

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 µm 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 µm, 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 µm, 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.

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Citation (search report)

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