

Durability & performance – mixtures, binders and pavements

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Durability, a Prerequisite for Sustainable Asphalt Pavements

Concerns about the environment have resulted in ample attention to sustainability issues related to the construction of new roads and the maintenance of existing roads. Life cycle analyses and environmentally friendly contracting therefore more and more attention and it can be expected that it will be common practice in let us say 15 years from now, that environmental issues are going to play a decisive role in the selection of types of materials, types of structures etc etc.

Some people might say that 15 years is a far too conservative estimate and that we should proceed faster. One should however realize that environmental conscious building and maintaining of roads is not only a matter of the pavement industry, it is extremely important that our policy makers develop a clear vision about this and develop policies to promote sustainable pavements to be built.

A very important aspect that should not be overlooked in the sustainability discussion is the fact that pavements also have to be durable. In fact a long life, durable pavement is the first step to sustainability simply because of the fact that optimal use is made of the available resources. When a long life pavement is constructed using recycled materials, the sustainability profile of that pavement will even be better.

The presentation to be given will mainly focus on answering the question whether “sustainable pavements which are also highly durable can be built using recycled materials”. Pavement design issues as well as construction issues as well as material selection and handling issues which are important for obtaining durable pavements will be discussed with emphasis on bituminous binders and asphalt mixtures.



In 1972 André Molenaar obtained his MSc degree in civil engineering at the Delft University of Technology. After finishing his studies he worked as scientific officer at the Chair of Highway Engineering of the Delft University and in 1977 he joined the laboratory for Road and Railroad Research. He obtained his PhD in 1983. In 1985 he was appointed as managing director of Netherlands Pavement Consultants. In 1988 he returned to the Delft University as part-time professor in Highway Engineering. In 1990 he was appointed as full time professor. This was possible thru a substantial subsidy from the Association of Dutch Road Building Contractors. Next to his education and research duties he fulfilled many duties within the university such as vice dean of the faculty of Civil Engineering and Geo Sciences, director of studies, chairman of the Science Committee of the faculty, and chairman of the

Department of Transportation. Currently he is a member of the Board of Doctorates of the University. His duties outside the university comprise of being a chairman of many CROW committees. Next to that he is a member of RILEM committees and is a member of the Association of Asphalt Paving Technologists.

In 2001 he was appointed as visiting professor at the university of Stellenbosch in South Africa and in 2005 he was appointed to a similar position at the Wuhan Technical University in China.