

Title (en)
PNEUMATIC TWO-DIMENSIONAL STRUCTURE

Title (de)
PNEUMATISCHE FLÄCHENSTRUKTUR

Title (fr)
STRUCTURE PNEUMATIQUE PLANE

Publication
EP 1694931 A1 20060830 (DE)

Application
EP 04797216 A 20041101

Priority
• CH 2004000656 W 20041101
• CH 18862003 A 20031104
• CH 9652004 A 20040604

Abstract (en)
[origin: WO2005042880A1] The invention relates to a pneumatic plate element (1) consisting of a hollow body (3) that can be impinged upon with a pressure medium having overpressure p. Said hollow body is located between two pressure/tension elements (2) that are connected to one another by their ends and is made of a flexible membrane (9). When transversal load is exerted on the plate element (1) placed on two supports (17) with load force F, the top pressure/tension element (2, 7) is subjected to pressure and the bottom pressure/tension element (2, 8) is subjected to tension. Prestressed tension elements (4) placed at a distance a traverse in channels the hollow body (3) between the pressure/tension elements (2, 8). The tension elements (4) are prestressed by the hollow body (3) separating the tension elements (2). The connections (6) operate as fictitious fixed intermediate supports and stabilize the pressure/tension element (2, 7) submitted to pressure in order to prevent buckling. Two-dimensional plate elements (1) can be particularly used for building roofs of lightweight constructions.

IPC 8 full level
E04H 15/20 (2006.01); **E01D 15/12** (2006.01); **E01D 15/20** (2006.01); **E04B 7/08** (2006.01); **E04B 7/14** (2006.01)

CPC (source: EP US)
E01D 15/12 (2013.01 - EP US); **E01D 15/20** (2013.01 - EP US); **E04B 7/08** (2013.01 - EP US); **E04B 7/14** (2013.01 - EP US);
E04H 15/20 (2013.01 - EP US)

Citation (search report)
See references of WO 2005042880A1

Citation (examination)
• WO 2005007991 A1 20050127 - PROSPECTIVE CONCEPTS AG [CH], et al
• WO 2005021898 A1 20050310 - PROSPECTIVE CONCEPTS AG [CH], et al
• WO 2004083569 A1 20040930 - PROSPECTIVE CONCEPTS AG [CH], et al
• WO 2004001162 A1 20031231 - PROSPECTIVE CONCEPTS AG [CH], et al

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LU MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)
WO 2005042880 A1 20050512; AU 2004286010 A1 20050512; AU 2004286010 B2 20110217; CA 2543798 A1 20050512;
CA 2543798 C 20120925; EP 1694931 A1 20060830; HK 1100785 A1 20070928; JP 2007510076 A 20070419; JP 4538463 B2 20100908;
US 2007094937 A1 20070503; US 7900401 B2 20110308

DOCDB simple family (application)
CH 2004000656 W 20041101; AU 2004286010 A 20041101; CA 2543798 A 20041101; EP 04797216 A 20041101; HK 07105888 A 20070604;
JP 2006537032 A 20041101; US 57758304 A 20041101