

MECHANICAL SPECIFICATION

SECTION 23 05 00

COMMON REQUIREMENTS FOR MECHANICAL WORK:

1.0 GENERAL
1.01 SCOPE OF DIVISION: WORK SHALL INCLUDE ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY FOR A COMPLETE AND PROPERLY FUNCTIONING MECHANICAL INSTALLATION IN ACCORDANCE WITH REQUIREMENTS OF THE FLORIDA BUILDING CODE 2014 - BUILDING AND MECHANICAL CODE AND NATIONAL FIRE PROTECTION ASSOCIATION (NFPA).

1.02 DRAWINGS: ARCHITECTURAL AND STRUCTURAL DRAWINGS TAKE PRECEDENCE OVER MECHANICAL DRAWINGS WITH REFERENCE TO THE BUILDING CONSTRUCTION. MECHANICAL DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT AND EXTENT OF WORK. EXACT LOCATIONS AND ARRANGEMENTS OF MATERIALS AND EQUIPMENT SHALL BE DETERMINED, WITH THE APPROVAL OF THE ENGINEER, AS WORK PROGRESSES TO CONFORM IN THE BEST POSSIBLE MANNER WITH THE SURROUNDINGS AND WITH THE ADJOINING WORK OF OTHER TRADES.

1.03 COORDINATION OF WORK: COORDINATE ALL WORK, PRIOR TO INSTALLATION, WITH WORK OF OTHER TRADES AND WITH ARCHITECTURAL AND STRUCTURAL FEATURES TO PRECLUDE INTERFERENCES BETWEEN THE WORK OF DIFFERENT TRADES AND TO INSURE NECESSARY CLEARANCES AT CROSSOVERS AND EQUIPMENT.

1.04 SHOP DRAWINGS: SUBMIT TO ENGINEER FOR APPROVAL, BEFORE COMMENCING WORK, SHOP DRAWINGS FOR ALL MECHANICAL MATERIALS AND EQUIPMENT TO BE PROVIDED.
A. PRESENT DATA IN DETAIL EQUAL TO OR GREATER THAN THAT GIVEN IN ITEM SPECIFICATIONS AND INCLUDE ALL WEIGHTS, DEFLECTIONS, SPEEDS, VELOCITIES, PRESSURE DROPS, OPERATING TEMPERATURES, OPERATING CURVES, TEMPERATURE RANGES, SOUND RATINGS, DIMENSIONS, SIZES, MANUFACTURERS' NAMES, MODEL NUMBERS, TYPES OF MATERIAL USED, OPERATING PRESSURES, FULL LOAD AMPERAGES, STARTING AMPERAGES, FOULING FACTORS, CAPACITIES, SETPOINTS, CHEMICAL COMPOSITIONS, CERTIFICATIONS AND ENDORSEMENTS, OPERATING VOLTAGES, THICKNESSES, GAUGES AND ALL OTHER RELATED.

1.05 RECORD DRAWINGS:
A. MAINTAIN ONE EXTRA SET OF BLACK LINE, WHITE PRINT DRAWINGS FOR USE AS RECORD DRAWINGS. RECORDS SHALL BE KEPT DAILY, USING COLORED PENCIL. AS THE WORK IS COMPLETED, RELEVANT INFORMATION SHALL BE TRANSFERRED TO A REPRODUCIBLE SET, AND COPIES MADE SHALL BE GIVEN TO THE ENGINEER.

1.06 FEES AND PERMIT:
A. THE CONTRACTOR SHALL OBTAIN ALL PERMITS, INSPECTIONS, AND APPROVALS AS REQUIRED BY ALL AUTHORITIES HAVING JURISDICTION

2.0 PRODUCTS
2.01 GENERAL:
A. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND WITHOUT BLEMISH OR DEFECT.

B. EQUIPMENT AND MATERIALS SHALL BE PRODUCTS WHICH WILL MEET WITH THE ACCEPTANCE OF THE AGENCY INSPECTING THE WORK. WHERE ACCEPTANCE IS CONTINGENT UPON HAVING THE PRODUCTS EXAMINED, TESTED, AND CERTIFIED BY UNDERWRITERS OR OTHER RECOGNIZED TESTING LABORATORY, THE PRODUCT SHALL BE SO EXAMINED, TESTED, AND CERTIFIED.

2.02 MOTORS: UNLESS SPECIFICALLY SPECIFIED OTHERWISE IN THE SECTION COVERING THE DRIVEN EQUIPMENT (OR THE EQUIPMENT DRIVES), MOTORS SHALL COMPLY WITH THE FOLLOWING:

A. THREE PHASE: NEMA DESIGN B, THREE-PHASE, SQUIRREL CAGE INDUCTION TYPE DESIGNED FOR 1800 RPM SYNCHRONOUS SPEED FOR OPERATION IN 40 DEGREE C AMBIENT AT 1.15 SERVICE FACTOR AT CONSTANT SPEED ON THE SCHEDULED VOLTAGE. MOTORS SHALL BE INSULATED WITH CLASS B INSULATION MATERIAL AND SHALL BE CAST IRON, DRIP PROOF, HORIZONTAL FOOT MOUNTED TYPE WITH BALL BEARINGS. TWO SPEED MOTORS SHALL BE PROVIDED AS SCHEDULED AND SHALL BE TWO WINDING TYPE.

B. SCHEDULED HORSEPOWER: THE HORSEPOWER SCHEDULED OR SPECIFIED ARE THOSE NOMINAL SIZES ESTIMATED TO BE REQUIRED BY THE EQUIPMENT WHEN OPERATING AT SPECIFIED DUTIES AND EFFICIENCIES. IF THE ACTUAL HORSEPOWER FOR THE EQUIPMENT FURNISHED DIFFERS FROM THAT SPECIFIED OR SHOWN ON THE DRAWINGS, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSURE THAT PROPER SIZE FEEDERS, BREAKERS, STARTERS, ETC. ARE PROVIDED AT NO CHANGE IN CONTRACT PRICE.

SECTION 23 05 03

PIPES AND TUBES FOR HVAC PIPING AND EQUIPMENT:

1.0 GENERAL
1.01 SCOPE: PROVIDE CONDENSATE DRAIN PIPING FROM COOLING COIL DRAIN PANS.

2.0 PRODUCTS
2.01 PIPE: PVC, SCHEDULE 40; ASTM D2665.

2.02 FITTINGS: SOLVENT WELD SOCKET TYPE PVC, STANDARD WEIGHT; ASTM D2665.

2.03 SOLDER: AS RECOMMENDED BY PIPE MANUFACTURER.

3.0 EXECUTION
3.01 GENERAL: PIPING SHALL BE SLOPED UNIFORMLY TOWARD DRAIN, AND PROVIDED WITH TRAP SEAL HAVING A DEPTH, IN INCHES, EQUIVALENT TO THE TOTAL STATIC PRESSURE OF THE RESPECTIVE FAN SYSTEM. TRAPS SHALL BE ASSEMBLED USING ELBOWS AND TEES WITH THREADED PLUGS TO PERMIT CLEANING OF TRAP AND DRAIN LINE. PIPING SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER AND SHALL BE NOT SMALLER THAN FULL SIZE OF THE EQUIPMENT DRAIN CONNECTION OR THREE-QUARTERS INCH (3/4").

SECTION 23 05 53

INSTRUCTIONS AND MAINTENANCE MANUALS:

1.0 GENERAL:
1.01 PROVIDE COMPLETE WRITTEN AND VERBAL OPERATING AND MAINTENANCE INSTRUCTION TO THE OWNER FOR ALL MECHANICAL SYSTEMS.

2.0 DOCUMENTATION:
2.01 PROVIDE TWO (2) INSTRUCTIONS AND MAINTENANCE MANUALS, EACH COMPLETE AS FOLLOWS:

A. HARDBACK THREE RING LOOSE-LEAF BINDERS.
B. TITLE SHEET WITH JOB NAME, CONTRACTOR'S SUBCONTRACTOR'S CONTROL SUBCONTRACTOR AND RELATED CONTRACTOR'S OR MATERIAL SUPPLIERS NAMES, ADDRESSES AND PHONE NUMBERS.

C. INDEX OF CONTENTS.
D. A SIGNED COPY OF ACKNOWLEDGMENT OF INSTRUCTIONS TO THE OWNER OR HIS AUTHORIZED REPRESENTATIVE. TWO ADDITIONAL COPIES OF THE SIGNED ACKNOWLEDGMENT SHALL BE SENT DIRECTLY TO THE ENGINEER AS SOON AS POSSIBLE AFTER RECEIPT.

E. TYPEWRITTEN OPERATING INSTRUCTIONS FOR THE OWNER'S PERSONNEL DESCRIBING THE FOLLOWING FOR EACH PIECE OF EQUIPMENT AND SYSTEMS:

1. HOW TO START AND STOP EACH PIECE OF EQUIPMENT.
2. HOW TO SET EQUIPMENT AND SYSTEMS FOR NORMAL OPERATION.
3. NORMAL RESTARTING PROCEDURES BEFORE CONTACTING THE SERVICE CONTRACTOR.
4. COMPLETE DESCRIPTION OF FUNCTIONS AND OPERATIONS OF EACH PIECE OF EQUIPMENT INCLUDING DESCRIPTION OF HOW EQUIPMENT OPERATES IN CONJUNCTION WITH AUTOMATIC CONTROL SYSTEMS.
5. INSTRUCTIONS FOR CLEANING, OILING, GREASING, FUELING AND SIMILAR TASKS.

SECTION 23 05 48
VIBRATION CONTROLS FOR HVAC PIPING AND EQUIPMENT

PART 1 GENERAL
1.01 SUMMARY
A. SECTION INCLUDES:
1. VIBRATION ISOLATORS.

1.02 SYSTEM DESCRIPTION
A. PROVIDE VIBRATION ISOLATION ON MOTOR DRIVEN EQUIPMENT OVER 0.5 HP, PLUS CONNECTED PIPING AND DUCTWORK

1.03 SUBMITTALS
A. PRODUCT DATA: SUBMIT SCHEDULE OF VIBRATION ISOLATOR TYPE.
B. MANUFACTURER'S INSTALLATION INSTRUCTIONS: SUBMIT SPECIAL PROCEDURES AND SETTING DIMENSIONS.

PART 2 PRODUCTS
2.01 VIBRATION ISOLATORS
A. MANUFACTURERS:
1. MASON INDUSTRIES
2. KINETICS

B. SPRING HANGER:
1. SPRING ISOLATORS:
A. FURNISH HOT DIPPED GALVANIZED HOUSINGS AND NEOPRENE COATED SPRINGS.
B. COLOR CODE: COLOR CODE SPRINGS FOR LOAD CARRYING CAPACITY.
2. SPRINGS: MINIMUM HORIZONTAL STIFFNESS EQUAL TO 75 PERCENT VERTICAL STIFFNESS, WITH WORKING DEFLECTION BETWEEN 0.5 AND 0.6 OF MAXIMUM DEFLECTION.
3. HOUSINGS: INCORPORATE NEOPRENE ISOLATION PAD MEETING REQUIREMENTS FOR NEOPRENE PAD ISOLATORS RUBBER HANGER WITH THREAD INSERT.
4. MISALIGNMENT: CAPABLE OF 20 DEGREE HANGER ROD MISALIGNMENT.

C. NEOPRENE PAD ISOLATORS:
1. RUBBER OR NEOPRENE-WAFFLE PADS.
A. 30 DUROMETER.
B. MINIMUM 1/2 INCH THICK.
C. MAXIMUM LOADING 40PSI.
D. HEIGHT OF RIBS: NOT TO EXCEED 0.7 TIMES WIDTH.
2. CONFIGURATION: SINGLE LAYER, 1/2 INCH THICK WAFFLE PADS PROVIDED EACH SIDE OF 1/4 INCH THICK STEEL PLATE.

PART 3 EXECUTION
3.01 EXAMINATION
A. VERIFY EQUIPMENT, DUCTWORK, AND PIPING IS INSTALLED BEFORE WORK ON THIS SECTION IS STARTED.

3.02 INSTALLATION
A. ADJUST EQUIPMENT LEVEL.
B. INSTALL SPRING HANGERS WITHOUT BINDING.
C. ON COILED SPRING ISOLATORS, ADJUST SO SIDE STABILIZERS ARE CLEAR UNDER NORMAL OPERATING CONDITIONS.

D. PRIOR TO MAKING PIPING CONNECTIONS TO EQUIPMENT WITH OPERATING WEIGHTS SUBSTANTIALLY DIFFERENT FROM INSTALLED WEIGHTS, BLOCK UP EQUIPMENT WITH TEMPORARY SHIMS TO FINAL HEIGHT. WHEN FULL LOAD IS APPLIED, ADJUST ISOLATORS TO ALLOW SHIM REMOVAL.

E. SUPPORT PIPING CONNECTIONS TO ISOLATE EQUIPMENT RESILIENTLY AS FOLLOWS:
1. UP TO 4 INCH DIAMETER: FIRST THREE POINTS OF SUPPORT.
2. SELECT THREE HANGERS CLOSEST TO VIBRATION SOURCE FOR MINIMUM 1.0 INCH STATIC DEFLECTION OR STATIC DEFLECTION OF ISOLATED EQUIPMENT. SELECT REMAINING ISOLATORS FOR MINIMUM 1.0 INCH STATIC DEFLECTION OR 1/2 INCH STATIC DEFLECTION OF ISOLATED EQUIPMENT.

3.03 ISOLATOR SCHEDULE
ITEM ISOLATOR TYPE
CHILLED WATER PIPING SPRING HANGERS
HEATING HOT WATER PIPE SPRING HANGERS
PUMPS NEOPRENE PAD ISOLATORS

SECTION 23 05 93

TESTING, ADJUSTING, AND BALANCING

1.0 GENERAL
1.1 SUMMARY
A. SECTION INCLUDES:
1. TESTING ADJUSTING, AND BALANCING OF AIR SYSTEMS.
2. TESTING ADJUSTING, AND BALANCING OF HYDRONIC SYSTEMS.
3. MEASUREMENT OF FINAL OPERATING CONDITION OF HVAC SYSTEMS.

1.2 REFERENCES
A. ASSOCIATED AIR BALANCE COUNCIL:
1. AABC MN-1 - NATIONAL STANDARDS FOR TESTING AND BALANCING HEATING, VENTILATING, AND AIR CONDITIONING SYSTEMS.
B. AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS:
1. ASHRAE 111 - PRACTICES FOR MEASUREMENT, TESTING, ADJUSTING AND BALANCING OF BUILDING HEATING, VENTILATION, AIR-CONDITIONING AND REFRIGERATION SYSTEMS.

C. NATURAL ENVIRONMENTAL BALANCING BUREAU:
1. NEBB - PROCEDURAL STANDARDS FOR TESTING, ADJUSTING, AND BALANCING OF ENVIRONMENTAL SYSTEMS.

1.3 CLOSEDOUT SUBMITTALS
A. PROJECT RECORD DOCUMENTS: RECORD ACTUAL LOCATIONS OF BALANCING VALVES AND ROUGH SETTING.
B. OPERATION AND MAINTENANCE DATA: FURNISH FINAL COPY OF TESTING, ADJUSTING, AND BALANCING REPORT INCLUSION IN OPERATING AND MAINTENANCE MANUALS.

1.4 QUALITY ASSURANCE
A. PERFORM WORK IN ACCORDANCE WITH AABC MN-1 NATIONAL STANDARDS FOR FIELD MEASUREMENT AND INSTRUMENTATION, TOTAL SYSTEM BALANCE.

B. GUARANTEE: THE TEST AND BALANCE AGENCY SHALL INCLUDE A WARRANTY PERIOD OF NINETY (90) DAYS AFTER COMPLETION AND ACCEPTABLE OF TEST AND BALANCE WORK. DURING THE WARRANTY PERIOD, THE ARCHITECT MAY REQUEST A RE-CHECK OR RE-SETTING OF ANY OUTLET AND SUPPLY FAN. THE TEST AND BALANCE AGENCY SHALL PROVIDE TECHNICIANS, INSTRUMENTS, AND TOOLS TO ASSIST THE ARCHITECT IN CONDUCTING ANY TEST THAT HE MAY REQUIRE DURING THIS TIME. THE FOREGOING SHALL BE IN ADDITION TO THE A.A.M.C. NATIONAL PROJECT CERTIFICATION PERFORMANCE GUARANTY WHICH SHALL BE FORWARDED WITH SHOP DRAWING DATA SPECIFIED HEREIN BEFORE.

1.5 QUALIFICATIONS
A. AGENCY: COMPANY SPECIALIZING IN TESTING, ADJUSTING, AND BALANCING OF SYSTEMS SPECIFIED IN THIS SECTION WITH MINIMUM THREE YEARS DOCUMENTED EXPERIENCE AND CERTIFIED BY ABC OR NEBB.

B. PERFORM WORK UNDER SUPERVISION OF ABB CERTIFIED TEST AND BALANCE ENGINEER.
A. ACCEPTABLE AGENCIES: WEST PHOENIX AGENCY, SOLVING INDEPENDENT TESTING AGENCY INC. OR OTHER AGENCY APPROVED BY ENGINEER.

2.0 PRODUCTS
A. NATIONAL STANDARDS: TESTING AND BALANCING SHALL BE PERFORMED IN ACCORDANCE WITH AABC NATIONAL STANDARDS.

3.0 EXECUTION
3.1 SCHEDULES
A. EQUIPMENT REQUIRING TESTING, ADJUSTING, AND BALANCING:
1. AIR FLOWING UNITS.
2. AIR TERMINAL UNITS.
3. AIR FANS.
4. AIR INLETS AND OUTLETS.

B. REPORT FORMS
1. TITLE PAGE:
A. NAME OF TESTING, ADJUSTING, AND BALANCING AGENCY
B. ADDRESS OF TESTING, ADJUSTING, AND BALANCING AGENCY
C. TELEPHONE AND FACSIMILE NUMBERS OF TESTING, ADJUSTING, AND BALANCING AGENCY
D. PROJECT NAME
E. PROJECT LOCATION
F. PROJECT ARCHITECT
G. PROJECT ENGINEER
H. PROJECT CONTRACTOR
I. REPORT DATE

2. SUMMARY COMMENTS:
A. DESIGN VERSUS FINAL PERFORMANCE
B. NOTABLE CHARACTERISTICS OF SYSTEM
C. DESCRIPTION OF SYSTEMS OPERATION SEQUENCE
D. NOMENCLATURE USED THROUGHOUT REPORT
F. TEST CONDITIONS

3. INSTRUMENT LIST:
A. INSTRUMENT
B. MANUFACTURER
C. MODEL NUMBER
D. SERIAL NUMBER
E. RANGE
F. CALIBRATION DATE

4. ELECTRIC MOTORS:
A. MANUFACTURER
B. MODEL/FRAME
C. HP/BHP AND KW
D. PHASE, VOLTAGE, AMPERAGE; NAMEPLATE, ACTUAL, NO LOAD
E. RPM
F. SERVICE FACTOR
G. STARTER SIZE, RATING, HEATER ELEMENTS
H. SHEAVE MAKE/SIZE/BORE

5. V-BELT DRIVE:
A. IDENTIFICATION/LOCATION
B. REQUIRED DRIVEN RPM
C. DRIVEN SHEAVE, DIAMETER AND RPM
D. BELT, SIZE AND QUANTITY
E. MOTOR SHEAVE DIAMETER AND RPM
F. CENTER TO CENTER DISTANCE, MAXIMUM, MINIMUM, AND ACTUAL

6. COOLING COIL DATA:
A. IDENTIFICATION/NUMBER
B. LOCATION
C. SERVICE
D. MANUFACTURER
E. AIR FLOW, DESIGN AND ACTUAL
F. ENTERING AIR DB TEMPERATURE, DESIGN AND ACTUAL
G. ENTERING AIR WB TEMPERATURE, DESIGN AND ACTUAL
H. LEAVING AIR DB TEMPERATURE, DESIGN AND ACTUAL
I. LEAVING AIR WB TEMPERATURE, DESIGN AND ACTUAL
J. WATER FLOW, DESIGN AND ACTUAL
K. WATER PRESSURE DROP, DESIGN AND ACTUAL
L. ENTERING WATER TEMPERATURE, DESIGN AND ACTUAL
M. LEAVING WATER TEMPERATURE, DESIGN AND ACTUAL
N. AIR PRESSURE DROP, DESIGN AND ACTUAL

7. AIR MOVING EQUIPMENT:
A. LOCATION
B. MANUFACTURER
C. MODEL NUMBER
D. SERIAL NUMBER
E. ARRANGEMENT/CLASS/DISCHARGE
F. AIR FLOW, SPECIFIED AND ACTUAL
G. RETURN AIR FLOW, SPECIFIED AND ACTUAL
H. OUTSIDE AIR FLOW, SPECIFIED AND ACTUAL
I. TOTAL STATIC PRESSURE (TOTAL EXTERNAL), SPECIFIED AND ACTUAL
J. INLET PRESSURE
K. DISCHARGE PRESSURE
L. SHEAVE MAKE/SIZE/BORE
M. NUMBER OF BELTS/MAKE/SIZE
N. FAN RPM

8. AIR DISTRIBUTION TEST SHEET:
A. AIR TERMINAL NUMBER
B. ROOM NUMBER/LOCATION
C. TERMINAL TYPE
D. TERMINAL SIZE
E. AREA FACTOR
F. DESIGN VELOCITY
G. DESIGN AIR FLOW
H. TEST VELOCITY
I. TEST (FINAL) AIR FLOW
J. PERCENT OF DESIGN AIR FLOW

SECTION 23 07 00
INSULATION-THERMAL
1.0 GENERAL
1.01 SCOPE: PROVIDE PLANT, LABOR, AND MATERIALS TO INSULATE EQUIPMENT, PIPING, AND MISCELLANEOUS ITEMS IN THE PIPING AND DUCT SYSTEMS AS INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN.

1.02 NFPA 90A: ALL MATERIALS AND ADHESIVES USED IN OR ON DUCTWORK SHALL CONFORM TO THE REQUIREMENTS OF NFPA 90A AS TO FLAME SPREAD AND SMOKE DEVELOPED RATINGS.

2.0 PRODUCTS
2.01 INSULATION MATERIALS, GENERAL: INSULATION MATERIALS SHALL INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, THE FOLLOWING:

2.01 DUCTWORK INSULATION MATERIALS:
A. FIBERGLASS BLANKET INSULATION: FIBERGLASS DUCT INSULATION, ONE AND ONE-HALF (1-1/2) INCH THICK, ONE (1) POUND PER CUBIC FOOT DENSITY WITH REINFORCED FOIL SCRIM KRAFT VAPOR BARRIER, MINIMUM THERMAL RESISTANCE OF R-6.

B. FIBERGLASS RIGID BOARD INSULATION: FIBERGLASS DUCT BOARD, STIFFNESS OF 800 EI, HEAVY DUTY FOIL FACING ON EXPOSED SURFACE CONSISTING OF FOIL, FIBERGLASS SCRIM REINFORCEMENT AND TWO LAYERS OF KRAFT PAPER IN A OIL-KRAFT-SCRIM-KRAFT PATTERN, WITH A THERMAL RESISTANCE OF 6.0.

2.02 PIPE INSULATION MATERIALS:
A. CELLULAR GLASS: ASTM C552; K FACTOR OF 0.29 AT 75 DEGREES F. (KSI VALUE OF 0.047 AT 24 DEGREES C); 8.0 LB/CU FT (128 KG/CU M) DENSITY.
B. CELLULAR FOAM: ASTM C534; FLEXIBLE, CELLULAR ELASTOMERIC, MOLDED.
1. K (KSI) VALUE: 0.27 AT 75 DEGREES F.
2. MAXIMUM SERVICE TEMPERATURE: 220 DEGREES F.
3. CONNECTION: WATERPROOF VAPOR RETARDER ADHESIVE.

C. GLASS FIBER: ASTM C547; MINERAL FIBER PIPE INSULATION.
1. K (KSI) VALUE: 0.27 AT 150 DEGREES F.
2. MAXIMUM SERVICE TEMPERATURE: 220 DEGREES F.
3. CONNECTION: WATERPROOF VAPOR RETARDER ADHESIVE.

D. JACKETS:
A. PVC PLASTIC PIPE JACKET:
1. PRODUCT DESCRIPTION: ASTM D1784, ONE PIECE MOLDED TYPE FITTING COVERS AND SHEET MATERIAL, OFF-WHITE COLOR.
3. THICKNESS: 10 MIL.
4. CONNECTIONS: TACKS.

2.03 ADHESIVES, MASTICS, SEALANTS: ADHESIVES, MASTICS, SEALANTS SHALL INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO THE FOLLOWING:
A. GLASS FIBER INSULATION (FABRIC AND MASTIC):
1. ADHESIVE: FOSTER 85-20.
2. MASTIC: FOSTER 35-00.

3.0 EXECUTION
3.01 DUCTWORK:
A. INTERIOR CONCEALED: DUCTWORK SHALL BE INSULATED EXTERNALLY WITH FIBERGLASS BLANKET WRAP. OVERLAP INTERNAL INSULATION A MINIMUM OF ONE FOOT BEYOND ANY SUCH INTERNAL INSULATION, AND VAPOR SEAL RAW END AS SPECIFIED HEREIN FOR JOINTS. ADHERE DUCT INSULATION USING ADHESIVE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. WHERE DUCT WIDTH EXCEEDS TWENTY-FOUR INCHES (24"), THE INSULATION SHALL BE ADDITIONALLY SECURED TO THE BOTTOM OF THE DUCT USING MECHANICAL FASTENERS SPACED ONE FOOT (1') ON CENTER. INSULATION SHALL BE APPLIED WITH EDGES TIGHTLY BUTTED, AND ALL JOINTS AND BREAKS IN THE VAPOR BARRIER SEALED USING GLASS FABRIC AND MASTIC APPLIED IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS.

B. INTERIOR EXPOSED: DUCTWORK SHALL BE INSULATED EXTERNALLY WITH FIBERGLASS DUCTBOARD INSULATION, INSULATION SHALL BE APPLIED WITH EDGES TIGHTLY BUTTED, AND ALL JOINTS AND BREAKS IN THE VAPOR BARRIER SEALED USING GLASS FABRIC AND MASTIC APPLIED IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS.



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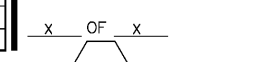
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MECHANICAL SPECIFICATIONS

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X OF X



Order Plans @

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Table with 2 columns: Date, Drawn, Designed, EOR, Job no. and 2 rows of data.