

Title (en)

COMPONENT MADE OF A FLAT MATERIAL AND METHOD FOR THE PRODUCTION THEREOF

Title (de)

BAUTEIL AUS EINEM FLACHMATERIAL UND VERFAHREN ZU SEINER HERSTELLUNG

Title (fr)

ÉLÉMENT STRUCTUREL CONSTITUÉ D'UN MATÉRIAUX PLAT, ET SON PROCÉDÉ DE FABRICATION

Publication

EP 2094412 A1 20090902 (DE)

Application

EP 07825270 A 20070928

Priority

- IB 2007002948 W 20070928
- DE 102006055657 A 20061123

Abstract (en)

[origin: WO2008062263A1] The invention relates to a component (1) made of a flat material with a center surface (8) located between two main surfaces (7, 9) that are parallel to each other. The flat material is provided with a deformation structure (4), extending partially perpendicularly to the center surface (8) depending on the pressing operation. At least one, if necessary a plurality of the partial regions (5) of the flat material are provided with the deformation structure (4), whereas at least one surface region of the flat material remains non-deformed. The deformation structure (4) comprises a lattice of adjacent cells (5) extending transversely to the center surface (8), the cells being delimited by cell bending edges (14, 15) having different heights. Each cell (5) comprises recesses (10) that are delimited by the relatively higher (14) or lower cell flanges (15), wherein the lower cell bending edges (15) substantially extend at a maximum to the height of a main surface (7), while the higher cell bending edges (14) extend up to the height (11) and the recesses (10) extend up to the height (13). The pressure is preferably primarily applied via elastomeric active media, wherein for example a tool made of modular individual elements is used for structuring purposes.

IPC 8 full level

B21D 13/02 (2006.01); **B21D 13/10** (2006.01); **E04C 2/32** (2006.01)

CPC (source: EP)

B21D 13/02 (2013.01); **B21D 13/10** (2013.01); **E04C 2/324** (2013.01)

Citation (search report)

See references of WO 2008062263A1

Citation (third parties)

Third party :

- DE 19858432 B4 20080410 - MIRTSCH GMBH DR [DE]
- DE 10059055 B4 20060302 - MIRTSCH GMBH DR [DE], et al
- DE 102004044509 B4 20071004 - MIRTSCH GMBH DR [DE]
- DE 102005025620 A1 20061207 - MIRTSCH GMBH DR [DE]
- BOBLAN I. ET AL: "First International Industrial Conference Bionik 2004", FORTSCHRITT-BERICHTE VDI, 22 April 2004 (2004-04-22) - 23 April 2004 (2004-04-23), pages 282 - 289, XP003025281
- MIRTSCH F. ET AL: "Vault-corrugated sheet metal on the basis of self-organization-fundamental principle, modification, simulation and new products", FIRST INTERNATIONAL INDUSTRIAL CONFERENCE BIONIK 2004, 2004, pages 299 - 313, XP003025282
- WANTZEN B.: "Dreidimensionale Strukturen durch Selbstorganisation", KONSTRUKTION, 6 June 2002 (2002-06-06), pages 4, XP003025283
- MIRTSCH F. ET AL: "Wolbstrukturen geben Materialien neue perspektiven", STAHL, no. 5, 2002, pages 58 - 60, XP003025284
- "Technology Guide Principles Applications Trends", 10 May 2009, SPRINGER BERLIN HEIDELBERG, ISBN: 9783540885450, article EICKENBUSCH H. AND G. HASSE: "Self-Organisation", pages: 60 - 63, XP003025285
- MIRTSCH F.: "Ressourceneffizienz und synergetische eigenschaften durch wolbstrukturieren", SACHSISCHE FACHTAGUNG UMFORTECHNIK DRESDEN, pages 1 - 12, XP003025286
- WOLMER A.S.: "BIEGSAME PLATTEN UND SCHALEN", BIEGSAME PLATTEN UND SCHALEN, 1962, pages 100 - 105, XP003025287

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR

DOCDB simple family (publication)

DE 102006055657 A1 20080529; EP 2094412 A1 20090902; EP 2094412 B1 20140910; EP 2094412 B8 20141022;
WO 2008062263 A1 20080529

DOCDB simple family (application)

DE 102006055657 A 20061123; EP 07825270 A 20070928; IB 2007002948 W 20070928