

Title (en)  
DOUBLE SHEET METAL CONSISTING OF TWO COVERING METAL SHEETS AND AN INTERMEDIATE LAYER

Title (de)  
DOPPELLAGENBLECH AUS ZWEI DECKBLECHEN UND EINER ZWISCHENLAGE

Title (fr)  
TOLE DOUBLE CONSTITUEE DE DEUX TOLES DE COUVERTURE ET D'UNE COUCHE INTERMEDIAIRE

Publication  
**EP 1062397 B1 20030521 (DE)**

Application  
**EP 99915552 A 19990309**

Priority  
• DE 19810706 A 19980312  
• EP 9901513 W 19990309

Abstract (en)  
[origin: DE19810706A1] A double-walled, filled panel comprising sheets bonded together at points of indentation, includes both closed-cell plastic foam and harder particles of e.g. glass, ceramic or metal. The behavior of the filling when the sheets are pressed together is characterized by two stress/strain curves. An Independent claim is also included for the corresponding method of making the filled double panel. Preferred features: The filling is adhered to the sheets over its entire area. On pressing together, resilient displacement takes place in accordance with the softer stress/strain curve, over 2-8% of the filling thickness. The corresponding modulus of elasticity is less than 50 MPa. That corresponding with the harder curve, is 500-210,000 MPa. The filling is porous plastic. It contains embedded particles of material, corresponding with the harder curve. The filler modulus of elasticity, excluding embedded particles, is less than 20 MPa. The filling has closed pores, occupying up to 70% of its volume. The hard embedded particles occupy up to 10% of the volume, or up to 5% of the weight of the double-layered sheets. They are glass, ceramic or metal and their extent perpendicular to the sheets, is 2-8% less than the sheet spacing. Mutual spacing of all hard particles in the cross sectional plane of the sheet is 3-7 times the inter-sheet spacing. The hard bodies are hollow, curved cuttings, foam, irregular granules or cenospheres. The plastic for the filler cures under heating to a viscous state, hardening fully at temperatures of 150-230 deg C.

IPC 1-7  
**E04C 2/32**; **E04C 2/292**

IPC 8 full level  
**E04C 2/292** (2006.01); **E04C 2/32** (2006.01)

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Cited by  
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**DE 19810706 A1 19990916**; **DE 19810706 C2 20020912**; DE 59905644 D1 20030626; EP 1062397 A1 20001227; EP 1062397 B1 20030521; US 6428905 B1 20020806; WO 9946461 A1 19990916

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