

# ANGELSTEP®

48P & 484P

APMTEST



ACOUSTIC FLOORING  
UNDERLAY



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GROUND FLOOR, 6A NELSON STREET, ANNANDALE NSW 2038



**Acoustica  
Projects**

## KEY BENEFITS

- Fire-rated to Australian and International standards
- Indefinite life cycle - will not rot or break down
- Easy to install - ideal for new installations and retrofit

## FIRE RATING

- Flammability = 0
- Spread of flame = 0
- Heat-evolved = 0
- Smoke developed = 0.1

## APPLICATIONS

Floor underlay for:

- Residential apartments
- Offices
- Meeting rooms
- Hotels
- Schools
- Shopping malls

## DESCRIPTION

AngelStep® 48P & 484P allows our clients to have premium floor sound barriers with minimal underlay height. This includes an impact isolation and vibration damping and sound absorber combined with an airborne sound barrier - giving ultimate absorption for your needs.

AngelStep® 48P acoustic underlay is designed for installation over concrete slab or light timber joists.

AngelStep® 484P acoustic underlay is specifically designed for properties which use a timber substrate, offering exceptional reduction of both airborne and impact noise.

# FEATURES

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- Water and chemical resistant
- Impact and airborne noise control
- High performance underlay for timber substrate floors
- Lifetime performance, 10-year guarantee
- Textile material comprises up to 75% recycled material
- Continuous support between substrate and floor
- Eco friendly
- A cost-effective 6-star floor system
- Zero VOC's, zero emissions and non-toxic
- 10-year warranty (subject to correct installation and use)
- BCA compliant (separating floors between adjoining dwellings)
- Designed and Made in Australia



# STANDARDS

The Building Code of Australia (BCA) *minimum* impact standard for a floor in a class 2 or 3 building is to be no more than  $L_{n,w+C1} \leq 62$ . However, the reality is that this is in most cases unacceptable to occupants and can result in the need for costly repair works.

In response, the Association of Australian Acoustic Consultants (AAAC) has developed the star rating system to rank the acoustical quality of apartments and provide guidance in the design and construction process.

AngelStep® with an impact sound pressure level on a concrete substrate of no more than  $L_{n,w+C1}$  of 40, exceeds the BCA requirements by 22 points.

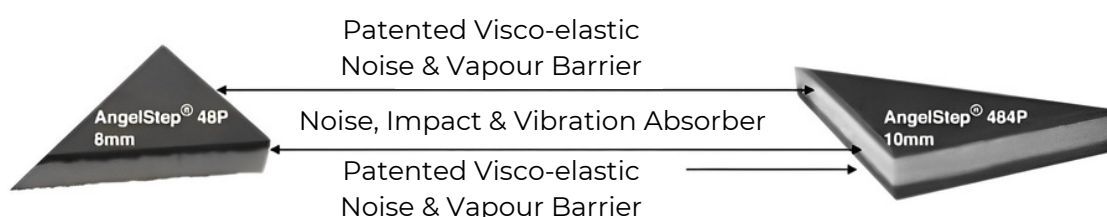
## 48P

- Compressive strength at 10% deformation (EN 826) = 30.5 kPa
- Dynamic stiffness (ISO 9052-1) = 95.59 MN/m<sup>3</sup>
- Compressibility (EN 12431) = 0.1mm @ 50 kPa

## 484P

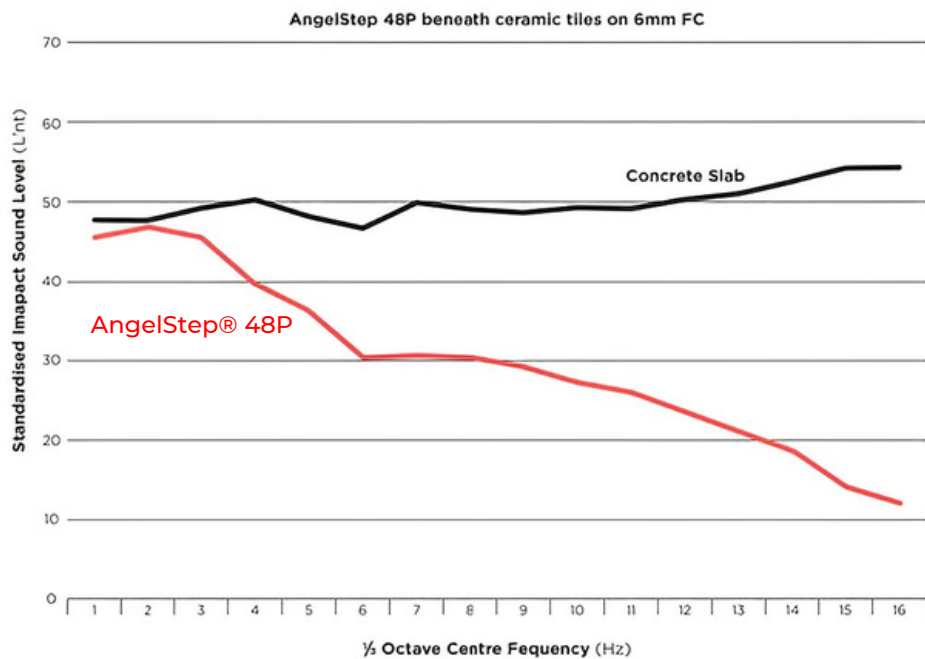
- Compressive strength at 10% deformation (EN 826) = 88.7 kPa
- Dynamic stiffness (ISO 9052-1) = 180.92 MN/m<sup>3</sup>
- Compressibility (EN 12431) = 0.2mm @ 50 kPa

AngelStep®	Barriers	Thickness	Size	Weight	Use over
484P	2	10mm	1150mm x 1150mm	9kg/m <sup>2</sup>	Timber/Ply /MDF
48P	1	8mm	1150mm x 1150mm	5kg/m <sup>2</sup>	Concrete floors

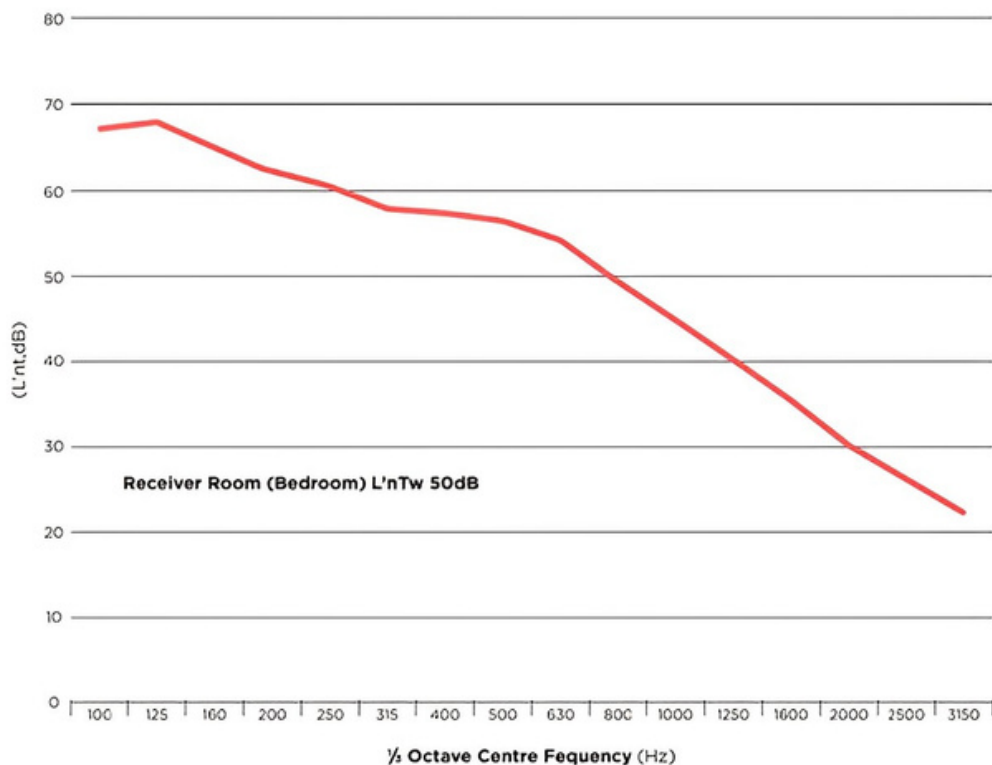


# SCORE AND TEST RESULTS

The product 48P has been independently tested by Marshall Day Acoustics; document 002 2007125 10/12/2015 to achieve a result L<sub>nt,w</sub> 40 - equivalent to AAAC rating 6 stars.



## Typical Acoustic Test Result



Untreated timber joist flooring systems that separate individual tenancies exhibit very poor impact isolation performance.

Rating	Impact isolation of floors (L <sub>nT,w</sub> )	AAAC Description
6 star	40	Just audible or not audible
5 star	45	Just audible
4 star	50	Audible
3 star	55	Clearly audible
2 star	65	Clearly audible
1 star	62	Clearly audible

It is estimated that for the untreated floor system the L<sub>nT,w</sub> would be in the region of 75 with a correction of nominally 0, resulting in L<sub>nT,w</sub> + C<sub>i</sub> of 75.

This level of performance would not comply with the current Building Code of Australia requirements of L<sub>nT,w</sub> + C<sub>i</sub> of 62.

The installation of the AngelStep® 484P underlay has resulted in a significant improvement in impact isolation between tenancies (an improvement of ≈ 17 to 19 dBA).

Type	AAAC Stars	L <sub>n,w</sub> + C <sub>i</sub> (Impact)	Indicative Sound Performance
Acoustica AngelStep®	5/6	36	Just audible or not-audible
10mm rubber matting	5	45	Just audible
5mm rubber matting	4	50	Audible
2mm closed = cell foam	3	55	Clearly audible
BCA compliance	-	62	Clearly audible
-	2	65	Clearly audible

Various floor impact noise tests of the AngelStep® acoustic underlays have been conducted under field conditions on masonry/concrete floor system.

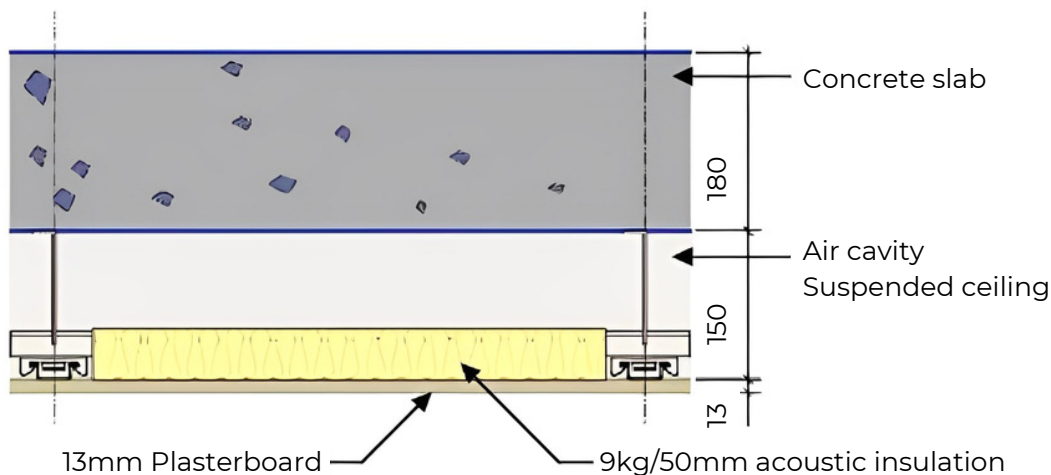
In the case above, AngelStep® 48P - 8mm under ceramic tiles on a 6mm FC underlay was the best performing system in terms of floor impact noise improvement compared to the base floor installation, with improvements of up to 24 points in the L'nT,w rating.

Independent tests for 484P by Wilkinson Murray #09053/A with a new 20mm tongue & groove floor installed over a timber structure achieved an overall sound insulation improvement of 19dB or LnT,w 56.

The untreated floor system had a rating of L'nT,w 75.

## SCORE AND TEST RESULTS

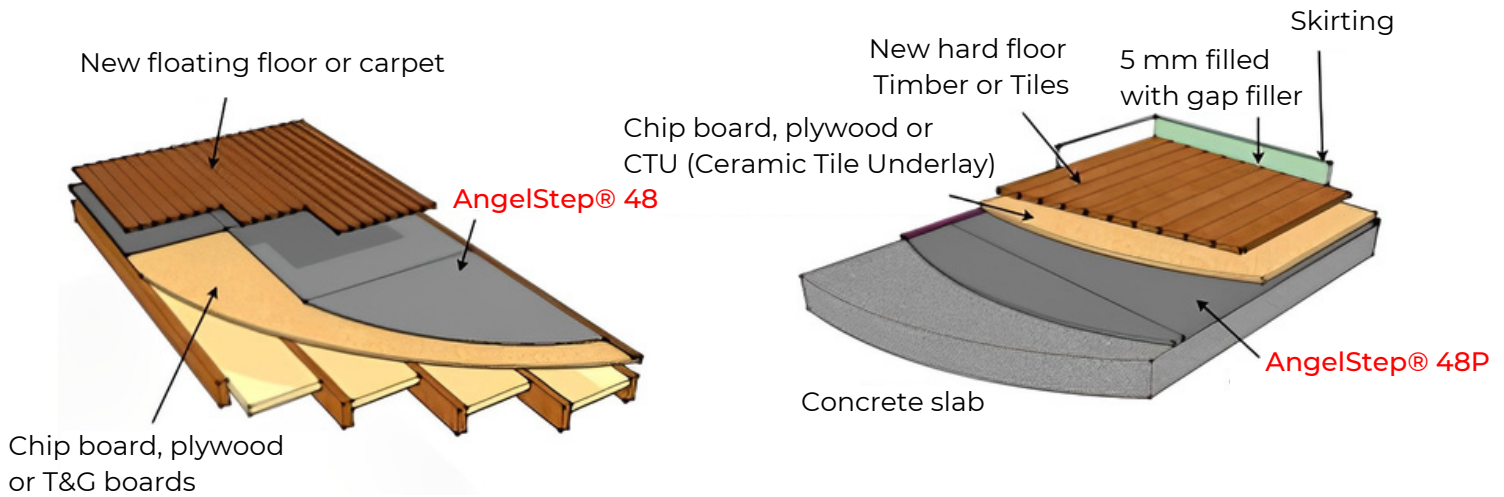
- Angelstep® provides highly effective support and cushion for timber, laminate and tiling flooring.
- It is also unaffected by water and will last the lifetime of the building.
- Consists of an 8mm thick impact, noise and vibration damping absorber made from 75% recycled materials combined with a decoupled 'visco-elastic' noise barrier.



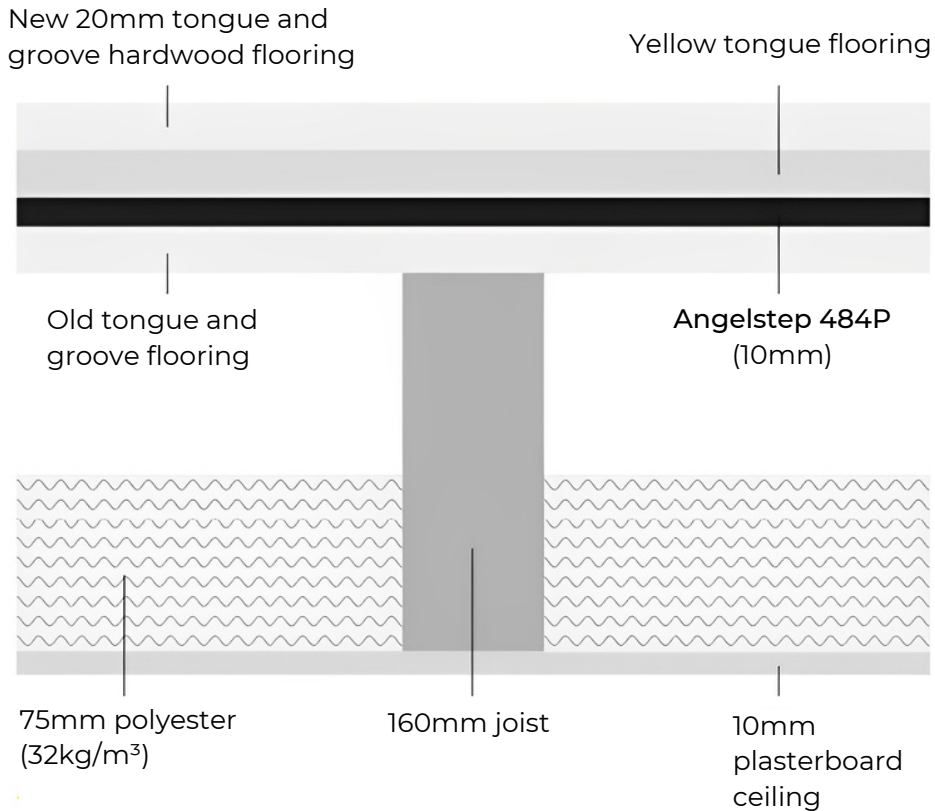
- The resilient polyester core layer absorbs impact energy and residual airborne noise from above and below, transforming wave vibrations into heat energy.
- The 'decoupled flexible floating' top noise barrier greatly reduces airborne sound waves - noise above or below the floor - and complies with the Building Code of Australia in respect to separating floors between adjoining dwellings.
- AngelStep® 48P is designed for a maximum traffic load of 65KN/m<sup>2</sup> (approx. 6,500kg/m<sup>2</sup>).

# INSTALLING ANGELSTEP®

- For a concrete substrate you would use AngelStep® 48P with one noise barrier.
- For a timber substrate you would use the AngelStep® 484P with the absorber sandwiched between layers of 2mm thick noise and vapour barrier.



## Installed Floor System



For some floor finishes, an intermediate layer (e.g. light concrete screed, tong & groove plywood or chipboard, FC sheeting) will have to be installed.

Our engineers will advise how to perform the installation.