

PRODUCTION AND TESTING OF ROAD BITUMEN

by

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SUMMARY

Bitumen is man's oldest engineering material. Nowadays it is being widely used for a great variety of purposes especially in roads construction. The object of this project is to analyse both production and testing of road bitumen.

In the introduction, through a general historical view, we see how Asphalt-Bitumen was used decades ago and its evolution in road development. We also give a description of the different types of binder.

Firstly, we describe two different processes involving the manufacture of the bitumen: fractional distillation of crude oil and air blowing of short residues, and then we analyse how bitumen should be stored and handled at the right temperature possible, for best results.

After discussing the four mostly manufactured types of bitumen, we state the essential properties required for satisfactory bitumen quality. The uses of bitumen emulsions are also included in this project.

In chapter 6, mechanical testing is described and properties of bitumen. We give a brief explanation of tests performed on bitumens and to apply in practice all the theoretical knowledge we have followed the penetration test in order to measure the consistency of the material.

Finally we analyse bitumen constitution, rheology, structure and also the relationship between the first two and the influence at bitumen properties on performance in practice.

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