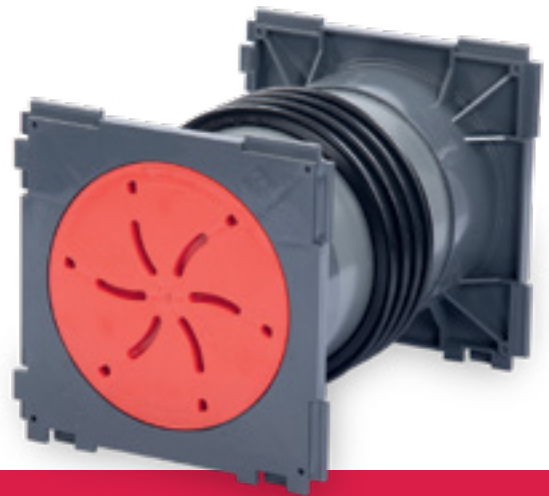


- + Find at a glance intelligent and effective sealing solutions - necessary for building technology - in the product category **KRASO® Cable Penetrations**.
- + **KRASO® Cable Penetration Systems KDS 90** and **KDS 150** can easily be combined and connected: with the variable plug-in system a horizontal as well as vertical combination of cable penetrations is possible. For e.g. the realisation of complex construction projects like transformer stations, hospitals or scientific institutions.
- + **KRASO® Cable Inlet Box System KDS 150** offers you a secure and simple possibility to insert cables and pipes right into industrial and commercial buildings. For a water pressure tight installation of cables and lines as for example water, electricity, telecommunication into buildings without basement.
- + A thought-through solution for flat roofs: **KRASO® Swan Neck**. For a water pressure tight connection of photovoltaics, satellites and air-conditioning technology.



Cable Penetrations



Cable Penetration KDS (double-)wall penetration
Cable Inlet Box System KDS 150
KDS - Accessories
Swan Neck
Sealing Insert Universal Multiple - split -

p. 60
p. 65
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p. 70
p. 72



KRASO® Cable Penetration KDS
Here there is an installation video
(just scan in the QR-Code!)

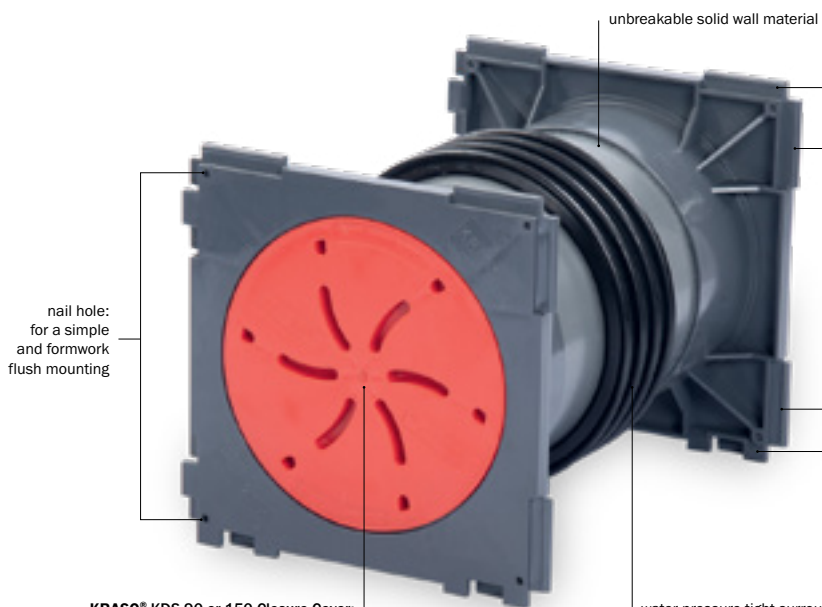


WU
1+2

KRASO® Cable Penetration KDS

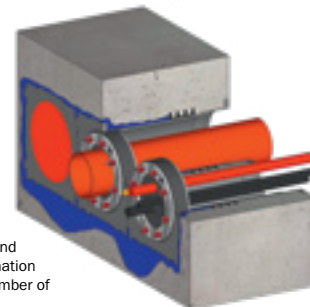
Compatible, tight, secure - the cable penetration double sealing system

- + **Compatible** with all other current systems! **Tight** due to the water pressure tight surrounding **KRASO® 4 Seal!** **Secure** by unbreakable solid wall material!
- + The **intelligent, all-purpose** and **flexible cable penetration system** for complex construction projects: **public buildings, hospitals, technical and scientific institutions** or in **industrial and commercial sectors**.
- + Almost **unlimited possibilities** due to the modern building equipment: horizontal and vertical combination, installation at an angle of 45° is possible with preassembled clamps, also available for precast walls or as integration into the sealing of larger areas.
- + A lot of accessories make the **KRASO® Cable Penetration System** a complete and all-purpose package!
- + **DafStB waterproof concrete guideline: Stress class 1 + 2**



KRASO® KDS 90 or 150 Closure Cover:
water pressure tight closure cover (up to 2,5 bar) for mounting until the installation of cables or lines with **KRASO® System Cover or Sealing Inserts KDS**

water pressure tight surrounding **KRASO® 4 Seal:**
MPA-tested water pressure tightness up to 3,5 bar



plug-in system:
for horizontal and vertical combination of a varying number of **KRASO® Cable Penetrations KDS 90 or 150**

KRASO® Cable Penetration KDS
installation situation



KRASO® Cable Penetration KDS 150 as double wall penetration horizontally and vertically combinable, with **KRASO® KDS Accessories:**

- **KRASO® System Cover 150** with hose adapter
- **KRASO® System Sealing Insert KDS** - heat-shrink technology -
- **KRASO® System Sealing Insert KDS**

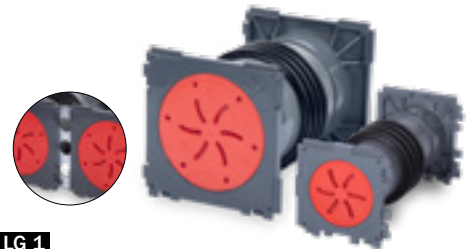


KRASO® Cable Penetration KDS 150 double wall penetration with KRASO®
Spacer 40 mm for enlargement of the centre distance of KDS double wall penetration from 210 mm to 250 mm





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



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

cable penetration system for concreting, with gas- and water pressure tight surrounding **KRASO® 4 Seal** and 2 KDS closure covers, with plug-in system on both sides for forming packages, for later installation of media lines using **KRASO® System Sealing Insert** (not included in the delivery) or for connecting empty conduits using **KRASO® System Cover** (not included in the delivery).

Optional available: **KRASO® Spacer 40 mm** for KDS 150 double wall penetration for enlargement of the centre distance from 210 mm to 250 mm | **DafStB waterproof concrete guideline: Stress class 1 + 2**

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

Scope of supply: **KRASO® Cable Penetration KDS 90 or 150 as double wall penetration, 2 KDS closure covers** •
Optional available: **KRASO® Spacer 40 mm for KDS 150 double wall penetration, factory-made**

Further wall thicknesses available on request!



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



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

cable penetration system for concreting, with gas- and water pressure tight surrounding **KRASO® 4 Seal** and KDS closure cover, with plug-in system on one side for forming packages, for later installation of media lines using **KRASO® System Sealing Insert** (not included in the delivery) or for connecting empty conduits using **KRASO® System Cover** (not included in the delivery).

Optional available: **KRASO® Spacer 40 mm** for KDS 150 single wall penetration for enlargement of the centre distance from 210 mm to 250 mm | **DafStB waterproof concrete guideline: Stress class 1 + 2**

Type / Item	KRASO® Cable Penetration KDS as single wall penetration													
available standard wall thicknesses in cm	6 ^{1,2}	7 ²	10 ²	15	17,5	20	24	25	30	35	36,5	40	45	50
KRASO® Cable Penetration KDS 90 as single wall penetration	28 €													
KRASO® Cable Penetration KDS 150 as single wall penetration	32 €													
Surcharge per penetration: KRASO® Spacer 40 mm for KDS 150 single wall penetration	7,50 €													

¹ only for **KRASO® Cable Penetration KDS 90 as single wall penetration**, ² for product-technical reasons partially **KRASO® 2 Seal**

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

Further wall thicknesses available on request!



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



KRASO® Cable Penetration KDS/DFW as 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 covers, with plug-in system on both sides for forming packages, for later installation of media lines using **KRASO® System Sealing Insert** (not included in the delivery) or for connecting empty conduits using **KRASO® System Cover** (not included in the delivery).

Optional available: **KRASO® Spacer 40 mm** for KDS/DFW 150 double wall penetration for enlargement of the centre distance from 210 mm to 250 mm | **DafStB waterproof concrete guideline: Stress class 1 + 2**

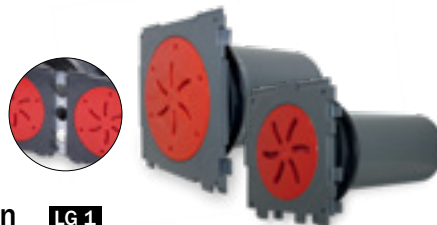
Type / Item	KRASO® Cable Penetration KDS/DFW as double wall penetration										
available standard wall thicknesses in cm	15	17,5	20	24	25	30	35	36,5	40	45	50
KRASO® Cable Penetration KDS/DFW 90 as double wall penetration	32 €										
KRASO® Cable Penetration KDS/DFW 150 as double wall penetration	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 as double wall penetration, 2 KDS closure covers** •
Optional available: **KRASO® Spacer 40 mm for KDS/DFW 150 double wall penetration, factory-made**

Further wall thicknesses available on request!



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



KRASO® Cable Penetration KDS/DFW as 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 one side for forming packages, for later installation of media lines using **KRASO® System Sealing Insert** (not included in the delivery) or for connecting empty conduits using **KRASO® System Cover** (not included in the delivery).

Optional available: **KRASO® Spacer 40 mm** for KDS/DFW 150 single wall penetration for enlargement of the centre distance from 210 mm to 250 mm | **DafStB waterproof concrete guideline: Stress class 1 + 2**

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

¹ only for **KRASO® Cable Penetration KDS 90** as single wall penetration

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

Further wall thicknesses available on request!



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

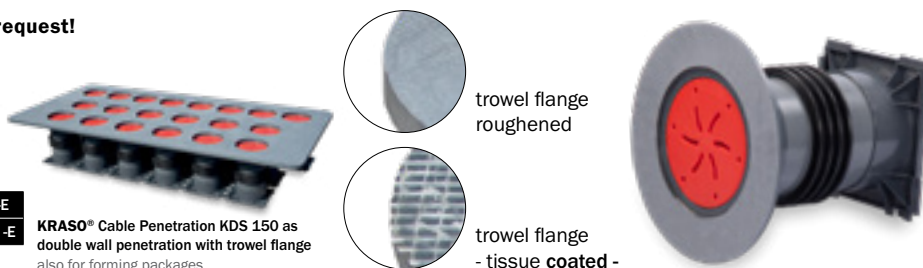
for later installation of pipes or cables using **KRASO® System Sealing Insert KDS 150** (not included in the delivery) or **KRASO® System Cover KDS 150** (not included in the delivery), with water pressure tight surrounding **KRASO® 4 Seal**, with plug-in system on one side for forming packages, one-sided with plug-in sleeve including connection for KG, HT or KG 2000 - pipes DN 160

| **DafStB waterproof concrete guideline: Stress class 1 + 2**

Type / Item	KRASO® Cable Penetration KDS 150 as single wall penetration with plug-in sleeve									
available standard wall thicknesses in cm	20	24	25	30	35	36,5	40	45	50	
KRASO® Cable Penetration KDS 150 as single wall penetration with plug-in sleeve	46 €									

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

Further wall thicknesses available on request!



KRASO® Cable Penetration KDS 150 as double wall penetration with trowel flange also for forming packages

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

cable penetration system KDS 150 with trowel flange for a secure connection of bitumen coating (e.g. KMB), roughened or tissue coated, surrounding approx. 7 cm, with water pressure tight surrounding **KRASO® 4 Seal**

| **DafStB waterproof concrete guideline: Stress class 1 + 2, DIN 18533 W1-E and W2.1-E**

Type / Item	KRASO® Cable Penetration KDS 150 as 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	
KRASO® Cable Penetration KDS 150 as double wall penetration with trowel flange - roughened -	82 €											
KRASO® Cable Penetration KDS 150 as double wall penetration with trowel flange - tissue coated -	92 €											

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

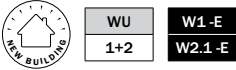
Further wall thicknesses available on request!



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

with preassembled clamps and styrofoam holders for installation at an angle of 45°

Prices on request! Further inclination available on request!



KRASO® Protrusion Flange FDS 150 **LG1**

protrusion flange made of plastic, reinforced by stainless steel, for dowel-fixing in front of a core hole for the connection of KRASO® System Cover 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
KRASO® Protrusion Flange FDS 150	110 €

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

KRASO® Cable Penetration KDS Compatible, tight, secure!



- + The **KRASO® Cable Penetration KDS** offers builders, planners and users a **reliable (double) tight sealing of buildings!** The intelligent, comprehensive and flexible cable penetration system is the **ideal solution for complex new buildings** like hospitals, educational or scientific institutions or industrial buildings.
- + Due to the **KRASO® 4 Seal** buildings are reliably **sealed against pressing water and the radioactive radon!**



W1-E
W2.1-E

W2.2-E



inside

outside



KRASO® Cable Penetration KDS 150 FL/ZE as 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® System Sealing Insert KDS 150 (not included in the delivery) or for connection of KRASO® KDS 150 Accessories (e.g. system cover) with bayonet fitting, made of non-corrosive stainless steel V2A, with water pressure tight surrounding KRASO® 2 Seal on one side, for buildings with exterior sealing ("black tank") against pressing water / non-pressing water according DIN 18533.

Available in non-corrosive stainless steel V2A or with special coating

| DIN 18533 W1 -E and W2.1 -E ("non-pressing water" design), W2.2 -E ("pressing water" design)

KRASO® Cable Penetration KDS 150 FL/ZE as double wall penetration - PRESSING WATER according DIN 18533 W2-E

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
KRASO® KDS 150 FL/ZE as double wall penetration - non-corrosive stainless steel V2A -	1.251 €
EPDM supplement (2 pcs.)	69 €
KRASO® KDS 150 FL/ZE - as double wall penetration with special coating - non-corrosive stainless steel V2A -	1.325 €

KRASO® Cable Penetration KDS 150 FL/ZE as double wall penetration - NON-PRESSING WATER according DIN 18533 W1-E

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
KRASO® KDS 150 FL/ZE as double wall penetration - non-corrosive stainless steel V2A -	898 €
EPDM supplement (2 pcs.)	50 €
KRASO® KDS 150 FL/ZE - as double wall penetration with special coating - non-corrosive stainless steel V2A -	966 €

Scope of supply: KRASO® Cable Penetration KDS 150 FL/ZE as 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! Also available in V4A! Also available as formed packages!



W1-E
W2.1-E

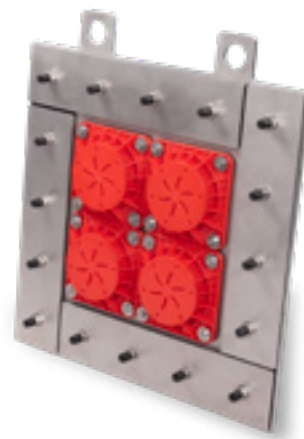
W2.2-E

KRASO® Cable Penetration KDS 150 FL/ZA **LG 2**

cable penetration KDS 150 FL/ZA, with fixed-loose flange and exterior protrusion flange FDS 150 for dowel-fixing, for connection of KRASO® KDS 150 Accessories (e.g. system cover) with bayonet fitting, made of non-corrosive stainless steel V2A, for buildings with exterior sealing ("black tank") against pressing water / non-pressing water according DIN 18533.

Available in non-corrosive stainless steel V2A or with special coating

| DIN 18533 W1 -E and W2.1 -E ("non-pressing water" design), W2.2 -E ("pressing water" design)





KRASO® Cable Inlet Box System KDS
Here there is an installation video
(just scan in the QR-Code!)

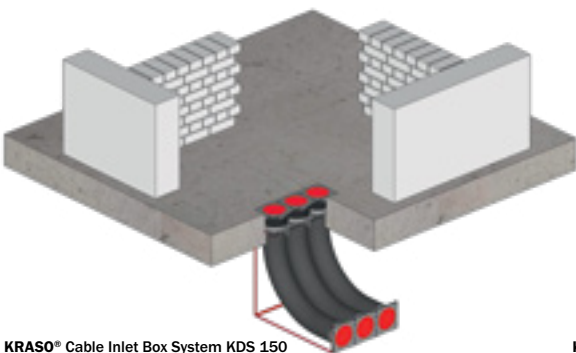


KRASO® Cable Inlet Box System KDS 150

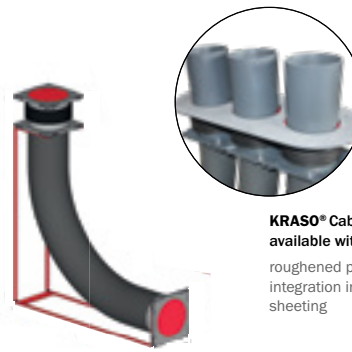
The flexible system for industry and commercial buildings

- + **KRASO® Cable Inlet Box System KDS 150 offers you a secure and simple possibility to install cables and pipes right into buildings.** Together with the **KRASO® Cable Penetration System KDS 150** this flexible system offers plenty of combinations. With a radius of 650 mm or 1000 mm you are able to connect pipes and cable protective hoses at a 90-degree angle to buildings without basements.
- + Due to the variable plug-in system the **KRASO® Cable Inlet Box System KDS 150** can be combined to many different sizes - according your requirements.
- + **For the installation of cables and lines as for example water, electricity, telecommunication etc. into buildings without basements: the ideal 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 from the outside due to **KRASO® Cable Penetration System KDS 150**.
- + Additional media line sealing from the inside using **KRASO® Sealing Inserts**.
- + **Including: 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, optional with trowel flange DIN 18533 W1-E**

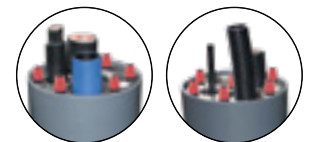
CABLE PENETRATIONS



KRASO® Cable Inlet Box System KDS 150
3-fold, installation situation



KRASO® Cable Inlet Box System KDS 150



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



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 lines as for example water, electricity, telecommunication etc. into buildings without basement,
with water pressure tight surrounding **KRASO® 4 Seal**

| DafStB waterproof concrete guideline: Stress class **1 + 2**, optional with 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
KRASO® Cable Inlet Box System KDS 150 - bending radius 650 mm	544 €	671 €	781 €	880 €
KRASO® Cable Inlet Box System KDS 150 - bending radius 1000 mm	597 €	737 €	858 €	967 €

Scope of supply: **KRASO® Cable Inlet Box System KDS 150**, **KRASO® KDS 150 Empty Pipe Insert 20 cm**, 90° empty pipe system, installation device and **KRASO® KDS 150 Closure Cover**

Further combinations available on request!



KRASO® KDS - Accessories

Appropriate accessories for KRASO® Cable Penetration KDS and Cable Inlet Box System KDS 150

- + With the appropriate accessories **KRASO® Cable Penetration KDS 90 / KDS 150** and **KRASO® Cable Inlet Box System KDS 150** can be combined to a complete and individual system - as it is required for demanding 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 and 3,0 bar respectively, under-pressures of 0,7 and 0,5 bar respectively, heavy version for severe mechanical stresses, with a smooth interior for smooth cable pulling, and a smooth exterior for optimal sealing, flexible, enhanced pressure and vacuum resistance, 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*)



KRASO® FLS
spiral of hard PVC

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 approx.	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	21 € per meter	32 € per meter	42 € per meter
Cutting costs***	16 €	21 €	-

* order minimum 10 m ** freight costs for the KRASO® FLS 150 only on request *** without discount

Scope of supply: KRASO® FLS



KRASO® Sealing Insert Type IGR - split - **LG 1**

for use in Type-R cable protection pipes, split design for retrofit installation, Torque Control Nut **KRASO® DKM**, non-corrosive stainless steel V2A, 30 mm seal

Type / Item	KRASO® Sealing Insert Type IGR - split -			
Cable protection pipe	DN 75	DN 90	DN 110	DN 160
KRASO® Sealing Insert Type IGR - split -	76 €	80 €	84 €	118 €

Scope of supply: KRASO® Sealing Insert Type IGR - split -
Further special designs available on request!



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
KRASO® Quick Sealing Plug for FLS	43 €	49 €	60 €

Scope of supply: KRASO® Quick Sealing Plug for FLS
Further diameters 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
KRASO® Hose Connection	49 €	66 €	69 €	72 €

Scope of supply: KRASO® Hose Connection



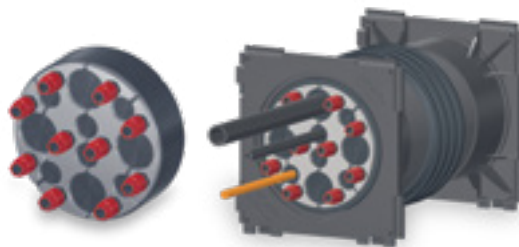
KRASO® Spacer **LG 1**

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



Type / Item	KRASO® Spacer 90	KRASO® Spacer 110	KRASO® Spacer 150
InternalDiameter ID in mm	90	110	165
KRASO® Spacer 1 x 2	23 €	27 €	29 €
KRASO® Spacer 2 x 2	34 €	36 €	38 €
KRASO® Spacer 2 x 4	40 €	45 €	47 €

Scope of supply: KRASO® Spacer 90, 110 or 150
Further spacers available on request!



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

can be used for penetration of one or several media lines/cables, split design for retrofit installation, Torque Control Nut **KRASO®** DKM, 30 mm seal, external diameter 160 mm, specifically for 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
Incisions or stepless ring technology External diameter of cable 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
KRASO® System Sealing Insert KDS 150 Universal Multiple - split -	102 €	122 €	122 €	122 €

Scope of supply: KRASO® System Sealing Insert KDS 150 Universal Multiple - split -

Further special designs available on request!



KRASO® System Cover 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. Water pressure tight up to 2,5 bar in combination with **KRASO®** FLS. Scope in the table below | DafStB waterproof concrete guideline: Stress class 1 + 2



Type / Item	Hose adapter 110	Hose adapter 160
Scope in mm	100 - 115	150 - 165
KRASO® System Cover 150 with hose adapter	79 €	85 €

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



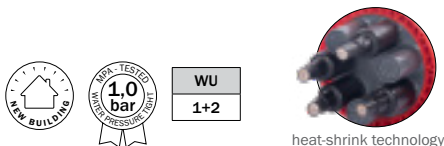
KRASO® System Cover 150 with sleeve **LG 1**

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



Type / Item	KRASO® System Cover 150 with sleeve		
Diameter DN	110	125	160
KRASO® System Cover 150 with sleeve	72 €	78 €	80 €

Scope of supply: KRASO® System Cover 150 with sleeve



incl. heat-shrink hose:
1, 3 or 7 pieces



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

incl. bayonett fitting with union nut and anti-twist lock (prevents unintentional opening), with 1, 3 or 7 adapters for installation of pipes or cables, incl. heat-shrink hose (length approx. 20 cm) for use with heat-shrink technology, **KRASO®** System Cover KDS 150 - heat-shrink technology 3-times and 7-times with factory-made, water pressure tight cover, simple opening by knocking off before installation (on site), scope in the 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 - 101	3 x 22 - 59	7 x 13 - 33
KRASO® System Cover KDS 150 - heat-shrink technology -	88 €	97 €	109 €

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



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 in mm	80 - 95
KRASO® System Cover 90 with hose adapter 90	77 €

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



KRASO® Heat-Shrink Hose KDS 90 - single **LG 1**

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

Type / Item	KRASO® Heat-Shrink Hose KDS 90 - single
KRASO® Heat-Shrink Hose KDS 90 - single for all pipes and cables according the table on the right (in mm)	1 x 25 - 95
KRASO® Heat-Shrink Hose KDS 90 - single	39 €

Scope of supply: KRASO® Heat-Shrink Hose KDS 90 - single, KRASO® System Cover 90



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

system sealing insert especially for installation in KRASO® Cable Penetration KDS 90, 20 mm seal, against pressing water up to 1.0 bar, Torque Control Nut KRASO® DKM, non-corrosive stainless steel V2A. Can also be used as blind plug for feed-through of pipes or cables. | DafStB waterproof concrete guideline: Stress class 1 + 2

Type / Item	KRASO® System Sealing Insert KDS 90 Universal
Stepless ring technology: External diameter of cable from ... to ... in mm	6 - 52 mm or blind
KRASO® System Sealing Insert KDS 90 Universal	77 €
KRASO® System Sealing Insert KDS 90 Universal - split -	85 €

Scope of supply: KRASO® System Sealing Insert KDS 90 Universal • KRASO® System Sealing Insert KDS 90 Universal - split -

Different special designs available on request!



KRASO® Y-Wrench **LG 1**

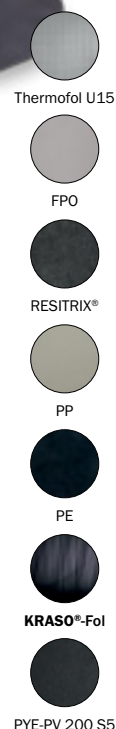
Y-Wrench to open/close the KDS closure cover, available for KRASO® Cable Penetration KDS 90 and KDS 150

Type / Item	KRASO® Y-Wrench
KRASO® Y-Wrench 90	49 €
KRASO® Y-Wrench 150	58 €

Scope of supply: KRASO® Y-Wrench



KRASO® Schwanenhals
Here there is an installation video
(just scan in 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 peripheral drip edge on the underside and anti-twist lock.
- + **Can be swivelled by 360 degrees.**
- + Flat roof penetration also available **galvanised** or in **stainless steel V2A**.
Also available as thermally insulated version!
- + We can adjust the **type of sealing sheets or foils**:
e.g. Thermofol U15, FPO, RESITRIX®, PP, PE, **KRASO®-Fol**, PYE-PV 200 S5 etc.
- + **Included in the delivery**: fastening dowels M8 x 100 V2A and EPDM sealing, adhesive and sealant **KRASO® PU 50**.



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



second sealing level possible



cables can be sealed off without any problems by using **KRASO® Replaceable Sealing Inserts** (s. page 72)



UV protection with peripheral drip edge on the underside and anti-twist lock



with innovative foil clamping flange sealing instead of drip cover



KRASO® Swan Neck **LG2**

flat roof penetration, for dowel-fixing, for installation of cables using **KRASO®** Replaceable Sealing Insert - split - (not included in the delivery), 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 peripheral drip edge on the underside and anti-twist lock, with EPDM seal for foot seal of the roof opening

Type / Item	KRASO® Swan Neck			
Stock length NW	100	150	200	300
Diameter pipe or cable from ... to ... in mm	e.g. 3 x 0 - 25 or 5 x 0 - 18 or 9 x 0 - 13	e.g. 3 x 0 - 43 or 5 x 0 - 35 or 9 x 0 - 25	e.g. 3 x 0 - 63 or 5 x 0 - 50 or 9 x 0 - 36	e.g. 3 x 0 - 110 or 5 x 0 - 85 or 9 x 0 - 63
KRASO® Swan Neck - galvanised -	799 €	937 €	1.290 €	1.776 €
KRASO® Swan Neck - non-corrosive stainless steel V2A -	999 €	1.172 €	1.612 €	2.221 €
Surcharge: second sealing level	233 €	326 €	408 €	764 €

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 possibility for trapezoidal sheet roofs on request!



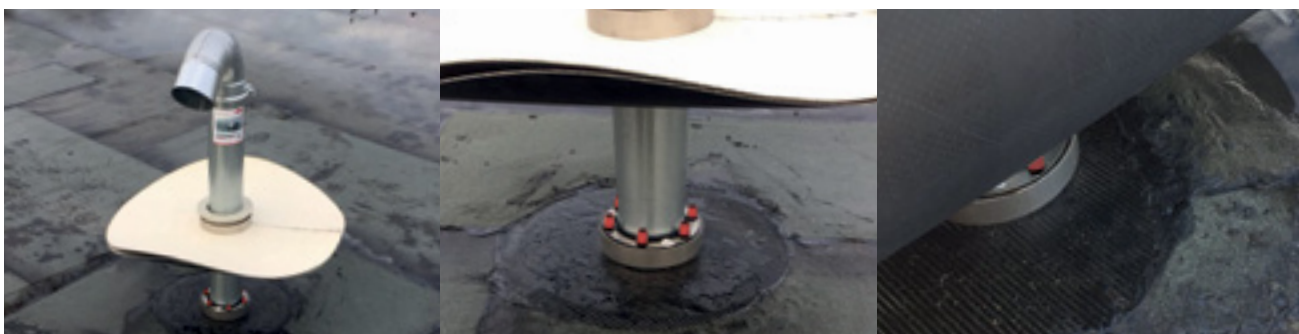
KRASO® Swan Neck - thermally insulated - **LG2**

flat roof penetration, for dowel-fixing, for installation of cables using **KRASO®** Replaceable Sealing Insert - split - (not included in the delivery), 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 peripheral drip edge on the underside and anti-twist lock, with EPDM seal for foot seal of the roof opening

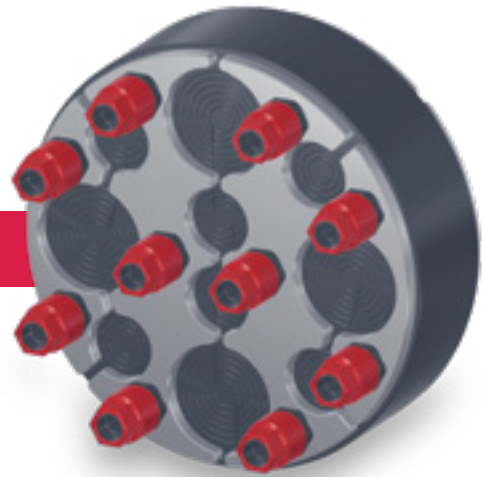
Type / Item	KRASO® Swan Neck - thermally insulated -			
Stock length NW	100	150	200	300
Diameter pipe or cable from ... to ... in mm	e.g. 3 x 0 - 25 or 5 x 0 - 18 or 9 x 0 - 13	e.g. 3 x 0 - 43 or 5 x 0 - 35 or 9 x 0 - 25	e.g. 3 x 0 - 63 or 5 x 0 - 50 or 9 x 0 - 36	e.g. 3 x 0 - 110 or 5 x 0 - 85 or 9 x 0 - 63
KRASO® Swan Neck - thermally insulated - galvanised -	1.386 €	1.719 €	2.301 €	2.813 €
KRASO® Swan Neck - thermally insulated - non-corrosive stainless steel V2A -	1.871 €	2.322 €	3.107 €	3.797 €
Surcharge: second sealing level	317 €	395 €	539 €	887 €

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!

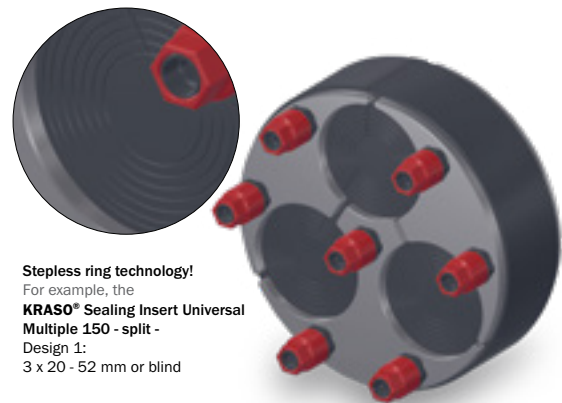


New Product!



KRASO® Sealing Insert Universal Multiple - split - Can be used anywhere – extremely flexible

- + For Core Drillings or Casings.
- + Stepless ring technology: Can be used for every 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: Automatic torque without a torque wrench!
- + MPA-tested: protects reliable against pressurised 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!
- + Tested according to FHRK test specification GE 101!
- + DafStB waterproof concrete guideline: Stress class 1 + 2



Stepless ring technology!
For example, the
KRASO® Sealing Insert Universal Multiple 150 - split - Design 1:
3 x 20 - 52 mm or blind

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

can be used for penetration of several media lines/cables, split design for retrofit installation,
Torque Control Nut KRASO® DKM, 40 mm seal | DafStB waterproof concrete guideline: Stress class 1 + 2

KRASO® Sealing Insert Universal Multiple - split -				
Core hole diameter or Casing in mm	100	125	150	200
Stepless ring technology: External diameter of cable 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	-
KRASO® Sealing Insert Universal Multiple - split -	91 €	99 €	139 €	215 €

Scope of supply: KRASO® Sealing Insert Universal Multiple - split -

Further arrangements always possible at short notice!