Auftrag 9050300 Datum 21.06.05 11:36:01
ASU Kosice N0. 9
System: KO 07c

CCC ********** CCC
CCC Spannungsanalyse CCC
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Spannungsnachweise nach PRESSURE PIPING ASME B31.3 Stand 2002

Automatische Ermittlung der zul. Spannung nach folgenden Regeln:

Die zulaessigen Spannungen Sh und Sa werden entweder vom Programm in Anlehnung an ASME B31.3 Art. 302.3
mit den Festigkeitswerten der Werkstoffdatei ermittelt oder direkt der Werkstoffdatei entnommen, falls ein ASME/ASTM-Werkstoff vorliegt. Die im ET-Satz (RR-Aufgabe) vorgegebenen zulaessigen Spannungen haben jedoch Vorrang.

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Sc = min (Rm\RT\min/3.0 , Rp0.2\RT\min/1.5)
Fuer ferritische Werkstoffe:
Sh = min (Sc , Rm\T\min/3.0 , Rp0.2\T\min/1.5 ,
          Rm\100000\mitt/1.5 , 0.8*Rm\100000\min)
Fuer austenitische Werkstoffe:
Sh = min (Sc , Rp1.0\T\min/1.5 ,
          Rm\100000\mitt/1.5 , 0.8*Rm\100000\min)
Sa = f * (1.25*Sc + 0.25*Sh)
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Rm\RT\min	=Zugfestigkeit 20 Grad C Mindestw.	in N/mm^2
Rm\T\min	=Zugfestigkeit Berechn.-T. Mindestwert	in N/mm^2
Rp02\RT\min	=0.2% Streckgrenze 20 Grad C Mindestw.	in N/mm^2
Rp02\T\min	=0.2% Streckgrenze Berechn.-T. Mindestw.	in N/mm^2
Rp1.0\T\min	=1.0% Streckgrenze Berechn.-T. Mindestw.	in N/mm^2
Rm\100000\mitt	=Zeitstandsfestw. 100000h Mittelwert	in N/mm^2
Rm\100000\min	=Zeitstandsfestw. 100000h Mindestwert	in N/mm^2

Erlaeuterungen:

Bei austenit. Staehlen mit einem Verhaeltnis von Streckgrenze/Zugfestigkeit bei 20 Grad C <= 0.5 wird mit Werten der 1% Streckgrenze gerechnet. Dieser, in deutschen Regelwerken ueblicherweise verwendete Wert zur Ermittlung der zul.Spannung fuer Austenite (/1.5), ersetzt den Wert "90% der Steckgrenze bei Temperatur" aus ASME B31.3 (303.3.2 d(3))

Falls Rm\T\min nicht vorliegt, werden Naeherungsformeln eingesetzt.
Fuer ferritische Werkstoffe:
Rm\T\min = Rm\RT\min * (Rp02\RT\min + Rp02\T\min) / (2 * Rp02\RT\min) .

Der Faktor f (von Lastwechselzahl abhaengiger Spannungs-Reduktionsfaktor) kann ueber den SPI-Datenatz eingegeben werden. (SPI .... F=f)

ANSI B31.3		Werkstoff: X6CRNITI1810			
Materialkennwert	ZUGF	RP02 RP1P	RM1H RM2H	EMOD AFAT	
Quelle	DIN17458	DIN17458	DIN17458	SEW 310 I	
Ausgabe	07/1985	07/1985	07/1985	08/1997	
1.4541 nach DIN 17458 fuer warmgeformte / nahtlose Rohre					
1.4541 enthaelt d. Kennwerte fuer nahtlose warmgeformte Rohr und fuer weiterverarbeitete Bauteile nach DIN 17458, Fuer (K)altverformte / (G)eschweisste Rohre sind die in 1.4541KG enthaltenen erhoehten Werte nach DIN 17457 zulaessi Der Zeitstandswert fuer 100000h wurde extrapoliert.					
AuslegungstempGR C	-200.000				
Betriebstemp. GR C	-200.000				
E-Mod kalt kN/mm^2	197.00				
E-Mod warm kN/mm^2	206.00				
Wanddicken mm	0- 50				
in N/mm^2					
Rm\RT\min	460.00				
Rp0.2\RT\min	180.00				
Rp1.0\T\min	215.00				
Rm\100000\mitt	-.-				
Rm\100000\min	-.-				
Rm\RT\min/3.0	153.33				
Rp0.2\RT\min/1.5	120.00				
Sc	120.00				
Rp1.0\T\min /1.5	143.33				
Rm\100000\mitt/1.5	-.-				
0.8*Rm\100000\min	-.-				
Sh	120.00				
Sa	180.00				

Den Spannungsnachweisen liegen folgende Lastfaelle zugrunde :

Lf-Datei	Lf-Feld	Lf-Bezeichnung	erstellt am:
Gew1.erg	G1	Gewicht	21.06.05 11:35:52
Temp1.erg	T1	Betrieb1	21.06.05 11:35:53
Wind1.erg	W1	Wind1-X	21.06.05 11:35:55
Wind1.erg	W2	Wind1-Y	21.06.05 11:35:55

Gedruckte Querschnittsdaten sind Nettowerte.

Es werden Toleranzeingaben beruecksichtigt fuer :
Druck-Spannungsanteile S(P)
Momenten-Spannungsanteile in SL, SOL

U E B E R L A G E R U N G S V O R S C H R I F T

Lf-Feld TMP1	Lastf. Betrie.-Gewich.1 = ARITHMET aus:			
	Lf-Feld T1	Lastf. Betrieb1	*	1.00
	+ Lf-Feld G1	Lastf. Gewicht	*	-1.00
Lf-Feld TRANGE	Lastf. Range	= RANGE aus:		
	Lf-Feld TMP1	Lastf. Betrie.-Gewich.1	*	1.00
Lf-Feld W-G_21	Lastf. Wind1-X-Gew	= ARITHMET aus:		
	Lf-Feld W1	Lastf. Wind1-X	*	1.00
	+ Lf-Feld G1	Lastf. Gewicht	*	-1.00
Lf-Feld W-G_22	Lastf. Wind1-Y-Gew	= ARITHMET aus:		
	Lf-Feld W2	Lastf. Wind1-Y	*	1.00
	+ Lf-Feld G1	Lastf. Gewicht	*	-1.00
Lf-Feld W_RMS2	Lastf. Wind1-XY	= RMS aus:		
	Lf-Feld W-G_21	Lastf. Wind1-X-Gew	*	1.00
	+ Lf-Feld W-G_22	Lastf. Wind1-Y-Gew	*	1.00

Angeforderte GLEICHUNGEN:

ANSI B31.3 Nachweis 01 SL = SLP+QXL/A+SQRT(ii*MiL^2+io*MoL^2)/Z < Sh
P aus ET-Satz (Ausleg.Druck)
Ma aus Lastfall Gewicht
Sh aus MATDAT errechnet oder aus ET-Satz Faktor = 1.00

ANSI B31.3 Nachweis 02 SE =SQRT(ii*MiE^2+io*MoE^2+MT^2)/Z < SA+f*(Sh-SL)
P aus ET-Satz (Ausleg.Druck)
Ma aus Lastfall Gewicht
Mc aus Lastfall Range
Sh aus MATDAT errechnet oder aus ET-Satz Faktor = 1.00
Sa aus MATDAT errechnet oder aus ET-Satz Faktor = 1.00
Ermuedungsfaktor f = 1.00
P,Ma fuer die Ermittlung von SL in Gleichung SE
Mc = Mc * E-MODkalt / E-MODwarm

ANSI B31.3 Nachweis 03 SOL = SL+QXO/A+SQRT(ii*MiO^2+io*MoO^2)/Z < k*Sh
P aus ET-Satz (Ausleg.Druck)
Ma aus Lastfall Gewicht
Mb aus Lastfall Wind1-XY
Sh aus MATDAT errechnet oder aus ET-Satz Faktor = 1.33

Pkt 50 Strg 6 v Da= 60.3 mm s= 1.0 mm (TWA) T-Stck Weld.,Aufsw
Strg 6 n Da= 60.3 mm s= 1.0 mm ii= 2.4 io= 2.4
Strg 4 n Da= 21.3 mm s= 0.6 mm

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	57.3	0.000	0.000	0.043	38.2	95.6	120.0	80
01 SL n	40.0	57.3	0.000	0.000	0.043	38.2	95.6	120.0	80
01 SL n	40.0	32.5	0.000	0.000	0.000	0.9	33.4	120.0	28
02 SE v	SL=	95.6	0.000	0.134	0.002	60.1	60.1	204.4	29
02 SE n	SL=	95.6	0.000	0.134	0.002	60.1	60.1	204.4	29
02 SE n	SL=	33.4	0.000	0.000	0.000	0.0	0.0	266.6	0
03 SOLv	SL=	95.6	0.084	0.035	0.002	31.8	127.4	159.6	80
03 SOLn	SL=	95.6	0.084	0.035	0.002	31.8	127.4	159.6	80
03 SOLn	SL=	33.4	0.000	0.000	0.000	0.0	33.4	159.6	21

Pkt 400 Strg 4 v Da= 21.3 mm s= 0.6 mm (VUU) V-Naht Umf.,Ubear.
ii= 1.0 io= 1.0

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	32.5	0.000	0.000	0.000	0.0	32.5	120.0	27
02 SE v	SL=	32.5	0.000	0.000	0.000	0.0	0.0	267.5	0
03 SOLv	SL=	32.5	0.000	0.000	0.000	0.0	32.5	159.6	20

Pkt 70 Strg 11 n Da= 60.3 mm s= 1.9 mm (TFS) T-Stck FormStueck
Strg 6 n Da= 60.3 mm s= 1.9 mm ii= 1.7 io= 2.0
Strg 7 v Da= 60.3 mm s= 1.9 mm

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL n	40.0	28.8	0.002	0.000	0.033	13.2	42.0	120.0	35
01 SL n	40.0	28.8	0.008	0.001	0.025	9.7	38.5	120.0	32
01 SL v	40.0	28.8	0.016	0.001	0.003	1.1	29.9	120.0	25
02 SE n	SL=	42.0	0.006	0.503	0.016	115.1	115.1	258.0	45
02 SE n	SL=	38.5	0.001	0.328	0.014	75.1	75.1	261.5	29
02 SE v	SL=	29.9	0.002	0.175	0.007	38.3	38.3	270.1	14
03 SOLn	SL=	42.0	0.072	0.032	0.001	11.4	53.4	159.6	33
03 SOLn	SL=	38.5	0.084	0.055	0.001	19.5	58.0	159.6	36
03 SOLv	SL=	29.9	0.384	0.023	0.000	8.9	38.8	159.6	24

Pkt 65 Strg 6 v Da= 60.3 mm s= 1.9 mm (VUU) V-Naht Umf.,Ubear.
Strg 6 n Da= 60.3 mm s= 1.0 mm ii= 1.0 io= 1.0

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	28.8	0.007	0.001	0.012	2.4	31.2	120.0	26
01 SL n	40.0	57.3	0.007	0.001	0.012	4.4	61.7	120.0	51
02 SE v	SL=	31.2	0.000	0.312	0.004	41.7	41.7	268.8	15
02 SE n	SL=	61.7	0.000	0.312	0.004	57.7	57.7	238.3	24
03 SOLv	SL=	31.2	0.084	0.041	0.001	8.6	39.8	159.6	25
03 SOLn	SL=	61.7	0.084	0.041	0.001	15.6	77.3	159.6	48

Pkt 60 Strg 6 v Da= 60.3 mm s= 1.0 mm (TWA) T-Stck Weld.,Aufsw
Strg 6 n Da= 60.3 mm s= 1.0 mm ii= 2.4 io= 2.4
Strg 13 n Da= 21.3 mm s= 0.6 mm

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	57.3	0.006	0.006	0.004	6.4	63.7	120.0	53
01 SL n	40.0	57.3	0.005	0.006	0.004	6.5	63.8	120.0	53
01 SL n	40.0	32.5	0.011	0.000	0.003	21.0	53.5	120.0	45
02 SE v	SL=	63.7	0.000	0.172	0.227	127.5	127.5	236.3	54
02 SE n	SL=	63.8	0.000	0.172	0.227	127.5	127.5	236.2	54
02 SE n	SL=	53.5	0.000	0.000	0.000	0.0	0.0	246.5	0
03 SOLv	SL=	63.7	0.084	0.011	0.016	17.9	81.7	159.6	51
03 SOLn	SL=	63.8	0.084	0.011	0.016	17.9	81.8	159.6	51
03 SOLn	SL=	53.5	0.000	0.000	0.000	0.0	53.5	159.6	34

Pkt 40 Strg 6 v Da= 60.3 mm s= 1.0 mm (VUU) V-Naht Umf.,Ubear.
Strg 6 n Da= 60.3 mm s= 1.0 mm ii= 1.0 io= 1.0

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	57.3	0.004	0.000	0.012	4.3	61.6	120.0	51
01 SL n	40.0	57.3	0.002	0.000	0.012	4.3	61.6	120.0	51
02 SE v	SL=	61.6	0.000	0.000	0.000	0.0	0.0	238.4	0
02 SE n	SL=	61.6	0.000	0.000	0.000	0.0	0.0	238.4	0
03 SOLv	SL=	61.6	0.084	0.007	0.000	3.2	64.7	159.6	41
03 SOLn	SL=	61.6	0.000	0.007	0.000	2.7	64.3	159.6	40

Pkt 30 Strg 6 v Da= 60.3 mm s= 1.0 mm (VUU) V-Naht Umf.,Ubear.
Strg 6 n Da= 60.3 mm s= 1.0 mm ii= 1.0 io= 1.0

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	57.3	0.002	0.000	0.005	1.7	59.0	120.0	49
01 SL n	40.0	57.3	0.002	0.000	0.005	1.7	59.0	120.0	49
02 SE v	SL=	59.0	0.000	0.000	0.000	0.0	0.0	241.0	0
02 SE n	SL=	59.0	0.000	0.000	0.000	0.0	0.0	241.0	0
03 SOLv	SL=	59.0	0.000	0.002	0.000	0.8	59.9	159.6	38
03 SOLn	SL=	59.0	0.000	0.002	0.000	0.8	59.9	159.6	38

Pkt 20 Strg 6 v Da= 60.3 mm s= 1.0 mm (RKR) Reduz. Kl.Radien
Strg 6 n Da= 48.3 mm s= 1.0 mm A= 13.0 Grd
ii= 1.0 io= 1.0

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	57.3	0.001	0.000	0.003	1.0	58.3	120.0	49
01 SL n	40.0	45.3	0.001	0.000	0.003	1.6	46.9	120.0	39
02 SE v	SL=	58.3	0.000	0.000	0.000	0.0	0.0	241.7	0
02 SE n	SL=	46.9	0.000	0.000	0.000	0.0	0.0	253.1	0
03 SOLv	SL=	58.3	0.000	0.001	0.000	0.4	58.7	159.6	37
03 SOLn	SL=	46.9	0.000	0.001	0.000	0.6	47.5	159.6	30

Pkt 10 Strg 6 v Da= 48.3 mm s= 1.0 mm (VUU) V-Naht Umf.,Ubear.
ii= 1.0 io= 1.0

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	45.3	0.001	0.000	0.000	0.0	45.3	120.0	38

02 SE v	SL=	45.3	0.000	0.000	0.000	0.0	0.0	254.7	0

Na	Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
03	SOLv	SL=	45.3	0.000	0.000	0.000	0.0	45.3	159.6	28

Pkt 180 Strg 7 n Da= 60.3 mm s= 1.0 mm (VUU) V-Naht Umf.,Ubear.
ii= 1.0 io= 1.0

Na	Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01	SL n	40.0	57.3	0.271	0.037	0.035	20.1	77.5	120.0	65
02	SE n	SL=	77.5	0.084	0.032	0.015	16.8	16.8	222.5	8
03	SOLn	SL=	77.5	0.143	0.015	0.037	15.4	92.9	159.6	58

Pkt 170 Strg 7 v Da= 60.3 mm s= 1.0 mm (BGL) Bogen GLatt
Strg 7 m Da= 60.3 mm s= 1.0 mm R= 76.0 mm
Strg 7 n Da= 60.3 mm s= 1.0 mm ii= 2.8 io= 2.3

Na	Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01	SL v	40.0	57.3	0.252	0.040	0.023	47.4	104.8	120.0	87
01	SL m	40.0	57.3	0.203	0.038	0.029	47.2	104.5	120.0	87
01	SL n	40.0	57.3	0.053	0.027	0.019	32.3	89.7	120.0	75
02	SE v	SL=	104.8	0.084	0.028	0.005	21.3	21.3	195.2	11
02	SE m	SL=	104.5	0.059	0.024	0.056	29.2	29.2	195.5	15
02	SE n	SL=	89.7	0.006	0.020	0.075	33.9	33.9	210.3	16
03	SOLv	SL=	104.8	0.143	0.018	0.014	22.9	127.7	159.6	80
03	SOLm	SL=	104.5	0.177	0.019	0.033	35.7	140.2	159.6	88
03	SOLn	SL=	89.7	0.125	0.015	0.034	33.4	123.0	159.6	77

Pkt 160 Strg 7 v Da= 60.3 mm s= 1.0 mm (BGL) Bogen GLatt
Strg 7 m Da= 60.3 mm s= 1.0 mm R= 76.0 mm
Strg 7 n Da= 60.3 mm s= 1.0 mm ii= 2.8 io= 2.3

Na	Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01	SL v	40.0	57.3	0.039	0.003	0.010	9.6	66.9	120.0	56
01	SL m	40.0	57.3	0.024	0.002	0.012	10.7	68.0	120.0	57
01	SL n	40.0	57.3	0.004	0.000	0.008	6.6	63.9	120.0	53
02	SE v	SL=	66.9	0.006	0.154	0.006	79.8	79.8	233.1	34
02	SE m	SL=	68.0	0.009	0.160	0.001	82.9	82.9	232.0	36
02	SE n	SL=	63.9	0.007	0.160	0.005	83.0	83.0	236.1	35
03	SOLv	SL=	66.9	0.125	0.024	0.002	25.6	92.6	159.6	58
03	SOLm	SL=	68.0	0.267	0.035	0.003	38.1	106.1	159.6	66
03	SOLn	SL=	63.9	0.271	0.036	0.005	38.7	102.6	159.6	64

Pkt 150 Strg 7 v Da= 60.3 mm s= 1.0 mm (VUU) V-Naht Umf.,Ubear.
Strg 7 n Da= 60.3 mm s= 1.0 mm ii= 1.0 io= 1.0

Na	Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01	SL v	40.0	57.3	0.007	0.013	0.091	33.7	91.1	120.0	76
01	SL n	40.0	57.3	0.005	0.013	0.091	33.7	91.0	120.0	76
02	SE v	SL=	91.1	0.007	0.146	0.006	27.1	27.1	208.9	13
02	SE n	SL=	91.0	0.007	0.146	0.006	27.1	27.1	209.0	13
03	SOLv	SL=	91.1	0.271	0.009	0.003	5.0	96.0	159.6	60
03	SOLn	SL=	91.0	0.206	0.009	0.003	4.6	95.7	159.6	60

Pkt 140 Strg 7 v Da= 60.3 mm s= 1.0 mm (TWA) T-Stck Weld.,Aufsw
Strg 7 n Da= 60.3 mm s= 1.0 mm ii= 2.4 io= 2.4
Strg 8 n Da= 21.3 mm s= 0.6 mm

Na	Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01	SL v	40.0	57.3	0.000	0.057	0.002	50.8	108.1	120.0	90
01	SL n	40.0	57.3	0.000	0.057	0.002	51.2	108.5	120.0	90
01	SL n	40.0	32.5	0.022	0.000	0.001	8.9	41.4	120.0	35
02	SE v	SL=	108.1	0.007	0.017	0.146	66.0	66.0	191.9	34
02	SE n	SL=	108.5	0.000	0.021	0.146	66.1	66.1	191.5	34
02	SE n	SL=	41.4	0.000	0.003	0.008	31.7	31.7	258.6	12
03	SOLv	SL=	108.1	0.206	0.009	0.024	24.1	132.2	159.6	83
03	SOLn	SL=	108.5	0.226	0.005	0.024	23.3	131.8	159.6	83
03	SOLn	SL=	41.4	0.011	0.011	0.002	82.4	123.9	159.6	78

Pkt 130 Strg 7 v Da= 60.3 mm s= 1.0 mm (VUU) V-Naht Umf.,Ubear.
Strg 7 n Da= 60.3 mm s= 1.0 mm ii= 1.0 io= 1.0

Na	Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01	SL v	40.0	57.3	0.002	0.001	0.073	26.9	84.2	120.0	70
01	SL n	40.0	57.3	0.010	0.001	0.073	27.0	84.3	120.0	70
02	SE v	SL=	84.2	0.000	0.145	0.006	26.8	26.8	215.8	12
02	SE n	SL=	84.3	0.000	0.145	0.006	26.8	26.8	215.7	12
03	SOLv	SL=	84.2	0.226	0.016	0.003	7.3	91.6	159.6	57
03	SOLn	SL=	84.3	0.271	0.016	0.003	7.6	91.8	159.6	58

Pkt 120 Strg 7 v Da= 60.3 mm s= 1.0 mm (BGL) Bogen GLatt
Strg 7 m Da= 60.3 mm s= 1.0 mm R= 76.0 mm
Strg 7 n Da= 60.3 mm s= 1.0 mm ii= 2.8 io= 2.3

Na	Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01	SL v	40.0	57.3	0.008	0.000	0.009	8.1	65.4	120.0	55
01	SL m	40.0	57.3	0.016	0.001	0.015	12.8	70.1	120.0	58
01	SL n	40.0	57.3	0.014	0.001	0.012	10.8	68.1	120.0	57
02	SE v	SL=	65.4	0.000	0.158	0.002	82.1	82.1	234.6	35
02	SE m	SL=	70.1	0.001	0.227	0.001	117.6	117.6	229.9	51
02	SE n	SL=	68.1	0.002	0.247	0.000	127.9	127.9	231.9	55
03	SOLv	SL=	65.4	0.271	0.032	0.001	34.4	99.9	159.6	63
03	SOLm	SL=	70.1	0.346	0.037	0.001	40.5	110.7	159.6	69
03	SOLn	SL=	68.1	0.236	0.029	0.001	31.0	99.1	159.6	62

Pkt 110 Strg 7 v Da= 60.3 mm s= 1.0 mm (VUB) V-Naht Umf.,Bearb.
Strg 7 n Da= 60.3 mm s= 1.0 mm ii= 1.0 io= 1.0

Na	Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01	SL v	40.0	57.3	0.001	0.000	0.112	41.4	98.7	120.0	82
01	SL n	40.0	57.3	0.021	0.000	0.112	41.5	98.8	120.0	82
02	SE v	SL=	98.7	0.002	0.121	0.003	22.3	22.3	201.3	11
02	SE n	SL=	98.8	0.002	0.121	0.003	22.3	22.3	201.2	11
03	SOLv	SL=	98.7	0.236	0.099	0.003	37.7	136.5	159.6	85
03	SOLn	SL=	98.8	0.175	0.099	0.003	37.4	136.2	159.6	85

Pkt 100 Strg 7 v Da= 60.3 mm s= 1.0 mm (VUU) V-Naht Umf.,Ubear.
Strg 7 n Da= 68.3 mm s= 5.0 mm ii= 1.0 io= 1.0

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	57.3	0.019	0.001	0.013	4.9	62.2	120.0	52
01 SL n	40.0	10.7	0.018	0.001	0.013	0.9	11.6	120.0	10
02 SE v	SL=	62.2	0.002	0.056	0.001	10.4	10.4	237.8	4
02 SE n	SL=	11.6	0.002	0.056	0.001	3.2	3.2	288.4	1
03 SOLv	SL=	62.2	0.175	0.051	0.003	19.8	82.0	159.6	51
03 SOLn	SL=	11.6	0.175	0.051	0.003	3.7	15.3	159.6	10

Pkt 90 Strg 7 v Da= 68.3 mm s= 5.0 mm (VUU) V-Naht Umf.,Ubear.
Strg 7 n Da= 68.3 mm s= 5.0 mm ii= 1.0 io= 1.0

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	10.7	0.017	0.001	0.002	0.2	10.9	120.0	9
01 SL n	40.0	10.7	0.017	0.001	0.002	0.2	10.9	120.0	9
02 SE v	SL=	10.9	0.002	0.045	0.001	2.6	2.6	289.1	1
02 SE n	SL=	10.9	0.002	0.045	0.001	2.6	2.6	289.1	1
03 SOLv	SL=	10.9	0.175	0.044	0.002	3.2	14.1	159.6	9
03 SOLn	SL=	10.9	0.175	0.044	0.002	3.2	14.1	159.6	9

Pkt 80 Strg 7 v Da= 68.3 mm s= 5.0 mm (VUU) V-Naht Umf.,Ubear.
Strg 7 n Da= 60.3 mm s= 1.0 mm ii= 1.0 io= 1.0

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	10.7	0.001	0.001	0.011	0.8	11.5	120.0	10
01 SL n	40.0	57.3	0.002	0.001	0.011	4.1	61.4	120.0	51
02 SE v	SL=	11.5	0.002	0.021	0.001	1.2	1.2	288.5	0
02 SE n	SL=	61.4	0.002	0.021	0.001	3.8	3.8	238.6	2
03 SOLv	SL=	11.5	0.175	0.014	0.002	1.1	12.6	159.6	8
03 SOLn	SL=	61.4	0.175	0.014	0.002	6.1	67.5	159.6	42

Pkt 78 Strg 7 v Da= 60.3 mm s= 1.0 mm (VUU) V-Naht Umf.,Ubear.
Strg 7 n Da= 60.3 mm s= 1.0 mm ii= 1.0 io= 1.0

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	57.3	0.005	0.002	0.113	41.8	99.1	120.0	83
01 SL n	40.0	57.3	0.018	0.002	0.113	41.9	99.2	120.0	83
02 SE v	SL=	99.1	0.002	0.120	0.004	22.3	22.3	200.9	11
02 SE n	SL=	99.2	0.002	0.120	0.004	22.3	22.3	200.8	11
03 SOLv	SL=	99.1	0.175	0.004	0.002	2.7	101.8	159.6	64
03 SOLn	SL=	99.2	0.384	0.004	0.002	3.8	103.0	159.6	65

Pkt 75 Strg 7 v Da= 60.3 mm s= 1.0 mm (VUU) V-Naht Umf.,Ubear.
Strg 7 n Da= 60.3 mm s= 1.9 mm ii= 1.0 io= 1.0

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	57.3	0.016	0.001	0.031	11.4	68.7	120.0	57
01 SL n	40.0	28.8	0.017	0.001	0.031	6.3	35.0	120.0	29
02 SE v	SL=	68.7	0.002	0.159	0.010	29.4	29.4	231.3	13
02 SE n	SL=	35.0	0.002	0.159	0.010	21.2	21.2	265.0	8
03 SOLv	SL=	68.7	0.384	0.018	0.001	8.6	77.3	159.6	48
03 SOLn	SL=	35.0	0.384	0.018	0.001	4.7	39.7	159.6	25

Pkt 600 Strg 8 v Da= 21.3 mm s= 0.6 mm (VUU) V-Naht Umf.,Ubear.
Strg 8 n Da= 21.3 mm s= 0.6 mm ii= 1.0 io= 1.0

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	32.5	0.016	0.000	0.000	1.0	33.5	120.0	28
01 SL n	40.0	32.5	0.015	0.000	0.000	0.9	33.5	120.0	28
02 SE v	SL=	33.5	0.000	0.005	0.000	11.1	11.1	266.5	4
02 SE n	SL=	33.5	0.000	0.000	0.005	11.1	11.1	266.5	4
03 SOLv	SL=	33.5	0.010	0.001	0.001	8.2	41.7	159.6	26
03 SOLn	SL=	33.5	0.000	0.001	0.001	7.9	41.4	159.6	26

Pkt 610 Strg 8 v Da= 21.3 mm s= 0.6 mm (VUU) V-Naht Umf.,Ubear.
Strg 8 n Da= 27.7 mm s= 3.8 mm ii= 1.0 io= 1.0

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	32.5	0.015	0.000	0.000	0.9	33.5	120.0	28
01 SL n	40.0	4.4	0.015	0.000	0.000	0.1	4.6	120.0	4
02 SE v	SL=	33.5	0.000	0.000	0.002	5.2	5.2	266.5	2
02 SE n	SL=	4.6	0.000	0.000	0.002	1.4	1.4	295.4	0
03 SOLv	SL=	33.5	0.000	0.000	0.000	2.5	36.0	159.6	23
03 SOLn	SL=	4.6	0.000	0.000	0.000	0.3	4.9	159.6	3

Pkt 630 Strg 8 v Da= 33.3 mm s= 3.8 mm (VUU) V-Naht Umf.,Ubear.
ii= 1.0 io= 1.0

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	5.9	0.000	0.000	0.000	0.0	5.9	120.0	5
02 SE v	SL=	5.9	0.000	0.000	0.000	0.0	0.0	294.1	0
03 SOLv	SL=	5.9	0.000	0.000	0.000	0.0	5.9	159.6	4

Pkt 250 Strg 11 v Da= 60.3 mm s= 1.0 mm (TWA) T-Stck Weld.,Aufsw
Strg 11 n Da= 60.3 mm s= 1.0 mm ii= 2.4 io= 2.4
Strg 10 n Da= 21.3 mm s= 0.6 mm

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	57.3	0.004	0.036	0.001	32.3	89.6	120.0	75
01 SL n	40.0	57.3	0.005	0.035	0.001	31.5	88.8	120.0	74
01 SL n	40.0	32.5	0.021	0.001	0.000	7.0	39.5	120.0	33
02 SE v	SL=	89.6	0.001	0.003	0.070	31.6	31.6	210.4	15
02 SE n	SL=	88.8	0.000	0.006	0.070	31.7	31.7	211.2	15
02 SE n	SL=	39.5	0.000	0.003	0.001	12.4	12.4	260.5	5
03 SOLv	SL=	89.6	0.126	0.002	0.016	14.6	104.2	159.6	65
03 SOLn	SL=	88.8	0.125	0.001	0.016	14.6	103.4	159.6	65
03 SOLn	SL=	39.5	0.009	0.001	0.012	85.5	125.0	159.6	78

Pkt 85 Strg 10 v Da= 21.3 mm s= 0.6 mm (VUU) V-Naht Umf.,Ubear.
Strg 10 n Da= 21.3 mm s= 0.6 mm ii= 1.0 io= 1.0

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	32.5	0.015	0.000	0.000	0.9	33.5	120.0	28
01 SL n	40.0	32.5	0.015	0.000	0.000	0.9	33.5	120.0	28
02 SE v	SL=	33.5	0.000	0.002	0.000	4.0	4.0	266.5	1
02 SE n	SL=	33.5	0.000	0.000	0.002	4.0	4.0	266.5	1
03 SOLv	SL=	33.5	0.009	0.001	0.001	8.1	41.6	159.6	26

03 SOLn	SL=	33.5	0.000	0.001	0.001	7.9	41.4	159.6	26

Pkt 95 Strg 10 v Da= 21.3 mm s= 0.6 mm (VUU) V-Naht Umf.,Ubear.
Strg 10 n Da= 27.7 mm s= 3.8 mm ii= 1.0 io= 1.0

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	32.5	0.015	0.000	0.000	0.9	33.5	120.0	28
01 SL n	40.0	4.4	0.015	0.000	0.000	0.1	4.6	120.0	4
02 SE v	SL=	33.5	0.000	0.000	0.001	1.9	1.9	266.5	1
02 SE n	SL=	4.6	0.000	0.000	0.001	0.5	0.5	295.4	0
03 SOLv	SL=	33.5	0.000	0.000	0.000	2.5	36.0	159.6	23
03 SOLn	SL=	4.6	0.000	0.000	0.000	0.3	4.9	159.6	3

Pkt 115 Strg 10 v Da= 33.3 mm s= 3.8 mm (VUU) V-Naht Umf.,Ubear.
ii= 1.0 io= 1.0

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	5.9	0.000	0.000	0.000	0.0	5.9	120.0	5
02 SE v	SL=	5.9	0.000	0.000	0.000	0.0	0.0	294.1	0
03 SOLv	SL=	5.9	0.000	0.000	0.000	0.0	5.9	159.6	4

Pkt 185 Strg 11 v Da= 60.3 mm s= 1.9 mm (VUU) V-Naht Umf.,Ubear.
Strg 11 n Da= 60.3 mm s= 1.0 mm ii= 1.0 io= 1.0

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	28.8	0.001	0.001	0.015	2.9	31.7	120.0	26
01 SL n	40.0	57.3	0.002	0.001	0.015	5.4	62.7	120.0	52
02 SE v	SL=	31.7	0.006	0.473	0.000	63.2	63.2	268.3	24
02 SE n	SL=	62.7	0.011	0.473	0.000	87.5	87.5	237.3	37
03 SOLv	SL=	31.7	0.072	0.023	0.001	4.9	36.6	159.6	23
03 SOLn	SL=	62.7	0.072	0.023	0.001	9.0	71.6	159.6	45

Pkt 200 Strg 11 v Da= 60.3 mm s= 1.0 mm (VUU) V-Naht Umf.,Ubear.
Strg 11 n Da= 68.3 mm s= 5.0 mm ii= 1.0 io= 1.0

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	57.3	0.003	0.001	0.025	9.1	66.5	120.0	55
01 SL n	40.0	10.7	0.000	0.001	0.025	1.7	12.4	120.0	10
02 SE v	SL=	66.5	0.011	0.403	0.001	74.6	74.6	233.5	32
02 SE n	SL=	12.4	0.006	0.403	0.001	22.9	22.9	287.6	8
03 SOLv	SL=	66.5	0.072	0.008	0.002	3.3	69.8	159.6	44
03 SOLn	SL=	12.4	0.072	0.008	0.002	0.6	13.0	159.6	8

Pkt 210 Strg 11 v Da= 68.3 mm s= 5.0 mm (VUU) V-Naht Umf.,Ubear.
Strg 11 n Da= 60.3 mm s= 1.0 mm ii= 1.0 io= 1.0

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	10.7	0.018	0.001	0.014	1.0	11.7	120.0	10
01 SL n	40.0	57.3	0.026	0.001	0.014	5.2	62.5	120.0	52
02 SE v	SL=	11.7	0.006	0.294	0.002	16.7	16.7	288.3	6
02 SE n	SL=	62.5	0.000	0.295	0.002	54.5	54.5	237.5	23
03 SOLv	SL=	11.7	0.072	0.008	0.004	0.7	12.4	159.6	8
03 SOLn	SL=	62.5	0.072	0.008	0.004	3.8	66.3	159.6	42

Pkt 220 Strg 11 v Da= 60.3 mm s= 1.0 mm (VUB) V-Naht Umf.,Bearb.
Strg 11 n Da= 60.3 mm s= 1.0 mm ii= 1.0 io= 1.0

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	57.3	0.032	0.001	0.137	50.6	107.9	120.0	90
01 SL n	40.0	57.3	0.019	0.001	0.137	50.5	107.8	120.0	90
02 SE v	SL=	107.9	0.000	0.114	0.000	21.1	21.1	192.1	11
02 SE n	SL=	107.8	0.000	0.114	0.000	21.1	21.1	192.2	11
03 SOLv	SL=	107.9	0.072	0.016	0.009	7.2	115.1	159.6	72
03 SOLn	SL=	107.8	0.249	0.016	0.009	8.2	116.0	159.6	73

Pkt 235 Strg 11 v Da= 60.3 mm s= 1.0 mm (BGL) Bogen GLatt
Strg 11 m Da= 60.3 mm s= 1.0 mm R= 76.0 mm
Strg 11 n Da= 60.3 mm s= 1.0 mm ii= 2.6 io= 2.2

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	57.3	0.011	0.001	0.003	2.9	60.3	120.0	50
01 SL m	40.0	57.3	0.010	0.001	0.015	12.1	69.4	120.0	58
01 SL n	40.0	57.3	0.004	0.001	0.017	13.5	70.8	120.0	59
02 SE v	SL=	60.3	0.000	0.192	0.001	91.9	91.9	239.7	38
02 SE m	SL=	69.4	0.001	0.217	0.001	103.9	103.9	230.6	45
02 SE n	SL=	70.8	0.001	0.219	0.000	104.8	104.8	229.2	46
03 SOLv	SL=	60.3	0.249	0.032	0.001	32.2	92.5	159.6	58
03 SOLm	SL=	69.4	0.242	0.031	0.000	31.1	100.5	159.6	63
03 SOLn	SL=	70.8	0.122	0.021	0.001	20.3	91.1	159.6	57

Pkt 240 Strg 11 v Da= 60.3 mm s= 1.0 mm (VUU) V-Naht Umf.,Ubear.
Strg 11 n Da= 60.3 mm s= 1.0 mm ii= 1.0 io= 1.0

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	57.3	0.004	0.002	0.090	33.3	90.6	120.0	75
01 SL n	40.0	57.3	0.004	0.002	0.090	33.3	90.6	120.0	75
02 SE v	SL=	90.6	0.001	0.068	0.005	12.6	12.6	209.4	6
02 SE n	SL=	90.6	0.001	0.068	0.005	12.6	12.6	209.4	6
03 SOLv	SL=	90.6	0.122	0.010	0.004	4.7	95.2	159.6	60
03 SOLn	SL=	90.6	0.126	0.010	0.004	4.7	95.3	159.6	60

Pkt 260 Strg 11 v Da= 60.3 mm s= 1.0 mm (BGL) Bogen GLatt
Strg 11 m Da= 60.3 mm s= 1.0 mm R= 76.0 mm
Strg 11 n Da= 60.3 mm s= 1.0 mm ii= 2.6 io= 2.2

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	57.3	0.005	0.000	0.012	9.9	67.2	120.0	56
01 SL m	40.0	57.3	0.009	0.000	0.004	3.4	60.7	120.0	51
01 SL n	40.0	57.3	0.007	0.000	0.006	4.5	61.8	120.0	51
02 SE v	SL=	67.2	0.000	0.072	0.003	34.2	34.2	232.8	15
02 SE m	SL=	60.7	0.000	0.087	0.001	41.8	41.8	239.3	17
02 SE n	SL=	61.8	0.001	0.124	0.003	59.3	59.3	238.2	25
03 SOLv	SL=	67.2	0.125	0.022	0.004	22.2	89.4	159.6	56
03 SOLm	SL=	60.7	0.165	0.026	0.003	25.7	86.4	159.6	54
03 SOLn	SL=	61.8	0.122	0.023	0.009	23.9	85.6	159.6	54

Pkt 270 Strg 11 v Da= 60.3 mm s= 1.0 mm (VUU) V-Naht Umf.,Ubear.
ii= 1.0 io= 1.0

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	57.3	0.007	0.000	0.006	2.1	59.4	120.0	50
02 SE v	SL=	59.4	0.001	0.124	0.003	22.9	22.9	240.6	10
03 SOLv	SL=	59.4	0.122	0.023	0.009	9.8	69.2	159.6	43

Pkt 500 Strg 13 v Da= 21.3 mm s= 0.6 mm (VUU) V-Naht Umf.,Ubear.
Strg 13 n Da= 27.7 mm s= 3.8 mm ii= 1.0 io= 1.0

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	32.5	0.008	0.000	0.000	2.2	34.8	120.0	29
01 SL n	40.0	4.4	0.008	0.000	0.000	0.3	4.7	120.0	4
02 SE v	SL=	34.8	0.000	0.000	0.000	0.0	0.0	265.2	0
02 SE n	SL=	4.7	0.000	0.000	0.000	0.0	0.0	295.3	0
03 SOLv	SL=	34.8	0.000	0.000	0.000	0.0	34.8	159.6	22
03 SOLn	SL=	4.7	0.000	0.000	0.000	0.0	4.7	159.6	3

Pkt 510 Strg 13 v Da= 27.7 mm s= 3.8 mm (VUU) V-Naht Umf.,Ubear.
ii= 1.0 io= 1.0

Na Gl	P (bar)	SLP (N/mm2)	Qx,Mt (kN,kNm)	Mi (kNm)	Mo (kNm)	S(Q,M) (N/mm2)	S-ges (N/mm2)	S-zul (N/mm2)	Ausn (%)
01 SL v	40.0	4.4	0.000	0.000	0.000	0.0	4.4	120.0	4
02 SE v	SL=	4.4	0.000	0.000	0.000	0.0	0.0	295.6	0
03 SOLv	SL=	4.4	0.000	0.000	0.000	0.0	4.4	159.6	3

EXTRAKT DER SPANNUNGSANALYSE NACH ASME B31.3:

Nachweis 01 Spannungen infolge staendiger Lasten (SL)

Bauteile mit maximaler Spannungsausnutzung

Pkt		ii	io	Errechn. Spannung (N/mm2)	Zulaess. Spannung (N/mm2)	Aus-nutzung (%)
140	(TWA)	2.42	2.42	108.5	120.0	90.4
220	(VUB)	1.00	1.00	107.9	120.0	89.9
170	(BGL)	2.80	2.33	104.8	120.0	87.3
78	(VUU)	1.00	1.00	99.2	120.0	82.6
110	(VUB)	1.00	1.00	98.8	120.0	82.4
50	(TWA)	2.42	2.42	95.6	120.0	79.6
150	(VUU)	1.00	1.00	91.1	120.0	75.9
240	(VUU)	1.00	1.00	90.6	120.0	75.5
250	(TWA)	2.42	2.42	89.6	120.0	74.6
130	(VUU)	1.00	1.00	84.3	120.0	70.2
180	(VUU)	1.00	1.00	77.5	120.0	64.5
235	(BGL)	2.58	2.15	70.8	120.0	59.0
120	(BGL)	2.80	2.33	70.1	120.0	58.4
75	(VUU)	1.00	1.00	68.7	120.0	57.3
160	(BGL)	2.80	2.33	68.0	120.0	56.7
260	(BGL)	2.58	2.15	67.2	120.0	56.0
200	(VUU)	1.00	1.00	66.5	120.0	55.4
60	(TWA)	2.42	2.42	63.8	120.0	53.2
185	(VUU)	1.00	1.00	62.7	120.0	52.2
210	(VUU)	1.00	1.00	62.5	120.0	52.1
100	(VUU)	1.00	1.00	62.2	120.0	51.8
65	(VUU)	1.00	1.00	61.7	120.0	51.4
40	(VUU)	1.00	1.00	61.6	120.0	51.3
80	(VUU)	1.00	1.00	61.4	120.0	51.1
270	(VUU)	1.00	1.00	59.4	120.0	49.5
30	(VUU)	1.00	1.00	59.0	120.0	49.2
20	(RKR)	1.00	1.00	58.3	120.0	48.6
10	(VUU)	1.00	1.00	45.3	120.0	37.8
70	(TFS)	1.71	1.95	42.0	120.0	35.0
500	(VUU)	1.00	1.00	34.8	120.0	29.0

0 Schnitte mit Spannungsueberschreitungen (*)

EXTRAKT DER SPANNUNGSANALYSE NACH ASME B31.3:

Nachweis 02 Spannungen infolge Staend. u. Temperaturlast

Bauteile mit maximaler Spannungsausnutzung

Pkt		ii	io	Errechn. Spannung (N/mm2)	Zulaess. Spannung (N/mm2)	Aus-nutzung (%)
120	(BGL)	2.80	2.33	127.9	231.9	55.2
60	(TWA)	2.42	2.42	127.5	236.2	54.0
235	(BGL)	2.58	2.15	104.8	229.2	45.7
70	(TFS)	1.71	1.95	115.1	258.0	44.6
185	(VUU)	1.00	1.00	87.5	237.3	36.9
160	(BGL)	2.80	2.33	82.9	232.0	35.7
140	(TWA)	2.42	2.42	66.1	191.5	34.5
200	(VUU)	1.00	1.00	74.6	233.5	31.9
50	(TWA)	2.42	2.42	60.1	204.4	29.4
260	(BGL)	2.58	2.15	59.3	238.2	24.9
65	(VUU)	1.00	1.00	57.7	238.3	24.2
210	(VUU)	1.00	1.00	54.5	237.5	22.9
170	(BGL)	2.80	2.33	33.9	210.3	16.1
250	(TWA)	2.42	2.42	31.6	210.4	15.0
150	(VUU)	1.00	1.00	27.1	208.9	13.0
75	(VUU)	1.00	1.00	29.4	231.3	12.7
130	(VUU)	1.00	1.00	26.8	215.7	12.4
110	(VUB)	1.00	1.00	22.3	201.2	11.1
78	(VUU)	1.00	1.00	22.3	200.8	11.1
220	(VUB)	1.00	1.00	21.1	192.1	11.0
270	(VUU)	1.00	1.00	22.9	240.6	9.5
180	(VUU)	1.00	1.00	16.8	222.5	7.6
240	(VUU)	1.00	1.00	12.6	209.4	6.0
100	(VUU)	1.00	1.00	10.4	237.8	4.4
600	(VUU)	1.00	1.00	11.1	266.5	4.1
610	(VUU)	1.00	1.00	5.2	266.5	2.0
80	(VUU)	1.00	1.00	3.8	238.6	1.6
85	(VUU)	1.00	1.00	4.0	266.5	1.5
90	(VUU)	1.00	1.00	2.6	289.1	0.9
95	(VUU)	1.00	1.00	1.9	266.5	0.7

0 Schnitte mit Spannungsueberschreitungen (*)

EXTRAKT DER SPANNUNGSANALYSE NACH ASME B31.3:

Nachweis 03 Spannungen infolge staend. + gelegentl. Lasten (SOL)

Bauteile mit maximaler Spannungsausnutzung

Pkt		ii	io	Errechn. Spannung (N/mm2)	Zulaess. Spannung (N/mm2)	Aus-nutzung (%)
170	(BGL)	2.80	2.33	140.2	159.6	87.9
110	(VUB)	1.00	1.00	136.5	159.6	85.5
140	(TWA)	2.42	2.42	132.2	159.6	82.9
50	(TWA)	2.42	2.42	127.4	159.6	79.8
250	(TWA)	2.42	2.42	125.0	159.6	78.3
220	(VUB)	1.00	1.00	116.0	159.6	72.7
120	(BGL)	2.80	2.33	110.7	159.6	69.3
160	(BGL)	2.80	2.33	106.1	159.6	66.5
78	(VUU)	1.00	1.00	103.0	159.6	64.5
235	(BGL)	2.58	2.15	100.5	159.6	63.0
150	(VUU)	1.00	1.00	96.0	159.6	60.2
240	(VUU)	1.00	1.00	95.3	159.6	59.7
180	(VUU)	1.00	1.00	92.9	159.6	58.2
130	(VUU)	1.00	1.00	91.8	159.6	57.5
260	(BGL)	2.58	2.15	89.4	159.6	56.0
100	(VUU)	1.00	1.00	82.0	159.6	51.4
60	(TWA)	2.42	2.42	81.8	159.6	51.2
65	(VUU)	1.00	1.00	77.3	159.6	48.5
75	(VUU)	1.00	1.00	77.3	159.6	48.4
185	(VUU)	1.00	1.00	71.6	159.6	44.9
200	(VUU)	1.00	1.00	69.8	159.6	43.7
270	(VUU)	1.00	1.00	69.2	159.6	43.4
80	(VUU)	1.00	1.00	67.5	159.6	42.3
210	(VUU)	1.00	1.00	66.3	159.6	41.5
40	(VUU)	1.00	1.00	64.7	159.6	40.6
30	(VUU)	1.00	1.00	59.9	159.6	37.5
20	(RKR)	1.00	1.00	58.7	159.6	36.8
70	(TFS)	1.71	1.95	58.0	159.6	36.3
10	(VUU)	1.00	1.00	45.3	159.6	28.4
600	(VUU)	1.00	1.00	41.7	159.6	26.1

0 Schnitte mit Spannungsueberschreitungen (*)