



# Acoustic Plus & Dual Bloc Ceiling Tiles

## - Green Building Summary Sheet -



<b>Product Name</b>	<b>Acoustic Plus Ceiling Tiles (15/25/50mm) and Dual Bloc (35/60mm)</b>
<b>Document Type</b>	Green Building Rating Compatibility Analysis
<b>Document Code</b>	ES-GSNZ-21-101a
<b>Client</b>	<b>Ecoplus Systems</b>

The Acoustic Plus Sound Absorber ceiling tile (1200mmx60mm) in 15mm or 25mm thick provide a high level of sound absorption & control of background noise levels. They have been tested and measured by Auckland University Acoustic Services and have the following NRC values: 0.85 (AP 15mm), 0.90 (AP 25mm); 0.95 (AP 50mm), 0.70 (DB 35mm), and 0.90 (DB 60mm)



Green Star Design & As Built NZ (V1)	Credit 10	Contribution Potential
	Credit 11	1 point
Green Star Interiors NZ (V1)	Credit 9	Contribution Potential
	Credit 10	1 point



Homestar V5	HC 6	0.5 Points (terrace / apartments only)
Homestar V4	EHC 9	1 Point (detached homes) / 0.5 pts (terrace / apts)

Manner in which the product may contribute towards points	Legend of Symbols in EnviroSpec
Products must meet specific criteria (e.g. Paint VOC emissions, carpets, etc)	✓
Products may help achieve points by their very nature, if they are specified and installed (e.g. bicycle racks)	●
Products may help achieve an outcome but they must be used in a specific manner (e.g. lighting control and zoning systems) OR The nominated product(s) can contribute towards the outcome but many other products or factor influence that same outcome (E.g. Potable Water Calculator)	○

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Rating Tool	Credit / category	Points available	Requirements	Contribution symbol	Contribution Potential	Details of compliance
Green Star Design & As Built NZ (V1)	Credit 10	3	<p><b>10.1 Internal Noise Levels</b> - 1 point is awarded where internal ambient noise levels are no more than 5dB(A) above the lower figure in the range recommended in Table 1 of AS/NZS2107:2016. (Noise measurement must account for all internal and external noise including building services equipment, outdoor sources such as traffic, and (where known) noise from industrial process. Occupancy noise is excluded.)</p> <p><b>10.2 Reverberation</b> - 1 point is awarded where the reverberation time is below the maximum stated in Table 1 of AS/NZ 2107:2016, ensuring reverberation time equivalent to or lower than the reverberation time predicted for treating at least 50% of the combined floor and ceiling area with a material having a noise reduction coefficient (NRC) of at least 0.5. Dedicated teaching spaces must have reverberation times in the lower half of the range specified in Table 1 of AS/NZS 2107:2016.</p> <p><b>10.3 Acoustic Separation</b> - 1 point is available where nominated enclosed spaces minimise crosstalk between rooms, and between rooms and open areas. This can be achieved through either:</p> <ul style="list-style-type: none"> <li>- Fixed or glazed partitions without a door between spaces should achieve a weighted sound reduction index (Rw) of at least 45 (and at least 35 for all partition types that contain a door).</li> <li>- The sound insulation between enclosed spaces complies with <math>D_w + LA_{eqT} &gt; 75</math>. Measurements must be based on finished rooms, accounting for any carpets and acoustically absorbent ceilings specified. The measurements can be conducted in either furnished or unfurnished spaces.</li> <li>- For residential components, the inter-tenancy walls, floors and doors must achieve nominated noise isolation standards (refer to Greenstar NZ submission guidelines for full details)</li> </ul>	✓	1 point	<p>The nominated product(s) comply with the requirements of 10.2 as they have an NRC 0.85 (15mm panel) and NRC 0.90 (25mm panel), thus allowing to claim 1 point provided at least 50% of the combined floor and ceiling area is above NRC 0.5</p> <p>The nominated product(s) can furthermore assist towards achieving compliance in 10.1 and 10.3. <i>Note: achieving the points here depends on the combination of floor, ceiling and walls achieving the targeted outcomes and must be measured by an Acoustic Engineer.</i></p>
	Credit 11	3	<p>This credit rewards well-lit spaces that provide a high degree of comfort to users.</p> <p><b>11.1 Minimum Lighting Comfort</b> -It is a mandatory minimum requirement of this credit that lights in the nominated area are flicker-free and accurately address the perception of colour in the space.</p> <p><b>11.2 General Illuminance and Glare Reduction</b> - 1 point is available where Glare is eliminated in the nominated area and lighting levels and quality comply with best practice Guidelines.</p> <p><b>11.3 Surface Illuminance</b> - 1 point is available where a combination of lighting and surfaces improve uniformity of lighting to give visual interest in the nominated area. The prescriptive compliance pathway is to ensure 95% of the spaces in the nominated area have a surface reflectance for ceilings of at least 0.75, and that lighting be designed to ensure the ceiling area has an average surface illuminance of at least 30% of the lighting levels on the working plane (alternatively a performance pathway is also available – Ref Green Star NZ Submission Guidelines)</p> <p><b>11.4 Localised Lighting Control</b> - 1 point is available where; in the nominated area, occupants have the ability to control the lighting in their immediate environment.</p>	✓	1 point	<p>In accordance with the Green Star NZ submission guidelines, a surface reflectance value of 0.75 corresponds to a matte flat white ceiling. As such, the nominated product(s) can be deemed to comply when the white option is installed.</p> <p><i>Note: achieving full compliance for 11.3 further requires the design team to ensure &gt; 95% of the nominated area are compliant and ensure the lighting design also complies.</i></p>

Rating Tool	Credit / category	Points available	Requirements	Contribution symbol	Contribution Potential	Details of compliance
Green Star Interiors NZ (V1)	Credit 9	3	<p><b>9.1 Internal Noise Levels</b> - 1 point is awarded where internal ambient noise levels are no more than 5dB(A) above the lower figure in the range recommended in Table 1 of AS/NZS2107:2016. (Noise measurement must account for all internal and external noise including building services equipment, outdoor sources such as traffic, and (where known) noise from industrial process. Occupancy noise is excluded.)</p> <p><b>9.2 Reverberation</b> - 1 point is awarded where the reverberation time is below the maximum stated in Table 1 of AS/NZ 2107:2016, ensuring reverberation time equivalent to or lower than the reverberation time predicted for treating at least 50% of the combined floor and ceiling area with a material having a noise reduction coefficient (NRC) of at least 0.5. Dedicated teaching spaces must have reverberation times in the lower half of the range specified in Table 1 of AS/NZS 2107:2016.</p> <p><b>9.3 Acoustic Separation</b> - 1 point is available where nominated enclosed spaces minimise crosstalk between rooms, and between rooms and open areas. This can be achieved through either:</p> <ul style="list-style-type: none"> <li>- Fixed or glazed partitions without a door between spaces should achieve a weighted sound reduction index (Rw) of at least 45 (and at least 35 for all partition types that contain a door).</li> <li>- The sound insulation between enclosed spaces complies with <math>D_w + LA_{eqT} &gt; 75</math>. Measurements must be based on finished rooms, accounting for any carpets and acoustically absorbent ceilings specified. The measurements can be conducted in either furnished or unfurnished spaces.</li> </ul>	✓	1 point	<p>The nominated product(s) comply with the requirements of 9.2 as they have an NRC 0.85 (15mm panel) and NRC 0.90 (25mm panel), thus allowing to claim 1 point provided at least 50% of the combined floor and ceiling area is above NRC 0.5</p> <p>The nominated product(s) can furthermore assist towards achieving compliance in 9.1 and 9.3. <i>Note: achieving the points here depends on the combination of floor, ceiling and walls achieving the targeted outcomes and must be measured by an Acoustic Engineer.</i></p>
	Credit 10	3	<p>This credit rewards well-lit spaces that provide a high degree of comfort to users.</p> <p><b>10.1 Minimum Lighting Comfort</b> -It is a mandatory minimum requirement of this credit that lights in the nominated area are flicker-free and accurately address the perception of colour in the space.</p> <p><b>10.2 General Illuminance and Glare Reduction</b> - 1 point is available where Glare is eliminated in the nominated area and lighting levels and quality comply with best practice Guidelines.</p> <p><b>10.3 Surface Illuminance</b> - 1 point is available where a combination of lighting and surfaces improve uniformity of lighting to give visual interest in the nominated area. The prescriptive compliance pathway is to ensure 95% of the spaces in the nominated area have a surface reflectance for ceilings of at least 0.75, and that lighting be designed to ensure the ceiling area has an average surface illuminance of at least 30% of the lighting levels on the working plane (alternatively a performance pathway is also available – Ref Green Star NZ Submission Guidelines)</p> <p><b>10.4 Localised Lighting Control</b> - 1 point is available where; in the nominated area, occupants have the ability to control the lighting in their immediate environment.</p>	✓	1 point	<p>In accordance with the Green Star NZ submission guidelines, a surface reflectance value of 0.75 corresponds to a matte flat white ceiling. As such, the nominated product(s) can be deemed to comply when the white option is installed.</p> <p><i>Note: achieving full compliance for 11.3 further requires the design team to ensure &gt; 95% of the nominated area are compliant and ensure the lighting design also complies.</i></p>

Rating Tool	Credit / category	Points available	Requirements	Contribution symbol	Contribution Potential	Details of compliance
Homestar V5	HC 6	3	<p>0.5 points can be claimed if external walls and ceilings meet STC (or Rw) 43, and windows meet STC (or Rw) 33, OR 1.5 points can be claimed if the envelope of the dwelling is designed such that internal ambient noise levels are no more than 5dB above the lower figure of the recommended range in AS/NZS 2107:2016, dependent on the type of neighborhood.</p> <p>For terraces and apartments, 1 further point is available where the in-situ Impact Sound insulation (IIC rating) and in-situ airborne sound insulation (STC ratings) levels are 5dB better than minimum stipulated levels in NZ building code clause G6, with an additional 0.5 points available where entranceways, lobbies, stairways, corridors and hallways have an area at least equivalent to the ceiling area covered with an absorptive finish achieving NRC 0.55 or greater. (Compliance is achieved by default where the terrace or apartment development does not have such areas).</p>	✓	0.5 points	The nominated product(s) comply with the requirements of 9.2 as they have an NRC 0.85 (15mm panel) and NRC 0.90 (25mm panel), thus allowing to claim 0.5 points provided an area at least equivalent to the ceiling area covered achieves above NRC 0.55
Homestar V4	EHC-9	3	This credit rewards the provision of an improved sound environment in accordance with items listed in the sound insulation checklist.	●	<p>0.5 Pts <i>(terrace / Apt)</i></p> <p>1 point <i>(detached homes)</i></p>	Acoustic ceiling tiles are referred to in the sound insulation checklist. If the nominated ceiling tiles are used in > 80% of a dwelling's livable rooms then 0.5 points can be claimed for terrace homes or apartments, and 1 point can be claimed for single detached houses.