

Title (en)  
PROCESS AND PLANT FOR HARDENING GLASS PLATES

Title (de)  
VERFAHREN UND ANLAGE ZUM HÄRTEN VON GLASTAFELN

Title (fr)  
PROCEDE ET INSTALLATION POUR LA TREMPE DE PANNEAUX DE VERRE

Publication  
**EP 0827489 A1 19980311 (DE)**

Application  
**EP 97906027 A 19970310**

Priority

- AT 9700048 W 19970310
- AT 52496 A 19960321
- AT 25297 A 19970214

Abstract (en)

[origin: WO9734844A1] A plant for hardening glass plates has a pre-heating zone (1) in which several glass plates (7) stacked in a standing position in carriages (6) provided with compartments are heated together up to a temperature (for example 300 DEG C) below the hardening temperature of for example 650 DEG C. The preheated glass plates (7) are heated up to their hardening temperature in an inclined position in which they form an acute angle to the vertical and are held by air pads between two heating plates. A conveyor which at the same time supports from below the glass plates (7) is provided at the lower edge of both heating plates of the heating zone (2). The glass plates (7) heated up to the hardening temperature are moved into a cooling zone (3) with cooling plates parallel to the heating plates. The glass plates (7) are inserted between the cooling plates for toughening. The cooling plates may also be laid on both sides of the glass plate (7) to be hardened. The toughened glass plates, still at a temperature of for example 300 DEG C, are conveyed into an aftercooling zone (4), in which they are stored in compartment carriages (6) and slowly cooled down to room temperature. Any problems in supporting and conveying the glass plates (7) are eliminated by arranging them in an inclined position, instead of a horizontal one, in the heating zone (2) and in the cooling zone (3). Considerable energy is saved by pre-heating the glass plates (7) together and cooling the glass plates (7) together down to room temperature after their toughening, since the heating and cooling capacity in the preheating zone (1) and in the aftercooling zone (4) may be reduced.

IPC 1-7  
**C03B 27/048**; **C03B 29/10**; **C03B 29/12**; **C03B 25/087**

IPC 8 full level  
**C03B 25/087** (2006.01); **C03B 27/048** (2006.01); **C03B 27/056** (2006.01); **C03B 29/10** (2006.01); **C03B 27/04** (2006.01); **C03B 29/12** (2006.01)

CPC (source: EP US)  
**C03B 25/087** (2013.01 - EP US); **C03B 27/048** (2013.01 - EP US); **C03B 29/10** (2013.01 - EP US); **C03B 29/12** (2013.01 - EP US)

Cited by  
CN102659305A

Designated contracting state (EPC)  
AT CH DE ES FI GB LI SE

DOCDB simple family (publication)  
**WO 9734844 A1 19970925**; AU 2086197 A 19971010; AU 714822 B2 20000113; BR 9707118 A 19991228; CA 2219852 A1 19970925; CN 1183090 A 19980527; CZ 370297 A3 19980513; EP 0827489 A1 19980311; HU P9901446 A2 19990830; HU P9901446 A3 19991129; JP H11505501 A 19990521; TR 199701411 T1 19980622; US 6053011 A 20000425

DOCDB simple family (application)  
**AT 9700048 W 19970310**; AU 2086197 A 19970310; BR 9707118 A 19970310; CA 2219852 A 19970310; CN 97190230 A 19970310; CZ 370297 A 19970310; EP 97906027 A 19970310; HU P9901446 A 19970310; JP 53296697 A 19970310; TR 9701411 T 19970310; US 94592598 A 19980126