

R&D PROJECT



Title of the project

Reduction of traffic accidents through sustainable pavements with thin and ultra-thin layers with an extended life cycle

Acronym

FINLAY

Content of the project

When a pavement is put into service, its functional and structural features begin to deteriorate, mainly as a result of the loads going through and the environmental agents' effect. In order to restore the adequate safety and comfort levels of pavements, there are different maintenance actions. Among them, there are the thin layers that are placed on the surface of the existing pavement.

These are mixtures that are very similar to porous ones, which differ in their lower porosity as the voids have been filled with mastic.

The final objective of this project is the development of a new generation of asphaltic mixtures for thin and ultra-thin layers with high performance that improve the safety, durability and sustainability of road pavements, and that reduce their life cycle cost.

To do it, software will be developed that integrates a new design methodology that, for the first time, includes safety, sustainability and durability aspects.

General objectives

- Increase the circulation safety with the improvement of slip resistance and the pavement visibility in adverse conditions
- Improve the pavements sustainability with the reduction of environmental impact
- Improve the pavements durability with a new design method of bituminous mixtures considering crack resistance, plastic strain or moisture damage
- Develop a new mixture design method, with its software, integrating for the first time safety, environmental and mechanical behaviour aspects
- Validate the new mixtures for thin and ultra-thin layers conceived using the new integrated design method in full-scale test sections

Results and conclusions

The thin and ultra-thin layers are asphaltic mixtures used in small thickness layers (3-2cm) or very small thickness (≤ 2 cm) that are used to restore the surface features of the pavement. After analyzing the results, the thin and ultra-thin layers present the following features:

- Slip resistance, surface regularity, waterproofing
- Fast open to traffic
- Sound absorbency, Splash&Spray and sustainability
- Durability

The product has been classified as A+ structural behaviour, A+ functional behaviour, A++ environmental behaviour.



**UNIVERSITAT POLITÈCNICA
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BUSSINESS AREAS

Infrastructure area
COMSA, S.A.

DURATION

2015-2018

BUDGET

757.933,29€

KEYWORDS

Perpetual flooring, thin and ultra-fine layers, sustainability, durability, security

COORDINATOR

Joan Peset

EXTERNAL FUNDING



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