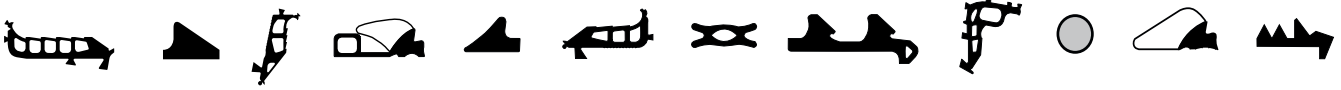
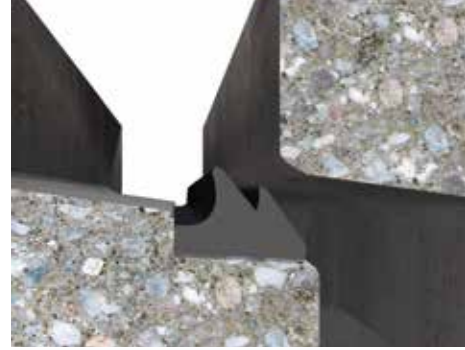


PRODUCT DATA SHEET DS LKD



DS LKD is a two-lipped compression seal made from elastomers with dense structure for the permanent sealing of concrete and reinforced concrete socket pipes and socket box culverts.

- DS LKD is in accordance with the requirements of DIN EN 681-1 / DIN 4060 [88] (seals made from elastomers) and the FBS quality guideline.
- DS LKD pipe connections fulfill the criteria of DIN EN 1916, method 1-4.
- DS LKD is a two-lipped compression slip ring seal. It requires a shoulder or chamber on the spigot end which determines the seat of the profile.
- DS LKD can be supplied in different specific cross sections.
- DS LKD is normally supplied by the pipe manufacturer directly to the job site along with the pipes separately or fixed to the spigot end.
- DS LKD pipe connections resist high shearing forces tested by the FBS quality guideline.

**Tested and quality controlled
by MPA Berlin-Brandenburg.**

SPECIAL ADVANTAGES

- ideal formed two-lipped compression slip-ring seal.
- combines easy and secure pipe mountability with highest possible tightness security.
- the two lips afford a larger sealing area and therefore a higher sealing security.
- supplied loose, at low temperatures it can be separately warmed up.

MATERIAL

DS LKD is usually produced from styrene-butadiene rubber (SBR), hardness 40+5 IRHD. The material resists the usual stresses caused by sewage. In case of content of light liquids (oil, petrol, fuels) in the sewage water it is recommended to use DS LKD made of acryl-nitrile-butadiene-rubber (NBR), which has a higher resistance against light liquids.

QR 4060



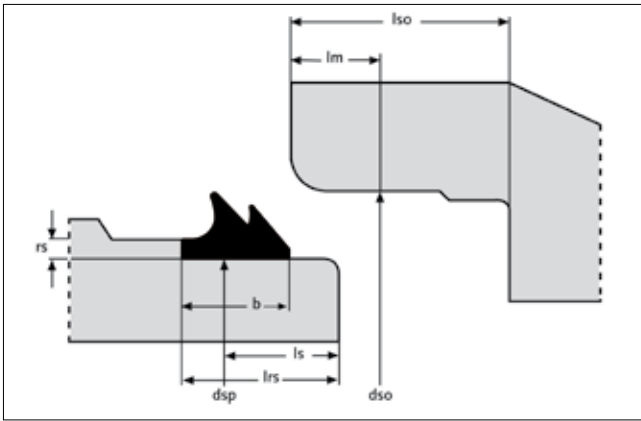
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CE

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PIPE REQUIREMENTS (all dimensions in mm)



- Concrete and reinforced concrete pipes must comply with the requirements of DIN EN 1916 and DIN V 1201.

By taking appropriate production measures – e.g. use of outer and inner supporting rings – it must be ensured that the limits for the gaps max w and min w laid out in the dimensioning table are met.

Design of the spigot end:

- $rs \geq 0,35 \text{ hj}$ (observe FBS-QR!)
- $ls = lrs - 15$;
- $lm = lso - ls - 10$

Chamber width:

- $> b + 3$
- For chambered sealings the chamber must be large enough to accept the volume of the seal!

DIMENSIONING OF THE SEALING RING

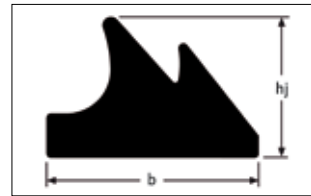
(All dimensions in mm)

For the dimensioning of the necessary seal height hj the socket gap width w has to be determined. To achieve this, the outer diameter of the spigot end dsp and the inner diameter of the socket end must be measured on at least ten pipes of a production batch or delivery. The pipes and the diameters are to be selected according to information gained on site in such a way that the maximum and minimum values are recorded. Max w and min w of the socket gap width are then calculated from the measured values as follows:

$$\max w = \frac{\max dso - \min dsp}{2}$$

$$\min w = \frac{\min dso - \max dsp}{2}$$

The cut length of the sealing ring is to be calculated as follows:



$$l = 2,73 \times (dsp + hj)$$

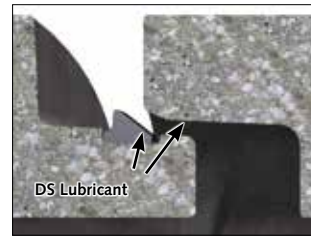
(deformation 32,5% – 50%,
pre-stretching $s = 15\%$)

hj	t+	t-	$b \pm 1,5$	max w	min w	w ±	
28	0,8	0,2	42	17,5	13,4	15,5	2,0
30	1,2	0,2	45	18,8	14,4	16,6	2,2
32	1,2	0,2	48	20,0	15,5	17,7	2,3

Smaller or larger hj on request.

PIPE INSTALLATION TIPS

Die DS LKD pipe connections can be installed without any problems using normal construction site equipment. When laying the pipes observe DIN EN 1610 and the DWA-A 139 work sheet



- Clean the sealing ring, socket and spigot end before installing.
- Mount pre-stretched sealing ring on spigot end and place it next to the shoulder ensuring an even pre-stretching of the sealing ring.
- Apply DS lubricant thoroughly to the inner area of the socket and sealing ring. The additional application of the lubricant to the seal is recommended as it helps to reduce the mounting forces.
- Move spigot end centrally into socket and pull pipes together.

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