COST 347 – an overview and then the common code of good practice

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COST 347 objectives

To develop a European code of good practice to optimize the use of Accelerated Loading Testing facilities and improve the application of results from these facilities
COST 347 objectives

Enable future cost-sharing co-operative research ventures between public and private sector research institutions and companies

Improve the possibilities for non-owner institutions to make use of existing ALT facilities

Provide the background for beneficial co-operation with related research activities outside Europe in the future

Final Report

- Inventory of European ALT facilities
- Previous and current research in ALT
- ALT and RLT
- Common code of good practice for ALT
- Future use of ALT

- Appendix B: ALT facilities reviewed by COST 347
- Appendix C: Common code of good practice for ALT
- Appendix E: Evaluation of strain gauges
Appendix B

Harmonisation of ALT in Europe

- Common code of good practice
- Easy transfer of data
- Co-operation in ALT
- Transfer of knowledge
- Increased quality in ALT
- European centers of excellence
Analytical design of pavements is based on the structural response. An appropriate knowledge of pavement structural behaviour is essential in achieving a good design, as well as in understanding the way pavement deterioration develops.

There are specific tests, like rutting experiments, which do not really require pavement instrumentation; but it is anyway required as background information. This information is helpful, however, in case of comparison of results from different ALT facilities.
## Mandatory actions

Select what variables are to be measured according to the pavement sections and research objectives. Select the type of instrument, according to the magnitude of the response to be measured, material to be placed in, experience in its use and later use of the data. Select also the installing procedure, considering the distortion of the original state due to the presence of the sensor. The number of sensors must be enough to get an acceptable mean value; consider 2 working sensors as an absolute minimum. It must be considered that some sensors fail during the construction of the pavement sections and also during trafficking. Besides, the number of sensors to be placed depends on previous experiences with each particular type of sensor and the reliability of the measurements.

## Recommended actions

The following variables are commonly measured in many ALT facilities:

- Temperature in asphalt.
- Deflection (under moving wheels)
- Horizontal strain in asphalt.
- Vertical strain in unbound base layers.
- Vertical stress in unbound base layers.
- Vertical strain in subgrade.
- Vertical stress in subgrade.

Consideration must be given to collecting data in a responsive manner (e.g. according to distress evolution, changes in environmental conditions, etc.) and not only to some pre-defined schedule. Otherwise, some useful results on cracks propagation, etc., may be lost.
COST 347
Improvements in Pavement Research with Accelerated Load Testing

References

Hildebrand, G. “Verification of Flexible Pavement Response from a Field Test”, Report 121, Road Directorate, Danish Road Institute, Roskilde, 2002.

Topics of recommendation

- Planning of experiment
- Test pavement
- Construction testing
- Loading
- Climate
- Data
- Pavement condition evaluation
- Pavement instrumentation
- Supplemental laboratory testing
- Operational safety
- Staffing
- Economy
COST 347 results

- Major technical benefits
- Sharing of results possible
- Improved quality of pavement research
- Improved co-operation in ALT in European and outside

COST 347 – in the future

The Final report of COST 347 is almost ready, and then ...

- Co-operation in ALT (under FEHRL)
- ALT association (AFD40(2))
- Web site
- Newsletter
- Discussion forum
- Annual meeting