

# Questionnaire

## CEN TC 227/Ad Hoc Group - Noise Classification

No.	Question	Agree	Neutral	Disagree
1	<u>European procedure for acoustic characterisation of a material or product</u> Do you think that type approval testing for the acoustically relevant material or product, (e.g. SMA, double layer porous asphalt, surface dressing, exposed aggregate concrete, rubber wearing courses), should be required?	X <sup>1)</sup>		
	Should this be on a laboratory level e.g. for CE marking (ITT, FPC)?		X	
	Should this be on laid materials including number of tests and statistical methods to define a characteristic level?	X		
	Should this be done on new materials or is a method taking into account the ageing of materials necessary? If so, what suggestions do you have to overcome the time problem between introduction of a material and the long time performance?	X <sup>2)</sup> (recurrently on finished layer)		
<b>Remarks</b>	<p><i>Impact of pavement surface on traffic noise (noise emission of pavement) is monitored in terms of the government regulation No 146/2006 Coll., On Public Health Protection where the limits for noise emission are specified within the Czech Republic. Noise indicators have been specified for assessment of traffic noise impact on outdoor area, and these are related to:</i></p> <ul style="list-style-type: none"> <li>– <i>day time – <math>L_{Aeq, 16h}</math> = equivalent level of acoustic pressure specified for all day time long (length 16 hours, from 6 to 22 o'clock)</i></li> <li>– <i>night time – <math>L_{Aeq, 8h}</math> = equivalent level of acoustic pressure specified for all night time long (length 8 hours, from 22 to 6 o'clock)</i></li> </ul> <p><i>The reference type of pavement surface has not been specified for the Czech Republic, as it is in some countries, which could be compared to other types of surface in point of reducing or increasing noise level in dB<sub>A</sub>.</i></p> <p><b>Noise emission of pavements</b> is only a part of mixture characteristics, it is very important how the surface has been produced and dressed (roughening asphalt course using aggregate, washconcrete pavement etc.)</p> <p><i>This is a variable parameter of a pavement which should be followed and assessed in similar way as the texture of the surface, skid-resistance parameters or uneven surface. There is a link between these parameters and pavement noise emission.</i></p> <p><b>1)</b> <i>Not all the areas require surface with reduced noise emission, this parameter is required for intravillas and near-by urban areas. "Product" requirements should be divided at least into two groups „requires reduced noise emission“ and „does not require reduced noise emission“.</i></p> <p><i>If the reduced emission is required thus the parameter for noise level should be standardized. If every type of pavement surface were specified in point of noise</i></p>			

	<p><i>emission, to choose appropriate type of surface which had applied to all requirements including noise emission would do.</i></p> <p><i>Standarts have been implemented for The Czech Republic CSN 73 6121: Road bulding – Asphalt Pavement Courses – Construction and conformity assessment, CSN 73 6122: Road building – Mastic asphalt – Construction and conformity assessment and CSN 73 6123-1: Road Building – Concrete pavements – Part 1: Construction and conformity assessment etc., which among others state requirements for finished course (layer). These standards include requirements for variable parameters of pavements, for example unevenness of surface, texture, skid-resistence. Other standards (CSN) define methods of measuring and assessment of these variable parameters where the focused parameter is assessed in terms of classification scale with degrees from 1 to 5. Each degree applies to the surface condition in a the particular lifetime /new construction, expire of guarantee time, take-up measures time and carry- out measures time).</i></p> <p><i>It is advisable to keep to this procedure within the conditions of the Czech Republic, so it is to implement the standard which describes possible ways of assessing the impact of pavement surface on traffic noise (it may come from the set of the standards ISO 11819) and assessing this parameter (using the scale from 1 to 5). The standards CSN 73 6121, CSN 73 6122, CSN 73 6123-1 and others which apply to finished surface requirements would be amended by the noise parameter.</i></p> <p><i>Aging effect in connection with development of noise emission of pavement surface is more complicated and does not only apply to noise emission. Aging effect should be monitored in the testing areas which are exposed to real traffic load and influenced by climatic effects.</i></p> <p><i>In case of drainage courses as porous asphalt aso.. the requirement for the adequate frequency and maintenance should be met to allow the layer keep the reduced level of noise emission as long as possible. Such requirement is above the scope of standard activity and should be specified in different part, most likely in technical provision for road and pavement maintenance.</i></p>
2	<p>Do you think that the procedures mentioned in question 1 should be described in a European document?</p> <p>Which form should this document have?</p> <p><input checked="" type="checkbox"/> <b>Standard</b></p> <p>€ Technical specification</p> <p>€ Report</p> <p>€ Guideline</p>
<b>Remarks</b>	<p><i>The Standard shall be implemented for measuring of noise emission of pavements.</i></p> <p><i>The Standard shall be implemented for assessing of noise emission of road pavements, in the first step within prospective technical specification.</i></p> <p><i>It is not necessary for the noise requirements to be specified within each product standard (e.g. set of EN 13108), as well as the requirements for texture, unevenness and skid-resistence characteristics of pavement surface..</i></p>

No.	Question	Agree	Neutral	Disagree
3	<u>European procedure for acoustic conformity testing of laid material or product</u>			
	Do you think that an acoustic Conformity of Production test procedure for the noise emission of a wearing course is beneficial?	X		
	Should the conformity of production procedure also include a system for assessing conformity during contract time in addition to acceptance testing?	X		
	Please give your ideas how this should be done (proxy-parameters, noise measurements, etc.)?	<i>single performance indicator based on noise emissions of pavement surfaces measurements</i>		
<b>Remarks</b>	<p><i>It is possible to use variable parameters for assessing of noise emissions of pavement surface – texture and uneven surface, as it is stated in the final report of European project COST 354: Performance Indicators for Road Pavements, from 2008. But for future it is recommended to measure noise emissions on pavement surfaces. The method CPX (Close-Proximity is widely used in the Czech Republic for these purposes in terms of arranged standard ISO 11819-2.</i></p> <p><i>If the method CPX is used, the surface pavement characteristics are measured and the results are not influenced by noise propagation in the environment. Measuring data could be meaned after every 20m and could be assessed using the scale from 1 to 5 or be related to noise level which applies to the specified reference surface.</i></p> <p><i>Noise emission of pavement surface should be tested in regular intervals and the results should be recorded with other variable parameters of road surface in the Road database. (Database for road management purposes)</i></p>			
4	<p>Do you think that the procedures mentioned in question 3 should be described in a European document?</p> <p>Which form should this document have?</p> <p><input checked="" type="checkbox"/> <b>Standard</b></p> <p>€ Technical specification</p> <p>€ Report</p> <p>€ Guideline</p>			
<b>Remarks</b>	<p><i>Measuring of noise emission of road pavement surfaces for wearing course classification purposes could be provided according to arranged standard ISO 11819-2.</i></p> <p><i>Requirements for evrery single surface from the noise emission point should be dealt with guideline. Different countries will make different demands. Even if the demands are different the method of measuring and assessment of noise emission of pavement should be the same and comparable.</i></p>			

No.	Question	Agree	Neutral	Disagree
5	<p><u>European procedure for acoustic testing (monitoring) of a <b>network</b></u></p> <p>Do you think that a procedure for the acoustic monitoring of a network is beneficial?</p>	X		
	<p>Is there a need for the introduction of a European procedure for acoustic properties in an asset management system?</p>	X		
	<p>Please give your ideas how this should be done (proxy-parameters, noise measurements, etc.)?</p>	<i>single performance indicator based on measuring of noise emissions of road pavements surfaces</i>		
<b>Remarks</b>	<p><i>The best method for measuring of the noise emission of road pavements is dynamic method (CPX: Close-Proximity, according to arranged standard ISO 11819-2) and static method (SPB: Statistical Pass-By, according to standard EN ISO 11819-1) which is recommended in Annex C from the final report of the European project SILVIA: Sustainable road surfaces for tradic noise control, from year 2006 (marked as classification method - Label 1).</i></p> <p><i>Measuring should be carried out in the regular intervals <u>on the pavement surfaces, which are marked as reduced-noise</u> (where the reducing of noise emission is required) The outputs of the measuring would be recorded in Road Database (database for road management purposes).</i></p>			
6	<p>Do you think that the procedures mentioned in question 5 should be described in a European document?</p> <p>Which form should this document have?</p> <p>€ Standard</p> <p>€ Technical specification</p> <p>€ Report</p> <p><input checked="" type="checkbox"/> <b>Guideline</b></p>			
<b>Remarks</b>	<p><i>Methods of measuring (combination of CPX and SPB) and working out the outputs should be dealt with the guideline.</i></p>			