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: ST37.0				
Materialkennwert	ZUGF	RP02 RP1P	RM1H RM2H	EMOD AFAT		
Quelle	DIN1629	DIN1629	---	SEW 310		
Ausgabe	10/1984	10/1984	---	08/1997		
Rp02-Werte fuer Temperatur sind nicht nachgewiesen; Beruecksichtigung des um 20% hoeheren Sicherheitsbeiwertes durch um den Faktor 1/1.2 reduzierte Rp02-Werte;						
AuslegungstempGR C	65.00	65.00	120.00			
Betriebstemp. GR C	65.00	65.00	65.00			
E-Mod kalt kN/mm^2	212.50	212.50	212.50			
E-Mod warm kN/mm^2	209.19	209.19	209.19			
Wanddicken mm	0- 16	16- 40	0- 16			
in N/mm^2						
Rm\RT\min	350.00	350.00	350.00			
(Rm\T\min)	334.92	334.64	316.49			
Rp0.2\RT\min	235.00	225.00	235.00			
Rp0.2\T\min	214.75	205.25	190.00			
Rm\100000\mitt	-.-	-.-	-.-			
Rm\100000\min	-.-	-.-	-.-			
Rm\RT\min/3.0	116.67	116.67	116.67			
Rp0.2\RT\min/1.5	156.67	150.00	156.67			
Sc	116.67	116.67	116.67			
Rm\T\min/3.0	111.64	111.55	105.50			
Rp0.2\T\min /1.5	143.17	136.83	126.67			
Rm\100000\mitt/1.5	-.-	-.-	-.-			
0.8*Rm\100000\min	-.-	-.-	-.-			
Sh	111.64	111.55	105.50			
Sa	173.74	173.72	172.21			

ANSI B31.3		Werkstoff: ALMG45MN				
Materialkennwert	ZUGF	RP02 RP1P	RM1H RM2H	EMOD AFAT		
Quelle	MMW 400R	DIN17175	DIN17175	SEW 310		
Ausgabe	08/1995	05/1979	05/1979	08/1997		
AuslegungstempGR C	65.00					
Betriebstemp. GR C	65.00					
E-Mod kalt kN/mm^2	70.00					
E-Mod warm kN/mm^2	68.70					
Wanddicken mm	0- 16					
in N/mm^2						
Rm\RT\min	350.00					
Rm\T\min	307.81					
Rp0.2\RT\min	125.00					
Rp0.2\T\min	122.19					
Rm\100000\mitt	-.-					
Rm\100000\min	-.-					
Rm\RT\min/3.0	116.67					
Rp0.2\RT\min/1.5	83.33					
Sc	83.33					
Rm\T\min/3.0	102.60					
Rp0.2\T\min /1.5	81.46					
Rm\100000\mitt/1.5	-.-					
0.8*Rm\100000\min	-.-					
Sh	81.46					
Sa	124.53					

Den Spannungsnachweisen liegen folgende Lastfaelle zugrunde :

Lf-Datei	Lf-Feld	Lf-Bezeichnung	erstellt am:
Gew1.erg	G1	Gewicht	12.05.05 10:08:43
Temp1.erg	T1	Betrieb1	12.05.05 10:08:45
Temp2.erg	T2	Betrieb2	12.05.05 10:08:49
Temp3.erg	T3	Betrieb3	12.05.05 10:08:53
Temp4.erg	T4	Betrieb4	12.05.05 10:08:55
Wind1.erg	W1	Wind1-X	12.05.05 10:08:58
Wind1.erg	W2	Wind1-Y	12.05.05 10:08:58

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 TMP2	Lastf. Betrie.-Gewich.2 = ARITHMET aus:			
	Lf-Feld T2	Lastf. Betrieb2	*	1.00
	+ Lf-Feld G1	Lastf. Gewicht	*	-1.00
Lf-Feld TMP3	Lastf. Betrie.-Gewich.3 = ARITHMET aus:			
	Lf-Feld T3	Lastf. Betrieb3	*	1.00
	+ Lf-Feld G1	Lastf. Gewicht	*	-1.00
Lf-Feld TMP4	Lastf. Betrie.-Gewich.4 = ARITHMET aus:			
	Lf-Feld T4	Lastf. Betrieb4	*	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 TMP2	Lastf. Betrie.-Gewich.2	*	1.00
	+ Lf-Feld TMP3	Lastf. Betrie.-Gewich.3	*	1.00
	+ Lf-Feld TMP4	Lastf. Betrie.-Gewich.4	*	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 40 Strg 4 v Da= 273.0 mm s= 13.2 mm (TFS) T-Stck FormStueck
Strg 4 n Da= 273.0 mm s= 13.2 mm ii= 1.6 io= 1.8
Strg 2 n Da= 168.3 mm s= 10.0 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	63.0	27.9	0.148	2.410	0.228	6.0	33.9	111.6	30
01 SL n	63.0	27.9	0.009	2.543	0.328	6.3	34.2	111.6	31
01 SL n	63.0	21.9	0.390	0.132	0.242	2.0	23.9	111.6	21
02 SE v	SL=	33.9	2.174	0.366	2.004	6.2	6.2	251.5	2
02 SE n	SL=	34.2	0.079	0.205	2.447	6.5	6.5	251.2	3
02 SE n	SL=	23.9	0.443	0.161	2.095	14.4	14.4	261.5	5
03 SOLv	SL=	33.9	0.257	0.022	0.056	0.2	34.1	148.5	23
03 SOLn	SL=	34.2	0.124	0.039	0.058	0.2	34.4	148.5	23
03 SOLn	SL=	23.9	0.019	0.054	0.028	0.4	24.3	148.5	16

Pkt 500 Strg 2 v Da= 168.3 mm s= 10.0 mm (VUU) V-Naht Umf.,Ubear.
Strg 2 n Da= 168.3 mm s= 6.1 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	63.0	21.9	0.472	0.140	0.102	1.0	22.9	111.6	21
01 SL n	63.0	38.8	0.472	0.140	0.102	1.6	40.4	111.6	36
02 SE v	SL=	22.9	0.443	1.544	0.197	8.2	8.2	262.5	3
02 SE n	SL=	40.4	0.443	1.544	0.197	11.8	11.8	245.0	5
03 SOLv	SL=	22.9	0.019	0.031	0.030	0.2	23.1	148.5	16
03 SOLn	SL=	40.4	0.019	0.031	0.030	0.4	40.7	148.5	27

Pkt 505 Strg 2 v Da= 168.3 mm s= 6.1 mm (BGL) Bogen GLatt
Strg 2 m Da= 168.3 mm s= 6.1 mm R= 229.0 mm
Strg 2 n Da= 168.3 mm s= 6.1 mm ii= 2.1 io= 1.7

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	63.0	38.8	0.592	0.087	0.034	1.8	40.5	111.6	36
01 SL m	63.0	38.8	0.824	0.130	0.069	2.7	41.5	111.6	37
01 SL n	63.0	38.8	0.523	0.057	0.064	1.5	40.3	111.6	36
02 SE v	SL=	40.5	0.443	0.307	0.278	6.7	6.7	244.8	3
02 SE m	SL=	41.5	0.523	0.174	0.086	4.8	4.8	243.9	2
02 SE n	SL=	40.3	0.321	0.413	0.400	8.4	8.4	245.1	3
03 SOLv	SL=	40.5	0.019	0.019	0.007	0.3	40.9	148.5	28
03 SOLm	SL=	41.5	0.066	0.010	0.006	0.2	41.7	148.5	28
03 SOLn	SL=	40.3	0.092	0.006	0.002	0.1	40.4	148.5	27

Pkt 510 Strg 2 v Da= 168.3 mm s= 6.1 mm (VUU) V-Naht Umf.,Ubear.
Strg 2 n Da= 168.3 mm s= 6.1 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	63.0	38.8	0.523	0.221	1.662	14.0	52.7	111.6	47
01 SL n	63.0	38.8	0.009	0.221	1.662	13.8	52.6	111.6	47
02 SE v	SL=	52.7	0.321	0.061	0.956	7.4	7.4	232.6	3
02 SE n	SL=	52.6	0.321	0.061	0.956	7.4	7.4	232.8	3
03 SOLv	SL=	52.7	0.092	0.017	0.021	0.2	53.0	148.5	36
03 SOLn	SL=	52.6	0.057	0.017	0.021	0.2	52.8	148.5	36

Pkt 520 Strg 2 v Da= 168.3 mm s= 6.1 mm (BGL) Bogen GLatt
Strg 2 m Da= 168.3 mm s= 6.1 mm R= 229.0 mm
Strg 2 n Da= 168.3 mm s= 6.1 mm ii= 2.1 io= 1.7

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	63.0	38.8	0.009	0.031	0.065	1.1	39.9	111.6	36
01 SL m	63.0	38.8	0.152	0.001	0.212	3.1	41.9	111.6	37
01 SL n	63.0	38.8	0.206	0.013	0.355	5.2	43.9	111.6	39
02 SE v	SL=	39.9	0.321	1.496	0.248	23.2	23.2	245.5	9
02 SE m	SL=	41.9	0.103	1.612	0.277	24.8	24.8	243.5	10
02 SE n	SL=	43.9	0.071	1.343	0.145	20.6	20.6	241.4	9
03 SOLv	SL=	39.9	0.057	0.008	0.006	0.2	40.1	148.5	27
03 SOLm	SL=	41.9	0.045	0.005	0.011	0.2	42.1	148.5	28
03 SOLn	SL=	43.9	0.015	0.004	0.009	0.1	44.1	148.5	30

Pkt 530 Strg 2 v Da= 168.3 mm s= 6.1 mm (VUU) V-Naht Umf.,Ubear.
Strg 2 n Da= 168.3 mm s= 6.1 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	63.0	38.8	0.206	0.013	0.355	3.0	41.8	111.6	37
01 SL n	63.0	38.8	0.206	0.013	0.355	3.0	41.8	111.6	37
02 SE v	SL=	41.8	0.071	1.343	0.145	9.9	9.9	243.6	4
02 SE n	SL=	41.8	0.071	1.343	0.145	9.9	9.9	243.6	4
03 SOLv	SL=	41.8	0.015	0.004	0.009	0.1	41.9	148.5	28
03 SOLn	SL=	41.8	0.015	0.004	0.009	0.1	41.9	148.5	28

Pkt 540 Strg 2 v Da= 168.3 mm s= 6.1 mm (RKR) Reduz. Kl.Radien
Strg 2 n Da= 114.3 mm s= 5.3 mm A= 19.0 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	63.0	38.8	0.206	0.013	0.460	3.9	42.6	111.6	38
01 SL n	63.0	29.3	0.206	0.013	0.460	9.9	39.2	111.6	35
02 SE v	SL=	42.6	0.071	1.178	0.091	8.6	8.6	242.7	4
02 SE n	SL=	39.2	0.071	1.178	0.091	22.0	22.0	246.2	9
03 SOLv	SL=	42.6	0.015	0.008	0.008	0.1	42.7	148.5	29
03 SOLn	SL=	39.2	0.015	0.008	0.008	0.2	39.4	148.5	27

Pkt 550 Strg 2 v Da= 114.3 mm s= 5.3 mm (VUU) V-Naht Umf.,Ubear.
Strg 2 n Da= 114.3 mm s= 5.3 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	63.0	29.3	0.206	0.012	0.564	12.0	41.4	111.6	37
01 SL n	63.0	29.3	0.206	0.012	0.564	12.0	41.4	111.6	37
02 SE v	SL=	41.4	0.071	1.013	0.037	18.9	18.9	244.0	8
02 SE n	SL=	41.4	0.071	1.013	0.037	18.9	18.9	244.0	8
03 SOLv	SL=	41.4	0.015	0.010	0.007	0.3	41.6	148.5	28
03 SOLn	SL=	41.4	0.015	0.010	0.007	0.3	41.6	148.5	28

Pkt 560 Strg 2 v Da= 114.3 mm s= 5.3 mm (VUU) V-Naht Umf.,Ubear.
Strg 2 n Da= 139.5 mm s= 17.9 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	63.0	29.3	0.206	0.012	0.660	14.1	43.4	111.6	39
01 SL n	63.0	7.8	0.206	0.012	0.660	3.6	11.4	111.5	10
02 SE v	SL=	43.4	0.071	0.859	0.013	16.0	16.0	242.0	7
02 SE n	SL=	11.4	0.071	0.859	0.013	4.6	4.6	273.9	2
03 SOLv	SL=	43.4	0.015	0.013	0.006	0.3	43.7	148.5	29
03 SOLn	SL=	11.4	0.015	0.013	0.006	0.1	11.5	148.4	8

Pkt 570 Strg 2 v Da= 139.5 mm s= 17.9 mm (VUU) V-Naht Umf.,Ubear.
Strg 2 n Da= 114.3 mm s= 5.3 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	63.0	7.8	0.206	0.007	0.490	2.7	10.5	111.5	9
01 SL n	63.0	29.3	0.206	0.007	0.490	10.5	39.8	111.6	36
02 SE v	SL=	10.5	0.071	0.179	0.351	2.1	2.1	274.8	1
02 SE n	SL=	39.8	0.071	0.179	0.351	7.4	7.4	245.6	3
03 SOLv	SL=	10.5	0.015	0.012	0.001	0.1	10.5	148.4	7
03 SOLn	SL=	39.8	0.015	0.012	0.001	0.3	40.1	148.5	27

Pkt 580 Strg 2 v Da= 114.3 mm s= 5.3 mm (VUU) V-Naht Umf.,Ubear.
Strg 2 n Da= 114.3 mm s= 5.3 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	63.0	29.3	0.206	0.001	1.042	22.2	51.5	111.6	46
01 SL n	63.0	29.3	0.206	0.001	1.042	22.2	51.5	111.6	46
02 SE v	SL=	51.5	0.071	1.783	0.874	36.9	36.9	233.9	16
02 SE n	SL=	51.5	0.071	1.783	0.874	36.9	36.9	233.9	16
03 SOLv	SL=	51.5	0.015	0.009	0.012	0.3	51.8	148.5	35
03 SOLn	SL=	51.5	0.015	0.009	0.012	0.3	51.8	148.5	35

Pkt 590 Strg 2 v Da= 114.3 mm s= 5.3 mm (RKR) Reduz. Kl.Radien
Strg 2 n Da= 1200.0 mm s= 19.0 mm A= 60.0 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	63.0	29.3	0.206	0.000	1.419	30.1	59.4	111.6	53
01 SL n	63.0	94.8	0.206	0.000	1.419	0.1	94.8	111.5	85
02 SE v	SL=	59.4	0.071	2.137	0.989	43.7	43.7	225.9	19
02 SE n	SL=	94.8	0.071	2.137	0.989	0.1	0.1	190.4	0
03 SOLv	SL=	59.4	0.015	0.014	0.014	0.4	59.9	148.5	40
03 SOLn	SL=	94.8	0.015	0.014	0.014	0.0	94.8	148.4	64

Pkt 600 Strg 2 v Da= 1200.0 mm s= 19.0 mm (VUU) V-Naht Umf.,Ubear.
Strg 2 n Da= 1200.0 mm s= 19.0 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	63.0	94.8	0.206	0.003	2.652	0.1	94.9	111.5	85
01 SL n	63.0	94.8	0.482	0.000	4.178	0.2	95.0	111.5	85

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 (%)
02 SE v	SL=	94.9	0.071	2.962	1.258	0.2	0.2	190.4	0
02 SE n	SL=	95.0	0.000	0.000	0.781	0.0	0.0	190.3	0
03 SOLv	SL=	94.9	0.015	0.024	0.020	0.0	94.9	148.4	64
03 SOLn	SL=	95.0	0.001	0.000	0.010	0.0	95.0	148.4	64

Pkt 610 Strg 2 v Da= 1200.0 mm s= 19.0 mm (VUU) V-Naht Umf.,Ubear.
Strg 2 n Da= 1200.0 mm s= 19.0 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	63.0	94.8	0.482	0.000	0.060	0.0	94.8	111.5	85
01 SL n	63.0	94.8	0.000	0.000	0.350	0.0	94.8	111.5	85
02 SE v	SL=	94.8	0.000	0.000	0.996	0.0	0.0	190.5	0
02 SE n	SL=	94.8	0.000	0.000	0.000	0.0	0.0	190.5	0
03 SOLv	SL=	94.8	0.001	0.000	0.001	0.0	94.8	148.4	64
03 SOLn	SL=	94.8	0.000	0.000	0.000	0.0	94.8	148.4	64

Pkt 620 Strg 2 v Da= 1200.0 mm s= 19.0 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	63.0	94.8	0.000	0.000	0.000	0.0	94.8	111.5	85
02 SE v	SL=	94.8	0.000	0.000	0.000	0.0	0.0	190.5	0
03 SOLv	SL=	94.8	0.000	0.000	0.000	0.0	94.8	148.4	64

Pkt 10 Strg 4 n Da= 219.1 mm s= 11.5 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	63.0	25.4	0.424	0.130	0.278	0.9	26.3	111.6	24
02 SE n	SL=	26.3	0.781	0.320	1.348	4.1	4.1	259.1	2
03 SOLn	SL=	26.3	0.069	0.174	0.225	0.8	27.0	148.5	18

Pkt 15 Strg 4 v Da= 219.1 mm s= 11.5 mm (RKR) Reduz. Kl.Radien
Strg 4 n Da= 273.0 mm s= 13.2 mm A= 28.0 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	63.0	25.4	0.535	0.114	0.211	0.7	26.1	111.6	23
01 SL n	63.0	27.9	0.535	0.114	0.211	0.4	28.3	111.6	25
02 SE v	SL=	26.1	0.781	0.433	1.159	3.7	3.7	259.3	1
02 SE n	SL=	28.3	0.781	0.433	1.159	2.1	2.1	257.0	1
03 SOLv	SL=	26.1	0.069	0.111	0.154	0.5	26.6	148.5	18
03 SOLn	SL=	28.3	0.069	0.111	0.154	0.3	28.6	148.5	19

Pkt 20 Strg 4 v Da= 273.0 mm s= 13.2 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	63.0	27.9	0.614	0.106	0.178	0.4	28.3	111.6	25

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 (%)
02	SE v	SL=	28.3	0.781	0.490	1.063	2.0	2.0	257.1	1
03	SOLv	SL=	28.3	0.069	0.083	0.120	0.2	28.5	148.5	19

Pkt 28 Strg 4 n Da= 273.0 mm s= 7.8 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 n	63.0	50.4	2.311	0.030	0.151	0.7	51.2	111.6	46
02	SE n	SL=	51.2	0.781	1.045	0.131	2.8	2.8	234.2	1
03	SOLn	SL=	51.2	0.069	0.123	0.100	0.4	51.6	148.5	35

Pkt 30 Strg 4 v Da= 273.0 mm s= 7.8 mm (BGL) Bogen GLatt
Strg 4 m Da= 273.0 mm s= 7.8 mm R= 381.0 mm
Strg 4 n Da= 273.0 mm s= 7.8 mm ii= 2.3 io= 1.9

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	63.0	50.4	3.092	0.675	0.092	4.2	54.7	111.6	49
01	SL m	63.0	50.4	2.572	0.419	0.096	2.7	53.2	111.6	48
01	SL n	63.0	50.4	0.377	0.441	0.044	2.5	52.9	111.6	47
02	SE v	SL=	54.7	0.781	1.355	1.931	10.7	10.7	230.7	5
02	SE m	SL=	53.2	1.989	1.559	0.986	9.8	9.8	232.2	4
02	SE n	SL=	52.9	2.174	1.474	0.537	9.0	9.0	232.4	4
03	SOLv	SL=	54.7	0.069	0.065	0.047	0.4	55.1	148.5	37
03	SOLm	SL=	53.2	0.215	0.022	0.051	0.3	53.5	148.5	36
03	SOLn	SL=	52.9	0.274	0.024	0.019	0.2	53.1	148.5	36

Pkt 32 Strg 4 v Da= 273.0 mm s= 7.8 mm (VUU) V-Naht Umf.,Ubear.
Strg 4 n Da= 273.0 mm s= 7.8 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	63.0	50.4	0.377	0.129	4.020	9.7	60.1	111.6	54
01	SL n	63.0	50.4	0.148	0.129	4.020	9.6	60.1	111.6	54
02	SE v	SL=	60.1	2.174	0.080	0.740	5.0	5.0	225.3	2
02	SE n	SL=	60.1	2.174	0.080	0.740	5.0	5.0	225.3	2
03	SOLv	SL=	60.1	0.274	0.487	0.003	1.2	61.3	148.5	41
03	SOLn	SL=	60.1	0.257	0.487	0.003	1.2	61.3	148.5	41

Pkt 35 Strg 4 v Da= 273.0 mm s= 7.8 mm (VUU) V-Naht Umf.,Ubear.
Strg 4 n Da= 273.0 mm s= 13.2 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	63.0	50.4	0.148	0.144	2.741	6.6	57.0	111.6	51
01	SL n	63.0	27.9	0.148	0.144	2.741	4.1	32.1	111.6	29
02	SE v	SL=	57.0	2.174	1.550	0.454	5.9	5.9	228.4	3
02	SE n	SL=	32.1	2.174	1.550	0.454	3.9	3.9	253.3	2
03	SOLv	SL=	57.0	0.257	0.138	0.017	0.4	57.4	148.5	39
03	SOLn	SL=	32.1	0.257	0.138	0.017	0.2	32.3	148.5	22

Pkt 45 Strg 4 v Da= 273.0 mm s= 13.2 mm (VUU) V-Naht Umf.,Ubear.
Strg 4 n Da= 273.0 mm s= 7.8 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	63.0	27.9	0.009	0.299	2.169	3.3	31.2	111.6	28
01	SL n	63.0	50.4	0.009	0.299	2.169	5.2	55.7	111.6	50
02	SE v	SL=	31.2	0.079	2.287	0.181	3.3	3.3	254.2	1
02	SE n	SL=	55.7	0.079	2.287	0.181	5.0	5.0	229.7	2
03	SOLv	SL=	31.2	0.124	0.016	0.039	0.1	31.3	148.5	21
03	SOLn	SL=	55.7	0.124	0.016	0.039	0.1	55.8	148.5	38

Pkt 50 Strg 4 v Da= 273.0 mm s= 7.8 mm (BGL) Bogen GLatt
Strg 4 m Da= 273.0 mm s= 7.8 mm R= 381.0 mm
Strg 4 n Da= 273.0 mm s= 7.8 mm ii= 2.3 io= 1.9

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	63.0	50.4	0.009	0.019	0.026	0.2	50.6	111.6	45
01	SL m	63.0	50.4	0.088	0.018	0.376	1.7	52.2	111.6	47
01	SL n	63.0	50.4	0.133	0.035	0.458	2.1	52.6	111.6	47
02	SE v	SL=	50.6	0.079	0.728	0.050	3.7	3.7	234.8	2
02	SE m	SL=	52.2	0.104	0.600	0.009	3.0	3.0	233.2	1
02	SE n	SL=	52.6	0.093	0.692	0.037	3.5	3.5	232.8	1
03	SOLv	SL=	50.6	0.124	0.046	0.039	0.3	50.9	148.5	34
03	SOLm	SL=	52.2	0.269	0.050	0.066	0.5	52.6	148.5	35
03	SOLn	SL=	52.6	0.332	0.070	0.056	0.5	53.1	148.5	36

Pkt 70 Strg 4 v Da= 273.0 mm s= 7.8 mm (BGL) Bogen GLatt
Strg 4 m Da= 273.0 mm s= 7.8 mm R= 381.0 mm
Strg 4 n Da= 273.0 mm s= 7.8 mm ii= 2.3 io= 1.9

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	63.0	50.4	0.133	0.051	0.322	1.5	52.0	111.6	47
01	SL m	63.0	50.4	0.100	0.039	0.614	2.8	53.3	111.6	48
01	SL n	63.0	50.4	0.009	0.004	0.593	2.7	53.2	111.6	48
02	SE v	SL=	52.0	0.093	1.912	0.171	9.6	9.6	233.4	4
02	SE m	SL=	53.3	0.199	2.168	0.085	10.9	10.9	232.1	5
02	SE n	SL=	53.2	0.213	2.441	0.050	12.2	12.2	232.2	5
03	SOLv	SL=	52.0	0.332	0.047	0.061	0.4	52.4	148.5	35
03	SOLm	SL=	53.3	0.217	0.053	0.021	0.3	53.6	148.5	36
03	SOLn	SL=	53.2	0.036	0.126	0.039	0.7	53.9	148.5	36

Pkt 75 Strg 4 v Da= 273.0 mm s= 7.8 mm (VUU) V-Naht Umf.,Ubear.
Strg 4 n Da= 273.0 mm s= 7.8 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	63.0	50.4	0.009	0.004	0.593	1.4	51.9	111.6	46
01	SL n	63.0	50.4	0.009	0.004	0.593	1.4	51.9	111.6	46
02	SE v	SL=	51.9	0.213	2.441	0.050	5.3	5.3	233.5	2
02	SE n	SL=	51.9	0.213	2.441	0.050	5.3	5.3	233.5	2
03	SOLv	SL=	51.9	0.036	0.126	0.039	0.3	52.2	148.5	35
03	SOLn	SL=	51.9	0.036	0.126	0.039	0.3	52.2	148.5	35

Pkt 80 Strg 4 v Da= 273.0 mm s= 7.8 mm (VUU) V-Naht Umf.,Ubear.
Strg 4 n Da= 308.2 mm s= 25.4 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	63.0	50.4	0.009	0.010	0.731	1.7	52.2	111.6	47
01 SL n	63.0	14.5	0.009	0.010	0.731	0.5	15.0	111.5	13
02 SE v	SL=	52.2	0.213	2.519	0.039	5.5	5.5	233.2	2
02 SE n	SL=	15.0	0.213	2.519	0.039	1.7	1.7	270.2	1
03 SOLv	SL=	52.2	0.036	0.159	0.038	0.4	52.6	148.5	35
03 SOLn	SL=	15.0	0.036	0.159	0.038	0.1	15.1	148.4	10

Pkt 90 Strg 4 v Da= 308.2 mm s= 25.4 mm (VUU) V-Naht Umf.,Ubear.
Strg 4 n Da= 273.0 mm s= 7.8 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	63.0	14.5	0.009	0.078	2.495	1.7	16.2	111.5	15
01 SL n	63.0	50.4	0.009	0.078	2.495	6.0	56.4	111.6	51
02 SE v	SL=	16.2	0.213	2.897	0.017	1.9	1.9	269.0	1
02 SE n	SL=	56.4	0.213	2.897	0.017	6.3	6.3	229.0	3
03 SOLv	SL=	16.2	0.036	0.367	0.038	0.3	16.5	148.4	11
03 SOLn	SL=	56.4	0.036	0.367	0.038	0.9	57.3	148.5	39

Pkt 92 Strg 4 v Da= 273.0 mm s= 7.8 mm (RKR) Reduz. Kl.Radien
Strg 4 n Da= 406.4 mm s= 11.0 mm A= 36.0 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	63.0	50.4	0.009	0.103	3.491	8.3	58.8	111.6	53
01 SL n	63.0	53.5	0.009	0.103	3.491	2.7	56.2	111.6	50
02 SE v	SL=	58.8	0.213	3.036	0.038	6.6	6.6	226.6	3
02 SE n	SL=	56.2	0.213	3.036	0.038	2.2	2.2	229.2	1
03 SOLv	SL=	58.8	0.036	0.461	0.038	1.1	59.9	148.5	40
03 SOLn	SL=	56.2	0.036	0.461	0.038	0.4	56.5	148.5	38

Pkt 94 Strg 4 v Da= 406.4 mm s= 11.0 mm (VUU) V-Naht Umf.,Ubear.
Strg 4 n Da= 406.4 mm s= 11.0 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	63.0	53.5	0.009	0.112	3.829	2.9	56.4	111.6	51
01 SL n	63.0	53.5	0.009	0.112	3.829	2.9	56.4	111.6	51
02 SE v	SL=	56.4	0.213	3.083	0.045	2.2	2.2	229.0	1
02 SE n	SL=	56.4	0.213	3.083	0.045	2.2	2.2	229.0	1
03 SOLv	SL=	56.4	0.036	0.494	0.038	0.4	56.8	148.5	38
03 SOLn	SL=	56.4	0.036	0.494	0.038	0.4	56.8	148.5	38

Pkt 95 Strg 4 v Da= 406.4 mm s= 11.0 mm (VUU) V-Naht Umf.,Ubear.
Strg 4 n Da= 406.4 mm s= 11.0 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	63.0	53.5	0.009	0.212	8.232	6.3	59.8	111.6	54
01 SL n	63.0	53.5	1.123	0.212	8.232	6.3	59.9	111.6	54

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 (%)
02	SE v	SL=	59.8	0.213	3.639	0.128	2.6	2.6	225.6	1
02	SE n	SL=	59.9	0.213	3.639	0.128	2.6	2.6	225.5	1
03	SOLv	SL=	59.8	0.036	1.030	0.038	0.8	60.6	148.5	41
03	SOLn	SL=	59.9	0.701	1.030	0.038	0.8	60.7	148.5	41

Pkt 96 Strg 4 v Da= 406.4 mm s= 11.0 mm (VUU) V-Naht Umf.,Ubear.
Strg 4 n Da= 406.4 mm s= 11.0 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	63.0	53.5	1.123	0.128	3.658	2.9	56.4	111.6	50
01	SL n	63.0	53.5	1.123	0.128	3.658	2.9	56.4	111.6	50
02	SE v	SL=	56.4	0.213	2.579	0.039	1.8	1.8	229.0	1
02	SE n	SL=	56.4	0.213	2.579	0.039	1.8	1.8	229.0	1
03	SOLv	SL=	56.4	0.701	0.404	0.009	0.4	56.7	148.5	38
03	SOLn	SL=	56.4	0.701	0.404	0.009	0.4	56.7	148.5	38

Pkt 98 Strg 4 v Da= 406.4 mm s= 11.0 mm (RKR) Reduz. Kl.Radien
Strg 4 n Da= 273.0 mm s= 7.8 mm A= 36.0 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	63.0	53.5	1.123	0.121	3.306	2.6	56.1	111.6	50
01	SL n	63.0	50.4	1.123	0.121	3.306	8.1	58.5	111.6	52
02	SE v	SL=	56.1	0.213	2.491	0.031	1.8	1.8	229.3	1
02	SE n	SL=	58.5	0.213	2.491	0.031	5.4	5.4	226.9	2
03	SOLv	SL=	56.1	0.701	0.363	0.007	0.3	56.4	148.5	38
03	SOLn	SL=	58.5	0.701	0.363	0.007	1.0	59.5	148.5	40

Pkt 100 Strg 4 v Da= 273.0 mm s= 7.8 mm (VUU) V-Naht Umf.,Ubear.
Strg 4 n Da= 273.0 mm s= 7.8 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	63.0	50.4	1.123	0.101	2.266	5.6	56.0	111.6	50
01	SL n	63.0	50.4	1.123	0.101	2.266	5.6	56.0	111.6	50
02	SE v	SL=	56.0	0.213	2.226	0.009	4.9	4.9	229.3	2
02	SE n	SL=	56.0	0.213	2.226	0.009	4.9	4.9	229.3	2
03	SOLv	SL=	56.0	0.701	0.246	0.000	0.7	56.7	148.5	38
03	SOLn	SL=	56.0	0.701	0.246	0.000	0.7	56.7	148.5	38

Pkt 110 Strg 4 v Da= 273.0 mm s= 7.8 mm (TWA) T-Stck Weld.,Aufsw
Strg 4 n Da= 273.0 mm s= 7.8 mm ii= 2.5 io= 2.5
Strg 5 n Da= 21.3 mm s= 1.8 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	63.0	50.4	1.123	0.635	0.026	3.9	54.4	111.6	49
01	SL n	63.0	50.4	1.123	0.635	0.026	3.9	54.4	111.6	49
01	SL n	63.0	14.1	0.012	0.000	0.000	0.1	14.2	105.5	13
02	SE v	SL=	54.4	0.213	0.070	1.279	6.9	6.9	231.0	3
02	SE n	SL=	54.4	0.213	0.070	1.279	6.9	6.9	231.0	3
02	SE n	SL=	14.2	0.000	0.000	0.000	0.0	0.0	263.5	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=	54.4	0.701	0.026	0.102	0.7	55.1	148.5	37
03	SOLn	SL=	54.4	0.701	0.026	0.102	0.7	55.1	148.5	37
03	SOLn	SL=	14.2	0.000	0.000	0.000	0.0	14.2	140.3	10

Pkt 120 Strg 4 v Da= 273.0 mm s= 7.8 mm (VUU) V-Naht Umf.,Ubear.
Strg 4 n Da= 308.2 mm s= 25.4 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	63.0	50.4	1.123	0.003	1.470	3.7	54.1	111.6	48
01	SL n	63.0	14.5	1.123	0.003	1.470	1.0	15.6	111.5	14
02	SE v	SL=	54.1	0.213	0.989	0.095	2.2	2.2	231.3	1
02	SE n	SL=	15.6	0.213	0.989	0.095	0.7	0.7	269.7	0
03	SOLv	SL=	54.1	0.701	0.188	0.034	0.6	54.7	148.5	37
03	SOLn	SL=	15.6	0.701	0.188	0.034	0.2	15.7	148.4	11

Pkt 130 Strg 4 v Da= 308.2 mm s= 25.4 mm (VUU) V-Naht Umf.,Ubear.
Strg 4 n Da= 273.0 mm s= 7.8 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	63.0	14.5	1.123	0.010	1.743	1.2	15.8	111.5	14
01	SL n	63.0	50.4	1.123	0.010	1.743	4.3	54.8	111.6	49
02	SE v	SL=	15.8	0.213	0.814	0.109	0.6	0.6	269.5	0
02	SE n	SL=	54.8	0.213	0.814	0.109	1.8	1.8	230.6	1
03	SOLv	SL=	15.8	0.701	0.234	0.039	0.2	16.0	148.4	11
03	SOLn	SL=	54.8	0.701	0.234	0.039	0.7	55.5	148.5	37

Pkt 140 Strg 4 v Da= 273.0 mm s= 7.8 mm (BGL) Bogen GLatt
Strg 4 m Da= 273.0 mm s= 7.8 mm R= 381.0 mm
Strg 4 n Da= 273.0 mm s= 7.8 mm ii= 2.3 io= 1.9

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	63.0	50.4	1.123	0.227	0.358	2.2	52.7	111.6	47
01	SL m	63.0	50.4	1.591	0.055	0.068	0.7	51.1	111.6	46
01	SL n	63.0	50.4	1.877	0.036	0.232	1.4	51.8	111.6	46
02	SE v	SL=	52.7	0.213	0.480	3.599	15.2	15.2	232.7	7
02	SE m	SL=	51.1	1.221	0.436	3.613	15.5	15.5	234.3	7
02	SE n	SL=	51.8	2.552	0.276	3.076	14.1	14.1	233.6	6
03	SOLv	SL=	52.7	0.701	0.160	0.502	2.6	55.3	148.5	37
03	SOLm	SL=	51.1	0.663	0.146	0.468	2.4	53.5	148.5	36
03	SOLn	SL=	51.8	0.530	0.095	0.369	1.9	53.7	148.5	36

Pkt 145 Strg 4 v Da= 273.0 mm s= 7.8 mm (BGL) Bogen GLatt
Strg 4 m Da= 273.0 mm s= 7.8 mm R= 381.0 mm
Strg 4 n Da= 273.0 mm s= 7.8 mm ii= 2.3 io= 1.9

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	63.0	50.4	1.877	0.232	0.036	1.6	52.0	111.6	47
01	SL m	63.0	50.4	1.490	0.421	0.672	4.1	54.5	111.6	49
01	SL n	63.0	50.4	0.111	0.963	0.948	6.9	57.3	111.6	51

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 (%)
02	SE v	SL=	52.0	2.552	3.076	0.276	16.4	16.4	233.4	7
02	SE m	SL=	54.5	1.766	3.282	1.621	18.2	18.2	230.9	8
02	SE n	SL=	57.3	0.260	3.015	2.016	17.3	17.3	228.1	8
03	SOLv	SL=	52.0	0.530	0.369	0.095	2.2	54.2	148.5	36
03	SOLm	SL=	54.5	0.655	0.384	0.224	2.4	57.0	148.5	38
03	SOLn	SL=	57.3	0.529	0.288	0.229	2.0	59.3	148.5	40

Pkt 150 Strg 4 v Da= 273.0 mm s= 7.8 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	63.0	50.4	0.111	0.424	2.079	5.1	55.5	111.6	50
02	SE v	SL=	55.5	0.088	3.029	0.550	6.7	6.7	229.9	3
03	SOLv	SL=	55.5	0.529	0.091	0.130	0.5	56.0	148.5	38

Pkt 700 Strg 5 v Da= 21.3 mm s= 1.8 mm (VUU) V-Naht Umf.,Ubear.
Strg 5 n Da= 32.5 mm s= 7.4 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	63.0	14.1	0.010	0.000	0.000	0.1	14.1	105.5	13
01	SL n	63.0	2.7	0.010	0.000	0.000	0.0	2.7	105.5	3
02	SE v	SL=	14.1	0.000	0.000	0.000	0.0	0.0	263.6	0
02	SE n	SL=	2.7	0.000	0.000	0.000	0.0	0.0	275.0	0
03	SOLv	SL=	14.1	0.000	0.000	0.000	0.0	14.1	140.3	10
03	SOLn	SL=	2.7	0.000	0.000	0.000	0.0	2.7	140.3	2

Pkt 710 Strg 5 v Da= 32.5 mm s= 7.4 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	63.0	2.7	0.000	0.000	0.000	0.0	2.7	105.5	3
02	SE v	SL=	2.7	0.000	0.000	0.000	0.0	0.0	275.0	0
03	SOLv	SL=	2.7	0.000	0.000	0.000	0.0	2.7	140.3	2

Pkt 150 Strg 6 n Da= 273.0 mm s= 7.8 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 n	63.0	50.4	0.086	0.424	2.079	5.1	55.5	111.6	50
02	SE n	SL=	55.5	0.088	3.029	0.550	6.7	6.7	229.9	3
03	SOLn	SL=	55.5	0.420	0.091	0.130	0.4	56.0	148.5	38

Pkt 160 Strg 6 v Da= 273.0 mm s= 7.8 mm (VUU) V-Naht Umf.,Ubear.
Strg 6 n Da= 273.0 mm s= 7.8 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	63.0	50.4	0.086	0.091	3.983	9.5	60.0	111.6	54
01	SL n	63.0	50.4	0.086	0.091	3.983	9.5	60.0	111.6	54

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 (%)
02	SE v	SL=	60.0	0.260	0.764	0.133	1.8	1.8	225.4	1
02	SE n	SL=	60.0	0.260	0.764	0.133	1.8	1.8	225.4	1
03	SOLv	SL=	60.0	0.420	1.097	0.026	2.7	62.7	148.5	42
03	SOLn	SL=	60.0	0.420	1.097	0.026	2.7	62.7	148.5	42

Pkt 170 Strg 6 v Da= 273.0 mm s= 7.8 mm (VUU) V-Naht Umf.,Ubear.
Strg 6 n Da= 273.0 mm s= 7.8 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	63.0	50.4	0.086	0.028	1.322	3.2	53.6	111.6	48
01	SL n	63.0	50.4	0.086	0.028	1.322	3.2	53.6	111.6	48
02	SE v	SL=	53.6	0.260	2.032	0.057	4.5	4.5	231.8	2
02	SE n	SL=	53.6	0.260	2.032	0.057	4.5	4.5	231.8	2
03	SOLv	SL=	53.6	0.420	0.126	0.011	0.4	54.0	148.5	36
03	SOLn	SL=	53.6	0.420	0.126	0.011	0.4	54.0	148.5	36

Pkt 180 Strg 6 v Da= 273.0 mm s= 7.8 mm (TWA) T-Stck Weld.,Aufsw
Strg 6 n Da= 273.0 mm s= 7.8 mm ii= 2.5 io= 2.5
Strg 7 n Da= 48.3 mm s= 4.0 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	63.0	50.4	0.086	7.050	0.187	41.6	92.1	111.6	82
01	SL n	63.0	50.4	0.086	7.050	0.187	41.6	92.1	111.6	82
01	SL n	63.0	14.4	0.013	0.000	0.000	0.0	14.5	111.6	13
02	SE v	SL=	92.1	0.260	0.310	3.724	20.1	20.1	193.3	10
02	SE n	SL=	92.1	0.260	0.310	3.724	20.1	20.1	193.3	10
02	SE n	SL=	14.5	0.000	0.000	0.000	0.0	0.0	270.9	0
03	SOLv	SL=	92.1	0.420	0.061	2.311	13.7	105.8	148.5	71
03	SOLn	SL=	92.1	0.420	0.061	2.311	13.7	105.8	148.5	71
03	SOLn	SL=	14.5	0.000	0.000	0.000	0.0	14.5	148.5	10

Pkt 185 Strg 6 v Da= 273.0 mm s= 7.8 mm (VUU) V-Naht Umf.,Ubear.
Strg 6 n Da= 273.0 mm s= 7.8 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	63.0	50.4	0.086	0.199	7.834	18.7	69.2	111.6	62
01	SL n	63.0	50.4	0.064	0.009	3.027	7.2	57.7	111.6	52
02	SE v	SL=	69.2	0.260	3.856	0.330	8.4	8.4	216.2	4
02	SE n	SL=	57.7	0.038	16.172	0.072	35.1	35.1	227.7	15
03	SOLv	SL=	69.2	0.420	2.558	0.065	6.2	75.3	148.5	51
03	SOLn	SL=	57.7	0.169	0.723	0.075	1.8	59.4	148.5	40

Pkt 190 Strg 6 v Da= 273.0 mm s= 7.8 mm (BGL) Bogen GLatt
Strg 6 m Da= 273.0 mm s= 7.8 mm R= 381.0 mm
Strg 6 n Da= 273.0 mm s= 7.8 mm ii= 2.3 io= 1.9

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	63.0	50.4	0.064	0.015	0.728	3.3	53.8	111.6	48
01	SL m	63.0	50.4	0.049	0.010	0.633	2.9	53.4	111.6	48
01	SL n	63.0	50.4	0.005	0.007	0.119	0.5	51.0	111.6	46

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 (%)
02	SE v	SL=	53.8	0.038	4.334	0.047	21.7	21.7	231.6	9
02	SE m	SL=	53.4	0.060	5.325	0.005	26.7	26.7	232.0	11
02	SE n	SL=	51.0	0.045	5.351	0.040	26.8	26.8	234.4	11
03	SOLv	SL=	53.8	0.169	0.273	0.211	1.8	55.6	148.5	37
03	SOLm	SL=	53.4	0.436	0.305	0.122	1.8	55.2	148.5	37
03	SOLn	SL=	51.0	0.520	0.311	0.046	1.8	52.8	148.5	36

Pkt 195 Strg 6 v Da= 273.0 mm s= 7.8 mm (VUU) V-Naht Umf.,Ubear.
Strg 6 n Da= 273.0 mm s= 7.8 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	63.0	50.4	0.005	0.154	3.273	7.8	58.3	111.6	52
01	SL n	63.0	50.4	0.097	0.154	3.273	7.8	58.3	111.6	52
02	SE v	SL=	58.3	0.045	1.417	0.052	3.1	3.1	227.1	1
02	SE n	SL=	58.3	0.045	1.417	0.052	3.1	3.1	227.1	1
03	SOLv	SL=	58.3	0.520	0.792	0.099	2.0	60.3	148.5	41
03	SOLn	SL=	58.3	0.230	0.792	0.099	1.9	60.2	148.5	41

Pkt 198 Strg 6 v Da= 273.0 mm s= 7.8 mm (VUU) V-Naht Umf.,Ubear.
Strg 6 n Da= 273.0 mm s= 7.8 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	63.0	50.4	0.097	0.401	5.343	12.8	63.3	111.6	57
01	SL n	63.0	50.4	0.370	0.401	5.343	12.8	63.3	111.6	57
02	SE v	SL=	63.3	0.045	0.346	0.361	1.1	1.1	222.1	0
02	SE n	SL=	63.3	0.045	0.346	0.361	1.1	1.1	222.1	0
03	SOLv	SL=	63.3	0.230	2.428	0.263	5.9	69.1	148.5	47
03	SOLn	SL=	63.3	0.822	2.428	0.263	6.0	69.3	148.5	47

Pkt 200 Strg 6 v Da= 273.0 mm s= 7.8 mm (BGL) Bogen GLatt
Strg 6 m Da= 273.0 mm s= 7.8 mm R= 381.0 mm
Strg 6 n Da= 273.0 mm s= 7.8 mm ii= 2.3 io= 1.9

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	63.0	50.4	0.370	1.242	0.311	7.0	57.5	111.6	51
01	SL m	63.0	50.4	1.119	1.551	0.132	8.7	59.2	111.6	53
01	SL n	63.0	50.4	1.045	1.580	0.499	9.1	59.6	111.6	53
02	SE v	SL=	57.5	0.045	2.198	0.873	11.6	11.6	227.9	5
02	SE m	SL=	59.2	0.605	1.991	0.697	10.5	10.5	226.2	5
02	SE n	SL=	59.6	0.941	1.028	0.113	5.6	5.6	225.8	2
03	SOLv	SL=	57.5	0.822	0.321	0.538	3.2	60.6	148.5	41
03	SOLm	SL=	59.2	0.600	0.239	0.377	2.3	61.4	148.5	41
03	SOLn	SL=	59.6	0.061	0.060	0.045	0.4	60.0	148.5	40

Pkt 210 Strg 6 v Da= 273.0 mm s= 7.8 mm (BGL) Bogen GLatt
Strg 6 m Da= 273.0 mm s= 7.8 mm R= 381.0 mm
Strg 6 n Da= 273.0 mm s= 7.8 mm ii= 2.3 io= 1.9

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	63.0	50.4	0.645	1.318	0.520	7.7	58.2	111.6	52
01 SL m	63.0	50.4	0.599	1.278	0.164	7.2	57.6	111.6	52
01 SL n	63.0	50.4	0.370	1.341	0.288	7.6	58.0	111.6	52
02 SE v	SL=	58.2	0.941	1.768	0.239	9.1	9.1	227.2	4
02 SE m	SL=	57.6	0.476	2.731	0.882	14.2	14.2	227.8	6
02 SE n	SL=	58.0	0.307	2.938	1.008	15.3	15.3	227.4	7
03 SOLv	SL=	58.2	0.061	0.453	0.257	2.8	60.9	148.5	41
03 SOLm	SL=	57.6	0.447	0.598	0.789	5.0	62.6	148.5	42
03 SOLn	SL=	58.0	0.544	0.633	0.840	5.3	63.3	148.5	43

Pkt 220 Strg 6 v Da= 273.0 mm s= 7.8 mm (VUU) V-Naht Umf.,Ubear.
Strg 6 n Da= 273.0 mm s= 7.8 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	63.0	50.4	0.370	0.177	1.329	3.3	53.7	111.6	48
01 SL n	63.0	50.4	0.366	0.177	1.329	3.3	53.7	111.6	48
02 SE v	SL=	53.7	0.307	1.661	0.232	3.7	3.7	231.7	2
02 SE n	SL=	53.7	0.307	1.661	0.232	3.7	3.7	231.7	2
03 SOLv	SL=	53.7	0.544	0.422	0.282	1.3	55.0	148.5	37
03 SOLn	SL=	53.7	0.498	0.422	0.282	1.3	55.0	148.5	37

Pkt 230 Strg 6 v Da= 273.0 mm s= 7.8 mm (BGL) Bogen GLatt
Strg 6 m Da= 273.0 mm s= 7.8 mm R= 381.0 mm
Strg 6 n Da= 273.0 mm s= 7.8 mm ii= 2.3 io= 1.9

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	63.0	50.4	0.366	0.639	0.559	4.4	54.9	111.6	49
01 SL m	63.0	50.4	0.487	0.685	0.154	3.9	54.4	111.6	49
01 SL n	63.0	50.4	0.323	0.623	0.294	3.7	54.2	111.6	49
02 SE v	SL=	54.9	0.307	3.121	3.096	20.3	20.3	230.5	9
02 SE m	SL=	54.4	2.533	3.040	2.278	18.8	18.8	231.0	8
02 SE n	SL=	54.2	3.528	2.532	0.125	14.8	14.8	231.2	6
03 SOLv	SL=	54.9	0.498	0.297	0.173	1.9	56.7	148.5	38
03 SOLm	SL=	54.4	0.439	0.273	0.383	2.4	56.7	148.5	38
03 SOLn	SL=	54.2	0.316	0.198	0.404	2.2	56.4	148.5	38

Pkt 240 Strg 6 v Da= 273.0 mm s= 7.8 mm (BGL) Bogen GLatt
Strg 6 m Da= 273.0 mm s= 7.8 mm R= 381.0 mm
Strg 6 n Da= 273.0 mm s= 7.8 mm ii= 2.3 io= 1.9

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	63.0	50.4	0.323	1.932	0.031	10.7	61.1	111.6	55
01 SL m	63.0	50.4	1.584	2.388	0.418	13.5	64.0	111.6	57
01 SL n	63.0	50.4	2.086	2.522	0.622	14.5	64.9	111.6	58
02 SE v	SL=	61.1	3.528	2.144	1.260	14.2	14.2	224.3	6
02 SE m	SL=	64.0	3.622	2.385	1.031	14.9	14.9	221.4	7
02 SE n	SL=	64.9	2.069	2.356	2.718	17.0	17.0	220.5	8

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=	61.1	0.316	0.648	0.229	3.8	64.9	148.5	44
03	SOLm	SL=	64.0	0.313	0.647	0.258	3.8	67.8	148.5	46
03	SOLn	SL=	64.9	0.091	0.562	0.161	3.2	68.1	148.5	46

Pkt 250 Strg 6 v Da= 273.0 mm s= 7.8 mm (VUU) V-Naht Umf.,Ubear.
Strg 6 n Da= 273.0 mm s= 7.8 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	63.0	50.4	4.061	1.389	0.663	4.3	54.7	111.6	49
01	SL n	63.0	50.4	5.106	1.389	0.663	4.5	54.9	111.6	49
02	SE v	SL=	54.7	2.069	0.330	4.742	11.3	11.3	230.6	5
02	SE n	SL=	54.9	2.069	0.330	4.742	11.3	11.3	230.5	5
03	SOLv	SL=	54.7	0.091	2.334	2.099	7.5	62.3	148.5	42
03	SOLn	SL=	54.9	0.092	2.334	2.099	7.5	62.4	148.5	42

Pkt 260 Strg 6 v Da= 273.0 mm s= 7.8 mm (BGL) Bogen GLatt
Strg 6 m Da= 273.0 mm s= 7.8 mm R= 381.0 mm
Strg 6 n Da= 273.0 mm s= 7.8 mm ii= 2.3 io= 1.9

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	63.0	50.4	3.302	1.097	2.213	12.3	62.8	111.6	56
01	SL m	63.0	50.4	3.025	1.023	2.016	11.3	61.7	111.6	55
01	SL n	63.0	50.4	2.312	0.777	1.513	8.5	58.9	111.6	53
02	SE v	SL=	62.8	2.069	1.253	1.305	9.4	9.4	222.6	4
02	SE m	SL=	61.7	1.398	1.110	2.071	10.7	10.7	223.7	5
02	SE n	SL=	58.9	0.484	1.020	2.523	11.7	11.7	226.4	5
03	SOLv	SL=	62.8	0.092	0.035	0.145	0.7	63.5	148.5	43
03	SOLm	SL=	61.7	0.071	0.064	0.094	0.6	62.3	148.5	42
03	SOLn	SL=	58.9	0.125	0.094	0.104	0.7	59.7	148.5	40

Pkt 270 Strg 6 v Da= 273.0 mm s= 7.8 mm (BGL) Bogen GLatt
Strg 6 m Da= 273.0 mm s= 7.8 mm R= 381.0 mm
Strg 6 n Da= 273.0 mm s= 7.8 mm ii= 2.3 io= 1.9

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	63.0	50.4	2.141	1.624	0.098	9.3	59.7	111.6	53
01	SL m	63.0	50.4	1.611	1.463	0.634	8.8	59.2	111.6	53
01	SL n	63.0	50.4	0.257	0.964	1.029	7.1	57.6	111.6	52
02	SE v	SL=	59.7	0.484	2.742	0.854	14.2	14.2	225.7	6
02	SE m	SL=	59.2	0.218	2.751	0.841	14.2	14.2	226.1	6
02	SE n	SL=	57.6	0.706	2.498	0.336	12.7	12.7	227.8	6
03	SOLv	SL=	59.7	0.125	0.094	0.154	0.9	60.6	148.5	41
03	SOLm	SL=	59.2	0.113	0.107	0.241	1.3	60.5	148.5	41
03	SOLn	SL=	57.6	0.081	0.124	0.189	1.1	58.7	148.5	40

Pkt 280 Strg 6 v Da= 273.0 mm s= 7.8 mm (VUU) V-Naht Umf.,Ubear.
Strg 6 n Da= 273.0 mm s= 12.0 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	63.0	50.4	0.257	0.130	0.072	0.4	50.8	111.6	46
01	SL n	63.0	31.2	0.257	0.130	0.072	0.3	31.4	81.5	39
02	SE v	SL=	50.8	0.706	1.327	1.193	4.2	4.2	234.5	2
02	SE n	SL=	31.4	0.706	1.327	1.193	3.2	3.2	174.5	2
03	SOLv	SL=	50.8	0.081	0.194	0.036	0.5	51.3	148.5	35
03	SOLn	SL=	31.4	0.081	0.194	0.036	0.3	31.8	108.3	29

Pkt 860 Strg 6 v Da= 273.0 mm s= 12.0 mm (VUU) V-Naht Umf.,Ubear.
Strg 6 n Da= 273.0 mm s= 12.0 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	63.0	31.2	0.257	0.285	1.316	2.2	33.4	81.5	41
01	SL n	63.0	31.2	0.257	0.285	1.316	2.2	33.4	81.5	41
02	SE v	SL=	33.4	0.706	0.076	0.573	1.5	1.5	172.6	1
02	SE n	SL=	33.4	0.706	0.076	0.573	1.5	1.5	172.6	1
03	SOLv	SL=	33.4	0.081	0.090	0.058	0.2	33.6	108.3	31
03	SOLn	SL=	33.4	0.081	0.090	0.058	0.2	33.6	108.3	31

Pkt 290 Strg 6 v Da= 273.0 mm s= 12.0 mm (RKR) Reduz. Kl.Radien
Strg 6 n Da= 324.0 mm s= 15.0 mm A= 23.0 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	63.0	31.2	0.257	0.299	1.410	2.4	33.5	81.5	41
01	SL n	63.0	29.4	0.257	0.299	1.410	1.4	30.7	81.5	38
02	SE v	SL=	33.5	0.706	0.034	0.518	1.5	1.5	172.4	1
02	SE n	SL=	30.7	0.706	0.034	0.518	0.8	0.8	175.3	0
03	SOLv	SL=	33.5	0.081	0.085	0.062	0.2	33.7	108.3	31
03	SOLn	SL=	30.7	0.081	0.085	0.062	0.1	30.8	108.3	28

Pkt 870 Strg 6 v Da= 324.0 mm s= 15.0 mm (VUU) V-Naht Umf.,Ubear.
Strg 6 n Da= 324.0 mm s= 15.0 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	63.0	29.4	0.257	0.313	1.500	1.4	30.8	81.5	38
01	SL n	63.0	29.4	0.257	0.313	1.500	1.4	30.8	81.5	38
02	SE v	SL=	30.8	0.706	0.145	0.463	0.8	0.8	175.2	0
02	SE n	SL=	30.8	0.706	0.145	0.463	0.8	0.8	175.2	0
03	SOLv	SL=	30.8	0.081	0.082	0.067	0.1	30.9	108.3	29
03	SOLn	SL=	30.8	0.081	0.082	0.067	0.1	30.9	108.3	29

Pkt 300 Strg 6 v Da= 324.0 mm s= 15.0 mm (TTU) T-Stck Uverstaerkt
Strg 6 n Da= 324.0 mm s= 15.0 mm ii= 3.4 io= 4.3
Strg 10 n Da= 168.3 mm s= 11.0 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	63.0	29.4	0.257	0.360	1.778	7.2	36.5	81.5	45
01	SL n	63.0	29.4	0.225	0.373	1.641	6.6	36.0	81.5	44
01	SL n	63.0	19.5	0.125	0.013	1.348	19.7	39.2	81.5	48
02	SE v	SL=	36.5	0.706	0.524	0.275	2.1	2.1	169.5	1
02	SE n	SL=	36.0	0.186	0.293	0.439	2.0	2.0	170.0	1
02	SE n	SL=	39.2	0.164	0.231	0.891	13.6	13.6	166.8	8
03	SOLv	SL=	36.5	0.081	0.083	0.083	0.4	37.0	108.3	34
03	SOLn	SL=	36.0	0.043	0.056	0.088	0.4	36.4	108.3	34
03	SOLn	SL=	39.2	0.024	0.054	0.084	1.4	40.6	108.3	37

Pkt 305 Strg 6 v Da= 324.0 mm s= 15.0 mm (TTU) T-Stck Uverstaerkt
Strg 6 n Da= 324.0 mm s= 15.0 mm ii= 3.4 io= 4.3
Strg 14 n Da= 168.3 mm s= 11.0 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	63.0	29.4	0.225	0.373	1.639	6.6	36.0	81.5	44
01	SL n	63.0	29.4	0.140	0.176	1.571	6.3	35.6	81.5	44
01	SL n	63.0	19.5	0.016	0.197	0.099	2.7	22.2	81.5	27
02	SE v	SL=	36.0	0.186	0.298	0.441	2.0	2.0	170.0	1
02	SE n	SL=	35.6	0.084	0.011	0.366	1.5	1.5	170.4	1
02	SE n	SL=	22.2	0.074	0.309	0.270	5.5	5.5	183.8	3
03	SOLv	SL=	36.0	0.043	0.056	0.088	0.4	36.4	108.3	34
03	SOLn	SL=	35.6	0.041	0.051	0.081	0.4	36.0	108.3	33
03	SOLn	SL=	22.2	0.044	0.008	0.127	1.9	24.1	108.3	22

Pkt 310 Strg 6 v Da= 324.0 mm s= 15.0 mm (TTU) T-Stck Uverstaerkt
Strg 6 n Da= 324.0 mm s= 15.0 mm ii= 3.4 io= 4.3
Strg 12 n Da= 168.3 mm s= 11.0 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	63.0	29.4	0.140	0.168	0.136	0.8	30.1	81.5	37
01	SL n	63.0	29.4	0.089	0.204	0.034	0.7	30.0	81.5	37
01	SL n	63.0	19.5	0.126	0.036	1.389	20.3	39.8	81.5	49
02	SE v	SL=	30.1	0.084	0.602	0.444	2.7	2.7	175.8	2
02	SE n	SL=	30.0	0.161	0.744	0.257	2.6	2.6	175.9	2
02	SE n	SL=	39.8	0.187	0.142	0.245	4.1	4.1	166.2	2
03	SOLv	SL=	30.1	0.041	0.057	0.029	0.2	30.4	108.3	28
03	SOLn	SL=	30.0	0.003	0.006	0.006	0.0	30.1	108.3	28
03	SOLn	SL=	39.8	0.027	0.053	0.081	1.3	41.2	108.3	38

Pkt 315 Strg 6 v Da= 324.0 mm s= 15.0 mm (TTU) T-Stck Uverstaerkt
Strg 6 n Da= 324.0 mm s= 15.0 mm ii= 3.4 io= 4.3
Strg 15 n Da= 168.3 mm s= 11.0 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	63.0	29.4	0.089	0.205	0.034	0.7	30.0	81.5	37
01	SL n	63.0	29.4	0.000	0.000	0.017	0.1	29.4	81.5	36
01	SL n	63.0	19.5	0.120	0.205	0.947	14.1	33.6	81.5	41
02	SE v	SL=	30.0	0.161	0.746	0.258	2.7	2.7	175.9	2
02	SE n	SL=	29.4	0.000	0.000	0.000	0.0	0.0	176.6	0
02	SE n	SL=	33.6	0.258	0.746	0.161	9.3	9.3	172.4	5
03	SOLv	SL=	30.0	0.003	0.006	0.006	0.0	30.1	108.3	28
03	SOLn	SL=	29.4	0.000	0.000	0.000	0.0	29.4	108.3	27
03	SOLn	SL=	33.6	0.023	0.006	0.033	0.5	34.0	108.3	31

Pkt 320 Strg 6 v Da= 324.0 mm s= 15.0 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	63.0	29.4	0.000	0.000	0.000	0.0	29.4	81.5	36
02	SE v	SL=	29.4	0.000	0.000	0.000	0.0	0.0	176.6	0
03	SOLv	SL=	29.4	0.000	0.000	0.000	0.0	29.4	108.3	27

Pkt 740 Strg 7 v Da= 48.3 mm s= 4.0 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	63.0	14.4	0.000	0.000	0.000	0.0	14.4	111.6	13
02	SE v	SL=	14.4	0.000	0.000	0.000	0.0	0.0	270.9	0
03	SOLv	SL=	14.4	0.000	0.000	0.000	0.0	14.4	148.5	10

Pkt 330 Strg 10 v Da= 168.3 mm s= 11.0 mm (VUU) V-Naht Umf.,Ubear.
Strg 10 n Da= 168.3 mm s= 7.1 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	63.0	19.5	0.125	0.026	0.040	0.3	19.7	81.5	24
01	SL n	63.0	32.7	0.125	0.026	0.040	0.4	33.1	81.5	41
02	SE v	SL=	19.7	0.164	0.076	0.031	0.9	0.9	186.2	1
02	SE n	SL=	33.1	0.164	0.076	0.031	1.3	1.3	172.9	1
03	SOLv	SL=	19.7	0.024	0.007	0.027	0.1	19.9	108.3	18
03	SOLn	SL=	33.1	0.024	0.007	0.027	0.2	33.3	108.3	31

Pkt 340 Strg 10 v Da= 168.3 mm s= 7.1 mm (BGL) Bogen GLatt
Strg 10 m Da= 168.3 mm s= 7.1 mm R= 229.0 mm
Strg 10 n Da= 168.3 mm s= 7.1 mm ii= 1.8 io= 1.5

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	63.0	32.7	0.125	0.040	0.026	0.6	33.3	81.5	41
01	SL m	63.0	32.7	0.817	0.200	0.121	3.1	35.8	81.5	44
01	SL n	63.0	32.7	1.013	0.248	0.144	3.8	36.5	81.5	45

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 (%)
02	SE v	SL=	33.3	0.164	0.031	0.076	1.5	1.5	172.7	1
02	SE m	SL=	35.8	0.064	0.166	0.137	2.7	2.7	170.2	2
02	SE n	SL=	36.5	0.043	0.199	0.124	3.0	3.0	169.5	2
03	SOLv	SL=	33.3	0.024	0.027	0.007	0.4	33.7	108.3	31
03	SOLm	SL=	35.8	0.032	0.020	0.022	0.4	36.2	108.3	33
03	SOLn	SL=	36.5	0.052	0.016	0.025	0.4	36.9	108.3	34

Pkt 350 Strg 10 v Da= 168.3 mm s= 7.1 mm (BGL) Bogen GLatt
Strg 10 m Da= 168.3 mm s= 7.1 mm R= 229.0 mm
Strg 10 n Da= 168.3 mm s= 7.1 mm ii= 1.8 io= 1.5

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	63.0	32.7	0.805	0.026	0.215	2.6	35.2	81.5	43
01	SL m	63.0	32.7	0.469	0.099	0.133	2.1	34.7	81.5	43
01	SL n	63.0	32.7	0.125	0.233	0.026	3.1	35.7	81.5	44
02	SE v	SL=	35.2	0.047	0.055	0.143	1.8	1.8	170.7	1
02	SE m	SL=	34.7	0.077	0.006	0.155	1.8	1.8	171.3	1
02	SE n	SL=	35.7	0.153	0.168	0.070	2.6	2.6	170.2	2
03	SOLv	SL=	35.2	0.052	0.040	0.061	0.8	36.1	108.3	33
03	SOLm	SL=	34.7	0.048	0.041	0.048	0.8	35.5	108.3	33
03	SOLn	SL=	35.7	0.024	0.039	0.007	0.5	36.3	108.3	33

Pkt 360 Strg 10 v Da= 168.3 mm s= 7.1 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	63.0	32.7	0.125	0.026	0.233	1.7	34.4	81.5	42
02	SE v	SL=	34.4	0.153	0.070	0.168	1.7	1.7	171.6	1
03	SOLv	SL=	34.4	0.024	0.007	0.039	0.3	34.7	108.3	32

Pkt 370 Strg 12 v Da= 168.3 mm s= 11.0 mm (VUU) V-Naht Umf.,Ubear.
Strg 12 n Da= 168.3 mm s= 7.1 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	63.0	19.5	0.126	0.026	0.075	0.4	19.9	81.5	24
01	SL n	63.0	32.7	0.126	0.026	0.075	0.6	33.3	81.5	41
02	SE v	SL=	19.9	0.187	0.113	0.099	1.2	1.2	186.1	1
02	SE n	SL=	33.3	0.187	0.113	0.099	1.8	1.8	172.7	1
03	SOLv	SL=	19.9	0.027	0.006	0.023	0.1	20.0	108.3	18
03	SOLn	SL=	33.3	0.027	0.006	0.023	0.2	33.5	108.3	31

Pkt 380 Strg 12 v Da= 168.3 mm s= 7.1 mm (BGL) Bogen GLatt
Strg 12 m Da= 168.3 mm s= 7.1 mm R= 229.0 mm
Strg 12 n Da= 168.3 mm s= 7.1 mm ii= 1.8 io= 1.5

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	63.0	32.7	0.126	0.075	0.026	1.0	33.7	81.5	41
01	SL m	63.0	32.7	1.010	0.276	0.098	4.0	36.7	81.5	45
01	SL n	63.0	32.7	1.320	0.343	0.113	5.0	37.6	81.5	46

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 (%)
02	SE v	SL=	33.7	0.187	0.099	0.113	2.3	2.3	172.3	1
02	SE m	SL=	36.7	0.226	0.073	0.019	1.9	1.9	169.3	1
02	SE n	SL=	37.6	0.160	0.050	0.139	2.0	2.0	168.3	1
03	SOLv	SL=	33.7	0.027	0.023	0.006	0.3	34.0	108.3	31
03	SOLm	SL=	36.7	0.079	0.035	0.022	0.5	37.2	108.3	34
03	SOLn	SL=	37.6	0.085	0.036	0.024	0.6	38.2	108.3	35

Pkt 390 Strg 12 v Da= 168.3 mm s= 7.1 mm (BGL) Bogen GLatt
Strg 12 m Da= 168.3 mm s= 7.1 mm R= 229.0 mm
Strg 12 n Da= 168.3 mm s= 7.1 mm ii= 1.8 io= 1.5

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	63.0	32.7	1.529	0.068	0.224	3.0	35.7	81.5	44
01	SL m	63.0	32.7	1.004	0.056	0.140	2.0	34.6	81.5	43
01	SL n	63.0	32.7	0.126	0.316	0.026	4.1	36.8	81.5	45
02	SE v	SL=	35.7	0.160	0.158	0.316	4.2	4.2	170.3	2
02	SE m	SL=	34.6	0.351	0.165	0.144	3.7	3.7	171.4	2
02	SE n	SL=	36.8	0.364	0.152	0.113	3.6	3.6	169.2	2
03	SOLv	SL=	35.7	0.085	0.024	0.060	0.7	36.4	108.3	34
03	SOLm	SL=	34.6	0.041	0.034	0.047	0.7	35.3	108.3	33
03	SOLn	SL=	36.8	0.027	0.049	0.006	0.6	37.5	108.3	35

Pkt 400 Strg 12 v Da= 168.3 mm s= 7.1 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	63.0	32.7	0.126	0.026	0.316	2.3	35.0	81.5	43
02	SE v	SL=	35.0	0.364	0.113	0.152	3.0	3.0	171.0	2
03	SOLv	SL=	35.0	0.027	0.006	0.049	0.4	35.4	108.3	33

Pkt 410 Strg 14 v Da= 168.3 mm s= 11.0 mm (VUU) V-Naht Umf.,Ubear.
Strg 14 n Da= 168.3 mm s= 7.1 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	63.0	19.5	0.016	0.008	0.015	0.1	19.6	81.5	24
01	SL n	63.0	32.7	0.016	0.008	0.015	0.1	32.8	81.5	40
02	SE v	SL=	19.6	0.074	0.045	0.662	3.4	3.4	186.4	2
02	SE n	SL=	32.8	0.074	0.045	0.662	4.9	4.9	173.2	3
03	SOLv	SL=	19.6	0.044	0.011	0.051	0.3	19.8	108.3	18
03	SOLn	SL=	32.8	0.044	0.011	0.051	0.4	33.2	108.3	31

Pkt 420 Strg 14 v Da= 168.3 mm s= 7.1 mm (BGL) Bogen GLatt
Strg 14 m Da= 168.3 mm s= 7.1 mm R= 229.0 mm
Strg 14 n Da= 168.3 mm s= 7.1 mm ii= 1.8 io= 1.5

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	63.0	32.7	0.016	0.015	0.008	0.2	32.9	81.5	40
01	SL m	63.0	32.7	0.113	0.006	0.067	0.8	33.4	81.5	41
01	SL n	63.0	32.7	0.161	0.013	0.087	1.0	33.7	81.5	41

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 (%)
02 SE v	SL=	32.9	0.074	0.662	0.045	8.8	8.8	173.1	5
02 SE m	SL=	33.4	0.028	0.648	0.067	8.6	8.6	172.5	5
02 SE n	SL=	33.7	0.020	0.561	0.049	7.4	7.4	172.3	4
03 SOLv	SL=	32.9	0.044	0.051	0.011	0.7	33.6	108.3	31
03 SOLm	SL=	33.4	0.083	0.060	0.012	0.8	34.2	108.3	32
03 SOLn	SL=	33.7	0.073	0.058	0.008	0.8	34.5	108.3	32

Pkt 430 Strg 14 v Da= 168.3 mm s= 7.1 mm (BGL) Bogen GLatt
Strg 14 m Da= 168.3 mm s= 7.1 mm R= 229.0 mm
Strg 14 n Da= 168.3 mm s= 7.1 mm ii= 1.8 io= 1.5

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	63.0	32.7	0.370	0.021	0.273	3.1	35.7	81.5	44
01 SL m	63.0	32.7	0.263	0.049	0.187	2.2	34.9	81.5	43
01 SL n	63.0	32.7	0.016	0.115	0.008	1.5	34.2	81.5	42
02 SE v	SL=	35.7	0.020	0.758	0.190	10.2	10.2	170.3	6
02 SE m	SL=	34.9	0.127	0.866	0.166	11.6	11.6	171.1	7
02 SE n	SL=	34.2	0.215	0.933	0.045	12.4	12.4	171.8	7
03 SOLv	SL=	35.7	0.073	0.039	0.014	0.5	36.3	108.3	33
03 SOLm	SL=	34.9	0.021	0.051	0.007	0.7	35.5	108.3	33
03 SOLn	SL=	34.2	0.044	0.065	0.011	0.9	35.0	108.3	32

Pkt 440 Strg 14 v Da= 168.3 mm s= 7.1 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	63.0	32.7	0.016	0.008	0.115	0.8	33.5	81.5	41
02 SE v	SL=	33.5	0.215	0.045	0.933	7.0	7.0	172.5	4
03 SOLv	SL=	33.5	0.044	0.011	0.065	0.5	34.0	108.3	31

Pkt 450 Strg 15 v Da= 168.3 mm s= 11.0 mm (VUU) V-Naht Umf.,Ubear.
Strg 15 n Da= 168.3 mm s= 7.1 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	63.0	19.5	0.120	0.012	0.149	0.8	20.2	81.5	25
01 SL n	63.0	32.7	0.120	0.012	0.149	1.1	33.8	81.5	41
02 SE v	SL=	20.2	0.258	0.028	0.579	3.2	3.2	185.7	2
02 SE n	SL=	33.8	0.258	0.028	0.579	4.6	4.6	172.2	3
03 SOLv	SL=	20.2	0.023	0.011	0.025	0.1	20.4	108.3	19
03 SOLn	SL=	33.8	0.023	0.011	0.025	0.2	34.0	108.3	31

Pkt 460 Strg 15 v Da= 168.3 mm s= 7.1 mm (BGL) Bogen GLatt
Strg 15 m Da= 168.3 mm s= 7.1 mm R= 229.0 mm
Strg 15 n Da= 168.3 mm s= 7.1 mm ii= 1.8 io= 1.5

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	63.0	32.7	0.120	0.149	0.012	2.0	34.6	81.5	43
01 SL m	63.0	32.7	0.540	0.243	0.059	3.4	36.0	81.5	44
01 SL n	63.0	32.7	0.661	0.267	0.071	3.7	36.4	81.5	45

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 (%)
02 SE v	SL=	34.6	0.258	0.579	0.028	7.9	7.9	171.4	5
02 SE m	SL=	36.0	0.223	0.572	0.111	7.8	7.8	169.9	5
02 SE n	SL=	36.4	0.101	0.500	0.184	6.9	6.9	169.6	4
03 SOLv	SL=	34.6	0.023	0.025	0.011	0.3	35.0	108.3	32
03 SOLm	SL=	36.0	0.032	0.027	0.012	0.4	36.4	108.3	34
03 SOLn	SL=	36.4	0.023	0.025	0.007	0.3	36.7	108.3	34

Pkt 470 Strg 15 v Da= 168.3 mm s= 7.1 mm (BGL) Bogen GLatt
Strg 15 m Da= 168.3 mm s= 7.1 mm R= 229.0 mm
Strg 15 n Da= 168.3 mm s= 7.1 mm ii= 1.8 io= 1.5

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	63.0	32.7	0.870	0.004	0.267	3.1	35.8	81.5	44
01 SL m	63.0	32.7	0.542	0.075	0.180	2.3	35.0	81.5	43
01 SL n	63.0	32.7	0.120	0.228	0.012	3.0	35.7	81.5	44
02 SE v	SL=	35.8	0.101	0.638	0.516	10.2	10.2	170.2	6
02 SE m	SL=	35.0	0.458	0.734	0.345	10.9	10.9	171.0	6
02 SE n	SL=	35.7	0.589	0.797	0.028	11.4	11.4	170.3	7
03 SOLv	SL=	35.8	0.023	0.026	0.014	0.4	36.2	108.3	33
03 SOLm	SL=	35.0	0.005	0.031	0.006	0.4	35.4	108.3	33
03 SOLn	SL=	35.7	0.023	0.036	0.011	0.5	36.2	108.3	33

Pkt 480 Strg 15 v Da= 168.3 mm s= 7.1 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	63.0	32.7	0.120	0.012	0.228	1.7	34.4	81.5	42
02 SE v	SL=	34.4	0.589	0.028	0.797	7.3	7.3	171.6	4
03 SOLv	SL=	34.4	0.023	0.011	0.036	0.3	34.6	108.3	32

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 (%)
600	(VUU)	1.00	1.00	95.0	111.5	85.2
590	(RKR)	1.00	1.00	94.8	111.5	85.0
610	(VUU)	1.00	1.00	94.8	111.5	85.0
620	(VUU)	1.00	1.00	94.8	111.5	85.0
180	(TWA)	2.47	2.47	92.1	111.6	82.5
185	(VUU)	1.00	1.00	69.2	111.6	62.0
240	(BGL)	2.30	1.92	64.9	111.6	58.2
198	(VUU)	1.00	1.00	63.3	111.6	56.7
260	(BGL)	2.30	1.92	62.8	111.6	56.2
32	(VUU)	1.00	1.00	60.1	111.6	53.8
160	(VUU)	1.00	1.00	60.0	111.6	53.7
95	(VUU)	1.00	1.00	59.9	111.6	53.6
270	(BGL)	2.30	1.92	59.7	111.6	53.5
200	(BGL)	2.30	1.92	59.6	111.6	53.4
92	(RKR)	1.00	1.00	58.8	111.6	52.7
98	(RKR)	1.00	1.00	58.5	111.6	52.4
195	(VUU)	1.00	1.00	58.3	111.6	52.2
210	(BGL)	2.30	1.92	58.2	111.6	52.1
145	(BGL)	2.30	1.92	57.3	111.6	51.3
35	(VUU)	1.00	1.00	57.0	111.6	51.1
94	(VUU)	1.00	1.00	56.4	111.6	50.5
90	(VUU)	1.00	1.00	56.4	111.6	50.5
96	(VUU)	1.00	1.00	56.4	111.6	50.5
100	(VUU)	1.00	1.00	56.0	111.6	50.2
45	(VUU)	1.00	1.00	55.7	111.6	49.9
150	(VUU)	1.00	1.00	55.5	111.6	49.7
250	(VUU)	1.00	1.00	54.9	111.6	49.2
230	(BGL)	2.30	1.92	54.9	111.6	49.1
130	(VUU)	1.00	1.00	54.8	111.6	49.1
30	(BGL)	2.30	1.92	54.7	111.6	49.0

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 (%)
590	(RKR)	1.00	1.00	43.7	225.9	19.4
580	(VUU)	1.00	1.00	36.9	233.9	15.8
185	(VUU)	1.00	1.00	35.1	227.7	15.4
190	(BGL)	2.30	1.92	26.7	232.0	11.5
180	(TWA)	2.47	2.47	20.1	193.3	10.4
520	(BGL)	2.09	1.74	24.8	243.5	10.2
540	(RKR)	1.00	1.00	22.0	246.2	8.9
230	(BGL)	2.30	1.92	20.3	230.5	8.8
300	(TTU)	3.45	4.26	13.6	166.8	8.1
145	(BGL)	2.30	1.92	18.2	230.9	7.9
550	(VUU)	1.00	1.00	18.9	244.0	7.7
240	(BGL)	2.30	1.92	17.0	220.5	7.7
430	(BGL)	1.80	1.50	12.4	171.8	7.2
210	(BGL)	2.30	1.92	15.3	227.4	6.7
470	(BGL)	1.80	1.50	11.4	170.3	6.7
560	(VUU)	1.00	1.00	16.0	242.0	6.6
140	(BGL)	2.30	1.92	15.5	234.3	6.6
270	(BGL)	2.30	1.92	14.2	225.7	6.3
40	(TFS)	1.64	1.85	14.4	261.5	5.5
315	(TTU)	3.45	4.26	9.3	172.4	5.4
70	(BGL)	2.30	1.92	12.2	232.2	5.3
260	(BGL)	2.30	1.92	11.7	226.4	5.2
200	(BGL)	2.30	1.92	11.6	227.9	5.1
420	(BGL)	1.80	1.50	8.8	173.1	5.1
250	(VUU)	1.00	1.00	11.3	230.5	4.9
500	(VUU)	1.00	1.00	11.8	245.0	4.8
30	(BGL)	2.30	1.92	10.7	230.7	4.6
460	(BGL)	1.80	1.50	7.8	169.9	4.6
480	(VUU)	1.00	1.00	7.3	171.6	4.2
440	(VUU)	1.00	1.00	7.0	172.5	4.1

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)	Ausnutzung (%)
180	(TWA)	2.47	2.47	105.8	148.5	71.2
600	(VUU)	1.00	1.00	95.0	148.4	64.0
590	(RKR)	1.00	1.00	94.8	148.4	63.9
610	(VUU)	1.00	1.00	94.8	148.4	63.9
620	(VUU)	1.00	1.00	94.8	148.4	63.9
185	(VUU)	1.00	1.00	75.3	148.5	50.7
198	(VUU)	1.00	1.00	69.3	148.5	46.6
240	(BGL)	2.30	1.92	68.1	148.5	45.9
260	(BGL)	2.30	1.92	63.5	148.5	42.7
210	(BGL)	2.30	1.92	63.3	148.5	42.6
160	(VUU)	1.00	1.00	62.7	148.5	42.2
250	(VUU)	1.00	1.00	62.4	148.5	42.0
200	(BGL)	2.30	1.92	61.4	148.5	41.4
32	(VUU)	1.00	1.00	61.3	148.5	41.3
95	(VUU)	1.00	1.00	60.7	148.5	40.9
270	(BGL)	2.30	1.92	60.6	148.5	40.8
195	(VUU)	1.00	1.00	60.3	148.5	40.6
92	(RKR)	1.00	1.00	59.9	148.5	40.3
98	(RKR)	1.00	1.00	59.5	148.5	40.1
145	(BGL)	2.30	1.92	59.3	148.5	39.9
35	(VUU)	1.00	1.00	57.4	148.5	38.7
90	(VUU)	1.00	1.00	57.3	148.5	38.6
94	(VUU)	1.00	1.00	56.8	148.5	38.3
230	(BGL)	2.30	1.92	56.7	148.5	38.2
96	(VUU)	1.00	1.00	56.7	148.5	38.2
100	(VUU)	1.00	1.00	56.7	148.5	38.2
310	(TTU)	3.45	4.26	41.2	108.3	38.0
150	(VUU)	1.00	1.00	56.0	148.5	37.7
45	(VUU)	1.00	1.00	55.8	148.5	37.6
300	(TTU)	3.45	4.26	40.6	108.3	37.5

0 Schnitte mit Spannungsueberschreitungen (*)