



# PROJECT FLOORS

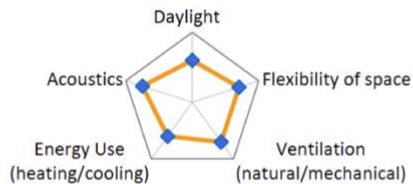
Education  
Flooring Solutions

# PROJECT FLOORS

## Integrated design philosophy

Designers are to apply an integrated design approach to the design of schools and learning spaces. The flexibility of a space, acoustics, ventilation, daylight and energy use are interrelated and a change to one factor often impacts other factors. For example, an effective but noisy ventilation system will introduce fresh air but also increase ambient noise levels.

## Optimising learning spaces



An integrated design approach is required to ensure quality learning spaces are optimised over all 5 environmental parameters.

While all environmental factors need to be optimised, the following hierarchy is essential when making value engineering decisions to reduce cost:

Flexibility of space > Acoustics > Ventilation > Daylight > Energy Use

**The importance of communication in learning spaces is a foundation requirement for teaching and learning.**

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## Acoustics

Within acoustics there are two things to consider Reverberation and impact noise transfer. We have worked extensively with the team for Norman Disney Young and Auckland University to ensure we can recommend the best solution for your space.

Design reverberation times in different learning spaces

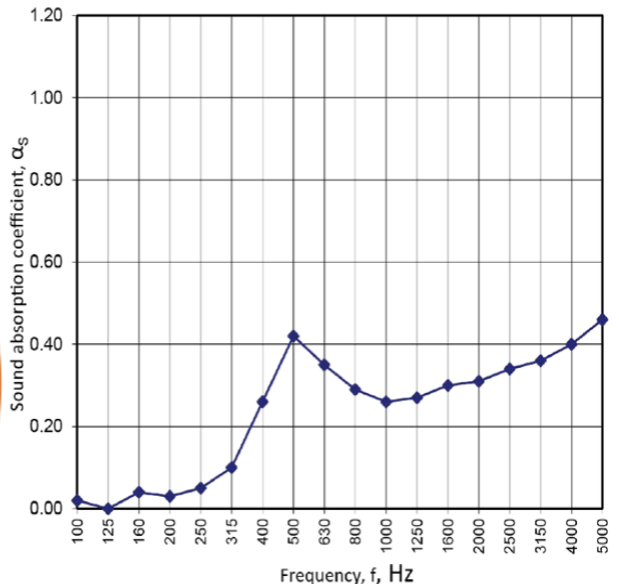
Learning space	Reverberation time (s) mid frequency average (RT <sub>MF</sub> )
Breakout spaces / meeting spaces / teacher work spaces	0.4 – 0.5
Flexible learning spaces	0.5 - 0.8
Cellular classrooms	0.4 – 0.5
Music learning spaces	0.6 - 0.8
Halls / Multipurpose spaces	0.6 - 0.8
Gymnasiums	0.8 - 1.5
Technology and science spaces	0.6 - 0.8
Libraries	0.5 – 0.8

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Project Floors – ProTile with EcoTX hits all the right notes when it comes to reverberation – reduction within the children’s vocal ranges



Frequency $f$ (Hz)	$T_1$ - Empty Chamber (seconds)	$T_2$ - With Sample (seconds)	$\alpha_s$ One-third octave
100	7.53	7.26	0.02
125	6.78	6.73	0.00
160	7.48	6.85	0.04
200	7.94	7.33	0.03
250	7.82	6.93	0.05
315	7.64	6.16	0.10
400	7.56	4.72	0.26
500	7.95	3.93	0.42
630	7.68	4.22	0.35
800	7.47	4.47	0.29
1000	6.75	4.38	0.26
1250	6.10	4.06	0.27
1600	5.51	3.65	0.30
2000	4.61	3.19	0.31
2500	3.93	2.79	0.34
3150	3.53	2.53	0.36
4000	3.04	2.21	0.40
5000	2.53	1.86	0.46



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Combining reverberation with impact reduction to deliver a multi-use education environment like no other

Computer Files: Bare: T1615 Slab.CMG ID.10, ID.11, ID.12, ID2 Sample: T1615-4 Carpet Tile.CMG ID.1, ID.2, ID.13, ID.3

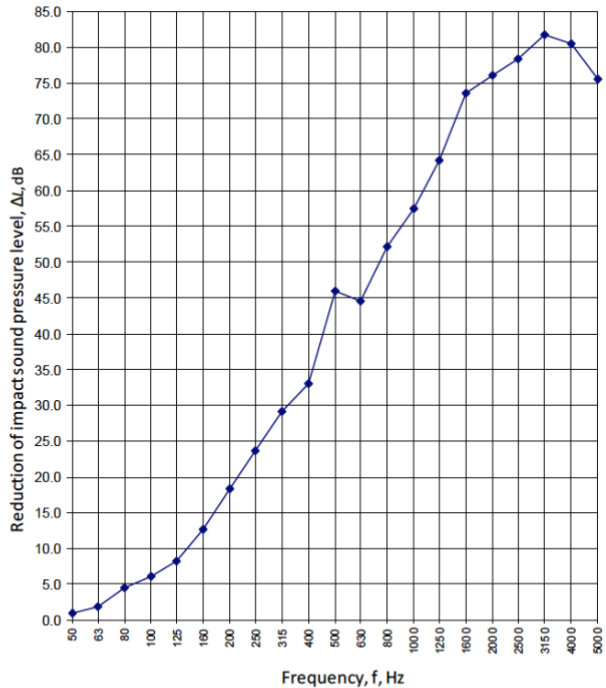
Mass per unit area: 4.199 kg/m<sup>2</sup>

Air temp in the test rooms: 20 °C

Air humidity in test rooms: 61 %

Receiving room volume: 153 m<sup>3</sup>

Frequency <i>f</i> Hz	$L_{n,0}$ One-third octave dB	$\Delta L$ One-third octave dB
50	55.3	1.0
63	48.5	1.8
80	55.9	4.5
100	<b>64.2</b>	<b>6.1</b>
125	<b>64.2</b>	<b>8.2</b>
160	<b>68.4</b>	<b>12.6</b>
200	<b>68.5</b>	<b>18.4</b>
250	<b>70.8</b>	<b>23.7</b>
315	<b>71.1</b>	<b>29.1</b>
400	<b>71.1</b>	<b>33.1</b>
500	<b>79.6</b>	<b>46.0</b>
630	<b>75.6</b>	<b>44.5</b>
800	<b>72.4</b>	<b>52.2</b>
1000	<b>72.0</b>	<b>57.5</b>
1250	<b>73.3</b>	<b>64.2</b>
1600	<b>78.7</b>	<b>73.6</b>
2000	<b>78.8</b>	<b>76.0</b>
2500	<b>76.5</b>	<b>78.3</b>
3150	<b>75.7</b>	<b>81.7</b>
4000	71.8	80.4
5000	67.8	75.6



Notes: #N/A = Value not available. **Bold**

values are used to calculate  $\Delta L_w$ .

< indicates that the true value is lower.

$L_{n,0}$  are the bare floor impact sound levels.

Rating according to ISO 717-2:

$\Delta L_w = 31$  dB

$C_{LA} = -13$  dB

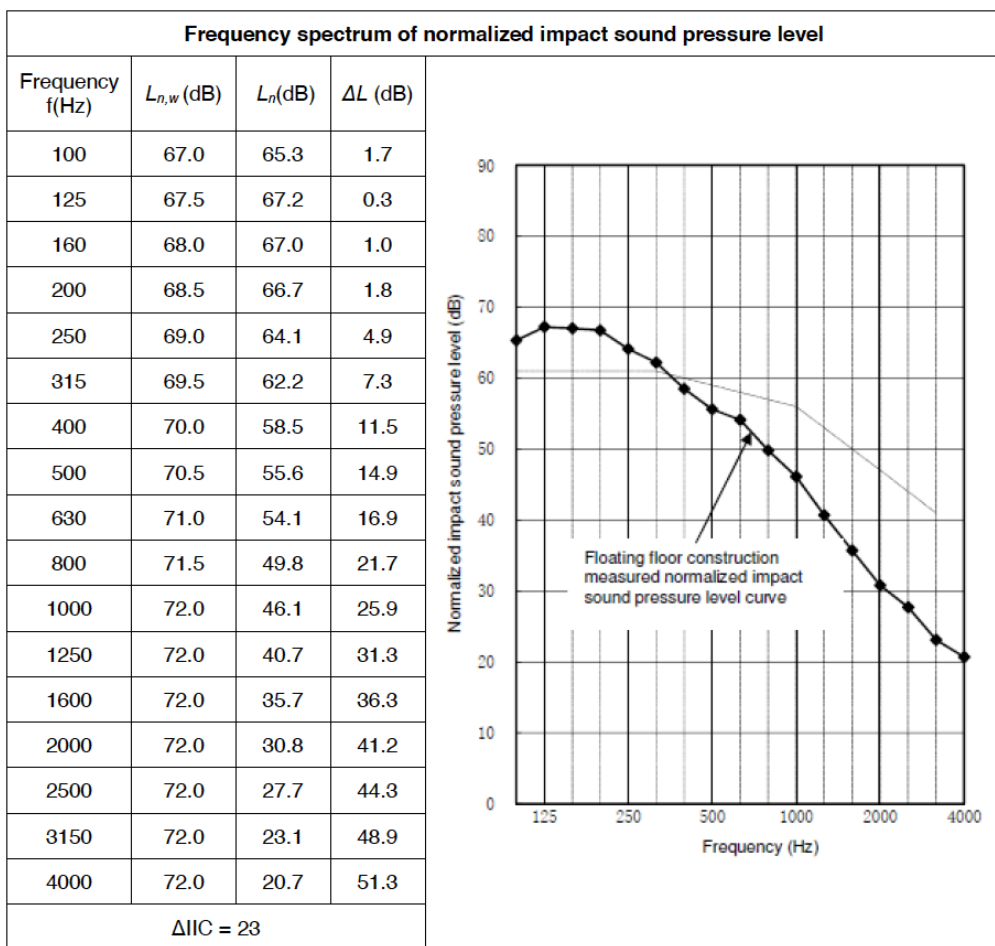
$C_{Lr} = 2$  dB

$C_{1,50-2500} = 2$  dB

These results are based on a test made with an artificial source under laboratory conditions (engineering Method) with the specified reference floor.

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Within any learning space there is always a requirement for a easy to clean hard floor area **Project Floors – TrueTouch Stone Plank Composite** offers an durable authentic timber finish pair with a acoustic quality like no other.



Remark:

1.  $L_{n,w}$  as the weighted normalized impact sound pressure level
2.  $L_n$  as the measured normalized impact sound pressure level

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**Flexibility** in the modern learning environment the ability to adapt and conform.



Whether it is simply adding a line of colour or design a unique pattern ProTile can be fully customised to suit your vision.

With the use of different patterns / designs and or colours you can create breakout spaces / hot zones that is not constrict by walls.

Well-designed learning environments.

Flexibility uses many forms mixing designs and textures Project Floors has a vast and readily available solutions, to create a modern and safe environment



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## Ventilation



Project Floors ProTile has been awarded gold level by Eurofins the leading testing agent for indoor air comfort.

IAQ Indoor air quality is one of the most important factors in ensuring that we remain alert and focused.

**Project Floors – ProTile with EcoTX** assists in removing allergens and dust out of the environment therefore increases the indoor air quality.

**Project Floors – TrueTouch** offer easy to clean heavy duty natural feel

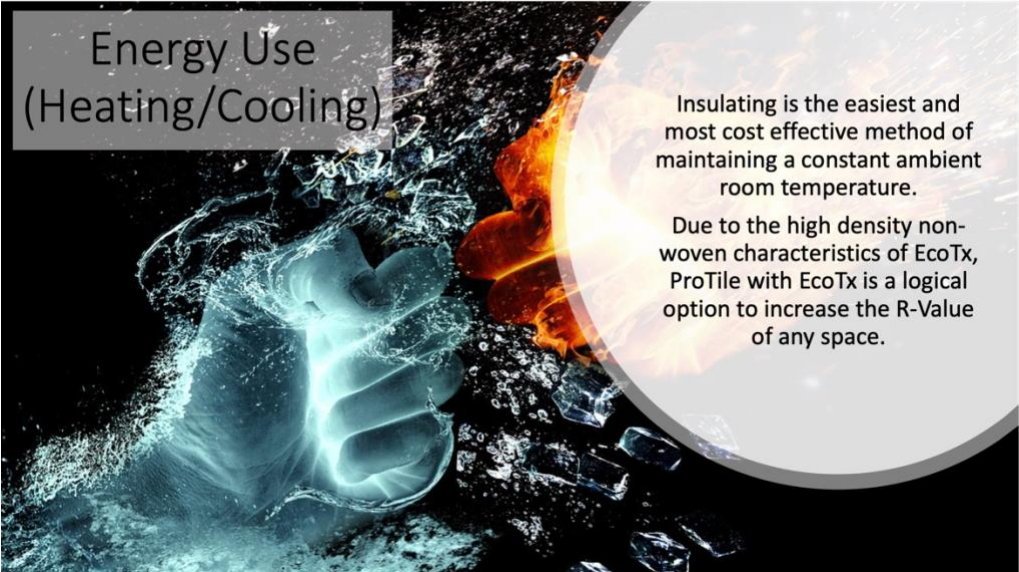


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## Daylight/ Light Reflectance Values

Secondary to allowing Natural light to enter the room is applying finishes that have High LRV rating to assist in light reflection.



## Energy Use (Heating/Cooling)

Insulating is the easiest and most cost effective method of maintaining a constant ambient room temperature.

Due to the high density non-woven characteristics of EcoTx, ProTile with EcoTx is a logical option to increase the R-Value of any space.

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**ECONYL®**

**GLOBAL GREEN TAG** Cert™

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