

Title (en)
INSULATED WALL MODULE

Title (de)
DÄMMWANDMODUL

Title (fr)
MODULE MURAL ISOLÉ

Publication
EP 2780514 A1 20140924 (EN)

Application
EP 12766324 A 20120731

Priority
• HR P20110582 A 20110804
• HR 2012000017 W 20120731

Abstract (en)
[origin: WO2013017900A1] The construction of a wall module of superior insulation properties required for passive buildings, the method of its industrial production for easy to install at erection site as technical design of the load bearing steel truss of the defined height, width and thickness, made of appropriate shaped steel elements, of appropriate dimensions, positioned appropriately to form the structure and fixed in compliance with all relevant requirements of the professional building practice and regulations. Steel elements are mostly C elements, horizontal (1.1) and vertical (1.2) C elements with fastening mechanisms fastened on the outside horizontally (2.1) and vertically (2.2) with internal (1.3) and external (1.4) spacers positioned on their sides of low thermal conductivity, on which internal (6.2) and external (6.3) lining panels are placed of the appropriate thickness defining in such manner the total thickness of the wall. The complete wall is factory-built so that the developed steel structure with all needed installation channels built in and with placed lining panels is placed in the appropriate press to inject expanded polyurethane in the space between the lining and the outside line of the steel structure that forms the wall, at approximately 3-bar pressure, which then expands and squeezes out the air from within the structure thereby creating a compact fill mass eliminating any risk of damp and condensation in the wall, at the same time improving for at least 30 % the statics of the steel structure. In this way a full compact wall of precise dimensions is built in a factory to the full completion with all ceramic tiles and parquet flooring, with all needed installation channels built in, with all openings including window and door openings of excellent insulation properties with the heat penetration coefficient U of approximately 0.14 W/(m²K °) which is less than 0.15 W/(m²K °) as the limit value for the compliance with passive house characteristics. Walls produced in entirety or in segments according to the described invention are transported to the site and installed, all the walls or their segments are joined, with fastening mechanisms vertically and horizontally, to make complete building structures. Because this invention allows the precise building of walls, in entirety or in segments, their installation after the transport on site is easy, based on precisely defined figures and methods, with the minimum labor and in a short time period, with only a few tools and equipment needed for the job. If all such modules, i.e., all wall elements are factory-made, with all windows, doors, utility channels and/or other additional elements installed in the production facility, one can make in advance the entire structure before it is brought to the building site, which results in a very flexible building concept with additionally reduced building costs.

IPC 8 full level
E04B 1/08 (2006.01)

CPC (source: EP US)
E04B 1/08 (2013.01 - EP US); **E04B 1/62** (2013.01 - US); **E04B 1/80** (2013.01 - EP US); **E04B 2/58** (2013.01 - US);
E04C 2/384 (2013.01 - EP US); **E04B 1/6137** (2013.01 - EP US)

Citation (search report)
See references of WO 2013017900A1

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)
WO 2013017900 A1 20130207; CA 2844029 A1 20130207; CN 103998694 A 20140820; EA 201490414 A1 20140730; EP 2780514 A1 20140924; HR P20110582 A2 20130430; JP 2014525001 A 20140925; US 2014202100 A1 20140724

DOCDB simple family (application)
HR 2012000017 W 20120731; CA 2844029 A 20120731; CN 201280048524 A 20120731; EA 201490414 A 20120731; EP 12766324 A 20120731; HR P20110582 A 20110804; JP 2014523406 A 20120731; US 201214237070 A 20120731