PROJECT

POTHOLE

Durable Pothole Repairs

Funding: European  
Duration: Oct 2011 - Sep 2013  
Status: Complete with results

Background & policy context:

The main objective of the project POTHOLE is to address the need of road agencies for durable construction and maintenance methods for the repair of damage, which occur after hard winters due to repeated frost-thaw cycles. All European countries are faced with the problem of potholes and how to repair them. Many approaches just deal with repair methods which are durable only on a short-term base and therefore are not cost-effective.

Regarding the immense economic loss due to the damage, the repair of potholes with materials that are only good on a short-term base and, most importantly, the increasing numbers of crashes, injuries and deaths caused by potholes requires an improvement in the methods and techniques. In this context it is not just important to improve the methods and techniques, but also provide the road agencies with some kind of tool which gives them the relevant information and helps them to make sound decisions.

Objectives:

In this project, existing as well as new approaches which target the medium- or long-term repair of potholes will be studied. In a catalogue tests, evaluation methods and experiences according to existing European Standards will be listed to give road agencies an overview of the possibilities for the repair of potholes. Furthermore, the testing of techniques and the use of materials from already existing trial sites will be used to determine laboratory testing which can or should be used to be able for the correct testing of materials for this purpose.

The gained knowledge, including the European experiences, will be used to develop guidelines for road agencies to enhance their maintenance needs, allowing them to select a repair technique and/or material with a durability corresponding to the estimated lifetime of the existing pavement. The great advantage of this approach is the corporation of seven countries which ensures that many views and experiences throughout Europe are considered. This also means a great help for the implementation of the results at the end of the project, as all partners can use their national contacts within the national road agencies and provide them with the developed guidelines on a direct basis.

Parent Programmes:  
ERA-NET - European Research Area Net

Funding type: Public (EU)  
Other programmes: CEDR  
Other countries: Belgium, Germany, Denmark, Finland, France, Netherlands, Norway, Sweden, Slovenia and United Kingdom

Partners:

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Key Results:

The first steps of the project showed that the problem of potholes is a current topic in all European countries, but still there is no uniform definition. Far more important than the missing definition was the fact that a lot of approaches for the repair of pothole, which don’t ensure durability at all, were and still are very common throughout Europe. Therefore, a list of test methods were developed, which can help to ensure the use of quality material in the future. Based on the study of European techniques, a compilation of different materials and procedures has been made and developed further, taking the analysing of existing trial sites into account. These show an estimated durability if certain materials and procedures are combined. The results of different strategies for pothole repair were shown in a Life Cycle Cost Benefit Analysis.

The guidelines which have been developed based upon all the results of the project can now be easily used by stakeholders which are facing the question which material and procedures should be used for what purpose.

When used and distributed across stakeholders in Europe, the findings, conclusions and compilation, which are collected in the guidelines prepared for this project, can be a huge benefit. Still there are some questions that should be dealt with in future projects and research, e.g. suggested in the following:

No requirements for material properties are existing throughout Europe which makes it very difficult for stakeholders to differentiate and to choose between materials on the market. Also there is no obligatory information which has to be made available by the manufacturer about their materials so far. These topics should be dealt with in national papers in the future. So far the geometry of repaired potholes has not been investigated. Often potholes are repaired as square areas which means the joint is within the direction of the traffic. It is assumed but not yet tested that a square turned 45°degrees (diamond shape) would be advantageous for the durability and maybe also reduce noise.

The geometry of repaired potholes as well as the performance of different materials should be investigated with test sites on a long-term basis.

Documents:

- [Project Description](#)

**STRIA Roadmaps:** Infrastructure

**Transport mode:** Road transport

**Transport sectors:** Passenger transport, Freight transport

**Transport policies:** Safety/Security

**Geo-spatial type:** Other