

Improvement of particleboard stability by steam pretreatment of wood chip

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Abstract Highly dimensionally stable particleboards of spruce and Birch were experimentally made from chips treated with saturated at elevated pressures. The relationships between steam pressure, time of steam treatment and MOR, MOE, IB and thickness swelling, linear expansion of particleboards were studied. The results indicated that the optimal technique parameters of steam treating chip were steam pressure: 1.3N/mm^2 , steam treating time: 5~6 min, and the stability of the Birch particleboard by steam treated was much greater than spruce.

Keywords Particleboard; Steam treatment; Dimensional stability; Thickness swelling; Linear expansion.

木材加工企业中废物的有效利用途径

在1991年前苏联动力储备和热力工程讨论会上,专家列夫沙科夫针对木材加工企业中含毒废物材料的有效利用途径(包括木材磨削时产生的粉尘以及UF树脂生产车间所产生的废水)发表了论文。他设计出一套用于储备动力能源、进一步有效利用废旧资源的装置。该装置的生产过程分三道工序:第一道工序是将木材磨削时产生的粉末送入燃烧室充分燃烧;第二道工序是把燃烧时所释放出的热量用于废水中杂质的热处理;第三道工序是将经过热处理除掉杂质的热水用于木材碎料的干燥。

生产性试验表明:甲醇、甲醛和树脂在完全酸化后可以转变为无毒物质。该项研究

的成功既保护了生态环境,又充分有效地利用了燃料资源。对于一条年产 25万m^3 的刨花板生产线来说,如果能有效利用从废物中提取的能源,那么每年可节约1千吨动力燃料。在Благовещенский家具厂已建造了一套该装置系统,上面有配备特种旋风分离器的燃烧室和喷射器。与此同时,他分析了刨花板在多层水力热压机上的热压规程,提出了应用高温载热介质、降低板坯的初含水率、升高垫板和板坯的初温、采用无垫板操作技术等提高板子质量的有效途径,并制定了最佳的热压工艺参数。

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