MECHANICAL PIPE AND PIPE INSULATION SCHEDULE

SERVICE	PIPING: PIPE MATERIALS	PIPING: FITTING MATERIALS	PIPING: JOINT	PIPING: FLANGE	PIPING INSULATION: INSULATION	PIPING INSULATION: PIPE SIZE	PIPING INSULATION: THICKNESS	PIPING INSULATION: INSULATION JACKET	PIPING INSULATION: FITTING COVER	PIPING INSULATION: VAPOR BARRIER	REMARKS
REFRIGERANT (INSIDE BUILDING)	ACR COPPER TYPE L	WROUGHT COPPER FORGED BRASS	SOLDER 1100 °F SILVER SOLDER	N/A	FLEXIBLE CLOSED CELL ELASTOMERIC	1/4" TO 4"	1"	N/A	N/A	YES	INSULATION R-VALUE SHALL BE MINIMUM 4.2
REFRIGERANT (EXTERIOR BUILDING)	ACR COPPER TYPE L	WROUGHT COPPER FORGED BRASS	SOLDER 1100 °F SILVER SOLDER	N/A	FLEXIBLE CLOSED CELL ELASTOMERIC	1/4" TO 4"	1"	N/A	N/A	YES	INSULATION R-VALUE SHALL BE MINIMUM 4.2 SEE NOTE BELOW

NOTE: PROVIDE UV PROTECTIVE COATING/COVERING ON ALL ELASTOMERIC PIPE INSULATION WHERE EXPOSED TO SUNLIGHT.

DUCT MATERIAL AND INSULATION SCHEDULE

DUCT SYSTEM	DUCT MATERIAL	INSULATION: TYPE	INSULATION: MINIMUM THICKNESS (IN)	INSULATION: R-VALUE	DUCT SEAL CLASS	REMARKS
SUPPLY						
LOW PRESSURE (<2.0")						
RECTANGULAR	GALVANIZED STEEL	DUCT WRAP	2.2"	6	B	
ROUND (MAIN)	GALVANIZED STEEL	DUCT WRAP	2.2"	6	B	
ROUND (DIFFUSER RUNOUT)	GALVANIZED STEEL OR FLEXIBLE DUCT (5' 0")	DUCT WRAP / FLEXIBLE GLASS FIBER	2.2"	6	B	
RETURN						
RECTANGULAR	GALVANIZED STEEL	DUCT WRAP	2.2"	6	B	
ROUND	GALVANIZED STEEL	DUCT WRAP	2.2"	6	B	
EXPOSED DUCTWORK						
RECTANGULAR	GALVANIZED STEEL	DUCT WRAP	2.2"	6	C	
ROUND	GALVANIZED STEEL	NONE	N/A	N/A	C	
EXHAUST DUCTWORK						
RECT. (TOILET)	GALVANIZED STEEL	DUCT WRAP	2.2"	6	B	
ROUND (TOILET)	GALVANIZED STEEL	DUCT WRAP	2.2"	6	B	
OUTSIDE AIR DUCTWORK						
RECTANGULAR	GALVANIZED STEEL	DUCT WRAP	2.2"	6	B	
ROUND	GALVANIZED STEEL	DUCT WRAP	2.2"	6	B	

2015 INTERNATIONAL MECHANICAL CODE VENTILATION REQUIREMENTS SCHEDULE

Room Number	Room Name - Fancoil Unit	Square Foot	Occupant Density #/1000 SF	People	OA Requirement 1 CFM/person	OA Requirement 2 CFM/ft²	Required Minimum Exhaust Rate	Ez Value	Ventilation Summary: Required Outdoor Air Intake (cfm)	Ventilation Summary: Design Outdoor Air Intake (cfm)
MISC.	GUESTROOM	365	-	2	5	0.06	--	1	32	
PTAC-1									32	35
	LOBBY	245	10	2	25	0	--	0.8	77	
	FRONT DESK	155		2	5	0.06		0.8	24	
	VESTIBULE	135	0	0	0	0.06	--	0.8	10	
	OFFICE	115	5	1	5	0.06		0.8	15	150
FANCOIL (FC-1) TOTAL									126	
	BOH/LAUNDRY	680	10	7	25	0	--	0.8	213	
	BREAKROOM	160	25	4	5	0.06	--	0.8	37	250
FANCOIL (FC-2) TOTAL									250	
110	STAYCLEAN	175	5	3	5	0.06	--	0.8	32	
109	STAYPLAY	500	25	9	7.5	0.06	--	0.8	122	
	CORRIDOR	90	0	0	0	0.06	--	0.8	7	175
FANCOIL (FC-3) TOTAL									161	
108	STAYFIT	230	10	4	25	0.06	--	0.8	142	
107	TOILET	55	0	0	0	--	50	0.8	50	
	CORRIDOR	105	0	0	0	0.06	--	0.8	8	200
FANCOIL (FC-4) TOTAL									200	
124/125	MAIN FLOOR CORRIDOR	890	0	0	0	0.06	--	0.8	67	
202	SECOND FLOOR CORRIDOR	1315	0	0	0	0.06	--	1.8	44	
302	THIRD FLOOR CORRIDOR	1315	0	0	0	0.06	--	2.8	28	[illegible]
402	FOURTH FLOOR CORRIDOR	1315	0	0	0	0.06	--	3.8	21	
ROOFTOPS (DOAS-1)									160	

NOTE: OCCUPANCY BASED ON 2015 IMC OCCUPANT DENSITIES, 2015 IBC OCCUPANT LOAD FACTORS, OR ACTUAL OCCUPANCIES; WHICHEVER IS HIGHER.

MECHANICAL GENERAL NOTES

THE FOLLOWING NOTES APPLY TO ALL MECHANICAL SHEETS:

1. ALL EQUIPMENT SHALL BE UL TESTED AND BEAR UL STAMP.
2. ROUTE ALL DUCTWORK PARALLEL TO BUILDING LINES UNLESS OTHERWISE NOTED.
3. ALL PIPING AND DUCTWORK SHALL BE CONCEALED ABOVE SUSPENDED CEILINGS AND IN MECHANICAL CHASES UNLESS NOTED OR INDICATED OTHERWISE. PIPING AND DUCTWORK SHALL BE EXPOSED IN ROOMS WITHOUT CEILINGS. EXPOSED PIPING AND DUCTWORK IN FINISHED SPACES SHALL BE PAINTED TO MATCH WALL OR CEILING AS APPROVED BY ARCHITECT/OWNER. THE PAINTING SHALL BE DONE BY THE CONTRACTOR INSTALLING THE PIPING OR DUCTWORK UNLESS OTHERWISE APPROVED BY ARCHITECT.
4. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR SLEEVES AND/OR OPENINGS REQUIRED TO INSTALL PIPES AND DUCTS THROUGH FOUNDATIONS, FLOOR SLABS, WALLS, BEAMS AND ROOF.
5. CEILING ACCESS SHALL BE PROVIDED AT ALL VALVES, FIRE DAMPERS, SMOKE DAMPERS, FIRE/SMOKE DAMPERS, MANUAL AND MOTORIZED DAMPERS, AND OTHER ITEMS REQUIRING SERVICE OR INSPECTION. WHERE ACCESS IS REQUIRED TO SPACE ABOVE INACCESSIBLE CEILINGS, CEILING ACCESS DOORS SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR UNLESS NOTED OTHERWISE.
6. COORDINATE WITH OTHER TRADES TO PREVENT CONFLICTS WITH THE INSTALLATION OF MECHANICAL WORK. PROVIDE ADEQUATE SPACE FOR EQUIPMENT SERVICING AND COMPONENT REPLACEMENT.
7. DIFFUSERS, REGISTERS, GRILLES, DRAIN PIPING, HEAT PUMPS, FANS AND SPRINKLER HEADS SHALL BE COORDINATED WITH OTHER TRADES BEFORE BEING INSTALLED. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH ARCHITECTURAL REFLECTED CEILING PLANS. FAILURE TO COORDINATE WORK WILL BE REDONE AT THE EXPENSE OF THE CONTRACTOR.
8. SEAL ALL SPACE AROUND PIPING, WIRING AND DUCTWORK PENETRATIONS OF WALLS AND FLOORS WITH FIRESTOPPING MATERIAL. ALSO SEAL ALL EXTERIOR WALL, AND ROOF PENETRATIONS WATERTIGHT.
9. THE NEW AIR HANDLING UNITS, AND OTHER HEATING EQUIPMENT SHALL NOT BE USED FOR TEMPORARY HEAT. CONTRACTOR SHALL COVER DUCTWORK OPENINGS DURING CONSTRUCTION WITH 4 MIL-POLY SHEETING, UNTIL THE TERMINAL DEVICES (LOUVER, DIFFUSER OR REGISTER'S) ARE IN PLACE.
10. PROVIDE A WATERTIGHT DRAIN PAN THAT HAS A MINIMUM DEPTH OF 2 INCHES AT OUTSIDE AIR INTAKE CHAMBERS, RELIEF HOODS AND POWER ROOF VENTILATORS.
11. ALL FANCOILS AND FAN UNITS SHALL BE PERMANENTLY MARKED TO CLEARLY IDENTIFY THE AREA SERVED.
12. CONTRACTOR SHALL GIVE 7 DAY NOTICE TO THE ENGINEER TO WITNESS DUCT LEAKAGE TESTS ON SUPPLY, RETURN AND EXHAUST SYSTEMS. THE DESIGN ENGINEER AND OWNER SHALL DETERMINE THE FREQUENCY AND EXTENT OF TESTING IF ANY TESTS FAIL.
13. THE TRAP FOR AIR HANDLING UNIT COIL DRAIN PANS SHALL BE DESIGNED TO HANDLE THE MAXIMUM STATIC PRESSURE OF THE SYSTEM. THE WATER SHALL FLOW OUT OF THE PAN AT THE SPECIFIED MAXIMUM STATIC PRESSURE WITHOUT THE PAN OVER FLOWING.
14. PROVIDE SLEEVES WHERE NEEDED FOR MECHANICAL WORK. COORDINATE LOCATION OF SLEEVES AND HOLD OUTS REQUIRED WITH THE GENERAL CONTRACTOR PRIOR TO SETTING OF FORMS, WALLS AND OTHER STRUCTURAL MEMBERS.
15. PROVIDE OFFSETS AND TRANSITIONS AS MAY BE REQUIRED TO INSTALL DUCTWORK AND PIPING. IF DUCTWORK HAS TO BE RECONFIGURED TO FIT WITHIN SPACE, IT SHALL BE RESIZED TO EQUAL FRICTION LOSS. INSTALL DUCTWORK AND PIPING WITHIN THE JOIST SPACE WHERE REQUIRED TO PERMIT INSTALLATION OF ALL WORK AND ALLOWANCES FOR WORK OF OTHER TRADES.
16. CUTTING, DEMOLITION, AND PATCHING OF WALLS, FLOOR, AND REMOVAL AND REPLACEMENT OF CEILINGS, REQUIRED TO INSTALL MECHANICAL EQUIPMENT, ARE TO BE COORDINATED BY, AND PAID FOR BY THE MECHANICAL CONTRACTOR.
17. THIS CONTRACTOR SHALL PROVIDE COMPLETE FIRE CAULKING FOR ALL WALL FLOOR AND CEILING PENETRATIONS. THIS INCLUDES ALL PLUMBING, HEATING, PROCESS, AND FIRE SPRINKLER PIPING, CONTROL WIRING AND CONDUIT, ALL DUCTWORK, BREECHING, AIR INTAKE PENETRATIONS ETC. NECESSITATED BY HIS WORK.
18. ALL GAS PIPING SHALL BE AIR TESTED IN ACCORDANCE WITH LOCAL CITY CODES, BUT IN NO CASE LESS THAN 25 POUND AIR TEST FOR THIRTY (30) MINUTES AT THE COMPLETION OF THE WORK. THE INSTALLATION SHALL BE IN ACCORDANCE WITH THE NATIONAL BOARD OF FIRE UNDERWRITERS AND ALL STATE AND THE 2017 FLORIDA BUILDING CODE.
19. PROVIDE ADDITIONAL VOLUME DAMPERS AS REQUIRED FOR BALANCING INDICATED AIRFLOWS.
20. THERMOSTATS IN PUBLIC AREA TO HAVE LOCK-OUT CAPABILITIES OR LOCKABLE THERMOSTAT COVER WITH GUARD
21. THIS SET OF DRAWINGS COMPRISE THE CONTRACT DOCUMENTS FOR THIS PROJECT AND AS SUCH EACH DISCIPLINE'S DRAWING SHEETS (ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL, CIVIL, AND SPECIALTY) SHALL BE REFERRED TO AND COORDINATED WITH EACH OTHER. IF CONFLICTS ARE NOTED BETWEEN THE DISCIPLINES THEY ARE TO BE BROUGHT TO THE ARCHITECT OF RECORD'S ATTENTION TO BE RESOLVED. IT IS ESPECIALLY IMPORTANT TO REFERENCE AND COORDINATE WITH THE ARCHITECTURAL DRAWINGS.

MECHANICAL RESPONSIBILITY MATRIX

	BY OTHERS	OWNER PROVIDED/ MC INSTALLED	OWNER SOLICITED/ MC PROCURED AND INSTALLED	MC PROVIDED/ MC INSTALLED
DIVISION 22 - PLUMBING				
PLUMBING VALVES				X
PLUMBING INSULATION				X
DOMESTIC WATER PIPING				X
DOMESTIC WATER PIPING SPECIALTIES				X
DOMESTIC WATER PUMPS		X		
DOMESTIC WATER PRESSURE BOOSTERS		X		
SANITARY WASTE AND VENT PIPING				X
SANITARY WASTE AND VENT SPECIALTIES				X
SANITARY DRAINS - FLOOR DRAINS AND FLOOR SINKS				X
SANITARY WASTE INTERCEPTORS - GREASE				X
PLUMBING FIXTURE ACCESSORIES (GRAB BARS, CURTAIN RODS, ETC)	X			
WATER SOFTENERS	X			
HOT WATER HEATERS			X	
PLUMBING FIXTURES			X	
EMERGENCY PLUMBING FIXTURES			X	
PRESSURE WATER COOLERS			X	
HOT WATER MIXING STATIONS		X		
DIVISION 23 - MECHANICAL				
TESTING , ADJUSTING AND BALANCING				X
DUCT INSULATION				X
NATURAL GAS PIPING				X
REFRIGERANT PIPING				X
METAL DUCTS				X
DUCTWORK ACCESSORIES				X
POWER VENTILATORS - BATHROOM EXHAUST FANS				X
POWER VENTILATORS - GENERAL EXHAUST				X
DIFFUSERS,REGISTERS, AND GRILLES				X
GRAVITY HOODS AND VENTILATORS				X
PTAC UNITS		X		
VERDANT THERMOSTATS FOR PTAC UNITS FOR ENERGY MANAGEMENT		X		
DOAS ROOFTOP UNITS				X
SPLIT SYSTEM AIR CONDITIONERS - MINI SPLITS				X
COMPUTER ROOM AIR CONDITIONING UNITS				X
FAN COILS / FURNACES & SPLIT SYSTEM AIR CONDITIONERS & HEAT PUMPS				X

HEATING, VENTILATION & AIR CONDITIONING SYMBOLS & ABBREVIATIONS LEGEND

- 24x12 — RECTANGULAR DUCT WITH ACOUSTICAL LINING
- FLEXIBLE CONNECTION IN DUCT
- S-1 18x10 400 — SIDEWALL GRILLE OR REGISTER WITH TYPE, NECK SIZE, AND AIRFLOWI NDICATED (SUPPLY)
- R-1 18x10 400 — SIDEWALL GRILLE OR REGISTER WITH TYPE, NECK SIZE, AND AIRFLOW INDICATED (RETURN)
- SUPPLY REGISTER OR GRILLE
- EXHAUST OR RETURN REGISTER OR GRILLE
- SQUARE ELBOW WITH TURNING VANES
- STANDARD RADIUS ROUND ELBOW (RADIUS OF CENTERLINE OF DUCT EQUAL TO 1.5 x DUCT WIDTH OR DIAMETER)
- DEMOLITION WORK INDICATED BY CROSSHATCHED LINES OVER ITEMS TO BE REMOVED AND AS NOTED.
- MANUAL VOLUME DAMPER
- FIRE DAMPER (FD)
- SMOKE DAMPER (SD)
- COMBINATION FIRE/SMOKE DAMPER (F/S)
- MOTOR OPERATED DAMPER
- RECTANGULAR DUCT TO CEILING DIFFUSER
- FLEXIBLE ROUND DUCT TO CEILING DIFFUSER
- DASHED LINE INDICATES EQUIPMENT ON ROOF
- (UP) (DN) POSITIVE PRESSURE DUCT - SUPPLY, RELIEF, ETC.
- (UP) (DN) NEGATIVE PRESSURE DUCT - RETURN, EXHAUST, OUTSIDE AIR, ETC.
- RISER THRU FLOOR OR ROOF ABOVE - POS. & NEG. PRESSURE
- RECTANGULAR DUCT WITH SIZE INDICATED.
- ROUND DUCT WITH SIZE INDICATED.

A	AIR	M	METER
ABS	ACRYLON, TRILE-BUTADIENE-STYRENE	MAX	MAXIMUM
A/C	ABOVE CEILING	MECH	MECHANICAL
AC	AIR CONDITIONING	MIN	MINIMUM
ACP	ASBESTOS CEMENT PIPE	MFG	MANUFACTURER
ADJ	ADJUSTABLE	MH	MANHOLE
AFF	ABOVE FINISHED FLOOR	MOD	MOTOR OPERATED DAMPER
ALUM	ALUMINUM	MOTZ	MOTORIZED
AMP	AMPS	NC	NORMALLY CLOSED
AP	ACCESS PANEL	NEC	NATIONAL ELECTRIC CODE
ARCH	ARCHITECT	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
AS	AIR SEPARATOR	NIC	NOT IN CONTRACT
ASHRAE	AMERICAN SOCIETY OF HEATING REFRIGERATION AND AIR CONDITIONING ENGINEERS	NO	NORMALLY OPEN
		NTS	NOT TO SCALE
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS	OA	OUTSIDE AIR
BD	BALANCING DAMPER	OFD	OVERFLOW DRAIN
B/G	BELOW GRADE	OFCI	OWNER FURNISH CONTRACTOR INSTALLS
BFP	BACKFLOW PREVENTER	OFOI	OWNER FURNISH OWNER INSTALLS
BTU	BRITISH THERMAL UNIT	PLBG	PLUMBING
CA	COMBUSTION AIR	PSIA	POUNDS/SQ INCH ABSOLUTE
CAP	CAPACITY	PSIG	POUNDS/SQ INCH GAUGE
CFM	CUBIC FEET PER MINUTE	PVC	POLYVINYL CHLORIDE
CL	CENTER LINE	RA	RETURN AIR OR RELIEF AIR
CLG	CEILING	RD	ROOF DRAIN
CO	CLEANOUT	RECIRC	RECIRCULATING
COMPT	COMPARTMENT	REF	REFERENCE ONLY
CONC	CONCRETE	REG	REGISTER
COND	CONDENSATE	REIN	REINFORCED
CONT	CONTINUED	RET	RETURN
CONTR	CONTRACTOR	REQ	REQUIRED/REQUIREMENTS
CP	CONTROL PANEL	RH	RELATIVE HUMIDITY
CW	COLD WATER	RHW	RECIRCULATED HOT WATER
CWR	CHILLED WATER RETURN	RL	RAIN LEADER
CWS	CHILLED WATER SUPPLY	RLA	RELIEF AIR
D	DRYER	RM	ROOM
DB	DECIBEL	RPM	REVOLUTIONS PER MINUTE
DIA	DIAMETER	SA	SUPPLY AIR
DN	DOWN	SAF	SUPPLY AIR FAN
DMPR	DAMPER	SAN	SANITARY
DS	DOWNSPOUT	SCW	SOFT COLD WATER
DWG	DRAWING	SD	SMOKE DAMPER
EAT	ENTERING AIR TEMPERATURE	SIM	SIMILAR
ECG	EGG CRATE GRILL	SP	STATIC PRESSURE
EFF	EFFICIENCY	SPECS	SPECIFICATIONS
EJ	EXPANSION JOINT	SUP	SUPPLY
ELEC	ELECTRICAL	SQ	SQUARE
EWT	ENTERING WATER TEMPERATURE	SS	SANITARY SEWER
EXH	EXHAUST	ST	STORM DRAIN
EXIST	EXISTING	STM	STEAM
F	FAHRENHEIT	SYS	SYSTEM
FA	FRESH AIR	TEMP	TEMPERATURE
FCO	FLOOR CLEAN OUT	TOF	TOP OF FAN
FD	FIRE/SMOKE DAMPER OR FLOOR DRAIN	TOD	TOP OF DECK
FDC	FIRE DEPARTMENT CONNECTION	T-STAT	THERMOSTAT
FLEX	FLEXIBLE	TYP	TYPICAL
FT	FEET	UG	UNDERGROUND
FTG	FOOTING	UON	UNLESS OTHERWISE NOTED
FURN	FURNISHED	V	SANITARY VENT
GA	GAUGE	(V)	VERIFY
GAL	GALLON	VAC	VACUUM
GC	GENERAL CONTRACTOR	VD	VOLUME DAMPER
GPH	GALLONS PER HOUR	VCP	VITRIFIED CLAY PIPE
GPM	GALLONS PER MINUTE	VAC	VACUUM
HB	HOSE BIB	VEL	VELOCITY
HFMD	HEATING FLOW MEASURING DEVICE	VTR	VENT THRU ROOF
HP	HORSE POWER	W	WASHER
HTG	HEATING	W/	WITH
HTR	HEATER	W/O	WITHOUT
HVAC	HEATING VENTILATING AND AIR CONDITIONING	WCO	WALL CLEAN OUT
HW	HOT WATER	WFD	WATER FLOW DEVICE
HWR	HOT WATER RETURN	WTR	WATER
HWS	HOT WATER SUPPLY	WP	WATERPROOF OR WEATHER PROOF
HYD	HYDRANT	MC	MECHANICAL CONTRACTOR
GCO	GRADE CLEANOUT	EC	ELECTRICAL CONTRACTOR
INSUL	INSULATION	FPC	FIRE PROTECTION CONTRACTOR
INV	INVERT		
KEC	KITCHEN EQUIPMENT CONTRACTOR		
KW	KILOWATT		
LAT	LEAVING AIR TEMPERATURE		
LB	POUNDS		
LIN	LINEAR		
LWT	LEAVING WATER TEMPERATURE		

MECHANICAL SHEET INDEX

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GEORGIA REGISTERED No. PE043834 PROFESSIONAL ENGINEER BRIAN MARTIN
11/1/18

MECHANICAL COVER SHEET

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