

K-PLAST

Improves the mechanical performance of asphalts mixture increasing resistance to deformation

Technical Data Sheet

Is a granules of a mix of thermoplastic polymers consisting mainly of low-density polyethylene. It is used for the road industry to improve the mechanical performance of asphalt mixture for the construction of road paving.

The use of K-PLAST enables the production of asphalts with high resistance to deformation using bitumen with penetration 60/70 (EN 13108-1).

K-PLAST is added directly into the mixer of the production plant. It can be added before, during or immediately after the addition of the bitumen.

ADVANTAGES

The use of K-PLAST allows obtaining:

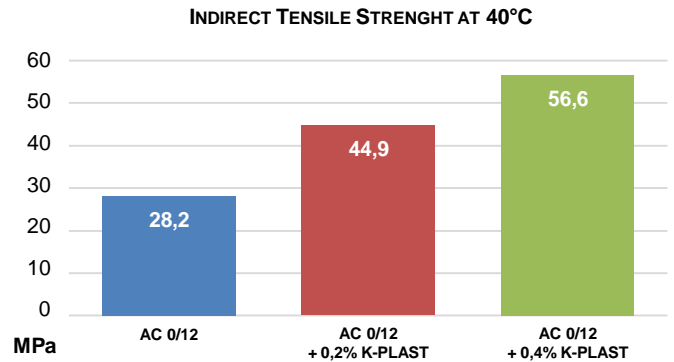
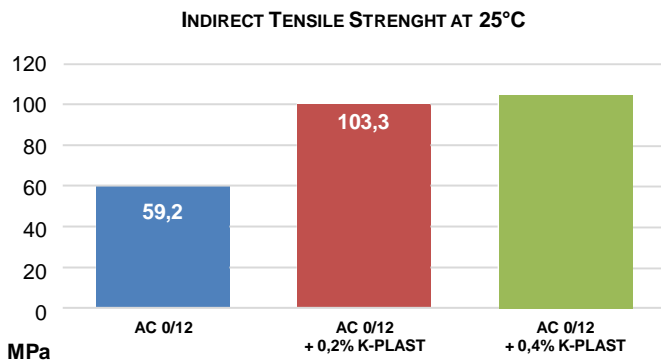
- Paving with considerable bearing capacity
- Paving with better "Resistance to Fatigue"
- Paving with high resistance to the formation of "Rutting".
- Paving with longer duration of "Useful Life".
- Possibility to reduce the thickness of the flooring by 20-30% compared to the traditional ones.



HOW TO USE AND DOSAGE

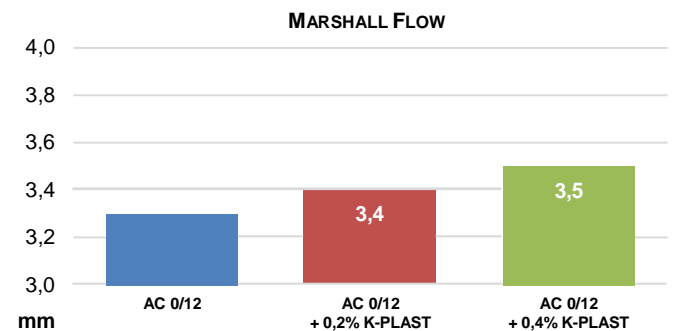
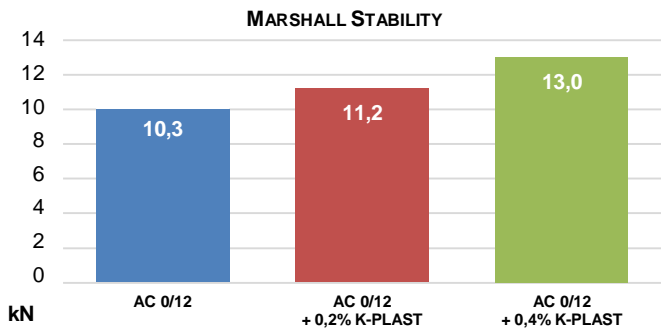
We recommended to add the aggregates mix first and immediately after the K-PLAST; after 10-15 seconds of dry mixing, the bitumen is added and mixed for about 15 seconds; then we proceed to the post-mixing phase, normally for another 10 to 15 seconds. The temperature of the aggregates must be between 160°C and 175°C, depending on the working conditions and the distance from the laying site.

The dosage percentage varies according to the characteristics required to the final asphalt. The standard dosage can vary from 0,2% to 0,4% on the weight of the asphalt mixture, (equivalent from 4% to 8% on the bitumen weight).



TEST METHODS FOR HOT MIX ASPHALT. WHEEL TRACKING - EN 12697-22 - Small size model B testing in air

Samples	Wheel-tracking Slope	Rut depth test at 10.000 cycles	Proportional rut depth at 10.000 cycles
	WTS _{AIR} [mm/10 ³ cicli]	RD _{AIR(10000)}	PRD _{AIR(10000)}
AC 0/12	0,370	11,29 mm	17,0%
AC 0/12 + 0,2% di K-PLAST	0,151	3,04 mm	4,7%
AC 0/12 + 0,4% di K-PLAST	0,192	1,49 mm	2,2%



RESISTANCE TO FATIGUE - EN 12697-24, ANNEX E

Samples	Test Temperature	Average Height (mm)	Diameter (mm)	Deformation corresponding at Nf/50=100 cycles, e [µε]	Equation trendline	
					y	R ²
AC 0/12	20°C	49,5	150	13	25.669x ^{-0,546}	0,9956
AC 0/12 + 0,2% di K-PLAST	20°C	52,0	150	34	1.178x ^{-0,256}	0,9809
AC 0/12 + 0,4% di K-PLAST	20°C	51,5	150	44	1.659x ^{-0,263}	0,9541

COMPOSITION

K-PLAST is a mix of thermoplastic polymers ecofriendly, odorless and not dangerous.

PRODUCT PROPERTIES

Appearance at 25°C	: Granules
Color	: Green-Gray
Granule diameter	: 2 ÷ 5 mm
Density	: 0.92 - 0.93 / cm ³
Softning Point	: 110 ÷ 130°C

PACKAGING, STORAGE AND HANDLING

K-PLAST is delivered in Big-Bags (1,400kg each) packed on wooden pallets. Can be stored for 24 months in its original sealed packaging. Stable at normal temperatures and kept in well-closed containers, covered and protected from water, at a temperature between 5°C and 30°C. It is not harmful for handling or for transport.