

EGS-10 Semi-Grained Asphalt Mix

CIRCUIT GILLES VILLENEUVE (1996)
(Photo courtesy of
Player's Grand Prix of Canada)



Introduction

The ESG-10 semi-grained asphalt mix is a dense mix whose particle-size distribution curve is below the maximum density curve. This makes it possible to obtain a closed road surface, thus reducing permeability to water. Its performance depends on the properties of its components. This asphalt mix is made exclusively with a giratory compactor using a method developed at the Laboratoire des chaussées (LC-26-004).

Thickness: from 40 to 70 mm depending on aggregate angularity and the performance grade of asphalt cement used.

Area of application

This asphalt mix can be used for all pavements types. The surface texture of the asphalt mix is particularly well suited for use on national, regional and municipal roads.

It is also a very good choice for parking lots. It should be chosen over the EG grained asphalt mix for engineering structures.

Qualities and composition

Aggregate gradation makes the ESG-10 asphalt mix more impermeable than the EG-10 grained asphalt mix. Pavement performance depends on component characteristics. For example, to obtain high rutting resistance, aggregates must be angular and made of performance grade 64-LL asphalt cement. But for highly flexible pavements with light traffic flow, a better suited asphalt mix with more rounded aggregates and performance grade HH-34 asphalt cement should be used. In any case, refer to the recommendations of the ministère des Transports when selecting components according to pavement characteristics, traffic level and weather conditions where the asphalt mix is to be used.

Laboratory characteristics

Aggregate classes required

ESG-10 calls for filler and aggregates belonging to at least two different particle classes whose gradations do not overlap. Classes 0-5 mm and 5-10 mm are currently used. To optimize the performance of the asphalt mix, use of the following three aggregate classes is recommended: 0-2.5 mm, 2.5-5 mm and 5-10 mm.

Typical physical characteristics

Binder content: 5.0 to 5.4%
Density: 93 to 95%
Voids at 10 gyrations (gyratory compactor): $\geq 11\%$
Voids at 80 gyrations (gyratory compactor): $> 4-7\%$
Voids at 200 gyrations: $\geq 2\%$

If the level of heavy traffic so warrants, resistance to rutting will be $< 20\%$ at 3000 cycles on a specimen 50 mm thick.

Sieve sizes (mm)	Passing (%)	
	minimum	maximum
14	100	100
10	92	100
5	50	65
• 2,5	46,1	46,1
• 1,25	30,7	36,7
• 0,630	22,8	26,8
• 0,310	18,1	18,1
0,160	—	—
0,080	4	10

• Restricted zone



Warning:

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