

Title (en)
Device for drying and smoothing fibrous webs

Title (de)
Trocknungs- und Glättungseinheit für Faserstoffbahnen

Title (fr)
Dispositif pour secher et lisser des bandes fibreuses

Publication
EP 1020559 A3 20010117 (DE)

Application
EP 99123079 A 19991122

Priority
DE 19901400 A 19990115

Abstract (en)
[origin: EP1020559A2] To dry and polish a fiber web (1), especially a paper web, at the drying station (2) the web (1) is dried to a max. 93% dry content. The effects on the lateral moisture profile of the web (1) are taken into account a number of times within the drying station (2). The web (1) is preferably dried to a max. 91% solid content in the drying station (2). The moisture distribution over the web (1) thickness is set at a consistent level during the drying action, by wetting at a number of points on at least one side of the web (1). The moisture distribution through the thickness and/or the lateral moisture profile is set in the first two one-third sections of the drying station (2) and again in the final one-third section and/or between the drying station and the calender (4). The moisture content of the web is adjusted when the web moisture content is 50-15% and preferably 25-25% and also at 20-8% and preferably 15-8%. The web (1) passes through the drying station (2) and the calender (4) at a speed of ≥ 1200 m/min. and preferably ≥ 1500 m/min. The division of the web length between the final moisture content adjustment and the leading polishing gap (5) at the calender (4) is divided by the web speed to give at least 1 sec. The web (1) is heated in the calender (4) together with a controlled press action in zones across the web width. The intensity of the web wetting is set preferably in zones from at least one subsequent measurement of the lateral moisture profile of the web (1). An Independent claim is included for the drying station and calender in a papermaking process with at least two wetting units (6) acting on the paper web (1). At least one unit is at the zone where the web (1) has a moisture content of 50-15% and preferably 25-15% and the second unit is at the zone where the web (1) has a moisture content of 20-8% and preferably 15-8%. Preferred Features: The wetting units (6), especially at the final one-third section of the drying station (2), spray the web (1) with water droplets of ≤ 100 μ m and preferably ≤ 80 μ m. The operation of the wetting units (6) is controlled to wet the web in zones across the web width at a controlled intensity. The zones have a width of ≤ 50 mm and preferably ≤ 25 mm. Monitors (7) to measure the lateral moisture profile of the web (1) are linked to the sprays (6) to control their action, with one monitor (7) after each spray (6). At least one steam blower box (9) is after the preceding press station (8), which extracts water from the web (1), with a controlled action to wet the web (1) in zones across its width. The calender (4) has at least three polishing rollers (10), with paired rollers each forming a polishing gap (5) between them for the web (1). At least one calender roller (10) is heated, and at least one calender roller (10) has a controlled bending action. The web (1) is in contact with a heated cylinder (3) only on one side, and mainly at the side which is sprayed (6) with water. Or both sides of the web can be in contact with a heated cylinder and the web can be sprayed by wetting units (6) on both sides, in the final one-third section of the drying station (2).

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Citation (search report)
• [A] GB 2039014 A 19800730 - MIDLAND ROSS CORP
• [A] EP 0742313 A2 19961113 - VOITH SULZER PAPIERMASCH GMBH [DE]

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DE10325572A1; DE10018945A1; AT17730U3; CN110998022A; ES2220188A1; US7249424B2; WO0242555A1

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