

Solutions for

Concrete Composite Films (FBV)

+ Floor

KRASO® Floor Penetration Type FBV-BDF _____ 122

+ Wall

KRASO® Wall Penetration Type FBV-FR _____ 123

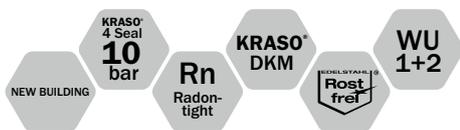
KRASO® Casing Type FBV-FE _____ 124

KRASO® Cable Penetration FBV-KDS _____ 125

KRASO® Sealing Insert Type FBV/GF _____ 126

+ Concrete

Fresh concrete composite (FBV) solutions made of concrete – pump sumps, lift pits, cable ducts _____ 126



KRASO® Floor Penetration Type FBV-BDF

The effective sealing system

- + Floor penetration for an integration into fresh concrete composite sealing 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!
- + Formed plug-in sleeve on one side for the connection of KG, HT or KG 2000 pipes
- + Including **KRASO® Cover** as building period protective cover
- + DafStB waterproof concrete guideline: stress class 1 + 2

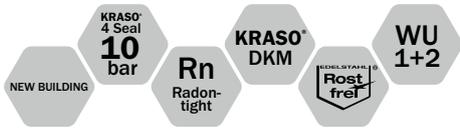


KRASO® Floor Penetration Type FBV-BDF **LG 1**

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

Item	KRASO® Type FBV-BDF • KRASO® Type FBV-BDF for KG 2000							
	110	125	160	200	250	315	400	500
Diameter DN	110	125	160	200	250	315	400	500
Delivery length (in cm)	50							
KRASO® Type FBV-BDF	246 €	302 €	309 €	418 €	605 €	724 €	937 €	1,150 €
KRASO® Type FBV-BDF for KG 2000	253 €	312 €	325 €	447 €	702 €	822 €	1,071 €	1,302 €

Scope of supply: KRASO® Type FBV-BDF or KRASO® Type FBV-BDF for 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 caused by 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 for KG 2000 made of polypropylene (PP), mineral-filled, smooth walls, long-lasting
- + DafStB waterproof concrete guideline: stress class 1 + 2



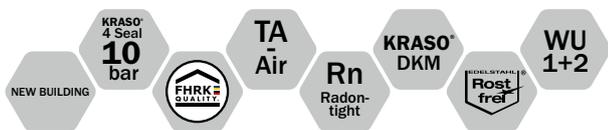
KRASO® Wall Penetration Type FBV-FR - flow direction **LG 1**

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

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

¹ Wall thickness 20 cm only available in DN 110, not available in KG 2000

Scope of supply: KRASO® Type FBV-FR or KRASO® Type FBV-FR for 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 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!
- + 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 **KRASO® 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!
- + Certified with the quality seal of the FHRK e. V.
- + DafStB waterproof concrete guideline: stress class 1 + 2

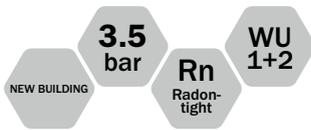
KRASO® Casing Type FBV-FE - true diameter casing **LG 1**

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

Item	KRASO® Type FBV-FE					
Internal Diameter in mm	100	125	150	200	250	300
Available standard wall thicknesses in cm	20 · 24 · 25 · 30 · 35 · 36.5 · 40 · 45 · 50					
KRASO® Type FBV-FE	245 €	302 €	304 €	418 €	564 €	638 €

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!



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 at the factory.
- + **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

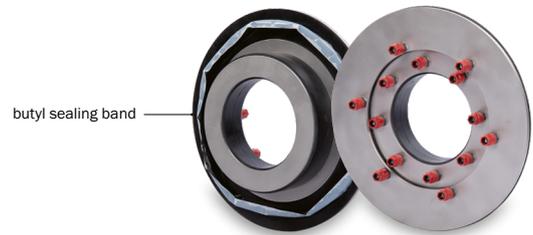
FBV SOLUTIONS

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

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

Item	KRASO® Cable Penetration FBV-KDS double wall penetration										
	15	17.5	20	24	25	30	35	36.5	40	45	50
KRASO® Cable Penetration FBV-KDS 90 double wall penetration	343 €										
KRASO® Cable Penetration FBV-KDS 150 double wall penetration	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



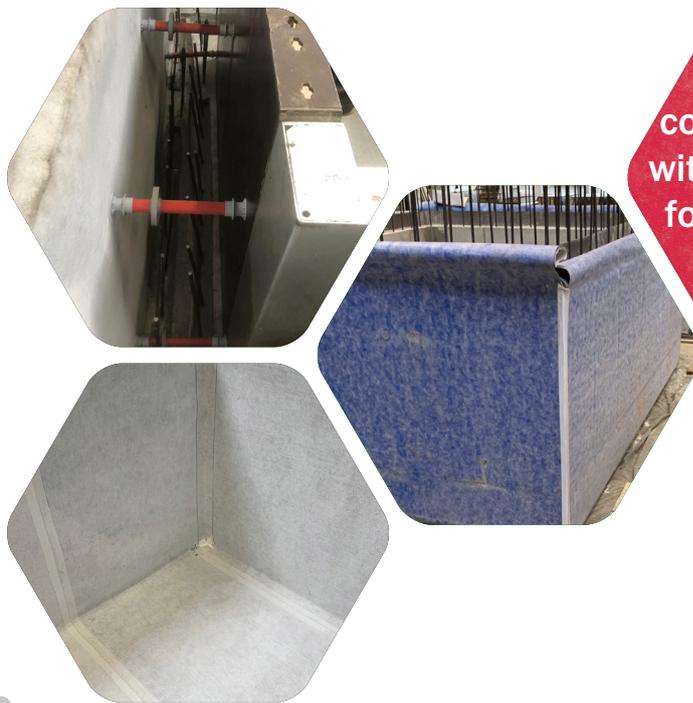
KRASO® Sealing Insert Type FBV/GF **LG 1**

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 (from - to)	80 (79 - 83)	100 (99 - 103)	125 (124 - 128)	150 (149 - 153)	200 (198 - 203)	250 (248 - 253)	300 (298 - 303)	350 (348 - 353)	400 (398 - 403)	450 (448 - 453)	500 (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
KRASO® Type FBV/GF											
KRASO® Type FBV/GF	384 €	448 €	499 €	585 €	730 €	907 €	1,143 €	1,333 €	1,578 €	1,789 €	1,987 €
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!



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



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!

