

# Product Data Sheet Lucobit® 1210A

## Product description

Lucobit 1210A is a mixture of ethylene copolymers and special bitumen. The resulting formulation is a concentrate or „masterbatch“.

## Product properties

Lucobit 1210A consists of thermoplastic polyolefins. Addition of Lucobit to bitumen increases its viscosity and broadens the range of plasticity. Although the minimum value of the Fraass breaking point of Lucobit is as low as for unmodified standard bitumen, the ring and ball softening point increases considerably, depending on the proportion of Lucobit 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 Lucobit.

## Product advantages

Compared with other standard binder Lucobit 1210A 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. This does not impair the low-temperature performance of Lucobit 1210A, but rather improves it.

## Applications

Even relatively small amounts of Lucobit 1210A 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 Lucobit 1210A 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 higher quantity of mixture. The proportion of bitumen already contained in Lucobit 1210A greatly facilitates the incorporation into bitumen.

## 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 1210A 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 increase the mixing time by at least 10 sec. Please note the producers manual when adding fibrous material!

## Environmental compatibility

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

## Packaging

Granules: 10 kg or 25 kg bags

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<b>Typical Properties</b>		
	Unit	Lucobit® 1210A
Density (23 °C)	g/cm <sup>3</sup>	0.97
Apparent Density	g/l	~ 500
Elongation at Break (23 °C)	%	700 - 800
Modules of Elasticity	MPa	17
Softening Range	°C	80 - 100
Embrittlement Range	°C	< - 30
	Unit	Mixture of Bitumen B50/70 and 5 % Lucobit® 1210A
Density (23 °C)	g/cm <sup>3</sup>	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.		

**Note**

The information provided in this document is based on our product tests and present technical knowledge. It does not release purchasers from the responsibility of carrying out their receiving inspections. Neither does it imply any binding assurance of suitability of our products for a particular purpose. As LUCOBIT cannot anticipate or control the many different conditions under which this product may be processed and used this information does not relieve processors from their own tests and investigations. Any proprietary rights as well as existing legislation shall be observed.