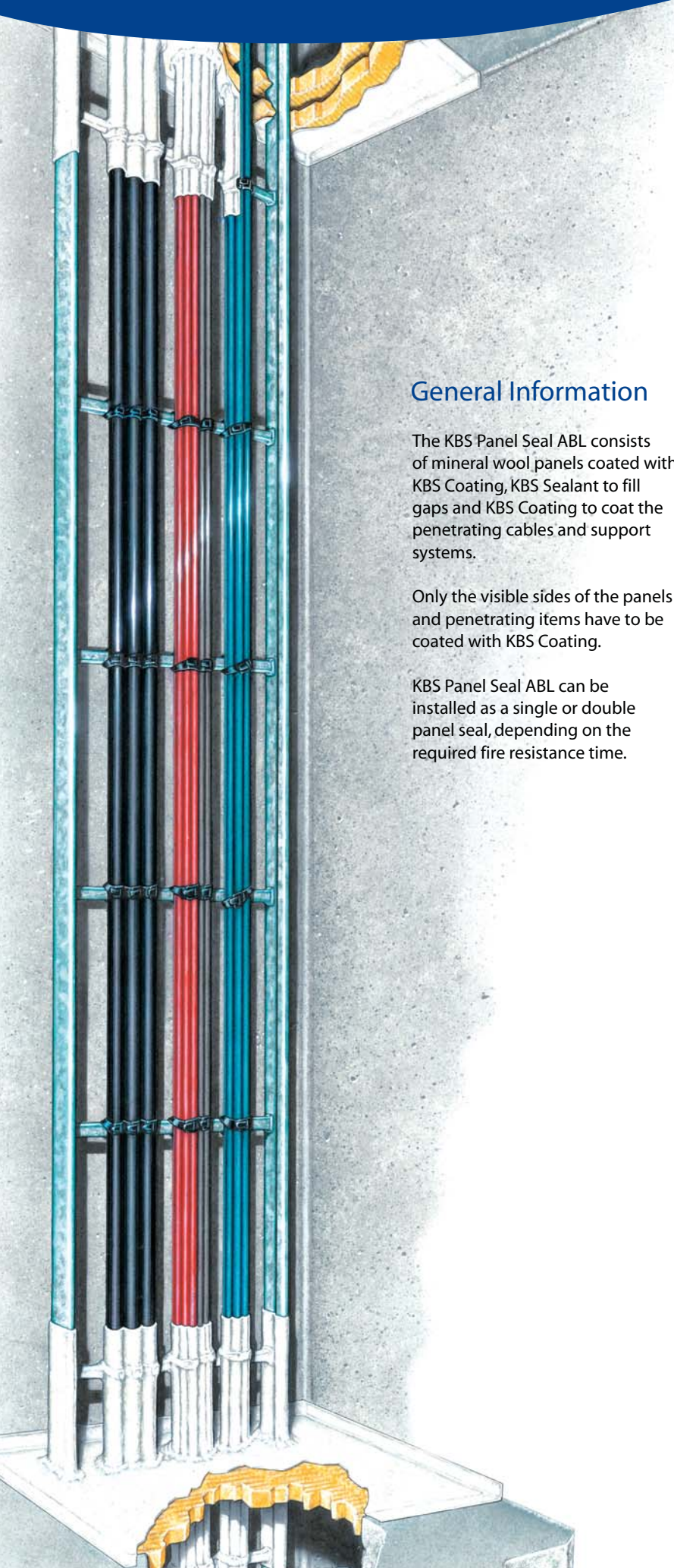


Panel Seal

Single and double panel
penetration seals for cables



General Information

The KBS Panel Seal ABL consists of mineral wool panels coated with KBS Coating, KBS Sealant to fill gaps and KBS Coating to coat the penetrating cables and support systems.

Only the visible sides of the panels and penetrating items have to be coated with KBS Coating.

KBS Panel Seal ABL can be installed as a single or double panel seal, depending on the required fire resistance time.

KBS Coating is a water-based ablative fire protective coating, KBS Sealant is a water-based ablative fire protective putty. KBS Coating is suitable for penetration seals and fire protection of cables or other utilities.

Both products last for the lifetime of cables. KBS Coating is highly flexible, totally weather- and water-resistant, and compatible with various chemicals.

Any mineral wool panels with a minimum density of 150 kg/m^3 and a melting point above $1000 \text{ }^\circ\text{C}$ can be used for KBS Panel Seal ABL. If not available on the local market, they can be supplied by our distributor.

KBS Coating and KBS Sealant are produced only by Cognis Illertissen maintaining a quality system which fulfils the requirements of DIN EN ISO 9001.

Technical Information

The KBS Panel Seal ABL is used to seal any size of opening in walls and floors, providing a fire- and smoke-tight seal around all penetrating utilities such as cables, cable supports, pipes and ducts.

KBS Panel Seals ABL have been tested and approved worldwide and have received various ratings depending on type and national standard. (Please see list of international test reports/approvals on back page). Please note the following results:

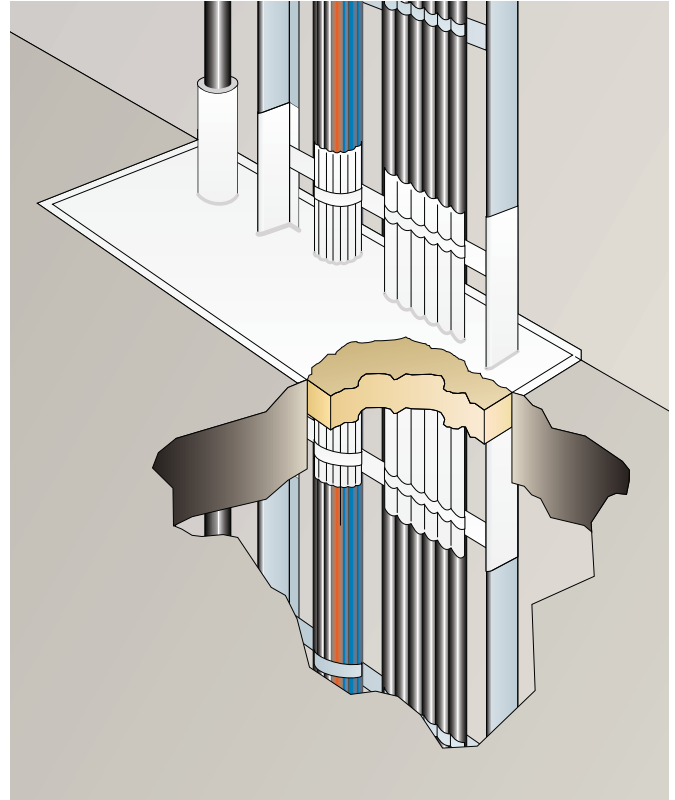
Single Panel Seal
(panel thickness 50-60 mm):
Rated up to 120 min.

Double Panel Seal:
Rated up to 180 min.

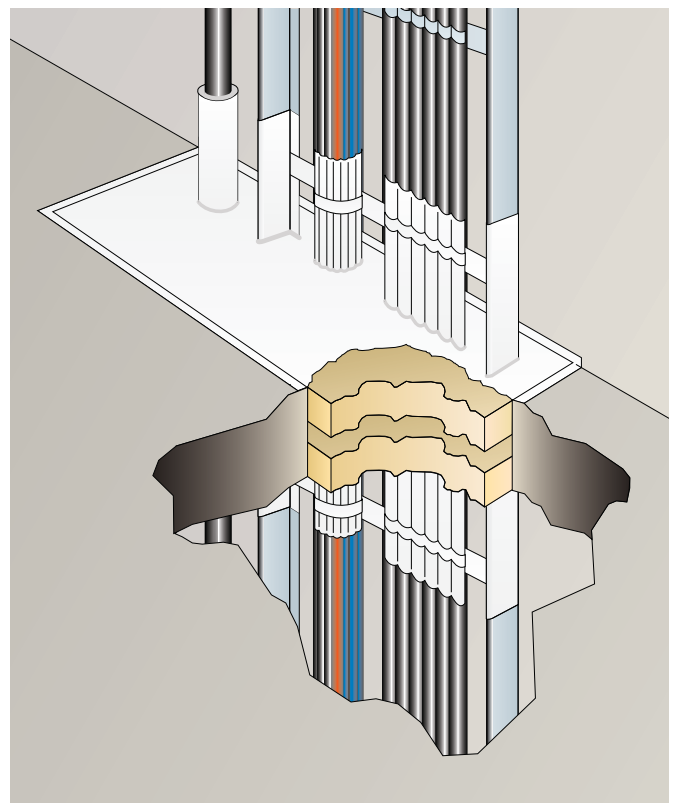
Panels are usually coated with KBS Coating at a coverage of approx. 2.0 kg/m^2 on the exposed (visible) side only, resulting in approx. 1.3 mm dry thickness. This means the same amount of coating is used per opening, independent whether it is a single or double panel seal. Panels may be precoated or coated on site by spray or brush. Precoated panels are also available from our distributor. The double panel seal usually is constructed with an air space between the two panels. Preferably the panels are installed flush with the outside of the wall. Cables and other penetrating items are coated with KBS Coating at a coverage rate of approx. 2.9 kg/m^2 , corresponding to approx. 1.6 mm dry thickness.

In all KBS Panel Seals ABL, it is required that only the exposed (visible) penetrating items (cables, support systems, pipes, etc.) must be coated with KBS Coating for a distance away from the seal. This distance is specified in national tests and differs from country to country according to respective requirements.

Retrofitting of additional utilities is achieved with ease in a KBS Panel Seal ABL. The opening for the penetrating item is cut as accurately as possible with a pointed saw or a saw-tooth knife and sealed after installation of the utilities with KBS Sealant. Where the opening has been cut larger than the penetrating item, loose mineral wool should be stuffed tightly in the remaining space before applying KBS



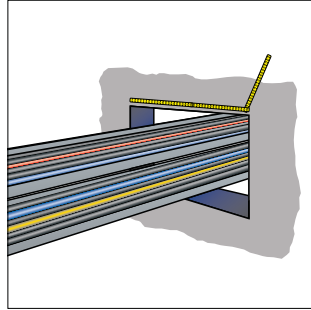
Single Panel Seal



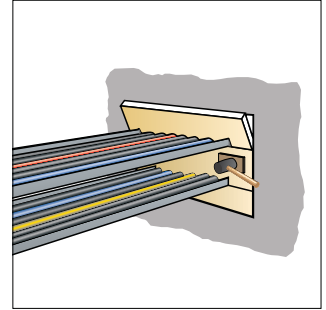
Double Panel Seal

Installation Instructions

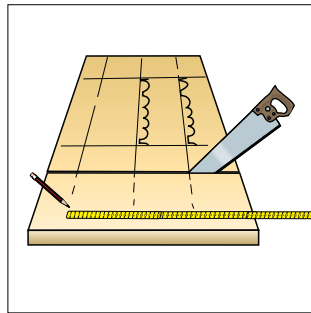
Measure exact location on cables and cable supports, using a meter stick, a mason's compass or a piece of string with which you can locate cables by measuring from the corners.



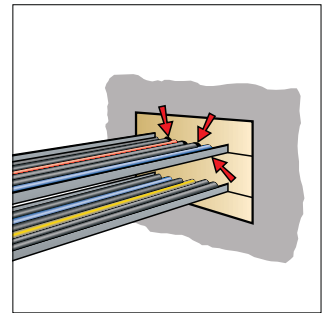
Place one edge of panel first in the opening completely and push it slowly into opening. Since the panel has been cut oversize, a piece of wood and a hammer will be necessary to get panel in place. If panel is loose in the opening, it should be discarded and replaced by a new one.



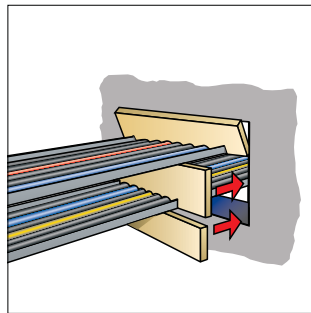
Transfer measurements onto mineral wool panel, but add about 3 mm on height and width of panel cut (this will result in a tighter fit). Now cut panel into as many pieces as necessary to fit in the opening.



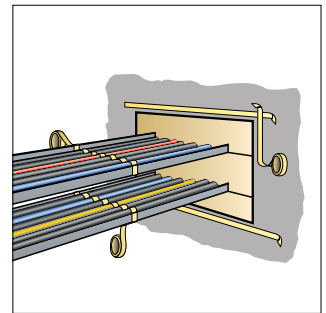
After panel is in place, check carefully for possible openings, stuffing them with loose mineral wool. Apply KBS Coating or KBS Sealant covering carefully spots stuffed with loose wool, also use KBS Coating or KBS Sealant liberally between cables and other spots which may allow leakage of fumes and smoke.



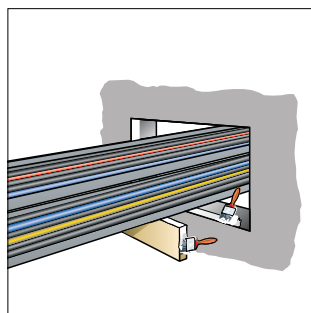
Check cut by placing the panel pieces into the opening and make necessary corrections.



Use masking tape to keep cables and surrounding area on wall or ceiling clean.

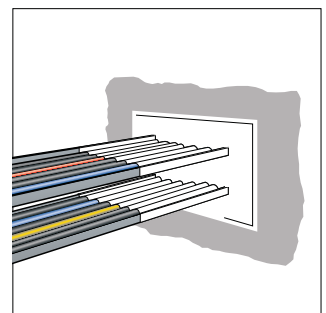


Apply KBS Coating to the edges of the panels as well as to the insides of the opening where panels will be fitted. Prior to coating application all areas to be coated have to be cleared of dust, additionally the surface of the building section should be wetted with water.



Now apply KBS Coating by spray or brush, first to panels, then to cables and support systems to distance required by national tests. Coat wall about 2 cm over edge of opening.

Attention:
If walking on a floor



Selection of International Test Results and Approvals of KBS Panel Seal ABL

Country	KBS Penetration Method*	Ceiling or Wall Test	Thickness of penetration (mm)	Official Fire Resistance F/T Rating (minutes)	Standard	Ref. No.
Austria	single panel	ceiling	60	60	ÖNORM B 3800	213
	double panel	wall	150	90	ÖNORM B 3800	210
Belgium	single panel	wall	50	90	N.B.N. 713.020	314 A
	double panel	wall	150	120	N.B.N. 713.020	313
France	double panel	wall	200	120	Arrêté du 21.4.83	610
	double panel	ceiling	200	120	Arrêté du 5.1.59	602
	double panel	steel bulkhead	2 x 75	60	SOLAS 197/ IMO A 517	620/ 621
Germany	single panel	wall	60	30	DIN 4102	183
	double panel	wall	120	90	DIN 4102	049
	double panel	ceiling	150	90	DIN 4102	049
	double panel	wall	150	90	DIN 4102	112
	double panel	wall	200	90	DIN 4102	112
	double panel	ceiling	150	90	DIN 4102	112
Great Britain	single panel	wall / ceiling	50	90	BS 476, p.8	904
	double panel	wall / ceiling	150	180	BS 476, p.8	904
	single panel	wall	60	90	BS 476, p.20	943
Italy	single panel	wall	60	120	Circolare n.91	1011
	double panel	wall	250	180	Circolare n.91	1011
	double panel	ceiling	200	180	Circolare n.91	1012
Netherlands	single panel	wall	50	60	NBN 713.020 / prEN 1366-3	411
	single panel	wall	50	90	NBN 713.020 / prEN 1366-3	411
	double panel	wall	140	90	NBN 713.020 / prEN 1366-3	411
Singapore	double panel	wall / ceiling	150	180	BS 476, p.20	3206
South Africa	double panel	wall	100	120	SABS 0177	4005
Sweden	single panel	wall / ceiling	60	60	NT-FIRE 005	817
	double panel	wall / ceiling	140	120	NT-FIRE 005	817
Switzerland	single panel	wall	60	60	VKF, AEAI	531
	single panel	ceiling	60	60	VKF, AEAI	531
	double panel	wall	120	90	VKF, AEAI	510
	double panel	ceiling	150	90	VKF, AEAI	510
USA	double panel	wall / ceiling	150	120	ASTM E 814	2020

All test reports on request.

* Single panel: 1 panel (50–60 mm)/double panel: 2 panels (50–60 mm)

Disclaimer: The above data, particularly the recommendations for the application and use of KBS products are based on the manufacturer's knowledge and experience. Due to different materials and conditions of application, which are beyond our control, we recommend in any case to carry out sufficient tests in order to ensure that KBS products are suitable for the intended processes and applications. Therefore, any liability for such recommendations or any oral advice is expressly excluded unless we have acted wilfully or by gross negligence. It is always the responsibility of the Installer / purchaser to guarantee correct preparation, DFT (KBS Coatings) and thickness (KBS Penetration Seals) of all KBS Materials. KBS Passive Fire Pty. Ltd. is not liable for installation or faulty installation. It is always the responsibility of the installer / purchaser to guarantee and certify the installation of materials.



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