

## DOVETAILED SHEETING FIXING AND INSTALLATION

### LEWIS®

A LEWIS® deck is easy to install by following the simple instructions below. Even though its geometric and cold rolled form is based on new innovation, our expertise of LEWIS® installation is based on more than 80 years of experience.

#### Safety



When laying a LEWIS® deck always pay attention to safety as the edges of the sheets may be sharp. Therefore wear protective gloves and safety boots. Always make sure the LEWIS® stack is stable and placed securely in the workplace ahead of laying the sheets

#### Storage

LEWIS® sheets are best stored in dry indoor conditions prior to installation.

#### Cutting



To cut LEWIS® sheets to size a carborundum disc cutter can be used. Cut outs can also be made this way or with the use of a suitable jig saw. Holes through a completed LEWIS® floor can be made with a core drill.

#### Laying the sheets



Always ensure the supporting structure is checked to make sure it is capable of carrying the weight of a LEWIS® composite floor. LEWIS® sheets are laid at right angles to the joists or beams even if laid on existing tim-

ber floor boarding or timber deck. Standard laying procedure is to lay out the first row of sheets lengthwise with the first sheet laid blue identification print facedown, and then alternate each sheet (print up, print down etc). The adjacent row starts (stretcher bond is OK) with the first sheet blue print up and so on.

#### Crosscut overlapping of the sheets



- ≥ 50 mm overlap if completely supported and fixed to the existing floor.
- ≥ 100 mm overlap if laid on joists or beams or as a floating floor on resilient strips.

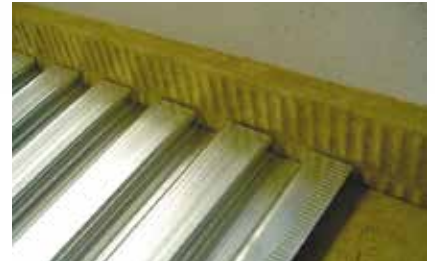
Crosscut overlaps are made by “clicking” the sheets into each other (see illustration) alternately (blue print down then up) with a min 100 mm overlap. Crosscut overlaps can be adjusted by simply sliding the sheets into or apart from each other once “clicked” into place. If resilient strips are to be used, first “click” the sheets together on a hard (not springy) surface.

#### Lengthwise overlaps



Overlaps should not be limited to the side flanges. In order to make the LEWIS® floor less vulnerable to site foot traffic (vibration movement), it is necessary to include part of the profile itself in the overlap.

For this purpose, slide the side flanges as far as possible over the first profile of the adjacent sheet (see illustration). The upright part of one profile will butt up to the upright profile of the adjacent sheet. The effective width of a LEWIS® sheet is approximately 580 mm.



#### Connections

For expansion reasons allow a 10 mm (approx.) gap between the LEWIS® deck and the perimeter walls. Use a suitable expansion joint product or the LEWIS® acoustic flanking strip.

#### Mechanical fixing

When working on new timber joists or floor boarding LEWIS® deck should be fixed (do not compress the profile) with regular wire screw nails or self-drilling screws, fixed through the upper flange of the deck. On existing timber joists or floor boards the sheets are fixed through the lower flange in the same way.

When working on steel beams the LEWIS® deck can be stud welded, nail gun riveted or fixed with self-drilling screws.

**Please note:** When a permanent “fixed” connection is made by welding, riveting or nail gun, anti-shrink reinforcement is needed – details can be provided.

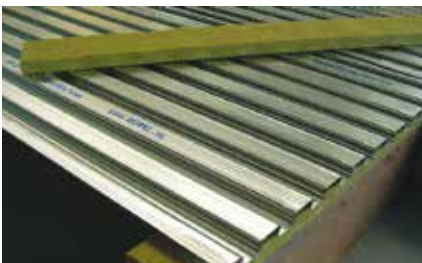
#### Composite action floors

In order to prevent initial deflection of the timber supporting structure, it must be underpinned temporarily, i.e. propped until the screed is cured. Lay the LEWIS® sheets at right angle across the joists in the usual way (min 100 mm overlap) and drive a 60 mm screw nail fixing through the lower flange of the deck until the head of the nail is level with the top profile of the deck, this allows additional connection between the screed and the nail.

#### Floating floors

Occasionally, due to poor drying and curing conditions, the concrete may curl/lift at the edges and lift the deck slightly at the perimeter of the floor. To prevent this, the LEWIS® deck can be temporarily fixed along the edges of the floor. This is done by fixing, with self-drilling screws, tapered timber blocks (to allow removal) or by using a plastic cone in a similar way. Once the concrete/screed is cured, these are removed and the holes grouted. Always make sure the top of the blocks or cones are above the finished floor levels. Pinning sheets by timber props between the ceiling and the deck also works. Details on temporary fixings are available upon request.

## Acoustic floating floors



Timber or steel construction - place LEWIS® 25/20 Resilient strips directly on top of new or existing beams or directly onto an existing or new timber floor deck. When laying acoustic strips on a timber deck: place the LEWIS® Resilient strips at between 500 - 600 mm centres.

If joist centres exceed 800 mm and/or the load applied exceeds 2.5kN/m<sup>2</sup> the LEWIS® CDM rubber granulate MTA=15/7 or LEWIS® CDM PF resilient strip should be used. For Steel frame construction (LGSF) the LEWIS® CDM rubber granulate MTA-5 is used. Full details on the various resilient strips are available upon request.



**Please note:** A resilient strip must always be placed directly under any lengthwise overlaps of the LEWIS® deck, overlaps should be a minimum 100 mm. Around the perimeter of each dwelling or room LEWIS® 20/15 Flanking strips must be used to create complete isolation of the floating floor from the supporting structure and party walls. Avoid any potential for "sound bridging" by wrapping all pipes and voids with LEWIS® 20/15 Flanking strip.

## Floors with under floor heating



As with standard floors, ensure a 10 mm gap around the perimeter of each room by using edge strips or LEWIS® 20/15 Flanking strips.

Fix heating pipes to the top of the LEWIS® deck with LEWIS® clips or the LEWIS® pipe fixing rail system. The LEWIS® deck should be laid as a floating floor – is recommended not to fix sheets to the sub-floor.

## Concrete and Screed

When installing LEWIS® please bear in mind that it initially acts as simple shuttering or formwork to support the concrete/screed whilst in its wet state. A LEWIS® deck will only start functioning as reinforcement after the concrete/screed has set. The fixing of finished surfaces such as ceramic and terrazzo type floor tiles must only be carried out on the smooth finished substrate floor once the concrete/screed has cured.

## Concrete composition



For best results use a C20/25 fine grade concrete (12 mm max aggregate) or a free flowing self-levelling anhydrite or cement based screed. Experienced screeding specialists may recommend the use of specific performance related screeds.

## Recommended LEWIS® floor thickness:

- Standard domestic floor  
 $16 + 20 = 36$  mm
- Standard floor  
(joist centres 600 mm max)  
 $16 + 34 = 50$  mm
- Standard floor  
(joist centres max 600 – 1500 mm)  
 $16 + 34 = 50$  mm
- Standard floor  
(joist centres 1500 – 2500 mm)  
 $16 + 34 = 75$  mm
- Acoustic + Fire resistant floor  
 $16 + 34 = 50$  mm
- Underfloor heating (Ø 16 mm pipe)  
 $16 + 16 + 20 = 52$  mm  
(20 mm concrete/ screed above finished level of pipes)

**Note:** extra reinforcement may be required.  
LEWIS® profile 16 mm + concrete = total floor thickness

A fine grade aggregate mix can be used as follows:

- 1 Part Cement
- 2.5 parts concreting sand
- 1 part fine gravel (2 -10 mm)

Calculating concrete/screed  
LEWIS® floor thickness – 8 mm = litres/m<sup>2</sup>

The use of pre-mixed concrete or screed is recommended and always to follow the manufactures guidelines on installation, finishing, drying and curing.

## Temporary propping

For joists or beams with centres greater than 1200 mm (50 mm floor thickness) or 1000 mm (floor thickness 75 mm) it is necessary to temporarily prop to support the floor whilst the concrete/screed cures. Normally one row of screw props per span is sufficient.

## Wet room or bathroom floors



To improve cross ventilation under the LEWIS® deck it is advisable to remove some floor boarding or cut vertical openings in the timber deck with a core drill. Air will then flow through the underside flanges of the LEWIS® deck.

To create a watertight wall to floor joint simply work a robust DPC into the concrete/screed and bond back to the wall ahead of boarding or plastering. Alternatively a self-adhesive waterproof sealing tape can be used ahead of plastering/tiling etc.

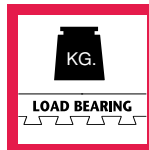
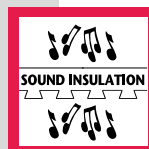
With lightweight partition walls – aerated blocks, composite stud partition plasterboard etc. can be fixed (avoiding any underfloor heating pipes) on top of a finished LEWIS® composite floor.

## General

Fine gravel concrete/screed, tiles, flagstones, natural stone or terrazzo tiles must be fixed according to the current standards and regulations.

## Certificates and reports

The LEWIS® manufacturing and production facility is ISO 9001 and ISO 14001 accredited. The LEWIS® product / system is tested to the highest standards and carries the following certification.



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