

HADHAM CONSTRUCTION LTD

BUILDING A HADFRAME LIGHTWEIGHT STEEL FRAMED PROPERTY

What comes after Steel - explained:-

Options for cladding, roofing and flooring your steel structure

1. Getting watertight

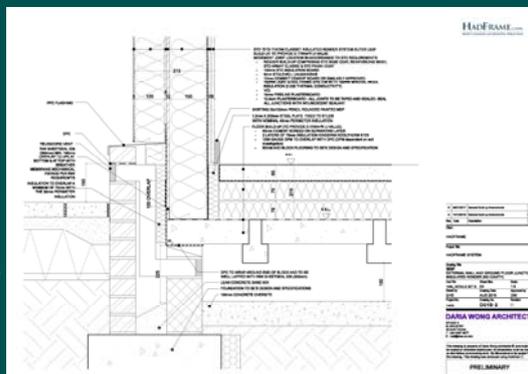
External cladding – First Fix cladding walls -includes a Weather Defence board (WD) or a Cement Particle board (CP) to the external elevations of the external walls. The choice of which is determined by the imposed load from the type of cladding finish to be used. All joints should be sealed with tape. WD is not sufficiently strong to support a Brick Slip finish but is fine for most other finishes, including a cavity and traditional brick skin. It is also cheaper, easier and quicker to install.

First Fix Roof – would usually be an 18mm OSB3 timber board which will give a degree of weather protection for up to 3 months before covering with the full roof cladding system. The alternative would be 18mm Marine Ply (do not be tempted to use cheaper alternatives) if there is any doubt as to how long the building may be exposed to the elements before the roof finish is installed then full Marine Ply is the answer. Again more expensive.

Second Fix cladding walls – The alternatives here are:-

- Traditional cavity and brick/ stone skin
- No Cavity insulated render
- No Cavity insulated brick slip
- No Cavity insulated composite panel
- No Cavity insulated brick effect render
- No Cavity insulated weather boarding.
- No Cavity insulated rain screen.

All these variables have Standard Detail sets which can be down loaded from the Hadframe website. These sets will give more information on the U values and acoustic values of various wall build ups.



<http://www.hadframe.co.uk/residential/commercial-residential/standard-details/>



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Second Fix Cladding roof – The alternatives here are:-

Traditional insulated cross batten peg tiles or slates

Insulated composite roof panel.

Insulated standing seam zinc

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2. Internal Floors

The steel structure of all floors above ground floor are included in the steel frame. These may consist of 150mm joists, 250mm joists, lattice beams and HRS beams as required. But no coverings, build up or ceilings are included.

The internal floor build up has three basic options:-

Concrete over metal span trays – traditional, heavy and strong, with excellent acoustic and fire ratings. Usually used for communal and municipal buildings. (student accommodation, hotels) The steel support tray is fitted to the top of the walls with a Zed rail and the concrete poured and floated prior to the installation of the next level of walls. This can slow the build as time has to be allowed for the concrete to cure.

Non cementitious screed over steel Lewis Decking – lighter, cheaper and thinner but still giving good acoustic and fire resistance. Excellent for wet rooms above ground floor and it does not move. The Lewis Decking, floor joists, lattice beams and Zed rail are pre assembled in the factory where the LD is fitted to the floor structure to create a craneable platform. These platforms are craned into position on top of the walls and the next level can be started immediately. Only when the top level has been reached, stairs added and roof installed is the non cementitious screed pumped in to each level on the way back down. Drying times of 24 to 48 hrs speed up the next operations.

Timber build up will consist of 22mm T&G chipboard flooring (cabershield / Eggerboard Protect) installed over a rubber acoustic strip placed on top of the steel floor joists or lattice beams. There may be an acoustic mat placed on top of this prior to final finishes.

Internal Ceiling build up:-

Even though the floor structure and surface is assembled into a 'cassette' in the factory prior to installation the underfloor insulation and ceilings are not added at this point to allow for the installation of the M&E through the lattice beams or between the floor joists once on site, unless there is to be a services void below the floor joists.



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The ceiling build up includes full fill mineral wool between the floor joists, VCL, 15mm fireline plasterboard sealed at the corners with tube grade intumescent sealant, 12.5mm plasterboard. This build up meets building regs for fire and most acoustic conditions. If additional acoustic control is required a single skin of plasterboard on acoustic hangars is added below the closed ceiling, and this also forms a services void if required.

3. Closing the Walls up:-

The internal build up of the walls is the same as the ceiling. Full fill mineral wool, VCL, 15mm Fireline plasterboard and 12.5mm plasterboard.

4. Mechanical and Electrical Services

HCL can quote for supply and installation of all M&E requirements. The HadFrame light gauge steel frames are all pre stamped with service holes which are lined with propriety plastic bushes so that the walls and floors are ready to receive the electrical wiring and plumbing pipework. This removed the requirement for electricians and plumbers to spend a proportion of their time drilling holes in the studwork and dramatically speeds up M&E installation, thus saving cost.

Why buy a Steel Framed Building

Provides a very ecological approach to building due to the minimal waste both in manufacture and on site construction.

Very low carbon footprint due to the light weight of the materials used reducing the impact of manufacture and transport to site.

With increases in energy costs, lightweight steel houses allow for excellent insulation when combined with the latest cladding systems, thus reducing the lifetime running costs.

Fast to construct, particular if being clad with composite panels.

Greater solidarity and strength.

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