

11 June 2009

Kiri Cook-Green
Standards New Zealand
Private Bag 2439
WELLINGTON 6140

Dear Kiri

SUBMISSION ON: DZ6808 – ACOUSTICS – ROAD TRAFFIC NOISE – NEW AND ALTERED ROADS

CCANZ

The Cement and Concrete Association of New Zealand (CCANZ) represents a membership in excess of 300 corporates and individuals who collectively account for a significant proportion of the building and construction sector in New Zealand.

The cement and concrete industry annually produces and uses 1.5 million tonnes of cement in New Zealand, which equates to around 3.75 million cubic metres of concrete for new residential, non-residential and commercial construction. In total, the direct, indirect and induced economic impact of the cement and concrete industry resulted in close to \$7.5 billion of output across the economy in the year to March 2006. This activity supported more than 24,000 jobs and created a value add of about \$2.8 billion – 2 percent of New Zealand's GDP in 2006.

In line with our mandate as representative of the cement and concrete industry, CCANZ has prepared this submission in response to the *Public comment draft: DZ6806/V1.14 Acoustics – Road traffic noise – New and altered roads*.

General Comment

The Cement and Concrete Association of New Zealand (CCANZ) is concerned that reference in the Draft Standard and its appendices to road surfaces is confined to various classes of bituminous/ asphalt mixes and chip seal over bitumen layers. No mention is made of Portland cement concrete (PCC), which is a widely used and accepted pavement material in other countries, and is an option in the *Austrroads Pavement Design – A Guide to the Structural Design of Road Pavements* manual (and the *New Zealand Supplement*).

In this regard, it is observed that a significant amount of research has been undertaken internationally on reducing the noise generated by traffic on PCC pavements. This has involved imparting a specific texture to the road surface and constructing joints in the pavement material according to specified design parameters. This research has shown that significant reductions in traffic noise

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generation is achievable, and that appropriate experience and technology is available to construct PCC road surfaces that meet or exceed the acoustic performance of bituminous material surfaces.

A further material advantage in the use of PCC pavements is their longevity and durability compared to bituminous material road surfaces. These characteristics of PCC pavement surfaces, along with appropriate texture, are an important consideration when evaluating the on-going noise reduction performance of road surfaces. This issue is commonly referred to as ‘acoustic durability’.

CCANZ is, for these reasons, concerned to ensure that the potential use of concrete road paving material is not perceived to be excluded from use by the omission of reference to it in NZS 6806 and its appendices.

CCANZ is also concerned that the information provided in the Appendix D: table does not include, for example, a diamond ground PCC pavement as a *Low noise road surface* in the *Noise mitigation category*. In addition, the table does not take into account the acoustic rating of the different noise barrier materials; and that the indicative costs are NOT based on costs that have been determined over a *design* period as set out in the New Zealand Transport Agency’s Economic Evaluation Manual (EEM).

In order to remedy these concerns, the following proposed ‘specific comments’, and ‘recommended changes’ are submitted for consideration.

Specific Comments

Clause/Paragraph/ Figure/Table No.	Page No.	Recommended Changes and Reason
3.3.1	26	<ul style="list-style-type: none"> ▪ Insert in the last sentence in the penultimate line of this paragraph, after the word ‘type’, the words “<i>and condition</i>”. ▪ Add to the end of this paragraph the following sentence: <i>“The deterioration of a low-noise road surface over time and with use can result in a reduction of its acoustic performance with a subsequent increase in the generation traffic noise.”</i> <p>Reason: OGPA surfaces become blocked, and like SMA and other bituminous material surfaces, are prone to rutting over time, with a subsequent deterioration in acoustic performance. PCC road surfaces do not experience this deterioration to the same degree.</p>
8.1.1	41	<p>Low noise road surfaces</p> <p>The reference to ‘longevity’ in this paragraph is supported and its retention is sought.</p> <p>Reason: Concrete road surfaces have a significantly longer life span than bituminous road surfaces.</p>

New Clause 8.1.1.3	42	<p>Insert the following new clause after 8.1.1.2:</p> <p><i>“In the case of low-noise road surfaces, these should be designed to retain their noise reducing characteristics for the longest period which can be achieved by practicable means, taking all relevant factors in to consideration.</i></p> <p><i>Where compliance with the criteria of this standard is dependant on the on-going acoustic performance of a low-noise road surface, a monitoring regime shall be established for the purpose of determining the acoustic performance of the road surface up to the design year, and the subsequent compliance with the relevant noise criterion.”</i></p> <p>Reason: Low-noise textured concrete road surfaces do not become blocked or deteriorate as quickly as OGPA surfaces. The provisions of the Standard should recognise this advantage.</p>
Appendix B	48	<p>At the end of the first sentence after the words ‘from this standard’, the following insertion is sought:</p> <p><i>“The following worked examples are based on actual projects undertaken recently in New Zealand and as a result refer to the road surface material used in those projects. It should be understood that PCC road pavements material can potentially satisfy the various requirements, including noise generation, of road construction.”</i></p> <p>Reason: CCANZ is concerned to ensure that rigid (PCC) road pavements are not seen to be excluded by omitting reference to them.</p>
Appendix C – Approaches to Noise Management Low Noise Road Surfaces	75	<p>Immediately below the table headed – ‘Average Noise Level (dB)’ – the insertion of the following phrase, or words to similar effect, is sought:</p> <p><i>“It should be understood that the above road surfaces are utilised as examples only and that other pavement material such as concrete can be used. In the case of PCC the utilisation of different surface textures will result in the generation of varying noise levels as for bituminous and chip seal surfaces referred to in the table.”</i></p> <p>Reason: As above</p>
Appendix C – Approaches to Noise Management Low Noise Road Surfaces	75	<p>At the end of the third paragraph after the words ‘AC type surfaces’, the insertion of the following, or words to similar effect:</p> <p><i>“Other types of road surface such as concrete could also be utilised.”</i></p> <p>Reason: As above</p>

Appendix C – Approaches to Noise Management Low Noise Road Surfaces	75	<p>The reference in the last line on this page to 'longevity' is supported and its retention sought.</p> <p>Reason: PCC road surfaces have a significantly longer life span than bituminous road surfaces and it is appropriate for this factor to be taken into consideration.</p>
Appendix D Noise Mitigation Benefit – Cost Analysis	87	<p>D5 Penultimate paragraph, first line: change Table F1 to Table D3,</p> <p>Reason: There is no Table F1. (Typo?)</p>
Appendix D	88	<p>Table D3</p> <p>Either the table should be deleted (CCANZ's preference), or it should include prices for diamond grinding PCC pavement surfaces.</p> <p>Moreover, it should be stressed that the indicative costs are up-front (capital) costs and are NOT based on the design life costs, over a fixed period, which have been computed in accordance with the NZTA's <i>Economic Evaluation Manual</i>.</p> <p>Finally, the table should include the relative effectiveness of each material type of noise barrier.</p> <p>Reason: At present the table does not contain sufficient information to make an informed engineering/ cost comparison judgement.</p>

We trust that the above comments and recommendations are appropriate for consideration and adoption in NZS 6806. However, please do not hesitate to contact us if we can be of any further assistance or if you should have any queries or require additional information.

Thank you.

Yours sincerely



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