

Title (en)  
HARD IMPACT RESISTANT COMPOSITE

Title (de)  
GEGEN HARTE STÖSSE WIDERSTANDSFÄHIGES VERBUNDMATERIAL

Title (fr)  
COMPOSITE RESISTANT AUX GROS IMPACTS

Publication  
**EP 0954658 A1 19991110 (EN)**

Application  
**EP 98900276 A 19980113**

Priority  
• DK 4397 A 19970113  
• DK 9800017 W 19980113

Abstract (en)  
[origin: WO9830769A1] A shaped article, at least one domain of which has a three-dimensionally reinforced composite structure comprising a matrix and a reinforcing system (2, 4, 5, 6), the reinforcing system comprising bodies such as bars, wires, cables or plates embedded in the matrix and extending three-dimensionally in first (4, 5), second (2) and third (6) dimensions therein, the reinforcing system being tension interlocked in at least one dimension in that reinforcement components extending in the first and/or second dimension are tension interlocked to reinforcement components extending in the same dimension(s), but at a transverse distance therefrom, by transverse reinforcement components extending in a dimension transverse to a plane or surface defined by the reinforcement in the first and/or second dimension. The matrix is preferably a dense cement-based matrix prepared from cement, microsilica, a concrete superplasticiser and water, or a metallic matrix. The shaped articles are capable of absorbing high energy with retention of a substantial degree of internal coherence, e.g. under exposure to high velocity impact.

IPC 1-7  
**E04C 5/06**; **E04H 9/04**

IPC 8 full level  
**E04C 5/06** (2006.01); **E04H 9/04** (2006.01); **E05G 1/024** (2006.01); **F41H 5/04** (2006.01)

CPC (source: EP US)  
**E04C 5/064** (2013.01 - EP); **E04H 9/04** (2013.01 - EP US); **E05G 1/024** (2013.01 - EP); **F41H 5/04** (2013.01 - EP)

Citation (search report)  
See references of WO 9830769A1

Cited by  
RU2504727C1

Designated contracting state (EPC)  
AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)  
**WO 9830769 A1 19980716**; AT E216453 T1 20020515; AU 5478698 A 19980803; CA 2276285 A1 19980716; CA 2276285 C 20070522; DE 69804936 D1 20020523; DE 69804936 T2 20021128; DK 0954658 T3 20020812; EP 0954658 A1 19991110; EP 0954658 B1 20020417; ES 2175654 T3 20021116; NO 320091 B1 20051024; NO 993430 D0 19990712; NO 993430 L 19990913

DOCDB simple family (application)  
**DK 9800017 W 19980113**; AT 98900276 T 19980113; AU 5478698 A 19980113; CA 2276285 A 19980113; DE 69804936 T 19980113; DK 98900276 T 19980113; EP 98900276 A 19980113; ES 98900276 T 19980113; NO 993430 A 19990712