SECTION 22 05 16

EXPANSION FITTINGS AND LOOPS FOR PLUMBING PIPING

**PART 1 GENERAL**

1. **REFER TO SECTION 23 0516 PART 2**

**PART 2 PRODUCTS**

1. **FLEXIBLE PIPE CONNECTORS - STEEL PIPING**
2. Inner Hose: Carbon Steel.
3. Exterior Sleeve: Single braided, stainless steel.
4. Pressure Rating: 1380 kPa and 121 degrees C (200 psi and 250 degrees F).
5. Joint: Flanged, threaded or welded.
6. Size: Use pipe sized units.
7. Maximum offset: 20 mm (3/4 inch) on each side of installed center line.
8. **FLEXIBLE PIPE CONNECTORS - COPPER PIPING**
9. Inner Hose: Bronze.
10. Exterior Sleeve: Braided bronze.
11. Pressure Rating: 1380 kPa and 121 degrees C (200 psi and 250 degrees F).
12. Joint: As specified for pipe joints.
13. Size: Use pipe sized units.
14. Maximum offset: 20 mm (3/4 inch) on each side of installed center line.
15. Application: Copper piping.
16. **EXPANSION JOINTS - STAINLESS STEEL BELLOWS TYPE**
17. Pressure Rating: 1380 kPa and 121 degrees C (200 psi and 250 degrees F).
18. Maximum Compression: 45 mm (1-3/4 inches).
19. Maximum Extension: 6 mm (1/4 inch).
20. Joint: As specified for pipe joints.
21. Size: Use pipe sized units.
22. Application: Steel piping 75 mm (3 inches) and under.
23. **EXPANSION JOINTS - EXTERNAL RING CONTROLLED STAINLESS STEEL BELLOWS TYPE**
24. Pressure Rating: 1550 kPa and 21 degrees C (225 psi and 70 degrees F).
25. Maximum Compression: 24 mm (15/16 inch).
26. Maximum Extension: 10 mm (3/8 inch).
27. Maximum Offset: 3 mm (1/8 inch).
28. Joint: Flanged, threaded or compression fittings.
29. Size: Use pipe sized units.
30. Accessories: Internal flow liner.
31. Application: Steel piping over 50 mm (2 inches).
32. **EXPANSION JOINTS - SINGLE SPHERE, FLEXIBLE COMPENSATOR**
33. Body: Teflon.
34. Pressure Rating, Sizes 20 mm to 50 mm (3/4 Inch to 2 Inch): 1040 kPa and 99 degrees C (150 psi and 210 degrees F).
35. Pressure Rating, Sizes 32 mm to 300 mm (1-1/2 Inch to 12 Inch): 1560 kPa and 76 degrees C (225 psi and 170 degrees F).
36. Pressure Rating, Sizes 350 mm to 600 mm (14 Inch to 24 Inch): 1240 kPa and 76 degrees C (180 psi and 170 degrees F).
37. Maximum Compression: 13 mm (1/2 inch).
38. Maximum Elongation: 13 mm (1/2 inch).
39. Maximum Offset: 10 mm (3/8 inch).
40. Maximum Angular Movement: 30 degrees.
41. Joint: Tapped steel flanges.
42. Size: Use pipe sized units.
43. Accessories: Control rods.
44. Application: Steel piping 50 mm (2 inches) and over.
45. **EXPANSION JOINTS - DOUBLE SPHERE, FLEXIBLE COMPENSATOR**
46. Body: Teflon.
47. Pressure Rating, Sizes 20 mm to 50 mm (3/4 Inch to 2 Inch): 1040 kPa and 99 degrees C (150 psi and 210 degrees F).
48. Pressure Rating, Sizes 32 mm to 300 mm (1-1/2 Inch to 12 Inch): 1560 kPa and 76 degrees C (225 psi and 170 degrees F).
49. Pressure Rating, Sizes 350 mm to 600 mm (14 Inch to 24 Inch): 1240 kPa and 76 degrees C (180 psi and 170 degrees F).
50. Maximum Compression: 13 mm (1/2 inch).
51. Maximum Elongation: 10 mm (3/8 inch).
52. Maximum Offset: 10 mm (3/8 inch).
53. Maximum Angular Movement: 30 degrees.
54. Joint: Tapped steel flanges.
55. Size: Use pipe sized units.
56. Accessories: Control rods.
57. Application: Steel piping 50 mm (2 inches) and over.
58. **EXPANSION JOINTS - TWO-PLY BRONZE BELLOWS TYPE**
59. Construction: Bronze with anti-torque device, limit stops, internal guides.
60. Pressure Rating: 1380 kPa and 121 degrees C (200 psi and 250 degrees F).
61. Maximum Compression: 45 mm (1-3/4 inches).
62. Maximum Extension: 6 mm (1/4 inch).
63. Joint: Soldered.
64. Size: Use pipe sized units.
65. Application: Copper piping.
66. **EXPANSION JOINTS - STEEL WITH PACKED SLIDING SLEEVE**
67. Working Pressure and Temperature: Class 300.
68. Joint: Flanged.
69. Size: Use pipe sized units.
70. Application: Steel piping 50 mm (2 inches) and over.
71. **ACCESSORIES**
72. Stainless Steel Pipe: ASTM A269/A269M.
73. Pipe Alignment Guides:
74. Two piece welded steel with enamel paint, bolted, with spider to fit standard pipe, frame with four mounting holes, clearance for minimum 25 mm (1 inch) thick insulation, minimum 75 mm (3 inches) travel.
75. Swivel Joints:
76. Fabricated steel body, double ball bearing race, field lubricated, with rubber (Buna-N) o-ring seals.
77. **PLASTIC PIPING EXPANSION LOOPS**

A. Provide expansion loops, pipe fitting, joints and fit for purpose pipe supports to accommodate thermal expansion of piping in accordance with manufacturer’s instructions and recommendations.

**PART 3 EXECUTION**

1. **REFER TO SECTION 23 0516**

**END OF SECTION**