Title (en)

Method for producing wood-based lightweight products

Title (de)

Verfahren zur Herstellung von Leichtbauprodukten auf Basis von Holz

Title (fr)

Procédé de fabrication de produits de construction légère à base de bois

Publication

EP 2615209 A1 20130717 (DE)

Application

EP 13150634 A 20130109

Priority

AT 372012 A 20120113

Abstract (en)

Producing rigid, dimensionally stable lightweight products, preferably -panels for construction, interior design-, furniture- and industrial purposes, and moldings of various types, which are based on wood, comprises: (a) intimately mixing e.g. (i) at least one grain flour preferably wheat flour having a particle size of less than 200 mm with water, and kneading; (b) mechanically shaping the obtained fine, uniform porous starting material, preferably dough-like pasty mass to form a final shape, (c) baking, and (d) subjecting the molding to post drying- and post machining process. Producing rigid and dimensionally stable lightweight products, preferably -panels for construction, interior design-, furniture- and industrial purposes, and moldings of various types, which are based on wood, comprises: (a) intimately mixing (i) at least one grain flour preferably wheat flour having a particle size of less than 200 mm, which has a protein content and dough-forming protein content of 8-14 mass%, preferably 11-13 mass%, and exhibits low extraction rate, (ii) at least one plant fiber flour, preferably wood flour, preferably softwood flour with particle sizes of 20-1000 mm, where the ratio of plant fiber flour to grain flour is from 70:30-30: 70, (iii) at least one yeast dispersed in water, which is present in an amount of 1-5 mass %, preferably 2-3 mass% (dry matter), respectively based on the amount of grain flour and wood fibers, (iv) 0.5-5 mass% swollen or gelatinous starch-containing product, and (v) water in an amount of 120-220 mass%, based on the total mass of the solid content of the components, and kneading; (b) mechanically shaping the thus obtained fine, uniform porous starting material, preferably dough-like pasty mass to form a final shape corresponding to the respectively provided preform, which is allowed to stand for less than 2 hours, preferably 25-35 minutes; (c) and baking the molding having pores during a heating process, which comprises or develops on molded uniform porous body at a temperature of 100-400[deg] C, preferably 180-220[deg] C, to obtain final shape of dimensionally stable, regularly arranged moldings with uniform dimension; and (d) subjecting the molding to post drying- and post machining process.

Abstract (de)

Die Erfindung betrifft ein Verfahren zur Herstellung von formstabilen Leichtbauprodukten auf Basis von Holz, wobei - zumindest ein, einen Glutengehalt von 8 bis 14 Masse.-% aufweisendes Getreidemehl, - zumindest ein Pflanzenfasermehl, vorzugsweise Holzmehl, insbesondere Nadelholzmehl, mit Teilchengrößen von 20 bis 1000 µm, wobei das Gewichtsverhältnis von Pflanzenfasermehl zu Getreidemehl, von 70:30 bis 30:70 beträgt, - zumindest eine Hefe in dispergierter Form, in Mengen von 1 bis 5 Masse.-%, (Trockensubstanz), bezogen auf Getreidemehl, - 0,5 bis 5 Masse.-% eines verkleisterte Stärke enthaltenden Produkts und - Wasser in Mengen von 120 bis 220 Masse.-%, bezogen auf Feststoffgehalt der genannten Komponenten, - miteinander verknetet werden, (Knetdauer abhängig von Kraftaufwand, Mehlsmenge, Glutenmenge und Wassergehalt) - dass die erhaltene teigartig pastöse Masse zu einem Formling mit der vorgesehenen Endform entsprechender Vorform geformt wird, welcher 20 bis 45 min lang rasten gelassen wird, und - der Porigkeit aufweisende Formling bei 100 bis 400°C zu dem die Endgestalt aufweisenden Leichtformkörper verbacken wird, - welcher eventuell einem Nachtrocknungs- und Nachbearbeitungsprozess unterworfen wird.

IPC 8 full level

D21J 1/00 (2006.01); **C08J 5/00** (2006.01); **C08J 9/00** (2006.01); **C12P 1/00** (2006.01); **D21J 3/00** (2006.01)

CPC (source: EP)

D21J 1/00 (2013.01); **D21J 3/00** (2013.01)

Citation (search report)

- [A] WO 02055722 A1 20020718 - INNOVATION WOOD IWOOD [CH], et al
- [A] DE 102004054224 A1 20060511 - UNIV DRESDEN TECH [DE]
- [A] US 3197360 A 19650727 - GIRARD CHRISTIAN F, et al

Cited by

CN114945461A; DE102017111139A1; US10619303B2

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

EP 2615209 A1 20130717; AT 512358 A1 20130715; AT 512358 B1 20130915

DOCDB simple family (application)

EP 13150634 A 20130109; AT 372012 A 20120113