

Title (en)  
HARD-BALLISTIC ARTICLE AND PROCESS TO MANUFACTURE SAID ARTICLE

Title (de)  
HARTBALLISTISCHER GEGENSTAND UND VERFAHREN ZUR HERSTELLUNG DES GEGENSTANDS

Title (fr)  
ARTICLE BALISTIQUE DUR ET PROCÉDÉ DE FABRICATION DE CET ARTICLE

Publication  
**EP 2956737 B1 20170412 (EN)**

Application  
**EP 14703092 A 20140207**

Priority  
• EP 13155240 A 20130214  
• EP 2014052444 W 20140207  
• EP 14703092 A 20140207

Abstract (en)  
[origin: WO2014124876A1] A hard-ballistic article and a method to manufacture said article are provided. The hard ballistic article comprises a hybrid panel, wherein the hybrid panel comprises a) a first package of a plurality of consolidated cross-ply, wherein each consolidated cross-ply contains at least two layers of unidirectional aligned aramid fibers, wherein the aramid fibers are provided with a first matrix material, wherein the first matrix material comprises a first polymer, wherein the first package exhibits a surface facing to the direction of a ballistic attack and a surface facing away from the direction of the ballistic attack, and b) a second package containing a plurality of woven fabric layers, wherein the woven fabric layers consist of aramid fibers provided with a second matrix material, wherein the second matrix material is different from the first matrix material, wherein the second matrix material comprises a second polymer, wherein the second polymer is different from the first polymer, wherein the first package is bonded with its surface facing away from the direction of the ballistic attack with the second package.

IPC 8 full level  
**F41H 5/04** (2006.01)

CPC (source: EP KR RU US)  
**F41H 5/04** (2013.01 - RU); **F41H 5/0428** (2013.01 - KR US); **F41H 5/0457** (2013.01 - KR US); **F41H 5/0471** (2013.01 - KR US);  
**F41H 5/0485** (2013.01 - EP KR US)

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 2014124876 A1 20140821**; AU 2014218035 A1 20150806; AU 2014218035 B2 20170323; BR 112015019190 A2 20170718;  
BR 112015019190 B1 20210105; CA 2900800 A1 20140821; CA 2900800 C 20200714; CN 105143812 A 20151209; CN 105143812 B 20170926;  
EP 2956737 A1 20151223; EP 2956737 B1 20170412; IL 240031 A0 20150924; IL 240031 B 20190926; KR 102083780 B1 20200416;  
KR 20150124444 A 20151105; MX 2015010497 A 20151026; RU 2015138725 A 20170317; RU 2644499 C2 20180212;  
US 2016025459 A1 20160128

DOCDB simple family (application)  
**EP 2014052444 W 20140207**; AU 2014218035 A 20140207; BR 112015019190 A 20140207; CA 2900800 A 20140207;  
CN 201480008622 A 20140207; EP 14703092 A 20140207; IL 24003115 A 20150720; KR 20157022083 A 20140207;  
MX 2015010497 A 20140207; RU 2015138725 A 20140207; US 201414768152 A 20140207