

NEW RELEASE

LONG LIFE PAVEMENTS AND SUCCESS STORIES

2009R06

Well established design methods for roads and pavements have now been in use for many years in many countries. Many pavements have reached or exceeded their original theoretical design life.

This report prepared by World Road Association (PIARC) Technical Committee C4.3 *Road Pavements* looks at successful pavement cases, comparing the actual performance with predictions at the time of original design and construction.

The study serves to detect areas of pavement exhibiting a longer life than expected with the objective of identifying the factors responsible for these variations. The factors found to promote better than expected performance could then be exploited for superior future pavement designs.

Papers were gathered with examples of pavements which lasted significantly longer than predicted at the design phase. Cases were analysed to determine the reasons for pavements whose life and performance exceeded expectation. Guidelines for the design, construction and maintenance of 'long life pavements' were created.

Thus, the report includes the following elements:

- Definition of success stories.
- Comparison of case studies regarding the concept of long life pavements
- Brief overview of papers received.
- Different types and techniques which may account for examples of 'long life pavements'.
- Conclusions and recommendations for future work in comparisons of true pavement performance versus design methods.

Lessons learnt and discussions are broken into three pavement categories:

- Flexible pavements
- Semi-rigid and composite pavements
- Rigid pavements

Topics covered include pavement design, structure, construction, maintenance and repair.

Long life pavement strategies are suggested, with discussion regarding initial construction investment, whole of life cost, foundation, workmanship of both the granular and bituminous/concrete layers, consideration of freeze/thaw cycles, frost resistant materials and drainage. The shift in emphasis from new construction to maintenance is also broached upon.

It is concluded that pavement management and technical parameters are as important as economic and environmental aspects in the success of long life pavements. The significance of bearing capacity, base layers, quality assurance, construction contract documents, critical thicknesses are discussed, among other things.

This report can be accessed through PIARC's Virtual Library at:
http://publications.piarc.org/ressources/publications_files/5/3604,WEB2009R06.pdf