

Wall and Floor Acoustic Information

The Juwö Evolved SmartWall system has acoustic test data based on the following information which is based on the standard for performance required for separation between walls and floors, with floors being based on a concrete floor specification.

The performance required to meet Building Regulation Part E 1, Protection against sound from other parts of the building and adjoining buildings i.e. dwellings, flats and rooms for residential use have to offer reasonable resistance to sound from other parts of the same building and adjoining buildings based on the following requirements:

England, Wales Northern Ireland

New Build dwelling houses and flats – separating walls that have a separating function. Airborne sound insulation Walls 45dB DnT,w + Ctr (minimum value).

New Build dwelling houses and flats – separating Floors and Stairs 45 dB Airborne sound insulation DnT,w + Ctr (minimum value) with Impact sound insulation 62dB L'nT,w dB (maximum value)

Scotland

New Build dwelling houses and flats – separating walls that have a separating function. Airborne sound insulation Walls 56dB DnT,w + Ctr (minimum value).

New Build dwelling houses and flats – separating Floors and Stairs 56 dB Airborne sound insulation DnT,w + Ctr (minimum value) with Impact sound insulation 53dB L'nT,w dB (maximum value)

Juwö Evolved SmartWall system has not carried out any Robust detailing, therefore to satisfy Building Regulations, Pre-Completion acoustic testing would have to be carried out.

Building regulations Part E require that buildings be tested prior to completion to confirm they meet or exceed Part E standards, or a Robust approved system is used. The person carrying out the building work should arrange for sound insulation testing to be carried out by a test body with approved qualifications and affiliations. Airborne and impact sound insulation tests require to be carried out in accordance with the measurement procedures of BS EN ISO140-4:1998 for field measurements with a single figure D_{nTw} and L_{nTw} in accordance with BS EN ISO 717. As per the new regulations the Spectrum Adaptation Ctr which is a correction factor calculated from the measured D_{nTw} and the corresponding third octave band DnT values. It uses a set of weighting levels in third octave bands derived from a road traffic noise spectrum. It is applied to airborne test results and is measured in dB. A new standard BS EN ISO 16283-1&2:2014 will be replacing ISO 140 for building regulation measurements in due course.

Juwö Evolved SmartWall system for separating walls have developed two methods of providing acoustic for separating walls using a single or double skin wall method.

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Single Skin Acoustic Wall method

The single skin acoustic wall system uses an SPZ 240mm SmartWall block wall which has a bulk density class of 2.0 kg / dm³, e.g. Juwö sound insulation block SPZ 240 backfilling with concrete C12/15 and finished with either a One Coat plaster or a two-coat plastered on both sides. See below details.

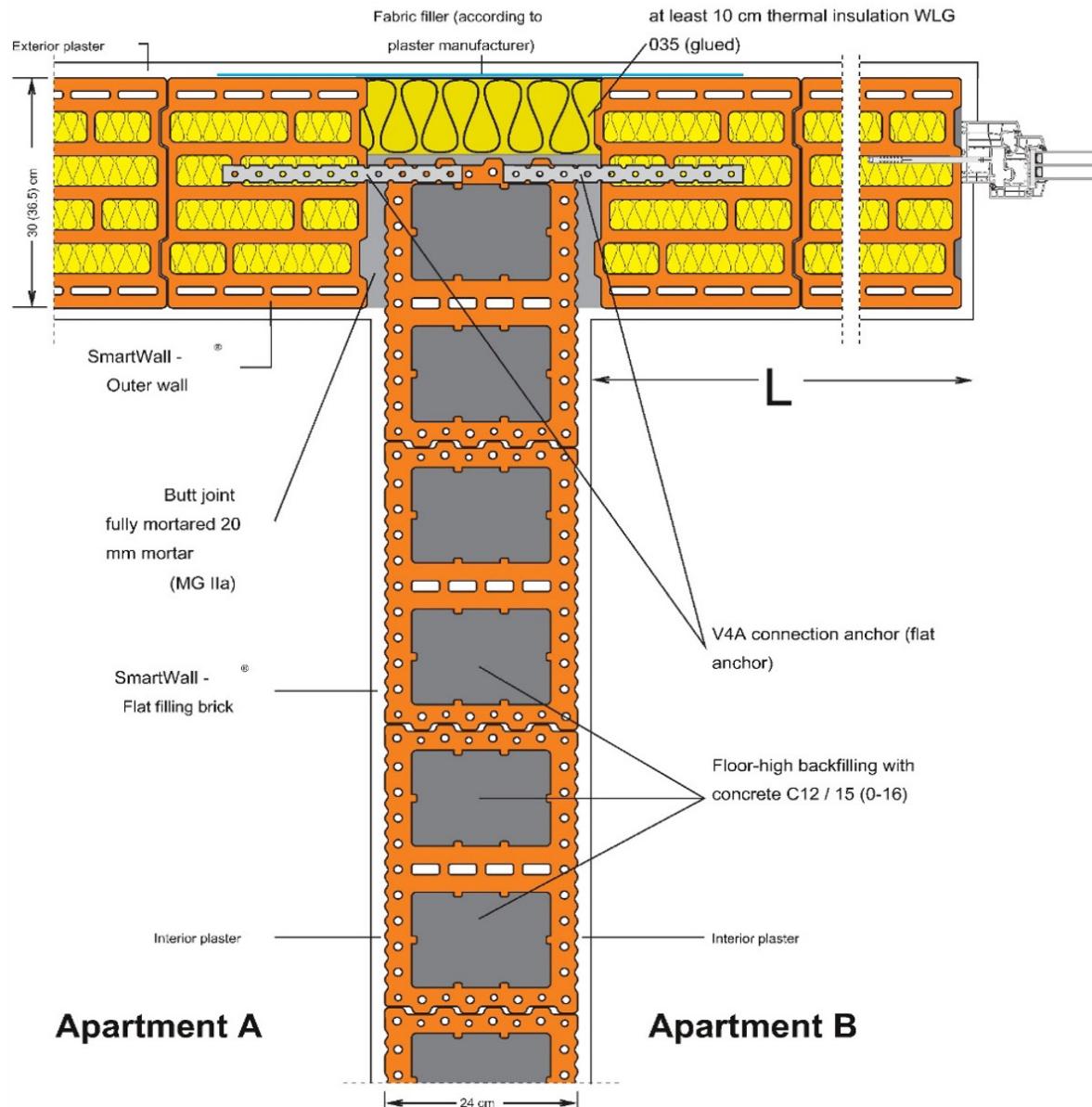
The outer external walls are made of 365mm – 490mm SmartWall blocks TS12 or TS11 or MZ90-G or MZ80-GS.

The SmartWall S7⁵, S8, S9 or T10 blocks are not suitable for sound insulation in buildings.

With the wall construction as described above, you can expect to achieve approx. 55 dB DnTw between the separation walls.

Wall connection sound-absorbing partition made of filling bricks PFZ integrated in the outer wall made of SmartWall MZ90-G / MZ10

L > 1.0 m (> 2.5 m²)



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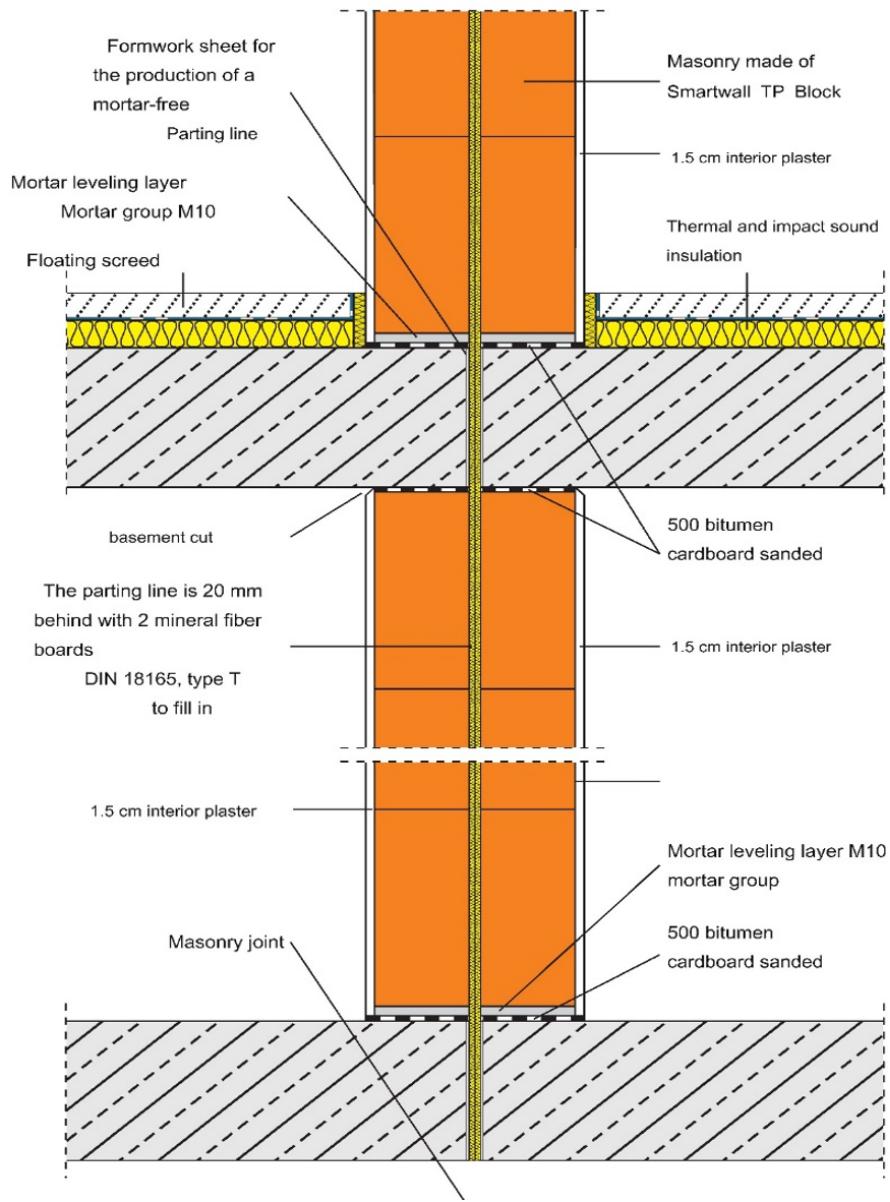
Double Skin Acoustic Wall method

Walls using a double skin separation acoustic wall require the following make up.

A separating wall junction line goes through completely with a minimum of a 40 mm joint. The acoustic performance for the separate units offer an approx performance of 64 dB D_{nTw} for airborne sound. The construction achieves this by using a SmartWall 175mm (TP175 / 1.4) block and 40mm mineral wool.

If however there is void below the TP175 / 1.4 and 40mm mineral wool, as long as the void separation below is not a cellar, and is made up as above and the walls and ceilings are completely separated by the continuous mineral wool slab, this could achieve approx 67 dB D_{nTw} .

Double-skin house partition



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Concrete Floors

Juwö Evolved SmartWall do not produce a flooring/ceiling system therefore, the SmartWall system would have to be used in conjunction with a reinforced concrete ceiling/floor system.

A need to employ a minimum of 200mm thick reinforced concrete system will be required, however this is very much dependant on the span required, and would be of a solid concrete nature, not a hollowcore or block & beam floor, possibly a metal cast concrete decking system could be used. In addition there would be a requirement to add acoustic insulation material and approx. 50 to 60mm of concrete screed in addition to floor covering made of tiles or wood or carpet.

With floor construction as described above, you can expect to achieve approx. 56 to 57 dB DnTw airborn sound performance between apartments through the floor, however these system would have to have a Pre-Completion tested carried out on site.

