

# Product Data Sheet

## Lucobit®1210AC

### 1. Product description

Lucobit®1210AC is a mixture of ethylene copolymer, a random terpolymer of ethylene, acrylic ester and glycidyl methacrylate and special bitumen. The resulting formulation is a concentrate or „masterbatch“.

### 2. Properties

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

### 3. Product advantages

Compared with other standard binder, Lucobit®1210AC displays significant advantages in improving resistance to deformation. Rut formation tests 50°C demonstrated that asphalt can bear a two to three-fold load when modifying it with thermoplastics or altering binder viscosity by adding Lucobit®1210AC.

### 4. Applications

Even relatively small amounts of Lucobit®1210AC 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
- enormous increase of elastic recovery

- low temperature flexibility

- ageing behavior

- storage stability

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)

### 5. 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 high-speed shear mixing unit leads to lower required time of mixing. The proportion of bitumen already contained in Lucobit®1210AC 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®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 producer's manual when adding fibrous material (IFTA)!

### 7. Environmental compatibility

Lucobit®1210AC is environmentally friendly in manufacture and processing, free of plasticizers and

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It is the customer's responsibility to inspect and test our products in order to satisfy himself as to the suitability of the products for the customer's particular purpose. The customer is responsible for the appropriate, safe and legal uses as well as the appropriate processing and handling of our products. No liability can be accepted with respect to the use of LUCOBIT AG products in conjunction with other materials. The information contained herein relates exclusively to our products when not used in conjunction with any other third party materials.

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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®1210AC 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* Lucobit®1210AC				
	Standard	Unit		Lucobit®1210AC
Density (23 °C)	ISO 1183	g/cm <sup>3</sup>		0,97
Apparent density	acc. to ISO 60	kg/l		0,5
Elongation at break (23 °C)	ISO 527	%		800 - 900
Modulus of Elasticity	ISO 527	MPa		17
		Unit	Bitumen 50/70	Mixture Bitumen B50/70 and 5 % Lucobit 1210AC
Density (23 °C)	ISO 1183	g/cm <sup>3</sup>	ca. 1,0	appr. 1.0
Penetration	DIN EN 1426	mm	50-70	25 - 55
Softening point Ring and Ball	DIN EN 12593	°C	>50	≥ 55
Elastic recovery	DIN EN 13398	%	>50	>50
Fraaß Breakpoint (25 °C)	DIN EN 12593	°C	<-8	< - 10
Ductility	DIN EN 13589	cm	0 - 10	> 50
*These standard values are typical values and should not be regarded as specifications.				

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