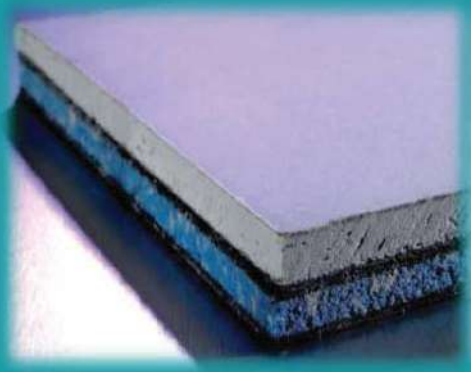
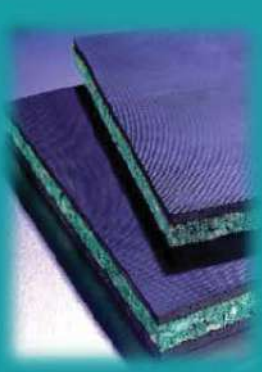
SOUNDPROOFING ESSENTIAL FACTS

JCW ACOUSTIC SUPPLIES





Soundproofing FAQ's

WHAT ARE THE DIFFERENT TYPES OF NOISE?

There are mainly 3 different kinds of noise:

Airborne Noise – Sounds transmitted between rooms via flanking elements instead of directly through separating elements or along any path other than the direct path.
To reduce the amount of sound heard by the other person you would need to install a barrier or Sound Insulator between the source and you, the thicker and denser the barrier then the better the sound reduction will be.

Impact Noise – This is the transmission of sound via the connection of different materials to each other i.e. footsteps on a floor of a house.
To reduce vibration transmission, you need to either stop the sound getting into the floor, out of the ceiling or a combination of both, by adding a Floating Floor or an Acoustic ceiling system.

Structure Borne Noise - Sound which is carried by the structure of a building.

WHAT IS FLANKING TRANSMISSION?

Sound transmitted vertically and horizontally between two rooms using an indirect path, such as the top or bottom of a partitioning wall

WHAT IS A FLOATING FLOOR TREATMENT?

Often referred to as the FFT. FFT may use battens, cradles, or platform based – all of which use a resilient layer to provide isolation from the base floor.

WHAT IS FLANKING NOISE?

Flanking noise is more often perceived in flats where noise is transmitted through the fabric of the building. Flanking noise is more often caused by impact noise and often travels through the walls of the building.
This is more of a problem if the walls are of a lightweight construction so it is important the correct density blocks are used in the construction of new flats today.

Normally a minimum 7 kilo newton density block is specified today to reduce flanking noise nuisance and also help comply with the current regulations for noise control in flats and other multi-occupied buildings.

MODERN MYTHS ABOUT SOUNDPROOFING -

Attempts to quiet rooms over the years have created many fallacies. Even today, some companies and builders merchants sell a variety of materials to unsuspecting contractors and homeowners based on fallacies which have been pervasive for years. A few of these are:

Fallacy	What they say	What it actually does
Fill the wall with egg cartons	"Will improve loss by 10dB"	No measurable effect
Put acoustic insulation in wall	"Will fix everything"	Typically 3 – 4dB improvement
Put mass loaded vinyl under dry-wall	"Will improve loss by 27dB"	Actually 3 – 9dB
Add another layer of drywall	"Will stop the bass sounds"	Actually 2 – 3dB per layer
Use foam as a barrier	"Regarded as a great barrier"	Actually <2dB

HOW DO I COMPLY TO NOISE REGULATIONS?

APPROVED DOCUMENT E 2003 (ENGLAND AND WALES)

Dwelling-houses and flats - Performance standards for separating walls, separating floors and stairs that have a separating function between dwellings.

New Build	Airborne Sound Insulation $D_{nT,w} + C_{tr}$ dB (minimum values)	Impact Sound Insulation $L'_{nT,w}$ dB (minimum values)
Walls	45	
Floors and stairs	45	62

Conversions - Material Change of Use		
Walls	43	
Floors and stairs	43	64

Rooms for residential purposes - Performance standards for separating walls, separating floors and stairs that have a separating function between dwellings.

New Build	Airborne Sound Insulation $D_{nT,w} + C_{tr}$ dB (minimum values)	Impact Sound Insulation $L'_{nT,w}$ dB (minimum values)
Walls	43	
Floors and stairs	45	62

Conversions - Material Change of Use		
Walls	43	
Floors and stairs	43	64

Laboratory values - For new internal walls and floors between all internal habitable rooms including bathroom/ w.c. within a residential property.

Domestic (Non separating)	Airborne Sound Insulation Rw dB (minimum values)
Walls	40
Floors and stairs	40

Pre-completion Testing

Sound insulation testing, to show compliance with the relevant performance standards should be conducted in accordance with:

BS EN ISO 140-4:1998 (airborne)
BS EN ISO 140-7:1998 (impact

Robust Details

The Robust Details Certification Scheme is a simple and reliable route to compliance.

It is designed for separating walls and floors in new build dwellings only in England and Wales.

For more information go to: www.robustdetails.com

SECTION 5 (SCOTLAND) STATES:

Every building, which is divided into more than one area of different occupation, must be designed and constructed in such a way to limit the transmission of source noise from normal domestic type activities, between such areas, to a level that will not threaten the health of, or cause inconvenience to, the building occupants.

Table 1 - Design Performance Levels

	New-build and conversions (not including traditional buildings)	Conversion of traditional buildings*
Minimum airborne sound insulation	$D_{nT,w}$ 56 dB	$D_{nT,w}$ 53 dB
Maximum impact sound transmission	$L_{nT,w}$ 56 dB	$L_{nT,w}$ 58 dB

Methods of Compliance

Compliance with Approved Document E can be shown by Pre-Completion Testing or site registration with Robust Details Ltd.

* definition of traditional buildings
A building or part of a building of a type constructed before or around 1919:
a)using construction techniques that were commonly in use before 1919; and
b)with permeable components, in a way that promotes the dissipation of moisture from the building fabric.

Demonstrating compliance

There are two methods in which to achieve the design performance levels of Standard 5.1.
They are by the use of:

a. Example Constructions

Example Constructions have been developed to repeatedly achieve the required design performance levels, providing that they are built correctly and all associated flanking details are correctly designed. They are examples of constructions, commonly used within the UK, that are proven to reduce sound transmission at frequencies which can generate neighbur complaints.

b. Other Constructions

Other Constructions include manufacturers' proprietary solutions and new, or innovative, construction designs, which are not considered to be Example Constructions.

a) Example Construction; or
b) Other Constructions

Method of Compliance - PCT/PT Approved Document E

Timber & Concrete Floors	New Build PCT req'd	Conversion PCT req'd	Refurbishment	Remedial	Floor Type (Refer to brochure for construction details)
Acoustic Batten JCW 80T timber frame. (bespoke batten depths available made to order)	•	•	•		Timber PCT/PT or General Refurbishment
Acoustic Batten JCW 50C & JCW 80C See Robust Details for further options	•	•	•		Concrete PCT/PT or General Refurbishment
Cradle & Batten See Robust Details for further options	•	•	•		Concrete PCT/PT or General Refurbishment
Impacta Rubber Under Screed Rubber Layer	•				Concrete PCT/PT
Acoustic Screed Foam Pack Under Screed Foam Layer	•				Concrete PCT/PT
Impacta Mat 3mm. Surface Impact Layer	•	•	•	•	Timber Refurbishment
Impacta Mat 4.5mm Surface Impact Layer	•	•	•	•	Concrete PCT/PT/ Refurbishment
Deck 19 T&G Overlay	•	•	•	•	Timber/Concrete General Refurbishment
Acoustic Deck 28 & 32 Overlay	•	•	•		PCT/PT Timber/**Concrete** General Refurbishment
Deck 33 & Deck 37C Direct to joist option	•	•	•		PCT/PT Timber or General Refurbishment
Deck 37 Cement Board Direct to joist option	•	•	•		PCT/PT Timber or General Refurbishment
Impactalay 12mm. Surface Mat treatment	•	•	•	•	Concrete or General Refurbishment
Impactalay Plus 15mm. Surface Mat treatment	•	•	•	•	PCT/PT or General Refurbishment

Walls					Product	Wall Type
Timber Single Stud Solution			•		Acoustic Quilt	PCT/PT
Timber Double Stud Solution	•				Acoustic Quilt	PCT/PT
Metal Single Frame Solution			•		Acoustic Quilt	PCT/PT
Metal Twin Frame Solution	•				Acoustic Quilt	PCT/PT
Independent Wall Lining Solution			•	•	Acoustic Quilt	PCT/PT
Acoustic Liner Solution			•	•	Acoustic Silent Board	PCT/PT

These products have been independently tested in a UKAS accredited laboratory and meet or exceed the minimum performance criteria as stipulated in the Robust Details handbook.

Please refer to the Robust Details Handbook for the details of the required specification.

Key to Method of Compliance

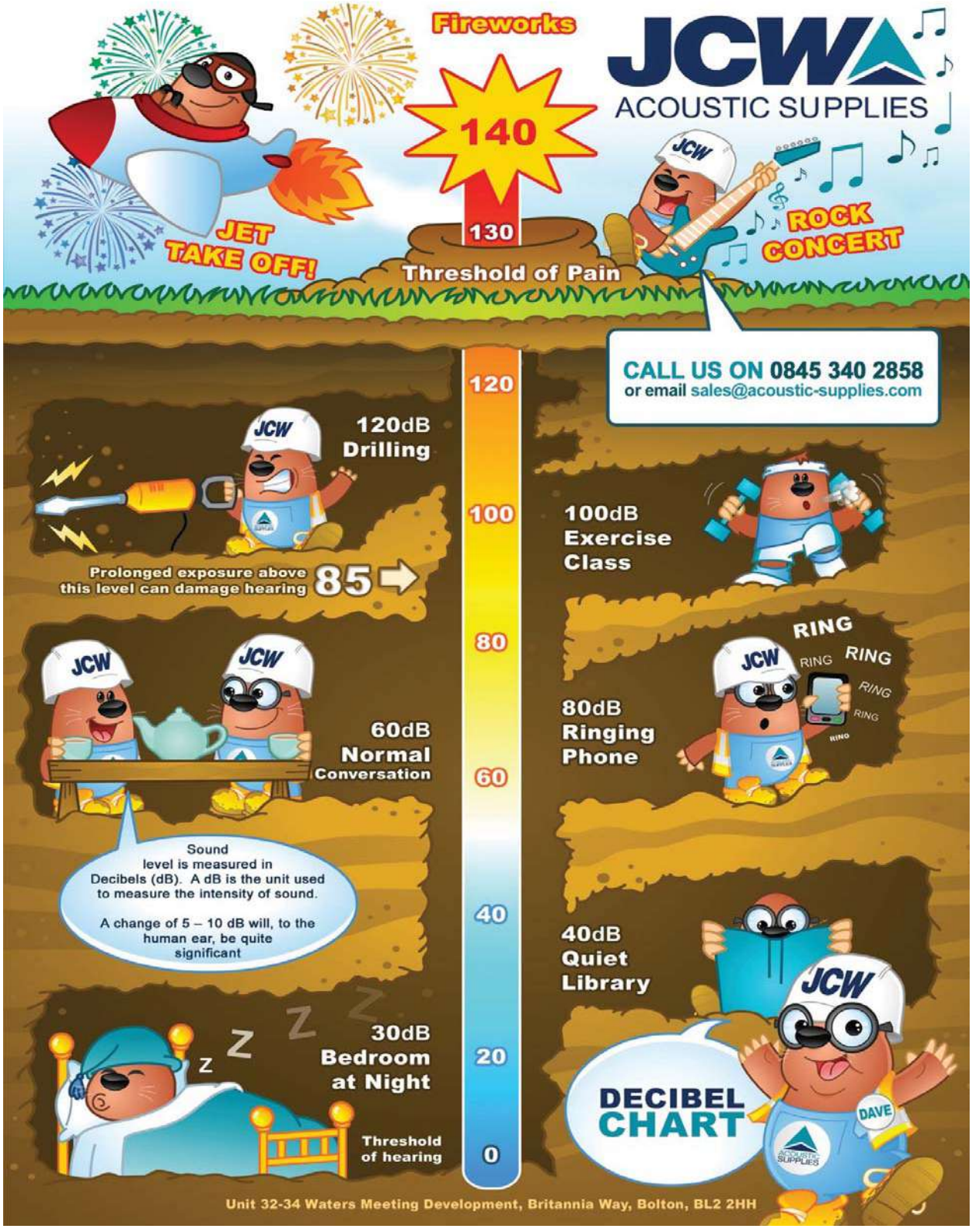
PCT - Pre-Completion Testing (England & Wales)
PT - Performance Testing (Scotland)
FFT - Floating Floor Treatment

Method of Compliance - Robust Detail (New Build Dwellings only)

Product Range	Robust Detail	Floor Type
Batten JCW 50C (FFT 3)	✓	E-FC-1, 2, 7 E-FS-1
Batten JCW 80C (FFT 1)	✓	E-FC-1, 2, 7 E-FS-1 E-FS-2
JCW 80T (FFT 1)	✓	E-FT-1, 2, 3
Cradle & Batten (FFT 2)	✓	E-FC-1, E-FC-2 & E-FS-1
Deck 19 (FFT 5)	✓	E-FC-1, 2 E-FS-1
Deck 28 & 32 (FFT 5)	✓	E-FC-1, 2 E-FS-1
Impacta Mat (4.5mm) (Bonded Resilient Floor Cover)	✓	E-FC-8

HOW IS SOUND MEASURED?

Sound is measured in decibels (dB). A decibel is one unit on the decibel scale, which is a logarithmic scale. The below scale indicates typical sound levels in comparison to decibels –



We know Soundproofing can be a problematic area but the team (and DAVE) at JCW Acoustic Supplies are always on hand to offer technical advice and we also have experts who will gladly come and visit your site to offer their vast expertise free of charge!

So please get in touch, we would love to hear from you...

Call - 0845 340 2858
Email: sales@acoustic-supplies.com

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