

Title (en)
Method and device for drying a web

Title (de)
Verfahren und Vorrichtung zum Trocknen einer Materialbahn

Title (fr)
Procédé et dispositif pour le séchage d'une bande

Publication
EP 1085122 A2 20010321 (DE)

Application
EP 00116921 A 20000805

Priority
DE 19944267 A 19990915

Abstract (en)

To dry a paper or cardboard web, it is passed initially to a heated surface (11) to remain constantly in contact with it. The duration of the contact with the heated surface is until the web is sufficiently strong to be lifted clear of the heated surface (11). The web is laid directly on the heated surface (11), without an intermediate layer between them. The heated surface (11) is smooth, and is especially a smooth and continuous metal surface. The length of the contact between the web and the heated surface is longer than the peripheral surface of the drying cylinders (32) in the following multi-cylinder drying group (30), and pref. significantly longer. The heated surface (11) is the mantle surface of a cylinder (14), where its dia. is pref. several meters and pref. 4-10 m. The cylinder (14) has a multi-shell structure at least in the zone of its mantle surface, which is a continuous belt. The cylinder (14) is heated from the interior by a hot fluid and/or from the exterior especially by infra red radiation or induction. The heated surface (11) can be the outer surface of a continuous belt around at least two deflection rollers, with at least one heater within the belt loop. The gap between the belt deflection rollers is a multiple of the deflection roller dia. One deflection roller is in the intermediate zone between a press assembly (20) and the following multi-cylinder drying group (30), with the belt path at an upwards or downwards angle out of the intermediate zone. A pick-up for the web pref. has at least one transfer fourdrinier which prevents the web dropping from the heated surface (11) and especially protect it from any matter from the multi-cylinder drying group (30). The web is held in contact with the heated surface by an air-permeable blanket belt (16), which especially presses the web against the heated surface (11). Or the web is locked to the heated surface (11) by a press roller. The web is detached from the heated surface (11) by a suction roller (18). While the web is in contact with the heated surface (11), additional heat is provided by an applied hot fluid especially as hot air and/or hot steam. On leaving the heated surface (11), the web has a dry content at least 1% higher than when initially brought into contact with it and pref. at least 2% higher and especially at least 4% higher. The heated surface (11) is located directly after the machine press station (20) and/or directly in front of the multi-cylinder drying group (30) and/or directly in front of an additional drying unit cylinder. An Independent claim is included for a papermaking or cardboard prodn. machine with a heated surface (11) to take the web in contact with it, with a pick-up to detach the web from the heated surface. The length of the heated surface is set so that, at the end of the heated surface contact stretch, the web has sufficient residual moisture content for the strength to resist shearing as it is transferred to the next station.

Abstract (de)

Die Erfindung betrifft ein Verfahren zum Trocknen einer Materialbahn, insbesondere einer Papier- oder Kartonbahn, bei dem die Materialbahn zumindest einer beheizten Fläche zugeführt und ununterbrochen in Kontakt mit der beheizten Fläche zumindest solange belassen wird, bis eine zum Abnehmen der Materialbahn von der beheizten Fläche ausreichende Festigkeit der Materialbahn erreicht ist. <IMAGE>

IPC 1-7
D21F 5/02

IPC 8 full level
D21F 5/00 (2006.01); **D21F 5/02** (2006.01); **D21F 5/04** (2006.01)

CPC (source: EP US)
D21F 5/004 (2013.01 - EP US); **D21F 5/02** (2013.01 - EP US); **D21F 5/04** (2013.01 - EP US)

Cited by
CN104020319A

Designated contracting state (EPC)
DE FI SE

DOCDB simple family (publication)
EP 1085122 A2 20010321; **EP 1085122 A3 20020109**; DE 19944267 A1 20010322; US 2003024133 A1 20030206; US 6482295 B1 20021119; US 6916405 B2 20050712

DOCDB simple family (application)
EP 00116921 A 20000805; DE 19944267 A 19990915; US 25940202 A 20020930; US 66200100 A 20000914