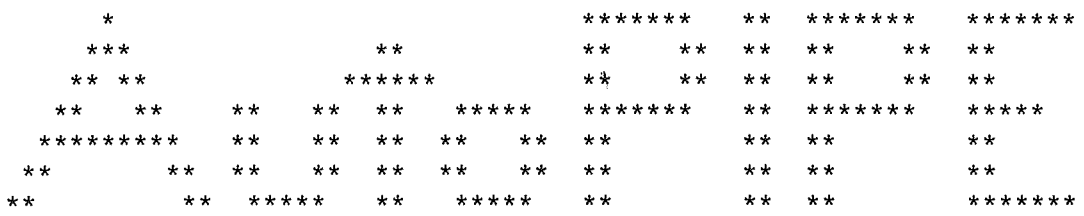

Pipe Stress Analysis and Design Program

Version: 6.20.09

Edition: Win

Developed and Maintained by

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

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

SYSTEM NAME : 79319866_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 : 0

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 # 79319866							
A00	T1	6.100	3.500	-86.700	0.000	0.000	0.000
A01	T1	6.566	3.769	-86.701	-0.001	-0.001	0.000
A02 N	T1	6.566	3.769	-86.701	-0.001	-0.001	0.000
A02 F	T1	7.099	4.052	-86.127	-0.006	-0.015	0.004
A03	T1	12.291	1.080	-63.052	-0.047	-0.077	-0.005
A04 N	T1	17.136	-1.938	-50.577	-0.059	-0.092	-0.009
A04 F	T1	17.361	-1.562	-49.848	-0.062	-0.094	-0.009
A05 N	T1	17.346	1.100	-48.833	-0.064	-0.097	-0.010
A05 F	T1	16.780	1.621	-48.300	-0.067	-0.099	-0.013
A06 N	T1	13.036	1.269	-46.171	-0.072	-0.103	-0.015
A06 F	T1	12.544	0.775	-45.971	-0.072	-0.104	-0.016
A07 N	T1	12.352	-0.576	-46.116	-0.074	-0.106	-0.017
A07 F	T1	12.539	-1.301	-45.641	-0.076	-0.109	-0.018
A08	T1	24.344	-9.683	-22.566	-0.080	-0.109	-0.023
A09 N	T1	30.765	-14.502	-8.439	-0.069	-0.088	-0.026
A09 F	T1	30.926	-14.366	-7.844	-0.066	-0.083	-0.028
A10 N	T1	31.013	-13.550	-6.985	-0.065	-0.080	-0.028
A10 F	T1	30.852	-13.376	-6.298	-0.061	-0.073	-0.029
A11 N	T1	29.215	-14.338	-3.151	-0.056	-0.066	-0.031
A11 F	T1	28.851	-14.438	-2.861	-0.055	-0.061	-0.030
A12	T1	5.133	-17.403	1.528	-0.020	-0.027	-0.020
*** Segment A end *** Line # 79319866							
*** Segment B begin *** Line #							
A12	T1	5.133	-17.403	1.528	-0.020	-0.027	-0.020
B01 N	T1	1.930	-17.676	1.910	-0.016	-0.026	-0.017

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
B01 F	T1	1.309	-17.131	2.010	-0.012	-0.023	-0.012
B02 N	T1	1.064	-10.977	2.252	-0.006	-0.020	-0.006
B02 F	T1	0.465	-10.404	2.315	-0.004	-0.018	-0.004
B03 N	T1	-3.442	-10.446	2.626	0.000	-0.017	-0.001
B03 F	T1	-3.982	-10.441	3.256	0.003	-0.017	0.002
B04 N	T1	-3.927	-10.431	3.971	0.003	-0.017	0.003
B04 F	T1	-3.872	-9.835	4.541	0.007	-0.017	0.005
B05	T1	-3.839	-8.496	4.497	0.008	-0.017	0.006
*** Segment B end *** Line #							
*** Segment C begin *** Line #							
C00	T1	-3.730	-2.090	4.983	0.023	-0.009	0.015
C01	T1	-3.473	-2.117	4.967	0.023	-0.009	0.015
*** Segment C end *** Line #							
*** Segment D begin *** Line #							
D00	T1	-3.465	-2.097	5.094	0.023	-0.009	0.015
C01	T1	-3.473	-2.117	4.967	0.023	-0.009	0.015
D02	T1	-3.480	-2.134	4.854	0.023	-0.009	0.015
D03	T1	-3.495	-2.174	4.601	0.023	-0.009	0.015
D04 N	T1	-3.495	-2.174	4.600	0.023	-0.009	0.015
D04 F	T1	-3.683	-2.282	4.434	0.023	-0.009	0.015
D05 N	T1	-3.933	-2.394	4.469	0.023	-0.009	0.015
D05 F	T1	-4.046	-2.550	4.501	0.023	-0.009	0.015
D06	T1	-4.060	-2.683	4.522	0.023	-0.009	0.015
D07	T1	-4.130	-3.358	4.626	0.023	-0.009	0.015
D08 N	T1	-4.130	-3.358	4.626	0.023	-0.009	0.015
D08 F	T1	-4.051	-3.534	4.646	0.023	-0.009	0.015

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
D09	T1	-3.999	-3.571	4.648	0.023	-0.009	0.015
D10 N	T1	-3.948	-3.608	4.650	0.022	-0.009	0.015
D10 F	T1	-3.868	-3.784	4.665	0.017	-0.013	0.013
D11	T1	-3.881	-3.943	4.683	0.016	-0.014	0.012
D12	T1	-3.903	-4.196	4.711	0.016	-0.014	0.012
D13	T1	-3.976	-5.080	4.807	0.016	-0.014	0.012
D14 N	T1	-3.976	-5.080	4.807	0.016	-0.014	0.012
D14 F	T1	-3.939	-5.366	4.737	0.013	-0.015	0.011
D15 N	T1	-3.758	-5.819	4.423	0.013	-0.015	0.010
D15 F	T1	-3.718	-6.102	4.348	0.010	-0.016	0.008
D16	T1	-3.759	-6.860	4.398	0.009	-0.016	0.008
D17	T1	-3.781	-7.265	4.424	0.009	-0.016	0.008
B05	T1	-3.839	-8.496	4.497	0.008	-0.017	0.006
*** Segment D end *** Line #							
*** Segment E begin *** Line #							
D09	T1	-3.999	-3.571	4.648	0.023	-0.009	0.015
E01	T1	-3.992	-3.619	4.445	0.046	0.018	0.029
E02 N	T1	-3.517	-4.282	3.421	0.133	0.102	0.103
E02 F	T1	-3.530	-4.316	3.250	0.145	0.108	0.114
E03 N	T1	-4.260	-3.647	2.465	0.207	0.100	0.184
E03 F	T1	-4.206	-3.426	2.217	0.217	0.090	0.206
E04 N	T1	-1.677	-1.942	-0.065	0.204	-0.010	0.257
E04 F	T1	-1.380	-2.022	-0.227	0.190	-0.021	0.250
E05 N	T1	-1.343	-2.087	-0.233	0.187	-0.023	0.248
E05 F	T1	-1.093	-2.099	-0.269	0.173	-0.031	0.238
E06 N	T1	0.408	-0.200	-0.080	0.059	-0.028	0.077

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
E06 F	T1	0.347	-0.054	-0.017	0.040	-0.015	0.046
E07	T1	0.119	-0.006	-0.002	0.014	-0.004	0.015
E08	T1	0.000	0.000	0.000	0.000	0.000	0.000

*** Segment E end *** Line #

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	4	-2	-3	6	-32	-52	-3	61
E08	Anchor T1	-4	2	3	6	2	-1	3	3

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 # 79319866									
A00	T1	-4	2	3	6	32	52	3	61
A01	T1	-4	2	3	6	32	51	3	60
A02 N	T1	-4	2	3	6	32	51	3	60
A02 F	T1	-4	2	3	6	32	50	4	60
A03	T1	-4	2	3	6	17	24	4	30
A04 N	T1	-4	2	3	6	9	10	4	14
A04 F	T1	-4	2	3	6	9	10	4	14
A05 N	T1	-4	2	3	6	12	9	7	17
A05 F	T1	-4	2	3	6	12	10	8	17
A06 N	T1	-4	2	3	6	12	13	5	18
A06 F	T1	-4	2	3	6	11	13	4	18
A07 N	T1	-4	2	3	6	10	14	3	17
A07 F	T1	-4	2	3	6	9	13	2	16
A08	T1	-4	2	3	6	-6	-13	2	14
A09 N	T1	-4	2	3	6	-15	-29	2	32
A09 F	T1	-4	2	3	6	-15	-29	2	33
A10 N	T1	-4	2	3	6	-14	-30	3	33
A10 F	T1	-4	2	3	6	-14	-30	4	33
A11 N	T1	-4	2	3	6	-16	-30	2	34
A11 F	T1	-4	2	3	6	-16	-30	2	34
A12	T1	-4	2	3	6	-16	-9	-13	23
*** Segment A end *** Line # 79319866									
*** Segment B begin *** Line #									
A12	T1	-4	2	3	6	-16	-9	-13	23
B01 N	T1	-4	2	3	6	-16	-6	-16	23

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
B01 F	T1	-4	2	3	6	-15	-5	-15	22
B02 N	T1	-4	2	3	6	-10	-5	-8	14
B02 F	T1	-4	2	3	6	-9	-5	-8	13
B03 N	T1	-4	2	3	6	-9	-1	-11	14
B03 F	T1	-4	2	3	6	-10	-1	-11	15
B04 N	T1	-4	2	3	6	-10	-2	-11	15
B04 F	T1	-4	2	3	6	-10	-3	-10	15
B05	T1	-4	2	3	6	-9	-3	-9	13
*** Segment B end *** Line #									
*** Segment C begin *** Line #									
C00	T1	0	0	0	0	0	0	0	0
C01	T1	0	0	0	0	0	0	0	0
*** Segment C end *** Line #									
*** Segment D begin *** Line #									
D00	T1	0	0	0	0	0	0	0	0
C01 -	T1	0	0	0	0	0	0	0	0
C01 +	T1	0	0	0	0	0	0	0	0
D02	T1	0	0	0	0	0	0	0	0
D03	T1	0	0	0	0	0	0	0	0
D04 N	T1	0	0	0	0	0	0	0	0
D04 F	T1	0	0	0	0	0	0	0	0
D05 N	T1	0	0	0	0	0	0	0	0
D05 F	T1	0	0	0	0	0	0	0	0
D06	T1	0	0	0	0	0	0	0	0
D07	T1	0	0	0	0	0	0	0	0
D08 N	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
D08 F	T1	0	0	0	0	0	0	0	0
D09 -	T1	0	0	0	0	0	0	0	0
D09 +	T1	4	-2	-3	6	2	3	1	4
D10 N	T1	4	-2	-3	6	3	3	1	4
D10 F	T1	4	-2	-3	6	3	3	1	4
D11	T1	4	-2	-3	6	3	3	2	5
D12	T1	4	-2	-3	6	3	3	2	5
D13	T1	4	-2	-3	6	5	3	4	7
D14 N	T1	4	-2	-3	6	5	3	4	7
D14 F	T1	4	-2	-3	6	5	3	4	7
D15 N	T1	4	-2	-3	6	5	3	4	7
D15 F	T1	4	-2	-3	6	5	3	5	8
D16	T1	4	-2	-3	6	6	3	6	9
D17	T1	4	-2	-3	6	7	3	7	10
B05	T1	4	-2	-3	6	9	3	9	13
*** Segment D end *** Line #									
*** Segment E begin *** Line #									
D09	T1	-4	2	3	6	-2	-3	-1	4
E01	T1	-4	2	3	6	-2	-3	-1	4
E02 N	T1	-4	2	3	6	-1	-1	-1	2
E02 F	T1	-4	2	3	6	-1	-1	-1	2
E03 N	T1	-4	2	3	6	-1	1	-2	2
E03 F	T1	-4	2	3	6	-1	1	-2	2
E04 N	T1	-4	2	3	6	1	1	1	2
E04 F	T1	-4	2	3	6	1	1	1	2
E05 N	T1	-4	2	3	6	1	1	1	2

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
E05 F	T1	-4	2	3	6	1	1	1	2
E06 N	T1	-4	2	3	6	2	-1	3	4
E06 F	T1	-4	2	3	6	2	-1	3	4
E07	T1	-4	2	3	6	2	-1	3	3
E08	T1	-4	2	3	6	2	-1	3	3

*** Segment E end *** Line #

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.
*** Segment A begin *** Line # 79319866										
A00	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	29	3	53	1.00	1.00	(17)	DISP	1	147
A01	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	28	3	53	1.00	1.00	(17)	DISP	1	147
A02 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	28	3	53	1.00	1.00	(17)	DISP	1	147
A02 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	28	3	53	1.96	1.63	(17)	DISP	1	147
A02 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	27	53	4	1.96	1.63	(17)	DISP	2	147
A02 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	50	32	4	1.00	1.00	(17)	DISP	1	147
A03	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	24	17	4	1.00	1.00	(17)	DISP	1	147
A04 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	10	9	4	1.00	1.00	(17)	DISP	0	147
A04 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	9	10	4	1.96	1.63	(17)	DISP	0	147
A04 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	9	4	10	1.96	1.63	(17)	DISP	0	147
A04 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	9	4	10	1.00	1.00	(17)	DISP	0	147
A05 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	12	7	10	1.00	1.00	(17)	DISP	0	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.	(Stress in N/mm2) Load type	Code Stress	Code Allow.
A05 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.95	1.63	(18)	SUST	0	71
	Cold to T1	8	11	10	1.95	1.63	(17)	DISP	0	147
A05 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.95	1.63	(18)	SUST	0	71
	Cold to T1	8	11	11	1.95	1.63	(17)	DISP	0	147
A05 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	10	9	11	1.00	1.00	(17)	DISP	0	147
A06 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	13	6	11	1.00	1.00	(17)	DISP	0	147
A06 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	7	13	11	1.96	1.63	(17)	DISP	1	147
A06 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	6	7	15	1.96	1.63	(17)	DISP	0	147
A06 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	8	6	15	1.00	1.00	(17)	DISP	0	147
A07 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	6	4	15	1.00	1.00	(17)	DISP	0	147
A07 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	6	4	15	1.96	1.63	(17)	DISP	0	147
A07 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	6	15	2	1.96	1.63	(17)	DISP	1	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	9	2	1.00	1.00	(17)	DISP	0	147
A08	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	13	6	2	1.00	1.00	(17)	DISP	0	147
A09 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	29	15	2	1.00	1.00	(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.
A09 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	15	29	2	1.96	1.63	(17)	DISP	1	147
A09 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	15	17	24	1.96	1.63	(17)	DISP	1	147
A09 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	15	17	24	1.00	1.00	(17)	DISP	1	147
A10 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	14	18	24	1.00	1.00	(17)	DISP	1	147
A10 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	4	22	24	1.96	1.63	(17)	DISP	1	147
A10 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	4	31	13	1.96	1.63	(17)	DISP	1	147
A10 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	30	7	13	1.00	1.00	(17)	DISP	1	147
A11 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	30	10	13	1.00	1.00	(17)	DISP	1	147
A11 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	30	10	13	1.96	1.63	(17)	DISP	1	147
A11 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	30	2	16	1.96	1.63	(17)	DISP	1	147
A11 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	30	2	16	1.00	1.00	(17)	DISP	1	147
A12	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	9	13	16	1.00	1.00	(17)	DISP	0	147

*** Segment A end *** Line # 79319866

*** Segment B begin *** Line #

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.	(Stress in N/mm2) Load type	Code Stress	Code Allow.
A12	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	9	13	16	1.00	1.00	(17)	DISP	0	147
B01 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	6	16	16	1.00	1.00	(17)	DISP	0	147
B01 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	16	6	16	1.96	1.63	(17)	DISP	1	147
B01 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	15	15	5	1.96	1.63	(17)	DISP	1	147
B01 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	15	15	5	1.00	1.00	(17)	DISP	0	147
B02 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	10	8	5	1.00	1.00	(17)	DISP	0	147
B02 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	8	10	5	1.96	1.63	(17)	DISP	0	147
B02 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	8	5	9	1.96	1.63	(17)	DISP	0	147
B02 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	5	8	9	1.00	1.00	(17)	DISP	0	147
B03 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	1	11	9	1.00	1.00	(17)	DISP	0	147
B03 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	1	11	9	1.96	1.63	(17)	DISP	0	147
B03 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	1	10	11	1.96	1.63	(17)	DISP	0	147
B03 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	1	10	11	1.00	1.00	(17)	DISP	0	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.
B04 N-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	2	10	11	1.00	1.00	(17)	DISP	0	147
B04 N+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	10	2	11	1.96	1.63	(17)	DISP	0	147
B04 F-	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.96	1.63	(18)	SUST	0	71
	Cold to T1	10	10	3	1.96	1.63	(17)	DISP	0	147
B04 F+	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	10	10	3	1.00	1.00	(17)	DISP	0	147
B05	Max P						(3a)	HOOP	0	71
	Max P	0	0		1.00	1.00	(18)	SUST	0	71
	Cold to T1	9	9	3	1.00	1.00	(17)	DISP	0	147
*** Segment B end *** Line #										
*** Segment C begin *** Line #										
*** Segment C end *** Line #										
*** Segment D begin *** Line #										
D00	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	0	0	0	1.00	1.00	(17)	DISP	0	165
C01 -	Max P						(3a)	HOOP	0	103
	Max P	0	0		2.21	2.62	(18)	SUST	0	103
	Cold to T1	0	0	0	2.21	2.62	(17)	DISP	0	165
C01 +	Max P						(3a)	HOOP	0	103
	Max P	0	0		2.21	2.62	(18)	SUST	0	103
	Cold to T1	0	0	0	2.21	2.62	(17)	DISP	0	165
D02	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	0	0	0	1.00	1.00	(17)	DISP	0	165
D03	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	0	0	0	1.00	1.00	(17)	DISP	0	165
D04 N-	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	0	0	0	1.00	1.00	(17)	DISP	0	165

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.
D04 N+	Max P						(3a)	HOOP	0	103
	Max P	0	0		2.17	1.81	(18)	SUST	0	103
	Cold to T1	0	0	0	2.17	1.81	(17)	DISP	0	165
D04 F-	Max P						(3a)	HOOP	0	103
	Max P	0	0		2.17	1.81	(18)	SUST	0	103
	Cold to T1	0	0	0	2.17	1.81	(17)	DISP	0	165
D04 F+	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	0	0	0	1.00	1.00	(17)	DISP	0	165
D05 N-	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	0	0	0	1.00	1.00	(17)	DISP	0	165
D05 N+	Max P						(3a)	HOOP	0	103
	Max P	0	0		2.17	1.81	(18)	SUST	0	103
	Cold to T1	0	0	0	2.17	1.81	(17)	DISP	0	165
D05 F-	Max P						(3a)	HOOP	0	103
	Max P	0	0		2.17	1.81	(18)	SUST	0	103
	Cold to T1	0	0	0	2.17	1.81	(17)	DISP	0	165
D05 F+	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	0	0	0	1.00	1.00	(17)	DISP	0	165
D06	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	0	0	0	1.00	1.00	(17)	DISP	0	165
D07	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	0	0	0	1.00	1.00	(17)	DISP	0	165
D08 N-	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	0	0	0	1.00	1.00	(17)	DISP	0	165
D08 N+	Max P						(3a)	HOOP	0	103
	Max P	0	0		2.17	1.81	(18)	SUST	0	103
	Cold to T1	0	0	0	2.17	1.81	(17)	DISP	0	165
D08 F-	Max P						(3a)	HOOP	0	103
	Max P	0	0		2.17	1.81	(18)	SUST	0	103
	Cold to T1	0	0	0	2.17	1.81	(17)	DISP	0	165
D08 F+	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	0	0	0	1.00	1.00	(17)	DISP	0	165

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.	(Stress in N/mm2) Load type	Code Stress	Code Allow.
D09 -	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.71	1.95	(18)	SUST	0	103
	Cold to T1	0	0	0	1.71	1.95	(17)	DISP	0	165
D09 +	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.71	1.95	(18)	SUST	0	103
	Cold to T1	4	1	1	1.71	1.95	(17)	DISP	1	165
D10 N-	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	4	1	1	1.00	1.00	(17)	DISP	1	165
D10 N+	Max P						(3a)	HOOP	0	103
	Max P	0	0		2.17	1.81	(18)	SUST	0	103
	Cold to T1	1	4	1	2.17	1.81	(17)	DISP	1	165
D10 F-	Max P						(3a)	HOOP	0	103
	Max P	0	0		2.17	1.81	(18)	SUST	0	103
	Cold to T1	1	3	3	2.17	1.81	(17)	DISP	1	165
D10 F+	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	3	1	3	1.00	1.00	(17)	DISP	1	165
D11	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	3	2	3	1.00	1.00	(17)	DISP	1	165
D12	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	3	2	3	1.00	1.00	(17)	DISP	0	165
D13	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	5	4	3	1.00	1.00	(17)	DISP	0	165
D14 N-	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	5	4	3	1.00	1.00	(17)	DISP	0	165
D14 N+	Max P						(3a)	HOOP	0	103
	Max P	0	0		2.84	2.36	(18)	SUST	0	103
	Cold to T1	6	0	3	2.84	2.36	(17)	DISP	0	165
D14 F-	Max P						(3a)	HOOP	0	103
	Max P	0	0		2.84	2.36	(18)	SUST	0	103
	Cold to T1	6	2	2	2.84	2.36	(17)	DISP	1	165
D14 F+	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	6	3	2	1.00	1.00	(17)	DISP	0	165

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.	(Stress in N/mm2) Load type	Code Stress	Code Allow.
D15 N-	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	6	4	2	1.00	1.00	(17)	DISP	0	165
D15 N+	Max P						(3a)	HOOP	0	103
	Max P	0	0		2.84	2.36	(18)	SUST	0	103
	Cold to T1	7	2	2	2.84	2.36	(17)	DISP	1	165
D15 F-	Max P						(3a)	HOOP	0	103
	Max P	0	0		2.84	2.36	(18)	SUST	0	103
	Cold to T1	7	1	3	2.84	2.36	(17)	DISP	1	165
D15 F+	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	5	5	3	1.00	1.00	(17)	DISP	0	165
D16	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	6	6	3	1.00	1.00	(17)	DISP	0	165
D17	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	7	7	3	1.00	1.00	(17)	DISP	0	165
B05	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	9	9	3	1.00	1.00	(17)	DISP	0	165
*** Segment D end *** Line #										
*** Segment E begin *** Line #										
D09	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.71	1.95	(18)	SUST	0	103
	Cold to T1	4	1	1	1.71	1.95	(17)	DISP	8	165
E01	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	3	2	1	1.00	1.00	(17)	DISP	6	165
E02 N-	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	1	1	1	1.00	1.00	(17)	DISP	3	165
E02 N+	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	1	1	1	1.00	1.00	(17)	DISP	3	165
E02 F-	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	1	1	1	1.00	1.00	(17)	DISP	3	165

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.
E02 F+	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	1	1	1	1.00	1.00	(17)	DISP	3	165
E03 N-	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	1	2	1	1.00	1.00	(17)	DISP	4	165
E03 N+	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	2	1	1	1.00	1.00	(17)	DISP	4	165
E03 F-	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	2	1	1	1.00	1.00	(17)	DISP	4	165
E03 F+	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	1	2	1	1.00	1.00	(17)	DISP	4	165
E04 N-	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	1	1	1	1.00	1.00	(17)	DISP	3	165
E04 N+	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	1	1	1	1.00	1.00	(17)	DISP	3	165
E04 F-	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	1	1	1	1.00	1.00	(17)	DISP	3	165
E04 F+	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	1	1	1	1.00	1.00	(17)	DISP	3	165
E05 N-	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	1	1	1	1.00	1.00	(17)	DISP	3	165
E05 N+	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	0	1	1	1.00	1.00	(17)	DISP	3	165
E05 F-	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	0	1	1	1.00	1.00	(17)	DISP	3	165
E05 F+	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	1	0	1	1.00	1.00	(17)	DISP	3	165

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.
E06 N-	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	2	3	1	1.00	1.00	(17)	DISP	6	165
E06 N+	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	3	2	1	1.00	1.00	(17)	DISP	6	165
E06 F-	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	3	1	2	1.00	1.00	(17)	DISP	6	165
E06 F+	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	1	3	2	1.00	1.00	(17)	DISP	6	165
E07	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	1	3	2	1.00	1.00	(17)	DISP	5	165
E08	Max P						(3a)	HOOP	0	103
	Max P	0	0		1.00	1.00	(18)	SUST	0	103
	Cold to T1	1	3	2	1.00	1.00	(17)	DISP	5	165

*** Segment E end *** Line #

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

Maximum displacements (mm)

Maximum X :	31.013	Point : A10 N	Load Comb.: T1
Maximum Y :	-17.676	Point : B01 N	Load Comb.: T1
Maximum Z :	-86.701	Point : A01	Load Comb.: T1
Max. total:	87.031	Point : A01	Load Comb.: T1

Maximum rotations (deg)

Maximum X :	0.217	Point : E03 F	Load Comb.: T1
Maximum Y :	-0.109	Point : A08	Load Comb.: T1
Maximum Z :	0.257	Point : E04 N	Load Comb.: T1
Max. total:	0.328	Point : E04 N	Load Comb.: T1

Maximum restraint forces (N)

Maximum X :	4	Point : A00	Load Comb.: T1
Maximum Y :	2	Point : E08	Load Comb.: T1
Maximum Z :	-3	Point : A00	Load Comb.: T1
Max. total:	6	Point : A00	Load Comb.: T1

Maximum restraint moments (Nm)

Maximum X :	-32	Point : A00	Load Comb.: T1
Maximum Y :	-52	Point : A00	Load Comb.: T1
Maximum Z :	3	Point : E08	Load Comb.: T1
Max. total:	61	Point : A00	Load Comb.: T1

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

Maximum pipe forces (N)

Maximum X :	-4	Point : A00	Load Comb.: T1
Maximum Y :	2	Point : A01	Load Comb.: T1
Maximum Z :	3	Point : A01	Load Comb.: T1
Max. total:	6	Point : A01	Load Comb.: T1

Maximum pipe moments (Nm)

Maximum X :	32	Point : A02 N	Load Comb.: T1
Maximum Y :	52	Point : A00	Load Comb.: T1
Maximum Z :	-16	Point : B01 N	Load Comb.: T1
Max. total:	61	Point : A00	Load Comb.: T1

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

Maximum displacement stress

Point		: D09
Stress	N/mm2	: 8
Allowable	N/mm2	: 165
Ratio		: 0.05
Load combination		: Cold to T1

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

Maximum displacement stress ratio

Point		: D09
Stress	N/mm2	: 8
Allowable	N/mm2	: 165
Ratio		: 0.05
Load combination		: Cold to T1

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