

Engineering Standard

16.3.1

PAGE 1

1983-01

Materials and Standards Section - Pittsburgh

SEALANTS.

ETS

N-METALLIC GASKETS

ITE PASTE WITH
CHEMICAL CO.
WITH TEFLON-

JET LUBE INC.
3D.SPEC.TI-S-1732)
900 - SHEETS
950 - RING GASKET
3200 WITH SBR
(ASBESTOS FREE)

BESTOS WITH
LEXITALLIC STYLE
O.

AINLESS STEEL
TH HOLDING RING-
PRESSURE RATING
CLASS.

BESTOS WITH
LEXITALLIC
CLASS.

UIT FLANGE CLASS.

. THEED & CO'S.
HEAT #2900
ITALLIC STYLE

GENERAL DESIGN GUIDELINES

- THE DESIGN PRESSURE AND TEMPERATURE SHALL NOT BE LESS THAN THE MAXIMUM OPERATING FLUID PRESSURE AND TEMPERATURE WITHIN THE SYSTEM.
- A STRESS AND MOVEMENT ANALYSIS IS REQUIRED FOR THESE SERVICES. SUPPORTS SUCH AS SPRING HANGERS, ANCHORS, AND GUIDES SHOULD BE DESIGNED TO SUIT THE SPECIFIC SITUATION.
- PROVISIONS SHALL BE MADE TO CONTAIN OR SAFELY RELIEVE ANY EXCESSIVE PRESSURE TO WHICH THE SYSTEM MAY BE SUBJECTED, I.E. AMBIENT INFLUENCES, FIRE, IMPROPER OPERATIONS, FAILURE OF CONTROL DEVICES.
- REFER TO ALCOA STANDARD 30.9 FOR PIPE INSULATION SELECTION CRITERIA.
- THESE SERVICE SPECIFICATIONS ARE FOR ABOVE GROUND INSTALLATIONS. IF PIPING MUST BE ROUTED UNDERGROUND, IT MUST BE PROTECTED WITH INSULATION OR COATING, AND CATHODIC PROTECTION PER ALCOA STANDARDS 33.7.11.1 AND 33.8.11.1.
- ALL DESIGN, MATERIALS, FABRICATION, AND INSPECTION SHALL BE IN ACCORDANCE WITH ANSI B31.1, THE POWER PIPING CODE, OR ANSI B31.1, THE CHEMICAL PLANT, PETROLEUM-REFINERY CODE DEPENDING ON AREA OF APPLICATION.

NOTES

1. SEVERAL VALVE TRIM MATERIALS ARE AVAILABLE, BUT NOT LISTED HERE. THEY MUST BE CONSIDERED FOR PROPER APPLICATION TO FLUIDS, PRESSURES, AND TEMPERATURES.
2. CAST IRON AND MALLEABLE IRON FITTINGS HAVE LOW DUCTILITY AND SHOULD NOT BE USED WHERE SHOCK LOADING OR BRITTLE FRACTURE MAY OCCUR. CAST IRON LIMITED TO 250 PSI @ 450°F MALLEABLE IRON TO 350 PSI @ 450°F. ANSI B31.1, 123.2.4 & 123.2.5. MALLEABLE AND CAST IRON FITTINGS MAY NOT BE ALLOWED AT SOME LOCATIONS.
3. VALVES WITH SCREWED BONNET CONNECTIONS SHALL NOT BE USED ABOVE 250 PSI. ANSI B31.1, 107.5.
4. ALWAYS SPECIFY BORE (PIPE I.D.) FOR WELD NECK FLANGES WHEN ORDERING.
5. USE FLAT FACE FLANGES AND FULL FACE GASKETS WHEN MATING AGAINST A CAST IRON FLANGE.
6. NO COPPER, BRASS OR NON-FERROUS ALLOY SHALL BE USED FOR VALVES OR VALVE COMPONENT THAT MIGHT CONTACT AN AMMONIA OR CAUSTIC ATMOSPHERE.
7. REFER TO ENGINEERING STANDARDS 18.8.1, 18.8.2, 18.8.3 AND 18.8.4 FOR SAFETY ASPECTS REGARDING LPG.
8. ALL GATE AND GLOBE VALVES TO HAVE BOLTED BONNETS, BUTT WELD ENDS, STEM AND SEATING OF 410 STAINLESS STEEL AND TO HAVE AN OUTSIDE STEM AND YOKE (O.S.&Y.). THIS IS TO AVOID STEM CORROSION AND TO ALLOW DETERMINATION IF VALVE IS OPEN OR CLOSED FROM A DISTANCE.
9. SLIP-ON FLANGES ARE NOT RECOMMENDED FOR SERVICE ABOVE ANSI CLASS 300 RATING OR FOR FLAMMABLE FLUIDS OR FOR CYCLIC SERVICES.
10. BRANCH CONNECTIONS SHALL BE CHECKED FOR REINFORCEMENT REQUIREMENTS OF ANSI B31.1.
11. PREHEAT AND POST-HEAT SHALL BE IN ACCORDANCE WITH ANSI B31.1.
12. PROLONGED EXPOSURE TO TEMPERATURE ABOVE 775 F. THE CARBIDE PHASE OF CARBON STEEL, MAY BE CONVERTED TO GRAPHITE.
13. VALVE SHALL HAVE A PRESSURE SEAL BONNET.
14. 150# BALL VALVE, A LUBRICATED OR NON-LUBRICATED PLUG VALVE, ASTM A-216 GR.WCB.
15. BOLT OR STUD LENGTHS TO EXTEND NO MORE THAN THREE THREADS BEYOND THE NUT WHENEVER PRACTICAL.
16. 26" AND LARGER 150# FLANGES HAVE SAME DRILLING DIMENSIONS AS CLASS 125 C.I.
17. THREADS SHALL BE THE COARSE SERIES EXCEPT ALLOY BOLTING 1-1/8" DIAMETER AND LARGER SHALL BE THE 8-PITCH - THREAD SERIES.
18. IT IS RECOMMENDED THAT HEAT ACTIVATED, FIRE SAFE VALVES BE UTILIZED ON FLAMMABLE LIQUIDS TO ISOLATE THE POTENTIAL SOURCE OF COMBUSTION (BOILER, FURNACE) FROM THE LIQUID SOURCE (TANK, DISTRIBUTION HEADER)
19. THE ANSI AND ASTM STANDARDS PROVIDE THE MOST CONSISTENT APPROACH TO VALVE SPECIFICATIONS AND SELECTION. STANDARD 16.3.1.0 SERVES AS A REFERENCE TO ASSIST IN VALVE SELECTION AND PROVIDES A STARTING POINT FOR COMPARING FEATURES BETWEEN MANUFACTURERS.

OTHER CODES AND REFERENCES

PLAINTIFF'S
EXHIBIT

AL-121