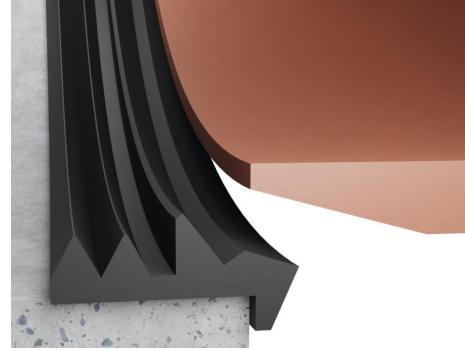


# DS LKs bore connection seal



DS LKs is a seal with bored holes for the connection of pipes made out of different materials (e.g. PVC, PE, cast iron, fiber reinforced cement, concrete, stoneware) in manhole components or pipes made out of concrete or reinforced concrete.

- DS LKs is in accordance with the requirements of EN 681-1 / DIN 4060 – seals made from elastomers – and the FBS quality guideline.
- DS LKs is a compression slide seal ring. It is compressed into the bore hole and its position is fixed by its shoulder side.
- DS LKs can be supplied for all different connection pipes, as long as the permissible tolerances are observed (see table).
- DS LKs eases by its wedge shape the centering of the pipes.
- DS LKs can take high heavy loads.

## SPECIAL ADVANTAGES

- Allows secure and economical subsequent flexible connection of pipes to concrete manhole components or pipes through a bore hole.

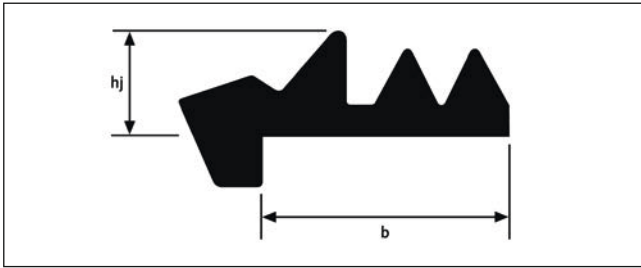
## MATERIAL

DS LKs is produced from styrene-butadiene rubber (SBR) or ethylene propylene diene rubber (EPDM), hardness  $40\pm 5$  IRHD. In case of content of light liquids (oil, petrol, fuels) in the sewage water it is recommended to use DS LKs out of acryl-nitrile-butadiene rubber (NBR), hardness  $45\pm 5$  IRHD, which has a higher resistance against light liquids.



## SIZING OF SEAL RING AND DRILL HOLE

(all dimensions in mm)



Gap width between connection pipe and pipe wall

LKs		socket gap
hj	b	w
14	50	9,0 ± 0,8
16	38	10,3 ± 0,8
20	50	13,0 ± 1,7
21	50	14,0 ± 1,7
24	50	16,8 ± 1,7
27	50	19,5 ± 1,7
32	50	24,0 ± 1,7

Cut length of the sealing ring for vulcanized extruded material

DN	s in %
150	5,5
200	5,0
> 200	4,0

$$SL = (dB - hj) \times \pi / (1 - s/100)$$

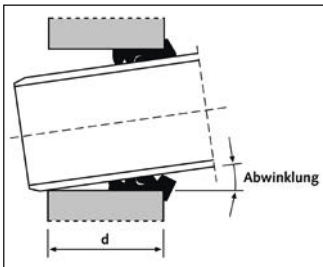
s = compression in %  
dB = bore hole diameter

## SIZING THE BORE HOLE DIAMETER

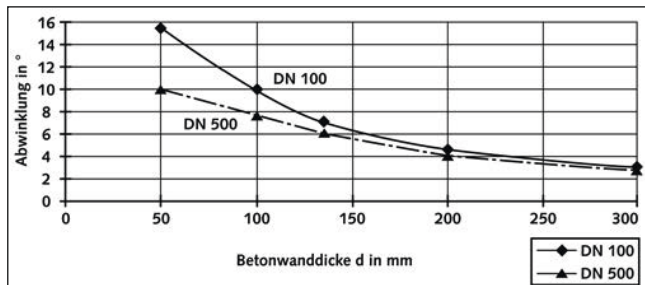
$$dB = dA_{\text{mittel}} + 2 \times W$$

dA = outer diameter of pipe to be inserted

Maximum bending angle of the connected pipes depending on concrete wall thickness d for LKs 20 and LKS 21.



Curves for the bending angle are for soft bending connected pipes. For stiff bending connected pipes values have to be reduced to 0,8.



## INSTALLATION TIPS

- Clean bore hole and press DS LKs into the existing (not lubricated) bore hole, push it to the shoulder stop. In doing so, do not use any lubricant at this stage.
- Bevel the pipe end to be inserted.
- Lubricate pipe end and seals DS lubricant
- Insert pipe centrally and push in.

## DS LKS BORE CONNECTION SEALS / STANDARD MEASUREMENTS

For different types of pipes and pipe diameters:

Pipe size [mm]	Extern pipe [mm]	Bore diameter [mm]	Seal type
Suitable for PVC KG pipes and formed pieces in accordance with DIN 19534			
100	110	138	110 / 138
125	125	151	125 / 151
150	160	186	160 / 186
200	200	226	200 / 226
250	250	276	250 / 276
300	315	341	315 / 341
400	400	426	400 / 426
Suitable for GFR pipes in accordance to DIN 16896 series 2			
150	168	194	168 / 194
200	220	246	220 / 246
250	272	298	272 / 298
300	324	350	324 / 350
400	427	453	427 / 453
Suitable for FZ pipes in accordance to DIN 19850 class B			
150	172	198	172 / 198
200	224	250	224 / 250
250	278	304	278 / 304
Suitable for HD PE pipes and PVC pressure pipes			
	40	75	40 / 75
	50	75	50 / 75
	63	89	63 / 89
	75	101	75 / 101
	90	116	90 / 116
	110	138	110 / 138
	125	151	125 / 151
	160	186	160 / 186
	200	226	200 / 226
	225	251	225 / 251
	250	276	250 / 276
	280	306	280 / 306
	315	341	315 / 341
	355	382	355 / 382
	400	426	400 / 426
	450	476	450 / 476
	500	526	500 / 526
	560	586	560 / 586
Suitable for stoneware pipes according to DIN EN 295			
150 N	186	212	186 / 212
200 N	242	268	242 / 268
Suitable for SML-A14 pipes according to DIN 19522, T1			
40	50	75	50 / 75
100	110	138	110 / 138
150	160	186	160 / 186
200	210	236	210 / 236
250	274	300	274 / 300
300	326	352	326 / 352
Suitable for GGG pipes			
150	170	196	170 / 196
200	222	248	222 / 248
250	274	300	274 / 300
300	326	352	326 / 352
400	429	455	429 / 455

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