

## Cement-Bitumen Treated Materials for Cold Recycling of Asphalt Pavements in Italy and Europe

**Andrea Graziani, Ph.D.**

Associate Professor

Università Politecnica delle Marche, Ancona, Italy

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### About the Speaker

Dr. Andrea Graziani is an Associate Professor in the Civil and Environmental Engineering Department at Marche Polytechnic University, Ancona (Italy). He has over 20 years of experience in industry and academia with an emphasis on sustainability of pavement systems, mechanical behavior of pavement materials and airport engineering. Dr. Graziani authored over 60 publications in journals, national and international conferences, and technical reports. He made more than 30 presentations in professional meetings, conferences, and workshops. He participated in several projects funded by Italian and European research Agencies and in Industry-funded projects. Dr. Graziani is a registered professional Engineer in Italy, and a member of the SIIV (Italian Society for Road Infrastructures), and the International Society for Asphalt Pavements. He chairs the RILEM Technical Committee 280-CBE on Multiphase Characterization of cold bitumen emulsion materials. Dr. Graziani is also an associate editor for the International Journal of Pavement Engineering-IJPE.

### About the Talk

Cold recycling has gained the interest of an increasing number of highway Agencies and Contractors worldwide. This is due to the increasing emphasis that is placed on sustainability and reuse of end-of-life products like reclaimed asphalt pavement. Moreover, field applications are showing that cold recycled materials (CRM) are an economically and structurally viable solution for both low- and high-traffic roadways.

CRM are applied following different composition concepts, leading to diverse mechanical behaviors. Bitumen (emulsion or foam) is the main binding agent and often it is used in combination with Portland cement or other chemical additives. However, if Portland cement dosage is greater than about 1%, it has a clear effect on the long-term properties of the mixtures, hence bitumen and cement shall be considered as co-binders and we can use the term Cement-Bitumen Treated Materials.

This presentation will start discussing general concepts on cold recycling techniques and mixtures, and terminology differences among US and Europe. The second part will focus on European applications, presenting the preliminary result of the CRABforOERE project founded by the Conference of European Directors of Roads (CEDR). The last part will outline recent research activities carried out in Italy and focused on the volumetric characterization, curing and mechanical behavior of CBTM mixtures.

**This seminar has been converted to a webinar and is now webcast live to a worldwide audience using Zoom.**

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