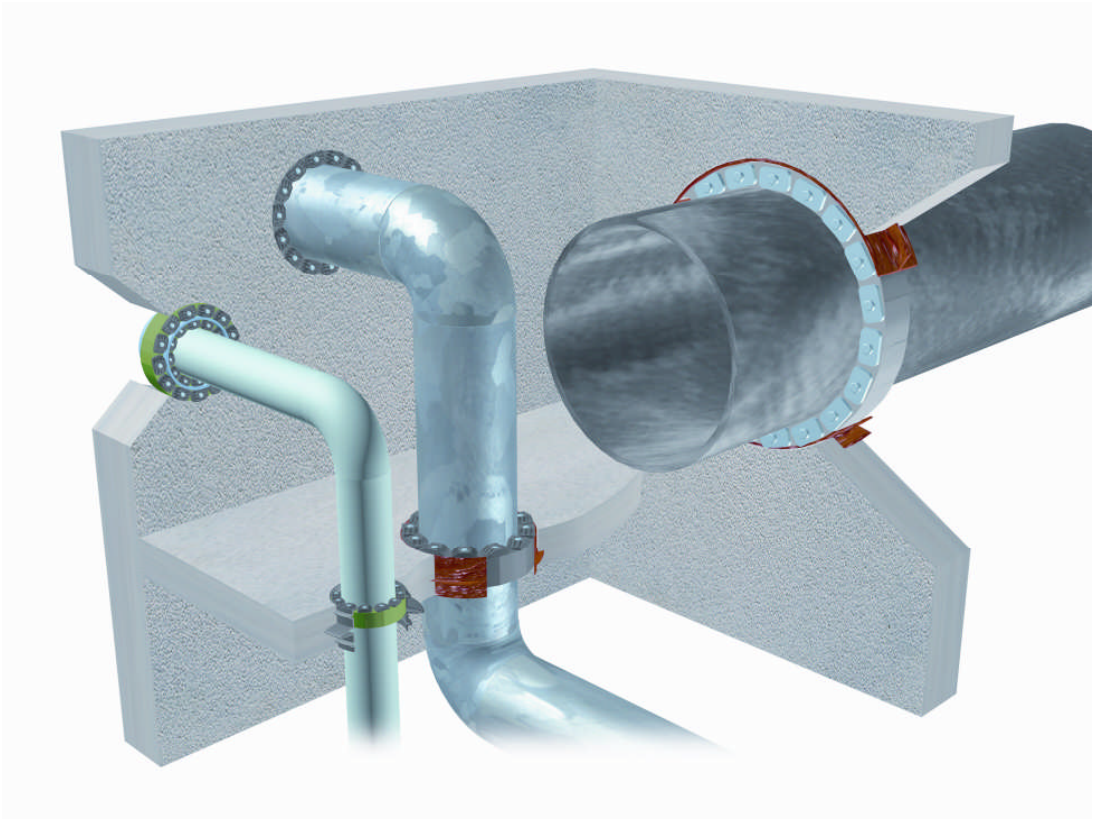
ORIGINAL LINK SEAL®
COBALCH Sealing



ORIGINALLINK SEAL® modular wall seal is installed quickly and easily. Architects, engineers, building and pipeline companies appreciate the advantages of ORIGINAL LINK SEAL®.

- independent of auxilary internal of external pressure
- electric insulation
- easy installation
- absorption of shocks, sound and vibration

The seal can be supplied in an assembled condition with the required number of links. Taping or other time-consuming methods are no longer neccessary.

GENEREL INFORMATION

LINK-SEAL is the most efficient modular mechanical seal for pipe through wall penetrations. The LINK-SEAL consists of identical solid rubber links in 20 different dimensions rating so they meet all diameters of pipes and cables.

The *LINK-SEAL* elements are connected by bolts. On each bolt - between the bolt and rubber element - there is a pressure plate. When tightening the bolt the pressure is transmitted through the pressure plate to the rubber element. The elements will expand in the gab between the pipe/cable and the wall opening. In this way you make wall penetrations entirely tight and the annular space between pipe/ cable and wall opening will be not more than 12 - 100 mm, which means that the wall opening must be drilled minimum size.

LINK-SEAL can be applied on pipes/cables with diameter from 10 mm to infinite.
LINK-SEAL standard model resists temperatures from -40°C to +120°C and LINK SEAL special model from -55°C to +230°C.
LINK-SEAL is also produced in a fire protection as model PYRO-PAC.

WATER AND AIR TIGHT SEALING

LINK-SEAL are TÜV tested with 5 bar and KTW approved for drinking water. Properly installed, *LINK-SEAL* resists a pressure up to 25 bar and resists radiation up to 5 x 10^8 RAD.
(Please contact COBALCH for more information)
Prevent creeping current and corona effect which occur on underground high-tension cables.
TÜV test SW 007-94
KTW approval of 27.03.98, Dir.Tgb. Nr.: C468/98

FAST MOUNTING = SAVED TIME

It is easy to see overleaf that *LINK SEAL* can be installed in a few minutes. By using *LINK- SEAL* you escape the time-consuming job casting between pipe/cable and wall opening.

SEALS ANY KIND OF PIPES/CABLES

LINK-SEAL fits any kind of pipes made of steel, PE, PVC, plastic, concrete, cast iron and also electric cables, telephone cable etc.. Is also used with no risk of deformation for ventilating duct with thin walls.

NB!
Plastic pipes must be PE100 - Pressure PN10, when the material otherwise is too thin and can be reduced in diameter and the tightening will be leaking, under PN10 please contact COBALCH.

DISTRICT HEATING PIPES (PRE-INSULATED PIPES)

When district heating pipes (pre-insulated pipes) it is important to use a thick type of *LINK-SEAL*, because of the movement in the pipeline.

20 DIFFERENT DIMENSIONS

With 20 different dimensions and 9 variants *LINK-SEAL* covers all types of wall pene-trations from pipe/cable diameters from 10 mm to infinite.
Look up the right dimension in the sizing charts, which shows the diameters of diamond drilled holes.

GIVES A GOOD SUPPORT

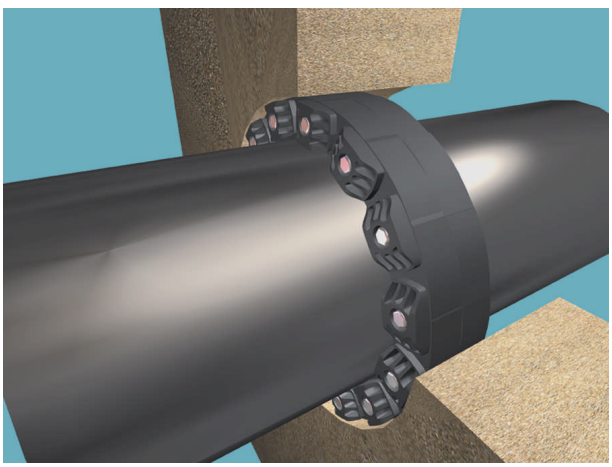
The solid rubber elements of a *LINK-SEAL* gives a good support for media supportedpiping, resists radial load and eliminate the need of wall opening strengthening by lead-in in walls, floors and roofs.

ABSORBTION OF SHOCKS, SOUND AND VIBRATION

The elasticity of the *LINK-SEAL* causes a good absorption of shock, stress and elimination of sound and vibration which can be results from pumps and by pressure alteration in the piping.
Besides *LINK-SEAL* helps reduce pipe failures due to fatigue, at welds, flanges and threaded connection.

PROTECTION AGAINST MECHANICAL INFLUENCE

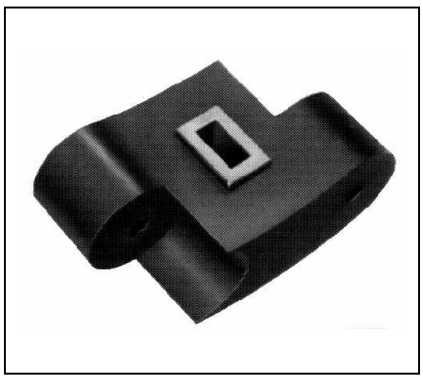
The placement of the *LINK-SEAL* in the wall prevent damages on pipe coating and cable insulating result from casting or tool used for this work.



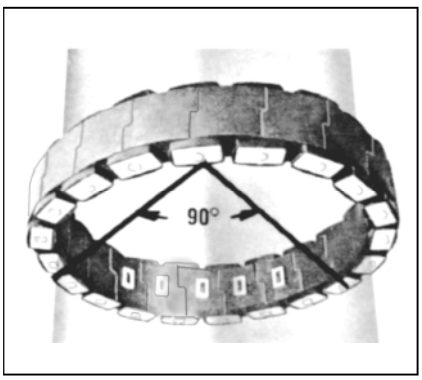
Section of finished installation
LINK-SEAL supports the pipes, absorbs the shocks, eliminates the vibrations and neutralize the noise. Metallic contact from pipe/cable to wall is impossible and render in that way electrolytic corrosion.

CENTERBLOCK MAKES INSTALLATION EASIER AND MORE SECURE

LINK-SEAL assembly showing the center block model CB.



LINK-SEAL with reinforced polyamide centering block. Note that the block is slightly thicker than unexpanded links.



LINK-SEAL centering blocks in 25% of the link, positioned in the lower 90° of each assembly.

CENTERBLOCK ARE AVAILABLE IN TYPE:

LS-400
LS-500
LS-525
LS-615

At installations where the media pipes are 14"/350 mm or more we recommend *LINK-SEAL* with 'centering blocks' in 25% of the links. These centering blocks, made of reinforced polyamide, fit into molded openings in the *LINK-SEAL*. They are positioned in the lower 90° of each assembly.

Since the centering blocks are slightly thicker than the free state (unexpanded) thickness of the rubber links, they position the pipe higher during initial stages of installation of the pipe coating by the pressure plates.

When dimension of the media pipe is 12"/300 mm or less - is the use of center blocks un-necessary.

ORIGINAL LINK SEAL®
COBALCH Sealing

Description

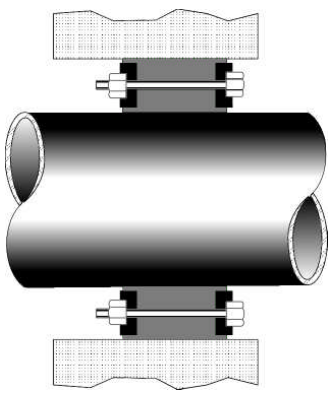


TÜV Tested with 6 bar.

Materials:
Sealing element: EPDM, NITRILE and SILICONE
Bolts and nuts: A4 and 8.8

Type	Material segment	Hardness shore	Bolt material	Pressure plates	Temperature range (°C)	Elektric insulation	Applications
A4	EPDM Colour = black	50°	1.4571	Glass fiber reinforced polyamide	-40° to +120°	Yes	High resistance against water, most other inorganic substances (acids and alkalies) and against most organic substances. Extremely good on aggressive cleaning plants, raw water, chemical industry, salt water, ect..
B-A4	EPDM Colour = blue	35°	1.4571	Glass fiber reinforced polyamide	-40° to +120°	Yes	As S-316, but is ideal for thin walled plastic pipes because of distortion by mounting.
O-A4	Nitrile Colour = green	50°	1.4571	Glass fiber reinforced polyamide	-40° to +120°	Yes	High resistances against oils, aromatic fuels, solvents and other mineral oil base products. Extremely good on all types of oil installations and refineries ect..
T-8.8	Silicone Colour = grey	50°	8.8	ST 37 Zink plated	-55° to +230°	No	Ideal for extreme temperatures and as a flame barrier for up to 1 hour. Very suitable for refrigerated store houses.

Section with LINK SEAL®



Wall

LINK SEAL®

Media pipe

ORIGINAL LINK SEAL®
COBALCH Sealing

Choose the right type

Type	Free state thickness	Expand state thickness	Min. wall thickness	Segment length	Pipe diameter from	Pipe diameter to	Min. numbers of segments
LS-200	12,7 mm	16,0 mm	75 mm	30,0 mm	21,3 mm	323,9 mm	4
LS-265	16,0 mm	20,0 mm	75 mm	42,4 mm	110,0 mm	219,1 mm	10
LS-275	16,0 mm	20,0 mm	75 mm	25,1 mm	10,0 mm	90,0 mm	4
LS-300	18,0 mm	22,5 mm	100 mm	40,0 mm	44,5 mm	406,4 mm	5
LS-310	18,0 mm	22,5 mm	100 mm	57,1 mm	160,0 mm	406,4 mm	10
LS-315	21,1 mm	26,0 mm	100 mm	38,4 mm	37,0 mm	315,0 mm	5
LS-325	23,2 mm	30,0 mm	120 mm	79,4 mm	133,0 mm	711,0 mm	6
LS-340	25,5 mm	34,0 mm	120 mm	41,4 mm	14,0 mm	323,9 mm	4
LS-360	32,0 mm	42,0 mm	120 mm	55,1 mm	16,0 mm	406,4 mm	4
LS-400	36,3 mm	46,0 mm	140 mm	93,1 mm	139,7 mm	1220,0 mm	6
LS-410	37,0 mm	48,5 mm	140 mm	67,6 mm	44,5 mm	323,9 mm	4
LS-425	28,4 mm	37,0 mm	140 mm	93,1 mm	144,0 mm	1220,0 mm	6
LS-440	44,0 mm	55,0 mm	140 mm	99,0 mm	100,0 mm	1220,0 mm	5
LS-475	41,3 mm	48,5 mm	140 mm	68,3 mm	60,3 mm	1220,0 mm	5
LS-500	60,3 mm	71,5 mm	150 mm	99,1 mm	100,0 mm	1220,0 mm	5
LS-525	55,4 mm	63,5 mm	150 mm	99,1 mm	133,0 mm	1220,0 mm	6
LS-575	48,0 mm	58,0 mm	150 mm	79,5 mm	130,0 mm	1220,0 mm	5
LS-615	81,6 mm	102,0 mm	150 mm	155,0 mm	219,0 mm	3000,0 mm	6
LS-625	83,0 mm	102,0 mm	150 mm	106,7 mm	133,0 mm	2000,0 mm	5
LS-650	69,0 mm	84,0 mm	150 mm	106,7 mm	133,0 mm	2000,0 mm	5
LS-700	95,0 mm	110,0 mm	150 mm	155,5 mm	219,0 mm	3000,0 mm	6

LS-625 and LS-700 are ONLY available in type B

RECOMMENDAATION:

110 mm to 160 mm	minimum	LS-300
180 mm to 400 mm	minimum	LS-400
450 mm to -		LS-500

Calculation of annular space: Holediameter, inside Ø – mediapipe, outside Ø : 2 = annular space between

Type selection according to selection guides LS

Calculation of chain length: Holediameter, inside Ø – mediapipe, outside Ø : 2 x 3,14 = boltcircle

Numbers of segments: Boltcircle : segment length = numbers of segments

ORIGINAL LINK SEAL®
COBALCH Sealing Certificate

DNV

DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. P-11685
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/gastight bulkheads and decks, except fire divisions
Temp. range: Type O, C, X : -40°C to +120°C
Max. work. press.: Type O: 7.0 bar; Type C and X : 5.0 bar
Sizes: See page 2

Place and date
Høvik, 2004-05-11
for DET NORSKE VERITAS AS
John Olav Nekleby
Head of Section

Local Office
DNV Houston

This Certificate is valid until
2008-12-31
Tom Berg-Nielsen
Surveyor

Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

DET NORSKE VERITAS AS · VERITASVEIEN 1, 1322 HØVIK, NORWAY · TEL: (+47) 67 57 99 00 · FAX: (+47) 67 57 99 11
Form No.: 20.90a Issue: January 98 Page 1 of 3

TÜV SÜDDEUTSCHLAND

BESCHEINIGUNG

Prüfbericht: DDA4/118/94

Auftraggeber: PSI Products GmbH
Ulrichstraße 25
72116 Mössingen

Hersteller: PSI Pipeline Seal and Insulator, Inc.
6525 Gofoth Street
Houston, Texas 77021
U.S.A.

Gegenstand: Ringraum-Dichtung in Modul-Bauweise

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

Der Geltungsbereich mit allen Einzelheiten ist in dem Prüfbericht enthalten.

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

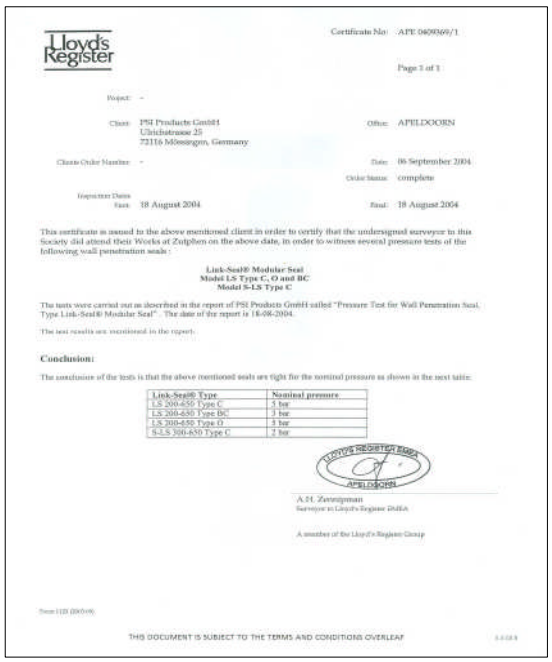
TÜV - SW 007 - 94

anzubringen.

Mannheim, den 24. September 2003
SB-DDB-MANljo

TÜV BAYERN HESSEN SACHSEN SÜDWEST E.V.
Bau und Betrieb
Dampf- und Drucktechnik
Kompetenzzentrum Druckbehälteranlagen
Die Sachverständige

Dipl.-Ing. John



Lloyd's Register

Certificate No: APE 0609869/1

Page 1 of 1

Project: -

Client: PSI Products GmbH
Ulrichstrasse 25
72116 Mössingen, Germany

Office: APELDOORN

Client Order Number: -

Date: 06 September 2004

Order Status: complete

Inspection Dates
from: 18 August 2004
final: 18 August 2004

This certificate is issued to the above mentioned client in order to certify that the undersigned surveyor to this Society did attend their Works at Zutphen on the above date, in order to witness several pressure tests of the following wall penetration seals :

Link-Seal® Modular Seal
Model LS Type C, O and BC
Model S-LS Type C

The tests were carried out as described in the report of PSI Products GmbH called "Pressure Test for Wall Penetration Seal, Type Link-Seal® Modular Seal". The date of the report is 18-08-2004.

The test results are mentioned in the report.

Conclusion:

The conclusion of the tests is that the above mentioned seals are right for the nominal pressure as shown in the next table:

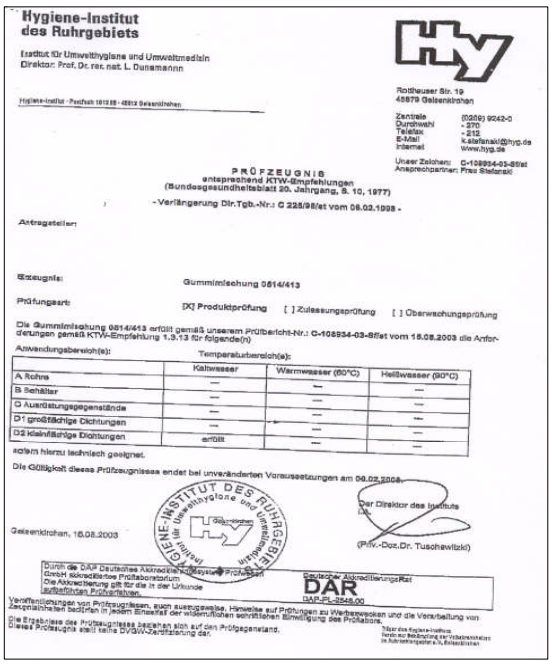
Link-Seal® Type	Nominal pressure
LS 200-650 Type C	3 bar
LS 200-650 Type BC	3 bar
LS 300-650 Type O	3 bar
S-LS 300-650 Type C	2 bar

LLOYD'S REGISTER EMEA
APELDOORN

A.H. Zennipman
Surveyor to Lloyd's Register EMEA

A member of the Lloyd's Register Group

THIS DOCUMENT IS SUBJECT TO THE TERMS AND CONDITIONS OVERLEAF



Hygiene-Institut des Ruhrgebiets

Institut für Umwelthygiene und Umweltmedizin
Direktor: Prof. Dr. rer. nat. L. Dunemann

Hygiene-Institut · Postfach 101239 · 45832 Gelsenkirchen

Rotheuser Str. 19
45879 Gelsenkirchen

Zentrale (0209) 9242-0
Durchwahl - 270
Telefax - 212
E-Mail k.stefaniak@hyg.de
Internet www.hyg.de

Unser Zeichen: G-108934-03-St/st
Ansprechpartner: Frau Stefaniak

PRÜFZEUGNIS
entsprechend KTW-Empfehlungen
(Bundesgesundheitsblatt 20. Jahrgang, S. 10, 1977)
- Verlängerung Dir.Tgb.-Nr.: G 225/98/st vom 06.02.1998 -

Antragsteller:

Erzeugnis: Gummimischung 0614/413

Prüfungsart: [X] Produktprüfung [ ] Zulassungsprüfung [ ] Überwachungsprüfung

Die Gummimischung 0614/413 erfüllt gemäß unserem Prüfbericht-Nr.: G-108934-03-St/st vom 15.08.2003 die Anforderungen gemäß KTW-Empfehlung 1.3.13 für folgende(n)

Anwendungsbereich(e): Temperaturbereich(e):

	Kaltwasser	Warmwasser (60°C)	Heißwasser (90°C)
A Rohre	---	---	---
B Behälter	---	---	---
C Ausrüstungsgegenstände	---	---	---
D1 großflächige Dichtungen	---	---	---
D2 kleinflächige Dichtungen	erfüllt	---	---

sofern hierzu technisch geeignet.

Die Gültigkeit dieses Prüfzeugnisses endet bei unveränderten Voraussetzungen am 06.02.2008.

Gelsenkirchen, 15.08.2003

INSTITUT DES RUHRGEBIETS für Umwelthygiene und Umweltmedizin Gelsenkirchen

Der Direktor des Instituts
(Prof.-Doz.Dr. Tuschewitzki)

Durch die DAP Deutsches Akkreditierungssystem Prüfwesen GmbH akkreditiertes Prüflaboratorium
Die Akkreditierung gilt für die in der Urkunde aufgeführten Prüfverfahren.

Deutsches Akkreditierungsstel
DAP
DAP-PL-2946.00

Veröffentlichungen von Prüfzeugnissen, auch auszugsweise, Hinweise auf Prüfungen zu Werbezwecken und die Verwendung von Zeichen/Siegeln bedürfen in jedem Einzelfall der schriftlichen Genehmigung des Prüflabors.

Die Ergebnisse des Prüfzeugnisses beziehen sich auf den Prüfgegenstand.
Dieses Prüfzeugnis stellt keine DVGW-Zertifizierung dar.

Technical modifications reserved

08-10-211