

Title (en)
LIGHT-WEIGHT AND MODULAR CONSTRUCTION SYSTEM

Title (de)
LEICHTGEWICHTIGES UND MODULARES BAUSYSTEM

Title (fr)
SYSTÈME DE CONSTRUCTION LÉGER ET MODULAIRE

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EP 15795812 A 20150525

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Abstract (en)
Light, modular construction system The lightweight, modular construction system is an alternative to traditional construction systems, providing advantages such as great flexibility, lightweight components, sustainability and structural strength against stresses such as wind or earthquakes, assembly speed, etc. This is a construction system made up of five groups or main parts. All the joins between the different groups and elements in the system are made using nuts and bolts. Starting structure and levelling The function of the starter structure and the levelling is to get perfect levelling for the building to operate and be assembled and to anchor the structure correctly to the foundation. The main elements are the starter frames and the anchoring plates. The starter frames are made up of structural galvanised steel tubes welded together whilst the anchoring plates are structural steel parts that are anchored to the foundation by means of threaded rods and to the starter frame. Structural vertical panels These panels are composed of an internal steel frame, rockwool insulation in the core and a board on either side as a closure. The frame is made up of type C galvanised open profiles, welded together. The frames also have perforated holes and rivet nuts to allow subsequent assembly screwing between several panels and elements in the system. For the closure boards, the materials used as a general rule are fibre-cement, chipboard, cement wood and laminated plaster, with variable thicknesses between 8 and 12 millimetres. The main joins between vertical structural panels and between the horizontal structural elements are made using 55 mm thick galvanised steel assembly plates. Horizontal structure and closure The slab is composed of a main metal structure and a sandwich panel closure screwed to this metal structure using self-tapping screws. The main metal structure is made up of type C or Z structural steel open profiles. The closure sandwich panels are composed of two sides of fibre-cement boards and a glued thermal core of thermal-acoustic insulation made of extruded polystyrene or high density rockwool. Roof sub-structure The sub-structure forming the roof slope is made up of one-off structural elements, roof trusses or triangulated structures made using rectangular and square tubes welded together, made of cold laminated galvanised steel. Metal sandwich type panels are used as a closure or final coating on the building roof. Non structural inner partitions The inner divisions are based on a system of sandwich panels and upper and lower channels made of galvanised steel profiles. The technical panels are configured by non structural vertical panels although they house an important set of installation networks that are required for damp and general areas and rooms in the building.

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