

Product Data Sheet

Lucobit®1210AX

1. Product description

Lucobit®1210AX is a mixture of ethylene copolymer, an elastomer and special bitumen. The resulting formulation is a concentrate or „masterbatch“.

2. Properties

Lucobit®1210AX consists of thermoplastic polyolefins. Addition of Lucobit®1210AX to bitumen increases its viscosity and broadens the range of plasticity. Although the minimum value of the Fraass breaking point of Lucobit®1210AX is as low as for unmodified standard bitumen, the ring and ball softening point increases considerably, depending on the proportion of Lucobit®1210AX 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 favorable than those for standard bitumen without addition of Lucobit®1210AX.

3. Product advantages

Compared with other standard binders, Lucobit® 1210 AX 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 Lucobit®1210 AX. This does not impair the low-temperature performance of Lucobit® 1210 AX, but rather improves it. The thermal stabilizer improves the long term stability of the polymer modified bitumen especially at elevated temperatures and increases the durability of the asphalt essentially

4. Applications

Even relatively small amounts of Lucobit®1210AX 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

Examples for application:

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

5. Processing into PmB

Bitumen is mixed homogeneously with Lucobit®1210AX 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 lower required time of mixing. The proportion of bitumen already contained in Lucobit®1210AX greatly facilitates the incorporation into bitumen.

6. Direct addition of Lucobit® granules into asphalt mixes

The required amount of granules (3 to 7.5 % based on the binder content while simultaneously reducing the bitumen as to the percent by weight of the polymer added) corresponding to the desired proportion of Lucobit®1210AX is added batchwise to the asphalt mixer either before or after adding the binder as usual. The mixing time of any asphalt mixtures has to be adjusted to the volume of the mixing unit. Using a mixing unit of 1 t recommend to increases the mixing time by at least 10 sec. Please note the producer's manual when adding fibrous material (IFTA)!

7. Environmental compatibility

Lucobit®1210AX is environmentally friendly in manufacture and processing, free of plasticizers and chlorine, and not harmful to health, water, soils, or plants.

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8. Packaging and storage

Granules: 10 kg or 25 kg bags

Lucobit®1210AX should be stored under dry conditions at a temperature below 40 °C and protected from UV-light otherwise the packaging should be damaged

Storage time longer than 6 months may have a negative influence on the processability of the product. We strongly recommend to convert the material latest within 6 months after delivery.

Use beyond the recommended shelf-life. The product should be inspected according to quality assurance measures to ensure product performance.

Typical Properties			
	Einheit	Lucobit® 1210AX	
Density (23 °C)	g/cm ³	0,97	
Apparent Density	g/l	500	
Elongation at Break (23 °C)	%	800 - 900	
Modules of Elasticity	MPa	17	
	Unit	Bitumen 50/70	Mixture of Bitumen B50/70 and 5 % Lucobit 1210AX Bitumen
Density (23 °C)	g/cm ³	1.1 - 1.0	1.1 - 1.0
Penetration	mm	50-70	25 - 55
Softening Point R&B	°C	>50	≥ 55
Fraaß Breaking Point (25 °C)	°C	<-8	< - 10
Ductility	cm	0 - 10	> 15
These standard values are typical values and should not be regarded as specifications.			

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