


GENERAL NOTES FOR HVAC&R SYSTEM


C			IRANIAN PETROLEUM STANDARDS 		
B			NO REVISION PERMITTED UNLESS APPROVED BY STANDARD ORGANIZATION		
A			DATE	DRAWING No.	SHT/REV.
REV.	DESCRIPTION	DATE	GENERAL NOTES FOR HVAC&R SYSTEM	IPS - D - AR - 011	1/7

GENERAL NOTES FOR HVAC MECHANICAL ROOM

- 1 - ALL PIPES ENTERING OR LEAVING THE MECHANICAL EQUIPMENT ROOM SHALL BE PROVIDED WITH STEEL PIPE SLEEVES. AFTER INSTALLATION THE ANNULAR SPACE BETWEEN SLEEVE AND PIPE SHALL BE PACKED WITH OAKUM.
- 2 - THE OVERAL INSTALLATION OF PIPING AND EQUIPMENT SHALL BE EXECUTED PER ASHRAE REQUIREMENT COMPLYING TO IPS-C-AR-110, AND COMPLYING TO STEP-BY-STEP INSTRUCTIONS OF MANUFACTURER'S PUBLICATIONS. ALL NECESSARY TEST, MONITORING AND CHECK POINTS SHALL BE PROVIDED AT ACESIBLE LOCATION TO SIMPLIFY TESTING, ADJUSTING AND BALANCING PROCEDURES AS ADRESSED BY ANSI/ASHRAE 111-1988 STANDARD REQUIREMENTS.
- 3 - THE HVAC CONTRACTOR SHALL ENSURE THAT ADEQUATE AND ACCESSIBLE SPACE SHALL BE MAINTAINED FOR PIPE CLEARANCE REQUIREMENTS FOR EASE OF SERVICE AND MAINTENANCE OF RELEVANT EQUIPMENT AS RECOMMENDED BY THE MANUFACTURER AS PER REQUIREMENT.
- 4 - THE CONTRACTOR SHALL PROVIDE FLANGED PIPE CONNECTIONS AT EACH EQUIPMENT WHERE PIPELINES ARE 2 1/2" AND LARGER TO ALLOW FOR SERVICE OR REMOVAL OF HEADERS (WHEN REQUIRED) FOR INSPECTION.
- 5 - HEADERS UPTO 2" SHALL BE PROVIDED WITH END CAPS AND THOSE 2 1/2" AND LARGER SHALL BE PROVIDED WITH FLAT FACED BLIND FLANGES AT EACH END.
- 6 - CONSTRUCTION OF TRENCHES, EQUIPMENT FOUNDATIONS, DRAIN PITS, BLOWDOWN PITS AND CONDENSATE TANK PITS SHALL BE PER HVAC CONTRACTOR'S APPROVED LAYOUT AND EXECUTED BY THE CIVIL CONTRACTOR.
- 7 - ALL POURED-IN CONCRETE FOUNDATIONS SHALL FACILITATE FOR CORRECTIONS ON SOUND EMISSION EQUIPMENT PARTICULARLY CHILLERS, BOILERS, PUMPS, VENTILATION FANS AND AIR HANDLING UNITS. THE FOUNDATION PADS SHALL BE LAID FULL WIDTH OF SUPPORTING CHANNELS WHERE REQUIRED. IT SHALL BE DEAD LEVEL BOTH DIRECTIONS ON RELEVANT ISOLATION PADS.
- 8 - CONSTRUCTION OF ALL STEEL STRUCTURES SUCH AS HANGERS, SUPPORTS, INSERTS, CLAMPS, BRACINGS ETC SHALL BE EXECUTED PER IPS-G-PI-280.
- 9 - LOCATION AND INSTALLATION OF OVERHEAD CHAIN BLOCK AND/OR CRANES IN THE MECHANICAL PLANT ROOM WHEN REQUIRED SHALL BE DECIDED AT SITE BY THE CONSULTING STRUCTURAL ENGINEER.


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- 10- THE MECHANICAL CONTRACTOR SHALL INSTAL, AND LEAVE IN PLACE, NECESSARY RIGGING TO LIFT HEAVY EQUIPMENT. THE RIGGING SHALL BE SUPPORTED BY STRUCTURAL MEMBERS OF ADEQUATE SIZE OR WHERE REQUIRED ADDITIONAL SUPPORT SHALL BE PROVIDED.
- 11- REFRIGERANT VENT CONNECTION SHALL BE PROVIDED TO THE OUTSIDE FROM THE RUPTURE DISC AND ANY OTHER LOCATION WHERE REFRIGERANT MIGHT BE EXPELLED OR RELEASED FROM A CHILLER UNIT.
- 12- ADEQUATE DESIGN FOR EXPANSION AND CONTRACTION OF RELEVANT EQUIPMENT AND ANCILLIARY WORK SHALL BE PROVIDED ON ALL INSTALLED ITEMS.
- 13- FOR EASE OF OPERATION ALL VALVES, GAGES, THERMOMETERS AND INDICATORS SHALL BE LOCATED AT SUITABLE HEIGHT WITHIN VISUAL AND PHYSICAL REACH OF THE OPERATOR.
- 14- ALL HVAC CONTRACTORS SHALL COORDINATE ALL OPERATIONS WITH OTHER CONTRACTORS WORKING IN THE MECHANICAL PLANT ROOM. IN THE EVENT OF ROUTING CONFLICTS, SITE SUPERINTENDENT SHALL BE PROMPTLY CONSULTED.
- 15- THE HVAC -RELATED ELECTRICAL WORKS SHALL COMPLY TO MINIMUM REQUIREMENTS OF IPS -E -EL -110 AND STANDARD.
- 16- ALL PIPE HANGERS AND SUPPORTS SHALL CONFORM TO THE LATEST REVISION OF IPS -G -PI -280.
- 17- HIGH POINTS OF EACH MAIN RISER AT ALL CHILLED/HOT WATER PIPES SHALL BE PROVIDED WITH SUITABLE AUTOMATIC AIR VENT AND DRAINS SHALL BE INSTALLED ON LOW POINTS.

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GENERAL NOTES FOR SHEET METAL DUCTING


- 1 - UNLESS OTHERWISE MENTIONED THE FABRICATION SCHEDULE SHALL BE BASED ON MINIMUM REQUIREMENTS OF SMACNA.
- 2 - TRAVERSE JOINTS BRACING, REINFORCING AND FLANGED FRAMING SHALL BE EXECUTED PER ASHRAE STANDARDS.
- 3 - FOR DUCT FABRICATION THE FOLLOWING MINIMUM REQUIREMENTS OF HARDWARES SHALL BE CONSIDERED:
 - a) FOR EVERY METER OF ANGLE IRON, EIGHT BOLTS AT ABOUT 150mm. PITCH TO SIZE 6 mm. DIA. x 25 mm. LONG SHALL BE USED.
 - b) FOR EVERY METER OF ANGLE IRON, ELEVEN RIVETS, AT 100mm. PITCH TO SIZE 3 mm. DIA. x 10 mm. LONG SHALL BE USED.
 - c) A 10mm. DIA. FIRE-PROOF ROPE PER FULL FRAME LENGTH SHALL BE USED.
- 4 - THE LOCATION AND NECESSITY OF ACCESS DOORS SHALL BE COORDINATED WITH CONSULTING ENGINEER'S INSTRUCTIONS.
- 5 - DUCT CONNECTIONS WITH FAN AND EQUIPMENT SHALL BE MADE OF CANVAS CONNECTION OF AT LEAST 150mm.(6") WIDE TO PREVENT DUCT BREAKOUT, NOISE AND TRANSMISSION OF VIBRATIONS.

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GENERAL NOTE FOR STEAM LINES


1 - IN ADDITION TO CONSULTING ENGINEER'S RELEVANT DRAWINGS, THE CONTRACTOR SHALL EXECUTE AS FOLLOWS:

- a) BRANCH TAKE-OFFS SHALL BE FROM TOP OF MAIN PIPES.
- b) ECCENTRIC REDUCERS SHALL BE USED TO PREVENT FLOODING.
- c) AUTOMATIC AIR VENTS SHALL BE PROVIDED ON HIGHEST POINT OF STEAM LINE.
- d) CONDENSATES SHALL BE RETURNED TO CONDENSATE TANK. PIPES LINES IN TRENCH OR OTHERWISE SHALL BE PROVIDED WITH MINIMUM PITCH OF 1% TOWARD CONDENSATE TANK.
- e) ALL MAIN LINES OR WHERE STEAM FLASHING IS ANTICIPATED, A SUITABLE DRIP LEG INTEGRATED WITH STEAM TRAP ASSEMBLY SHALL BE PROVIDED.

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GENERAL NOTES FOR NATURAL GAS PIPING


- 1 - GAS PIPING SHALL BE BLACK CARBON STEEL SEAMLESS ASTM A53 GRADE B OR API 5L GRADE B AND OR APPROVE EQUAL MATERIAL WITH WELDED FITTINGS.
- 2 - EXECUTION OF COATING AND TAPE WRAP SHALL COMPLY IPS-C-TP-274.
- 3 - AN APPROVED SHUT-OFF COCK OR BALL VALVE SHALL BE PROVIDED AT CONNECTIONS TO EACH GAS BURNING APPLIANCE.
- 4 - UNDERGROUND PIPES SHALL BE PLASTIC JACKETED TO PROVIDE ELECTROLYSIS PROTECTION, WITH ALL FITTINGS WRAPPED WITH MATCHING TAPE TO SAME THICKNESS AS JACKED.

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GENERAL NOTES FOR PIPE SUPPORTS

THE FOLLOWING PIPE SUPPORTS STANDARDS SHALL BE APPLICABLE FOR THIS SECTION.

- IPS - G - PI - 280
- IPS - D - PI - 130
- IPS - D - AR - 012

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