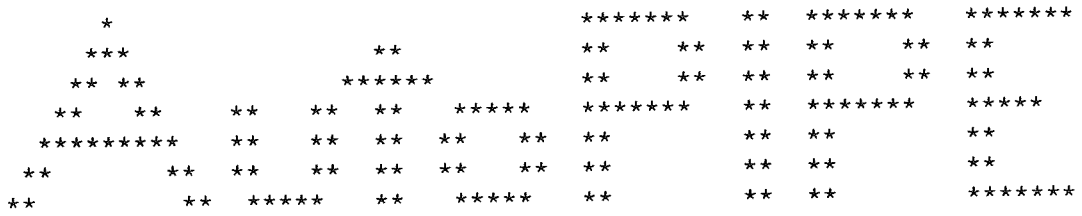

Pipe Stress Analysis and Design Program

Version: 6.20.09

Edition: Win

Developed and Maintained by

REBIS Industrial Workgroup Software
1600 Riviera Ave., Suite 300
Walnut Creek, CA 94596

****
**
** AUTOPIPE SYSTEM INFORMATION **
**
****

SYSTEM NAME : 79319816_KOMPLETT

PROJECT ID : ASU KOSICE

DESCRIPTION :

PREPARED BY : _____
WEGSTEIN

CHECKED BY : _____
FRICKHOEFER

PIPING CODE : B31.3

VERTICAL AXIS : Z

AMBIENT TEMPERATURE : 20.0 deg C

COMPONENT LIBRARY : HANAU_AL

MATERIAL LIBRARY : AUTOB313

MODEL REVISION NUMBER : 3

C O M P O N E N T D A T A L I S T I N G

*** SEGMENT A , LINE # 79319816

From A00 to A01, DX= -107.48 mm, DY= 107.48 mm, L= 152.00 mm Redu

COMPONENT DATA (Reducer):
Length= 152.00 mm, SIF= 1.00

PIPE DATA:
Pipe Id= 200MX6.0, Material= AL, Poisson= 0.300, Nom Size= 200 mm,
OD= 219.10 mm, Sch= NS, Wall Thk= 6.000 mm, Mill= 0.750 mm, Cor= 0 mm,
Pipe Density= 2707.12 kg/m3, Pipe Unit Wgt= 106.64 N/m, Insul Thk= 0 mm,
Lining Thk= 0 mm, Long Weld factor= 1.00, Circ Weld factor= 1.00,
Long Modulus= 0.06899 x10^6 N/m, Hoop Modulus= 0.06899 x10^6 N/m,
Shear Modulus= 0.02653 x10^6 N/m, Sc= 103.4 N/mm2, Syc= 0 N/mm2

OPERATING DATA:
P1= 0 N/mm2, T1= -196.00 deg C, Exp1= -3.84587 mm/m,
E1= 0.07646 x10^6 N/m, Sh1= 71.00 N/mm2

POINT DATA:
A00, Coordinates, X= 0.00 mm, Y= 0.00 mm, Z= 0.00 mm

SUPPORT DATA:
A00, Anchor, KTX= Rigid, KTY= Rigid, KTZ= Rigid, KRX= Rigid, KRY= Rigid,
KRZ= Rigid

From A01 to A02, DX= -161.93 mm, DY= 161.93 mm, L= 229.00 mm Run

PIPE DATA:

Pipe Id= 150MX6.0, Nom Size= 150 mm, OD= 168.30 mm

POINT DATA:
A01, Coordinates, X= -107.48 mm, Y= 107.48 mm, Z= 0.00 mm

From A02 to A03, DX= -315.61 mm, DY= -315.61 mm, L= 446.34 mm Bend

COMPONENT DATA (Bend, TIP= A02, Near= A02 N, Far= A02 F):
Elbow, Radius= 228.99 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:
A02, Coordinates, X= -269.41 mm, Y= 269.41 mm, Z= 0.00 mm
A02 N, Coordinates, X= -107.49 mm, Y= 107.49 mm, Z= 0.00 mm
A02 F, Coordinates, X= -431.33 mm, Y= 107.49 mm, Z= 0.00 mm

From A03 to A04, DY= -1631.52 mm Bend

COMPONENT DATA (Bend, TIP= A03, Near= A03 N, Far= A03 F):
Elbow, Radius= 228.99 mm, Bend angle= 45.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

C O M P O N E N T D A T A L I S T I N G

POINT DATA:
A03, Coordinates, X= -585.02 mm, Y= -46.20 mm, Z= 0.00 mm
A03 N, Coordinates, X= -517.95 mm, Y= 20.87 mm, Z= 0.00 mm
A03 F, Coordinates, X= -585.02 mm, Y= -141.05 mm, Z= 0.00 mm

From A04 to A05, DX= 406.12 mm, DY= -406.12 mm, L= 574.34 mm Bend

COMPONENT DATA (Bend, TIP= A04, Near= A04 N, Far= A04 F):
Elbow, Radius= 228.99 mm, Bend angle= 45.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:
A04, Coordinates, X= -585.02 mm, Y= -1677.72 mm, Z= 0.00 mm
A04 N, Coordinates, X= -585.02 mm, Y= -1582.87 mm, Z= 0.00 mm
A04 F, Coordinates, X= -517.95 mm, Y= -1744.79 mm, Z= 0.00 mm

---

From A05 to A06, DX= 406.12 mm, DY= -406.12 mm, L= 574.34 mm Tee

COMPONENT DATA (Tee Header, Center= A05):
B16.9 welding tee, SIFI= 2.05, SIFO= 2.40

POINT DATA:
A05, Coordinates, X= -178.90 mm, Y= -2083.84 mm, Z= 0.00 mm

From A06 to A07, DX= 1631.52 mm Bend

COMPONENT DATA (Bend, TIP= A06, Near= A06 N, Far= A06 F):
Elbow, Radius= 228.99 mm, Bend angle= 45.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:
A06, Coordinates, X= 227.22 mm, Y= -2489.96 mm, Z= 0.00 mm
A06 N, Coordinates, X= 160.15 mm, Y= -2422.89 mm, Z= 0.00 mm
A06 F, Coordinates, X= 322.07 mm, Y= -2489.96 mm, Z= 0.00 mm

From A07 to A08, DX= 315.61 mm, DY= 315.61 mm, L= 446.34 mm Bend

COMPONENT DATA (Bend, TIP= A07, Near= A07 N, Far= A07 F):
Elbow, Radius= 228.99 mm, Bend angle= 45.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:
A07, Coordinates, X= 1858.74 mm, Y= -2489.96 mm, Z= 0.00 mm
A07 N, Coordinates, X= 1763.89 mm, Y= -2489.96 mm, Z= 0.00 mm
A07 F, Coordinates, X= 1925.81 mm, Y= -2422.89 mm, Z= 0.00 mm

---

From A08 to A09, DX= -164.08 mm, DY= 164.08 mm, L= 232.04 mm Bend

COMPONENT DATA (Bend, TIP= A08, Near= A08 N, Far= A08 F):
Elbow, Radius= 228.99 mm, Bend angle= 90.00 deg, End flanges= 0,

C O M P O N E N T D A T A L I S T I N G

Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:

A08, Coordinates, X= 2174.35 mm, Y= -2174.35 mm, Z= 0.00 mm
A08 N, Coordinates, X= 2012.43 mm, Y= -2336.27 mm, Z= 0.00 mm
A08 F, Coordinates, X= 2012.43 mm, Y= -2012.43 mm, Z= 0.00 mm

---

From A09 to A10, DX= -105.32 mm, DY= 105.32 mm, L= 148.94 mm Redu

COMPONENT DATA (Reducer):
Length= 148.94 mm, SIF= 1.00

POINT DATA:
A09, Coordinates, X= 2010.27 mm, Y= -2010.27 mm, Z= 0.00 mm
A10, Coordinates, X= 1904.95 mm, Y= -1904.95 mm, Z= 0.00 mm

SUPPORT DATA:
A10, Anchor, KTX= Rigid, KTY= Rigid, KTZ= Rigid, KRX= Rigid, KRY= Rigid, KRZ= Rigid

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*** SEGMENT B , LINE # 79319816

From A05 to B01, DZ= -184.15 mm Tee

COMPONENT DATA (Tee Branch, Center= A05):
B16.9 welding tee, SIFI= 2.05, SIFO= 2.40

PIPE DATA:
Pipe Id= 150MX6.0, Nom Size= 150 mm

POINT DATA:
A05, Coordinates, X= -178.90 mm, Y= -2083.84 mm, Z= 0.00 mm

From B01 to B02, DZ= -442.58 mm Run

POINT DATA:
B01, Coordinates, X= -178.90 mm, Y= -2083.84 mm, Z= -184.15 mm

---

From B02 to B03, DZ= -767.26 mm Tee

COMPONENT DATA (Tee Header, Center= B02):
B16.9 welding tee, SIFI= 2.05, SIFO= 2.40

POINT DATA:
B02, Coordinates, X= -178.90 mm, Y= -2083.84 mm, Z= -626.73 mm

---

From B03 to B04, DX= -406.12 mm, DY= 406.12 mm, DZ= -50.25 mm, L= 576.53 mm Bend

C O M P O N E N T D A T A L I S T I N G

COMPONENT DATA (Bend, TIP= B03, Near= B03 N, Far= B03 F):
Elbow, Radius= 228.99 mm, Bend angle= 85.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:
B03, Coordinates, X= -178.90 mm, Y= -2083.84 mm, Z= -1393.99 mm
B03 N, Coordinates, X= -178.90 mm, Y= -2083.84 mm, Z= -1184.16 mm
B03 F, Coordinates, X= -326.71 mm, Y= -1936.03 mm, Z= -1412.28 mm

---

From B04 to B05, DY= 1325.25 mm, DZ= -115.94 mm, L= 1330.31 mm Bend

COMPONENT DATA (Bend, TIP= B04, Near= B04 N, Far= B04 F):
Elbow, Radius= 228.99 mm, Bend angle= 44.82 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:
B04, Coordinates, X= -585.02 mm, Y= -1677.72 mm, Z= -1444.24 mm
B04 N, Coordinates, X= -518.50 mm, Y= -1744.24 mm, Z= -1436.01 mm
B04 F, Coordinates, X= -585.02 mm, Y= -1583.65 mm, Z= -1452.47 mm

---

From B05 to B06, DZ= -6209.84 mm Bend

COMPONENT DATA (Bend, TIP= B05, Near= B05 N, Far= B05 F):
Elbow, Radius= 228.99 mm, Bend angle= 85.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:
B05, Coordinates, X= -585.02 mm, Y= -352.47 mm, Z= -1560.18 mm
B05 N, Coordinates, X= -585.02 mm, Y= -561.50 mm, Z= -1541.89 mm
B05 F, Coordinates, X= -585.02 mm, Y= -352.47 mm, Z= -1770.01 mm

---

From B06 to B07, DZ= -6000.00 mm Run

POINT DATA:
B06, Coordinates, X= -585.02 mm, Y= -352.47 mm, Z= -7770.02 mm

---

From B07 to B08, DZ= -6000.00 mm Run

POINT DATA:
B07, Coordinates, X= -585.02 mm, Y= -352.47 mm, Z= -13770.02 mm

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From B08 to B09, DZ= -5650.89 mm Run

POINT DATA:
B08, Coordinates, X= -585.02 mm, Y= -352.47 mm, Z= -19770.02 mm

---

From B09 to B10, DZ= -262.97 mm Tee

COMPONENT DATA (Tee Header, Center= B09):

C O M P O N E N T D A T A L I S T I N G

B16.9 welding tee, SIFI= 2.05, SIFO= 2.40

POINT DATA:
B09, Coordinates, X= -585.02 mm, Y= -352.47 mm, Z= -25420.91 mm

---

From B10 to B11, DY= -1890.11 mm, DZ= -1091.25 mm, L= 2182.51 mm Bend

COMPONENT DATA (Bend, TIP= B10, Near= B10 N, Far= B10 F):
Elbow, Radius= 228.99 mm, Bend angle= 60.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:
B10, Coordinates, X= -585.02 mm, Y= -352.47 mm, Z= -25683.88 mm
B10 N, Coordinates, X= -585.02 mm, Y= -352.47 mm, Z= -25551.67 mm
B10 F, Coordinates, X= -585.02 mm, Y= -466.97 mm, Z= -25749.98 mm

---

From B11 to B12, DZ= -6132.21 mm Bend

COMPONENT DATA (Bend, TIP= B11, Near= B11 N, Far= B11 F):
Elbow, Radius= 228.99 mm, Bend angle= 60.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:
B11, Coordinates, X= -585.02 mm, Y= -2242.58 mm, Z= -26775.13 mm
B11 N, Coordinates, X= -585.02 mm, Y= -2128.08 mm, Z= -26709.03 mm
B11 F, Coordinates, X= -585.02 mm, Y= -2242.58 mm, Z= -26907.34 mm

---

From B12 to B13, DZ= -2218.88 mm Run

POINT DATA:
B12, Coordinates, X= -585.02 mm, Y= -2242.58 mm, Z= -32907.34 mm

---

From B13 to B14, DY= -705.38 mm Bend

COMPONENT DATA (Bend, TIP= B13, Near= B13 N, Far= B13 F):
Elbow, Radius= 228.99 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:
B13, Coordinates, X= -585.02 mm, Y= -2242.58 mm, Z= -35126.22 mm
B13 N, Coordinates, X= -585.02 mm, Y= -2242.58 mm, Z= -34897.23 mm
B13 F, Coordinates, X= -585.02 mm, Y= -2471.57 mm, Z= -35126.22 mm

---

From B14 to B15, DX= 939.05 mm, DZ= -82.16 mm, L= 942.64 mm Bend

COMPONENT DATA (Bend, TIP= B14, Near= B14 N, Far= B14 F):
Elbow, Radius= 228.99 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:

C O M P O N E N T D A T A L I S T I N G

B14, Coordinates, X= -585.02 mm, Y= -2947.96 mm, Z= -35126.22 mm
B14 N, Coordinates, X= -585.02 mm, Y= -2718.97 mm, Z= -35126.22 mm
B14 F, Coordinates, X= -356.90 mm, Y= -2947.96 mm, Z= -35146.18 mm

---

From B15 to B16, DX= 200.00 mm, DY= 200.00 mm, DZ= -24.75 mm, L= 283.92 mm Bend

COMPONENT DATA (Bend, TIP= B15, Near= B15 N, Far= B15 F):
Elbow, Radius= 228.99 mm, Bend angle= 44.82 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:
B15, Coordinates, X= 354.03 mm, Y= -2947.96 mm, Z= -35208.38 mm
B15 N, Coordinates, X= 259.96 mm, Y= -2947.96 mm, Z= -35200.15 mm
B15 F, Coordinates, X= 420.55 mm, Y= -2881.44 mm, Z= -35216.61 mm

---

From B16 to B17, DX= 1300.00 mm, DZ= -113.74 mm, L= 1304.97 mm Bend

COMPONENT DATA (Bend, TIP= B16, Near= B16 N, Far= B16 F):
Elbow, Radius= 228.99 mm, Bend angle= 44.82 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:
B16, Coordinates, X= 554.03 mm, Y= -2747.96 mm, Z= -35233.13 mm
B16 N, Coordinates, X= 487.51 mm, Y= -2814.48 mm, Z= -35224.90 mm
B16 F, Coordinates, X= 648.10 mm, Y= -2747.96 mm, Z= -35241.36 mm

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From B17 to B18, DY= -1052.95 mm, DZ= -92.12 mm, L= 1056.97 mm Bend

COMPONENT DATA (Bend, TIP= B17, Near= B17 N, Far= B17 F):
Elbow, Radius= 230.73 mm, Bend angle= 89.56 deg, End flanges= 0,
Flex= 7.849, SIFI= 2.55, SIFO= 2.12

POINT DATA:
B17, Coordinates, X= 1854.03 mm, Y= -2747.96 mm, Z= -35346.87 mm
B17 N, Coordinates, X= 1625.92 mm, Y= -2747.96 mm, Z= -35326.91 mm
B17 F, Coordinates, X= 1854.03 mm, Y= -2976.07 mm, Z= -35366.83 mm

---

From B18 to B19, DZ= -5662.81 mm Bend

COMPONENT DATA (Bend, TIP= B18, Near= B18 N, Far= B18 F):
Elbow, Radius= 228.99 mm, Bend angle= 85.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:
B18, Coordinates, X= 1854.03 mm, Y= -3800.91 mm, Z= -35438.99 mm
B18 N, Coordinates, X= 1854.03 mm, Y= -3591.88 mm, Z= -35420.70 mm
B18 F, Coordinates, X= 1854.03 mm, Y= -3800.91 mm, Z= -35648.82 mm

---

From B19 to B20, DX= 1498.44 mm, DY= 1498.44 mm, DZ= -2119.11 mm,
L= 2996.88 mm Bend

C O M P O N E N T D A T A L I S T I N G

COMPONENT DATA (Bend, TIP= B19, Near= B19 N, Far= B19 F):

Elbow, Radius= 228.98 mm, Bend angle= 45.00 deg, End flanges= 0,
Flex= 7.909, SIFI= 2.56, SIFO= 2.13

POINT DATA:
B19, Coordinates, X= 1854.03 mm, Y= -3800.91 mm, Z= -41101.80 mm
B19 N, Coordinates, X= 1854.03 mm, Y= -3800.91 mm, Z= -41006.95 mm
B19 F, Coordinates, X= 1901.45 mm, Y= -3753.49 mm, Z= -41168.87 mm

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From B20 to B21, DX= 1085.25 mm Bend

COMPONENT DATA (Bend, TIP= B20, Near= B20 N, Far= B20 F):
Elbow, Radius= 228.99 mm, Bend angle= 60.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:
B20, Coordinates, X= 3352.47 mm, Y= -2302.47 mm, Z= -43220.91 mm
B20 N, Coordinates, X= 3286.37 mm, Y= -2368.57 mm, Z= -43127.43 mm
B20 F, Coordinates, X= 3484.68 mm, Y= -2302.47 mm, Z= -43220.91 mm

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From B21 to B22, DX= 505.51 mm, DZ= -505.51 mm, L= 714.90 mm Bend

COMPONENT DATA (Bend, TIP= B21, Near= B21 N, Far= B21 F):
Elbow, Radius= 228.99 mm, Bend angle= 45.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:
B21, Coordinates, X= 4437.72 mm, Y= -2302.47 mm, Z= -43220.91 mm
B21 N, Coordinates, X= 4342.87 mm, Y= -2302.47 mm, Z= -43220.91 mm
B21 F, Coordinates, X= 4504.79 mm, Y= -2302.47 mm, Z= -43287.98 mm

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From B22 to B23, DX= 1559.24 mm Bend

COMPONENT DATA (Bend, TIP= B22, Near= B22 N, Far= B22 F):
Elbow, Radius= 228.99 mm, Bend angle= 45.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:
B22, Coordinates, X= 4943.23 mm, Y= -2302.47 mm, Z= -43726.42 mm
B22 N, Coordinates, X= 4876.16 mm, Y= -2302.47 mm, Z= -43659.35 mm
B22 F, Coordinates, X= 5038.08 mm, Y= -2302.47 mm, Z= -43726.42 mm

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From B23 to B24, DY= -1217.32 mm Bend

COMPONENT DATA (Bend, TIP= B23, Near= B23 N, Far= B23 F):
Elbow, Radius= 228.99 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:
B23, Coordinates, X= 6502.47 mm, Y= -2302.47 mm, Z= -43726.42 mm
B23 N, Coordinates, X= 6273.48 mm, Y= -2302.47 mm, Z= -43726.42 mm

C O M P O N E N T D A T A L I S T I N G

B23 F, Coordinates, X= 6502.47 mm, Y= -2531.46 mm, Z= -43726.42 mm

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From B24 to B25, DY= -75.33 mm, DZ= -281.12 mm, L= 291.04 mm Bend

COMPONENT DATA (Bend, TIP= B24, Near= B24 N, Far= B24 F):
Elbow, Radius= 228.99 mm, Bend angle= 75.00 deg, End flanges= 0,
Flex= 7.908, SIFI= 2.56, SIFO= 2.13

POINT DATA:
B24, Coordinates, X= 6502.47 mm, Y= -3519.79 mm, Z= -43726.42 mm
B24 N, Coordinates, X= 6502.47 mm, Y= -3344.08 mm, Z= -43726.42 mm
B24 F, Coordinates, X= 6502.47 mm, Y= -3565.27 mm, Z= -43896.14 mm

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From B25 to B26, DY= -36.23 mm, DZ= -135.23 mm, L= 140.00 mm Redu

COMPONENT DATA (Reducer):
Length= 140.00 mm, SIF= 1.00

POINT DATA:
B25, Coordinates, X= 6502.47 mm, Y= -3595.12 mm, Z= -44007.54 mm

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From B26 to B27, DY= -45.29 mm, DZ= -169.04 mm, L= 175.00 mm Valv

COMPONENT DATA (Valve):
NS, Rating= 10, Length= 175.00 mm, Weight= 45 kg, Surface factor= 0.00,
End cond= Butt welded, SIF= 1.00, Without taper, Offset= 0.000 mm

PIPE DATA:
Pipe Id= 100MX6.0, Nom Size= 100 mm, OD= 114.30 mm, Sch= 6.0

POINT DATA:
B26, Coordinates, X= 6502.47 mm, Y= -3631.35 mm, Z= -44142.77 mm

---

From B27 to B28, DY= 169.04 mm, DZ= -45.29 mm, L= 175.00 mm Valv

COMPONENT DATA (Valve):
NS, Rating= 10, Length= 175.00 mm, Weight= 45 kg, Surface factor= 0.00,
End cond= Butt welded, SIF= 1.00, Without taper, Offset= 0.000 mm

POINT DATA:
B27, Coordinates, X= 6502.47 mm, Y= -3676.64 mm, Z= -44311.81 mm

SUPPORT DATA:
B27, Anchor, KTX= Rigid, KTY= Rigid, KTZ= Rigid, KRX= Rigid, KRY= Rigid,
KRZ= Rigid

From B28 to B29, DY= 112.66 mm, DZ= -30.19 mm, L= 116.63 mm Run

POINT DATA:
B28, Coordinates, X= 6502.47 mm, Y= -3507.60 mm, Z= -44357.10 mm

C O M P O N E N T D A T A L I S T I N G

From B29 to B30, DZ= -518.63 mm Bend

COMPONENT DATA (Bend, TIP= B29, Near= B29 N, Far= B29 F):
Elbow, Radius= 151.37 mm, Bend angle= 75.00 deg, End flanges= 0,
Flex= 5.327, SIFI= 1.97, SIFO= 1.64

POINT DATA:
B29, Coordinates, X= 6502.47 mm, Y= -3394.94 mm, Z= -44387.29 mm
B29 N, Coordinates, X= 6502.47 mm, Y= -3507.13 mm, Z= -44357.23 mm
B29 F, Coordinates, X= 6502.47 mm, Y= -3394.94 mm, Z= -44503.44 mm

From B30 to B31, DX= 1023.30 mm Bend

COMPONENT DATA (Bend, TIP= B30, Near= B30 N, Far= B30 F):
Elbow, Radius= 151.99 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 5.305, SIFI= 1.96, SIFO= 1.63

POINT DATA:
B30, Coordinates, X= 6502.47 mm, Y= -3394.94 mm, Z= -44905.92 mm
B30 N, Coordinates, X= 6502.47 mm, Y= -3394.94 mm, Z= -44753.93 mm
B30 F, Coordinates, X= 6654.46 mm, Y= -3394.94 mm, Z= -44905.92 mm

*** SEGMENT C , LINE # 79319816

From B02 to C01, DX= 94.86 mm, DY= -94.86 mm, L= 134.15 mm Tee

COMPONENT DATA (Tee Branch, Center= B02):
B16.9 welding tee, SIFI= 2.05, SIFO= 2.40

PIPE DATA:
Pipe Id= 25MMX3.4, Nom Size= 25 mm, OD= 33.400 mm, Sch= 3.4,
Wall Thk= 3.400 mm, Mill= 0.425 mm

POINT DATA:
B02, Coordinates, X= -178.90 mm, Y= -2083.84 mm, Z= -626.73 mm
C01, Coordinates, X= -84.04 mm, Y= -2178.70 mm, Z= -626.73 mm

*** SEGMENT D , LINE # 79319816

From B09 to D01, DY= -119.95 mm Tee

COMPONENT DATA (Tee Branch, Center= B09):
B16.9 welding tee, SIFI= 2.05, SIFO= 2.40

PIPE DATA:
Pipe Id= 50MMX3.9, Nom Size= 50 mm, OD= 60.300 mm, Sch= 3.9,
Wall Thk= 3.900 mm, Mill= 0.487 mm

C O M P O N E N T D A T A L I S T I N G

POINT DATA:
B09, Coordinates, X= -585.02 mm, Y= -352.47 mm, Z= -25420.91 mm
D01, Coordinates, X= -585.02 mm, Y= -472.42 mm, Z= -25420.91 mm

*** SEGMENT E , LINE # 79319816

From E00 to E01, DY= -300.00 mm Run

PIPE DATA:
Pipe Id= 100MX6.0, Nom Size= 100 mm, OD= 114.30 mm, Sch= 6.0,
Wall Thk= 6.000 mm, Mill= 0.750 mm

POINT DATA:
E00, Coordinates, X= 9097.95 mm, Y= -3604.42 mm, Z= -46977.97 mm

SUPPORT DATA:
E00, Anchor, KTX= Rigid, KTY= Rigid, KTZ= Rigid, KRX= Rigid, KRY= Rigid,
KRZ= Rigid

From E01 to E02, DX= -618.17 mm Bend

COMPONENT DATA (Bend, TIP= E01, Near= E01 N, Far= E01 F):
Elbow, Radius= 151.99 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 5.305, SIFI= 1.96, SIFO= 1.63

POINT DATA:
E01, Coordinates, X= 9097.95 mm, Y= -3904.42 mm, Z= -46977.97 mm
E01 N, Coordinates, X= 9097.95 mm, Y= -3752.43 mm, Z= -46977.97 mm
E01 F, Coordinates, X= 8945.96 mm, Y= -3904.42 mm, Z= -46977.97 mm

From E02 to E03, DX= -252.01 mm Tee

COMPONENT DATA (Tee Header, Center= E02):
B16.9 welding tee, SIFI= 1.63, SIFO= 1.83

POINT DATA:
E02, Coordinates, X= 8479.78 mm, Y= -3904.42 mm, Z= -46977.97 mm

From E03 to E04, DZ= 1522.05 mm Bend

COMPONENT DATA (Bend, TIP= E03, Near= E03 N, Far= E03 F):
Elbow, Radius= 151.99 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 5.305, SIFI= 1.96, SIFO= 1.63

POINT DATA:
E03, Coordinates, X= 8227.77 mm, Y= -3904.42 mm, Z= -46977.97 mm
E03 N, Coordinates, X= 8379.76 mm, Y= -3904.42 mm, Z= -46977.97 mm
E03 F, Coordinates, X= 8227.77 mm, Y= -3904.42 mm, Z= -46825.98 mm

C O M P O N E N T D A T A L I S T I N G

From E04 to E05, DX= -550.00 mm, DY= 509.48 mm, L= 749.71 mm Bend

COMPONENT DATA (Bend, TIP= E04, Near= E04 N, Far= E04 F):
Elbow, Radius= 151.99 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 5.305, SIFI= 1.96, SIFO= 1.63

POINT DATA:
E04, Coordinates, X= 8227.77 mm, Y= -3904.42 mm, Z= -45455.92 mm
E04 N, Coordinates, X= 8227.77 mm, Y= -3904.42 mm, Z= -45607.91 mm
E04 F, Coordinates, X= 8116.27 mm, Y= -3801.13 mm, Z= -45455.92 mm

From E05 to E06, DZ= 550.00 mm Bend

COMPONENT DATA (Bend, TIP= E05, Near= E05 N, Far= E05 F):
Elbow, Radius= 151.99 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 5.305, SIFI= 1.96, SIFO= 1.63

POINT DATA:
E05, Coordinates, X= 7677.77 mm, Y= -3394.94 mm, Z= -45455.92 mm
E05 N, Coordinates, X= 7789.27 mm, Y= -3498.23 mm, Z= -45455.92 mm
E05 F, Coordinates, X= 7677.77 mm, Y= -3394.94 mm, Z= -45303.93 mm

From E06 to B31, DX= -152.00 mm Bend

COMPONENT DATA (Bend, TIP= E06, Near= E06 N, Far= E06 F):
Elbow, Radius= 151.99 mm, Bend angle= 90.00 deg, End flanges= 0,
Flex= 5.305, SIFI= 1.96, SIFO= 1.63

POINT DATA:
E06, Coordinates, X= 7677.77 mm, Y= -3394.94 mm, Z= -44905.92 mm
E06 N, Coordinates, X= 7677.77 mm, Y= -3394.94 mm, Z= -45057.91 mm
E06 F, Coordinates, X= 7525.78 mm, Y= -3394.94 mm, Z= -44905.92 mm

*** SEGMENT F , LINE # 79319816

From E02 to F01, DX= 0.01 mm, DY= -106.74 mm, DZ= 9.34 mm, L= 107.15 mm Tee

COMPONENT DATA (Tee Branch, Center= E02):
B16.9 welding tee, SIFI= 1.63, SIFO= 1.83

PIPE DATA:
Pipe Id= 50MMX3.9, Nom Size= 50 mm, OD= 60.300 mm, Sch= 3.9,
Wall Thk= 3.900 mm, Mill= 0.487 mm

POINT DATA:
E02, Coordinates, X= 8479.78 mm, Y= -3904.42 mm, Z= -46977.97 mm
F01, Coordinates, X= 8479.79 mm, Y= -4011.16 mm, Z= -46968.63 mm

C O M P O N E N T D A T A L I S T I N G

Number of points in the system: 117

Weight of Empty Pipes	+	Weight of Contents	=	Total Weight of System
625.1 kg	+	0.0 kg	=	625.1 kg

C O O R D I N A T E S D A T A L I S T I N G

POINT NAME	COORDINATE (mm) X	Y	Z
*** SEGMENT A , LINE # 79319816			
A00	0.00	0.00	0.00
A01	-107.48	107.48	0.00
A02 N	-107.49	107.49	0.00
A02	-269.41	269.41	0.00
A02 F	-431.33	107.49	0.00
A03 N	-517.95	20.87	0.00
A03	-585.02	-46.20	0.00
A03 F	-585.02	-141.05	0.00
A04 N	-585.02	-1582.87	0.00
A04	-585.02	-1677.72	0.00
A04 F	-517.95	-1744.79	0.00
A05	-178.90	-2083.84	0.00
A06 N	160.15	-2422.89	0.00
A06	227.22	-2489.96	0.00
A06 F	322.07	-2489.96	0.00
A07 N	1763.89	-2489.96	0.00
A07	1858.74	-2489.96	0.00
A07 F	1925.81	-2422.89	0.00
A08 N	2012.43	-2336.27	0.00
A08	2174.35	-2174.35	0.00
A08 F	2012.43	-2012.43	0.00
A09	2010.27	-2010.27	0.00
A10	1904.95	-1904.95	0.00
*** SEGMENT B , LINE # 79319816			
A05	-178.90	-2083.84	0.00
B01	-178.90	-2083.84	-184.15
B02	-178.90	-2083.84	-626.73
B03 N	-178.90	-2083.84	-1184.16
B03	-178.90	-2083.84	-1393.99
B03 F	-326.71	-1936.03	-1412.28
B04 N	-518.50	-1744.24	-1436.01
B04	-585.02	-1677.72	-1444.24
B04 F	-585.02	-1583.65	-1452.47
B05 N	-585.02	-561.50	-1541.89
B05	-585.02	-352.47	-1560.18
B05 F	-585.02	-352.47	-1770.01
B06	-585.02	-352.47	-7770.02
B07	-585.02	-352.47	-13770.02
B08	-585.02	-352.47	-19770.02
B09	-585.02	-352.47	-25420.91
B10 N	-585.02	-352.47	-25551.67
B10	-585.02	-352.47	-25683.88
B10 F	-585.02	-466.97	-25749.98
B11 N	-585.02	-2128.08	-26709.03
B11	-585.02	-2242.58	-26775.13
B11 F	-585.02	-2242.58	-26907.34
B12	-585.02	-2242.58	-32907.34
B13 N	-585.02	-2242.58	-34897.23
B13	-585.02	-2242.58	-35126.22
B13 F	-585.02	-2471.57	-35126.22

C O O R D I N A T E S D A T A L I S T I N G

POINT NAME	COORDINATE (mm) X	Y	Z
B14 N	-585.02	-2718.97	-35126.22
B14	-585.02	-2947.96	-35126.22
B14 F	-356.90	-2947.96	-35146.18
B15 N	259.96	-2947.96	-35200.15
B15	354.03	-2947.96	-35208.38
B15 F	420.55	-2881.44	-35216.61
B16 N	487.51	-2814.48	-35224.90
B16	554.03	-2747.96	-35233.13
B16 F	648.10	-2747.96	-35241.36
B17 N	1625.92	-2747.96	-35326.91
B17	1854.03	-2747.96	-35346.87
B17 F	1854.03	-2976.07	-35366.83
B18 N	1854.03	-3591.88	-35420.70
B18	1854.03	-3800.91	-35438.99
B18 F	1854.03	-3800.91	-35648.82
B19 N	1854.03	-3800.91	-41006.95
B19	1854.03	-3800.91	-41101.80
B19 F	1901.45	-3753.49	-41168.87
B20 N	3286.37	-2368.57	-43127.43
B20	3352.47	-2302.47	-43220.91
B20 F	3484.68	-2302.47	-43220.91
B21 N	4342.87	-2302.47	-43220.91
B21	4437.72	-2302.47	-43220.91
B21 F	4504.79	-2302.47	-43287.98
B22 N	4876.16	-2302.47	-43659.35
B22	4943.23	-2302.47	-43726.42
B22 F	5038.08	-2302.47	-43726.42
B23 N	6273.48	-2302.47	-43726.42
B23	6502.47	-2302.47	-43726.42
B23 F	6502.47	-2531.46	-43726.42
B24 N	6502.47	-3344.08	-43726.42
B24	6502.47	-3519.79	-43726.42
B24 F	6502.47	-3565.27	-43896.14
B25	6502.47	-3595.12	-44007.54
B26	6502.47	-3631.35	-44142.77
B27	6502.47	-3676.64	-44311.81
B28	6502.47	-3507.60	-44357.10
B29 N	6502.47	-3507.13	-44357.23
B29	6502.47	-3394.94	-44387.29
B29 F	6502.47	-3394.94	-44503.44
B30 N	6502.47	-3394.94	-44753.93
B30	6502.47	-3394.94	-44905.92
B30 F	6654.46	-3394.94	-44905.92
B31	7525.77	-3394.94	-44905.92
*** SEGMENT C , LINE # 79319816			
B02	-178.90	-2083.84	-626.73
C01	-84.04	-2178.70	-626.73
*** SEGMENT D , LINE # 79319816			
B09	-585.02	-352.47	-25420.91
D01	-585.02	-472.42	-25420.91

C O O R D I N A T E S D A T A L I S T I N G

POINT NAME	COORDINATE (mm) X	Y	Z
*** SEGMENT E , LINE # 79319816			
E00	9097.95	-3604.42	-46977.97
E01 N	9097.95	-3752.43	-46977.97
E01	9097.95	-3904.42	-46977.97
E01 F	8945.96	-3904.42	-46977.97
E02	8479.78	-3904.42	-46977.97
E03 N	8379.76	-3904.42	-46977.97
E03	8227.77	-3904.42	-46977.97
E03 F	8227.77	-3904.42	-46825.98
E04 N	8227.77	-3904.42	-45607.91
E04	8227.77	-3904.42	-45455.92
E04 F	8116.27	-3801.13	-45455.92
E05 N	7789.27	-3498.23	-45455.92
E05	7677.77	-3394.94	-45455.92
E05 F	7677.77	-3394.94	-45303.93
E06 N	7677.77	-3394.94	-45057.91
E06	7677.77	-3394.94	-44905.92
E06 F	7525.78	-3394.94	-44905.92
B31	7525.77	-3394.94	-44905.92
*** SEGMENT F , LINE # 79319816			
E02	8479.78	-3904.42	-46977.97
F01	8479.79	-4011.16	-46968.63

P I P E D A T A L I S T I N G

Pipe ID/ Material	Nom/ Sch	O.D. mm	Thickness (mm) W.Th.	Corr	Mill	Insu	Ling	Spec Grav	Weight (N/m) Pipe	Other	Total	ZL/ ZC
200MX6.0 AL	200 NS	219.10	6.000	0	0.75	0	0	0	107	0	107	1.00 1.00
150MX6.0 AL	150 NS	168.30	6.000	0	0.75	0	0	0	81.22	0	81.22	1.00 1.00
100MX6.0 AL	100 6.0	114.30	6.000	0	0.75	0	0	0	54.19	0	54.19	1.00 1.00
25MMX3.4 AL	25 3.4	33.400	3.400	0	0.43	0	0	0	8.51	0	8.51	1.00 1.00
50MMX3.9 AL	50 3.9	60.300	3.900	0	0.49	0	0	0	18.35	0	18.35	1.00 1.00

M A T E R I A L D A T A L I S T I N G

Material Name	Pipe ID	Density kg/m3	Pois. Ratio	Temper. deg C	Modulus x10^6 N/ Axial	Hoop	Shear	Expans. mm/m
AL	200MX6.0	2707.1	0.30	20.0	0.06899	0.06899	0.02653	
				-196.0	0.07646			-3.8459
AL	150MX6.0	2707.1	0.30	20.0	0.06899	0.06899	0.02653	
				-196.0	0.07646			-3.8459
AL	100MX6.0	2707.1	0.30	20.0	0.06899	0.06899	0.02653	
				-196.0	0.07646			-3.8459
AL	25MMX3.4	2707.1	0.30	20.0	0.06899	0.06899	0.02653	
				-196.0	0.07646			-3.8459
AL	50MMX3.9	2707.1	0.30	20.0	0.06899	0.06899	0.02653	
				-196.0	0.07646			-3.8459

M A T E R I A L A L L O W A B L E D A T A L I S T I N G

Material Name	Pipe ID	Temper. deg C	Allow. N/mm2	Yield N/mm2
AL	200MX6.0	20.0	103.42	0.00
		-196.0	71.00	
AL	150MX6.0	20.0	103.42	0.00
		-196.0	71.00	
AL	100MX6.0	20.0	103.42	0.00
		-196.0	71.00	
AL	25MMX3.4	20.0	103.42	0.00
		-196.0	71.00	
AL	50MMX3.9	20.0	103.42	0.00
		-196.0	71.00	

TEMPERATURE AND PRESSURE DATA

POINT NAME	-----C A S E 1------ PRESS. N/mm2	TEMPER deg C	EXPAN. mm/m	-----C A S E 2------ PRESS. N/mm2	TEMPER deg C	EXPAN. mm/m	-----C A S E 3------ PRESS. N/mm2	TEMPER deg C	EXPAN. mm/m
*** SEGMENT A , LINE # 79319816									
A00	0	-196	-3.846						
A10	0	-196	-3.846						
*** SEGMENT B , LINE # 79319816									
A05	0	-196	-3.846						
B31	0	-196	-3.846						
*** SEGMENT C , LINE # 79319816									
B02	0	-196	-3.846						
C01	0	-196	-3.846						
*** SEGMENT D , LINE # 79319816									
B09	0	-196	-3.846						
D01	0	-196	-3.846						
*** SEGMENT E , LINE # 79319816									
E00	0	-196	-3.846						
B31	0	-196	-3.846						
*** SEGMENT F , LINE # 79319816									
E02	0	-196	-3.846						
F01	0	-196	-3.846						

H O T M O D U L U S (x10^6 N/)

POINT NAME	CASE 1	CASE 2	CASE 3
*** SEGMENT A , LINE # 79319816			
A00	0.07646		
A10	0.07646		
*** SEGMENT B , LINE # 79319816			
A05	0.07646		
B31	0.07646		
*** SEGMENT C , LINE # 79319816			
B02	0.07646		
C01	0.07646		
*** SEGMENT D , LINE # 79319816			
B09	0.07646		
D01	0.07646		
*** SEGMENT E , LINE # 79319816			
E00	0.07646		
B31	0.07646		
*** SEGMENT F , LINE # 79319816			
E02	0.07646		
F01	0.07646		

* Non-standard material

H O T A L L O W A B L E S (N/mm2)

POINT NAME	------C A S E 1------ ALLOW	NOT USED	NOT USED	------C A S E 2------ ALLOW	NOT USED	NOT USED	------C A S E 3------ ALLOW	NOT USED	NOT USED
*** SEGMENT A , LINE # 79319816									
A00	71.00*								
A10	71.00*								
*** SEGMENT B , LINE # 79319816									
A05	71.00*								
B31	71.00*								
*** SEGMENT C , LINE # 79319816									
B02	71.00*								
C01	71.00*								
*** SEGMENT D , LINE # 79319816									
B09	71.00*								
D01	71.00*								
*** SEGMENT E , LINE # 79319816									
E00	71.00*								
B31	71.00*								
*** SEGMENT F , LINE # 79319816									
E02	71.00*								
F01	71.00*								

< User-defined code allowable
* Non-code material

THERMAL ANCHOR MOVEMENTS AND DISPLACEMENTS

POINT NAME	LOAD CASE	DX (mm)	DY (mm)	DZ (mm)	RX (deg)	RY (deg)	RZ (deg)
A00	Thermal 1	-3.70	3.70	-191.10	0.000	0.000	0.000
A10	Thermal 1	3.70	-3.70	-191.10	0.000	0.000	0.000
E00	Thermal 1	1.20	3.40	31.90	0.000	0.000	0.000

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (mm) X	Y	Z	ROTATIONS (deg) X	Y	Z
*** Segment A begin *** Line # 79319816							
A00	T1	-3.700	3.700	-191.100	0.000	0.000	0.000
A01	T1	-3.298	3.273	-191.100	0.000	0.000	0.013
A02 N	T1	-3.298	3.273	-191.100	0.000	0.000	0.013
A02 F	T1	-1.785	2.172	-191.086	-0.004	0.005	0.349
A03 N	T1	-0.912	1.965	-191.072	-0.004	0.005	0.358
A03 F	T1	0.481	2.132	-191.047	-0.008	0.007	0.428
A04 N	T1	10.720	7.665	-190.831	-0.007	0.008	0.333
A04 F	T1	11.082	8.488	-190.828	-0.002	0.010	0.086
A05	T1	10.037	10.043	-190.883	0.001	0.010	0.000
A06 N	T1	8.485	11.091	-190.945	0.001	0.009	-0.085
A06 F	T1	7.662	10.729	-190.968	0.000	0.006	-0.333
A07 N	T1	2.128	0.483	-191.094	0.000	0.004	-0.428
A07 F	T1	1.962	-0.911	-191.101	0.000	0.002	-0.359
A08 N	T1	2.170	-1.785	-191.103	0.000	0.002	-0.349
A08 F	T1	3.273	-3.298	-191.100	0.000	0.000	-0.013
A09	T1	3.282	-3.306	-191.100	0.000	0.000	-0.013
A10	T1	3.700	-3.700	-191.100	0.000	0.000	0.000
*** Segment A end *** Line # 79319816							
*** Segment B begin *** Line # 79319816							
A05	T1	10.037	10.043	-190.883	0.001	0.010	0.000
B01	T1	10.002	10.047	-190.174	0.002	0.011	0.000
B02	T1	9.908	10.073	-188.472	0.005	0.013	0.001
B03 N	T1	9.767	10.136	-186.328	0.008	0.016	0.001
B03 F	T1	10.254	9.622	-185.345	0.023	0.028	0.000
B04 N	T1	10.980	8.893	-185.081	0.024	0.028	0.000

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (mm) X	Y	Z	ROTATIONS (deg) X	Y	Z
B04 F	T1	11.225	8.283	-184.907	0.030	0.031	0.001
B05 N	T1	11.161	4.401	-184.003	0.032	0.035	0.001
B05 F	T1	11.012	3.719	-183.012	0.029	0.038	0.002
B06	T1	6.450	6.243	-159.935	0.018	0.047	0.001
B07	T1	1.677	7.147	-136.858	-0.002	0.042	-0.001
B08	T1	-2.003	5.630	-113.782	-0.029	0.026	-0.003
B09	T1	-3.301	1.270	-92.048	-0.061	-0.001	-0.005
B10 N	T1	-3.297	1.130	-91.545	-0.062	-0.002	-0.005
B10 F	T1	-3.280	1.338	-90.643	-0.074	-0.010	-0.001
B11 N	T1	-3.052	6.435	-84.717	-0.078	-0.024	-0.003
B11 F	T1	-2.954	6.607	-83.799	-0.076	-0.034	0.001
B12	T1	2.762	-1.137	-60.722	-0.073	-0.078	0.005
B13 N	T1	5.753	-3.670	-53.069	-0.073	-0.095	0.006
B13 F	T1	6.206	-3.084	-51.893	-0.074	-0.110	0.013
B14 N	T1	6.264	-2.133	-51.575	-0.073	-0.113	0.013
B14 F	T1	5.486	-1.218	-50.727	-0.077	-0.126	0.016
B15 N	T1	3.234	-1.115	-49.138	-0.075	-0.130	0.016
B15 F	T1	2.635	-1.344	-48.784	-0.072	-0.137	0.017
B16 N	T1	2.378	-1.592	-48.675	-0.072	-0.138	0.017
B16 F	T1	1.780	-1.820	-48.298	-0.069	-0.144	0.018
B17 N	T1	-1.763	-1.619	-45.492	-0.067	-0.146	0.018
B17 F	T1	-2.467	-0.715	-44.500	-0.063	-0.144	0.018
B18 N	T1	-2.134	1.595	-43.623	-0.061	-0.143	0.019
B18 F	T1	-1.500	2.192	-42.543	-0.046	-0.142	0.018
B19 N	T1	11.682	-0.719	-21.935	-0.017	-0.142	0.022
B19 F	T1	11.884	-0.923	-21.204	-0.011	-0.144	0.023

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (mm) X	Y	Z	ROTATIONS (deg) X	Y	Z
B20 N	T1	10.868	-5.952	-10.414	-0.006	-0.138	0.022
B20 F	T1	10.301	-6.143	-9.600	-0.010	-0.130	0.022
B21 N	T1	7.000	-5.823	-7.698	-0.012	-0.124	0.021
B21 F	T1	6.513	-5.780	-7.107	-0.013	-0.111	0.020
B22 N	T1	5.787	-5.740	-4.976	-0.014	-0.106	0.019
B22 F	T1	5.282	-5.705	-4.442	-0.015	-0.090	0.018
B23 N	T1	0.531	-5.333	-2.673	-0.019	-0.073	0.017
B23 F	T1	-0.290	-4.390	-2.391	-0.008	-0.046	0.014
B24 N	T1	-0.099	-1.265	-2.273	-0.008	-0.028	0.013
B24 F	T1	-0.016	-0.425	-1.599	-0.001	-0.006	0.000
B25	T1	-0.005	-0.312	-1.171	-0.001	-0.004	0.000
B26	T1	0.000	-0.174	-0.650	0.000	0.000	0.000
B27	T1	0.000	0.000	0.000	0.000	0.000	0.000
B28	T1	0.000	-0.650	0.175	0.000	0.000	0.000
B29 N	T1	0.000	-0.652	0.175	0.000	-0.001	0.000
B29 F	T1	0.155	-1.027	0.772	0.026	-0.142	-0.015
B30 N	T1	0.907	-0.914	1.738	0.024	-0.208	0.008
B30 F	T1	1.240	-0.782	3.519	0.023	-0.581	0.048
B31	T1	-2.116	0.168	13.421	-0.014	-0.666	0.065
*** Segment B end *** Line # 79319816							
*** Segment C begin *** Line # 79319816							
B02	T1	9.908	10.073	-188.472	0.005	0.013	0.001
C01	T1	9.544	10.439	-188.502	0.005	0.013	0.001
*** Segment C end *** Line # 79319816							
*** Segment D begin *** Line # 79319816							
B09	T1	-3.301	1.270	-92.048	-0.061	-0.001	-0.005

D I S P L A C E M E N T S

Point name	Load combination	TRANSLATIONS (mm) X	Y	Z	ROTATIONS (deg) X	Y	Z
D01	T1	-3.310	1.731	-91.920	-0.061	-0.001	-0.005
*** Segment D end *** Line # 79319816							
*** Segment E begin *** Line # 79319816							
E00	T1	1.200	3.400	31.900	0.000	0.000	0.000
E01 N	T1	1.222	3.969	31.872	0.014	-0.044	0.013
E01 F	T1	1.915	4.406	31.357	0.107	-0.209	0.070
E02	T1	3.711	3.810	29.426	0.112	-0.245	0.072
E03 N	T1	4.096	3.684	28.995	0.113	-0.242	0.070
E03 F	T1	4.200	3.235	27.849	0.104	-0.143	0.048
E04 N	T1	1.052	1.510	23.153	0.036	-0.212	-0.009
E04 F	T1	0.711	1.184	21.750	-0.121	-0.434	-0.014
E05 N	T1	2.059	0.113	18.382	-0.124	-0.493	-0.015
E05 F	T1	1.140	-0.031	16.616	-0.066	-0.524	0.025
E06 N	T1	-1.138	0.221	15.667	-0.053	-0.542	0.035
E06 F	T1	-2.116	0.168	13.421	-0.014	-0.666	0.065
B31	T1	-2.116	0.168	13.421	-0.014	-0.666	0.065
*** Segment E end *** Line # 79319816							
*** Segment F begin *** Line # 79319816							
E02	T1	3.711	3.810	29.426	0.112	-0.245	0.072
F01	T1	3.805	4.202	29.182	0.112	-0.245	0.072
*** Segment F end *** Line # 79319816							

R E S T R A I N T R E A C T I O N S

Point name	Load combination	FORCES (N) X	Y	Z	Result	MOMENTS (Nm) X	Y	Z	Result
A00	Anchor T1	1678	-1678	55	2374	-41	39	1631	1632
A10	Anchor T1	-1682	1681	-4	2378	3	19	-1633	1633
B27	Anchor T1	-797	302	1363	1608	419	-919	481	1119
E00	Anchor T1	801	-305	-1414	1653	453	-825	375	1013

G L O B A L F O R C E S & M O M E N T S

Point name	Load combination	FORCES (N) X	Y	Z	Result	MOMENTS (Nm) X	Y	Z	Result
*** Segment A begin *** Line # 79319816									
A00	T1	-1678	1678	-55	2374	41	-39	-1631	1632
A01	T1	-1678	1678	-55	2374	46	-33	-1631	1632
A02 N	T1	-1678	1678	-55	2374	46	-33	-1631	1632
A02 F	T1	-1678	1678	-55	2374	46	-15	-1087	1088
A03 N	T1	-1678	1678	-55	2374	42	-11	-796	798
A03 F	T1	-1678	1678	-55	2374	33	-7	-412	414
A04 N	T1	-1678	1678	-55	2374	-46	-7	2008	2008
A04 F	T1	-1678	1678	-55	2374	-55	-11	2167	2167
A05 -	T1	-1678	1678	-55	2374	-74	-29	2167	2168
A05 +	T1	-1682	1681	-4	2378	3	28	2170	2171
A06 N	T1	-1682	1681	-4	2378	1	27	2171	2171
A06 F	T1	-1682	1681	-4	2378	1	26	2012	2012
A07 N	T1	-1682	1681	-4	2378	1	20	-411	412
A07 F	T1	-1682	1681	-4	2378	1	19	-796	797
A08 N	T1	-1682	1681	-4	2378	1	19	-1088	1088
A08 F	T1	-1682	1681	-4	2378	3	19	-1633	1633
A09	T1	-1682	1681	-4	2378	3	19	-1633	1633
A10	T1	-1682	1681	-4	2378	3	19	-1633	1633
*** Segment A end *** Line # 79319816									
*** Segment B begin *** Line # 79319816									
A05	T1	4	-3	-51	51	-76	-57	-4	96
B01	T1	4	-3	-51	51	-76	-56	-4	95
B02 -	T1	4	-3	-51	51	-75	-55	-4	93
B02 +	T1	4	-3	-51	51	-75	-55	-4	93
B03 N	T1	4	-3	-51	51	-73	-52	-4	90

G L O B A L F O R C E S & M O M E N T S

Point name	Load combination	FORCES (N) X	Y	Z	Result	MOMENTS (Nm) X	Y	Z	Result
B03 F	T1	4	-3	-51	51	-65	-44	-3	79
B04 N	T1	4	-3	-51	51	-56	-34	-3	65
B04 F	T1	4	-3	-51	51	-47	-31	-2	56
B05 N	T1	4	-3	-51	51	5	-30	2	31
B05 F	T1	4	-3	-51	51	16	-29	3	33
B06	T1	4	-3	-51	51	31	-4	3	32
B07	T1	4	-3	-51	51	47	21	3	51
B08	T1	4	-3	-51	51	62	46	3	78
B09 -	T1	4	-3	-51	51	77	70	3	104
B09 +	T1	4	-3	-51	51	77	70	3	104
B10 N	T1	4	-3	-51	51	77	71	3	105
B10 F	T1	4	-3	-51	51	72	71	2	101
B11 N	T1	4	-3	-51	51	-10	75	-5	76
B11 F	T1	4	-3	-51	51	-15	76	-5	78
B12	T1	4	-3	-51	51	0	101	-5	102
B13 N	T1	4	-3	-51	51	6	110	-5	110
B13 F	T1	4	-3	-51	51	-5	111	-6	111
B14 N	T1	4	-3	-51	51	-18	111	-7	112
B14 F	T1	4	-3	-51	51	-30	99	-8	104
B15 N	T1	4	-3	-51	51	-29	68	-6	75
B15 F	T1	4	-3	-51	51	-26	60	-5	66
B16 N	T1	4	-3	-51	51	-23	57	-5	61
B16 F	T1	4	-3	-51	51	-19	49	-4	53
B17 N	T1	4	-3	-51	51	-19	0	-2	19
B17 F	T1	4	-3	-51	51	-30	-12	-2	33
B18 N	T1	4	-3	-51	51	-61	-12	-5	63

G L O B A L F O R C E S & M O M E N T S

Point name	Load combination	FORCES (N) X	Y	Z	Result	MOMENTS (Nm) X	Y	Z	Result
B18 F	T1	4	-3	-51	51	-71	-11	-6	72
B19 N	T1	4	-3	-51	51	-58	12	-6	59
B19 F	T1	4	-3	-51	51	-55	10	-5	56
B20 N	T1	4	-3	-51	51	20	-52	4	56
B20 F	T1	4	-3	-51	51	24	-61	5	66
B21 N	T1	4	-3	-51	51	24	-105	7	108
B21 F	T1	4	-3	-51	51	24	-113	8	116
B22 N	T1	4	-3	-51	51	25	-130	9	133
B22 F	T1	4	-3	-51	51	25	-138	9	141
B23 N	T1	4	-3	-51	51	25	-201	12	202
B23 F	T1	4	-3	-51	51	14	-212	12	213
B24 N	T1	4	-3	-51	51	-27	-212	8	214
B24 F	T1	4	-3	-51	51	-38	-211	7	215
B25	T1	4	-3	-51	51	-39	-211	7	215
B26	T1	4	-3	-51	51	-41	-210	7	214
B27 -	T1	4	-3	-51	51	-43	-210	7	214
B27 +	T1	801	-305	-1414	1653	-462	709	-474	970
B28	T1	801	-305	-1414	1653	-209	746	-338	845
B29 N	T1	801	-305	-1414	1653	-209	746	-338	845
B29 F	T1	801	-305	-1414	1653	-5	863	-248	898
B30 N	T1	801	-305	-1414	1653	71	1063	-248	1094
B30 F	T1	801	-305	-1414	1653	117	970	-202	998
B31	T1	801	-305	-1414	1653	117	-262	64	294
*** Segment B end *** Line # 79319816									
*** Segment C begin *** Line # 79319816									
B02	T1	0	0	0	0	0	0	0	0

G L O B A L F O R C E S & M O M E N T S

Point name	Load combination	FORCES (N) X	Y	Z	Result	MOMENTS (Nm) X	Y	Z	Result
C01	T1	0	0	0	0	0	0	0	0
*** Segment C end *** Line # 79319816									
*** Segment D begin *** Line # 79319816									
B09	T1	0	0	0	0	0	0	0	0
D01	T1	0	0	0	0	0	0	0	0
*** Segment D end *** Line # 79319816									
*** Segment E begin *** Line # 79319816									
E00	T1	-801	305	1414	1653	-453	825	-375	1013
E01 N	T1	-801	305	1414	1653	-243	825	-257	898
E01 F	T1	-801	305	1414	1653	-29	610	-89	617
E02 -	T1	-801	305	1414	1653	-29	-49	53	78
E02 +	T1	-801	305	1414	1653	-29	-49	53	78
E03 N	T1	-801	305	1414	1653	-29	-191	84	210
E03 F	T1	-801	305	1414	1653	18	-284	130	313
E04 N	T1	-801	305	1414	1653	389	692	130	804
E04 F	T1	-801	305	1414	1653	289	656	81	722
E05 N	T1	-801	305	1414	1653	-139	194	-62	246
E05 F	T1	-801	305	1414	1653	-239	158	-110	307
E06 N	T1	-801	305	1414	1653	-164	355	-110	406
E06 F	T1	-801	305	1414	1653	-117	262	-64	294
B31	T1	-801	305	1414	1653	-117	262	-64	294
*** Segment E end *** Line # 79319816									
*** Segment F begin *** Line # 79319816									
E02	T1	0	0	0	0	0	0	0	0
F01	T1	0	0	0	0	0	0	0	0
*** Segment F end *** Line # 79319816									

ASME B31.3b (2001) CODE COMPLIANCE

Point name	Load combination	(Moments in Nm) In-Pl. Moment	Out-Pl. Moment	Torsion Moment	S.I.F In	S.I.F Out	Eq. no.	Load type	(Stress in N/mm2) Code Stress	Code Allow.
*** Segment A begin *** Line # 79319816										
A00	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	1	1631	56	1.00	1.00	(17)	DISP	8	147
A01	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	9	1631	56	1.00	1.00	(17)	DISP	14	147
A02 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	9	1631	56	1.00	1.00	(17)	DISP	14	147
A02 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	1631	9	56	2.56	2.13	(17)	DISP	35	147
A02 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	1087	44	22	2.56	2.13	(17)	DISP	23	147
A02 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	44	1087	22	1.00	1.00	(17)	DISP	9	147
A03 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	37	796	22	1.00	1.00	(17)	DISP	7	147
A03 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	796	37	22	2.56	2.13	(17)	DISP	17	147
A03 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	412	33	7	2.56	2.13	(17)	DISP	9	147
A03 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	33	412	7	1.00	1.00	(17)	DISP	3	147
A04 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	46	2008	7	1.00	1.00	(17)	DISP	17	147
A04 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	2008	46	7	2.56	2.13	(17)	DISP	43	147

ASME B31.3b (2001) CODE COMPLIANCE

Point name	Load combination	(Moments in Nm) In-Pl. Moment	Out-Pl. Moment	Torsion Moment	S.I.F In	S.I.F Out	Eq. no.	Load type	(Stress in N/mm2) Code Stress	Code Allow.
A04 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	2167	47	32	2.56	2.13	(17)	DISP	46	147
A04 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	47	2167	32	1.00	1.00	(17)	DISP	18	147
A05 -	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.05	2.40	(18)	SUST	0	71
	Cold to T1	73	2167	32	2.05	2.40	(17)	DISP	43	147
A05 +	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.05	2.40	(18)	SUST	0	71
	Cold to T1	22	2170	18	2.05	2.40	(17)	DISP	44	147
A06 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	20	2171	18	1.00	1.00	(17)	DISP	18	147
A06 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	2171	20	18	2.56	2.13	(17)	DISP	46	147
A06 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	2012	26	1	2.56	2.13	(17)	DISP	43	147
A06 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	26	2012	1	1.00	1.00	(17)	DISP	17	147
A07 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	20	411	1	1.00	1.00	(17)	DISP	3	147
A07 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	411	20	1	2.56	2.13	(17)	DISP	9	147
A07 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	796	13	14	2.56	2.13	(17)	DISP	17	147
A07 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	13	796	14	1.00	1.00	(17)	DISP	7	147
A08 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	12	1088	14	1.00	1.00	(17)	DISP	9	147

ASME B31.3b (2001) CODE COMPLIANCE

Point name	Load combination	(Moments in Nm) In-Pl. Moment	Out-Pl. Moment	Torsion Moment	S.I.F In	S.I.F Out	Eq. no.	Load type	(Stress in N/mm2) Code Stress	Code Allow.
A08 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	1088	12	14	2.56	2.13	(17)	DISP	23	147
A08 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	1633	15	11	2.56	2.13	(17)	DISP	35	147
A08 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	15	1633	11	1.00	1.00	(17)	DISP	14	147
A09	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	15	1633	11	1.00	1.00	(17)	DISP	14	147
A10	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	16	1633	11	1.00	1.00	(17)	DISP	8	147
*** Segment A end *** Line # 79319816										
*** Segment B begin *** Line # 79319816										
A05	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.05	2.40	(18)	SUST	0	71
	Cold to T1	95	14	4	2.05	2.40	(17)	DISP	2	147
B01	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	56	76	4	1.00	1.00	(17)	DISP	1	147
B02 -	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.05	2.40	(18)	SUST	0	71
	Cold to T1	92	14	4	2.05	2.40	(17)	DISP	2	147
B02 +	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.05	2.40	(18)	SUST	0	71
	Cold to T1	92	14	4	2.05	2.40	(17)	DISP	2	147
B03 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	52	73	4	1.00	1.00	(17)	DISP	1	147
B03 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	89	15	4	2.56	2.13	(17)	DISP	2	147
B03 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	77	2	15	2.56	2.13	(17)	DISP	2	147

ASME B31.3b (2001) CODE COMPLIANCE

Point name	Load combination	(Moments in Nm) In-Pl. Moment	Out-Pl. Moment	Torsion Moment	S.I.F In	S.I.F Out	Eq. no.	Load type	(Stress in N/mm2) Code Stress	Code Allow.
B03	F+ Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	77	2	15	1.00	1.00	(17)	DISP	1	147
B04	N- Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	63	2	15	1.00	1.00	(17)	DISP	1	147
B04	N+ Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	4	63	15	2.56	2.13	(17)	DISP	1	147
B04	F- Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	3	47	30	2.56	2.13	(17)	DISP	1	147
B04	F+ Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	47	5	30	1.00	1.00	(17)	DISP	0	147
B05	N- Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	5	1	30	1.00	1.00	(17)	DISP	0	147
B05	N+ Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	5	1	30	2.56	2.13	(17)	DISP	0	147
B05	F- Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	16	29	3	2.56	2.13	(17)	DISP	1	147
B05	F+ Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	29	16	3	1.00	1.00	(17)	DISP	0	147
B06	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	4	31	3	1.00	1.00	(17)	DISP	0	147
B07	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	21	47	3	1.00	1.00	(17)	DISP	0	147
B08	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	46	62	3	1.00	1.00	(17)	DISP	1	147
B09	- Max P						(3a)	HOOP	0	71
	Max P	0	0		2.05	2.40	(18)	SUST	0	71
	Cold to T1	77	70	3	2.05	2.40	(17)	DISP	2	147

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Point name	Load combination	(Moments in Nm) In-Pl. Moment	Out-Pl. Moment	Torsion Moment	S.I.F In	S.I.F Out	Eq. no.	Load type	(Stress in N/mm2) Code Stress	Code Allow.
B09 +	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.05	2.40	(18)	SUST	0	71
	Cold to T1	77	70	3	2.05	2.40	(17)	DISP	2	147
B10 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	71	77	3	1.00	1.00	(17)	DISP	1	147
B10 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	77	71	3	2.56	2.13	(17)	DISP	2	147
B10 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	72	34	63	2.56	2.13	(17)	DISP	2	147
B10 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	72	34	63	1.00	1.00	(17)	DISP	1	147
B11 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	10	42	63	1.00	1.00	(17)	DISP	1	147
B11 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	10	42	63	2.56	2.13	(17)	DISP	1	147
B11 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	15	76	5	2.56	2.13	(17)	DISP	1	147
B11 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	76	15	5	1.00	1.00	(17)	DISP	1	147
B12	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	101	0	5	1.00	1.00	(17)	DISP	1	147
B13 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	110	6	5	1.00	1.00	(17)	DISP	1	147
B13 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	6	110	5	2.56	2.13	(17)	DISP	2	147
B13 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	5	6	111	2.56	2.13	(17)	DISP	1	147

ASME B31.3b (2001) CODE COMPLIANCE

Point name	Load combination	(Moments in Nm) In-Pl. Moment	Out-Pl. Moment	Torsion Moment	S.I.F In	S.I.F Out	Eq. no.	Load type	(Stress in N/mm2) Code Stress	Code Allow.
B13 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	5	6	111	1.00	1.00	(17)	DISP	1	147
B14 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	18	7	111	1.00	1.00	(17)	DISP	1	147
B14 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	9	17	111	2.56	2.13	(17)	DISP	1	147
B14 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	10	99	29	2.56	2.13	(17)	DISP	2	147
B14 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	99	10	29	1.00	1.00	(17)	DISP	1	147
B15 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	68	9	29	1.00	1.00	(17)	DISP	1	147
B15 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	6	69	29	2.56	2.13	(17)	DISP	1	147
B15 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	5	61	25	2.56	2.13	(17)	DISP	1	147
B15 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	61	3	25	1.00	1.00	(17)	DISP	1	147
B16 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	56	3	25	1.00	1.00	(17)	DISP	1	147
B16 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	5	56	25	2.56	2.13	(17)	DISP	1	147
B16 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	4	49	19	2.56	2.13	(17)	DISP	1	147
B16 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	49	6	19	1.00	1.00	(17)	DISP	0	147

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Point name	Load combination	In-Pl. Moment (Moments in Nm)	Out-Pl. Moment	Torsion Moment	S.I.F In	S.I.F Out	Eq. no.	Load type	Code Stress (Stress in N/mm2)	Code Allow.
B17 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	0	3	19	1.00	1.00	(17)	DISP	0	147
B17 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.55	2.12	(18)	SUST	0	71
	Cold to T1	3	1	19	2.55	2.12	(17)	DISP	0	147
B17 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.55	2.12	(18)	SUST	0	71
	Cold to T1	4	30	12	2.55	2.12	(17)	DISP	1	147
B17 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	30	1	12	1.00	1.00	(17)	DISP	0	147
B18 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	61	4	12	1.00	1.00	(17)	DISP	1	147
B18 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	61	4	12	2.56	2.13	(17)	DISP	1	147
B18 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	71	11	6	2.56	2.13	(17)	DISP	2	147
B18 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	11	71	6	1.00	1.00	(17)	DISP	1	147
B19 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	12	58	6	1.00	1.00	(17)	DISP	0	147
B19 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	49	32	6	2.56	2.13	(17)	DISP	1	147
B19 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	46	26	19	2.56	2.13	(17)	DISP	1	147
B19 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	46	26	19	1.00	1.00	(17)	DISP	0	147
B20 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	51	13	19	1.00	1.00	(17)	DISP	0	147

ASME B31.3b (2001) CODE COMPLIANCE

Point name	Load combination	In-Pl. Moment (Moments in Nm)	Out-Pl. Moment	Torsion Moment	S.I.F In	S.I.F Out	Eq. no.	Load type	Code Stress (Stress in N/mm2)	Code Allow.
B20 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	40	34	19	2.56	2.13	(17)	DISP	1	147
B20 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	47	40	24	2.56	2.13	(17)	DISP	1	147
B20 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	61	5	24	1.00	1.00	(17)	DISP	1	147
B21 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	105	7	24	1.00	1.00	(17)	DISP	1	147
B21 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	105	7	24	2.56	2.13	(17)	DISP	2	147
B21 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	113	22	12	2.56	2.13	(17)	DISP	2	147
B21 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	113	22	12	1.00	1.00	(17)	DISP	1	147
B22 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	130	24	12	1.00	1.00	(17)	DISP	1	147
B22 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	130	24	12	2.56	2.13	(17)	DISP	3	147
B22 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	138	9	25	2.56	2.13	(17)	DISP	3	147
B22 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	138	9	25	1.00	1.00	(17)	DISP	1	147
B23 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	201	12	25	1.00	1.00	(17)	DISP	2	147
B23 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	12	201	25	2.56	2.13	(17)	DISP	4	147

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Point name	Load combination	(Moments in Nm) In-Pl. Moment	Out-Pl. Moment	Torsion Moment	S.I.F In	S.I.F Out	Eq. no.	Load type	(Stress in N/mm2) Code Stress	Code Allow.
B23 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	12	14	212	2.56	2.13	(17)	DISP	2	147
B23 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	14	12	212	1.00	1.00	(17)	DISP	2	147
B24 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	27	8	212	1.00	1.00	(17)	DISP	2	147
B24 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	27	8	212	2.56	2.13	(17)	DISP	2	147
B24 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.56	2.13	(18)	SUST	0	71
	Cold to T1	38	206	48	2.56	2.13	(17)	DISP	4	147
B24 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	38	206	48	1.00	1.00	(17)	DISP	2	147
B25	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	39	206	48	1.00	1.00	(17)	DISP	2	147
B26	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	41	205	48	1.00	1.00	(17)	DISP	4	147
B28	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	209	132	808	1.00	1.00	(17)	DISP	16	147
B29 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	209	132	808	1.00	1.00	(17)	DISP	16	147
B29 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.97	1.64	(18)	SUST	0	71
	Cold to T1	209	133	808	1.97	1.64	(17)	DISP	18	147
B29 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.97	1.64	(18)	SUST	0	71
	Cold to T1	5	863	248	1.97	1.64	(17)	DISP	27	147
B29 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	863	5	248	1.00	1.00	(17)	DISP	17	147

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Point name	Load combination	(Moments in Nm) In-Pl. Moment	Out-Pl. Moment	Torsion Moment	S.I.F In	S.I.F Out	Eq. no.	Load type	(Stress in N/mm2) Code Stress	Code Allow.
B30 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	1063	71	248	1.00	1.00	(17)	DISP	21	147
B30 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	1063	71	248	1.96	1.63	(17)	DISP	40	147
B30 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	970	202	117	1.96	1.63	(17)	DISP	37	147
B30 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	970	202	117	1.00	1.00	(17)	DISP	19	147
B31	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	262	64	117	1.00	1.00	(17)	DISP	6	147
*** Segment B end *** Line # 79319816										
*** Segment C begin *** Line # 79319816										
B02	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.05	2.40	(18)	SUST	0	71
	Cold to T1	0	0	0	2.05	2.40	(17)	DISP	0	147
C01	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	0	0	0	1.00	1.00	(17)	DISP	0	147
*** Segment C end *** Line # 79319816										
*** Segment D begin *** Line # 79319816										
B09	Max P						(3a)	HOOP	0	71
	Max P	0	0		2.05	2.40	(18)	SUST	0	71
	Cold to T1	0	0	0	2.05	2.40	(17)	DISP	0	147
D01	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	0	0	0	1.00	1.00	(17)	DISP	0	147
*** Segment D end *** Line # 79319816										
*** Segment E begin *** Line # 79319816										
E00	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	453	375	825	1.00	1.00	(17)	DISP	19	147

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Point name	Load combination	(Moments in Nm) In-Pl. Moment	Out-Pl. Moment	Torsion Moment	S.I.F In	S.I.F Out	Eq. no.	Load type	(Stress in N/mm2) Code Stress	Code Allow.
E01 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	243	257	825	1.00	1.00	(17)	DISP	17	147
E01 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	257	243	825	1.96	1.63	(17)	DISP	20	147
E01 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	89	610	29	1.96	1.63	(17)	DISP	19	147
E01 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	610	89	29	1.00	1.00	(17)	DISP	12	147
E02 -	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.63	1.83	(18)	SUST	0	71
	Cold to T1	49	54	29	1.63	1.83	(17)	DISP	2	147
E02 +	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.63	1.83	(18)	SUST	0	71
	Cold to T1	49	54	29	1.63	1.83	(17)	DISP	2	147
E03 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	191	84	29	1.00	1.00	(17)	DISP	4	147
E03 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	191	84	29	1.96	1.63	(17)	DISP	8	147
E03 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	284	18	130	1.96	1.63	(17)	DISP	11	147
E03 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	284	18	130	1.00	1.00	(17)	DISP	6	147
E04 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	692	389	130	1.00	1.00	(17)	DISP	15	147
E04 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	772	185	130	1.96	1.63	(17)	DISP	29	147
E04 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	678	81	234	1.96	1.63	(17)	DISP	26	147

ASME B31.3b (2001) CODE COMPLIANCE

Point name	Load combination	(Moments in Nm) In-Pl. Moment	Out-Pl. Moment	Torsion Moment	S.I.F In	S.I.F Out	Eq. no.	Load type	(Stress in N/mm2) Code Stress	Code Allow.
E04 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	678	81	234	1.00	1.00	(17)	DISP	14	147
E05 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	48	62	234	1.00	1.00	(17)	DISP	5	147
E05 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	48	62	234	1.96	1.63	(17)	DISP	5	147
E05 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	46	282	110	1.96	1.63	(17)	DISP	9	147
E05 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	158	239	110	1.00	1.00	(17)	DISP	6	147
E06 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	355	164	110	1.00	1.00	(17)	DISP	8	147
E06 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	355	164	110	1.96	1.63	(17)	DISP	14	147
E06 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	262	64	117	1.96	1.63	(17)	DISP	10	147
E06 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	262	64	117	1.00	1.00	(17)	DISP	6	147
B31	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	262	64	117	1.00	1.00	(17)	DISP	6	147

*** Segment E end *** Line # 79319816

*** Segment F begin *** Line # 79319816

E02	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.63	1.83	(18)	SUST	0	71
	Cold to T1	0	0	0	1.63	1.83	(17)	DISP	0	147
F01	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	0	0	0	1.00	1.00	(17)	DISP	0	147

*** Segment F end *** Line # 79319816

S Y S T E M S U M M A R Y

Maximum displacements (mm)

Maximum X :	11.884	Point : B19 F	Load Comb.: T1
Maximum Y :	11.091	Point : A06 N	Load Comb.: T1
Maximum Z :	-191.103	Point : A08 N	Load Comb.: T1
Max. total:	191.455	Point : A06 N	Load Comb.: T1

Maximum rotations (deg)

Maximum X :	-0.124	Point : E05 N	Load Comb.: T1
Maximum Y :	-0.666	Point : B31	Load Comb.: T1
Maximum Z :	-0.428	Point : A07 N	Load Comb.: T1
Max. total:	0.669	Point : B31	Load Comb.: T1

Maximum restraint forces (N)

Maximum X :	-1682	Point : A10	Load Comb.: T1
Maximum Y :	1681	Point : A10	Load Comb.: T1
Maximum Z :	-1414	Point : E00	Load Comb.: T1
Max. total:	2378	Point : A10	Load Comb.: T1

Maximum restraint moments (Nm)

Maximum X :	453	Point : E00	Load Comb.: T1
Maximum Y :	-919	Point : B27	Load Comb.: T1
Maximum Z :	-1633	Point : A10	Load Comb.: T1
Max. total:	1633	Point : A10	Load Comb.: T1

S Y S T E M S U M M A R Y

Maximum pipe forces (N)

Maximum X :	-1682	Point : A05	Load Comb.: T1
Maximum Y :	1681	Point : A05	Load Comb.: T1
Maximum Z :	-1414	Point : B28	Load Comb.: T1
Max. total:	2378	Point : A05	Load Comb.: T1

Maximum pipe moments (Nm)

Maximum X :	-462	Point : B27	Load Comb.: T1
Maximum Y :	1063	Point : B30 N	Load Comb.: T1
Maximum Z :	2171	Point : A06 N	Load Comb.: T1
Max. total:	2171	Point : A06 N	Load Comb.: T1

S Y S T E M S U M M A R Y

Maximum displacement stress

Point		: A06 N
Stress	N/mm2	: 46
Allowable	N/mm2	: 147
Ratio		: 0.32
Load combination		: Cold to T1

S Y S T E M S U M M A R Y

Maximum displacement stress ratio

Point		: A06 N
Stress	N/mm2	: 46
Allowable	N/mm2	: 147
Ratio		: 0.32
Load combination		: Cold to T1

* * * The system satisfies ASME B31.3 code requirements * * *
* * * for the selected options * * *