

**Company certificate**  
**DDL Compact seal Pipe-Seal *Senso* / *Kabu-Seal***

**Document no. 026-0311**

This certificate consists of 3 pages

*Qualification for*  
**Wall and ceiling penetrations**

type  
**DDL Pipe-Seal *Senso* / *K-S* DN 100 / 125 / 150 / 200 / 300**  
Subgroups of these types see pages 2 and 3

*manufactured by*

**DDL GmbH**  
Durchführungstechnik  
Dichtsysteme  
Lutz

Wernau/N., Germany

*Application / use*

**Wall and ceiling pipe penetrations, tight against  
pressing water and gas**

type	temperature range	max. operating pressure	test pressure	sizes
Pipe-Seal <i>Senso</i> / <i>K-S</i> PSS-X va	-40 °C - +100 °C	1.5 bar	2.0 bar	see p.2

Wernau, July 1<sup>st</sup> 2016

- *Uli Lutz* -  
Geschäftsführer

## Product description

Manufacturer of the products:

**DDL GmbH**  
**Durchführungstechnik**  
**Dichtsysteme**  
**Lutz**  
**Borsigstr. 26-28**  
**D-73249 Wernau/N.**

### DDL Pipe-Seal Senso / Kabu-Seal sizes/dimensions

DDL Pipe-Seal Senso / K-S Type	Outside diameter carrier pipe [mm]
PSS-100/63 VA	63
PSS-125/75 VA	75
PSS-150/110 VA	110
PSS-200/140 VA	140
PSS-200/160 VA	160
PSS-250/175 VA	175
PSS-300/200 VA	200

## Application/limitation

Seal insert of extremely soft thermoset elastomer with a medium-hard rubber carrier core inlay. Particularly for the use in annuluses with carrier pipes "corrugated pipe / district heating pipe / thin-walled plastic pipe".

<b>Operating temperature:</b>	-40 °C + 100 °C
<b>Nominal operating pressure:</b>	1.5 bar / 15 mWS
<b>Core-drilled hole tolerance:</b>	+ 4 mm to DN specification

## Resistance/suitability for use of DDL Pipe-Seal Senso / K-S elastomers

Thermoset elastomers offer good **chemical resistance** to oils, fats, many solvents, aromatic fuels (petrol, engine oil, kerosene, methane, hydraulic oil, transformer oil), acetone, alcohol, salt water, and ozone.

Particularly suitable for the use in natural gas and town gas.

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Thermoset elastomers have excellent **mechanical properties** such as

- abrasion resistance
- tear resistance
- wear resistance
- impact resistance
- heat resistance

### **Tightness against air and gas pressure:**

DDL Pipe-Seal *Senso* / *K-S* pipe penetrations have been tested for their tightness against air and gas pressure as follows:

Testing device with Pipe-Seal *Senso* / *K-S* annular seal in a 40 mm elastomer seal version built in on both sides.

Inside diameter testing device: 150 mm

Outside diameter carrier pipe: 110 mm (corrugated pipe model "Kabuflex")

1. inspection level with a testing pressure of 0.5 bar for 24 hours
2. inspection level with a testing pressure of 1.0 bar for 24 hours
3. inspection level with a testing pressure of 1.5 bar for 24 hours
4. inspection level with a testing pressure of 2.0 bar for 30 min.\*

After 30 minutes the carrier pipe tore in the middle of the seal inserts along a groove sole over a distance of about 8 cm due to material fatigue and the inspections were terminated.

The inspections were carried out under AIR PRESSURE and under WATER PRESSURE.

### **Test arrangement**



Carrier pipe Kabuflex DN 100 in testing device ID 150 mm

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Mounted annular seal Pipe-Seal *Senso* / K-S PSS 150/110



2. inspection level 1.0 bar / 24 hours



3. inspection level 1.5 bar / 24 hours



4. inspection level 2.0 bar / 30 min.



Complete test setup

**Installation specifications:**

The pipe penetrations must be installed according to the manufacturer's installation guide.

**Item name:**

- Pipe-Seal *Senso*
- Kabu-Seal

**Quality declaration raw material/production**

The manufacturer hereby declares that all raw material for DDL Pipe-Seal *Senso* / *K-S* pipe penetrations is obtained by German raw material manufacturers, that the individual parts and finished products are manufactured in Germany and that the use of recycling material is not permitted.

Stainless steel connecting elements such as screws, nuts and washers are not part of this quality declaration with regard to their country of origin.

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