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bre

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Our Ref. 8063-123637 (AU)

To whom it may concern

Assessment of Aurora downlights

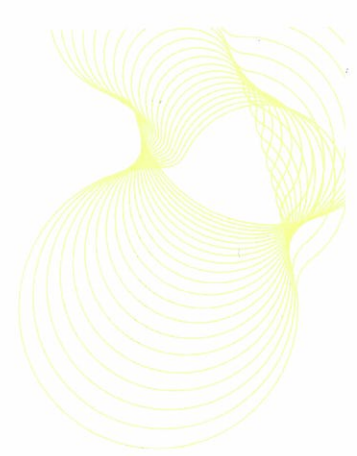
This letter contains our assessment of the effect of installing the downlights listed in Table 3 on the acoustic performance of a Robust Details Limited (RDL) Appendix F floor. For downlights to be acceptable for use in RDL timber separating floors, neither the airborne or impact sound insulation of the RDL Appendix F floor must be reduced by more than 1 dB when at least one downlight is installed for every two square metres of Appendix F floor ceiling.

Our assessment is based on:

- the test data contained in BRE test report number 249938, Airborne & Impact Sound Insulation Measurements in Accordance with Robust Details Part E; Appendix F with AU-T222 Downlights;
- *the information provided by Laurence K Kovacs in e-mail correspondence dated 6 October 2008 and included in the appendix to this letter;*
- the sound insulation performance criteria in Appendix F of Robust Details Part E, Resistance to the passage of sound;
- BRE's experience of testing downlights in accordance with the method described in Appendix F of Robust Details Part E, Resistance to the passage of sound.

The information provided on the products tested at BRE (BRE test report number 249938) is given in Table 1. The sound insulation data and the test numbers are given in Table 2. All the tests

Tests L208-031 and L208-032 were conducted on a Robust Details Limited (RDL) Appendix F floor with no downlights in the floor's ceiling.



Tests L208-033 and L208-034 were conducted on the same floor with NINE AU-T222Cast Aluminium adjustable low energy downlights installed in the ceiling of the same floor.

Tests L208-035 and L208-0364 were conducted with EIGHTEEN AU-T222downlights installed in the ceiling.

The area of the ceiling was 17.6 m².

Table 1: data supplied for product tested at BRE

Product reference	Type of downlight	Weight* (g)	Required hole diameter (mm)	Can height (mm)
AU-T222	Aluminium; adjustable	670	125	97

*Weight with 7 W fluorescent lamp fitted

Table 2: results from BRE test report number 225491 and comparison with the Robust Details criteria

Downlights installed	BRE UKAS Test number	$R_w + C_{tr}$ (dB)	$L_{n,w}$ (dB)	Test 2 - Test 1 (dB)	Test 3 - Test 4 (dB)
None	L208-031	32			
	L208-032		78		
AU-T222	L208-033 ¹	31		31-32 = -1	
	L208-034 ¹		78		78-78 = 0
AU-T222	L208-035 ²	31		31-32 = -1	
	L208-036 ²		78		78-78 = 0

¹ NINE downlights installed in ceiling

² EIGHTEEN downlights installed in ceiling

The RDL sound insulation criterion for downlights used in RDL floors is that when a type of downlight is installed in a RDL Appendix F floor with 1 downlight per 2 m² of ceiling area, neither airborne nor impact sound insulation should be reduced by more than 1 dB.

Examination of Table 2 shows that the AU-T222downlight RDL performance criterion was achieved with 1 downlight per 2 m² and 1 downlight per 1 m² of ceiling area.

Table 3 contains the product descriptors for the downlights assessed in this letter along with their weights without bulbs, hole cut out diameters and can heights.

- The maximum hole diameter required for installation is 115 mm.
- The weights of the downlights range from 325 g to 600 g.
- The can heights range from 80 mm to 129 mm.

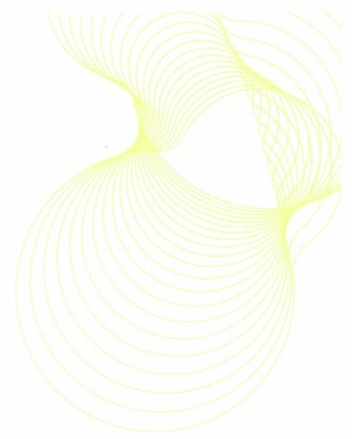


Table 3: data supplied for products assessed

Product reference	Weight (g)	Cut out diameter (mm)	Can height (mm)
AU-DLM841	325	90	103
HA-DLM821	325	90	103
AU-DLM842	400	100	110
HA-DLM822	400	100	110
AU-DLT221	575	115	94
AU-DLT225	600	115	90
AU-LPF640	550	98	129
AU-LPF650	550	98	129
AU-DLH921	350	75	89
AU-DLH922	400	85	93
AU-DLL971	350	65	80
AU-DLM961	350	65	80
AU-DLL972	375	80	80
AU-DLM962	375	80	80

- The AU-T222downlights require a larger hole cut out than any of the downlights assessed.
- The required Robust Details Limited sound insulation performance was achieved with 1 downlight per 2 m² of ceiling area and with 1 downlight per 1 m² of ceiling area.

Therefore, in our opinion; if the downlights listed in Table 3 were tested in as described in Appendix F of Robust Details Part E, the performance specified in F.4 of Appendix F would be achieved.

Yours sincerely, for and on behalf of BRE

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