

LEWIS PLATES

Lewis Plates are cold-rolled self-supporting, dovetailed, steel reinforcement sheets which allow lightweight concrete floors to be laid on timber floor framing.

The plates are laid over timber joists and nailed or screwed down; the underfloor heating pipe is then clipped to them and a screed is then poured over.

Key benefits of Lewis Plates include their ability to increase the load-bearing capability of a floor structure, their excellent acoustic insulation properties and their enhanced thermal transfer capability when underfloor heating is installed with a low temperature, highly efficient heat source such as a heat pump.



IHS Solutions

Underfloor Heating

Ground Source Heat Pumps

Air Source Heat Pumps

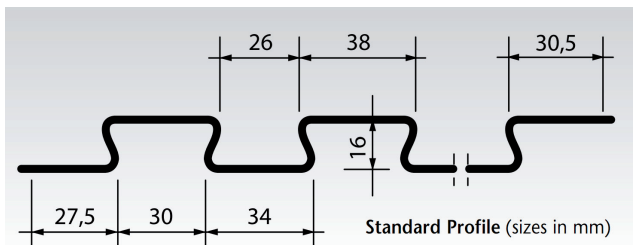
Thermal Stores & Hot Water Tanks

Solar Thermal Systems

Manifolds, Pipe & Controls

Road Energy

Lewis Plates



Height of Profile	16mm
Flange Width	38/34mm
Weight	0.058 kN/m ²
Minimum "fine grade" concrete thickness	Typical Profile = 16mm profile height (plate) +40-45mm screed/concrete mix = 56/61mm. See application details for more information.

Special Properties

- Simple to install due to special rolled profile; can be laid directly onto floor joists. Tongue and groove timber boards can be omitted resulting in savings on floor height and weight
- Water-resistant structural flooring ideal for bathrooms, wet-rooms and kitchens
- Enhance heat transfer capacity of underfloor heating
- Total floor thickness limited to 56mm
- Increased strength and rigidity of interconnected floor system results in extra load-bearing capacity of up to 30%
- Unique profile allows air circulation essential for timber preservation
- Advanced fire resistance properties

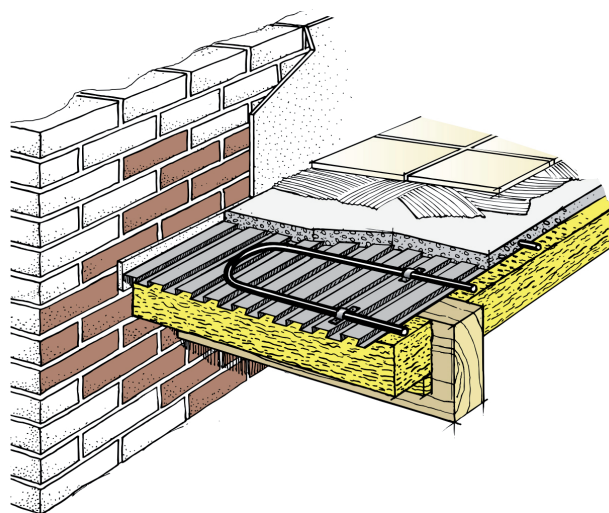
Lewis Plates, Underfloor Heating and Heat Pumps

Heat pumps are low temperature heat sources (typically 45°C) which is one of the reasons why they are so efficient. This is perfectly adequate for heating but lower than conventional heat sources such as oil or gas. Where a heat pump is the heat source for underfloor heating in a joisted floor structure, the use of Lewis Plates with screed increases the thermal performance of the floor construction yielding temperatures of up to 50°C or outputs of up to 150 w/m². The combination of a low temperature heat flowing through the screed turns the building itself into a giant heat sink which means it calls for heat far less frequently and is therefore far more efficient to run.



Methods of Application

A separate brochure outlines recommended methods of installation, detailed instructions regarding sheet-laying, joist lengths and width adjustments, fixing methods and concrete composition and pouring. The technical team at IHS are always happy to offer advice on appropriate construction and installation methods



Technical Details

Nominal Width	630mm
Effective Width	*580/610mm (depending on overlap)
Standard Lengths	1220mm 1530mm 1830mm 2000mm 2500mm
Length Range	800-7000mm
Dimensional Tolerances	Length: 1-4mm Width: 1-3mm
Moment of Inertia	1x = 3.6 cm ⁴ /m ¹
Moment of Resistance	Wx = 3.0 c ³ /m ¹
Steel Gauge	0.5mm