SUBFLOOR

SLIMLINE BUILDINGS

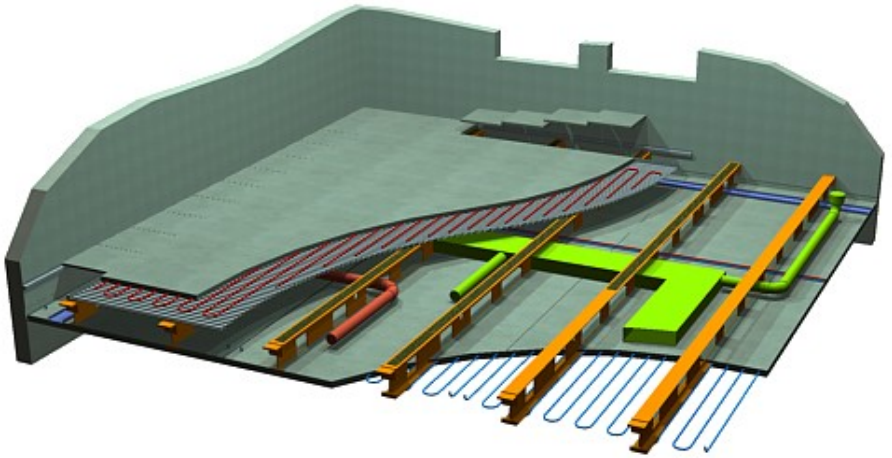
Introduction

Slimline is a unique combination of a ceiling, floor zone for multi directional services and sub-floor.

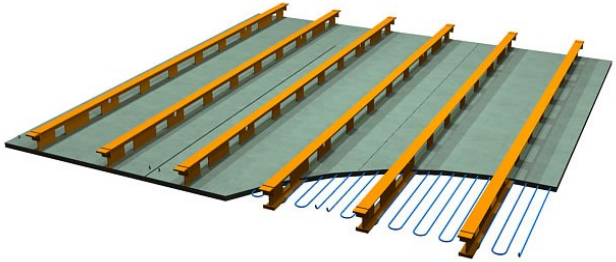
A Slimline Floor is the optimal choice for commercial, retail, schools, hotels, public buildings, riased access floors and residential apartment projects. Slimline Floors also work exceptionally well in refurbishment projects.

Slimline Floors are based on a pre-cast concrete slab layer of 70 or 80 mm thickness with integrated steel beams. The concrete slab layer will carry the working loads generated from storage, installation of material and workmen during the construction phase. The concrete slab layer also contributes to the dimensional stability of the building, the diaphragm action as well as fire protection and sound insulation.

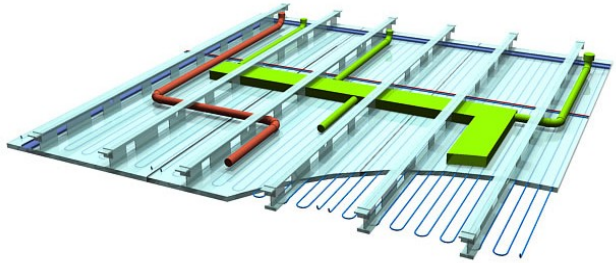
A 16 mm deep Lewis® dovetailed profile, galvanised steel, reinforcement sheet with concrete screed is fixed to the top of the steel beams to create a floating sub-floor. Access to the horizontal service voids is through specially installed access points (flexible access zones) in the finished sub-floor, as described later in this brochure.



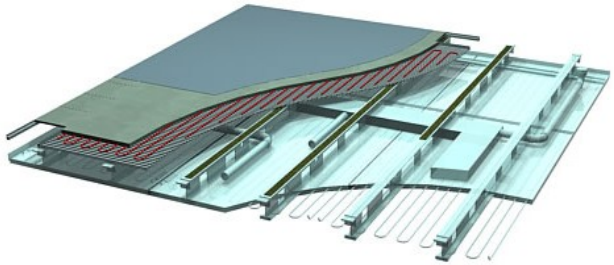
INTRODUCTION SLIMLINE SUBFLOOR



Ceiling



Horizontal shaft



Subfloor

FROM CEILING TILL SUBFLOOR

Accessibility

The use of Slimline creates horizontal shaft spaces within the pre-cast concrete ceiling layer and IPE steel profile beams to house multi-directional service pipes, ducts and cables.

Access to the service void is made via specially cut access points (flexible access zones) within the ceiling and sub-floor. Access zone covers can be lockable or ready to remove for rapid access depending on the type of sub-floor and floor finish selected. Security must also be considered.

The ceiling

The pre-cast concrete slab soffit becomes the final ceiling, it is factory finished and ready to be painted, has a depth of 70 or 80 mm and robust enough to allow construction foot traffic during installation of services during the construction process. The pre-cast concrete slab layer ceiling is an essential part of the composite floor, providing dimensional stability, fire-resistance (> 145 min) and contributes to the overall acoustic performance of the separating floor.

Types of subfloor

There are two types of subfloors:

1. Raised Floor type (without support studs)
2. Concrete or free flowing screed finished floor on 16 mm deep Lewis Dovetailed Sheeting, special profile reinforcement galvanised steel sheets – see illustration on page 4 of the brochure.

Raised floor

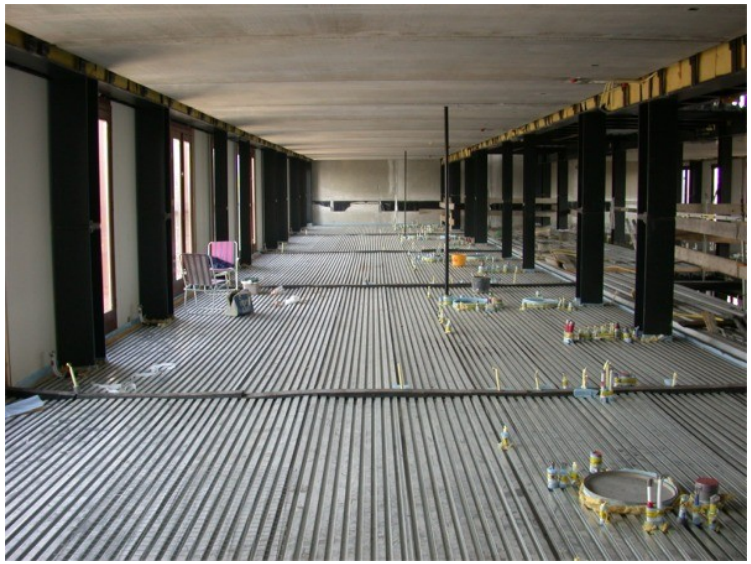
This concept creates almost 100 % flexibility for regular changing needs or new occupants of the building.

Screed with Flexible Access Zones (Flex-Zones)

A floating screed on Lewis® Dovetailed Sheeting can give an impression of non-flexibility for access points through the subfloor. This is not the case as from experience we find that only a small proportion of the sub-floor has to be accessible to reach services within the floor zone service voids therefore the option of flexible access zones is a practical choice. Flex-Zones create accessibility at locations where maintenance has to be done or for changing data and electrical connections. A flexzone along the facade, at the location of the servers, or in the zones in the hallway is a practical solution.

SUBFLOOR OPTIONS

Raised floor



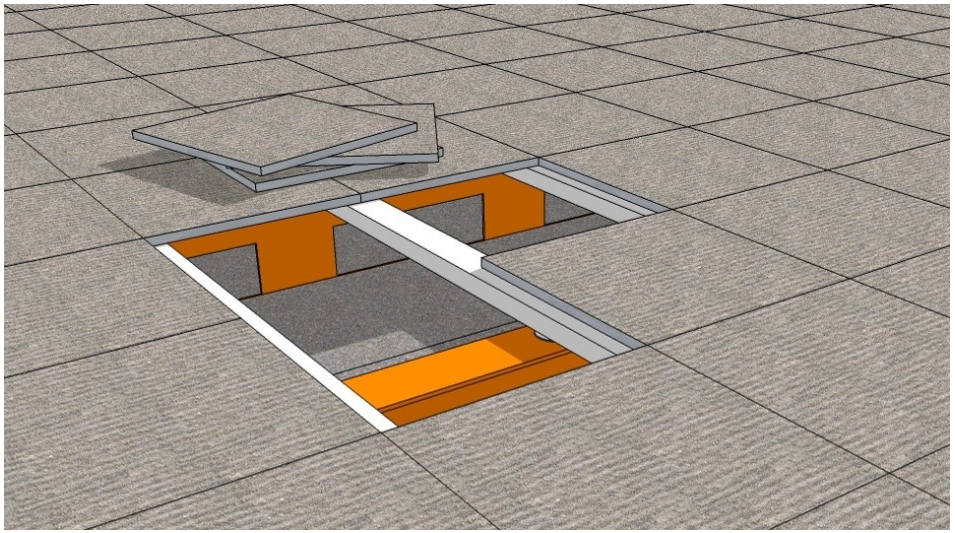
Screed on profiled steel sheet

Raised Access Floor

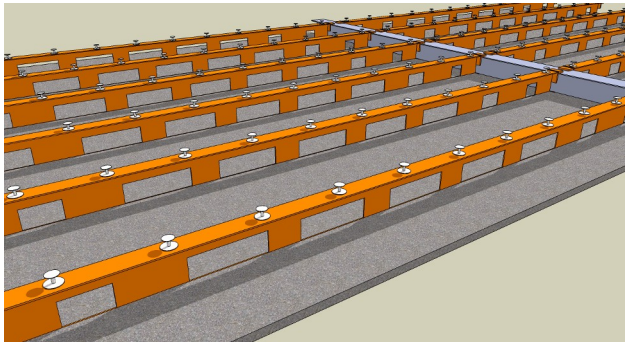
The raised floor type is based on steel profiles which are placed over the IPE profiles. On top of these profiles the standard 600 x 600 mm tiles are installed.

Construction

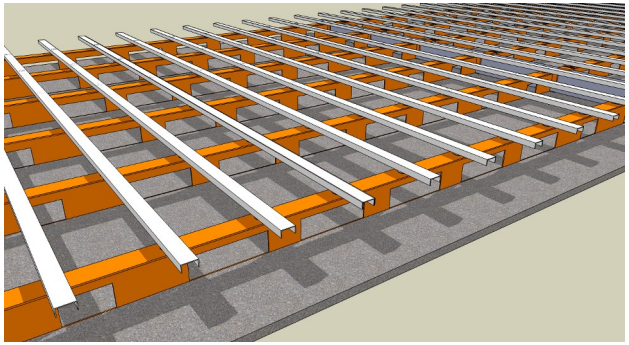
Support studs are laser leveled and bonded to the top flange of the IPE beams. Special inverted U profile supports are placed over the studs acting as a support for the 600 x 600 mm acoustic floor tiles. All tiles are removable to allow access to the horizontal service ducts. The tiles are 100 % demountable too reach the services.



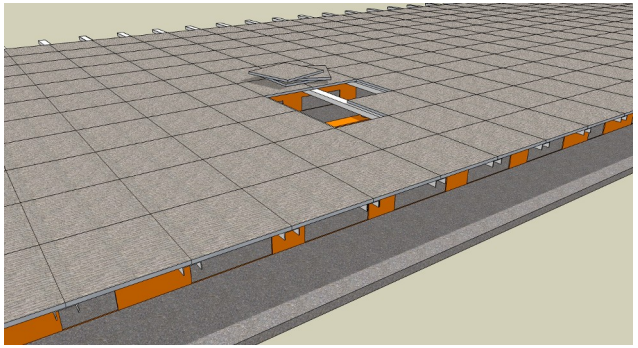
RAISED ACCES FLOOR



adjustable support on slimline profiles



U profiles as framework above IPE beams



Computer tiles on framework

100% FLEXIBLE

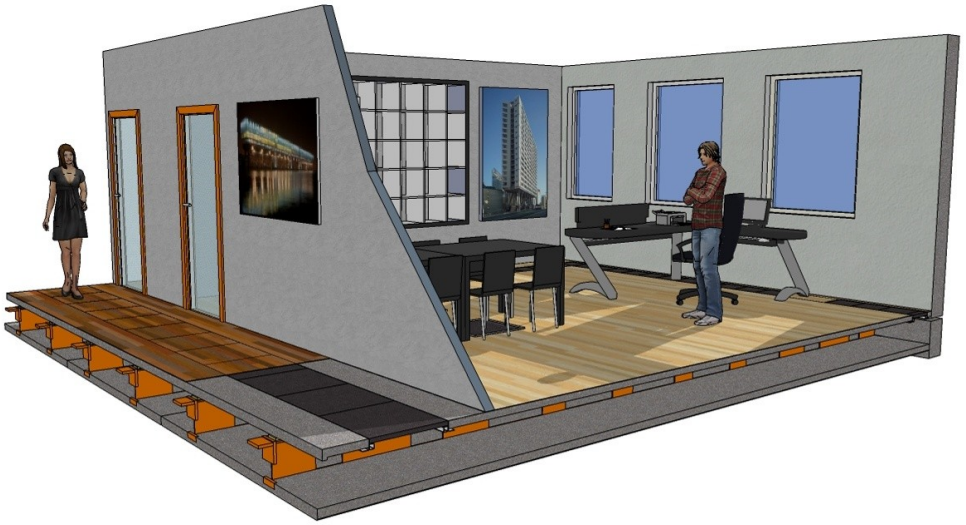
Self Leveling Screed on Lewis Dovetailed Sheeting

When using a Lewis® Dovetailed Sheeting, concrete or screed composite floor solution, access to the horizontal service voids is limited. The introduction of access panels (flexible access zones) at selected points across the floor provides required access.

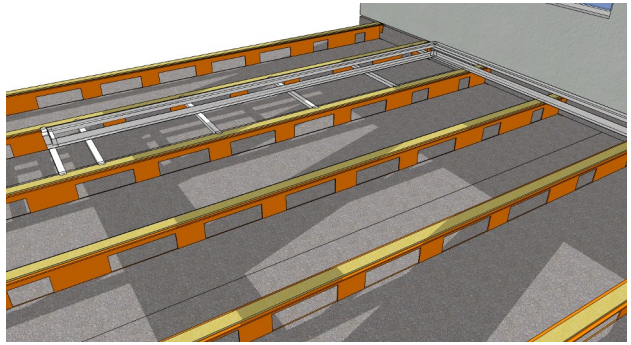
Construction

Slimline resilient strips are placed on top of the upper flange of IPE beams. Lewis® Dovetailed Sheeting is then placed on the beams (at 90 degrees to the beams) with openings cut at selected points to provide access points (flexible access zones). Access point frames, under floor heating and cooling pipes (if required) are fixed to the Lewis® sheet prior to pouring free flowing self leveling screed.

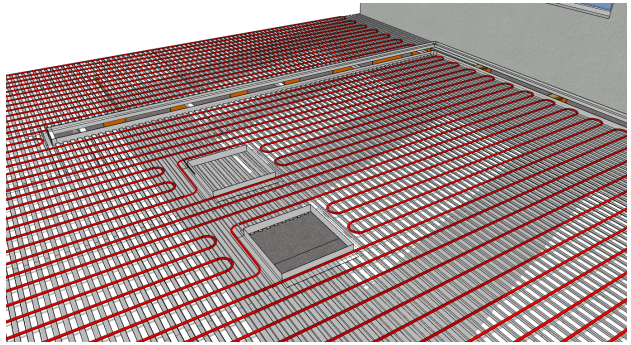
The floors can be future-proofed with the inclusion of extra flexible access zones to allow installation of extra services in the future. Thought must be given to avoid areas where u/floor pipework will be located.



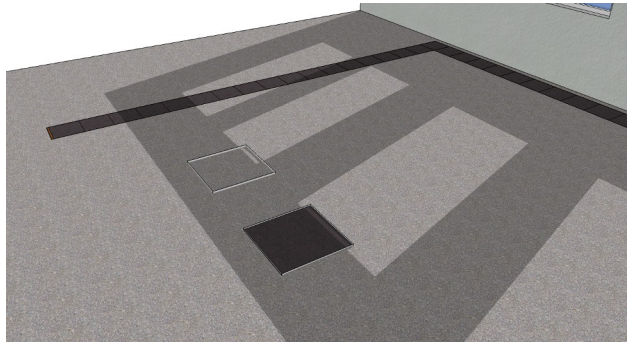
CAST FLOOR



Relaying of Flex-Zones



Profiled steelsheet with climate tubes

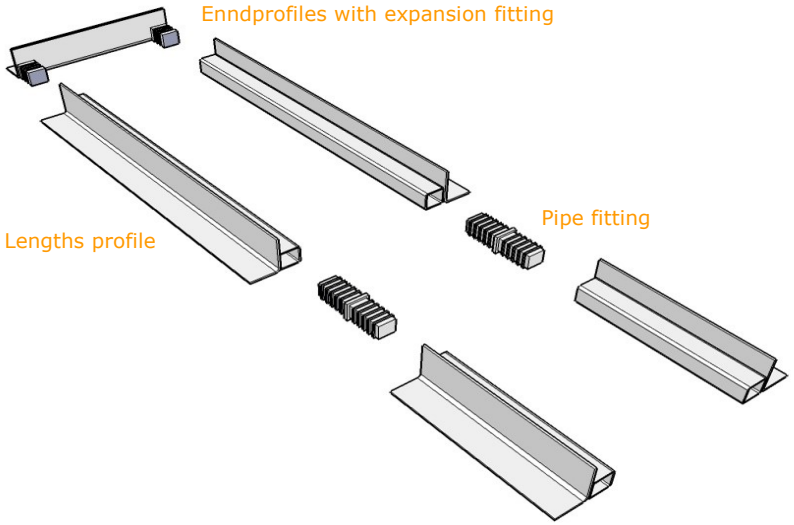


Casted sub floor with Flex-Zones

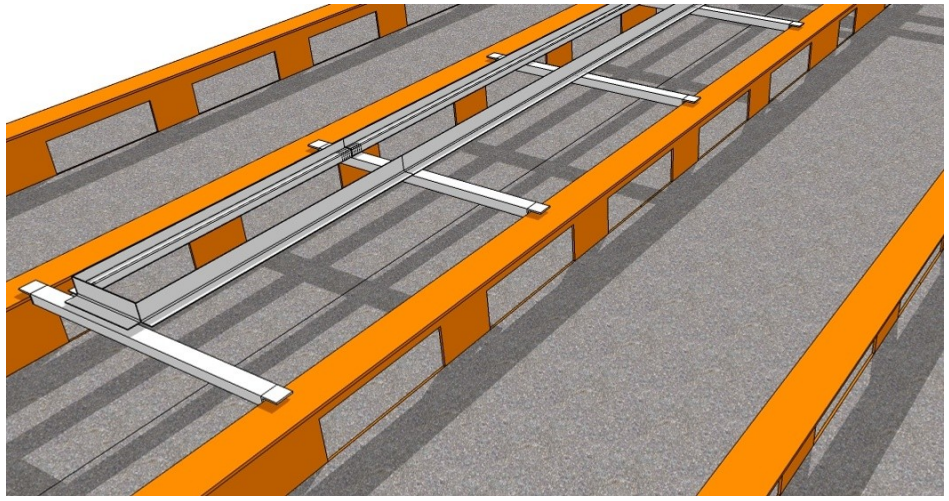
The Flex-Zone

Flex Zones (flexible access zones) are the accessable areas in the sub-floor providing access to the horizontal service void areas beneath the sub-floor.

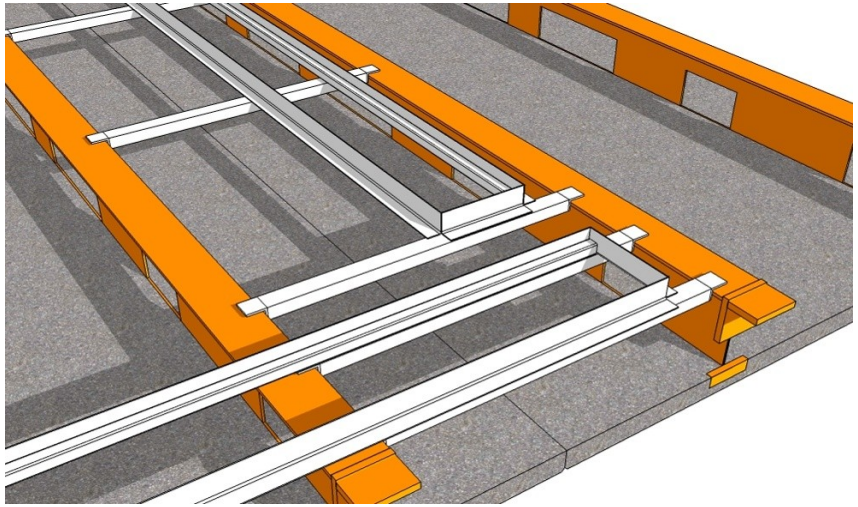
Flexible Zones are made up of special end and length profiles with an inner sleeve isolated from the Slimline floor with acoustic flanking material to eliminate sound transmission.



THE FLEX-ZONE



Flex-Zone supported by holding device



Cantilever supported by holding device

The Flex tiles

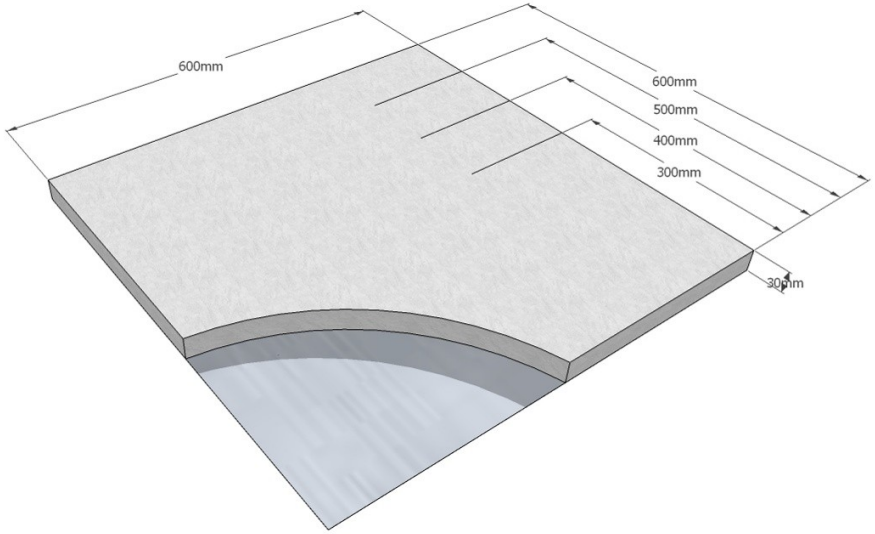
Flex tiles are standard 30mm thick, ‘pressed wood fibres’ or ‘gypsum-panels’.

Compressed wood
Gypsum

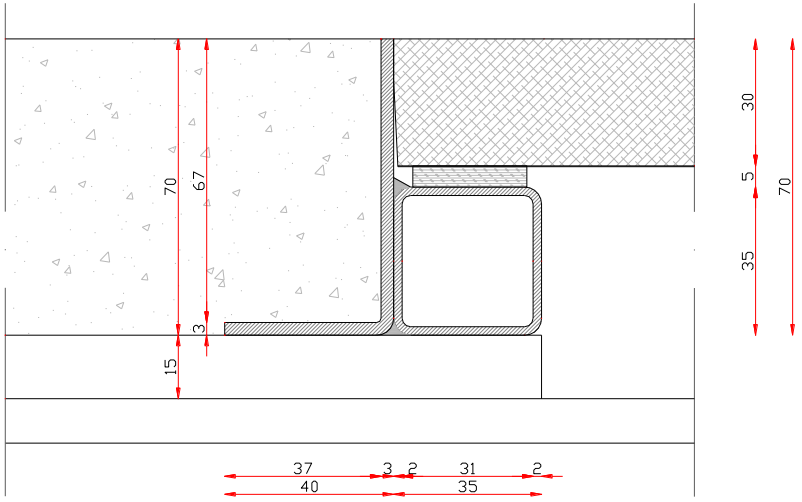
The tiles have a 0.2 mm steelsupport at the bottom. The upperside is unfinished.

Dimensions:

Wide	Length	Thickness
200 mm	600 mm	30 mm
300 mm	600 mm	30 mm
400 mm	600 mm	30 mm
500 mm	600 mm	30 mm
600 mm	600 mm	30 mm



THE FLEX TILE



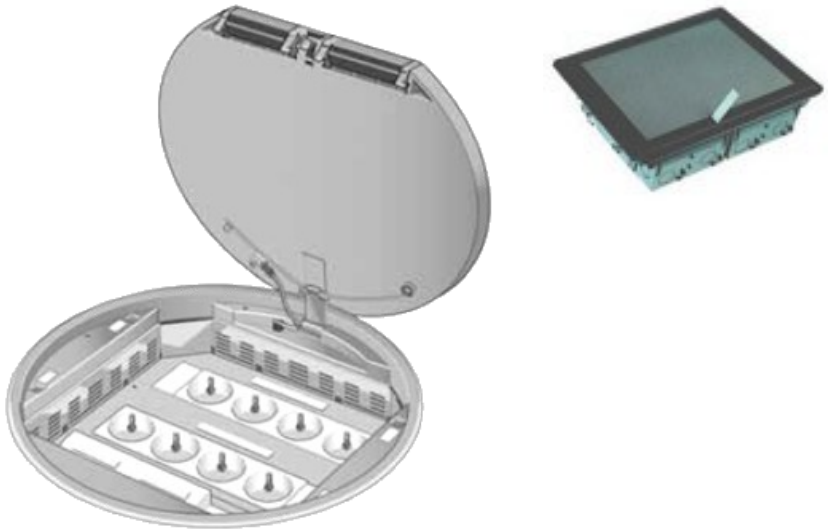
Top floor jack cross section detail

Electrical and data-connections

Within the Flex Zones - Electric and data connections can integrated and connected to cabling within the horizontal service voids if required.

- Electric connectors
- Plugs
- TV-video
- Soundboosters

Less flexible, but still very practical is the location of connector- boxes in the screed of the subfloor.



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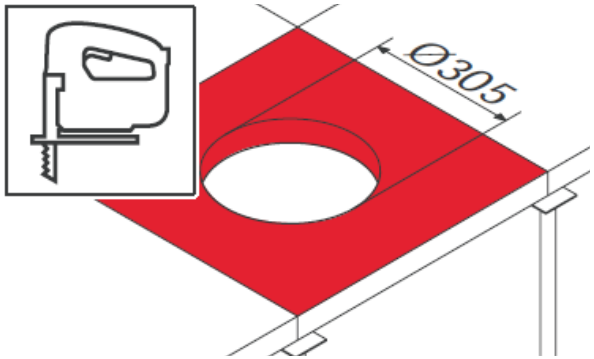
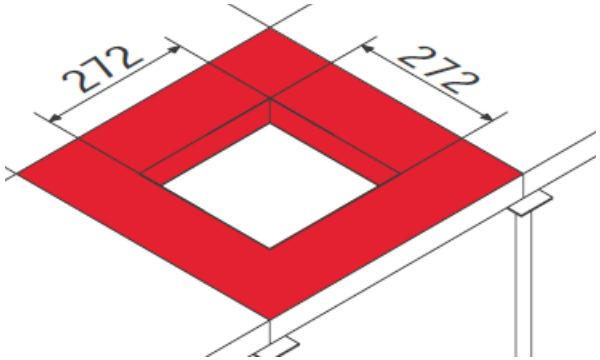
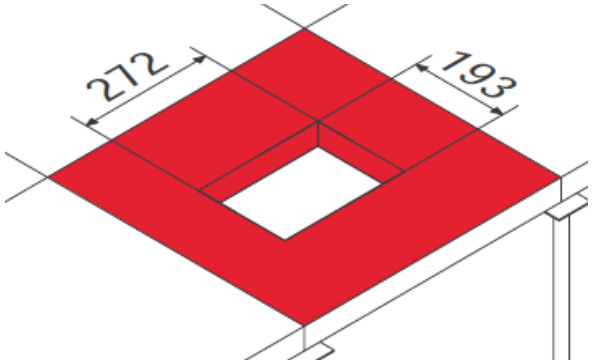
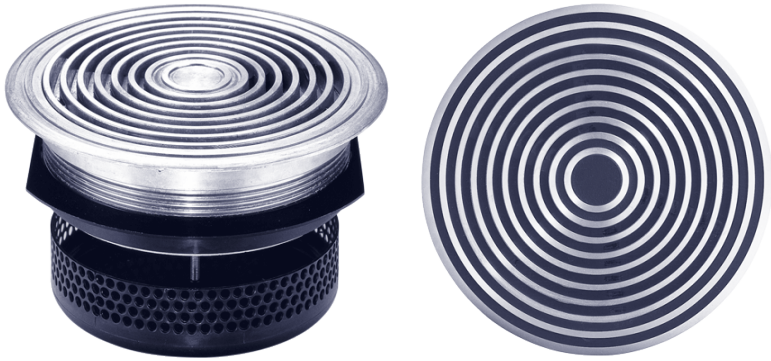




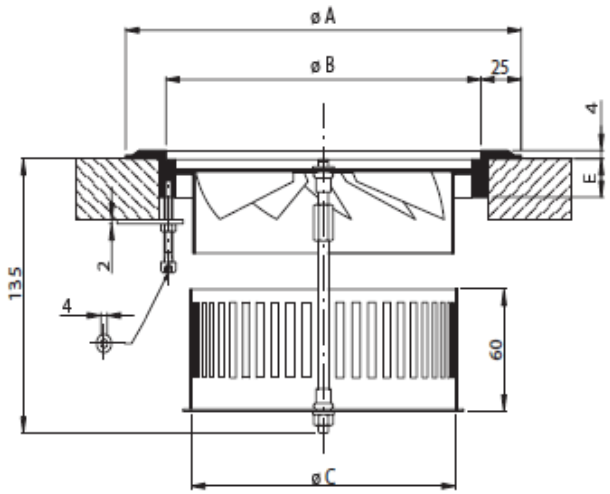


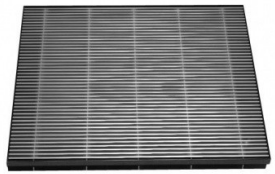
Ventilation

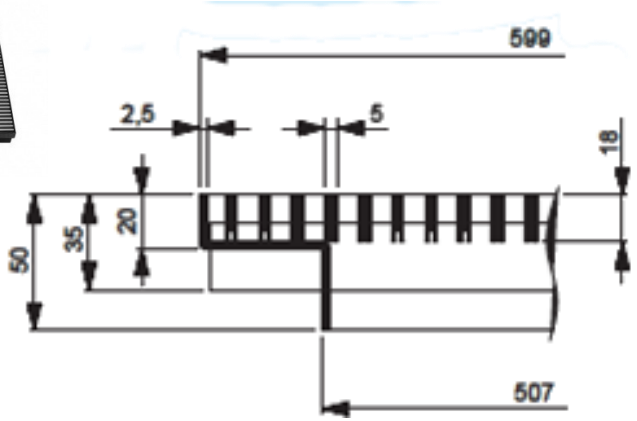
Vents can be located within the Flex Zone areas alongside data and electrical connections or placed within individual tiles as part of the raised floor or within the screed if a solid concrete floor option is used.



VENTILATION







Detail conjunction splice grid

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