALL WEATHER BARRIER OVER EXTERIOR FACE OF EXTERIOR WALL SUBSTRATE IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS. INSTALL WEATHER BARRIER PRIOR TO INSTALLATION OF WINDOWS AND DOORS.
B. START WEATHER BARRIER INSTALLATION AT A BUILDING CORNER, LEAVING 6-12 INCHES OF WEATHER BARRIER EXTENDED BEYOND CORNER TO OVERLAP. APPLY WRAP WITH GROOVED SURFACE PATTERN IN VERTICAL DIRECTION. INSTALL WEATHER BARRIER IN A HORIZONTAL MANNER STARTING AT THE LOWER PORTION OF THE WALL SURFACE WITH SUBSEQUENT LAYERS INSTALLED IN A SHINGLING MANNER TO OVERLAP LOWER LAYERS. MAINTAIN WEATHER BARRIER PLUMB AND LEVEL
C. SILL PLATE INTERFACE: EXTEND LOWER EDGE OF WEATHER BARRIER OVER SILL PLATE INTERFACE 3-6 INCHES. SECURE TO FOUNDATION WITH ELASTOMERIC SEALANT AS RECOMMENDED BY WEATHER BARRIER MANUFACTURER.
D. WINDOW AND DOOR OPENINGS: EXTEND WEATHER BARRIER COMPLETELY OVER OPENINGS.
E. OVERLAP WEATHER BARRIER
1. EXTERIOR CORNERS: MINIMUM 12 INCHES.
2. SEAMS: MINIMUM 6 INCHES.
F. WEATHER BARRIER ATTACHMENT:
1. (STEEL OR WOOD FRAME CONSTRUCTION) ATTACH WEATHER BARRIER TO STUDS THROUGH EXTERIOR SHEATHING. SECURE USING WEATHER BARRIER MANUFACTURER RECOMMEND FASTENERS, SPACE 6 -18 INCHES VERTICALLY ON CENTER ALONG STUD LINE, AND 24 INCH ON CENTER, MAXIMUM HORIZONTALLY.
2. (MASONRY CONSTRUCTION) ATTACH WEATHER BARRIER TO MASONRY. SECURE USING WEATHER BARRIER MANUFACTURER RECOMMEND FASTENERS, SPACE 6-18 INCHES VERTICALLY ON CENTER AND 24 INCHES MAXIMUM HORIZONTALLY. WEATHER BARRIER MAY BE TEMPORARILY ATTACHED TO MASONRY USING RECOMMENDED ADHESIVE, PLACED IN VERTICAL STRIPS SPACED 24 INCHES ON CENTER, WHEN COORDINATED ON THE PROJECT SITE.
G. APPLY 4 INCH BY 7 INCH PIECE OF DUPONT™ STRAIGHTFLASH™ TO WEATHER BARRIER MEMBRANE PRIOR TO THE INSTALLATION CLADDING ANCHORS.

3.03 SEAMING

A. SEAL SEAMS OF WEATHER BARRIER WITH SEAM TAPE AT ALL VERTICAL AND HORIZONTAL OVERLAPPING SEAMS.
B. SEAL ANY TEARS OR CUTS AS RECOMMENDED BY WEATHER BARRIER MANUFACTURER.

3.04 OPENING PREPARATION (FOR USE WITH NON-FLANGED WINDOWS - ALL CLADDING TYPES)

A. FLUSH CUT WEATHER BARRIER AT EDGE OF SHEATHING AROUND FULL PERIMETER OF OPENING.
B. CUT A HEAD FLAP AT 45-DEGREE ANGLE IN THE WEATHER BARRIER AT WINDOW HEAD TO EXPOSE 8 INCHES OF SHEATHING. TEMPORARILY SECURE WEATHER BARRIER FLAP AWAY FROM SHEATHING WITH TAPE.

3.05 FLASHING (FOR USE WITH NON-FLANGED WINDOWS - ALL CLADDING TYPES)

A. CUT 9-INCH WIDE DUPONT™ FLEXWRAP™ A MINIMUM OF 12 INCHES LONGER THAN WIDTH OF SILL ROUGH OPENING.
B. COVER HORIZONTAL SILL BY ALIGNING DUPONT™ FLEXWRAP™ EDGE WITH INSIDE EDGE OF SILL. ADHERE TO ROUGH OPENING ACROSS SILL AND UP JAMBS A MINIMUM OF 6 INCHES. SECURE FLASHING TIGHTLY INTO CORNERS BY WORKING IN ALONG THE SILL BEFORE ADHERING UP THE JAMBS.
C. FAN DUPONT™ FLEXWRAP™ AT BOTTOM CORNERS ONTO FACE OF WALL. FIRMLY PRESS IN PLACE. MECHANICALLY FASTEN FANNED EDGES.
D. APPLY 9-INCH WIDE STRIPS OF DUPONT™ STRAIGHTFLASH™ AT JAMBS. ALIGN FLASHING WITH INTERIOR EDGE OF JAMB FRAMING. START STRAIGHTFLASH™ AT HEAD OF OPENING AND LAP SILL FLASHING DOWN TO THE SILL.
E. SPRAY-APPLY PRIMER TO TOP 6 INCHES OF JAMBS AND EXPOSED SHEATHING.
F. INSTALL DUPONT™ FLEXWRAP™ AT OPENING HEAD USING SAME INSTALLATION PROCEDURES USED AT SILL. OVERLAP JAMB FLASHING A MINIMUM OF 2 INCHES.
G. COORDINATE FLASHING WITH WINDOW INSTALLATION.
H. ON EXTERIOR, INSTALL BACKER-ROD IN JOINT BETWEEN WINDOW FRAME AND FLASHED ROUGH FRAMING. APPLY SEALANT AT JAMBS AND HEAD, LEAVING SILL UNSEALED. APPLY SEALANTS IN ACCORDANCE WITH SEALANT MANUFACTURER'S INSTRUCTIONS AND ASTM C 1193.
I. POSITION WEATHER BARRIER HEAD FLAP ACROSS HEAD FLASHING. ADHERE USING 4-INCH WIDE DUPONT™ STRAIGHTFLASH™ OVER THE 45-DEGREE SEAMS.
J. TAPE TOP OF WINDOW IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
K. ON INTERIOR, INSTALL BACKER ROD IN JOINT BETWEEN FRAME OF WINDOW AND FLASHED ROUGH FRAMING. APPLY SEALANT AROUND ENTIRE WINDOW TO CREATE AIR SEAL. APPLY SEALANT IN ACCORDANCE WITH SEALANT MANUFACTURER'S INSTRUCTIONS AND ASTM C 1193.

3.06 OPENING PREPARATION (FOR USE WITH FLANGED WINDOWS)

A. CUT WEATHER BARRIER IN A MODIFIED "I-CUT" PATTERN.
1. CUT WEATHER BARRIER HORIZONTALLY ALONG THE BOTTOM OF THE HEADER.
2. CUT WEATHER BARRIER VERTICALLY 2/3 OF THE WAY DOWN FROM TOP CENTER OF WINDOW OPENING.
3. CUT WEATHER BARRIER DIAGONALLY FROM BOTTOM OF CENTER VERTICAL CUT TO THE LEFT AND RIGHT CORNERS OF THE OPENING.
4. FOLD SIDE AND BOTTOM WEATHER BARRIER FLAPS INTO WINDOW OPENING AND FASTEN.
B. CUT A HEAD FLAP AT 45-DEGREE ANGLE IN THE WEATHER BARRIER AT WINDOW HEAD TO EXPOSE 8 INCHES OF SHEATHING. TEMPORARILY SECURE WEATHER BARRIER FLAP AWAY FROM SHEATHING WITH TAPE.

3.07 FLASHING (FOR USE WITH FLANGED WINDOWS)

A. CUT 9-INCH WIDE DUPONT™ FLEXWRAP™ A MINIMUM OF 12 INCHES LONGER THAN WIDTH OF SILL ROUGH OPENING.
B. COVER HORIZONTAL SILL BY ALIGNING DUPONT™ FLEXWRAP™ EDGE WITH INSIDE EDGE OF SILL. ADHERE TO ROUGH OPENING ACROSS SILL AND UP JAMBS A MINIMUM OF 6 INCHES. SECURE FLASHING TIGHTLY INTO CORNERS BY WORKING IN ALONG THE SILL BEFORE ADHERING UP THE JAMBS.
C. FAN DUPONT™ FLEXWRAP™ AT BOTTOM CORNERS ONTO FACE OF WALL. FIRMLY PRESS IN PLACE. MECHANICALLY FASTEN FANNED EDGES.
D. ON EXTERIOR, APPLY CONTINUOUS BEAD OF SEALANT TO WALL OR BACKSIDE OF WINDOW MOUNTING FLANGE ACROSS JAMBS AND HEAD. DO NOT APPLY SEALANT ACROSS SILL.
E. INSTALL WINDOW ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
F. APPLY 4-INCH WIDE STRIPS OF DUPONT™ STRAIGHTFLASH™ AT JAMBS OVERLAPPING ENTIRE MOUNTING FLANGE. EXTEND JAMB FLASHING 1-INCH ABOVE TOP OF ROUGH OPENING AND BELOW BOTTOM EDGE OF SILL FLASHING.
G. APPLY 4-INCH WIDE STRIP OF DUPONT™ STRAIGHTFLASH™ AS HEAD FLASHING OVERLAPPING THE MOUNTING FLANGE. HEAD FLASHING SHOULD EXTEND BEYOND OUTSIDE EDGES OF BOTH JAMB FLASHINGS.
H. POSITION WEATHER BARRIER HEAD FLAP ACROSS HEAD FLASHING. ADHERE USING 4-INCH WIDE DUPONT™ STRAIGHTFLASH™ OVER THE 45-DEGREE SEAMS.
I. TAPE HEAD FLAP IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS
J. ON INTERIOR, INSTALL BACKER ROD IN JOINT BETWEEN FRAME OF WINDOW AND FLASHED ROUGH FRAMING. APPLY SEALANT AROUND ENTIRE WINDOW TO CREATE AIR SEAL. APPLY SEALANT IN ACCORDANCE WITH SEALANT MANUFACTURER'S INSTRUCTIONS AND ASTM C 1193.

3.08 THRU-WALL FLASHING INSTALLATION

A. APPLY PRIMER PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
B. INSTALL PREFORMED CORNERS AND END DAMS BEDDED IN SEALANT IN APPROPRIATE LOCATIONS ALONG WALL.
C. STARTING AT A CORNER, REMOVE RELEASE SHEET AND APPLY MEMBRANE TO PRIMED SURFACES IN LENGTHS OF 8 TO 10 FEET.
D. EXTEND MEMBRANE THROUGH WALL AND LEAVE ¼ INCH MINIMUM EXPOSED TO FORM DRIP EDGE.
E. ROLL FLASHING INTO PLACE. ENSURE CONTINUOUS AND DIRECT CONTACT WITH SUBSTRATE.
F. LAP ENDS AND OVERLAP PREFORMED CORNERS 4 INCHES MINIMUM. SEAL ALL LAPS WITH SEALANT.
G. TRIM EXTERIOR EDGE OF MEMBRANE 1-INCH AND SECURE METAL DRIP EDGE PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
H. TERMINATE MEMBRANE ON VERTICAL WALL. TERMINATE INTO REGLET, COUNTERFLASHING OR WITH TERMINATION BAR.
I. APPLY SEALANT BEAD AT EACH TERMINATION.

3.09 THRU-WALL FLASHING / WEATHER BARRIER INTERFACE AT BASE OF WALL

A. OVERLAP THRU-WALL FLASHING WITH WEATHER BARRIER BY 6-INCHES.
B. MECHANICALLY FASTEN BOTTOM OF WEATHER BARRIER THROUGH TOP OF THRU-WALL FLASHING.
C. SEAL VERTICAL AND HORIZONTAL SEAMS WITH TAPE OR SEALING MEMBRANE.

6.1 THERMAL AND MOISTURE PROTECTION - WEATHER BARRIERS (CONT.):

3.10 THRU-WALL FLASHING / WEATHER BARRIER INTERFACE AT SHELF ANGLE

A. SEAL WEATHER BARRIER TO BOTTOM OF SHELF ANGLE WITH SEALING MEMBRANE.
B. APPLY THRU-WALL FLASHING TO TOP OF SHELF ANGLE. OVERLAP THRU-WALL FLASHING WITH WEATHER BARRIER BY 6-INCHES.
C. SEAL BOTTOM OF WEATHER BARRIER TO THRU-WALL FLASHING WITH TAPE OR SEALING MEMBRANE.

3.11 THRU-WALL FLASHING / WEATHER BARRIER INTERFACE AT WINDOW HEAD

A. CUT FLAP IN WEATHER BARRIER AT WINDOW HEAD.
B. PRIME EXPOSED SHEATHING.
C. INSTALL LINTEL AS REQUIRED. VERIFY END DAMS EXTEND 4 INCHES MINIMUM BEYOND OPENING.
D. INSTALL END DAMS BEDDED IN SEALANT.
E. ADHERE 2 INCHES MINIMUM THRU-WALL FLASHING TO WALL SHEATHING. OVERLAP LINTEL WITH THRU-WALL FLASHING AND EXTEND 1/4 INCH MINIMUM BEYOND OUTSIDE EDGE OF LINTEL TO FORM DRIP EDGE.
F. APPLY SEALANT ALONG THRU-WALL FLASHING EDGES.
G. FOLD WEATHER BARRIER FLAP BACK INTO PLACE AND TAPE BOTTOM EDGE TO THRU-WALL FLASHING.
H. TAPE DIAGONAL CUTS OF WEATHER BARRIER.
I. SECURE WEATHER BARRIER FLAP WITH FASTENERS.

3.12 PROTECTION

A. PROTECT INSTALLED WEATHER BARRIER FROM DAMAGE.

6.2 THERMAL AND MOISTURE PROTECTION - FIRESTOPPING:

PART 1 - GENERAL

1.01 SUMMARY

A. PROVIDE FIRESTOPPING AT THE FOLLOWING LOCATIONS WHERE INDICATED:
1. PENETRATIONS THROUGH FIRE-RESISTANCE-RATED FLOOR AND ROOF CONSTRUCTION.
2. PENETRATIONS THROUGH FIRE-RESISTANCE-RATED WALLS AND PARTITIONS.
3. PENETRATIONS THROUGH SMOKE BARRIERS AND CONSTRUCTION ENCLOSING COMPARTMENTALIZED AREAS.
4. SEALANT JOINTS IN FIRE-RESISTANCE-RATED CONSTRUCTION.

1.02 SUBMITTALS

A. UPON REQUEST, SUBMIT FOR APPROVAL PRODUCT DATA, TEST REPORTS AND CERTIFICATION THAT MATERIALS MEET OR EXCEED THE SPECIFIED REQUIREMENTS.

1.03 QUALITY ASSURANCE

A. COMPLY THE GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
B. FIRE PERFORMANCE: ASTM E119-12A, ASTM E814-11A, AND LOCAL REGULATIONS.

PART 2 - PRODUCTS

2.01 MATERIALS

A. MANUFACTURERS: BIO FIRESHIELD IS SPECIFIED, UNLESS OTHERWISE INDICATED; EQUIVALENT MATERIALS BY METALINES/MATACAULK, 3M, DOW CORNING FIRE STOP, TREMCO, USG, OR APPROVED EQUAL.
B. GENERAL:
1. PROVIDE MATERIALS THAT ARE ASBESTOS FREE.
2. PROVIDE MATERIALS WITH MINIMUM FLAME (F) AND TEMPERATURE (T) RATING OF ONE HOUR, BUT NOT LESS THAN FIRE RESISTANCE RATING OF ASSEMBLY BEING PENETRATED, AS TESTED PER ASTM E814-11A.
3. PROVIDE MATERIALS CONFORMING TO GOVERNING CODES.
4. RATINGS: REFER TO DRAWINGS FOR MINIMUM RATING VALUES AND LOCATION REQUIREMENTS.
5. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
C. FIRESTOP SEALANT: BIOTHERM FIRESTOP SEALANTS; SINGLE COMPONENT SILICONE, GUN GRADE FOR WALLS AND OVERHEAD APPLICATIONS (BIOTHERM 100) AND SELF-LEVELING FOR FLOOR APPLICATIONS (BIOTHERM 200).
D. FIRESAFING INSULATION (BATT OR BOARD): MINERAL WOOL FIBER INSULATION OR HYDROUS CALCIUM SILICATE-INORGANIC, UNFACED, THICKNESS REQUIRED TO ACHIEVE ASSEMBLY PERFORMANCE. JOHNS MANVILLE "SUPER FIRETEMP BOARD", USG "THERMAFIBER", FIBREX OR APPROVED EQUAL.
E. FIRESTOP PILLOWS: FIBERGLASS CLOTH BAGS FILLED WITH HIGH TEMPERATURE MINERAL WOOL COATED WITH INTUMESCENT MATERIAL.
F. FIRESTOP MORTAR:
1. NOVASIT K-10 FIRESTOP MORTAR: SINGLE COMPONENT PORTLAND CEMENT FLY AS MORTAR.
2. K-2 FIRESTOP MORTAR; PORTLAND CEMENT BASED MORTAR.
G. FIRESTOP SLEEVE: PREFABRICATED, STEEL CASING LINED WITH INTUMESCENT MATERIAL.
H. FIRESTOP INTUMESCENT CAULK: BIOSTOP 500 SINGLE COMPONENT WATER BASED ACRYLIC CAULK.
I. CRASH FOAM SYSTEM: STAINLESS STEEL HOUSING LINED WITH INTUMESCENT COMPOUND, WITH SPRING-LOADED SHUTOFF MECHANISM.
J. ACCESSORIES:
1. DAM MATERIAL: MINERAL FIBERBOARD, PLYWOOD, OR PARTICLEBOARD, SHEET METAL, OR OTHER APPROVED MATERIAL.
2. RETAINERS, CLIPS: AS RECOMMENDED BY FIRESTOP MANUFACTURER.
3. MINERAL FIBER MATTING: SAFING.

PART 3 - EXECUTION

3.01 INSTALLATION

A. REVIEW EXTENT OF WORK WITH AUTHORITIES HAVING JURISDICTION AND OBTAIN APPROVAL OF INSTALLATION THICKNESS AND METHODS.
B. SEQUENCE WORK TO PERMIT FIRESTOPPING MATERIALS TO BE INSTALLED AFTER ADJACENT AND SURROUNDING WORK IS COMPLETE TO AVOID NEED FOR REMOVAL OF FIRESTOPPING BY WORK OF OTHER TRADES.
C. CLEAN SURFACES AND SUBSTRATES OF DIRT, OIL, LOOSE MATERIAL AND OTHER FOREIGN MATERIALS, WHICH MAY AFFECT PROPER BOND AND INSTALLATION OF FIRESTOP. PROVIDE PRIMERS REQUIRED FOR VARIOUS SUBSTRATES. MAINTAIN TEMPERATURES OF SUBSTRATE MATERIALS AND AMBIENT AIR TEMPERATURES AS RECOMMENDED BY MANUFACTURER. PROVIDE VENTILATION IN AREAS TO RECEIVE SOLVENT CURED MATERIALS.
D. COMPLY WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. SECURELY ANCHOR INSULATION WITH SAFING CLIPS. INSTALL FIRESTOPS WITHOUT GAPS OR VOIDS. TOOL AND TROWEL EXPOSED SURFACES. REMOVE EXCESS FIRESTOP MATERIAL PROMPTLY AS WORK PROGRESSES AND UPON COMPLETION.
E. PROTECT, INSPECT AND REPAIR WORK UNTIL FINAL ACCEPTANCE.

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