Acoustics *for wood floors*: Part E impact sound and build-ups

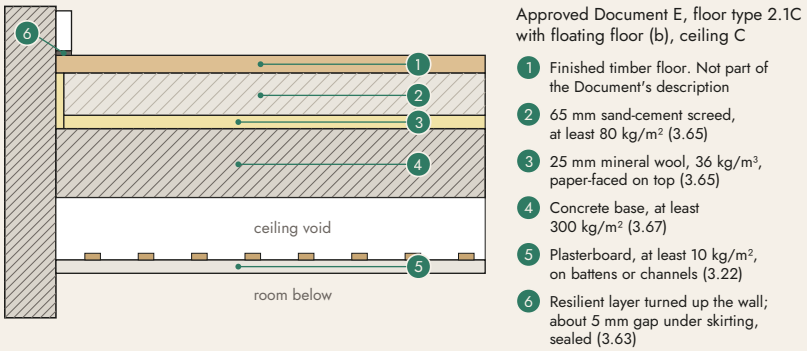
In England and Wales, Approved Document E sets impact sound through a floor between hotel rooms or flats at 62 dB L'nT,w at most (64 dB for a conversion); Scotland's handbook says 56 dB. It is proved by a test on site of the floor as built, not by a catalogue figure for an underlay.

Compliance guidance. Read on 5 and 6 November 2026: Approved Document E (England; 2003 edition, reprint October 2015), the Welsh Government's edition, and Scotland's non-domestic handbook (2022, section 5.1). Northern Ireland was not read. Compliance is shown by a test on site of the floor as built, not by a catalogue figure for an underlay. Check the current editions and take advice from an acoustician and your building control body. Guidance, not legal or engineering advice.

AT A GLANCE

Where and what	Impact, L'nT,w, dB (maximum)	Airborne, dB (minimum)	Source
England: purpose-built hotel rooms (rooms for residential purposes)	62	45 (DnT,w + Ctr)	Approved Document E, Table 0.1b
England: hotel rooms formed by material change of use	64	43 (DnT,w + Ctr)	Table 0.1b
England: purpose-built flats	62	45 (DnT,w + Ctr)	Table 0.1a
England: flats formed by material change of use	64	43 (DnT,w + Ctr)	Table 0.1a
Wales: rooms for residential purposes	62 and 64	45 and 43	Welsh Approved Document E, Table 0.1b
Scotland: new build and conversions, not traditional buildings	56	56 (DnT,w)	Non-domestic handbook 2022, Table 5.1
Scotland: conversions of traditional buildings	58	53 (DnT,w)	Table 5.1

Impact: lower is better. L'nT,w is the level in the room below with a tapping machine above. Each figure is the limit for the floor between two rooms, tested on site. Northern Ireland was not read.



A floating floor for a room for residential purposes: Approved Document E floor type 2.1C with floating floor (b) and ceiling treatment C, with a timber finish on top. The finish is not part of the Document's description. Schematic: not to scale. Original drawing by Make Bespoke Studio.

SPECIFICATION WORDING

REQUIREMENT

Floor between [rooms for residential purposes] to achieve impact sound insulation L'nT,w not more than [62] dB [64 dB where formed by material change of use] and airborne sound insulation DnT,w + Ctr not less than [45] dB [43 dB], as Approved Document E Table 0.1b, [and not more than [ ] dB / not less than [ ] dB, as set by [acoustician] for the floor above [bar or restaurant]]. [Scotland: not more than 56 dB.]

BUILD-UP

Floor build-up: [Approved Document E floor type [2.1C] with floating floor [(b)] and ceiling treatment [C] / acoustician's design [ref]]. Concrete base not less than [300] kg/m^2; resilient layer [mineral wool 25 mm, 36 kg/m^3 / [type], dynamic stiffness not more than [15] MN/m^3 and thickness not less than [5] mm to BS EN 29052-1]; floating layer [65 mm sand-cement screed, not less than 80 kg/m^2]; finish [engineered timber, [ ] mm, [bonded / floated]].

UNDERLAY AND SYSTEM EVIDENCE

The floating floor or covering to have a ΔLw of not less than [ ] dB, tested with the finished floor, adhesive and underlay proposed, loaded and unloaded, on a [140] mm test floor by a UKAS accredited laboratory, to [BS EN ISO 10140-3 and BS EN ISO 717-2, current editions / editions agreed with building control]. Report dated [ ] to be submitted before ordering.

TESTING AND DETAILS

Pre-completion testing by a [UKAS accredited / ANC registered] test body to Approved Document E Annex B, at the rate set by [building control body], in rooms complete except decoration, unfurnished, doors closed. Resilient layer turned up at all room edges; gap [ ] at the wall and [5] mm under skirtings, filled with flexible sealant; resilient joints lapped or butted and taped; no fixing or service to pass through the resilient layer.

TERMS USED

L'nT,w

The weighted, standardised impact sound level measured in the room below a floor; lower is better, and Approved Document E sets a maximum of 62 dB for new-build floors and 64 dB for conversions.

ΔLw

The measured improvement in impact sound insulation from a floor covering or floating floor on a test floor in a laboratory, in dB. It is a laboratory figure for the layer, not a site result (Approved Document E, Annex C).

Floating floor

In Approved Document E, a floating layer resting on a resilient layer, so that it is isolated from the base floor and the surrounding walls (Annex C).

Pre-completion testing

Sound insulation testing on site, once rooms are essentially complete, to show a separating floor or wall meets Part E. It is carried out by a test body with third-party accreditation (Approved Document E, Section 1).

STANDARDS AND SOURCES

- Approved Document E: Resistance to the passage of sound (England; 2003 edition, reprint October 2015): Table 0.1b (p.12); Sections 0, 1, 3, 4, 6; Annex B. Paragraphs cited in the text. Read 5 Nov 2026.
- Approved Document E frequently asked questions (DCLG, March 2016): read 5 Nov 2026.
- Welsh Government: Approved Document E: Table 0.1b (p.19) read 5 Nov 2026.
- Scotland: building standards technical handbook 2022, non-domestic, section 5.1: clause 5.1.2, Table 5.1; published 1 Jun 2022; read 5 Nov 2026.
- BS EN ISO 16283-2:2020, BS EN ISO 10140-3:2021, BS EN ISO 717-2:2020, BS EN 29052-1:1992: BSI Knowledge listings: Current. BS EN ISO 140-7:1998, 140-8:1998 and 717-2:1997, named in the Document, are withdrawn. Standards not read.

Full guide: https://makebespoke.com/trade/technical/acoustics-for-wood-floors. Make Bespoke Studio coordinates manufacture through its partner workshops. Figures are guidance only and your specification governs; some may be superseded, so contact the studio to verify.