LUCOBIT
THERMOPLASTIC POLYOLEFINS

Product Data Sheet Lucolast® 7010

Product description

Lucolast 7010 is a polar copolymer consisting of ethylene and butyl acrylate with low crystallinity.

Product properties

Addition of Lucolast 7010 to bitumen increases its viscosity and broadens the range of plasticity. Although the minimum value of the Fraass breaking point of Lucolast 7010 is as low as for unmodified standard bitumen, the ring and ball softening point increases considerably, depending on the proportion of Lucolast 7010 that was added.

Penetration values decline accordingly. Ductility determined according to DIN EN 12591 decreases, however, the values ascertained for the so-called ductility at low temperatures are usually more favourable than those for standard bitumen without addition of Lucolast 7010.

Product advantages

Compared with other standard binder Lucolast 7010 displays significant advantages in improving resistance to deformation. Rut formation tests at high temperatures demonstrated that asphalt can bear a two- to three-fold load when modifying it with thermoplastics or altering binder viscosity by adding Lucolast 7010. This does not impair the low-temperature performance of Lucolast 7010, but rather improves it.

Applications

Even relatively small amounts of PmB based on Lucolast 7010 in asphalt mixtures improve:

- resistance to mechanical stress, in particular deformation and wear
- stability / rigidity and reduce the tendency to flow when hot and under load
- low temperature flexibility
- ageing behaviour

Examples for application:

- s-wearing courses to ZTV-Asphalt - StB
- poured asphalt, also on sloping surfaces (ramps)
- stone mastic asphalt
- special asphalt surfaces, e.g. porous asphalt
- thin bituminous wearing courses (hot laying)

Processing into PmB

Bitumen is mixed homogeneously with Lucolast 7010 at the temperatures range 165 °C to 195 °C and is then ready for use. Depending on mixing intensity, the time required to mix large quantities (approx. 20 t) is 1 - 3 h. The usage of a high-speed shear mixing unit leads to a higherquantity of mixture. In order to avoid a possible phase seperation a continuous mixing process is required.

Environmental compatibility

Lucolast 7010 is environmentally sound in manufacture and processing, free of plasticizers and chlorine, and not harmful to health, water, soils, or plants.

Packaging

Granules: 25 kg bags

Storage

Store cool and dry protected from direct sunlight.
Other storage conditions can influence the quality of the product and the packaging.
It is recommended to use the product within 2 years.

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Typical Properties		
	Unit	Lucolast® 7010
Density (23 °C)	g/cm³	0.924
Apparent Density	g/l	~ 500
Elongation at Break (23 °C)	%	860
Modules of Elasticity	MPa	62
Softening Range	°C	80 - 100
Embrittlement Range	°C	< - 30
	Unit	Mixture of Bitumen B50/70 and 2,4 % Lucolast 7010-Bitumen
Density (23 °C)	g/cm³	1.1 - 1.0
Penetration	mm	25 - 55
Softening Point R&B	°C	≥ 55
Fraaß Breaking Point (25 °C)	°C	< - 10
Ductility	cm	> 15
These standard values are typical values and should not be regarded as specifications.		

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