

CONSTRUCTION SPECIFICATIONS:

07 4243 COMPOSITE WALL PANELS

PART 1 - GENERAL

- 1.1 SECTION INCLUDES:
A. EXTERIOR, PANELIZED FIBER CEMENT CLADDING SYSTEM AND ACCESSORIES TO COMPLETE A DRAINED AND BACK-VENTILATED RAINSCREEN.
B. INTERIOR FIBER CEMENT PANELIZED CLADDING SYSTEM AND ACCESSORIES.

- 1.4 SUBMITTALS
A. SUBMIT UNDER PROVISIONS OF SECTION 01 33 00.
B. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DESCRIPTION, STORAGE AND HANDLING REQUIREMENTS, AND INSTALLATION INSTRUCTIONS.
C. PRODUCT TEST REPORTS AND CODE COMPLIANCE DOCUMENTS DEMONSTRATING PRODUCT COMPLIANCE WITH LOCAL BUILDING CODE, SUCH AS TEST REPORTS OR EVALUATION REPORTS FROM QUALIFIED, INDEPENDENT TESTING AGENCIES.
D. LEED CREDITS: PROVIDE DOCUMENTATION OF LEED CREDITS FOR PROJECT CERTIFICATION UNDER USGBC LEED 2009 (VERSION 3.0) OR 2012 V.4.
E. MANUFACTURER'S DETAILS: SUBMIT DRAWINGS (.DWG, .RVT, AND/OR .PDF FORMATS), INCLUDING PLANS, SECTIONS, SHOWING INSTALLATION DETAILS THAT DEMONSTRATE PRODUCT DIMENSIONS, EDGE/TERMINATION CONDITIONS/TREATMENTS, COMPRESSION AND CONTROL JOINTS, CORNERS, OPENINGS, AND PENETRATIONS.
F. SAMPLES: SUBMIT SAMPLES OF EACH PRODUCT TYPE PROPOSED FOR USE.

1.5 QUALITY ASSURANCE

- A. MANUFACTURER QUALIFICATIONS:
1. ALL FIBER CEMENT PANELS SPECIFIED IN THIS SECTION MUST BE SUPPLIED BY A MANUFACTURER WITH A MINIMUM OF 10 YEARS OF EXPERIENCE IN FABRICATING AND SUPPLYING FIBER CEMENT CLADDING SYSTEMS.
a. PRODUCTS COVERED UNDER THIS SECTION ARE TO BE MANUFACTURED IN AN ISO 9001 CERTIFIED FACILITY.
2. PROVIDE TECHNICAL AND DESIGN SUPPORT AS NEEDED REGARDING INSTALLATION REQUIREMENTS AND WARRANTY COMPLIANCE PROVISIONS.
B. INSTALLER QUALIFICATIONS: ALL PRODUCTS LISTED IN THIS SECTION ARE TO BE INSTALLED BY A SINGLE INSTALLER TRAINED BY MANUFACTURER OR REPRESENTATIVE.
C. MOCK-UP WALL: PROVIDE A MOCK-UP WALL AS EVALUATION TOOL FOR PRODUCT AND INSTALLATION WORKMANSHIP.
D. PRE-INSTALLATION MEETINGS: PRIOR TO BEGINNING INSTALLATION, CONDUCT CONFERENCE TO VERIFY AND DISCUSS SUBSTRATE CONDITIONS, MANUFACTURER'S INSTALLATION INSTRUCTIONS AND WARRANTY REQUIREMENTS, AND PROJECT REQUIREMENTS.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. PANELS MUST BE STORED FLAT AND KEPT DRY BEFORE INSTALLATION. A WATERPROOF COVER OVER PANELS AND ACCESSORIES SHOULD BE USED AT ALL TIMES PRIOR TO INSTALLATION. DO NOT STACK PALLETS MORE THAN TWO HIGH. REFER TO THE INFORMATION INCLUDED ON EACH PALLET.
B. IF PANELS ARE EXPOSED TO WATER OR WATER VAPOR PRIOR TO INSTALLATION, ALLOW TO COMPLETELY DRY BEFORE INSTALLING. FAILURE TO DO SO MAY RESULT IN PANEL CRACKING, LAP JOINTS, AND SUCH ACTION MAY VOID WARRANTY.
C. PANELS MUST BE CARRIED ON EDGE. DO NOT CARRY OR LIFT PANELS FLAT. IMPROPER HANDLING MAY CAUSE CRACKING OR PANEL DAMAGE.
D. DIRECT CONTACT BETWEEN THE PANELS AND THE GROUND SHOULD BE AVOIDED AT ALL TIMES. IT IS NECESSARY TO KEEP PANELS CLEAN DURING INSTALLATION PROCESS.

1.7 WARRANTY

- A. MANUFACTURER'S 15-YEAR WARRANTY AGAINST MANUFACTURED DEFECTS IN FIBER CEMENT PANELS. ADDITIONAL 5-YEAR EXTENSION AVAILABLE WHEN REFINISHED IN YEAR 14-15.
B. PROVIDE MANUFACTURER'S 15-YEAR WARRANTY AGAINST MANUFACTURED DEFECTS IN PANEL FINISH.
C. WARRANTY PROVIDES FOR THE ORIGINAL PURCHASER. SEE WARRANTY FOR DETAILED INFORMATION ON TERMS, CONDITIONS AND LIMITATIONS.

PART II - PRODUCTS

2.1 MANUFACTURERS

- A. ACCEPTABLE MANUFACTURER: NICHIIHA CORPORATION, 18-19 NISHIKI 2-CHOME NAKA-KU, NAGOYA, AICHI 460-8810, JAPAN.
B. ACCEPTABLE MANUFACTURER'S REPRESENTATIVE: NICHIIHA USA, INC., 6485 E. JOHNS CROSSING, SUITE 250, JOHNS CREEK, GA 30097. TOLL FREE: 1.866.424.4421, OFFICE: 770.805.9466, FAX: 770.805.9467, WWW.NICHIIHA.COM.
1. BASIS OF DESIGN PRODUCT: NICHIIHA TUFFBLOCK.
a. PROFILE COLORS: STEEL, BAMBOO, WALNUT, PEWTER, OR DESIGNER-SPECIFIED CUSTOM COLOR.
b. ACCESSORY/COMPONENT OPTIONS:
i. MANUFACTURED CORNERS WITH 3-1/2" RETURNS FOR EACH PROFILE COLOR.
ii. ALUMINUM TRIM OPTIONS: CORNER KEYS, OPEN OUTSIDE CORNER, H-MOLD, J-MOLD, COMPRESSION JOINT, INSIDE CORNER.
iii. FINISH: CUSTOM COLOR, CLEAR, ANODIZED, OR PRIMED
1. ESSENTIAL FLASHING SYSTEM: STARTER, OVER-HANG.
1. FINISH: MATTE BLACK.
c. DIMENSIONS - AWP-1818: 455MM (17-7/8") (H) X 1,818 MM (71-9/16") (L).
d. PANEL THICKNESS: 16 MM (5/8").
e. FINISH: MATTE, MODERATELY TEXTURED.
f. WEIGHT: 35.27 LBS. PER PANEL.
g. COVERAGE: 8.88 SQ. FT. PER PANEL.
h. FACTORY SEALED ON SIX (6) SIDES.
c. SUBSTITUTIONS: NOT PERMITTED.
D. REQUESTS FOR SUBSTITUTIONS WILL BE CONSIDERED IN ACCORDANCE WITH PROVISIONS OF SECTION 01 60 00.

2.2 MATERIALS

- A. FIBER CEMENT PANELS MANUFACTURED FROM A PRESSED, STAMPED, AND ADOCLAVED MIX OF PORTLAND CEMENT, FLY ASH, SILICA, RECYCLED REJECTS, AND WOOD FIBER BUNDLES.
B. PANEL SURFACE PRE-FINISHED AND MACHINE APPLIED.
C. PANELS PROFILED ON FOUR EDGES SUCH THAT BOTH HORIZONTAL AND VERTICAL JOINTS BETWEEN THE INSTALLED PANELS ARE SHIP-LAPPED.
D. FACTORY-APPLIED SEALANT GASKET ADDED TO TOP AND RIGHT PANEL EDGES; ALL JOINTS CONTAIN A FACTORY SEALANT.
2.3 PERFORMANCE REQUIREMENTS:
A. FIBER CEMENT CLADDING - MUST COMPLY WITH ASTM C-1186, TYPE A, GRADE II REQUIREMENTS.
1. WET FLEXURAL STRENGTH: RESULT: 1418 PSI, LOWER LIMIT: 1015 PSI.
2. WATER TIGHTNESS: NO WATER DROPLETS OBSERVED ON ANY SPECIMEN.
3. FREEZE-THAW: NO DAMAGE OR DEFECTS OBSERVED.
4. WARM WATER: NO EVIDENCE OF CRACKING, DELAMINATION, SWELLING, OR OTHER DEFECTS OBSERVED.
5. HEAT: NO CRACKING, CRACKING, OR OTHER DELETERIOUS EFFECTS, SURFACE OR JOINT CHANGES OBSERVED IN ANY SPECIMEN.
B. MEAN COEFFICIENT OF LINEAR THERMAL EXPANSION (ASTM E-228): MAX 1.0\*10^-5 IN./IN.
C. SURFACE BURNING (CAN-ULC S102/ASTM E-84): FLAME SPREAD: 0, SMOKE DEVELOPED: 0.
D. WIND LOAD (ASTM E-330): CONTACT MANUFACTURER FOR ULTIMATE WIND PRESSURE DATA CORRESPONDING TO FRAMING TYPE, DIMENSIONS, FASTENER TYPE AND ATTACHMENT CLIPS. PROJECT ENGINEER(S) MUST DETERMINE WIND AND DESIGN PRESSURES BASED ON PROJECT SPECIFIC.
E. WATER PENETRATION (ASTM E-331): NO WATER LEAKAGE OBSERVED INTO WALL CAVITY.
F. STEADY-STATE HEAT FLUX AND THERMAL TRANSMISSION PROPERTIES TEST (ASTM C-518): 16MM THICK PANEL THERMAL RESISTANCE VALUE OF 0.09.
G. FIRE RESISTANT (ASTM E-119): THE WALL ASSEMBLY MUST SUCCESSFULLY ENDURE 60-MINUTE FIRE EXPOSURE WITH DESIGN OPENING EXPOSURE UNEXPOSED SURFACE TEMPERATURE ALLOWING MAXIMUM 250 F IN CAVITY INSULATION, AND INTERIOR 5/8" TYPE X GYPSUM MET THE ACCEPTANCE CRITERIA OF CAN/ULC S-134.
H. IGBLOND RAINSCREEN (CAN/ULC S-288): NO SIGNIFIED FLOWING OF PANELS, ASSEMBLY WAS SUBJECTED TO MINIMUM RADIANT HEAT OF 12.5 KW/M2 ± 5% IN THE PRESENCE OF A PILE OF WOOD AS SOURCE FOR A 20-MINUTE PERIOD.
I. RAINSCREEN ASSEMBLY (A-285): WALL ASSEMBLY OF NICHIIHA AWP, ULTIMATE CLIPS AND STARTER TRACK, TYPE IV MEMBRANE WRAP, 1/2" DENSGLOSS GOLD SHEATHING, 16" O.C. HUGE STEEL STUDS, 2" IN-CAVITY INSULATION, AND INTERIOR 5/8" TYPE X GYPSUM MET THE ACCEPTANCE CRITERIA OF NFPA 285.
J. PROPAGATION (CAN/ULC S-134): WALL ASSEMBLY OF NICHIIHA AWP, ULTIMATE CLIPS AND STARTER TRACK, TYPE IV MEMBRANE WRAP, 1/2" DENSGLOSS GOLD SHEATHING, 16" O.C. 2X WOOD STUDS, 2" IN-CAVITY INSULATION, AND INTERIOR 5/8" TYPE X GYPSUM MET THE ACCEPTANCE CRITERIA OF CAN/ULC S-134.
K. DRAINED AND BACK-VENTILATED RAINSCREEN (AAMA 909-14): SYSTEM CLASSIFICATIONS: W1, V1.

L. FLORIDA BUILDING CODE - TEST PROTOCOL HVHZ (TAS 202, 203); DESIGN PRESSURE: 95 PSF.

2.4 INSTALLATION COMPONENTS

- A. ULTIMATE CLIP SYSTEM.
1. STARTER TRACK: FA 700 (10MM RAINSCREEN) - 3030MM (L) GALVALUME COATED STEEL.
2. PANEL CLIPS: JEL 770 "ULTIMATE CLIP II" (10MM RAINSCREEN FOR 5/8" AWP) - ZINC-ALUMINUM-MAGNESIUM ALLOY COATED STEEL.
a. JOINT TAB ATTACHMENTS (INCLUDED) - USED AT ALL AWP-1818 PANEL TO PANEL VERTICAL JOINTS.
3. CORNER CLIPS: JE 777C (10MM RAINSCREEN FOR 5/8" AWP MANUFACTURED CORNERS) - ZINC-ALUMINUM-MAGNESIUM ALLOY COATED STEEL.
4. SINGLE FLANGE SEALANT BACKER - FH 1015 R (10MM) - 6.5" (L) FLUORINE COATED GALVALUME.
5. DOUBLE FLANGE SEALANT BACKER - FH 1015 R (10MM) - 10" (L) FLUORINE COATED GALVALUME.
6. CORRUGATED SPACER - FS 1005 (6MM), FS 1010 (10MM) - 4" (L).
B. ALUMINUM TRIM (OPTIONAL): PAINT AS SPECIFIED IN FINISH SCHEDULE.
C. ESSENTIAL FLASHING SYSTEM (OPTIONAL):
1. STARTER - MAIN SEGMENTS (3030MM), INSIDE CORNERS, OUTSIDE CORNERS
2. OVERHANG - MAIN SEGMENTS (3030MM), INSIDE CORNERS, OUTSIDE CORNERS, JOINT CLIPS
D. FASTENERS: CORROSION RESISTANT FASTENERS, SUCH AS HOT-DIPPED GALVANIZED SCREWS APPROPRIATE TO LOCAL BUILDING CODES AND PRACTICES MUST BE USED. USE STAINLESS STEEL FASTENERS IN HIGH HUMIDITY AND HIGH-MOISTURE REGIONS. PANEL MANUFACTURER IS NOT LIABLE FOR CORROSION RESISTANCE OF FASTENERS. DO NOT USE ALUMINUM FASTENERS, STAPLES OR FASTENERS THAT ARE NOT RATED OR DESIGNED FOR INTENDED USE. SEE MANUFACTURER'S INSTRUCTIONS FOR APPROPRIATE FASTENERS FOR CONSTRUCTION METHOD USED.
E. FLASHING: FLASH ALL AREAS SPECIFIED IN MANUFACTURER'S INSTRUCTIONS. DO NOT USE RAW ALUMINUM FLASHING. FLASHING MUST BE GALVANIZED, ANODIZED, OR PVC COATED.
F. SEALANT: SEALANT SHALL COMPLY WITH ASTM C920, CLASS 35.

PART III - EXECUTION

3.1 EXAMINATION

- A. VERIFICATION OF CONDITIONS:
1. FIBER CEMENT PANELS CAN BE INSTALLED OVER BRACED WOOD, STEEL STUDS AND SHEATHING INCLUDING PLYWOOD, OSB, PLASTIC FOAM OR FIBERBOARD SHEATHING. FIBER CEMENT PANELS CAN ALSO BE INSTALLED OVER STRUCTURAL INSULATED PANELS (SIPS), CONCRETE MASONRY UNITS (CMUs) AND CONCRETE BLOCK STRUCTURES (CBS) WITH FURRING STRIPS, AND PRE-ENGINEERED METAL CONSTRUCTION INSULATED CONCRETE FORMS (ICFs) ARE NOT AN APPROVED SUBSTRATE UNDER ANY CONDITION.
2. ALLOWABLE STUD SPACING: 16" O.C. MAXIMUM.
3. A WEATHER RESISTIVE BARRIER IS REQUIRED WHEN INSTALLING FIBER CEMENT PANELS. USE AN APPROVED WEATHER RESISTIVE BARRIER (WRB) AS DEFINED BY THE 2015 IBC OR IFC. REFER TO LOCAL BUILDING CODES.
4. APPROPRIATE METAL FLASHING SHOULD BE USED TO PREVENT MOISTURE PENETRATION AROUND ALL DOORS, WINDOWS, WALL BOTTOMS, MATERIAL TRANSITIONS AND PENETRATIONS. REFER TO LOCAL BUILDING CODES FOR BEST PRACTICES.
B. EXAMINE SITE TO ENSURE SUBSTRATE CONDITIONS ARE WITHIN ALIGNMENT
A. PROVIDE MANUFACTURER'S INSTRUCTIONS FOR SUBSTRATE PREPARATION.
C. DO NOT BEGIN INSTALLATION UNTIL UNACCEPTABLE CONDITIONS HAVE BEEN CORRECTED.
D. DO NOT INSTALL PANELS OR COMPONENTS THAT APPEAR TO BE DAMAGED OR DEFECTIVE. DO NOT INSTALL WET PANELS.

3.2 TOLERANCE

- A. WALL SURFACE PLANE MUST BE PLUMB AND LEVEL WITHIN +/- 1/4" INCH IN 20 FEET IN ANY DIRECTION.
1. ONE LAYER OF NICHIIHA 5MM (-3/16") SPACER MAY BE USED AS SHIM.
3.3 INSTALLATION
A. GENERAL: INSTALL PRODUCTS IN ACCORDANCE WITH THE LATEST INSTALLATION GUIDELINES OF THE MANUFACTURER AND ALL APPLICABLE BUILDING CODES AND OTHER LAWS, RULES, REGULATIONS AND ORDINANCES. REVIEW ALL MANUFACTURER INSTALLATION, MAINTENANCE INSTRUCTIONS, AND OTHER APPLICABLE DOCUMENTS BEFORE INSTALLATION.
1. CONSULT WITH YOUR LOCAL DEALER OR NICHIIHA TECHNICAL DEPARTMENT BEFORE INSTALLING ANY NICHIIHA FIBER CEMENT PRODUCT ON A BUILDING HIGHER THAN 45 FEET OR THREE STORIES OR FOR CONDITIONS NOT MATCHING PRESCRIBED STANDARD INSTALLATION GUIDE REQUIREMENTS AND METHODS. SPECIAL INSTALLATION CONDITIONS MAY BE REQUIRED VIA A TECHNICAL REVIEW AND SPECIAL APPLICATIONS FORM (SAP) PROCESS.
2. VERTICAL CONTROL/EXPANSION JOINTS ARE REQUIRED WITHIN 2-10 FEET OF OUTSIDE CORNERS FINISHED WITH METAL TRIM AND APPROXIMATELY EVERY 30 FEET THEREAFTER.
3. HORIZONTAL COMPRESSION JOINTS ARE REQUIRED FOR MULTI-STORY INSTALLATIONS OF AWP. LOCATE JOINTS AT FLOOR LINES. JOINTS ARE FLASHED MINIMUM 1/2" BREAKS. DO NOT CAULK. REFER TO INSTALLATION GUIDE(S).
a. WOOD FRAMED BUILDINGS OF THREE OR MORE FLOORS REQUIRE A COMPRESSION JOINT AT EACH FLOOR.
b. STEEL FRAMED BUILDINGS (INCLUDING REINFORCED CONCRETE CORE WITH LGMF EXTERIOR WALLS) OF MORE THAN THREE FLOORS (OR 45 FEET) REQUIRE A COMPRESSION JOINT EVERY 25 FEET AT A FLOOR LINE.
B. PANEL CUTTING
1. ALWAYS CUT FIBER CEMENT PANELS OUTSIDE OR IN A WELL VENTILATED AREA. DO NOT CUT THE PRODUCTS IN AN ENCLOSED AREA.
2. ALWAYS WEAR SAFETY GLASSES AND NIOSH/OSHA APPROVED RESPIRATOR WHENEVER CUTTING, DRILLING, SAWING, SANDING OR FINISHING THE PRODUCTS. REFER TO MANUFACTURER SDS FOR MORE INFORMATION.
3. USE A DUST-REDUCING CIRCULAR SAW WITH A DIAMOND CARBIDE-TIPPED BLADE.
a. RECOMMENDED CIRCULAR SAW: MAXI-7" CIRCULAR SAW WITH DUST COLLECTOR (#5057KB).
b. RECOMMENDED BLADE: TENRYU T-1000-PRO FIBER CEMENT CUTTING BLADE (PBP-18505).
c. SHARP ELECTRIC CIRCUMFERENCE JIG SAWS MAY BE USED FOR CORNER-CUTTING CUTTINGS, SUCH AS SEWER OPENINGS, CURVES, RADII AND SCHEDULES.
4. SILICA DUST WARNING: FIBER CEMENT PRODUCTS MAY CONTAIN SOME AMOUNTS OF WET-DRYABLE SILICA, A NATURALLY OCCURRING, POTENTIALLY HAZARDOUS MINERAL WITH CARCINOGENIC DUST FORM. CONSULT PRODUCT SDS OR VISIT WWW.OSHA-OSHA.DOCVIEWS.COM/SILICACRYSSTALLINE/.

3.3 INSTALLATION

- A. GENERAL: INSTALL PRODUCTS IN ACCORDANCE WITH THE LATEST INSTALLATION GUIDELINES OF THE MANUFACTURER AND ALL APPLICABLE BUILDING CODES AND OTHER LAWS, RULES, REGULATIONS AND ORDINANCES. REVIEW ALL MANUFACTURER INSTALLATION, MAINTENANCE INSTRUCTIONS, AND OTHER APPLICABLE DOCUMENTS BEFORE INSTALLATION.
1. CONSULT WITH YOUR LOCAL DEALER OR NICHIIHA TECHNICAL DEPARTMENT BEFORE INSTALLING ANY NICHIIHA FIBER CEMENT PRODUCT ON A BUILDING HIGHER THAN 45 FEET OR THREE STORIES OR FOR CONDITIONS NOT MATCHING PRESCRIBED STANDARD INSTALLATION GUIDE REQUIREMENTS AND METHODS. SPECIAL INSTALLATION CONDITIONS MAY BE REQUIRED VIA A TECHNICAL REVIEW AND SPECIAL APPLICATIONS FORM (SAP) PROCESS.
2. VERTICAL CONTROL/EXPANSION JOINTS ARE REQUIRED WITHIN 2-10 FEET OF OUTSIDE CORNERS FINISHED WITH METAL TRIM AND APPROXIMATELY EVERY 30 FEET THEREAFTER.
3. HORIZONTAL COMPRESSION JOINTS ARE REQUIRED FOR MULTI-STORY INSTALLATIONS OF AWP. LOCATE JOINTS AT FLOOR LINES. JOINTS ARE FLASHED MINIMUM 1/2" BREAKS. DO NOT CAULK. REFER TO INSTALLATION GUIDE(S).
a. WOOD FRAMED BUILDINGS OF THREE OR MORE FLOORS REQUIRE A COMPRESSION JOINT AT EACH FLOOR.
b. STEEL FRAMED BUILDINGS (INCLUDING REINFORCED CONCRETE CORE WITH LGMF EXTERIOR WALLS) OF MORE THAN THREE FLOORS (OR 45 FEET) REQUIRE A COMPRESSION JOINT EVERY 25 FEET AT A FLOOR LINE.
B. PANEL CUTTING
1. ALWAYS CUT FIBER CEMENT PANELS OUTSIDE OR IN A WELL VENTILATED AREA. DO NOT CUT THE PRODUCTS IN AN ENCLOSED AREA.
2. ALWAYS WEAR SAFETY GLASSES AND NIOSH/OSHA APPROVED RESPIRATOR WHENEVER CUTTING, DRILLING, SAWING, SANDING OR FINISHING THE PRODUCTS. REFER TO MANUFACTURER SDS FOR MORE INFORMATION.
3. USE A DUST-REDUCING CIRCULAR SAW WITH A DIAMOND CARBIDE-TIPPED BLADE.
a. RECOMMENDED CIRCULAR SAW: MAXI-7" CIRCULAR SAW WITH DUST COLLECTOR (#5057KB).
b. RECOMMENDED BLADE: TENRYU T-1000-PRO FIBER CEMENT CUTTING BLADE (PBP-18505).
c. SHARP ELECTRIC CIRCUMFERENCE JIG SAWS MAY BE USED FOR CORNER-CUTTING CUTTINGS, SUCH AS SEWER OPENINGS, CURVES, RADII AND SCHEDULES.
4. SILICA DUST WARNING: FIBER CEMENT PRODUCTS MAY CONTAIN SOME AMOUNTS OF WET-DRYABLE SILICA, A NATURALLY OCCURRING, POTENTIALLY HAZARDOUS MINERAL WITH CARCINOGENIC DUST FORM. CONSULT PRODUCT SDS OR VISIT WWW.OSHA-OSHA.DOCVIEWS.COM/SILICACRYSSTALLINE/.

CLEANING AND MAINTENANCE

- 1. REVIEW MANUFACTURER'S GUIDELINES FOR DETAILED CARE INSTRUCTIONS.

SECTION 07 4646 MINERAL-FIBER CEMENT SIDING

PART 1 - GENERAL

- 1.1 SUMMARY
A. SECTION INCLUDES:
1. MINERAL-FIBER CEMENT SIDING AND TRIM.
2. TRIM, ANCHORAGE, AND ACCESSORIES.
1.2 SUBMITTALS
A. SUBMITTALS FOR REVIEW:
1. PRODUCT DATA: INDICATE PROFILES, SIZES, FASTENING METHODS, SURFACE TEXTURE, AND FINISH.
2. WARRANTY AND FINISH WARRANTY FORM.
B. SUSTAINABLE DESIGN SUBMITTALS:
1. REGIONAL MATERIALS.
1.3 QUALITY ASSURANCE
A. INSTALLER QUALIFICATIONS: MINIMUM 3 YEARS DOCUMENTED EXPERIENCE IN WORK OF THIS SECTION.
1.4 WARRANTIES
A. FURNISH MANUFACTURER'S WARRANTY, MADE OUT IN OWNER'S NAME WITH COPY TO OWNER, PROVIDING COVERAGE AGAINST CRACKING, ROTTING, OR DELAMINATION OF SIDING.
PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. ACCEPTABLE MANUFACTURERS:
1. JAMES HARDIE BUILDING PRODUCTS INC. WWW.JAMESHARDIE.COM
2. APPROVED EQUAL - TO BE CONSIDERED AND APPROVED BY ARCHITECT.
2.2 MATERIALS
A. MINERAL-FIBER CEMENT SIDING:
1. ASTM C1186, GRADE II, TYPE A: FORMULATED FROM PORTLAND CEMENT, GROUND SAND, CELLULOSE FIBERS, ADDITIVES, AND WATER, FORMED UNDER PRESSURE TO REQUIRED PROFILE.
2. FINISH: FACTORY PRIME PAINTED.
3. FIRE HAZARD CLASSIFICATION: CLASS A, TESTED TO ASTM E84.
4. LAP SIDING:
a. SIZE: 7 1/2" INCH HIGH (8 INCH EXPOSURE) X 12 FEET LONG (SEE DRAWINGS).
b. THICKNESS: 5/16" INCH.
c. SURFACE TEXTURE: SMOOTH.
5. TRIM:
a. SIZE: 3 INCHES WIDE X MAXIMUM PRACTICAL LENGTH.
b. THICKNESS: 7/16" INCH.
c. SURFACE TEXTURE: SMOOTH.

2.3 ACCESSORIES

- A. FASTENERS: TYPE RECOMMENDED BY SIDING MANUFACTURER.
B. SHEET METAL FLASHINGS AND TRIM: SPECIFIED IN SECTION 07 62 00.
C. JOINT SEALERS: SPECIFIED IN SECTION 07 92 00.

PART 3 - EXECUTION

- 3.1 INSTALLATION - LAP SIDING
A. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS
B. INSTALL SIDING WITH 10 INCH EXPOSURE (SEE DRAWINGS)
C. LAP SIDING FOR NATURAL WATER SHEED.
D. BUTT JOINTS TIGHT.
E. SET PLUMB AND LEVEL.
F. CUT SIDING TO FIT AT PERIMETER AND AROUND PENETRATIONS WITH MAXIMUM 1/4 INCH GAPS. SMOOTH CUT EDGES.
G. POSITION CUT ENDS OVER BEARING SURFACES.
H. INSTALL CORNER STRIPS, CLOSURES, AND TRIM AS SHOWN ON DRAWINGS.
I. FASTEN AT MAXIMUM 12 INCHES ON CENTER. BLIND NAIL EXCEPT TRIM.
J. INSTALL METAL FLASHINGS AT SILLS AND HEADS OF WALL OPENINGS. FASTEN AT 12 INCHES ON CENTER MAXIMUM.
K. APPLY JOINT SEALER BETWEEN SIDING AND TRIM AND ADJACENT SURFACES AS SPECIFIED IN SECTION 07 92 00. ENSURE WATERTIGHT CONDITION.
3.2 INSTALLATION - TRIM
A. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
B. BUTT JOINTS TIGHT.
C. SET PLUMB AND LEVEL.
D. CUT TO FIT AT PERIMETER AND AROUND PENETRATIONS WITH MAXIMUM 1/4 INCH GAPS. SMOOTH CUT EDGES.
E. FASTEN AT MAXIMUM 16 INCHES ON CENTER.
3.3 TOLERANCE
A. WALL SURFACE PLANE MUST BE PLUMB AND LEVEL WITHIN +/- 1/4" INCH IN 20 FEET IN ANY DIRECTION.
1. ONE LAYER OF NICHIIHA 5MM (-3/16") SPACER MAY BE USED AS SHIM.
3.3 INSTALLATION
A. GENERAL: INSTALL PRODUCTS IN ACCORDANCE WITH THE LATEST INSTALLATION GUIDELINES OF THE MANUFACTURER AND ALL APPLICABLE BUILDING CODES AND OTHER LAWS, RULES, REGULATIONS AND ORDINANCES. REVIEW ALL MANUFACTURER INSTALLATION, MAINTENANCE INSTRUCTIONS, AND OTHER APPLICABLE DOCUMENTS BEFORE INSTALLATION.
1. CONSULT WITH YOUR LOCAL DEALER OR NICHIIHA TECHNICAL DEPARTMENT BEFORE INSTALLING ANY NICHIIHA FIBER CEMENT PRODUCT ON A BUILDING HIGHER THAN 45 FEET OR THREE STORIES OR FOR CONDITIONS NOT MATCHING PRESCRIBED STANDARD INSTALLATION GUIDE REQUIREMENTS AND METHODS. SPECIAL INSTALLATION CONDITIONS MAY BE REQUIRED VIA A TECHNICAL REVIEW AND SPECIAL APPLICATIONS FORM (SAP) PROCESS.
2. VERTICAL CONTROL/EXPANSION JOINTS ARE REQUIRED WITHIN 2-10 FEET OF OUTSIDE CORNERS FINISHED WITH METAL TRIM AND APPROXIMATELY EVERY 30 FEET THEREAFTER.
3. HORIZONTAL COMPRESSION JOINTS ARE REQUIRED FOR MULTI-STORY INSTALLATIONS OF AWP. LOCATE JOINTS AT FLOOR LINES. JOINTS ARE FLASHED MINIMUM 1/2" BREAKS. DO NOT CAULK. REFER TO INSTALLATION GUIDE(S).
a. WOOD FRAMED BUILDINGS OF THREE OR MORE FLOORS REQUIRE A COMPRESSION JOINT AT EACH FLOOR.
b. STEEL FRAMED BUILDINGS (INCLUDING REINFORCED CONCRETE CORE WITH LGMF EXTERIOR WALLS) OF MORE THAN THREE FLOORS (OR 45 FEET) REQUIRE A COMPRESSION JOINT EVERY 25 FEET AT A FLOOR LINE.
B. PANEL CUTTING
1. ALWAYS CUT FIBER CEMENT PANELS OUTSIDE OR IN A WELL VENTILATED AREA. DO NOT CUT THE PRODUCTS IN AN ENCLOSED AREA.
2. ALWAYS WEAR SAFETY GLASSES AND NIOSH/OSHA APPROVED RESPIRATOR WHENEVER CUTTING, DRILLING, SAWING, SANDING OR FINISHING THE PRODUCTS. REFER TO MANUFACTURER SDS FOR MORE INFORMATION.
3. USE A DUST-REDUCING CIRCULAR SAW WITH A DIAMOND CARBIDE-TIPPED BLADE.
a. RECOMMENDED CIRCULAR SAW: MAXI-7" CIRCULAR SAW WITH DUST COLLECTOR (#5057KB).
b. RECOMMENDED BLADE: TENRYU T-1000-PRO FIBER CEMENT CUTTING BLADE (PBP-18505).
c. SHARP ELECTRIC CIRCUMFERENCE JIG SAWS MAY BE USED FOR CORNER-CUTTING CUTTINGS, SUCH AS SEWER OPENINGS, CURVES, RADII AND SCHEDULES.
4. SILICA DUST WARNING: FIBER CEMENT PRODUCTS MAY CONTAIN SOME AMOUNTS OF WET-DRYABLE SILICA, A NATURALLY OCCURRING, POTENTIALLY HAZARDOUS MINERAL WITH CARCINOGENIC DUST FORM. CONSULT PRODUCT SDS OR VISIT WWW.OSHA-OSHA.DOCVIEWS.COM/SILICACRYSSTALLINE/.

SECTION 07 5400 THERMOPLASTIC MEMBRANE ROOFING

PART 1 - GENERAL

- 1.1 ROOF SYSTEM SUMMARY
1. MEMBRANE: THERMOPLASTIC MEMBRANE MECHANICALLY FASTENED TO ROOF DECK OR INDUCTION WELDED TO WELDING PLATES.
2. ROOF INSULATION: POLYISOCYANURATE INSULATION MECHANICALLY ATTACHED TO ROOF DECK.
3. STRUCTURAL DECK: STEEL OR WOOD.
1.2 DESIGN CRITERIA
A. GENERAL: INSTALLED ROOFING MEMBRANE SYSTEMS SHALL REMAIN WATER TIGHT AND RESIST SPECIFIED WIND UPLIFT PRESSURES, THERMALLY INDUCED MOVEMENT, AND EXPOSURE TO WEATHER WITHOUT FAILURE.
B. MATERIAL COMPATIBILITY: ROOFING MATERIALS SHALL BE COMPATIBLE WITH ONE ANOTHER UNDER CONDITIONS OF SERVICE AND APPLICATION REQUIREMENTS, AS DETERMINED BY ROOFING SYSTEM MANUFACTURER BASED ON TESTING AND FIELD EXPERIENCE.
C. WIND UPLIFT RESISTANCE: ROOFING SYSTEM SHALL BE IDENTICAL TO SYSTEMS THAT HAVE BEEN SUCCESSFULLY TESTED BY A QUALIFIED TESTING AND INSPECTING AGENCY TO RESIST WITH INCH LIFT PRESSURE AS SPECIFIED IN ACCORDANCE WITH ASCE 7.
2.1 MANUFACTURERS
A. ACCEPTABLE MANUFACTURERS:
1. JAMES HARDIE BUILDING PRODUCTS INC. WWW.JAMESHARDIE.COM
2. APPROVED EQUAL - TO BE CONSIDERED AND APPROVED BY ARCHITECT.
2.2 MATERIALS
A. MINERAL-FIBER CEMENT SIDING:
1. ASTM C1186, GRADE II, TYPE A: FORMULATED FROM PORTLAND CEMENT, GROUND SAND, CELLULOSE FIBERS, ADDITIVES, AND WATER, FORMED UNDER PRESSURE TO REQUIRED PROFILE.
2. FINISH: FACTORY PRIME PAINTED.
3. FIRE HAZARD CLASSIFICATION: CLASS A, TESTED TO ASTM E84.
4. LAP SIDING:
a. SIZE: 7 1/2" INCH HIGH (8 INCH EXPOSURE) X 12 FEET LONG (SEE DRAWINGS).
b. THICKNESS: 5/16" INCH.
c. SURFACE TEXTURE: SMOOTH.
5. TRIM:
a. SIZE: 3 INCHES WIDE X MAXIMUM PRACTICAL LENGTH.
b. THICKNESS: 7/16" INCH.
c. SURFACE TEXTURE: SMOOTH.

3.2 TOLERANCE

- A. WALL SURFACE PLANE MUST BE PLUMB AND LEVEL WITHIN +/- 1/4" INCH IN 20 FEET IN ANY DIRECTION.
1. ONE LAYER OF NICHIIHA 5MM (-3/16") SPACER MAY BE USED AS SHIM.
3.3 INSTALLATION
A. GENERAL: INSTALL PRODUCTS IN ACCORDANCE WITH THE LATEST INSTALLATION GUIDELINES OF THE MANUFACTURER AND ALL APPLICABLE BUILDING CODES AND OTHER LAWS, RULES, REGULATIONS AND ORDINANCES. REVIEW ALL MANUFACTURER INSTALLATION, MAINTENANCE INSTRUCTIONS, AND OTHER APPLICABLE DOCUMENTS BEFORE INSTALLATION.
1. CONSULT WITH YOUR LOCAL DEALER OR NICHIIHA TECHNICAL DEPARTMENT BEFORE INSTALLING ANY NICHIIHA FIBER CEMENT PRODUCT ON A BUILDING HIGHER THAN 45 FEET OR THREE STORIES OR FOR CONDITIONS NOT MATCHING PRESCRIBED STANDARD INSTALLATION GUIDE REQUIREMENTS AND METHODS. SPECIAL INSTALLATION CONDITIONS MAY BE REQUIRED VIA A TECHNICAL REVIEW AND SPECIAL APPLICATIONS FORM (SAP) PROCESS.
2. VERTICAL CONTROL/EXPANSION JOINTS ARE REQUIRED WITHIN 2-10 FEET OF OUTSIDE CORNERS FINISHED WITH METAL TRIM AND APPROXIMATELY EVERY 30 FEET THEREAFTER.
3. HORIZONTAL COMPRESSION JOINTS ARE REQUIRED FOR MULTI-STORY INSTALLATIONS OF AWP. LOCATE JOINTS AT FLOOR LINES. JOINTS ARE FLASHED MINIMUM 1/2" BREAKS. DO NOT CAULK. REFER TO INSTALLATION GUIDE(S).
a. WOOD FRAMED BUILDINGS OF THREE OR MORE FLOORS REQUIRE A COMPRESSION JOINT AT EACH FLOOR.
b. STEEL FRAMED BUILDINGS (INCLUDING REINFORCED CONCRETE CORE WITH LGMF EXTERIOR WALLS) OF MORE THAN THREE FLOORS (OR 45 FEET) REQUIRE A COMPRESSION JOINT EVERY 25 FEET AT A FLOOR LINE.
B. PANEL CUTTING
1. ALWAYS CUT FIBER CEMENT PANELS OUTSIDE OR IN A WELL VENTILATED AREA. DO NOT CUT THE PRODUCTS IN AN ENCLOSED AREA.
2. ALWAYS WEAR SAFETY GLASSES AND NIOSH/OSHA APPROVED RESPIRATOR WHENEVER CUTTING, DRILLING, SAWING, SANDING OR FINISHING THE PRODUCTS. REFER TO MANUFACTURER SDS FOR MORE INFORMATION.
3. USE A DUST-REDUCING CIRCULAR SAW WITH A DIAMOND CARBIDE-TIPPED BLADE.
a. RECOMMENDED CIRCULAR SAW: MAXI-7" CIRCULAR SAW WITH DUST COLLECTOR (#5057KB).
b. RECOMMENDED BLADE: TENRYU T-1000-PRO FIBER CEMENT CUTTING BLADE (PBP-18505).
c. SHARP ELECTRIC CIRCUMFERENCE JIG SAWS MAY BE USED FOR CORNER-CUTTING CUTTINGS, SUCH AS SEWER OPENINGS, CURVES, RADII AND SCHEDULES.
4. SILICA DUST WARNING: FIBER CEMENT PRODUCTS MAY CONTAIN SOME AMOUNTS OF WET-DRYABLE SILICA, A NATURALLY OCCURRING, POTENTIALLY HAZARDOUS MINERAL WITH CARCINOGENIC DUST FORM. CONSULT PRODUCT SDS OR VISIT WWW.OSHA-OSHA.DOCVIEWS.COM/SILICACRYSSTALLINE/.

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