Sound Insulating
& Fire Resistant Floors
with Lewis® metal sheet flooring.

Sound insulating properties:-

Existing floor constructions in older commercial buildings and houses are often made of wood. In the case of major repairs, renovation, restoration or a change in the function of such buildings, it often appears that these floor constructions do not meet the current requirements for sound insulation.

LEWIS® Dovetailed sheeting makes it possible to create a lightweight sound insulating floating floor on top of the existing wooden or steel frame floor construction.

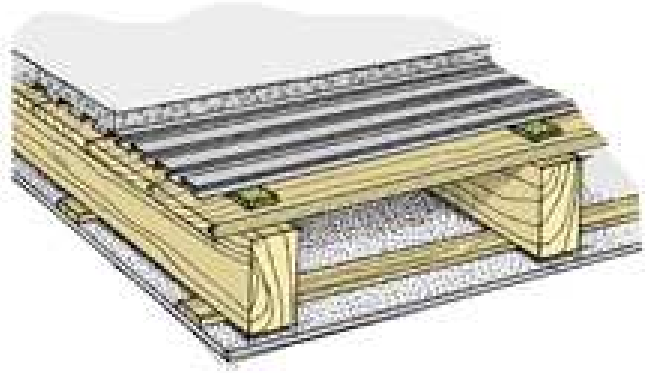
Sound insulation requirements

Building regulations usually set minimum requirements for airborne and impact sound insulation between rooms inside buildings. If the underlying construction consists of wooden beams or a lightweight steel frame construction, a lightweight additional floor surface will be necessary.

Using a thin and therefore relatively light LEWIS® sound insulating (floating) floor, the desired sound insulation values can virtually always be realised.

Compartment floor

Generally, a simple standard LEWIS® floor (type LWS-B0) amply meets the sound insulation requirements for compartment floors. With the LEWIS® LWS-B0 construction, LEWIS® sound-insulating Rockwool resilient strips are applied onto the floor wood at the spots of the wooden beams.



The LEWIS® Dovetailed metal decking is applied at right angles to the beams. Using LEWIS® Rockwool side strips, the LEWIS® sheet floor is kept free from the rising work around. A layer of 34 mm flowing screed is applied onto the Dovetailed metal sheeting. Underneath the dovetailed metal sheet floor, a 12.5 mm thick fibreglass-reinforced plaster board ceiling will suffice. This construction realises a performance of airborne sound Rw 55 and impact sound Ln 49.

Flexibility of Construction Variants

LEWIS® metal deck floor constructions are constructed flexibly based on a floating LEWIS® composite steel deck sheeting. Thus, a solution can be offered for virtually every construction and sound requirement. The performance of 17 LEWIS® floor construction variants has been established in a lab or by measurements in practice. An overview of these construction variants and their corresponding insulation values is available. By adjusting one or more of the variables in the LEWIS® floor construction, such as support material, cavity insulation and the thickness of flowing screed for example, further improvements can be realised.

Resilient strips

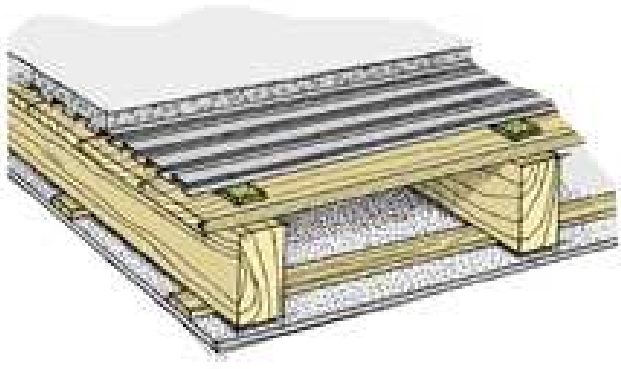
LEWIS ® Rockwool resilient strips are applied to LEWIS® sound insulating floors as support materials by default. If the centre-to-centre distance is greater than 800 mm and/or the use load is greater than 2.5 kN/m2, then we would advise to apply LEWIS® rubber granulate or LEWIS® Sylomer TSS resilient strips.

Fire resistant properties:-

LEWIS® profiled metal decking makes it possible to realise a composite floor construction that meets fire resistance requirements without complicated measures. Generally, a fire resistance of 60 to 120 minutes can be realised without a problem with all standard LEWIS® floor constructions. European test reports are available. Apart from fire-resistant floors on wooden supporting constructions, LEWIS® Dovetailed sheeting is also often applied for fire-resistant floors in lightweight steel constructions (steel framing systems).

Compartment floors

LEWIS® Dovetailed sheeting makes it easy to convert an existing wooden floor into a compartment floor. By applying a LEWIS® fire-resistant floor construction, these requirements for sound insulation of compartment floors are met at the same time.



LEWIS® sound-insulating support strips are applied on the existing T&G timber boards or directly on the wooden beams. LEWIS® profiled metal decking is applied onto the resilient strips. Peripheral connection points and conduits are closed off with LEWIS® Rockwool side strips. A layer of 34 mm flowing screed is applied onto the LEWIS® metal decking. The total finished floor thickness applied onto the existing construction is only 65 mm (15 mm resilient strips, 16 mm

sheet profile and 34 mm flowing screed). The ceiling consists of 12.5 mm thick fibreglass-reinforced plasterboard (GKF) sheeting fixed onto wooden battens or metal stud profile. With this construction, the LEWIS® composite floor has a fire resistance of = 60 minutes. When even higher requirements apply to fire resistance, these can be met by adjusting the thickness of the ceiling finish or the flowing screed.

Composite structural floor system

In addition to the best known application of LEWIS® Dovetailed sheeting on (existing) wooden beam layers with a centre-to-centre distance of 400 to 900 mm, spans with centre-to-centre distances up to 2500 mm can also be realised. This application is mainly found in lightweight steel constructions (light gauge steel framing systems).

Depending on the span, it may sometimes be necessary to include an additional reinforcement into the LEWIS® composite floor in order to meet the 60-minute fire resistance requirement.

Please feel free to contact us if you would like further information on any of our products, or if you would like to discuss a particular project.

We would also be happy to provide you with a no obligation, free quotation for your project.

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