

# Product Data Sheet Lucobit® 1210AC

## Product description

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

## Product properties

Lucobit® 1210AC consists of thermoplastic polyolefins. Addition of Lucobit to bitumen increases its viscosity and broadens the range of plasticity. Depending on the proportion of Lucobit 1210AC that was added the minimum value of the Fraass breaking point of 1210AC modified bitumen decreases and the ring and ball softening point increases.

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 more favourable than those for standard bitumen without addition of Lucobit.

## Product advantages

Compared with other standard binder Lucobit 1210AC displays significant advantages in improving resistance to deformation. Rut formation tests at high temperatures demonstrated that asphalt can bear a two- to threefold load when modifying it with thermoplastics or altering binder viscosity by adding Lucobit. The low temperature properties of Lucobit 1210AC modified asphalt also improve significantly.

## 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 1210AC 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 highspeed shear mixing unit leads to a higher quantity of mixture.

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

## Packaging

Granules in 10 kg or 25 kg bags

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<b>Typical Properties</b>			
Property	Standard	Unit	Lucobit® 1210AC
Density (23 °C)	ISO 1183	g/cm <sup>3</sup>	0.97
Apparent Density	DIN EN ISO 60	g/l	~ 500
Elongation at Break (23 °C)	ISO 527	%	800 - 900
Property	Standard	Unit	Mixture of Bitumen B50/70 and 5 % Lucobit® 1210AC
Penetration (25 °C)	DIN EN 1426	mm	25 - 55
Softening Point R&B	DIN EN 1427	°C	55
Force Ductility (5 °C)	DIN EN 13589	J/cm <sup>2</sup>	3
Fraaß Breaking Point	DIN EN 12593	°C	< - 10
Elastic recovery (25 °C)	DIN EN 13398	%	50
These standard values are typical values and should not be regarded as specifications.			