

ACOUSTICS2008/1114
Traffic noise levels after replacing the top of two-layer porous asphalt at Øster Søgade

Jørgen Kragh and Hans Bendtsen
Danish Road Institute/Road Directorate, Guldalderen 12, 2640 Hedehusene, Denmark

In 1999 three different types of two-layer porous asphalt pavement with 5 mm or 8 mm maximum aggregate in the top layer were built in a city street in Copenhagen. A section with dense asphalt concrete was built as a reference. The pavements have been monitored since then.

The initial noise reduction of 6 - 7 dB compared with the noise level at the reference section has vanished over the years due to gradual clogging of the porosities in the pavement.

After 8 years in service the drainage asphalt in the spring of 2007 was worn and raveling had begun. The municipality of Copenhagen decided to have the top layer milled away and replaced by new porous asphalt with 8 mm maximum aggregate. This type had proven most durable, acoustically and structurally.

Noise measurements were carried out in 2007 as part of the SILENCE project, both before and after replacing the top layer. The measurements showed that at two of the test sections most of the initial noise reduction was regained while this was not the case at the one test section that was thinnest (a total of 55 mm while the other were 70 mm and 90 mm, respectively).