

Title (en)
Process for making a multilayer fibrous web

Title (de)
Verfahren zur Herstellung einer mehrlagigen Faserstoffbahn

Title (fr)
Procédé pour la fabrication d' une bande fibreuse à plusieurs couches

Publication
EP 1225273 A3 20031203 (DE)

Application
EP 01130765 A 20011222

Priority
DE 10101549 A 20010115

Abstract (en)

[origin: DE10101549A1] To produce a multi-layer paper or cardboard web, the fiber pulp is converted into layers at the forming stages to be couched together. In at least one couching nip, the water extraction action gives a flow of fine matter at right angles to the web plane from the zones with a high fine material content to the zones with a lower fine material content and/or from zones with a high fiber bonding to the zones with a lower fiber bonding. To give a multi-layer paper/cardboard web, the distribution of the fine matter is effected at the couching nip between a couching roller and a couching shoe roller, or between two couching shoe rollers, or between a couching roller and a press belt. A control action on the water extraction from the web, either by blocking it or increasing it, affects the direction of the dispersion of fine matter within the web layers. A water-absorbent belt is at least on one side of the web, passing through the couching nip, and at least one water-impermeable belt is on one side of the web passing through the couching nip and/or an impermeable and non-absorbent belt is on one side of the web through the couching nip. One surface of the web can be in contact with the roller at the couching nip. In the couching nip, the pressure increase phase on the web gives a pressure gradient from 5 kPa/mm to 50 kPa/mm, and is ≥ 100 kPa/mm in the final couching nip. At the end of a couching nip, where there is a following couching nip in the web path, the outer surface of the layered web to take the next couched layer has a dry content of 7-16% and preferably 9-14% and/or at least one of the layers to be couched together has a dry content of 7-12% and preferably 8-10%. At the end of a couching nip, where there is a further couching nip in the web path, with a bonded multi-layer web weight of up to 200 g/m², a linear force is applied of 1-100 kN/m and preferably 5-40 kN/m and/or 1-100 kN/m, and preferably 2-30 kN/m with a web weight over 200 g/m². At the final couching nip, the linear force on a web up to 200 g/m² is 1-300 kN/m and preferably 5-150 kN/m and/or the linear force for a web over 200 g/m² is 1-200 kN/m and preferably 2-100 kN/m. Water is extracted from one side of the web in at least one couching nip. A pressure is applied to at least one of the layers to be brought together, in front of each couching nip in the direction of web travel (L). On leaving each couching nip, the web passes around one of the two components forming the nip, to control the path of the emerging web. The fine matter and fibers in the web are activated by a steam blowing chamber in front of each couching nip. An Independent claim is included for the fourdrinier section of a papermaking/cardboard production machine, with at least one couching nip (10) to take the formed web layers (12,14). Preferred Features: The couching nip is formed between a couching roller (20) and a couching shoe (22) or shoe roller or belt.

IPC 1-7
D21F 11/04; D21F 9/00

IPC 8 full level
D21F 11/04 (2006.01)

CPC (source: EP)
D21F 11/04 (2013.01)

Citation (search report)

- [XY] DE 19920438 A1 20001109 - VOITH SULZER PAPIERTECH PATENT [DE]
- [XY] EP 0863254 A2 19980909 - VOITH SULZER PAPIERMASCH GMBH [DE]
- [Y] WO 9205310 A1 19920402 - TAMPPELLA PAPERTECH OY [FI]
- [A] EP 0636745 A1 19950201 - MITSUBISHI HEAVY IND LTD [JP], et al
- [A] DE 2059962 A1 19710624 - WALMSLEYS BURY LTD

Cited by
AT506985A3; AT506985B1; AT513315A3; AT513315B1; US7988825B2; WO2007048877A3

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

DOCDB simple family (publication)
EP 1225273 A2 20020724; EP 1225273 A3 20031203; DE 10101549 A1 20020718

DOCDB simple family (application)
EP 01130765 A 20011222; DE 10101549 A 20010115