MINOVA

LOKSET HS

RESIN CARTRIDGE

HIGH MECHANICAL PERFORMANCE,
MEDIUM VISCOSITY

DESCRIPTION

Lokset resin cartridge consists of a filled polyester mastic and a catalyst paste, contained in a heat-sealed tube of polyester film. A film barrier prevents premature chemical reaction until the moment of use. They are intended for the installation of bolts to reinforce rock strata and installation of various anchoring elements to building structures. Lokset HS comply with the British Standard.

APPLICATION AND USES

- Anchoring of steel/GFRP rock bolts for ground support in mines & tunnels
- Anchoring of rock reinforcement in rock cuts & slopes
- Bonding of anchorage of equipment to rock or concrete
- Anchoring of bolts for machinery
- Anchoring of short pins & reinforcement to building structures

ADVANTAGES

- High mechanical performance - adhesion, compressive and shear strength
- Rapid & simple installation process without the use of a pump
- Quick setting resin allows the anchorage to be loaded quickly
- High resistance to vibrations (blasting, vibrating equipment)
- Highly durable, reduces the risk of steel anchorage corrosion

TECHNICAL PROPERTIES

The table presents standard product offering. Additional types are subject on requests.

PARAMETER	UNIT	LOKSET				
Cartridge Diameter	mm	20	24	28	32	38
Suitable Borehole Diameter	mm	22-26	26-30	30-34	34-39	40-44
Catridge Length	mm	250; 300; 450; 550; 600				
Gel time (according to BS)	-	FAST, SLOW, ULTRA SLOW				

The data is based on laboratory testing. They may vary in the field due to different ambient temperature, pressure, and other factors.

MECHANICAL DATA

PARAMETER	UNIT	LOKSET HS
Compressive Strength	(MPa)	≥80
Punch shear strength	(MPa)	≥25
Modulus of elasticity	(GPa)	≥11
Creep	%	max. 0,12
Viscosity	-	low (thixotropic)

APPLICATION METHOD

Lokset resin cartridges can be applied using different types of bolting machines including hand-held bolters, leg-mounted bolters and mechanised mobile bolters. If cartridges are placed in the borehole by compressed air it may be necessary to use a special type designed for pneumatic shooting. For the optimal choice of cartridge type, it is recommended to consult your Minova representative and if possible, perform anchoring tests under real conditions. During most standard applications the following steps should be taken:

- Drill a hole to the correct depth and diameter; drilled holes must be made clear of dust and debris by flushing with water or air. The optimal difference in diameter between the bolt and borehole is between 4 and 10 mm.
- Insert required number of cartridges into the hole and place bolt into the hole.
- Attach bolt to rotary machine and start a slow rotation through the cartridge(s) until the bottom of the drilled hole is reached.
- When the bolt head reaches the hole bottom, stop movement, and spin the bolt for five seconds at 200-600 rpm or a minimum of 35 revolutions. Do not overspin. If bolt rotation continues through the gel, damage to the anchor may occur.
- Stop rotation and leave bolt undisturbed until resin has cured. Put plate, washer and nut over bolt and tighten up if required.

SAFETY INSTRUCTIONS AND LIMITATIONS

Observe the usual precautionary measures for handling chemicals and refer to the Lokset SDS. In case of incorrect anchor selection, wrong hole dimensions or the incorrect anchoring method, i.e., lack of anchor rotation or low rotation speed, the cartridge components might be insufficiently mixed. In such cases, the bond strength may be less than the theoretical strength. The cartridges should not be used in weak, loose, incoherent or highly porous soil, such as sands and clays. Cartridges should not be used in holes with flowing water, with a strong presence of water and near groundwater sources.When working with resin cartridges wear, safety gloves, goggles and protective clothing. Do not open or puncture cartridges prior to use. If clothes become saturated with any of the cartridge's components it is recommended to change into a set of clean clothing. For skin contact, wash thoroughly with soap and water. For detailed safety information, please refer to the corresponding Safety Data Sheet.

PACKAGING AND TRANSPORTATION

Lokset resin cartridges are packed into appropriate boxes according to their length, in quantities depending on their size. Boxes are stacked on pallets in quantities agreed with the customer. Lokset resin cartridges are marked with a symbol that specifies the cartridge's dimensions, type of recipe and gelation time. Names of the resin cartridges are as follows:

LOKSET ss x ddd aa-bbb-cd

Letter (s)	Sub-Letter (s)	Meaning
ss		Diameter (mm)
ddd		Length
aa		Main Type Designation (SM, SL, HM, HL, HS)
bbb		Gel Time (s)
c		Antistatic Destination
	Y	Regular Version
	X	Antistatic Version (Antistatic Layer + Copper Clips)
	Other Letters	Special Customer Version.
d		Type Of Holder (Retainer)
	N	Regular (No Retainer)
	B	Basket Type
	P	Parachute Type
	Other Letters	Special Customer Version

i.e. symbols LOKSET 20x450 HS-30-XB describe a cartridge with a diameter of 20 mm, length 450 mm, type of recipe HS, gelation time: 30 seconds at 20 °C, antistatic and equipped with basket retainer.

STORAGE AND SHELF LIFE

The cartridges shall be stored in closed original packaging, in dry and well-ventilated areas, away from direct sunlight. Shelf-life period for storage temperature ≤ 20°C is 9 months. A higher storage temperature can lead to shortening of the shelf-life. Storage at temperatures above 30°C is not recommended.

DISPOSAL

Follow local regulations.

TECHNICAL SUPPORT

We provide technical advisory service by a team of specialists in the field. The service includes on-site assistance and advice on evaluation trials and laboratory work.

MANUFACTURER

Minova Ekochem sp.z o.o.
An ISO 9001:2015
Quality Management Certificated Company
Certificate No. FM 689118

CUSTOMER SERVICE

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DISCLAIMER