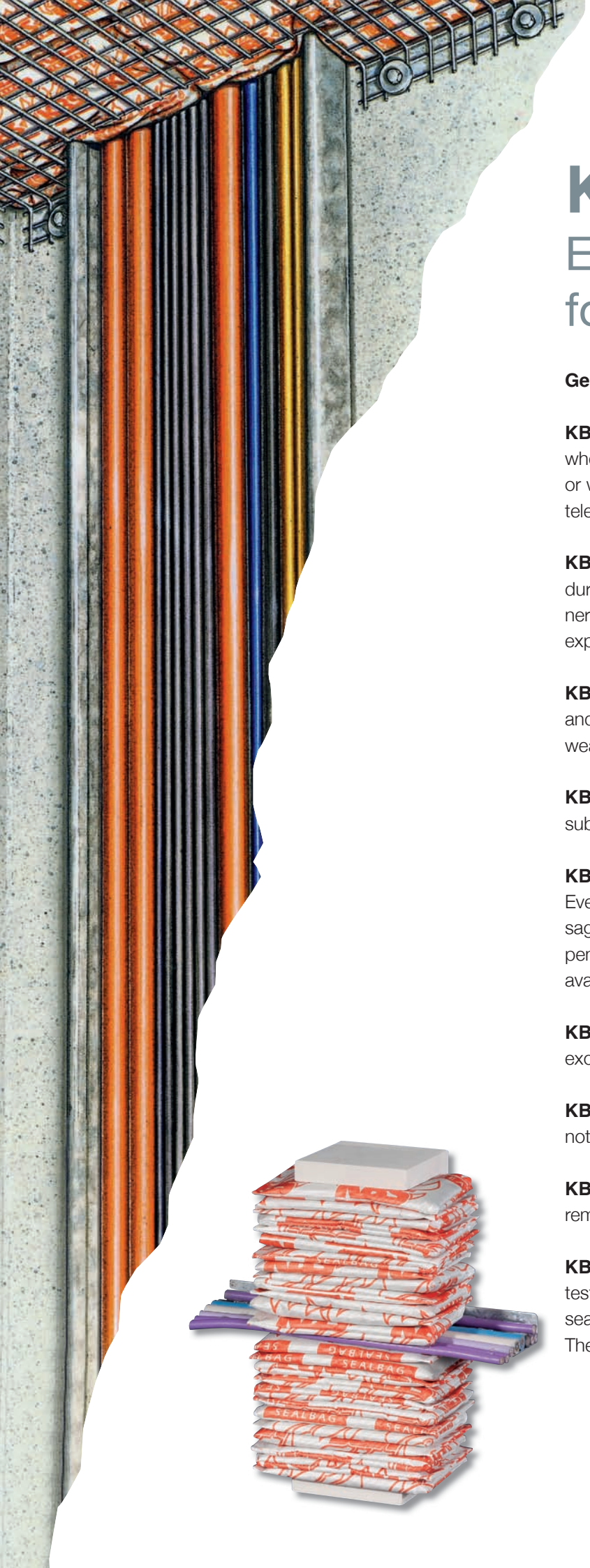
KBS® Sealbags

Expanding pillows for penetration seals

BASF
The Chemical Company



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Expanding pillows for penetration seals

General Information

KBS® Sealbags are installed in cable penetration seals, where frequent retrofitting of new cables is expected or where dustfree penetration seals are requested, e.g. telephone exchanges, pilot plants, computer rooms, etc.

KBS® Sealbags are pillows consisting of tightly woven, durable fibre-glass cloth, filled with a combination of mineral fibres, incombustible components, water-insoluble expansion agents and special fire retardant additives.

KBS® Sealbags are totally water- and weather-resistant and retain their properties and effectiveness under all weather, temperature and atmospheric conditions.

KBS® Sealbags contain no asbestos or any other toxic substances.

KBS® Sealbags maintain their volume constancy. Even many years of industrial vibrations do not induce sagging of the bags, which results in an absolutely tight penetration seal (official report for 7 years vibration test available).

KBS® Sealbags are „dustproof“ for use in telephone exchanges, computer rooms etc.

KBS® Sealbags have a high electric resistance and are not current conductive, if kept in dry conditions.

KBS® Sealbags are easily installed and just as easily removed for retrofitting.

KBS® Sealbags are tested internationally (see list of test reports and approvals) with 18 cm and 34 cm sealing thickness providing up to 4 hours fire resistance. They are FM- and UL-listed.

Special Features / Types

How they react in fire:

• At approx. 130°C the various components of the bags start gluing up and sticking together, preventing the fillers from running out, even if the wrapping is damaged by mechanical impact.

• At approx. 280°C the content begins to expand up to 45%, so that even the smallest remaining spaces between cables, trays and masonry are tightly closed.

• At approx. 800°C a „ceramic reaction“ causes the content to harden and form a solid block. The seal becomes mechanically so strong that it will withstand mechanical damage caused by falling debris etc. or a hose stream from fire fighters.

Used of KBS® Sealbags:

KBS® Sealbags are used to provide permanent or temporary fire stops for electrical cables. They are especially suited where frequent cable changes are expected and are also ideally suited to provide fire protection during the construction phase of a project.

KBS® Sealbags are used as well for sealing small PVC or steel pipes, ducts or cable conduits.

KBS® Sealbags provide smoke gas-tight penetration seals where cold smoke from a distant fire will not pass through and in case of a nearby fire any gaseous extinguishing agents (used in computer rooms etc.) will keep their extinguishing concentration.

KBS® Sealbags are ideal for the protection of cables in double floors of processing centres.

KBS® Sealbags may also be used to cover cables in trays against fire from sources such as welding.

KBS® Sealbags come in various sizes so as to allow the sealing of even the smallest openings.

Available sizes

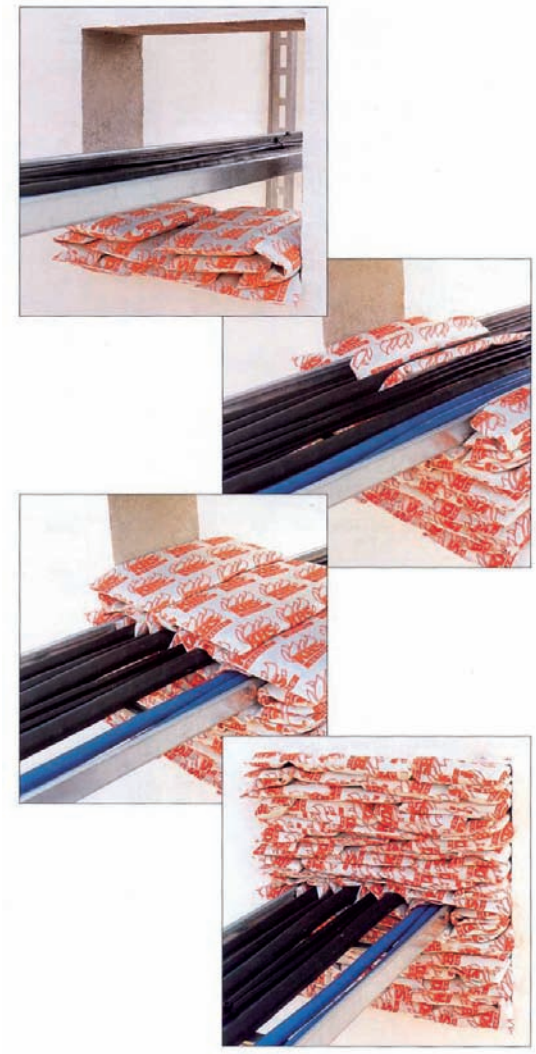
Standard types	Total weight in g (approx.)	Size in mm (approx.) Length x width x height (not patted)	Packaging Number of Bags per carton
KBS® Sealbag 250	250	340 x 180 x 13	20
KBS® Sealbag 400	400	340 x 180 x 18	35
KBS® Sealbag 720	720	340 x 180 x 35	20
KBS® Sealbag 1500	1500	340 x 330 x 35	10

Installation

Wall penetration

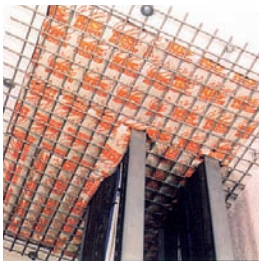
KBS® Sealbags should be patted by hand so that the content is distributed evenly before inserting them into the opening.
KBS® Sealbags should be placed into the opening by staggering the joints.

Use a smooth wooden stick to help push Sealbags in place.



Floor and ceiling openings

A wire screen must be installed to the underside of the opening. The screen should be fastened to the ceiling using steel dowels and washers.



Place **KBS® Sealbags** lengthwise and flat onto the wire mesh, layer after layer. The filling of tight spaces is accomplished as described above.

If walking on the floor penetration seal becomes necessary,use any suitable cover.

For more details see our installation recommendations in each carton.

Selection of International Test Results and Approvals

Country	Testing Institute/ Approval Body	Ceiling or Wall Test	Sealbag Seal Thickness (mm)	Size of Opening (mm)	Hose-stream Test	Official Fire Resistance Rating (minutes)	Standard	Ref. No.
Europe	CSI	wall	340	1200 x 800	not required	up to EI 180	EN-1366-3	DC 02/017/F13
		floor	340	1200 x 800	not required	up to EI 180	EN-1366-3	
	AFITI LICCF	wall	180	800 x 600	not required	EI 120/E 180	EN-1366-3	7994/09-23
Belgium	University of Gent	floor	250	600 x 300	not required	130	NBN 713020	312
	University of Liège	wall	a) 150	400 x 400	not required	90	NBN 713020	308
			b) 330	400 x 400		90		
		wall	B2) 150	400 x 400	not required	149	NBN 713020	310
		wall	C2) 330	400 x 300		149		
		wall	340	300 x 300	not required	180	NBN 713020	309
France	C.S.T.B	wall	340	500 x 300	not required	180	Arêté 21.4.83	613
		wall	180	450 x 250		120		630
Germany	DIBt, Berlin	wall	340	1500 x 1100	not required	S90	DIN 4102	161
		floor	340	800 x ∞				
Italy	CSI	wall	340	600 x 500	not required	REI 180	CM 91	1003
		wall	190	300 x 400	not required	REI 120	CM 91	1010
		wall	340	400 x 300	not required	REI 180	CM 91	1011
		floor	340	300 x 200	not required	REI 180	CM 91	1012
South Africa	S.A.B.S	wall	330	600 x 650	not required	120	SABS 0177: Part II	4005
Spain	I.N.I.A.	floor	240	460 x 300	not required	180	UNE 23.802	1201
		floor	150	450 x 400				
Sweden	Statens Provnings- anstalten SITAC	wall or floor	300 210	400 x 1000 400 x 1000	not required	EI90 EI120	SBN-PFS 1983-2	818
Switzerland	VKF	wall	340	1,3 m2	not required	S90	DIN 4102	161
		floor		0,6 m2				
UK	LPC (FIRTO)	wall	340	505 x 510	not required	180	BS 476, Part 8 (72)	903
		floor	180	500 x 500	not required	180		906
		floor	1) 340	ø 100	passed	F180 T180	UL 1479	912
			2) 340	ø 180	passed	F180 T151	ISO 834	
			3) 340	ø 120	passed	F180 T180		
			4) 340	ø 120	passed	F180 T180		
			5) 340	ø 280	passed	F180 T180		
		wall	180	750 x 750	not required	248	BS 476, p. 20	913
USA	UL	floor (floor) (a)	330 (13˝)	810 x 1020 (32˝x 40˝)	passed	F240 T240	UL 1479 ASTM E-814	2010
		(b)	330 (13˝)	810 x 1020 (32˝x 40˝)	passed	F180 T - rating depending on cable type		
	FM	floor (floor) (a)	330 (13˝)	810 x 1020 (32˝x 40˝)	passed	T180	ASTM E-814	2011
		(b)	330 (13˝)	810 x 1020 (32˝x 40˝)	passed	F180 T 120-180 depending on cable type		

All test reports on request.

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