

Title (en)

A WET-FORMED SOLID POROUS BODY, A PROCESS FOR CONTROLLING STRUCTURAL AND MECHANICAL PROPERTIES IN THE MANUFACTURE OF A SOLID POROUS BODY AND PAPER MANUFACTURE, AND A METHOD OF WET-FORMING THE SOLID POROUS BODY

Title (de)

NASSGEFORMTER FESTER PORÖSER KÖRPER, VERFAHREN ZUR STEUERUNG DER STRUKTURELLEN UND MECHANISCHEN EIGENSCHAFTEN BEI DER HERSTELLUNG EINES FESTEN PORÖSEN KÖRPERS UND PAPIERHERSTELLUNG SOWIE VERFAHREN ZUM NASSFORMEN DES FESTEN PORÖSEN KÖRPERS

Title (fr)

CORPS POREUX SOLIDE FORMÉ PAR VOIE HUMIDE, PROCÉDÉ DE RÉGULATION DE PROPRIÉTÉS STRUCTURELLES ET MÉCANIQUES DANS LA FABRICATION D'UN CORPS POREUX SOLIDE ET LA FABRICATION DE PAPIER, ET PROCÉDÉ DE FORMATION PAR VOIE HUMIDE DU CORPS POREUX SOLIDE

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Abstract (en)

[origin: WO2017200452A1] A method of wet forming a solid porous body that is substantially lighter than conventionally produced similar products but has comparable strength/stiffness and is based on fibrous material from softwood including fractions of fibers separated from one another in a mechanical pulping process comprises: a) providing a draining device having a wire-net bottom; b) fractionating the separated fibers to obtain – a fiber fraction having a weighted average fiber length of from 0.7 to 1.8 mm and a weighted average fiber width of from 25 to 42 µm, and – a fines fraction of particles having a weighted average length of less than 0.2 mm and constituting from 8 to 40 percent by weight of said fibrous material; c) mixing said fractions and preparing a stock from the mixture; d) furnishing the stock to the draining device; e) draining water from the stock on the draining device to form a stabilized solid porous body; and 15 f) drying the stabilized solid porous body to produce a hydrogen bonded solid porous body free from added non-cellulose based binders. Further, a process for controlling the structural and mechanical properties by using combined fiber selection strategy in the manufacture of a solid porous body and paper manufacture comprises: – selecting a suitable wood raw material; – defibering the wood raw material in a mechanical pulping process to get free fibers separated from one another; – selecting a degree of treatment of the wood raw material by controlling an amount of energy supplied to the mechanical pulping process; – exposing the free fibers to a mechanical after-treatment in at least one refiner; – fractionating the obtained pulp by means of screens or hydrocyclones to get fiber fractions useful in the manufacture of a solid porous body and paper manufacture; and – selecting at least one fiber fraction suitable for manufacturing of a solid porous body.

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