

Nr. înreg.: URG 27/2 / 07. MAR. 2016

Referință: Clarificări la documentația de atribuire a contractului de executie lucrari de inlocuire conducta de transport titei Ø 5 9/16" Statie Ghelinta-Rampa Imeci pe tronsonul parau SohodoI-depozit vechi Ghelinta, în lungime de cca. 4.800 m

Ca urmare a clarificărilor solicitate de unele dintre firmele care au preluat documentația de atribuire pentru licitația referită de pe site-ul CONPET, vă comunicăm următoarele:

Intrebarea nr.1: In antemasuratoarea SDG202-Decongelator Dn50-la Art.14 se mentioneaza ca se vor cota "table otel T235J2, conform Pl.15". Va rugam sa ne transmiteti unde se coteaza "Manta camin" conform aceluiasi Plan 15.

Raspuns: Va transmitem, atasat Plan 15, dupa care se va face cotarea, plan ce a fost folosit la intocmirea antemasuratorii SDG 202.

Intrebarea nr.2: Va rugam sa precizati daca se vor accepta modificari, diminuari in functie de propriile consumuri de resurse, fara a influenta cantitatile prevazute in listele cu cantitatile de lucrari din proiect, chiar daca aceasta inseamna oferta alternativa, iar in Anuntul de participare se mentioneaza la pct."14. Oferte alternative: NU SE ACCEPTA", de asemenea la Pct.IV.4.PREZENTAREA OFERTEI se mentioneaza ca "Ofertantii vor respecta intocmai cantitatile articolelor de deviz stabilite de Proiectant".

Raspuns: Conform Anuntului de participare nu se accepta oferte alternative.

Pentru intocmirea ofertelor financiare vor fi respectate cantitatile si articolele de deviz din antemasuratori, putandu-se opera majorari/diminuari din anumite resurse, in functie de tehnologiile si dotarile tehnice, cu conditia respectarii cantitatilor si calitatii prevazute in proiect.

Intrebarea nr.3: Va rugam sa ne transmiteti daca se accepta ca teava pentru protector ø 323,9 sa fie teava sudata longitudinal si ce grosime va avea aceasta, deoarece in Foaia de date si in Caietul de sarcini grosimea este de 7,1 mm, iar in Listele cu cantitatile de lucrari (SDG205, SDG207,SDG209, SDG211) teava pentru protector are grosimea de 7,92 mm.

Raspuns: Se accepta pentru protector teava sudata longitudinal 323,9 x 7,1mm.

Intrebarea nr.4: Va rugam sa ne transmiteti ce grosime va avea teava ø 60,3 pentru decongelator, avand in vedere ca in Fisa de date grosimea acesteia este de 5,6 mm, iar in Lista cu cantitatile de lucrari SDG202, grosimea este de 7,1mm.

Raspuns: Teava de 60,3 mm pentru decongelator, va avea grosimea ca in Fisa de date si anume 5,6 mm.

Intrebarea nr.5: Analizand adresa d-voastra de clarificare Nr.6368 din 01.03.2016, respectiv intrebarea nr.6 si Raspunsul aferent, dar si Foia de date atasata pentru "Mansoane termocontractile imbinari sudura", va transmitem punctul de vedere al unui furnizor:

"Daca verificam cu atentie desenul "detaliu presetupa" vedem ca subcomponenta 1 este o garnitura de cauciuc, care face etansare direct pe teava de otel. Daca in acelasi loc vom incalzi teava pentru a aplica „manson termocontractabil" aceasta garnitura de cauciuc

(cel puțin ea) se va topi. Mansonul care poate fi aplicat pe 2 diametre diferite este unul special și am atasat prezentarea unui asemenea manson atasat prezentarea unui asemenea manson - Canusa PMA. Temperatura de aplicare este de minimum 60°C, dar în funcție de vremea de afara tevil pe care îl aplicăm va trebui să le încălzim și mai mult, chiar peste 80°C. Cum să procedăm în acest caz?"

Ca urmare a celor relatate, vă rugăm să ne transmiteți caracteristicile potrivite pentru "Mansoanele termocontractile cu dubla secțiune 12 3/4"-6 5/8", pe care le vom solicita furnizorilor în vederea realizării ofertei.

Răspuns: Din caracteristicile prestupeii, prezentate în planul nr. 15, anexat prezentei, și în date generale presetupa, rezulta că presetupa propusă de proiectant (Standard version black) este utilizabilă pentru temperaturi cuprinse între - 40°C și +80°C, temperaturi ce se încadrează la montarea mansoanelor termocontractibile.

La montarea mansoanelor se recomandă respectarea datelor tehnice ale presetupeii.
Anexam plan nr. 15 din proiect și date tehnice presetupa.

Întrebarea nr.6: În devizul "SDG202 DECONGELATOR Dn 50" la articolul" 015 GB08E1 [1]" nu se găsesc procurate protectoarele pentru cele 4 dispozitive de decongelare și nici în rețeta depusă de dumneavoastră în clarificarea nr.6368/01.03.2016. Vă rugăm să clarificați.

Răspuns: Va retransmitem rețetele normei

Norma: GB08A1 [1] U.M.:BUC. PROTECTOR METAL INCL.TIJA DE MANEVRA SI
CAPUL PTR.VENTILE MONTAT PE CONDUCTE AVIND DN= 419 -1125
RETETA NORMA

Cod	Denumire	Consum U.M.
6103294	VOPSEA MINIU DE PLUMB	V.351-3 NTR 90-80 2.17000 KG
0025041	MONTATOR CONDUCTE CAT.4	0.96000 ORE
0025031	MONTATOR CONDUCTE CAT.3	0.96000 ORE
0025021	MONTATOR CONDUCTE CAT.2	1.93000 ORE
0025011	MONTATOR CONDUCTE CAT.1	0.96000 ORE

Materialul, protector metalic pt. RSP Dn 50 Pn 64, va fi cota ca procurare în oferte – Protector metalic (D=419mm, h =1125mm) pentru ventile, complet echipat, conform Plan nr. 15 pe care îl atasăm prezentei în format PDF.

Menționăm că oferta dumneavoastră va fi elaborată ținând cont de indicațiile precizate mai sus și că restul cerințelor din documentația de atribuire rămân neschimbate.

Vă mulțumim.

DIRECTOR DEPARTAMENT MANAGEMENTUL
INVESTITIILOR SI ACHIZITIILOR

Ing. Radu ALBU

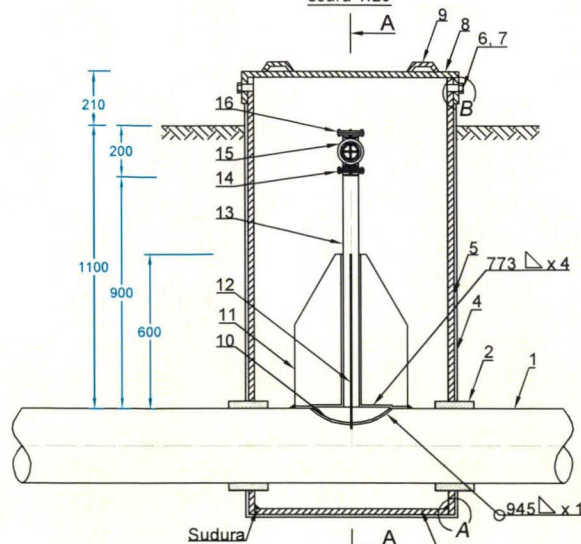


ȘEF SERVICIUL ACHIZIȚII
Jr. Agripina Tircavu

Serviciu Achiziții,
Exp. A.P. Claudia Braslasu

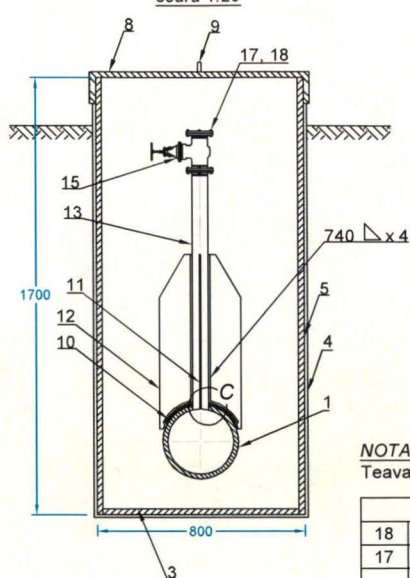
DECONGELATOR DN 50, PN 64

scara 1:20



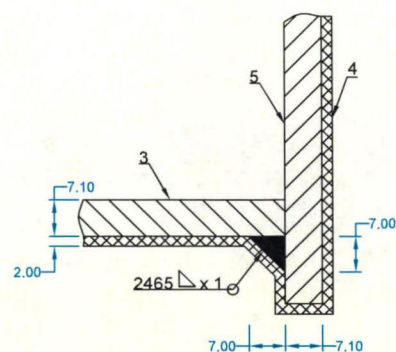
VEDERE A - A

scara 1:20



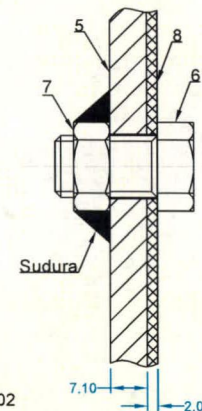
DETALIU "A"

scara 1:1



DETALIU "B"

scara 1:1



NOTA:

Teava de refulare (nr. poz. 13) va fi izolata prin vopsire conform SR EN ISO 12944:2002

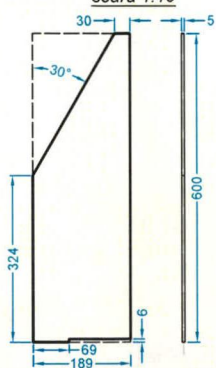
GREUTATE [Kg]

357.45

18	Piulita M16	STAS 8121-3:84	16		
17	Prezon	STAS 8121-2:84	8		
16	Flansa oarba DN 50, PN 64	SR EN 1092-1:2008	1	P285 Group 8E2 SR EN 10222-4	M16 - 90
15	Robinet DN 50, PN 64	SR EN 1984:2010	1	A216 + 13Cr	
14	Flansa cu gat sudabil DN 50, PN 64	SR EN 1092-1:2008	1	P285 Group 8E2 SR EN 10222-4	
13	Teava de refulare	SR EN ISO 3183:2013	1	L 360N	Ø60.3 x 7.1mm, L= 0.90m
12	Nervura de consolidare		2	S 235 J2	Tb 680 x 127 x 5mm
11	Nervura de consolidare		2	S 235 J2	Tb 600 x 189 x 5mm
10	Placa de intarire		1	S 235 J2	Tb 301 x 301 x 5.6mm
9	Maner		2	OL 37.2K	
8	Capac camin	SR EN 10029:2011	1	OL 37.2K	Tb 810 x 810 x 2mm Ø810 x 123 x 2mm
7	Piulita M12	SR EN ISO 4034:2013	2	OLC 25	SR EN 10083-2:2007
6	Surub M12 x 35	SR EN ISO 4018:2011	2	OLC 35	SR EN 10083-2:2007
5	Manta camin	SR EN ISO 3183:2013	1	L 245N	Ø800 x 1700 x 7.1
4	Invelis bitum	STAS 2484:85			
3	Fund camin	SR EN 10029:2011	1	OL 37.2K	Tb 785 x 785 x 7.1mm
2	Inel distantier electroizolant		2		
1	Conducta	SR EN ISO 3183/2013	1	L 360N	
POZ.	DENUMIREA	STAS	BUC.	MATERIAL	OBSERVATII

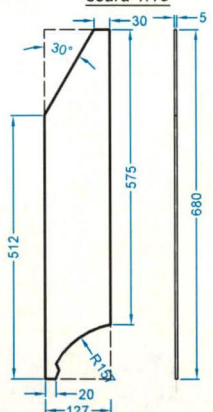
Detaliu 11

scara 1:10



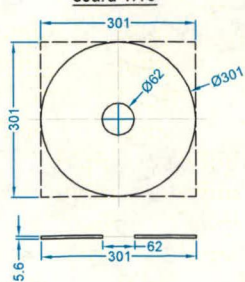
Detaliu 12

scara 1:10



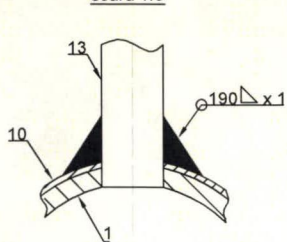
Detaliu 10

scara 1:10



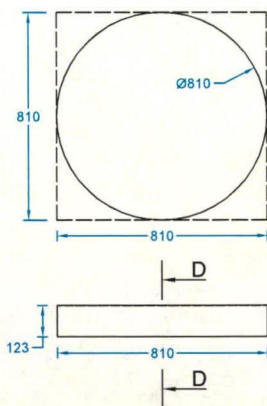
Detaliu "C"

scara 1:5



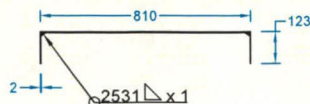
Detaliu 8

scara 1:20



SECTIUNE D - D

scara 1:20



Verificator/
Expert

Nume

Semnatura

Cerinta

Referat / Expertiza Nr. / Data

S.C. SNIF PROIECT S.A. Targoviste
Numar de inmatriculare J15/925/2005

Beneficiar:
S.C. CONPET S.A. PLOIESTI

Pr. nr.
304

Specificatie

Nume

Semnatura

Scara:
1:20
1:10
1:5

"Inlocuire conducta de transport titei Ø5 9/16" Statie
Ghelinta - Rampa Imeci pe tronsonul Pârâu Sohodol
- depozit vechi Ghelinta, in lungime de cca. 4.800m"

Faza
PT+CS+D

Desenat

Ing. Radu Florin

Data:
2015



General Information

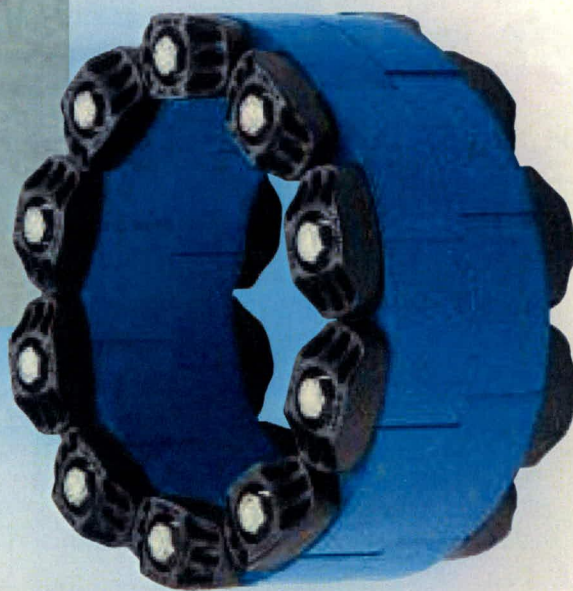
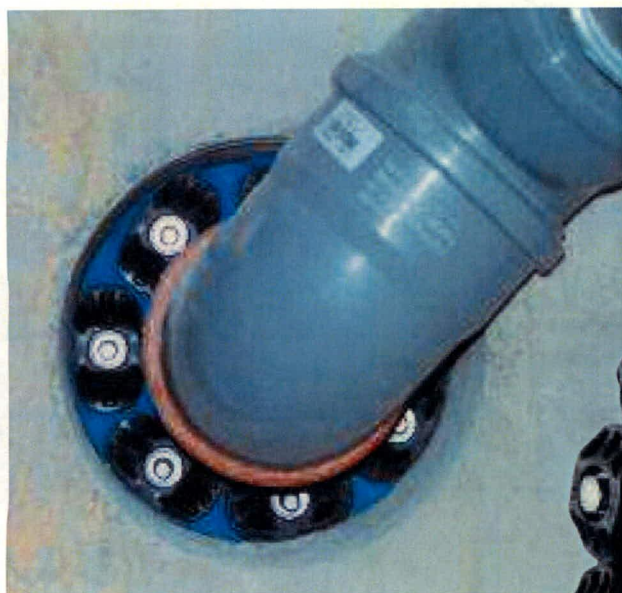
Technical Data

Selection Guide

Order Submittal Sheet

Installation Instruction

PSI Link-Seal® Modular Seals



Pipeline Accessories

Link-Seal® Modular Seals

General Information



Application range

Link-Seal® Modular Seals are considered to be the premier method for permanently sealing pipes of any size passing through walls, floors and ceilings. In fact, any cylindric object may be quickly, easily and permanently sealed, as they pass through barriers.

Features

- Saves money and time
- Positive hydrostatic seal
- Long seal life
- Maximum protection against corrosion
- Oil, jet fuel and temperature resistant material available
- Configure a Link-Seal® modular seal to match your application
- ISO quality assurance

The principle



The radial expansion of the rubber ensures the hydrostatic pressure tightness

Link-Seal® Modular Seals

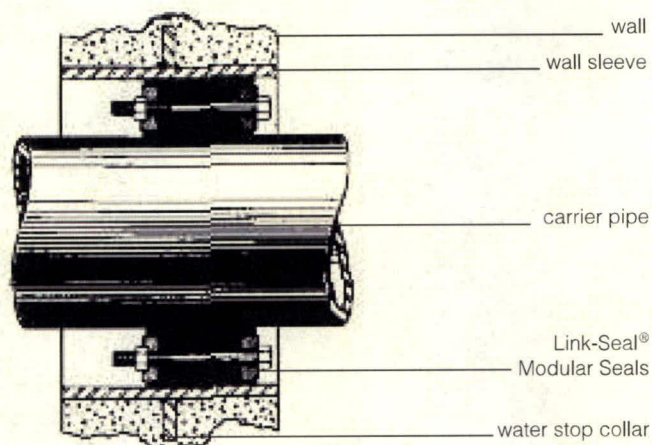
Technical Data



Material Properties

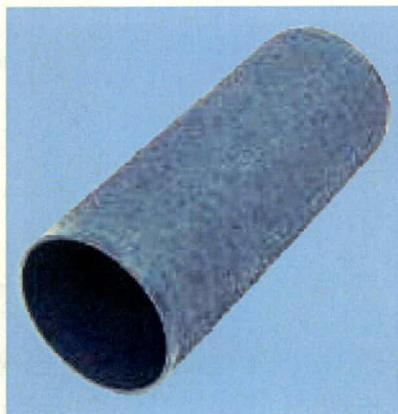
Temperature resistance	Standard version black Type T, grey Type O, green	-40° C up to +80° C -55° C up to +230° C -40° C up to +70° C
Oil, jet fuel resistance	Type O	
Special version for plastic pipes	blue EPDM	Shore 40 ± 5
Pressure tightness	up to 5 bar (TÜV and Lloyd's registered) Original Link-Seal® up to 3 bar (Lloyd's registered) Original Link-Seal® Typ BC and BS316 up to 2 bar (Lloyd's registered) Type S-LS	
Cathodic protection	Dielectrical strength 500 V/mm	

Sectional drawing of a Link-Seal® Modular Seals



Wall sleeve

PSI offers wall sleeves in PVC, carbon steel galvanised, stainless steel or asbestos free fibre cement.



Link-Seal® Modular Seals

Technical Data



Type	Version	Sealing Element	Pressure Plates	Bolts and Nuts	Temperature Range	Application
C	Standard	EPDM-rubber black	Reinforced Nylon Polymer	Carbon steel zinc dichromated	-40° C up to + 80° C	General application at normal atmosphere, in water or a humid environment. Suitable for electrical insulation and cathodic protection.
B	Shore 40±5	EPDM-rubber blue	Reinforced Nylon Polymer	Carbon steel zinc dichromated	-40° C up to + 80° C	See under type „C“, especially for plastic pipes
S 316	Standard stainless steel	EPDM-rubber black	Reinforced Nylon Polymer	stainless steel	-40° C up to + 80° C	High resistance against water, most other inorganic substances (acids and alkalis) and against most organic substances (e.g. acetic, acid, acetone).
O	Oil resistant	NITRILE-rubber green	Reinforced Nylon Polymer	Carbon steel zinc dichromated	-40° C up to + 70° C	Good resistance against oil, aromatic fuels, solvents and other mineral oil base products.
BS 316	Shore 40±5	EPDM-rubber blue	Reinforced Nylon Polymer	stainless steel	-40° C up to + 80° C	See type „S 316“, especially for plastic pipes
OS 316	Oil resistant	NITRILE-rubber green	Reinforced Nylon Polymer	stainless steel	-40° C up to + 70° C	Good resistance against oil, aromatic fuels, solvents and other mineral oil base products.
KTW	Shore 45±5	EPDM-rubber black incl. KTW-Stamp*	Reinforced Nylon Polymer blue	stainless steel	- 40° C up to + 80° C	Appropriate for drinking water applications
T**	High and low temperature	SILICONE-rubber grey	St 37 zinc dichromated	Carbon steel zinc dichromated	- 55° C up to + 230° C	No insulating properties, especially suitable for extreme temperatures.

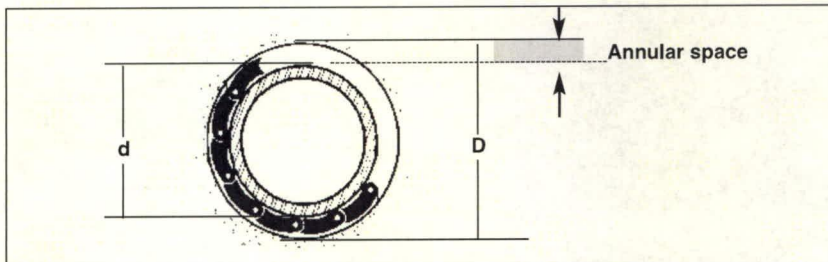
Link-Seal® Modular Seals 3 Bar/Blue, 5 Bar/Black, Green & Grey

Selection/Order Submittal Sheet



1. Which type is suitable?

Calculate the annular space. The annular space is half the difference between your pipe size and the wall opening diameter. Use the following formula:



Wall opening I.D. (D)	-	Actual Pipe O.D. (d)	=	Annular space
		2		

From the adjacent chart, select the size closest to the annular space calculated in step 1. You have selected the correct size Link-Seal® modular seal if the free state thickness is less than the annular space and the expanded state thickness is greater than the annular space.

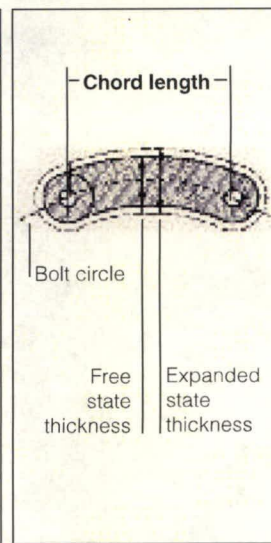
Type	Free state thickness	Annular space	Expanded state thickness	Necessary wall thickness
LS 200	12,7 mm		15,7 mm	75 mm
LS 265	16,0 mm		20,0 mm	75 mm
LS 275	16,0 mm		20,0 mm	75 mm
LS 300	18,0 mm		22,5 mm	100 mm
LS 310	18,0 mm		22,5 mm	100 mm
LS 315	21,1 mm		26,0 mm	100 mm
LS 325	23,2 mm		30,0 mm	120 mm
LS 340	25,5 mm		34,0 mm	120 mm
LS 360	32,0 mm		42,0 mm	120 mm
LS 400	36,3 mm		46,0 mm	140 mm
LS 410	37,0 mm		48,5 mm	140 mm
LS 425	28,4 mm		37,0 mm	140 mm
LS 440	44,0 mm		55,0 mm	140 mm
LS 475	41,3 mm		48,5 mm	140 mm
LS 500	60,3 mm		71,5 mm	150 mm
LS 525	55,4 mm		63,5 mm	150 mm
LS 575	48,0 mm		58,0 mm	150 mm
LS 615 ^a	81,6 mm		102,0 mm	150 mm
LS 625	83,0 mm		102,0 mm	150 mm
LS 650	69,0 mm		84,0 mm	150 mm
LS 700	95,0 mm		110,0 mm	150 mm

Type:

2. How many links do you need?

Calculate the number of links required to fit around the pipe and seal the annular space. Determine the bolt circle for Link-Seal® modular seal assembly by using the formular below.

Type	Chord length	Carrier Pipe O.D. min.	Carrier Pipe O.D. max.	min. No. of Segm.
LS 200	30,0 mm	from 21,3 mm	up to 323,9 mm ⁽¹⁾	4
LS 265	41,0 mm	from 50,0 mm	up to 406,4 mm ⁽¹⁾	5
LS 275	25,6 mm	from 0,0 mm	up to 90,0 mm	4
LS 300	41,0 mm	from 44,5 mm	up to 250,0 mm ⁽¹⁾	5
LS 310	57,5 mm	from 60,3 mm	up to 406,4 mm ⁽²⁾	5
LS 315	38,4 mm	from 37,0 mm	up to 315,0 mm	5
LS 325	79,8 mm	from 133,0 mm	up to 711,0 mm	6
LS 340	41,4 mm	from 14,0 mm	up to 323,9 mm	4
LS 360	55,1 mm	from 40,0 mm	up to 406,4 mm	5
LS 400	93,1 mm	from 139,7 mm	up to 1220,0 mm	6
LS 410	67,6 mm	from 60,3 mm	up to 323,9 mm	5
LS 425	93,1 mm	from 144,0 mm	up to 1220,0 mm	6
LS 440	99,0 mm	from 100,0 mm	up to 1220,0 mm	5
LS 475	68,6 mm	from 60,3 mm	up to 1220,0 mm	5
LS 500	99,8 mm	from 100,0 mm	up to 1220,0 mm	5
LS 525	99,8 mm	from 133,0 mm	up to 1220,0 mm	6
LS 575	79,5 mm	from 130,0 mm	up to 1220,0 mm	5
LS 615 ^a	155,5 mm	from 219,0 mm	up to 3000,0 mm	6
LS 625	106,7 mm	from 133,0 mm	up to 2000,0 mm	5
LS 650	106,7 mm	from 133,0 mm	up to 2000,0 mm	5
LS 700	155,5 mm	from 219,0 mm	up to 3000,0 mm	6



¹ As from O.D. of 150 mm we recommend to enlarge your coredrill to install Link-Seal Type 310.

² As from O.D. of 300 mm we recommend to enlarge your coredrill to install Link-Seal Type 325.

³ LS 615 NOT suitable for plastic pipes.

Wall Opening I.D. (D)	+	Pipe Diameter O.D. (d)		Bolt Circle	Chord length	Number
		2	x 3,14 =		:	=

Number:



Selection CD/
Guide on request

Link-Seal® Modular Seals Selection/Order Submittal Sheet



3. Which version is suitable?
 Please determine the rubber and bolt quality suitable for your application. The relevant abbreviations are shown in the following chart.

Version:

Rubber	Bolts/nuts	
	galvanised	stainless steel
Standard EPDM-rubber (black)	C	S 316
Oil resistant Nitrile-rubber (green)	O	OS 316
Temperature resistant Silicone-rubber (grey)	T	TS 316*
EPDM-rubber (blue, Shore 40 ± 5)	B	BS 316

* Special type

4. Correct product code?
 Please select the correct product code corresponding to your choice.



Product-Code:

Type	C	B	S 316	O	BS 316	OS 316
LS 200	2-025-00001	2-025-00300	2-025-00139	2-025-00040	2-025-00340	2-025-00156
LS 265	2-025-00017	2-025-00309	2-025-00186	-	2-025-00349	-
LS 275	2-025-00010	2-025-00301	2-025-00140	2-025-00039	2-025-00341	2-025-00150
LS 300	2-025-00002	2-025-00302	2-025-00141	2-025-00041	2-025-00342	2-025-00151
LS 310	2-025-00018	2-025-00310	2-025-00187	-	2-025-00359	-
LS 315	2-025-00012	2-025-00303	2-025-00146	2-025-00049	2-025-00343	2-025-00157
LS 325	2-025-00003	2-025-00304	2-025-00142	2-025-00042	2-025-00344	2-025-00152
LS 340	2-025-00004	2-025-00058	2-025-00143	2-025-00050	2-025-00064	2-025-00055
LS 360	2-025-00008	2-025-00059	2-025-00144	2-025-00051	2-025-00065	2-025-00056
LS 400	2-025-00009	2-025-00305	2-025-00172	2-025-00043	2-025-00345	2-025-00153
LS 410	2-025-00011	2-025-00060	2-025-00173	2-025-00052	2-025-00066	2-025-00161
LS 425	2-025-00005	2-025-00306	2-025-00174	2-025-00044	2-025-00346	2-025-00154
LS 440	2-025-00015	-	2-025-00176	2-025-00257	-	2-025-00258
LS 475	2-025-00006	2-025-00307	2-025-00145	2-025-00045	2-025-00347	2-025-00155
LS 500	2-025-00007	2-025-00308	2-025-00147	2-025-00046	2-025-00348	2-025-00158
LS 525	2-025-00013	2-025-00061	2-025-00148	2-025-00047	2-025-00067	2-025-00159
LS 575	2-025-00014	2-025-00062	2-025-00149	2-025-00053	2-025-00068	2-025-00160
LS 615	2-025-00215	-	2-025-00185	2-025-00220	-	2-025-00265
LS 625	-	2-025-00260	-	-	2-025-00261	-
LS 650	2-025-00016	-	2-025-00177	2-025-00255	-	2-025-00259
LS 700	-	2-025-00470	-	-	2-025-00471	-

5. Order submittal sheet
 Please copy the order sheet and fax to PSI Ltd
 Fax +44(0) 1480 404662



Selection CD/
 Guide on request

Quantity	Type	Version	Product-Code	Total

For further information please contact PSI Ltd. We apply our General conditions for sales on all orders. Subject to technical changes. The user must ensure that the chosen product is suitable for his application. Our warranty is limited to the replacement of defective found material. For prices please see our actual price list.

despatched by:

date/signature

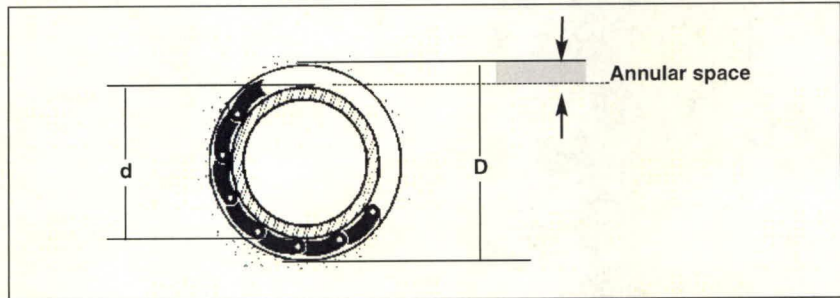
Link-Seal Type S-LS (small Version) 2 bar

Selection/Order Submittal Sheet



1. Which type is suitable?

Calculate the annular space. The annular space is half the difference between your pipe size and the wall opening diameter. Use the following formula:



Wall opening I.D. (D)	-	Actual Pipe O.D. (d)	=	Annular space
		2		

From the adjacent chart, select the size closest to the annular space calculated in step 1. You have selected the correct size Link-Seal® modular seal if the free state thickness is less than the annular space and the expanded state thickness is greater than the annular space.

Type:

Type	Free state thickness	Annular space	Expanded state thickness	Necessary wall thickness
LS 200	17,7 mm		15,7 mm	70 mm
LS 275	16,0 mm		20,0 mm	70 mm
S-LS 300	17,5 mm		21,0 mm	70 mm
S-LS 315	20,1 mm		24,0 mm	70 mm
S-LS 325	24,0 mm		29,0 mm	90 mm
S-LS 340	24,5 mm		30,0 mm	70 mm
S-LS 360	31,5 mm		37,0 mm	90 mm
S-LS 400	35,5 mm		42,0 mm	90 mm
S-LS 410	36,5 mm		42,5 mm	90 mm
S-LS 425	28,6 mm		34,1 mm	90 mm
S-LS 440	44,0 mm		50,5 mm	90 mm
S-LS 475	41,3 mm		45,5 mm	90 mm
S-LS 500	61,0 mm		67,0 mm	110 mm
S-LS 525	53,0 mm		58,0 mm	110 mm
S-LS 575	48,0 mm		54,0 mm	100 mm
S-LS 625	83,0 mm		95,0 mm	100 mm
S-LS 650	69,0 mm		77,0 mm	100 mm

Note: Type S-LS reduced pressure and sealing range

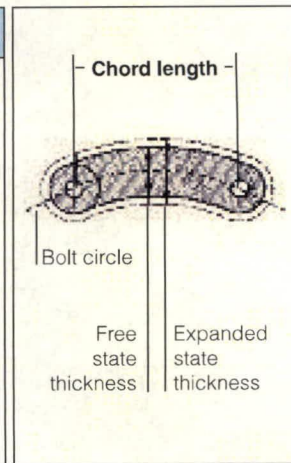
2. How many links do you need?

Calculate the number of links required to fit around the pipe and seal the annular space. Determine the bolt circle for Link-Seal® modular seal assembly by using the formular below.

¹ As from an O.D. of 150 mm we recommend to enlarge your coredrill to install Link-Seal Type S-LS 300.

² As from an O.D. of 250 mm we recommend to enlarge your coredrill to install Link-Seal Type S-LS 325.

Type	Chord length	Carrier Pipe O.D. min.	Carrier Pipe O.D. max.	min. No. of Segm.
LS 200	30,5 mm	from 21,3 mm	up to 323,9 mm ¹	4
LS 275	25,0 mm	from 0,0 mm	up to 30,0 mm	4
S-LS 300	40,5 mm	from 44,5 mm	up to 406,4 mm ²	5
S-LS 315	37,0 mm	from 37,0 mm	up to 315,0 mm	5
S-LS 325	79,0 mm	from 88,9 mm	up to 711,0 mm	6
S-LS 340	42,0 mm	from 14,0 mm	up to 323,9 mm	4
S-LS 360	55,5 mm	from 16,0 mm	up to 406,4 mm	4
S-LS 400	93,0 mm	from 139,7 mm	up to 1220,0 mm	6
S-LS 410	68,0 mm	from 44,5 mm	up to 323,9 mm	4
S-LS 425	93,0 mm	from 134,0 mm	up to 1220,0 mm	6
S-LS 440	99,0 mm	from 100,0 mm	up to 1220,0 mm	5
S-LS 475	68,0 mm	from 60,3 mm	up to 1220,0 mm	5
S-LS 500	99,0 mm	from 100,0 mm	up to 1220,0 mm	5
S-LS 525	99,0 mm	from 133,0 mm	up to 1220,0 mm	6
S-LS 575	79,0 mm	from 130,0 mm	up to 1220,0 mm	5
S-LS 625	106,7 mm	from 133,0 mm	up to 2000,0 mm	5
S-LS 650	106,7 mm	from 133,0 mm	up to 2000,0 mm	5



Wall Opening I.D. (D)	+	Pipe Diameter O.D. (d)		Bolt Circle	Chord length	Number
		2		x 3,14 =	:	=

Number:



Selection CD/
Guide on request

Link-Seal Type S-LS (small Version)
Selection/Order Submittal Sheet



3. Which version is suitable?
Please determine the rubber and bolt quality suitable for your application. The relevant abbreviations are shown in the following chart

Version:

rubber	bolts/nuts	
	galvanised	stainless steel
Standard EPDM-rubber black	C	S 316
KTW EPDM-rubber black acc. to German drinking recommendation	–	KTW

4. Correct product code?
Please select the correct product code corresponding to your choice.



Product-Code:

Type	C	S 316	KTW
LS 200	–	–	2-025-00400
LS 275	–	–	2-025-00404
S-LS 300	2-024-00002	2-024-00141	2-024-00200
S-LS 315	2-024-00012	2-024-00146	2-024-00204
S-LS 325	2-024-00003	2-024-00142	2-024-00208
S-LS 340	2-024-00004	2-024-00143	2-024-00212
S-LS 360	2-024-00008	2-024-00144	2-024-00216
S-LS 400	2-024-00009	2-024-00172	2-024-00220
S-LS 410	2-024-00011	2-024-00173	2-024-00224
S-LS 425	2-024-00005	2-024-00174	2-024-00228
S-LS 440	2-024-00015	2-024-00176	2-024-00232
S-LS 475	2-024-00006	2-024-00145	2-024-00236
S-LS 500	2-024-00007	2-024-00147	2-024-00240
S-LS 525	2-024-00013	2-024-00148	2-024-00244
S-LS 575	2-024-00014	2-024-00149	2-024-00248
S-LS 625	2-024-00017	2-024-00179	2-024-00252
S-LS 650	2-024-00016	2-024-00177	2-024-00256

Note: Type S-LS reduced pressure and sealing range

5. Order submittal sheet
Please copy the order sheet and fax to PSI Ltd
Fax +44(0) 1480 404662



Selection CD/
Guide on request

Quantity	Type	Version	Product-Code	Total

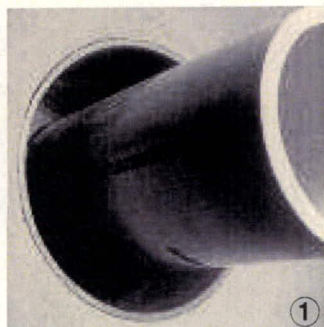
For further information please contact PSI Ltd. We apply our General conditions for sales on all orders. Subject to technical changes. The user must ensure that the chosen product is suitable for his application. Our warranty is limited to the replacement of defective found material. For prices please see our actual price list.

despatched by:

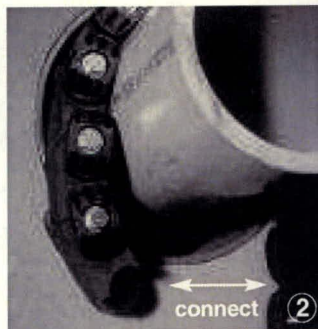
date/signature

Link-Seal® Modular Seals

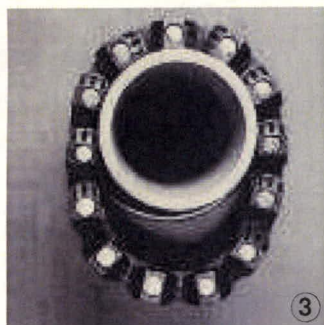
Installation Instruction



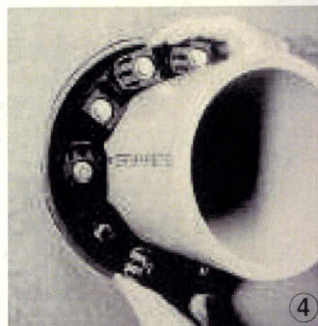
Center the pipe, cable or conduit in wall opening or casing. Make sure the pipe is adequately supported on both ends. Link-Seal® modular seals are not intended to support the weight of the pipe.



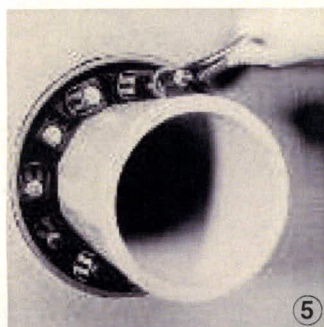
Loosen rear pressure plate with nut just enough so links move freely towards and away from each other - connect both ends of belt.



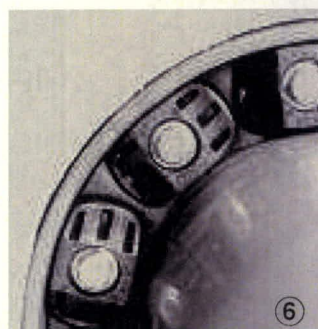
Check to be sure bolt heads are facing the installer. Extra slack or sag is normal. Do not remove links if extra slack exists. Note: On smaller diameter pipes, links may need to be stretched.



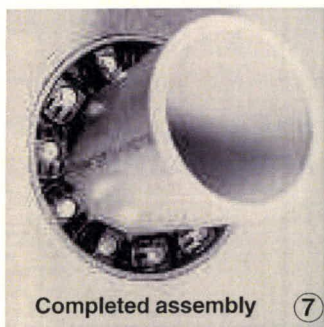
Slide belt assembly into annular space. For larger size belts, start inserting Link-Seal® modular seal assembly at the 6 o'clock position and work both sides up toward the 12 o'clock position in the annular space.



Start at 12 o'clock. Tighten any bolt in a clockwise manner. Tighten only by hand!



Do not tighten any bolt more than 4 turns at a time. Continue in a clockwise manner. Make 2 or 3 more passes at 3 turns per bolt until links have been uniformly compressed and the max. torque moment (see table) is reached.



Repeat tightening after approx. 2 hours. Especially the Link-Seal® Type LS 500 up to LS 650 are, depending on the installation conditions (annular space, temperature, etc.) has to be tightened again for several times.

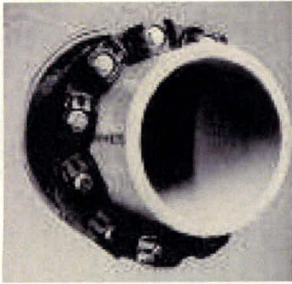
Max. torque moment			Type
for Type C, S316 rubber black O and OS316 rubber green Type T rubber grey Shore 55°± 5°	for Type BC and BS316 rubber blue, Shore 40°± 5°	for Type S-LS version C, S316 and KTW Shore 45°± 5°	
2 Nm	2 Nm	2 Nm	LS 200 up to LS 275
8 Nm	6 Nm	6 Nm	LS 300 up to LS 360
27 Nm	20 Nm	20 Nm	LS 400 up to LS 475
65 Nm	50 Nm	50 Nm	LS 500 up to LS 575
110 Nm	65 Nm	65 Nm	LS 615
65 Nm	50 Nm	50 Nm	LS 625 up to LS 700

Link-Seal® Modular Seals

Installation Instruction



Please consider the right equipment when you install Link-Seal®



Link-Seal® Modular seals – Do's

1. Make sure pipe is centered.
2. Install the belt with the pressure plates evenly spaced.
3. Install the exact number of links indicated in sizing charts.
4. Check to make sure pipe is supported properly during backfill operations.
5. Make sure seal assembly and pipe surfaces are free from dirt.



Link-Seal® Modular seals – Don't's

1. Don't install the belt with the pressure plates aimed in irregular directions (Staggered)
2. Don't install Link-Seal® Modular seals with spiral weld pipe.
3. Don't torque each bolt completely before moving on to the next.
4. Do not use high speed power tools.
5. Do not use power tools with Link-Seal® Modular seal S316 (X) bolts.
6. Please note that the Link-Seal® isn't a fixing point.

PSI warranty is limited to the replacement of faulty material. The user is responsible for checking if the products are suitable for application.

Original Link-Seal® Selection Table

Selection for core drilled holes



KB	LS			Select Seal	
	Medium pipe Ø _a [mm] up - to			Quantity of elements	Type LS ...
50	10	-	18	4	275
80	40	-	48	8	275
	48	-	53	7	200
100	32	-	45	5	340
	48	-	57	6	315
	55	-	64	6	300
	62	-	68	6	265
	68	-	75	9	200
125	42	-	61	5	360
	58	-	74	7	340
	73	-	82	8	315
	80	-	89	8	300
	87	-	93	8	265
	95	-	100	12	200
150	50	-	67	5	475
	58	-	76	5	410
	66	-	82	6	360
	82	-	99	9	340
	105	-	114	7	310
	112	-	118	10	265
	118	-	125	14	200
200	90	-	104	6	575
	103	-	117	7	475
	103	-	124	7	410
	116	-	133	9	360
	132	-	149	13	340
	155	-	164	10	310
250	134	-	154	8	575
	140	-	160	6	440
	153	-	163	9	475
	158	-	177	7	400
	166	-	186	12	360
	178	-	192	7	425
	190	-	203	9	325
	206	-	212	12	310
300	157	-	173	7	500
	184	-	204	10	575
	190	-	210	8	440
	208	-	226	12	410
	216	-	236	15	360
	234	-	244	20	340
	240	-	253	11	325
	255	-	264	15	310
350	182	-	210	8	650
	207	-	229	9	500
	223	-	239	9	525
	234	-	254	12	575
	253	-	267	14	475
	253	-	274	14	410
	266	-	286	18	360
	258	-	274	10	400
	276	-	293	11	425
	286	-	296	24	340
	294	-	303	13	325
	307	-	314	18	310

Original Link-Seal® Selection Table

Selection for core drilled holes



KB	LS			Select Seal	
	Medium pipe Ø _a [mm] up - to			Quantity of elements	Type LS ...
400	200	-	234	9	625
	234	-	255	9	650
	264	-	279	11	500
	273	-	289	11	525
	284	-	304	14	575
	292	-	310	11	440
	303	-	317	16	475
	308	-	327	12	400
	326	-	341	12	425
	340	-	353	15	325
450	246	-	265	10	625
	266	-	286	7	615
	285	-	311	11	650
	307	-	329	12	500
	327	-	339	12	525
	335	-	354	16	575
	345	-	356	13	440
	355	-	367	19	475
	358	-	377	14	400
	376	-	393	14	425
	375	-	386	24	360
	390	-	403	17	325
500	296	-	334	12	625
	335	-	359	12	650
	357	-	379	14	500
	373	-	389	14	525
	385	-	400	18	575
	390	-	410	14	440
	408	-	427	15	400
	426	-	443	16	425
	440	-	453	19	325
600	396	-	434	15	625
	436	-	457	15	650
	457	-	479	17	500
	473	-	489	17	525
	490	-	503	17	440
	503	-	509	25	475
	508	-	527	19	400
	526	-	543	19	425
	540	-	553	23	325

All other sizes on request!

Available in these versions:

- Type C: Rubber EPDM (black standard), screws galvanized
- Type BC: Rubber EPDM (blue, extra soft for plastic pipe)
- Type S316: Rubber EPDM (black), screws V4A-stainless steel
- Type BS316: Rubber EPDM (blue, extra soft for plastic pipe), screws V4A-stainless steel
- Type O: Rubber Nitril (green, oil-resistant), screws galvanized. Price on request.
- Type OS316: Rubber Nitril (green, oil-resistant), screws V4A-stainless steel. Price on request.



Link-Seal Type S-LS Selection Table

(slim version up to 2,0 bar)

Selection for core drilled holes



KB	LS			Select Seal	
	Medium pipe Ø _a [mm]	up	to	Quantity of elements	Type LS ...
50	10	-	18	4	275
80	40	-	48	8	275
	48	-	53	7	200
100	40	-	47	5	340
	52	-	57	6	315
	58	-	64	6	300
	68	-	75	9	200
125	51	-	61	5	360
	65	-	75	7	340
	77	-	83	8	315
	83	-	89	8	300
	95	-	100	12	200
150	59	-	67	5	475
	67	-	76	5	410
	76	-	86	7	360
	90	-	100	9	340
	108	-	115	10	300
	118	-	125	14	200
200	92	-	104	6	575
	109	-	117	7	475
	117	-	126	7	410
	126	-	136	9	360
	140	-	150	13	340
	158	-	164	14	300
250	134	-	144	6	525
	142	-	154	8	575
	150	-	161	6	440
	166	-	177	7	400
	176	-	186	12	360
	185	-	192	7	425
	192	-	202	9	325
	208	-	214	18	300
300	166	-	178	7	500
	192	-	204	10	575
	200	-	211	8	440
	215	-	226	12	410
	226	-	236	15	360
	240	-	250	20	340
	258	-	264	21	300
350	196	-	211	8	650
	216	-	228	9	500
	234	-	241	9	525
	242	-	254	12	575
	259	-	267	14	475
	266	-	276	14	410
	276	-	286	18	360
	290	-	300	24	340
	308	-	314	25	300

Link-Seal Type S-LS Selection Table

(slim version up to 2,0 bar)

Selection for core drilled holes



KB	LS			Select Seal	
	Medium pipe Ø _a [mm]	up	to	Quantity of elements	Type LS ...
400	210	-	234	9	625
	246	-	255	9	650
	266	-	278	11	500
	284	-	292	11	525
	292	-	304	14	575
	299	-	311	11	440
	309	-	317	16	475
	316	-	328	12	400
	328	-	335	21	360
	332	-	342	12	425
	342	-	352	15	325
450	260	-	280	10	625
	296	-	311	11	650
	316	-	328	12	500
	334	-	342	12	525
	342	-	354	16	575
	349	-	356	13	440
	359	-	367	19	475
	366	-	378	14	400
	382	-	392	14	425
	376	-	386	24	360
	392	-	402	17	325
500	310	-	334	12	625
	346	-	359	12	650
	366	-	378	14	500
	384	-	392	14	525
	392	-	404	18	575
	399	-	411	14	440
	409	-	417	21	475
	416	-	428	15	400
	432	-	442	16	425
	442	-	452	19	325
600	410	-	434	15	625
	446	-	460	15	650
	466	-	478	17	500
	484	-	492	17	525
	492	-	504	22	575
	499	-	510	17	440
	509	-	516	26	475
	516	-	528	19	400
	532	-	542	19	425
	542	-	552	23	325

All other sizes on request!

Available in these versions:

Type C: Rubber EPDM (black standard), screws galvanized

Type S316: Rubber EPDM (black), screws V4A-stainless steel

Type KTW: Rubber EPDM (with blue print „KTW“, pressure plate blue), screws V4A-stainless steel

KTW = Version for **drinking water**



Original Link-Seal® Modular Seals Certificate





DET NORSKE VERITAS TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. P-10685
This Certificate consists of 3 pages

This is to certify that the
Deck/Bulkhead Penetration
with type designation(s)
LINK-SEAL SYSTEM of the types LS 200, LS 275, LS 300, LS 315, LS 325 and LS 500.

Manufactured by
PSI Pipeline Seal & Insulator, Inc
Houston, United States

is found to comply with
Det Norske Veritas Rules for Classification of Ships

Application
Pipe penetrations of watertight/tight bulkheads and decks, except the divisions
Temp. range: Type D, E, X: -40°C to +120°C
Max. wind press.: Type D, F, G, Type C and X: 5.0 bar
Status: See page 2

Place and date
Bavil, 2004-05-11
for Det Norske Veritas AS
John Olav Nilsen
Head of Section

 Local Office
DNV Houston

This Certificate is valid until
2008-12-31
Todd Berg-Mulvan
Toll Berg-Mulvan
Surveyor

Notes: This Certificate is subject to review and conditions specified. Any significant change in design or construction may require this Certificate be voided. The validity also rests in the Type Approval Certificate and not in the approval of representative samples.



BESCHEINIGUNG

Prüfnummer: 0004111904

Auftraggeber: PSI Products GmbH
Ulrichstraße 25
72116 Mödingen

Hersteller: PSI Pipeline Seal and Insulator, Inc.
8105 Dabolt Street
Houston, Texas 77057
U.S.A.

Begrenztheit: Ringraum-Dichtung in Modulbauweise

Der o.g. Gegenstand wurde unter Berücksichtigung technischer Regeln geprüft und die qualitätsbestimmenden Maßnahmen für die Fertigung festgelegt.

Der Geltungsbereich mit allen Einzelheiten ist in dem Prüfbericht enthalten.

Der Hersteller ist berechtigt, an dem o.g. Gegenstand das Deutscherischerzeichen

TÜV - SR 007 - 94

anzubringen.

Mannheim, den 24. September 2004
040-0004-0004

TÜV RHEINLAND NACHEN SÜDWEST EV.
Bau und Betrieb
Gas- und Drucktechnik
Kompetenzzentrum Druckanlagen
Die Achsevermeidung

Dr. Ing. Jahn



Client: PSI Products GmbH
Ulrichstraße 25
72116 Mödingen, Germany

Design Order Number:

Completion Date: 18 August 2004

Class: APPROVED

Date: 16 September 2004

Order Status: vollständig

Date: 15 August 2004

This certificate is issued to the client upon payment of fees, and is subject to the conditions of the certificate. The certificate is valid for the period of the certificate. The certificate is valid for the period of the certificate.

Link-Seal® in Modulbauweise
Modul LS-200, LS-275, LS-300, LS-315, LS-325, LS-500

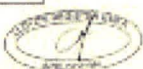
Diese Tests wurden entsprechend der Forderung von PSI Products GmbH "Link-Seal® für die Ringraumdichtung Typ Link-Seal® in Modulbauweise" durchgeführt. Die Daten der Prüfungsanordnung in der 18. August 2004.

Die Ergebnisse werden in dem Prüfbericht angegeben.

Verbindungsanweisung

Die Verbindungsanweisung der Prüfungen ist, dass die oben genannten Druckversuche für den statischen Druck, wie in der Tabelle angegeben, unter Beachtung sind:

Link-Seal® Typ	Prüfdruck (bar)
LS-200-001 Typ D	1 bar
LS-200-001 Typ E	1 bar
LS-200-001 Typ F	1 bar
LS-200-001 Typ G	1 bar
LS-200-001 Typ X	1 bar


N. H. Ziemann
 Surveyor to Lloyd's Register Ltd.
 A member of the Lloyd's Register Group