

Title (en)

METHOD FOR MANUFACTURING A THREE-DIMENSIONAL FORMED STRUCTURE IN POLYAMIDE TEXTILES

Title (de)

VERFAHREN ZUR HERSTELLUNG EINER DREIDIMENSIONALEN GEFORMTEN STRUKTUR IN POLYAMIDTEXTILIEN

Title (fr)

PROCÉDÉ DE FABRICATION D'UNE STRUCTURE FORMÉE TRIDIMENSIONNELLE DANS LES TEXTILES POLYAMIDES

Publication

EP 4183918 A1 20230524 (EN)

Application

EP 21209577 A 20211122

Priority

EP 21209577 A 20211122

Abstract (en)

Method for manufacturing a three-dimensional formed structure from a textile fabric, comprising the steps of (a) providing a textile fabric comprising polyamide; (b) contacting the textile fabric with a treatment solution wherein the treatment solution comprises a mixture of CaCl_2 , EtOH and H_2O , wherein the CaCl_2 content is $> 6 \text{ mol\%}$, the EtOH content is $< 25 \text{ mol\%}$, the molar ratio between CaCl_2 : EtOH : H_2O is between $1 : 0.6 - 2 : 3.4 - 7$ and the H_2O /EtOH molar ratio is > 2.5 . for at least 1 second and at most 4 hours by immersion or for at least 1 s and at most 5 minutes by spraying; (c) squeezing of the treatment liquid from the fabrics to adjust the solvent content in the fabrics; (d) consolidating the textile fabric for 1 s to 60 minutes while the textile fabric is still containing the treatment solution by increasing the temperature of the textile fabric to a temperature of between 10°C to 120°C with the provision that the temperature is at least 100°C below the melting point of the polyamide and by forming the textile fabric in the desired three-dimensional structure; (e) quenching the treatment solution while the formed textile fabric still contains treatment solution by adding water and/or by evaporating ethanol out from the fabric; (f) isolating the formed textile fabric followed by washing and drying.

IPC 8 full level

D06M 11/155 (2006.01); **D06C 15/00** (2006.01); **D06C 23/04** (2006.01); **D06M 13/144** (2006.01); **D06M 23/16** (2006.01); **D06M 23/18** (2006.01); **D06Q 1/08** (2006.01); **E01C 11/14** (2006.01); **F16B 13/00** (2006.01); **F16B 13/14** (2006.01); **D06M 101/34** (2006.01)

CPC (source: EP)

D06M 11/155 (2013.01); **D06M 13/144** (2013.01); **D06M 23/16** (2013.01); **D06M 23/18** (2013.01); **D06Q 1/08** (2013.01); **D06C 23/00** (2013.01); **D06M 2101/34** (2013.01)

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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)

EP 4183918 A1 20230524

DOCDB simple family (application)

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