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## Floor

Floor Penetration Type FBV-BDF (p. 108)

## Wall

Wall Penetration Type FBV-FR (p. 109) + Casing Type FBV-FE (p. 110) +  
Sealing Insert Type FBV/GF (p. 111) + Cable Penetration FBV-KDS (p. 112)

## Concrete

Fresh concrete composite (FBV) solutions made of concrete –  
pump sumps, lift pits, cable ducts (p. 113)

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## KRASO® Floor Penetration Type FBV-BDF

### The effective sealing system

- + Floor penetration for an **integration into the fresh concrete composite system in compliance with the system**
- + Independent of the manufacturer: fresh concrete composite films (FBV) from any manufacturer can be integrated into the system at the factory
- + **KRASO® FBV Sealing Flange** made of non-corrosive stainless steel V2A with 20 cm surrounding, square fresh concrete composite film
- + Torque Control Nut **KRASO® DKM**: **integrated torque limiter - no torque wrench required!**
- + **KRASO® Floor Penetration Type BDF**: the proven floor penetration with **KRASO® 4 Seal** – MPA-tested up to 10 bar!
- + **IAF-tested: Radon-tight!**
- + Made of dimensionally and pressure stable solid wall material with low abrasion! Installation even at lower temperatures!
- + Also available in KG 2000: made of polypropylene (PP), mineral-filled, smooth walls, long-lasting
- + Formed plug-in sleeve on one side **for the connection from KG, HT or KG 2000 pipes**
- + Including **KRASO® Cover** as building period protective cover
- + **DafStB waterproof concrete guideline: stress class 1 + 2**

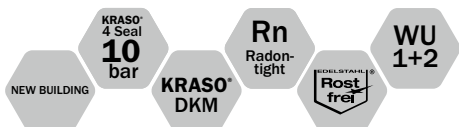


### KRASO® Floor Penetration Type FBV-BDF **LG 1**

floor penetration for a compliant integration of fresh concrete composite films (FBV) | **DafStB waterproof concrete guideline: stress class 1 + 2**

| Type / Item                          | KRASO® Type FBV-BDF • KRASO® Type FBV-BDF - KG 2000 |       |       |       |       |       |         |         |
|--------------------------------------|---|-------|-------|-------|-------|-------|---------|---------|
| Diameter DN                          | 110   | 125   | 160   | 200   | 250   | 315   | 400     | 500     |
| Delivery length (in cm)              | 50  |       |       |       |       |       |         |         |
| <b>KRASO® Type FBV-BDF</b>           | 246 €   | 302 € | 309 € | 418 € | 605 € | 724 € | 937 €   | 1.150 € |
| <b>KRASO® Type FBV-BDF - KG 2000</b> | 253 €   | 312 € | 325 € | 447 € | 702 € | 822 € | 1.071 € | 1.302 € |

**Scope of supply:** KRASO® Type FBV-BDF or KRASO® Type FBV-BDF - KG 2000, KRASO® Cover as building period protective cover, KRASO® FBV Sealing Flange with 20 cm surrounding, square fresh concrete composite film



## KRASO® Wall Penetration Type FBV-FR

### Always the right flow direction using FBV system

- + Wall penetration for a **compliant integration of fresh concrete composite films**
- + Independent of the manufacturer: fresh concrete composite films (FBV) from any manufacturer can be integrated into the system at our factory
- + **KRASO® FBV Sealing Flange** made of non-corrosive stainless steel V2A with 20 cm surrounding, square fresh concrete composite film
- + Torque Control Nut **KRASO® DKM**: integrated torque limiter - no torque wrench required!
- + Thanks to the **KRASO® Wall Penetration Type FR**, waste water always maintains the correct flow direction! Unnecessary edges are prevented. **Blocked pipes: impossible!**
- + Due to the **flexible yet water pressure tight connection** to the pipe system, stresses occurring through the setting of the KG pipes are **minimised!**
- + **The basement remains dry and is protected against radon thanks to the up to 10 bar water pressure tight surrounding KRASO® 4 Seal!**
- + **Made of solid wall material!** Also available in KG 2000 made of polypropylene (PP), mineral-filled, smooth walls, long-lasting
- + **DafStB waterproof concrete guideline: stress class 1 + 2**



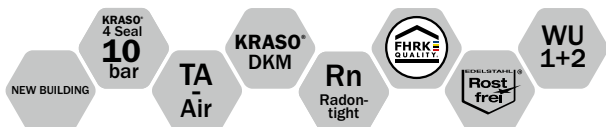
### KRASO® Wall Penetration Type FBV-FR - flow direction **LG 1**

wall penetration for a compliant integration of fresh concrete composite film | **DafStB waterproof concrete guideline: stress class 1 + 2**

| Type / Item                               | KRASO® Type FBV-FR             |       |       |
|---|--------------------------------|-------|-------|
| Diameter DN                               | 110                            | 125   | 160   |
| Available standard wall thicknesses in cm | 20 <sup>1</sup> · 24 · 25 · 30 |       |       |
| <b>KRASO® Type FBV-FR</b>                 | 309 €                          | 315 € | 420 € |
| <b>KRASO® Type FBV-FR - KG 2000</b>       | 324 €                          | 330 € | 449 € |

<sup>1</sup> wall thickness 20 cm only available in DN 110, not available as KG 2000

**Scope of supply:** KRASO® Type FBV-FR or KRASO® Type FBV-FR - KG 2000, 2 KRASO® Covers as an installation aid, KRASO® FBV Sealing Flange with 20 cm surrounding, square fresh concrete composite film



## KRASO® Casing Type FBV-FE

### The casing for FBV integration

- + Casing for a **compliant integration of fresh concrete composite films**
- + Independent from the manufacturer: fresh concrete composite films (FBV) of all manufacturers can be integrated
- + **KRASO® FBV Sealing Flange** made of non-corrosive stainless steel V2A with 20 cm surrounding, square fresh concrete composite film
- + Torque Control Nut **KRASO® DKM**: integrated torque limiter - no torque wrench required!
- + The thick-walled true diameter plastic casing for concreting:  
as a **recess for retrofit installation of cables or pipes using a sealing insert!**
- + With **water pressure tight surrounding KRASO® 4 Seal** – **certified and approved**: due to the special geometry, the 4 Seal produces a water pressure, gas- and odour-tight grip with the concrete
- + **Material and processing: KRASO® Casings** are made of **weatherproof and impact resistant plastic**.  
The water pressure tight surrounding **KRASO® 4 Seal** is joined monolithically to the plastic pipe by vulcanization.
- + **IAF-tested: Radon-tight!**
- + Tested in accordance with FHRK test specification GE 102!
- + **DafStB waterproof concrete guideline: stress class 1 + 2**

### KRASO® Casing Type FBV-FE - true diameter casing **LG 1**

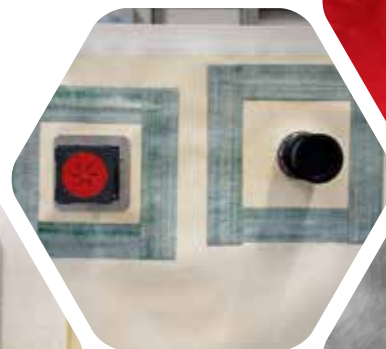
thick-walled plastic casing for a compliant integration of FBF films | **DafStB waterproof concrete guideline: stress class 1 + 2**

| Type / Item                               | KRASO® Type FBV-FE                           |              |              |              |              |              |
|---|--|--------------|--------------|--------------|--------------|--------------|
| InternalDiameter ID                       | 100  | 125          | 150          | 200          | 250          | 300          |
| Available standard wall thicknesses in cm | 20 · 24 · 25 · 30 · 35 · 36,5 · 40 · 45 · 50 |              |              |              |              |              |
| <b>KRASO® Type FBV-FE</b>                 | <b>245 €</b>                                 | <b>302 €</b> | <b>304 €</b> | <b>418 €</b> | <b>564 €</b> | <b>638 €</b> |

**Scope of supply:** KRASO® Casing Type FBV-FE, 2 KRASO® Covers as an installation aid, KRASO® FBV Sealing Flange with 20 cm surrounding, square fresh concrete composite film

**Further diameters and wall thicknesses available on request!**





butyl sealing band



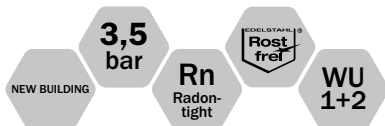
## KRASO® Sealing Insert Type FBV/GF **LG 1**

for installation of pipes or cables, for casing or core drilling, with large flange and additional sealing flange incl. butyl sealing band for the integration of FBV films, Torque Control Nut **KRASO® DKM\***, non-corrosive stainless steel V2A, against pressing water up to 2.5 bar | **DafStB waterproof concrete guideline: stress class 1 + 2**

| Core drilling / casing in mm<br>(from - to) | 80<br>(79 - 83)  | 100<br>(99 - 103) | 125<br>(124 - 128) | 150<br>(149 - 153) | 200<br>(198 - 203) | 250<br>(248 - 253) | 300<br>(298 - 303) | 350<br>(348 - 353) | 400<br>(398 - 403) | 450<br>(448 - 453) | 500<br>(497 - 503) |
|---|--|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| max. external diameter pipe or cable        |  |                   |                    |                    |                    |                    |                    |                    |                    |                    |                    |
| from  | 0  | 0                 | 0                  | 0                  | 0                  | 0                  | 0                  | 0                  | 0                  | 0                  | 0                  |
| to  | 55   | 75                | 100                | 125                | 175                | 225                | 275                | 325                | 375                | 425                | 475                |
| <b>KRASO® Type FBV/GF</b>                   |  |                   |                    |                    |                    |                    |                    |                    |                    |                    |                    |
| <b>KRASO® Type FBV/GF</b>                   | <b>384 €</b>   | <b>448 €</b>      | <b>499 €</b>       | <b>585 €</b>       | <b>730 €</b>       | <b>907 €</b>       | <b>1.143 €</b>     | <b>1.333 €</b>     | <b>1.578 €</b>     | <b>1.789 €</b>     | <b>1.987 €</b>     |
| Surcharge: additional drilling              | up to 5 drillings each additional drilling 17 €, each further additional drilling 11 € |                   |                    |                    |                    |                    |                    |                    |                    |                    |                    |

\* In some cases, allen screws must be used due to the design

**All sizes and diameters available on request!**



## KRASO® Cable Penetration FBV-KDS double wall penetration as FBV system

- + Cable penetration for the **compliant integration of fresh concrete composite films**
- + Independent from the manufacturer: fresh concrete composite films (FBV) of all manufacturers can be integrated
- + **KRASO® FBV Sealing Flange** made of non-corrosive stainless steel V2A with 20 cm surrounding, square fresh concrete composite film
- + **Compatible** with all other current systems! **Tight** due to the water pressure tight surrounding **KRASO® 4 Seal!** **Secure** due to break-resistant solid wall material!
- + The **intelligent, all-purpose** and **flexible cable penetration system** for complex construction projects: **public buildings, hospitals, technical-scientific institutions** or **industrial and commercial sectors**
- + **With plug-in system on both sides for forming packages!**
- + **DafStB waterproof concrete guideline: stress class 1 + 2**

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

cable penetration system for concreting | **DafStB waterproof concrete guideline: stress class 1 + 2**

| Type / Item   | KRASO® Cable Penetration FBV-KDS double wall penetration |      |    |    |    |    |    |      |    |    |    |
|---|--|------|----|----|----|----|----|------|----|----|----|
| Available standard wall thicknesses in cm                           | 15   | 17,5 | 20 | 24 | 25 | 30 | 35 | 36,5 | 40 | 45 | 50 |
| <b>KRASO® Cable Penetration FBV-KDS 90 double wall penetration</b>  | 343 €  |      |    |    |    |    |    |      |    |    |    |
| <b>KRASO® Cable Penetration FBV-KDS 150 double wall penetration</b> | 491 €  |      |    |    |    |    |    |      |    |    |    |

**Scope of supply:** **KRASO®** FBV-KDS 90 or **KRASO®** FBV-KDS 150 double wall penetration, 2 KDS closure covers, **KRASO®** FBV Sealing Flange with 20 cm surrounding, square fresh concrete composite film



Precast concrete elements with FBV film: ready for the integration into the FBV system



NEW BUILDING

## KRASO® FBV solutions made of concrete pump sumps, lift pits, inspections shafts

- + Precast concrete elements as special designs for a compliant integration of fresh concrete composite films: pump sumps, lift pits, cable ducts, inspection shafts
- + Complete foil cover for integration into the base plate!  
Manufacturer-independent: fresh concrete composite films (FBV) of all manufacturers can be integrated
- + Weather-independent production, completely custom-made exactly according to your instructions!
- + The surrounding water pressure tight construction joint tape **KRASOflex® Duo-Fix 150 „plus“** ensures a water pressure tight passage to the base plate
- + Simple and fast placement on-site thanks to crane lifting lugs!





**Solid wall  
material  
means security  
and  
stability**

**KRASO® solid wall material**

- pressure and dimensionally stable
- break-resistant
- impact resistant
- low abrasion
- installation also at low temperatures



**foamed material**

lower degree of stability  
in contrast to our pipe  
penetrations made of  
solid wall material.

+ **KRASO® Pipe Penetrations** made of solid wall material are **very pressure resistant and dimensionally stable** in contrast to pipes made of **foamed material**! **Breakage resistance, impact resistance** as well as **low abrasion** are **further advantages** for the hard everyday operations on the construction-site. **KRASO® Pipe Penetrations** are also easy to install at low temperatures.

+ Pipes and pipe material of our floor and wall penetrations are in accordance with the terms of **DIN EN 1401 (KG)** or **DIN EN 14758 (KG 2000)**.

+ The monolithic (force-fit) fusion with the solid wall pipe **prevents any creep or slippage**.

Due to the special geometry, the **KRASO® 4 Seal** produces a **grip with the concrete**.

+ **MPA-tested quality**: the material testing institute MPA certifies a **water pressure tightness up to 10 bar!**

**KRASO®  
4 Seal:  
tight against pressing  
water up to  
10 bar!**