



Steel lintels

- Essential tips



Following on the article covering the Structural Alert about the steel framework installation, here is the essential steel lintels guide.

Steel Installation

1. Steel lintels should be CE marked. It is the manufacturers guarantee that steel meets the Construction Products Regulations. CE is the European Standard in compliance with British BS EN 1090.
2. Some steel lintels have a built-in damp-proof course (DPC), and such should be at least 140mm deep and made of austenitic stainless steel or galvanized steel with a 40-micron powder coating. It is recommended to install a damp proof course (DPC) or cavity tray over all openings in external cavity walls.
3. Steel lintels are often a major thermal bridge in a building, as heat transfer easily through steel. Thermal performance of steel is given as a psi value- the lower psi, the better performance.
4. Lintels should be made to order, specifically design for the particular location. Lintels are installed to spread loads of the construction. The design should take into account building type, loadings, thermal performance, etc. Never install damaged lintel. Before the installation, it is necessary to inspect lintels carefully. Correct installation is a must to ensure the steel lintel's performance. The steel lintels come in the variety of options- for cavity walls, timber frame, solid external walls, internal walls, arches, bays, etc.

The installation of steel lintel is mainly to ensure it will carry the load, which depends on several factors.

5. When installing a lintel ensure
 - Lintel is not damaged
 - There is a minimum end bearing of 150mm at each end
 - Lintel is leveled across its length and width
- Lintel should be bedded on mortar and brickwork
 - Masonry overhang cannot exceed 25mm
 - At the junction of the window head and lintel suitable mastic should be used.
 - Wall ties should be fitted at maximum horizontal spacing of 450mm within 300mm above the lintel support
 - Have all loads checked by the structural engineer
 - Masonry above the lintel is cured properly before installation of floor or roof loads, temporary propping beneath a steel lintel might be used to reduce the load.
 - Ensure wall dimensions are in accordance with engineer specification
 - While installing a steel lintel to external wall, in severe exposure always lay DPC
 - Do not cut lintels under any circumstances



Steel installation



Building steel frame structure



Propping existing structure



Extension works



Installing steel beam



Spider crane



Bolting beams



Steel beams installation progress



Steel construction



Steel beams connection



6. Structural Propping

You can decide to prop all steel lintels to speed the installation. Propping can be installed when masonry load has been applied to the lintel. A horizontal timber plank should be placed underneath the lintel, and suitable props should be secured. There are various types of props available on the market- from standard coated with polyester resin to telescopic and heavy-duty shoring systems.

Propping is necessary when part of the existing structure will be replaced or modified. During the removal of vertical structural elements, there is a need to support the overhead loads of the structure, demolish the part and transfer the loads onto the new structure. Propping allows for secure construction during:

- making an opening in a wall to create an archway, window or doorway
- removing a wall
- support to reinforced concrete and beams
- bracing formwork for walls, stairs, columns
- temporary support for lintels, beams, installation of wall ties, windows or doors

Please allow for structural engineer calculations to account for changing loads like foot traffic, heavy tools on the floor above so the correct length and type of prop will be used.