

Title (en)
Method for treating a paper fibre mixture

Title (de)
Verfahren zur Behandlung eines Papierfasergemisches

Title (fr)
Procédé destiné au traitement d'un mélange de fibres de papier

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Application
EP 07013340 A 20070707

Priority
DE 102006038866 A 20060818

Abstract (en)

The procedure for the treatment of an aqueous suspended paper fiber mixture from fibers of different length for the paper- and cardboard production, comprises fractionating the aqueous suspended paper fiber mixture in a fractionating device to form a coarse fraction and a fine fraction, which are separately treated in different process steps. The fractionating device (2) is used with a rotary screw (8) and a filter cover (9) surrounding the fractionating device at its circumference. The procedure for the treatment of an aqueous suspended paper fiber mixture from fibers of different length for the paper- and cardboard production, comprises fractionating the aqueous suspended paper fiber mixture in a fractionating device to form a coarse fraction and a fine fraction, which are separately treated in different process steps. The fractionating device (2) is used with a rotary screw (8), a filter cover (9) surrounding the fractionating device at its circumference, a means to introduce the paper fiber mixture between the screw and the filter cover, a means to transport the paper fiber mixture introduced into a housing (11) in axial direction and to push-through a filtrate by the openings of the filter cover in radial direction into a filtrate chamber (10), a means to collect and to discharge a part of the filtrate as a fine fraction, and a means to discharge eliminates as a coarse fraction at the filter cover. A further filtrate is pressed into the fractionating device in axial direction by the openings of a filter and is led into the filtrate chamber. The fractionation is carried out in such a way that short fibers and long fibers are enriched in the coarse fraction and fine materials are enriched in the fine fraction. The fractionating device is operated with an intake consistency of 2-4%. The filtrate is collected in the axially separated, two-part filtrate chamber and the last filtrate is removed as fine fraction. The first filtrate is partially added to the fractionating device for upstream dilution, led back into the inlet of the fractionating device and led into the coarse fraction. The first filtrate is partially supplied in an area between the screw and the filter cover, which is drained into a part of the filtrate chamber. The part of the filtrate chamber lies downstream to another part of the filtrate chamber, from which the first filtrate comes. The part of the first filtrate is thickened first and then given into the coarse fraction. The intermediate region expands between the screw and filter cover at the additional place of the first filtrate. The filter cover has small filter openings in the downstream part of the separated filtrate chamber than in the additional downstream part. The free cross-section of the intermediate region reduces between the screw and the filter cover in axial flow direction. The fractionation is adjusted in such a way that the fine fraction is formed, whose solid portion amounts to 20% of the solid material portion of the fibrous material suspension supplied to the fractionating device. The portion of the fibers is 5% smaller than in the fine fraction. The dispersed fibrous material is released in floatation by a part of the interfering substances. The floatation is mutually/separately carried out by the fine fraction.

Abstract (de)

Das Verfahren dient zur Behandlung eines wässrig suspendierten Papierfasergemisches aus Fasern unterschiedlicher Länge. Dabei wird ein wässrig suspendiertes Papierfasergemisch (S2) erzeugt und in einer Fraktionier Vorrichtung (2) in eine Grobfraktion (G) und eine Feinfraktion (F) aufgeteilt. Als Fraktionier Vorrichtung wird z.B. eine Schneckenpresse (4) verwendet. Vorzugsweise wird eine Grobfraktion (G) gebildet, die sowohl die Kurz- als auch die Langfasern enthält und eine Feinfraktion (F) mit den Feinstoffen.

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Citation (search report)

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