

**Cable Penetrations**

## Floor

Cable Inlet Box System KDS 150 (p. 67)

## Wall

Cable Penetration KDS double wall penetration (p. 62) + Cable Penetration KDS single wall penetration (p. 63) + Cable Penetration KDS/DFW double wall penetration (p. 63) + Cable Penetration KDS/DFW single wall penetration (p. 64) + Cable Penetration KDS 150 single wall penetration with plug-in sleeve (p. 64) + Cable Penetration KDS 150 single wall penetration with hose connection (p. 64) + Cable Penetration KDS 150 double wall penetration with trowel flange (p. 65) + Cable Penetration KDS 150 single wall penetration with trowel flange (p. 65) + Protrusion Flange FDS 150 (p. 65) + Cable Penetration KDS 150 double wall penetration - 45 Grad (p. 66) + Cable Penetration KDS 150 FL/ZE double wall penetration (p. 66) + Cable Penetration KDS 150 FL/ZA (p. 66)

## Roof

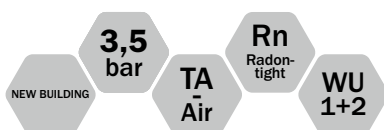
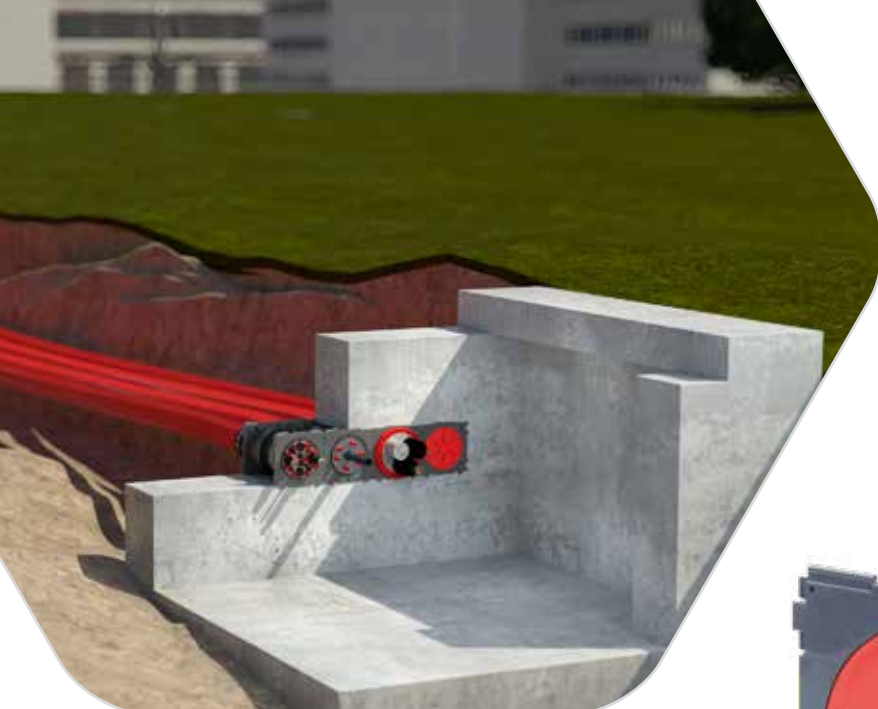
Swan Neck (p. 72) + Swan Neck - thermally insulated - (p. 73)

## Accessories

FLS - Flexible Empty Pipe System (p. 68) + Quick Sealing Plug for FLS (p. 69) + Hose Connection (p. 69) + Spacer (p. 69) + System Sealing Insert KDS 150 Universal Multiple - split - (p. 69) + System Cover KDS 150 with hose adapter (p. 70) + System Cover KDS 150 with sleeve (p. 70) + System Cover KDS 150 - heat-shrink technology - (p. 70) + System Cover 90 with hose adapter 90 (p. 71) + Shrink Hose KDS 90 - 1-fold (p. 71) + System Sealing Insert KDS 90 Universal (p. 71) + Y-Wrench (p. 71) + Sealing Insert Universal Multiple - split - (p. 74)



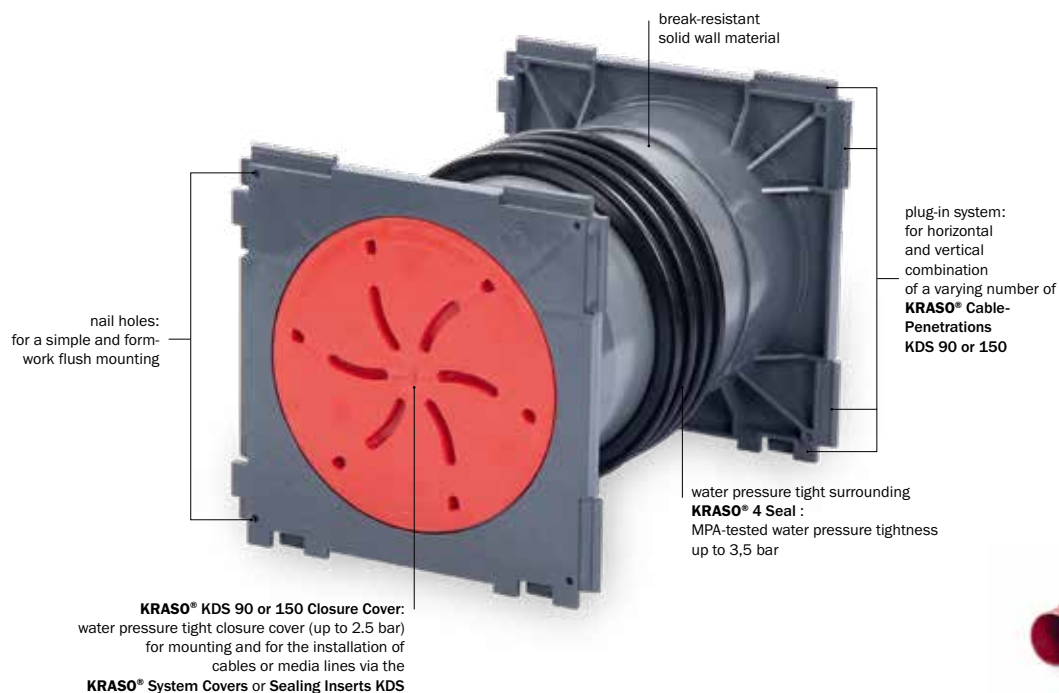
**KRASO®** Cable Penetration KDS  
Check the installation video  
(just scan the QR code!)



## KRASO® Cable Penetration KDS

Compatible, tight, secure –  
the cable penetration double sealing system

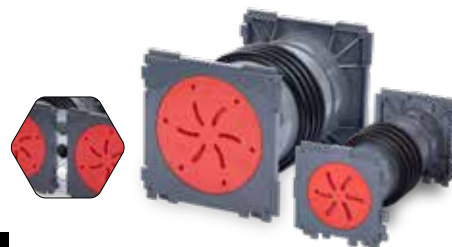
- + **Compatible** with all other current systems! **Tight** due our water pressure **KRASO® 4 Seal !**  
**Secure** due to break-resistant solid wall material!
- + **The intelligent, all-purpose and flexible cable penetration system** for complex new buildings:  
**public buildings, hospitals, technical-scientific institutions** or in the **industrial and commercial sector.**
- + Horizontal and vertical combination possible, installation at an angle of 45° with pre-installed clamps possible,  
also available for precast walls or as integration into the sealing of larger areas.
- + The matching accessories for every purpose!
- + **DafStB waterproof concrete guideline: stress class 1 + 2**







**KRASO® Spacer 40 mm** for KDS 150 double wall penetration for the enlargement of the centre distance from 210 mm to 250 mm



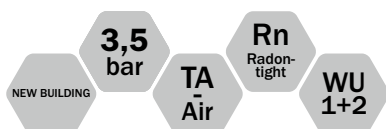
## KRASO® Cable Penetration KDS double wall penetration **LG 1**

cable penetration system for concreting, with plug-in system on both sides for forming packages, for the later installation of media lines using a **KRASO® System Sealing Insert** (not included in the scope of supply) or for connecting empty pipe hoses using **KRASO® System Cover** (not included in the scope of supply). Optionally available: **KRASO® Spacer 40 mm** for KDS 150 double wall penetration for the enlargement of the centre distance from 210 mm to 250 mm | **DafStB waterproof concrete guideline: stress class 1 + 2**

Type / Item	KRASO® KDS double wall penetration											
Available standard wall thicknesses in cm	12	15	17,5	20	24	25	30	35	36,5	40	45	50
<b>KRASO® KDS 90 double wall penetration</b>	32 €											
<b>KRASO® KDS 150 double wall penetration</b>	37 €											
Surcharge per penetration: <b>KRASO® Spacer 40 mm</b> for KDS 150 double wall penetration	12 €											

**Scope of supply:** **KRASO®** Cable Penetration KDS 90 or 150 double wall penetration, 2 KDS Closure Covers • Optionally available: **KRASO®** Spacer 40 mm for KDS 150 double wall penetration, factory-assembled

**Further wall thicknesses available on request!**



**KRASO® Spacer 40 mm** for KDS 150 single wall penetration for the enlargement of the centre distance from 210 mm to 250 mm



## KRASO® Cable Penetration KDS single wall penetration **LG 1**

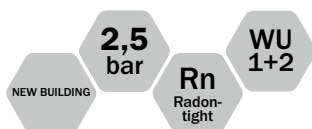
cable penetration system for concreting, with gas- and water pressure tight surrounding **KRASO® 4 Seal** and KDS closure covers, with plug-in system on one side for forming packages, for the later installation of media lines using a **KRASO® System Sealing Insert** (not included in the scope of supply) or for connecting empty pipe hoses using **KRASO® System Cover** (not included in the scope of supply). Optionally available: **KRASO® Spacer 40 mm** for KDS 150 single wall penetration for the enlargement of the centre distance from 210 mm to 250 mm | **DafStB waterproof concrete guideline: stress class 1 + 2**

Type / Item	KRASO® KDS single wall penetration													
Available standard wall thicknesses in cm	6 <sup>1, 2</sup>	7 <sup>2</sup>	10 <sup>2</sup>	15	17,5	20	24	25	30	35	36,5	40	45	50
KRASO® KDS 90 single wall penetration	28 €													
KRASO® KDS 150 single wall penetration	32 €													
Surcharge per penetration: KRASO® Spacer 40 mm for KDS 150 single wall penetration	8 €													

<sup>1</sup> only for **KRASO®** Cable Penetration KDS 90 single wall penetration, <sup>2</sup> for technical production reasons partly **KRASO® 2 Seal**

**Scope of supply:** **KRASO®** Cable Penetration KDS 90 or 150 single wall penetration, KDS closure cover, **KRASO®** Cover as an installation aid • Optionally available: **KRASO®** Spacer 40 mm for KDS 150 single wall penetration, factory-assembled

**Further wall thicknesses available on request!**



**KRASO® Spacer 40 mm** for KDS/DFW 150 double wall penetration for the enlargement of the centre distance from 210 mm to 250 mm



## KRASO® Cable Penetration KDS/DFW double wall penetration **LG 1**

cable penetration system for installation into triple walls, with gas- and water pressure tight surrounding **KRASO® 2 Seal** on both sides and 2 KDS closure cover, with plug-in system on both sides for forming packages, for the later installation of media lines using a **KRASO® System Sealing Insert** (not included in the scope of supply) or for connecting empty pipe hoses using **KRASO® System Cover** (not included in the scope of supply). Optionally available: **KRASO® Spacer 40 mm** for KDS/DFW 150 double wall penetration for the enlargement of the centre distance from 210 mm to 250 mm | **DafStB waterproof concrete guideline: stress class 1 + 2**

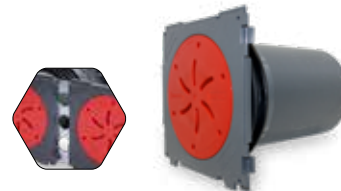
Type / Item	KRASO® KDS/DFW double wall penetration										
Available standard wall thicknesses in cm	15	17,5	20	24	25	30	35	36,5	40	45	50
KRASO® KDS/DFW 90 double wall penetration	32 €										
KRASO® KDS/DFW 150 double wall penetration	37 €										
Surcharge per penetration: KRASO® Spacer 40 mm for KDS/DFW 150 double wall penetration	12 €										

**Scope of supply:** **KRASO®** Cable Penetration KDS/DFW 90 or 150 double wall penetration, 2 KDS Closure Covers • Optionally available: **KRASO®** Spacer 40 mm for KDS/DFW 150 double wall penetration, factory-assembled

**Further wall thicknesses available on request!**



**KRASO® Spacer 40 mm** for KDS/DFW 150 single wall penetration for the enlargement of the centre distance from 210 mm to 250 mm



## KRASO® Cable Penetration KDS/DFW single wall penetration **LG 1**

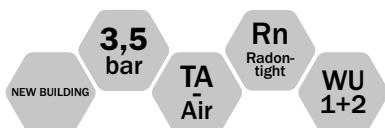
cable penetration system for installation into triple walls, with gas- and water pressure tight surrounding **KRASO® 2 Seal** on one side and KDS closure cover, with plug-in system on both sides for forming packages, for the later installation of media lines using a **KRASO® System Sealing Insert** (not included in the scope of supply) or for connecting empty pipe hoses using **KRASO® System Cover** (not included in the scope of supply). Optionally available: **KRASO® Spacer 40 mm** for KDS/DFW 150 single wall penetration for the enlargement of the centre distance from 210 mm to 250 mm | **DafStB waterproof concrete guideline: stress class 1 + 2**

Type / Item	KRASO® KDS/DFW single wall penetration													
Available standard wall thicknesses in cm	6 <sup>1</sup>	7	10	15	17,5	20	24	25	30	35	36,5	40	45	50
<b>KRASO® KDS/DFW 90 single wall penetration</b>	28 €													
<b>KRASO® KDS/DFW 150 single wall penetration</b>	37 €													
Surcharge per penetration: <b>KRASO® Spacer 40 mm</b> for KDS/DFW 150 single wall penetration	8 €													

<sup>1</sup> only for **KRASO® Cable Penetration KDS/DFW 90 single wall penetration**

**Scope of supply:** **KRASO® Cable Penetration KDS/DFW 90 or 150 single wall penetration**, KDS closure cover, **KRASO® Cover** as an installation aid • Optionally available: **KRASO® Spacer 40 mm** for KDS/DFW 150 single wall penetration, factory-assembled

**Further wall thicknesses available on request!**



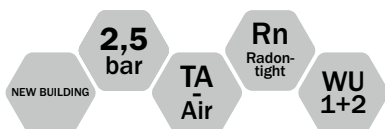
## KRASO® Cable Penetration KDS 150 single wall penetration with plug-in sleeve **LG 1**

for later installation of cables or pipes using **KRASO® System Sealing Insert KDS 150** (not included in the scope of supply) or **KRASO® System Cover KDS 150** (not included in the scope of supply), with water pressure tight surrounding **KRASO® 4 Seal**, with plug-in system on one side for forming packages, one side with plug-in sleeve including connection for from KG, HT or KG 2000 pipes DN 160 | **DafStB waterproof concrete guideline: stress class 1 + 2**

Type / Item	KRASO® KDS 150 single wall penetration with plug-in sleeve								
Available standard wall thicknesses in cm	20	24	25	30	35	36,5	40	45	50
<b>KRASO® KDS 150 single wall penetration with plug-in sleeve</b>	46 €								

**Scope of supply:** **KRASO® Cable Penetration KDS 150 single wall penetration with plug-in sleeve**, KDS 150 Closure Cover and **KRASO® Cover** as an installation aid

**Further wall thicknesses available on request!**



## KRASO® Cable Penetration KDS 150 single wall penetration with hose connection **LG 1**

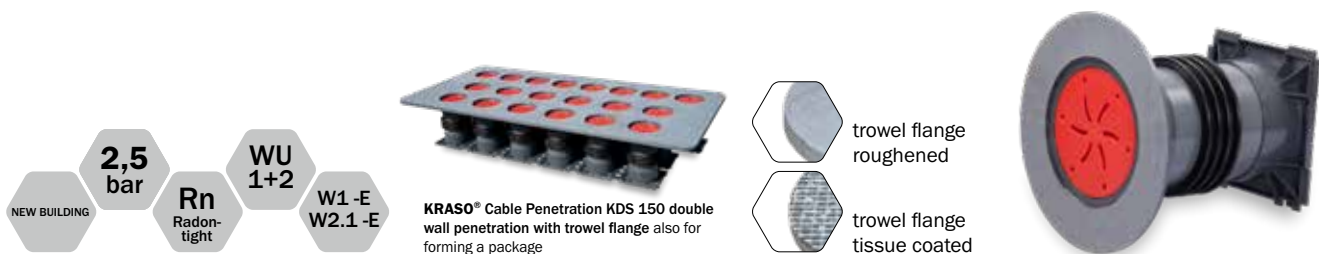
for later installation of cables or pipes using **KRASO® System Sealing Insert KDS 150** (not included in the scope of supply) or **KRASO® System Cover KDS 150** (not included in the scope of supply), with water pressure tight surrounding **KRASO® 4 Seal**, with plug-in system on one side for forming packages, one side with hose connection e.g. for **KRASO® FLS - Flexible Empty Pipe System** | **DafStB waterproof concrete guideline: stress class 1 + 2**

Type / Item	KRASO® KDS 150 single wall penetration with hose connection								
Available standard wall thicknesses in cm	20	24	25	30	35	36,5	40	45	50
<b>KRASO® KDS 150 single wall penetration with hose connection 110</b>	108 €								
<b>KRASO® KDS 150 single wall penetration with hose connection 160</b>	111 €								

**Scope of supply:** **KRASO® Cable Penetration KDS 150 single wall penetration with hose connection**

**Further wall thicknesses available on request!**





## KRASO® Cable Penetration KDS 150 double wall penetration with trowel flange **LG 1**

cable penetration system for concreting, with gas- and water pressure tight surrounding **KRASO®** 4 Seal , incl. 2 KDS closure cover, with trowel flange, tissue coated or roughened, surrounding approx. 7 cm for a secure connection of bitumen or reactive sealing (e.g. KMB) or a fresh concrete composite system, for later installation of media lines using **KRASO®** System Sealing Insert KDS or for connecting empty pipe hoses using **KRASO®** System Cover | **DafStB waterproof concrete guideline: stress class 1 + 2, DIN 18533 W1 -E and W2.1 -E**

Type / Item	KRASO® KDS 150 double wall penetration with trowel flange										
Available standard wall thicknesses in cm	15	17,5	20	24	25	30	35	36,5	40	45	50
<b>KRASO® KDS 150</b> double wall penetration with trowel flange - R -	82 €										
<b>KRASO® KDS 150</b> double wall penetration with trowel flange - G -	92 €										

**Scope of supply:** **KRASO®** Cable Penetration KDS 150 double wall penetration with trowel flange, 2 KDS closure covers

**Further wall thicknesses available on request!**



## KRASO® Cable Penetration KDS 150 single wall penetration with trowel flange **LG 1**

cable penetration system for concreting, with gas- and water pressure tight surrounding **KRASO®** 4 Seal , incl. KDS closure covers, with trowel flange, tissue coated or roughened, surrounding approx. 7 cm, for a secure connection of bitumen and reactive sealings or a fresh concrete composite system, for later installation of media lines using **KRASO®** System Sealing Insert KDS or for connecting empty pipe hoses using **KRASO®** System Cover | **DafStB waterproof concrete guideline: stress class 1 + 2, DIN 18533 W1 -E and W2.1 -E**

Type / Item	KRASO® KDS 150 single wall penetration with trowel flange										
Available standard wall thicknesses in cm	15	17,5	20	24	25	30	35	36,5	40	45	50
<b>KRASO® KDS 150</b> single wall penetration with trowel flange - R -	77 €										
<b>KRASO® KDS 150</b> single wall penetration with trowel flange - G -	87 €										

**Scope of supply:** **KRASO®** Cable Penetration KDS 150 single wall penetration with trowel flange, KDS Closure Cover

**Further wall thicknesses available on request!**

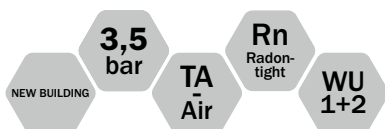


## KRASO® Protrusion Flange FDS 150 **LG 1**

protrusion flange made of stainless steel-reinforced plastic, for dowel-fixing in front of a core drilling for the connection of **KRASO®** System Cover KDS 150 with hose adapter for **KRASO®** FLS, **KRASO®** System Sealing Insert KDS 150 | **DafStB waterproof concrete guideline: stress class 1 + 2, DIN 18533 W1 -E and W2.1 -E**

Type / Item	KRASO® Protrusion Flange FDS 150
<b>KRASO® Protrusion Flange FDS 150</b>	110 €

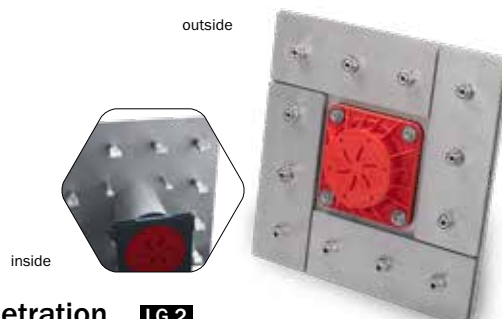
**Scope of supply:** **KRASO®** Protrusion Flange FDS 150 with EPDM flat seal and fixing material



## KRASO® Cable Penetration KDS 150 double wall penetration - 45 degrees -

with pre-installed clamps and styrofoam holders for installation at an angle of 45° | DafStB waterproof concrete guideline: stress class 1 + 2

Prices on request! Further inclination angles available on request!



## KRASO® Cable Penetration KDS 150 FL/ZE double wall penetration **LG 2**

cable penetration KDS 150 FL/ZE as double wall penetration, with fixed-loose flange and exterior protrusion flange FDS 150 for concreting, for installation of media pipes using **KRASO®** Sealing Inserts KDS 150 (not included in the scope of supply) or for connection of **KRASO®** KDS 150 Accessories (e.g. system cover) with bayonet fitting, made of non-corrosive stainless steel V2A, one side with water pressure tight surrounding **KRASO®** 2 Seal, for buildings with exterior sealing („black tank“) against pressing / non-pressing water according to DIN 18533. Available in non-corrosive stainless steel V2A or with special coating | **DIN 18533 W2.1 -E and W2.2 -E**

### KRASO® Cable Penetration KDS 150 FL/ZE double wall penetration - DIN 18533 W2.2 -E: HIGH IMPACT OF PRESSING WATER (WATER COLUMN ≥ 3 METRES)

Pipe InternalDiameter ID	155
Available standard wall thicknesses in cm	15 • 17,5 • 20 • 24 • 25 • 30 • 35 • 36,5 • 40 • 45 • 50
Dimensions fixed-flange	Dimensions a x b 577 mm - t = 10 mm
Dimensions loose-flange	Dimensions a x b 567 mm - t = 10 mm
<b>KRASO®</b> KDS 150 FL/ZE double wall penetration - non-corrosive stainless steel V2A -	1.251 €
EPDM supplement (2 pcs.)	69 €
<b>KRASO®</b> KDS 150 FL/ZE double wall penetration with special coating - non-corrosive stainless steel V2A -	1.325 €

### KRASO® Cable Penetration KDS 150 FL/ZE double wall penetration - DIN 18533 W2.1 -E: MEDIUM IMPACT OF PRESSING WATER (WATER COLUMN ≤ 3 METRES)

Pipe InternalDiameter ID	155
Available standard wall thicknesses in cm	15 • 17,5 • 20 • 24 • 25 • 30 • 35 • 36,5 • 40 • 45 • 50
Dimensions fixed-flange	Dimensions a x b 397 mm - t = 6 mm
Dimensions loose-flange	Dimensions a x b 387 mm - t = 6 mm
<b>KRASO®</b> KDS 150 FL/ZE double wall penetration - non-corrosive stainless steel V2A -	898 €
EPDM supplement (2 pcs.)	50 €
<b>KRASO®</b> KDS 150 FL/ZE double wall penetration with special coating - non-corrosive stainless steel V2A -	966 €

**Scope of supply:** **KRASO®** Cable Penetration KDS 150 FL/ZE double wall penetration, with fixed-loose flange and exterior **KRASO®** Protrusion Flange FDS 150, 2 KDS 150 closure covers

**Further wall thicknesses available on request lieferbar! Also available in V4A! Also available as formed packages!**



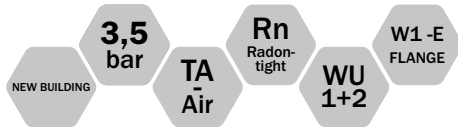
**KRASO®** Cable Penetration KDS 150 FL/ZE as multiple wall penetration - 45 degrees, for concreting (special production)



**KRASO®** Cable Penetration KDS 150 FL/ZA as multiple wall penetration - with fixed-loose flange and exterior protrusion flange FDS 150, for dowel-fixing (special production)



**KRASO®** Cable Inlet Box System KDS  
Check the installation video  
(just scan the QR code!)



## KRASO® Cable Inlet Box System KDS 150

### The flexible system for industry and commercial buildings

- + The secure and reliable way for the installation of cables and pipes right into buildings:  
with a radius of 650 mm or 1000 mm, main pipes and cable protective hoses can be connected at a 90-degree angle to buildings without basements
- + **KRASO® Cable Penetration System KDS 150:** flexible and combinable in various ways
- + The **KRASO® Cable Inlet Box System KDS 150** can be expanded to any number of rows thanks to the plug-in system - depending on your requirements!
- + For the installation of cables and pipes such as water, electricity, telecommunication etc. into buildings without a basement: the perfect solution for industrial and commercial buildings!
- + Sealing of the base plate by water pressure tight surrounding **KRASO® 4 Seal**
- + With stable installation device for correct positioning before concreting
- + Flexible plug-in possibilities on the outer side using **KRASO® Cable Penetration System KDS 150**
- + Additional media pipe sealing from the inside using **KRASO® Sealing Inserts**
- + Included in the scope of supply: **KRASO® KDS 150 Empty Pipe Insert** with bayonet fitting for a floor construction with floor heating, insulation and screed
- + DafStB waterproof concrete guideline: stress class 1 + 2, with optional trowel flange DIN 18533 W1 -E

**KRASO® Cable Inlet Box System KDS 150**  
available with **KRASO® Trowel Flange**  
roughened plastic-trowel flange  
for the integration into the floor sealing/  
sealing sheets



**KRASO® KDS 150 Empty Pipe Insert**  
example of installation of media lines using  
**KRASO® Sealing Inserts**

## KRASO® Cable Inlet Box System KDS 150 **LG 2**

for the installation of cables and utility lines such as e.g. water - electricity - telecommunication etc. in buildings without basement. Attention: do not use a **KRASO® System Sealing Insert KDS 150** for the sealing of media lines, but use **KRASO® Sealing Inserts** instead (s. p. 11 - 15)! | DafStB waterproof concrete guideline: stress class 1 + 2, with optional trowel flange DIN 18533 W1 -E

Type / Item	KRASO® Cable Inlet Box System KDS 150			
Available standard systems	1 x 1	1 x 2	1 x 3	1 x 4
<b>KRASO® Cable Inlet Box System KDS 150 - bending radius 650 mm</b>	561 €	691 €	804 €	906 €
<b>KRASO® Cable Inlet Box System KDS 150 - bending radius 1000 mm</b>	627 €	774 €	901 €	1.015 €

**Scope of supply:** **KRASO®** Cable Inlet Box System KDS 150, **KRASO®** KDS 150 Empty Pipe Insert 25 cm, 90° empty pipe system, installation device and KDS 150 Closure Cover

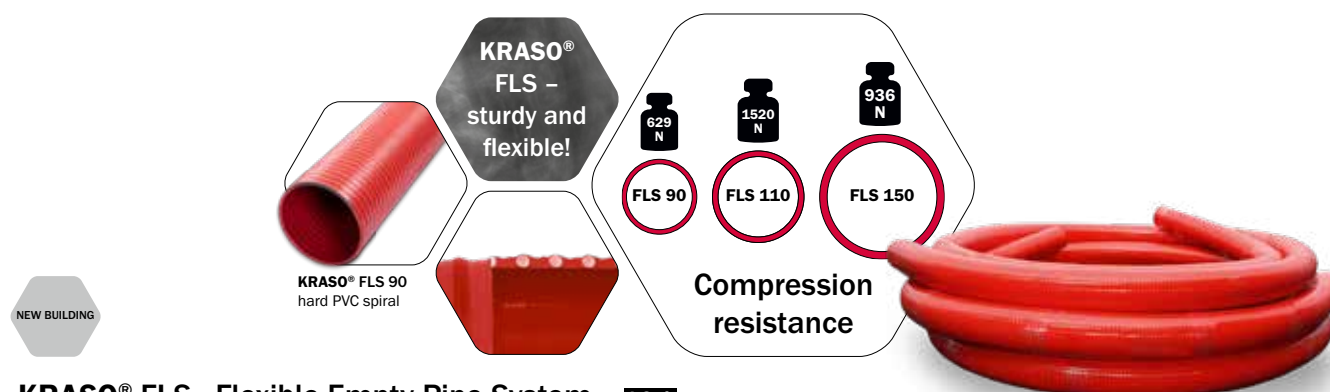
**Further combinations available on request!**



## KRASO® KDS - Accessories

### Appropriate accessories for **KRASO®** Cable Penetration KDS + Cable Inlet Box System KDS 150

- + With the appropriate accessories, **KRASO®** Cable Penetration KDS 90 / KDS 150 as wall penetrations and **KRASO®** Cable Inlet Box System KDS 150 can be combined to a complete individual system – as it is required for challenging construction projects
- + Our experts are happy to assist you regarding the numerous possibilities – even on your construction-site!

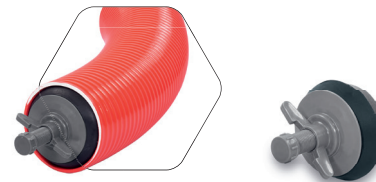


#### KRASO® FLS - Flexible Empty Pipe System **LG 4**

flexible empty pipe system as a cable protective hose for gas- and water tight connection to **KRASO®** Cable Penetration KDS, over-pressures of 4.0 or 3 bar, under-pressures of 0.7 or 0.5 bar, heavy design for high mechanical load, smooth interior for smooth cable pulling, smooth exterior for optimal sealing, flexible, enhanced resistance against pressure and vacuum, high axial resistance, resistant to alkalis and acids, resistant to brine and sea water, good UV and ozone resistance, gas-tight and liquid-tight, RoHS compliant (*Restriction of Hazardous Substances*)

Type / Item	KRASO® FLS 90	KRASO® FLS 110*	KRASO® FLS 150* **
InternalDiameter ID in mm	80	101	150
External diameter in mm	88	113	163
Bending radius in mm	200	350	600
Weight in kg/m ca.	1.5	2,9	4,3
Material thickness in mm	4	6	6,5
Compression resistance	629 N	1520 N	936 N
Classification according to DIN EN 61386-24	N250 (reached test force F: 364 N)	N250 (reached test force F: 293 N)	N250 (reached test force F: 388 N)
Stock length in m	30	30	20
KRASO® FLS	22 € per metre	33 € per metre	43 € per metre
Cutting cost***	16 €	22 €	-

\* Minimum order 10 m \*\* Freight charges for **KRASO®** FLS 150 only on request \*\*\* no discount applicable



## KRASO® Quick Sealing Plug for FLS **LG 1**

for sealing the **KRASO®** FLS - Flexible Empty Pipe System

Type / Item	KRASO® Quick Sealing Plug for FLS		
FLS	FLS 90	FLS 110	FLS 150
<b>KRASO® Quick Sealing Plug for FLS</b>	<b>44 €</b>	<b>50 €</b>	<b>62 €</b>

Further diameters available on request!



## KRASO® Hose Connection **LG 1**

for the connection of e.g. **KRASO®** FLS - Flexible Empty Pipe System

Type / Item	KRASO® Hose Connection			
Diameter DN	90	110	125	150
<b>KRASO® Hose Connection</b>	<b>50 €</b>	<b>68 €</b>	<b>71 €</b>	<b>75 €</b>

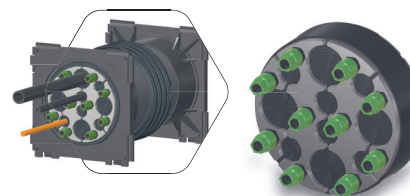


## KRASO® Spacer **LG 1**

guarantees sufficient distance between the flexible empty pipes, lighter, impact resistant, weather- and rot-proof plastic spacer

Type / Item	KRASO® Spacer 110	KRASO® Spacer 150
InternalDiameter ID in mm	110	165
<b>KRASO® Spacer 1 x 2</b>	<b>14 €</b>	<b>15 €</b>
<b>KRASO® Spacer 2 x 2</b>	<b>18 €</b>	<b>19 €</b>
<b>KRASO® Spacer 2 x 4</b>	<b>23 €</b>	<b>24 €</b>

Further spacers available on request!



## KRASO® System Sealing Insert KDS 150 Universal Multiple - split - **LG 1**

can be used for installation of one or several media lines/cables, for installation into the bayonet fitting of **KRASO®** Cable Penetration KDS 150, split design for retrofit installation, Torque Control Nut **KRASO®** DKM, 30 mm seal, external diameter 160 mm, specifically for the use in cable penetrations | DafStB waterproof concrete guideline: stress class 1 + 2

KRASO® System Sealing Insert KDS 150 Universal Multiple - split -				
	Universal	Design 1	Design 2	Design 3
Drillings or stepless onion ring technology: external cable diameter from... to ... in mm	1 x 63, 75, 90 or 110 mm	3 x 6 - 52 mm or blind	4 x 6 - 18 mm or blind 6 x 6 - 33 mm or blind	6 x 6 - 38 mm or blind
<b>KRASO® System Sealing Insert KDS 150 Universal Multiple - split -</b>	<b>107 €</b>	<b>127 €</b>	<b>127 €</b>	<b>127 €</b>

Further special designs on request!



### KRASO® System Cover KDS 150 with hose adapter **LG 1**

incl. bayonet fitting with union nut and anti-twist lock, hose adapter for the connection of **KRASO®** FLS, PE corrugated pipes or PVC and PP pipes to **KRASO®** Cable Penetration KDS 150. In combination with **KRASO®** FLS water pressure tight up to 2.5 bar. Scope of application as per table below | **DafStB waterproof concrete guideline: stress class 1 + 2**

Type / Item	hose adapter 110	hose adapter 160
Scope of application in mm	100 - 115	150 - 165
<b>KRASO®</b> System Cover KDS 150 with hose adapter	81 €	88 €

**Scope of supply:** **KRASO®** System Cover 150 with hose adapter

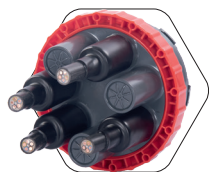


### KRASO® System Cover KDS 150 with sleeve **LG 1**

incl. bayonet fitting with union nut and anti-twist lock, sleeve for the connection of PVC and PP pipes to **KRASO®** Cable Penetration KDS 150

Type / Item	<b>KRASO®</b> System Cover KDS 150 with sleeve		
Diameter DN	110	125	160
<b>KRASO®</b> System Cover KDS 150 with sleeve	75 €	80 €	82 €

**Scope of supply:** **KRASO®** System Cover 150 with sleeve



### KRASO® System Cover KDS 150 - heat-shrink technology - **LG 1**

incl. bayonet fitting with union nut and anti-twist lock (prevents unintentional opening), with 1, 3 or 7 adapters for installation of pipes or cables, incl. shrink hose (length approx. 20 cm), connection via heat-shrink technology, **KRASO®** System Cover KDS 150 - heat-shrink technology - 3-fold and 7-fold with factory-installed, water pressure tight cover, simple opening by knocking off before installation (on-site), scope of application as per table below | **DafStB waterproof concrete guideline: stress class 1 + 2**

Type / Item	System Cover KDS 150 1-fold - heat-shrink technology -	System Cover KDS 150 3-fold - heat-shrink technology -	System Cover KDS 150 7-fold - heat-shrink technology -
diameter pipe or cable from ... to ... in mm	1 x 34 - 115	3 x 22 - 59	7 x 13 - 33
<b>KRASO®</b> System Cover KDS 150 - heat-shrink technology -	91 €	100 €	112 €

**Scope of supply:** **KRASO®** System Cover KDS 150 - heat-shrink technology - 1-fold, 3-fold, 7-fold with shrink hose/shrink hoses

**Further diameters on request!**





## KRASO® System Cover 90 with hose adapter 90 **LG 1**

incl. bayonet fitting, hose adapter for connection of **KRASO®** FLS, PE corrugated pipes or PVC-pipes to **KRASO®** Cable Penetration KDS 90 | **DafStB** waterproof concrete guideline: stress class 1 + 2

Type / Item	KRASO® System Cover 90 with hose adapter 90
Scope of application in mm	80 - 95
KRASO® System Cover 90 with hose adapter 90	79 €

Scope of supply: **KRASO®** System Cover 90 with hose adapter 90



## KRASO® Shrink Hose KDS 90 - 1-fold **LG 1**

shrink hose for **KRASO®** System Cover 90 (incl.)



Type / Item	KRASO® Shrink Hose KDS 90 - 1-fold
KRASO® Shrink Hose KDS 90 - 1-fold for all pipes and cables according to the table on the right (in mm)	1 x 25 - 95
KRASO® Shrink Hose KDS 90 - 1-fold	41 €

Scope of supply: **KRASO®** Shrink Hose KDS 90 - 1-fold, **KRASO®** System Cover 90



## KRASO® System Sealing Insert KDS 90 Universal **LG 1**

system sealing insert especially for connection of **KRASO®** Cable Penetration KDS 90, 20 mm seal, against pressing water up to 1 bar, Torque Control Nut **KRASO®** DKM, non-corrosive stainless steel V2A. Also usable as blind plug until feed-through of pipes or cables | **DafStB** waterproof concrete guideline: stress class 1 + 2

Type / Item	KRASO® System Sealing Insert KDS 90 Universal
Stepless onion ring technology: external cable diameter from... to ... in mm	6 - 52 mm or blind
KRASO® System Sealing Insert KDS 90 Universal	79 €
KRASO® System Sealing Insert KDS 90 Universal - split -	88 €

**Further special designs on request!**



## KRASO® Y-Wrench **LG 1**

Y-Wrench to open/close the KDS closure cover, available for **KRASO®** Cable Penetration KDS 90 and KDS 150



Type / Item	KRASO® Y-Wrench
KRASO® Y-Wrench 90	50 €
KRASO® Y-Wrench 150	59 €



**KRASO®** Swan Neck  
Check the installation video  
(just scan the QR code!)



## KRASO® Swan Neck

### Innovative, secure, tight – the **KRASO®** Flat Roof Penetration

- + Integration in the roof sealing sheeting using **KRASO®** Foil Clamping Flange Type FKF: oil- and bitumen resistant, tested water pressure tightness up to 2.5 bar
- + Torque Control Nut **KRASO®** DKM: integrated torque limiter - no torque wrench required!
- + **UV protection** with surrounding peripheral drip edge and anti-twist lock
- + **Can be swivelled by 360 degrees!**
- + Flat roof penetration available **galvanised, non-corrosive stainless steel V2A or stainless steel V4A**  
**Also available as thermally insulated version!**
- + We can adjust the **type of sealing sheets or foils**:  
e.g. EPDM, Thermofol U15, FPO, RESITRIX®, PP, PE, **KRASO®-Fol**, PYE-PV 200 S5 etc.
- + **Included in the scope of supply**: fastening dowels M8 x 100 V2A and EPDM sealing, adhesive and sealant **KRASO®** PU 50.



UV protection with surrounding peripheral drip edge at the underside, anti-twist lock, **KRASO®** Foil Clamping Flange Type FKF



**second sealing layer possible**



cables can be sealed off without any problems by using **KRASO®** Sealing Insert Universal Multiple - split - (see page 74)



UV protection with surrounding peripheral drip edge at the underside, anti-twist lock



with innovative foil clamping flange sealing instead of drip cover



## KRASO® Swan Neck **LG 2**

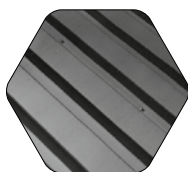
flat roof penetration for installation of cables using **KRASO®** Sealing Insert Universal Multiple - split - (not included in the scope of supply), integration in the roof sealing sheeting using **KRASO®** Foil Clamping Flange Type FKF

Type / Item	KRASO® Swan Neck			
Nominal Width NW	100*	150*	200*	300**
	Diameter pipe or cable from ... to .... in mm			
Design 1	4 x 6 - 33 mm or blind	3 x 6 - 52 mm or blind	3 x 6 - 28 mm or blind 4 x 6 - 52 mm or blind	e.g. 3 x 0 - 110 or 5 x 0 - 85 or 9 x 0 - 63
Design 2	3 x 6 - 18 mm or blind 2 x 6 - 33 mm or blind	4 x 6 - 18 mm or blind 6 x 6 - 33 mm or blind	7 x 6 - 18 mm or blind 8 x 6 - 33 mm or blind	
Design 3	8 x 6 - 18 mm or blind	6 x 6 - 38 mm or blind	-	
<b>KRASO®</b> Swan Neck - galvanised -	799 €	937 €	1.290 €	1.776 €
<b>KRASO®</b> Swan Neck - non-corrosive stainless steel V2A -	999 €	1.172 €	1.612 €	2.221 €
Surcharge: second sealing layer	233 €	326 €	408 €	764 €

\* **KRASO®** Sealing Insert Universal Multiple - split - (not included in the scope of supply) \*\* **KRASO®** Sealing Insert SD - split - (not included in the scope of supply)

**Scope of supply:** **KRASO®** Swan Neck, EPDM seal, **KRASO®** Foil Clamping Flange Type FKF, UV protection, fastening dowels M8 x 100 V2A, adhesive and sealant **KRASO®** PU 50

**Further sizes available on request!**



**Mounting possibilities  
for trapezoidal sheet  
roofs on request!**



## KRASO® Swan Neck - thermally insulated - **LG 2**

flat roof penetration, for dowel-fixing, for installation of cables using **KRASO®** Sealing Insert Universal Multiple - split - (not included in the scope of supply), can be swivelled by 360°, integration in the roof sealing sheeting using **KRASO®** Foil Clamping Flange Type FKF, oil- and bitumen resistant, Torque Control Nut **KRASO®** DKM, UV protection with surrounding peripheral drip edge and anti-twist lock, with EPDM seal for foot seal of the roof opening

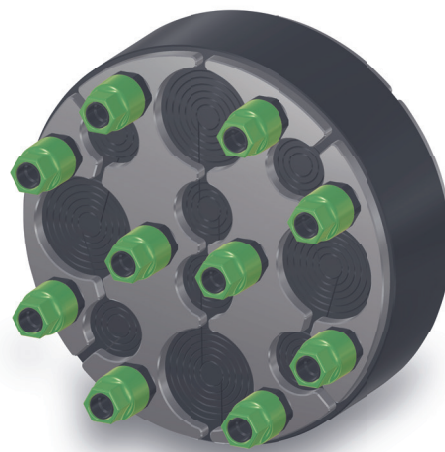
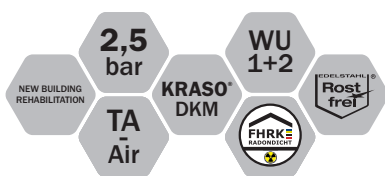
Type / Item	KRASO® Swan Neck - thermally insulated -			
Nominal Width NW	100*	150*	200*	300**
	Diameter pipe or cable from ... to .... in mm			
Design 1	4 x 6 - 33 mm or blind	3 x 6 - 52 mm or blind	3 x 6 - 28 mm or blind 4 x 6 - 52 mm or blind	e.g. 3 x 0 - 110 or 5 x 0 - 85 or 9 x 0 - 63
Design 2	3 x 6 - 18 mm or blind 2 x 6 - 33 mm or blind	4 x 6 - 18 mm or blind 6 x 6 - 33 mm or blind	7 x 6 - 18 mm or blind 8 x 6 - 33 mm or blind	
Design 3	8 x 6 - 18 mm or blind	6 x 6 - 38 mm or blind	-	
<b>KRASO®</b> Swan Neck - thermally insulated - galvanised -	1.386 €	1.719 €	2.301 €	2.813 €
<b>KRASO®</b> Swan Neck - thermally insulated - non-corrosive stainless steel V2A -	1.871 €	2.322 €	3.107 €	3.797 €
Surcharge: second sealing layer	317 €	395 €	539 €	887 €

\* **KRASO®** Sealing Insert Universal Multiple - split - (not included in the scope of supply) \*\* **KRASO®** Sealing Insert SD - split - (not included in the scope of supply)

**Scope of supply:** **KRASO®** Swan Neck - thermally insulated -, EPDM seal, **KRASO®** Foil Clamping Flange Type FKF, UV protection, fastening dowels M8 x 100 V2A, adhesive and sealant **KRASO®** PU 50

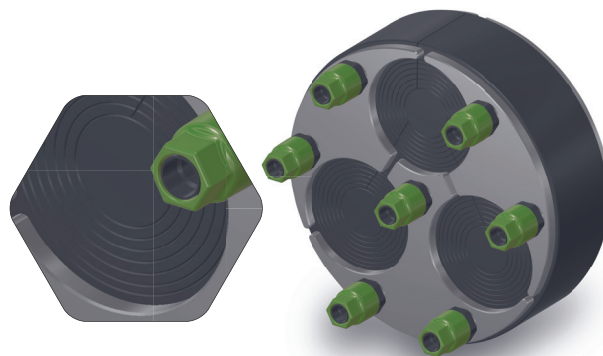
**Further sizes available on request! Mounting possibility for trapezoidal sheet roofs on request!**





## KRASO® Sealing Insert Universal Multiple - split - Usable anywhere – extremely flexible

- + For core drillings and casings.
- + Stepless onion ring technology: usable for any external diameter of media lines/cables - even with several penetrations! Split design for retrofit installation!
- + **KRASO® Sealing Insert quality:** 5 mm thick clamping plates made of non-corrosive stainless steel V2A, 40 mm seal made of specially developed rubber mixture, welded-on studs instead of through bolts.
- + Torque Control Nut **KRASO® DKM:** integrated torque limiter - no torque wrench required!
- + **MPA-tested:** protects reliably against pressing water up to 2.5 bar!
- + **Gas- and odour-tight** – high-quality in terms of TA-Air!
- + **Radon tightness IAF tested** - meets the requirements for radon precautionary areas according to FHRK leaflet MB 101!
- + **DafStB waterproof concrete guideline:** stress class 1 + 2



Stepless onion ring technology!  
example:  
**KRASO® Sealing Insert Universal Multiple 150 - split -**  
Design 1:  
3 x 6 - 52 mm or blind

### KRASO® Sealing Insert Universal Multiple - split - **LG 1**

for simultaneous installation of several media lines/cables, split design for retrofit installation | **DafStB waterproof concrete guideline:** stress class 1 + 2

Type / Item	KRASO® Sealing Insert Universal Multiple - split -			
Core drilling / casing in mm	100	125	150	200
	Stepless onion ring technology: external cable diameter from... to ... in mm			
Design 1	4 x 6 - 33 mm or blind	6 x 6 - 28 mm or blind	3 x 6 - 52 mm or blind	3 x 6 - 28 mm or blind 4 x 6 - 52 mm or blind
Design 2	3 x 6 - 18 mm or blind 2 x 6 - 33 mm or blind	-	4 x 6 - 18 mm or blind 6 x 6 - 33 mm or blind	7 x 6 - 18 mm or blind 8 x 6 - 33 mm or blind
Design 3	8 x 6 - 18 mm or blind	-	6 x 6 - 38 mm or blind	-
<b>KRASO® Sealing Insert Universal Multiple - split -</b>	<b>95 €</b>	<b>103 €</b>	<b>145 €</b>	<b>225 €</b>

Further custom-made configurations available at short notice!