

Title (en)
Controlling the moisture profile

Title (de)
Feuchteprofilierung

Title (fr)
Régulation du profil d'humidité

Publication
EP 0989231 A3 20010425 (DE)

Application
EP 99112923 A 19990705

Priority
DE 19841638 A 19980911

Abstract (en)
[origin: EP0989231A2] To set the moisture profile of a fiber web material (1) in a papermaking or finishing machine, it is treated with electromagnetic waves as microwaves and/or high frequency (HF) waves. The field energy of the electromagnetic waves is distributed evenly across the web (1), when the web (1) has a dry content of 60-95%. The web (1) is supported in its movement path, at least at the zone subjected to electromagnetic waves. The web drying action is mainly through the exposure to electromagnetic waves, or only partially by them to compensate for differences in the moisture content across the web (1). An Independent claim is included for a web drying station, where the web (1) is moved past a microwave transmitter (2). Preferred Features: The microwave transmitter (2) has one or more hollow waveguides, each linked to a microwave source, and distributed evenly across the web (1). The web (1) moves over a rotating cylinder (3) at the microwave transmitter (2) zone. The cylinder (3) has a mantle or an outer cladding (4) of a material which absorbs microwaves less well than the web (1). The outer cylinder cladding (4) has a thickness of 5-150 mm and especially 10-50 mm. The support for the web (1), in its path from at least a fourdrinier (5), has a lower microwave absorption than the web (1). The path for the web (1) can carry it past at least two HF electrodes of different polarities. The electrodes are electrode rods, condenser plates and/or rotating cylinders. The web (1) moves round a rotating cylinder (3), preferably supported by a fourdrinier (5). The metal cylinder (3) can form an electrode, with a further rod electrode and/or condenser plate on the other side of the web (1), of a different polarity. The cylinder (3) can be cladded with an electrical insulation material. Where the web passes round the cylinder (3), at least two rod electrodes of different polarities generate HF waves which penetrate the web (1) at least partially. The assembly has an electromagnetic shrouding (6).

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IPC 8 full level
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CPC (source: EP US)
D21F 5/167 (2013.01 - EP US); **F26B 3/347** (2013.01 - EP US); **F26B 13/10** (2013.01 - EP US)

Citation (search report)

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