



4 October 2013

(Sent by email to: colin.blair@standards.org.au)

Mr Colin Blair  
Chief Executive Officer  
Standards Australia  
Level 10  
20 Bridge Street  
SYDNEY NSW 2000

Dear Mr Blair

**Re: Request for Standards Australia to provide legal advice to LG-002 on Australian international trade obligations in the context of AS/NZS 1158 Part 6 review**

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I am writing to you in the context of the current review of AS/NZS 1158 Lighting for Roads & Public Spaces Part 6: Luminaires, to encourage Standards Australia to provide appropriate legal input to your lighting committee, LG-002, on whether the scope and detail of AS/NZS 1158 Part 6 meets Australian international trade obligations.

The Southern Sydney Regional Organisation of Councils (SSROC) has made a detailed submission to the important review of AS/NZS 1158 Part 6 on behalf of the 35 Councils in its Street Lighting Improvement Program. These Councils collectively encompass over 230,000 street lights in Sydney, the Central Coast and Hunter regions of NSW.

The introduction of many internationally supplied LED luminaires represents a significant change from the recent history of roadway lighting in Australia. Councils in the SSROC SLI Program are the first in Australia to have come to agreement with their utility on the widespread deployment of LED luminaires. The review of AS/NZS 1158 Part 6 is viewed as vital in this context as the Standard currently prohibits a variety of emerging street lighting technologies, including LEDs, through omission.

SSROC is aware of a 31 July 2013 letter to you from Citelum Managing Director ANZ, Adam Carey, that raised concerns that AS/NZS 1158 Part 6 may not be consistent with Australia's international trade agreements and specifically, that Part 6 creates inappropriate barriers to trade for international LED suppliers.

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Similar concerns have been expressed to the SSROC SLI Program by leading international LED roadway lighting suppliers in recent months. They have expressed the view that requirements in Part 6 that are not aligned with international Standards, trade-restrictive and inappropriately prescriptive in nature rather than being performance-based and substantiated by evidence.

I note, in this context, that compliance with AS/NZS 1158 Part 6 is legally mandated or effectively mandatory under a variety of Public Lighting Codes and similar instruments around Australia. Non-compliance with Part 6 can have the effect of permanently excluding suppliers from being able to tender on the great majority of utility supply contracts. Fourteen Australian utilities own and manage more than 90% of Australian public lighting on behalf of the local governments that pay for the service.

Councils, the ultimate customer for the vast majority of public lighting, want to ensure that only quality lighting products are adopted in Australia. However, it is not in Councils' interests to have good quality international product unnecessarily excluded from consideration. Such exclusion is likely to reduce choice and increase costs.

SSROC notes that legal questions about international trade obligations are not reasonably within the expertise of LG-002 members and would encourage Standards Australia to provide a clear legal opinion to LG-002 members and the road lighting community as to whether AS/NZS 1158 Part 6 and any proposed changes to both its scope and detail, meets Australia's international trade obligations.

Should you have any questions about this matter, please feel free to contact me on 02 9330 6455 or at [an@ssroc.nsw.gov.au](mailto:an@ssroc.nsw.gov.au)

Yours sincerely



Alan Northey  
**General Manager**  
**Southern Sydney Regional Organisation of Councils**

## Detailed SSROC SLI Program Submission to Standards Australia on AS/NZS 1158 Part 6 review

*Section	*Section Identifier	Paragraph/ table/ figure/ commentary/ note	*Comment Type	*Page No	*Comment Detail	*Proposed Change
Clause	1.1		General	6	<p>The Southern Sydney Regional Organisation of Councils (SSROC) makes this submission on behalf of the 35 councils in its Street Lighting Improvement Program. These councils collectively encompass over 230,000 roadway luminaires.</p> <p>Councils in the Program are the first in Australia to have come to agreement with their utility on the widespread deployment of LED luminaires. The review of AS/NZS 1158 Part 6 is viewed as vital in this context.</p> <p>The introduction of many internationally supplied LED luminaires represents a significant change from the recent history of roadway lighting in Australia.</p> <p>SSROC is aware of a 31 July 2013 letter to Standards Australia CEO, Colin Blair, from Citelum Managing Director ANZ, Adam Carey, that raised concerns that AS/NZS 1158 Part 6 may not be consistent with Australia's international trade agreements and specifically, that Part 6 creates inappropriate barriers to trade for international LED suppliers. Similar concerns have been expressed to the SSROC SLI Program by international LED suppliers, most notably about requirements in Part 6 that are viewed as prescriptive in nature rather than being performance-based and substantiated by evidence.</p> <p>Councils want to ensure that only quality lighting products are adopted in Australia. However, it is not in councils' interests to have good quality international product unnecessarily excluded from consideration. Such exclusion is likely to reduce choice and increase costs.</p>	Seek Standards Australia input on whether scope and detail of AS/NZS 1158 Part 6 meet Australian international trade obligations (per letter from Citeum Australia to Standards Australia of 31 July 2013).

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					SSROC notes that legal questions about international trade obligations are not reasonably within the expertise of LG-002 members and would encourage Standards Australia to provide a clear opinion to LG-002 members and the lighting community on whether AS/NZS 1158 Part 6, in both its scope and detail, meets Australia's international trade obligations.	
Clause	2.2.1	Paragraph 3	General	10	<p>Paragraph 3 states .... <i>"Note: SSL luminaires without a supplementary visor will typically have an irregular surface and will be more likely to retain dirt and other foreign object compared with smooth regular surfaces."</i></p> <p>This statement does not appear to be correct as a number of LED luminaires have been presented to the SSROC SLI Program that do NOT have a traditional drop-bowl visor but nonetheless have a smooth surface in front of the LEDs that appears unlikely to be able to accumulate dirt or cobwebs.</p> <p>There does not appear to be any supporting evidence that approaches other than an external drop-bowl visor are more likely to attract and retain dirt. While complex underside geometries to a luminaire may indeed be problematic, that does not suggest that a drop-bowl visor is the only possible approach.</p> <p>Of specific note are widespread and successful deployment of flat-glass luminaires in Europe and a deployment internationally of LED luminaires with fully-encapsulated LED optical modules (eg with no edges or other features where spiders could adhere to or where dirt is likely to accumulate).</p> <p>While phrased as informative text, it should be recognised that this paragraph may have substantive commercial implications and, depending on how the words "supplementary visor" are interpreted, may be used as a basis to dramatically limit product choice</p>	Delete Paragraph

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					and hence, result in increased costs.	
Clause	2.3.1		Technical	11	<p>This section implicitly assumes that all luminaires will be made from cast aluminium alloys. This is not necessarily the case with LED luminaires as some luminaires that are widely deployed internationally use extruded aluminium bodies in part or whole.</p> <p>It should be noted that extruded aluminium is a better heat conductor than cast aluminium due to the higher density and lower porosity of extruded aluminium. Additionally, the corrosion resistance of marine grade anodised aluminium (50 micron depth) is very good. It's exclusion by omission therefore seems inappropriate.</p>	<p>Revise text in accordance to accept extruded aluminium as a legitimate and effective luminaire body material.</p> <p>See below. Recommended clause in Appendix A A2 Body Material p38.</p>
Clause	2.3.1	Line 2	General	11	<p>The text states.... <i>"shall be of aluminium alloy complying with AS1874....."</i></p> <p>Requiring compliance with an Australian Standard only forces international suppliers (that may have compliance with the appropriate chemical composition and compliance with an equivalent international standard) to have luminaire body materials re-tested to Australian Standards. This creates additional costs and provides no additional advantage and is a non-tariff barrier to trade.</p>	<p>Add.... <i>"shall be of aluminium alloy complying with AS1874 or other recognised national or international standard with the same or lower Cu content requirements...."</i></p>
Clause	2.3.1	Paragraph 2, sentence 3.	Technical	11	<p>The text states.... <i>"Nonetheless, the use of material other than cast aluminium may reduce the luminaire's life by a significant extent."</i></p> <p>This statement is not valid in the context of LED luminaires made from extruded aluminium finished with marine grade anodising.</p>	Delete sentence
Clause	3.11		Technical	24	With many LED luminaires becoming smaller and more compact, the physical space to accommodate accessories such as photoelectric cell bases and	<p>Add....</p> <p>3.11.1 Base Type</p> <p>(c) Non-socketed 20mm mounting hole MiniCell</p>

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					<p>switches can be problematic.</p> <p>Some LED luminaires use European-type MiniCell direct mounted photoelectric switches rather than NEMA or D2 socketed bases.</p> <p>The Standard is currently silent on MiniCell (20mm dia fixing hole) photoelectric cell switches. As the format of the standard is "prescriptive" (rather than "performance") permissible technologies are indicated "by inclusion" and the converse is indicated "by omission". Thus the omission of MiniCell photoelectric cell switches implies that these are not permitted.</p> <p>Add note that clarifies the situation and indicates that MiniCells are permitted.</p>	photoelectric cell switches may be used as an alternative to socket base type photoelectric cell switches
Clause	3.11		Technical	24	<p>There has been much recent activity and international Standards evolution in the area of NEMA/ANSI photocell receptacles specifically prompted by LED and CMS developments.</p> <p>The updated 7-contact receptacle is designated ANSI C136.41 Standard will shortly supersede the existing ANSI C136.10 and will allow for significant CMS capability in LED luminaires.</p> <p>The US ANSI standards committee successfully balloted this update last month and it will be approved on 21 October 2013 (eg well prior to issuance of any revisions to AS/NZS 1158 Part 6).</p> <p>The suggested text adjacent is taken from text by the California Department of Transportation (Caltrans) Reference: <a href="http://www.dot.ca.gov/hq/esc/ttsb/electrical/pdf/PURCHASE%20SPECIFICATION.pdf">http://www.dot.ca.gov/hq/esc/ttsb/electrical/pdf/PURCHASE%20SPECIFICATION.pdf</a></p>	<p>Remove - (b) A "NEMA" pattern photocell socket complying with BS5972 or ANSI C136.10.</p> <p>Add - (b) A NEMA pattern photocell receptacle conforming with BS5972 or ANSI C136.10. A rain tight shorting cap must be provided and installed.</p> <p>When available, an ANSI C136.41 2013 compliant, locking type photocontrol receptacle with dimming connections shall be furnished in place of the ANSI C136.10 compliant receptacle.</p>

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					<p>As the format of Part 6 is prescriptive rather than performance-based, permissible technologies are indicated by inclusion and the converse is indicated by omission. Thus the omission of reference to ANSI C136.41 receptacles implies that these are not permitted. Without the suggested change, Part 6 will be somewhat obsolete before it is issued.</p> <p>As many of the internationally available LED luminaires are made in or for the USA, the omission of reference to ANSI C136.41 would preclude from many otherwise appropriate sourcing options and may place an unnecessary barrier in the way of adoption of compatible CMS systems.</p>	
Appendix	A2		Technical	38	<p>Extruded aluminium is not considered in the existing text.</p> <p>This section implicitly assumes that all luminaires will be made from cast aluminium alloys. This is not necessarily the case with LED luminaires as some internationally and nationally widely deployed luminaires use extruded aluminium bodies in part or whole.</p> <p>Aluminium extrusions are better heat conductors than aluminium castings due to lower component porosity.</p>	Add .....(d) <i>suitable grades of extruded aluminium with corrosion protective anodised surface treatment.</i>
Appendix	A5.3		Technical	40	<p>The text states...  <i>"The drawback is a shorter service life compared to magnetic control gear, which is expected to survive the life of the luminaire, electronic control gear has to be considered a consumable part"</i>.</p> <p>The tone in the text of the draft standard may not represent the actual status of current LED power supplies, some of which are now designed to have a lifetime service rating exceeding 100,000 hours. In</p>	Delete this paragraph or change to...."may need to be considered a consumable part".

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					short, it is unclear that LED power supplies “....need to be considered a consumable part”.	
Appendix	A6.4.1	Paragraph 1	Technical	44	<p>The text states.... “SSL is a new light source with <b>apparently</b> good potential for road lighting application”.</p> <p>This wording is too dismissive of LEDs when there are now many successful LED applications worldwide.</p>	Change to ....”SSL is a new light source with good potential for road lighting application”.
Appendix	A6.4.1	Paragraph 3	Technical	44	<p>Paragraph 3, Line 1.</p> <p>The text states ..... “Use of SSL luminaires with <b>high blue</b> content of light sources is of great concern to astronomers”.</p> <p>The term “blue-rich” should be used as this is the internationally accepted term and the term “spectral” should be added as the original sentence requires clarification.</p> <p>Also of concern are the environment effects of blue-rich light as short wavelengths attract more insects and more generally, disrupt the migratory, feeding and sleeping patterns of many species. This has a detrimental effect on the species themselves but also results in dirtier luminaires.</p> <p>There is also now growing evidence about detrimental effects on human health from blue-rich lighting including with respect to circadian rhythm disruption and breast &amp; prostate cancer.</p> <p>A recent paper presented to the IESNA by Dr Travis Longcore highlighted blue-rich lighting of less than 540 nm as the worst for the night sky, wildlife and human health.</p>	Change to ...“Use of SSL luminaires with blue-rich spectral content is of great concern to astronomers and of environmental concern. Limiting light of 540nm or less should be considered to reduce the adverse astronomical, environmental and health effects of public lighting”.

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					<p>Prominent researchers are now calling for lighting below this level to be dramatically limited or banned as per this quote from a prominent peer-reviewed journal:</p> <p>“We recommend a total ban of the outdoor emission of light at wavelengths shorter than 540 nm to reduce the adverse health effects of decreased melatonin production and circadian rhythm disruption in humans and animals.” Falchi et al. 2011, <i>Journal of Environmental Management</i></p> <p>Language in the Standard that facilitates a progressive move to LEDs of a more amber colour (eg 3000K or less) but still with reasonable colour rendition would not only address astronomical, environmental and health concerns but would also fit with human preference for warm colour temperatures at the low light levels found on most roads (see empirically-derived Kruithof Curve).</p> <p>The use of high colour temperature full-spectrum white light might be more appropriately limited to CBDs and night-time entertainment precincts.</p>	
Appendix	A6.4.2	Line 1	Technical	44	<p>The text states.... “<i>The lightsource of a SSL lamped luminaire will generally be a <b>horizontal</b> panel or module comprising an array of SSLs.</i>”</p> <p>LED luminaires are available in many configurations and form factors with much evolution still taking place with this technology. The LED modules may be configured in vertical, inwards or outward orientation, in a curved or horizontal manner. The prescription of one particular geometric configuration is technically restrictive and appears trade restrictive.</p>	<p>a) Delete “horizontal”.</p> <p>b) Or, delete whole sentence (preferred)</p>

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					Notwithstanding that this section is nominally informative, in reality this paragraph has substantive commercial implications and is likely to limit the product choices that are on offer to LED luminaire purchasers in the ANZ region and thus may impact negatively on available options and on procurement economics.	
Appendix	A6.4.3.5	Paragraph 1, sentence 2.	Technical	45	<p>The text states... <i>“The use of visors can limit the impact of some of these issues”</i>.</p> <p>This paragraph is insufficiently supported by credible research evidence or structured and broad based experiential evidence on the performance of external visors in extending cleaning cycles across a range of applications and a range of territories.</p> <p>While complex underside geometries to a luminaire may indeed be problematic, that does not suggest that a drop-bowl visor is the only possible approach.</p> <p>Of specific note are widespread and successful deployment of flat-glass luminaires in Europe and a deployment internationally of LED luminaires with fully-encapsulated LED optical modules (eg with no edges or other features where spiders could adhere to or where dirt is likely to accumulate).</p> <p>The use of external visors on LED luminaires is not common internationally and the vast majority of LED luminaires do not have external visors or offer the option of external visors. Thus, the recommendation on the use of external visors is both technically restrictive and appears trade restrictive.</p> <p>This paragraph has substantive commercial implications and is likely to severely limit the product choices that are on offer to LED luminaire purchasers and thus may impact negatively on available options and on procurement economics</p>	Either a) Delete this paragraph entirely (preferred) Or b) change “can” to “may” (acceptable)

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Appendix	A6.4.3.5	Paragraph 2, Line 2.	Technical	45	<p>The text states .... <i>“however, this may not be the case for SSL luminaires without visors”</i>.</p> <p>There is no research evidence to support this assertion. Refer paragraphs above on restrictive technical and trade issues.</p>	Delete entire sentence
Appendix	A6.4.3.5	Paragraph 3,	Technical	45	<p>This paragraph is internally contradictory. The first sentence advocates one position but the third sentence takes an opposing position. This paragraph provides no actual guidance and thus should be deleted.</p>	Delete entire paragraph.
Appendix	A6.4.3.5	Paragraph 4,	Technical	45	<p>The text states..... <i>“It is not possible at this time to make general assumptions about the way in which the build-up of external dirt affects lumen depreciation; this problem and the surrounding issues, should be considered for each specific application”</i>.</p> <p>If it is not possible to make general assumptions about this subject, it is unclear why are the three preceding paragraphs are attempting to do just that. This paragraph should be deleted.</p>	Delete entire paragraph