

Title (en)

BLISTER FABRICS WITH INTERNAL CONNECTING ELEMENTS

Title (de)

CLOQUÉ MIT INTERNEN VERBINDUNGSELEMENTEN

Title (fr)

CLOQUES A ELEMENTS DE RACCORDEMENT INTERNES

Publication

**EP 1583856 B1 20101208 (EN)**

Application

**EP 03779253 A 20031024**

Priority

- US 0333846 W 20031024
- US 29847602 A 20021115
- US 29847502 A 20021115
- US 31909702 A 20021213
- US 45441603 A 20030604

Abstract (en)

[origin: WO2004046437A1] A blister fabric (740) of a knit or woven construction may be needle punched to produce internal connections of filaments or fibers (741, 746) from yarns extending into, and/or between, the yarns of an adjacent layer. Interconnections of fibers among separate layers are produced by needles which enter a first layer and then carry fibers from the first layer to a second adjacent layer within the blister of the fabric. Such interconnected fibers which bridge or span multiple layers in the fabric serve to strengthen the blister fabric, making the fabric more resistant to abrasive forces.

IPC 8 full level

**D03D 13/00** (2006.01); **D03D 11/02** (2006.01); **D03D 15/00** (2006.01); **D04B 1/02** (2006.01); **D04B 21/02** (2006.01)

CPC (source: EP KR US)

**D03D 1/0041** (2013.01 - EP); **D03D 11/00** (2013.01 - EP KR); **D03D 11/02** (2013.01 - EP); **D03D 13/00** (2013.01 - KR);  
**D03D 13/004** (2013.01 - EP); **D03D 15/283** (2021.01 - EP US); **D03D 27/00** (2013.01 - KR); **D04B 1/126** (2013.01 - EP);  
**D10B 2201/02** (2013.01 - EP); **D10B 2201/24** (2013.01 - EP); **D10B 2211/02** (2013.01 - EP); **D10B 2331/04** (2013.01 - EP);  
**D10B 2403/0112** (2013.01 - EP); **D10B 2403/023** (2013.01 - EP)

Designated contracting state (EPC)

CZ DE ES FR GB IT

DOCDB simple family (publication)

**WO 2004046437 A1 20040603**; AU 2003284934 A1 20040615; AU 2003287211 A1 20040615; AU 2003287211 A8 20040615;  
BR 0316354 A 20050927; BR 0316356 A 20050927; CA 2505388 A1 20040603; CA 2505391 A1 20040603; CN 1296198 C 20070124;  
CN 1711168 A 20051221; CN 1711379 A 20051221; CN 1711379 B 20101222; EP 1581680 A2 20051005; EP 1581680 A4 20070404;  
EP 1583856 A1 20051012; EP 1583856 A4 20070328; EP 1583856 B1 20101208; HK 1086229 A1 20060915; JP 2006506557 A 20060223;  
JP 4599589 B2 20101215; KR 100752857 B1 20070829; KR 20050086561 A 20050830; KR 20050086568 A 20050830;  
MX PA05005075 A 20050701; MX PA05005077 A 20050701; WO 2004046446 A2 20040603; WO 2004046446 A3 20041216

DOCDB simple family (application)

**US 0333846 W 20031024**; AU 2003284934 A 20031024; AU 2003287211 A 20031024; BR 0316354 A 20031024; BR 0316356 A 20031024;  
CA 2505388 A 20031024; CA 2505391 A 20031024; CN 200380103201 A 20031024; CN 200380103371 A 20031024;  
EP 03779253 A 20031024; EP 03781391 A 20031024; HK 06106173 A 20060527; JP 2004570363 A 20031024; KR 20057008475 A 20050512;  
KR 20057008489 A 20050512; MX PA05005075 A 20031024; MX PA05005077 A 20031024; US 0333844 W 20031024