WATERLOO ENGINEERING
UNIVERSITY OF WATERLOO
200 University Avenue West, Waterloo, ON, Canada N2L 3G1
519-888-4567 | uwaterloo.ca

CPATT
CENTRE FOR PAVEMENT AND TRANSPORTATION TECHNOLOGY

Seminar hosted by CPATT/Norman W. McLeod Chair

By Dr. Christiane Raab

Senior scientist and leader of the Road Materials and Pavements team at the Road Engineering/Sealing Components Laboratory - EMPA Swiss Federal Laboratories for Materials Science and Technology (Switzerland).

and

Adjunct Research Professor at Carleton University, in Ottawa, Canada.

AGEING BEHAVIOR OF ENERGY REDUCED PAVEMENT

Abstract Nowadays, pavement construction is expected to be more energy efficient and road pavements to be more environmentally and socially friendly. In this context the Swiss Federal Office of Transport FOT, has established a road research program under the title of "Sustainable transport" in order to investigate energy reduced pavements, warm or semi warm pavements concepts allowing to significantly reduce the installation temperature in order to save CO_2 emissions. Although first experiences with these pavement concepts show promising results, there are no long term performance data available and the durability and long term resistance has still to be established. This paper presents results from investigating the ageing behaviour of different energy reduced pavement mixtures. The mixtures were either prepared in the laboratory or taken directly from mixing plant. The study compares the rutting and fatigue behaviour of unaged material in comparison to long term aged material. In order to conduct the long term ageing a special ageing protocol with different heating, cooling and watering cycles had been developed. The investigation revealed a quite controversial rutting behaviour with most aged pavements showing increased rutting while for others reduced rut depths could be found. As op-posed to this finding, fatigue and stiffness of all aged pavement samples compared to unaged samples improved significantly. The overall results lead to the conclusion that the ageing of energy reduced pavement concepts is not very critical and that the application of such pavements therefore provide a good solution for saving CO_2 emissions and prolonging the installation season.

Seminar Details

Location – University of Waterloo, Engineering 2 (E2) 2350
Date/Time – October 3rd, 2016 at 2:30-3:30pm
Visitor Parking: UWP, N, W, X ($5.00 in change)
UW Map for parking and directions - http://uwaterloo.ca/map/index.php
UW parking lot information - https://uwaterloo.ca/parking/lot-information/map
Light refreshments will be served