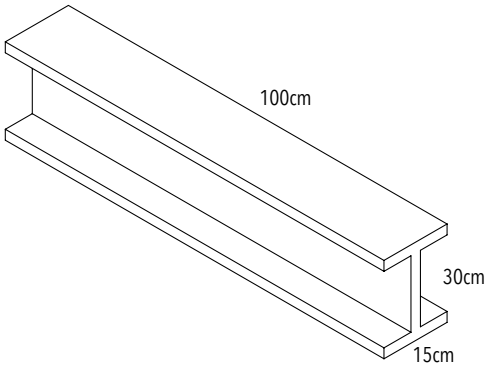
I-BEAM

Element Thickness: 2cm

Estimated weight: 200kg

Construction Site: Primark, Oxford Street, London



The building sits alongside a construction site, however part of the existing structure has been exposed as a consequence of the building process. These elements protruded from the top of the building, and are uncovered, revealing their material properties.

The I-Beam is a common construction element, made of structural steel. There are several ways to achieve this I shape; the first step is to pour molten metal into a prefabricated mould (often made of iron or copper), that is water cooled, such that the metal begins to solidify within. There are two possibilities for taking these casts to the next step; shaping them into a beam. The cast is then moved along the assembly line to the ‹rolling› stage, in which it is passed through a set of rolls to make the thickness uniform, and achieve the desired shape. The entire process, from molten metal to rolled beam, takes an average of two hours.

An alternative option for producing I-beams, is the welding process (as seen in the three images to the left). The prefabricated slabs of steel are cut to the required dimensions and mechanically held together, whilst the joint edges are welded and kept still to cool.

Steel is the perfect material to withstand forces of compression, tension and shear, without breaking. Its stiffness and dense nature are vital. The material also has very high thermal resistance, allowing it to endure the high temperature levels the element might come across in the construction process, or within the skin of the building. As this element acts as the ‹skeleton› of the building, its rough and rusty appeal is concealed by the concrete and brick façade.