AllBack2Pave
Toward a sustainable 100% recycling of reclaimed asphalt in road pavements

Research project funded under the CEDR Transnational Road Research Programme

CEDR Call 2012: Recycling - Road construction in a post-fossil fuel society

CEDR Call 2012: Recycling is a Transnational Road Research Programme organised by CEDR (Conference of European Directors of Roads). The funding partners for this programme are Denmark, Finland, Germany, Ireland, Netherlands and Norway.

Details
Acronym: AllBack2Pave
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Co-ordinator: Frohmut Wellner, Dresden University of Technology, Netherlands
Contact: Frohmut.Wellner@tu-dresden.de
Partners: University of Nottingham, UK
University of Palermo, Italy
PEB Project Manager: Rob Hofman, Netherlands

Project summary
To save natural resources it is essential to recycle construction materials in new construction. In the case of road construction, the majority of European roads are paved with asphalt material. The dismantling and end-of-life strategies for these pavements is common practice in many European countries but are very divergent among the European member states and the associated countries relating to the amount of reclaimed asphalt (RA) reused in new pavement layers. In general the share of recycling the RA in new asphalt courses is rather lower than it could be technically. However, the complete reuse of the reclaimed construction materials requires a precise assessment of the properties of the virgin, aged and mixed materials. The current FP7 Re-Road Project is looking at these issues and it has already produced methodologies and tools that will be of primary importance to operate an effective recycling of asphalt pavements in Europe. However, the mechanical characterisation and performance modelling of Re-Road has been performed on hot asphalts mixes for surface courses incorporating a maximum of 30% of RA.

AllBack2Pave is a 2-year transnational project investigating the recycling and multiple recycling of construction materials in road construction: the project will be based on the outputs of the Re-Road project and will evaluate the feasibility of moving towards 100% recycling of asphalt pavements into surface courses using warm-mix technologies. The main objectives of AllBack2Pave are:

1. Collaborate closely with the private sector, asphalt producers, chemical additives producers and waste material managers, in order to define a warm-asphalt mix technology for surface course incorporating as much RA as possible;
2. Perform a wide mechanical characterisation to ensure the development of a technology which maintains a level of performance which does not affect its durability;
3. Develop and end-user manual of the AllBack2Pave technology in order to support stakeholders during the implementation of the investigated technologies for further full-scale trials.

AllBack2Pave will represent a chance for CEDR to develop its own sustainability rating system for road pavements which will take into account results of previous projects (SUNRA) integrated and further developed together with the creators of the sole existing program of this type: GreenRoads (GR) developed by the University of Washington. Therefore, the project will also aim to:
1. Characterise the environmental impact (LCA) and economical impact (LCCA) of the defined technology taking into account the European level of the project and by adapting the study to normal practice in at least UK, Germany and Italy. Studies specific to other countries will be offered, depending on data availability from CEDR members;

2. Collaborate with partners specialised in sustainability assessment of road pavements, in order to define a state-of-the-art on sustainability impact indicators of road pavements and to broadly assess the sustainability of the investigated technology.

AllBack2Pave outputs will be transferred to CEDR and widely disseminated all over Europe.