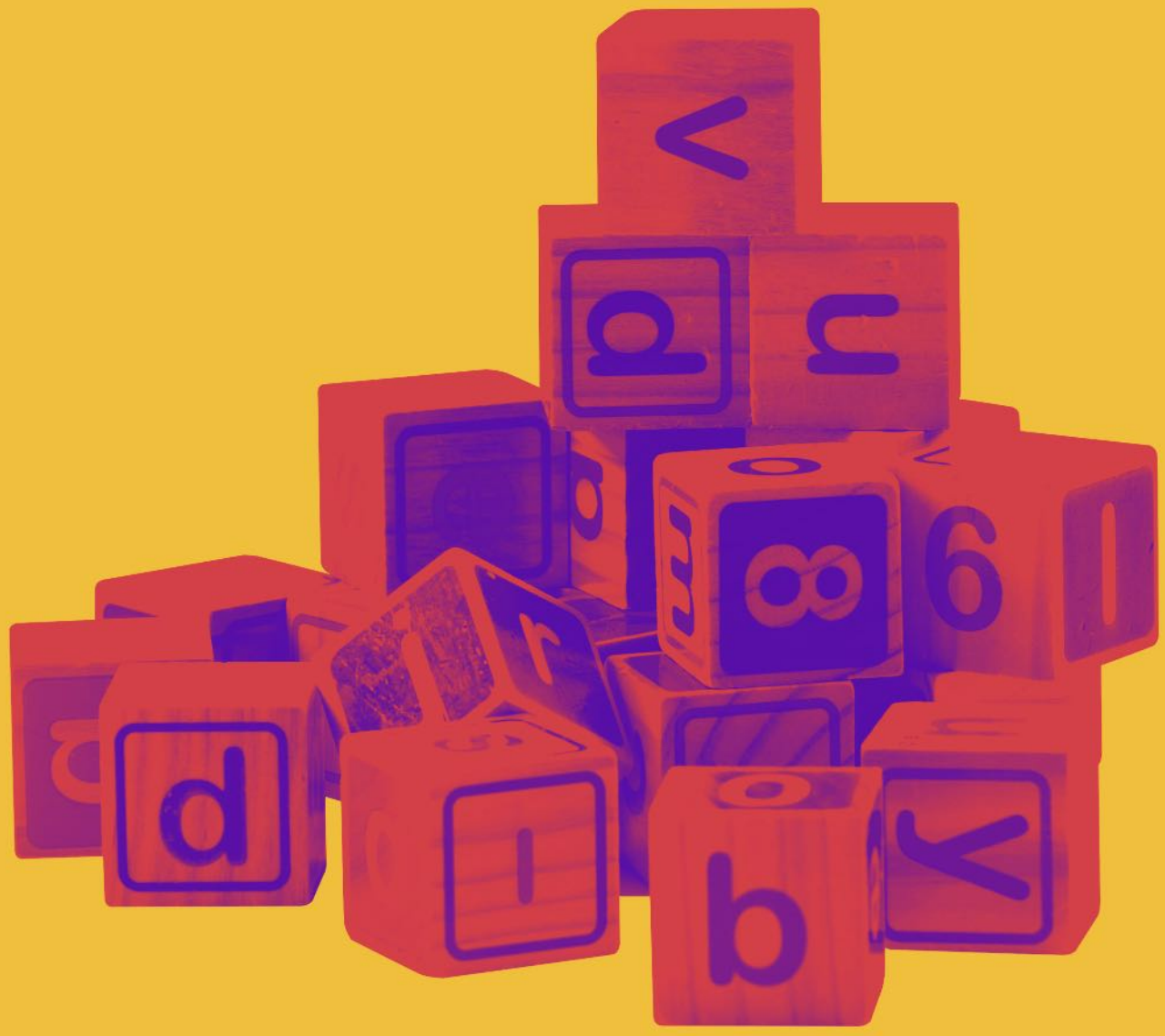
acoustica®
AUSTRALIA

IMPACT

# AngelStep® 630

## acoustic underlay for vinyl



acoustica.com.au

# AngelStep® 630

acoustic underlay for vinyl

**Part of the high performance AngelStep range, AngelStep® 630 acoustic underlay is designed to enhance the acoustic performance of vinyl flooring. At just 4mm thick, it is highly effective against impact and airborne noise.**

The AngelStep® floor acoustic underlay product range is designed for the treatment of Impact and airborne noise transfer.

AngelStep® construction combines a highly effective support and cushion. It provides maximum performance for minimum thickness, uniquely combining impact, vibration damping and sound absorber.

AngelStep® 630 greatly reduces airborne sound waves noise above or below the floor and complies with the Building Code of Australia (BCA) in respect to separating floors between adjoining dwellings. When AngelStep® 630 is installed, it delivers optimum performance and comfort for both resident and neighbours alike.

The unrivalled performance of AngelStep® 630 was designed for use in apartments, townhouses, upmarket housing, professional office and consulting suites, where discerning buyers expect performance beyond that mandated by the minimum requirements of the BCA.



## Key benefits

- Outstanding acoustic performance
- High sound absorption
- Water & chemical resistant
- Will last the life of the flooring material
- Easy to install
- Zero VOC's, zero emissions, non toxic
- Nominal 4mm thickness
- Australian designed & manufactured

The product has been independently tested:

- to achieve L'nT,w of 37dB - better than AAAC rating 6 stars - independently tested by Vipac Engineers & Scientists Ltd May 2016; document 20E-16-0040-455704 under loose lay vinyl in a building over 50 years old

- to achieve L'nT,w of 42dB - better than AAAC rating 5 stars - independently tested by Vipac Engineers & Scientists Ltd June 2016; document 20E-16-0085-455973 under 20mm solid oak on plywood with a 190mm concrete slab, 80mm cavity with no insulation & 10mm plasterboard ceiling

- to achieve LnT,w of 43dB - better than AAAC rating 5 stars - independently tested by Vipac Engineers & Scientists Ltd October 2016; document 20E-16-0192-ADM-456564-0 under Novocore vinyl with a 200mm concrete slab with bare concrete ceiling

It is 4mm in thickness and is supplied in tiles 1200mm x 1200mm.

The unrivalled performance of AngelStep® 630 is due to its unique polymer construction. This results in no degradation of acoustic properties due to structural collapse under the weight of heavy furniture, castors and appliances. For thin vinyl or vinyl that does not interlock or clip together we recommend an intermediate layer between the AngelStep® 630 and the vinyl flooring. i.e. flooring grade plywood.

## Fire Ratings

**AS ISO 9705:2003**

- classification Group 1 ; (SMORGArc) <100$m^2/s^2$; as required by BCA C1.10; tested 16/05/2012 BRANZ FI 4871

**ISO 9705:1993**

- classification Group 1-S; smoke production rate <5.0$m^2/s$ as required by NZBC C/VM2

- EN13501-1:2007 B-s2, d0 report dated 22/07/2009

VOC emissions tested by Cetec Pty Limited (CV080408) for chemical emission & is classified as low VOC.

VOC Concentration 0.01mg/$m^3$

## Applications

AngelStep® 630 was specially designed for the treatment of vinyl floors, carpet tiles, 'klip-on' vinyl planks.

In general, for floors finishes that do not allow not allows defection movements of more than 0.25mm - 0.5mm.



## Acoustic tapping test

Acoustica's product range of noise control solutions for flooring systems has been repeatedly independently tested to consistently achieve five and six stars in the Association of Australian Acoustic Consultants (AAAC) star rating system.

However, results will vary depending on the construction, substrate and surface materials of each project.

Acoustica can provide site specific testing and certification for each project site, prepared in accordance with the International Standard ISO 16283-1:2014 Acoustics -Field measurement of sound insulation in buildings and of building elements - Part 1: Airborne sound insulation (refer ISO 140-7:1998).

There is a charge for this service.

## Technical

The BCA provides minimum construction standards for various building classes including acoustic privacy.

The BCA requirement is a weighted standardised impact sound pressure level with spectrum adaptation term $C_1$, of less than or equal to 62dB $L'nT,w+C_1$.

However, the reality is that this is in most cases unacceptable to occupants and can result in the need for costly reparation works.

In response the AAAC has developed the star rating system to rank the acoustical quality of apartments and provide guidance in the design and construction process.

## Installation methodology for vinyl floors

1. For thin vinyl or vinyl that does not interlock or clip together we recommend installation of the vinyl on top of flooring grade plywood on top of the AngelStep® 630 product
2. All surfaces should be level, clean & dust free prior to any installation
3. Pour & spread an even coat of polyurethane glue (similar to Dunlop Vinyl Adhesive) using a 3-4mm "V" notched trowel - note the glue should have the consistency of toothpaste
4. Allow the adhesive to become 'tacky' before laying the AngelStep® 630, this should take 10-15 minutes depending on environmental conditions, specifically temperature & humidity
5. Repeat the glueing operation on the AngelStep® 630 before laying the vinyl floor
6. You can apply an even pressure on the vinyl floor
7. The glue can take 24-48 hours to set (refer to the manufacturer's instructions)

## Custom & specialist solutions

Acoustica are specialists in refining solutions to tune your project to achieve an optimal outcome.

Note: When installation of multiple layers is required, please contact our experts at Acoustica for specific installation instructions.

| | Impact Isolation of floors (L'nT'w) | AAAC Description |
|---|---|---|
| **6 star** | 40dB | Just audible or not audible |
| **5 star** | 45dB | Just audible |
| **4 star** | 50dB | Audible |
| **3 star** | 55dB | Clearly audible |
| **2 star** | 65dB | Clearly audible |
| **BCA** | 62dB | Clearly audible |

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

## How is an impact test done? - Test Methodology

A tapping machine is used to generate impact noise on the floor of the source apartment.

The tapping machine consists of five hammers weighing 500g each that continuously fall from a 40mm height.

The tapping machine is placed in four different positions within the room.

A Sound Level Meter is used in the receiving room (the room below the floor) to conduct the impact noise measurement.

An averaging measurement technique, for a period of 30 seconds per tapping machine position, is performed.

The field test results are then analysed and the acoustic performance of the floor is determined using Australian Standard AS ISO 717.2 “Acoustics - Rating of sound insulation in buildings and of building elements”.



Tapping machine



## Case study

Building Mandated By-law: Impact Insulation Class (IIC) 55 or less or 3 star in the AAAC star rating guide.

Installation of a timber floor over AngelStep® 630 over a concrete slab.

Result: Impact Insulation Class IIC 68 or LnT,w 42dB (5 star in the AAAC rating guide).

| AAAC Star Rating | Impact Isolation of floors (L’nT,w dB) | AAAC Description | IIC Rating |
|---|---|---|---|
| **2 star** | **65** | Clearly audible | 45 |
| **BCA** | **62** | BCA Clearly audible | 48 |
| **3 star** | **55** | Clearly audible | 55 |
| **Bylaw** | | | ≥ 55 |
| **4 star** | **50** | Clearly audible | 60 |
| **5 star** | **45** | Audible | 65 |
| **Measured result new flooring system with AngelStep® 630 acoustic underlay** | **42** | | 68 |
| **6 star** | **40** | Just audible or barely audible | 70 |

In this case the results indicate that the tested new flooring system with AngelStep® 630 acoustic underlay achieves IIC 68 which is significantly better the impact noise standard mandated by the strata by-law being ≥ IIC 55.

**Acoustica Australia Pty Limited**
**25 Plasser Crescent**
**North St Marys NSW 2760**
**Australia**

**1300 722 825 / +61 2 9550 2900**

**acoustica.com.au**