

Wood Products Consumption for New Nonresidential Building Construction, 2003

Research is being undertaken in collaboration with industry to assess how wood products use in new nonresidential construction is changing—particularly use of engineered wood products. This information helps industry and forest managers understand changing needs for production capacity and for timber management. This research is part of a continuing effort to monitor changing wood products use in major end uses, including residential housing, residential upkeep and improvement, and manufacturing.



Use of curved glulam beams at the Disneyland Ice Arena, Anaheim, California.

The Forest Service and the wood products industry have long been interested in the nonresidential construction market. Studies have been conducted over the years by both the Forest Service and the wood products industry, independently and, more recently, cooperatively. In the mid-1980s, the Forest Service and the Wood Products Council pooled their technical expertise and financial resources to cooperatively

evaluate the rapidly growing and changing nonresidential construction market. More than 10 years later another cooperative study was conducted. This study revealed many changes in the market. Once again the Forest Service and Wood Products Council are conducting a new nonresidential construction study to evaluate changes in the amounts and types of wood and nonwood building products being used and potential impacts from the newly adopted IBC.

Background

New construction expenditures in the United States totaled \$843 billion in 2001. Of this, new nonresidential buildings accounted for \$299 billion, or 36% of all construction expenditures. As such, new nonresidential building construction is an important, dynamic market for lumber, structural wood panels, nonstructural wood panels, and engineered and manufactured wood products, and the mix of products used is changing over time. The most recent comprehensive study of wood products use was conducted in 1995, before many of the newly emerging engineered wood products and construction techniques had penetrated the nonresidential building construction market. Also, the recent development and adoption of the International Building Code (IBC) may permit the use of wood products in areas previously not allowed.

Objective

The objective of this study is to provide new benchmark information on the use of structural wood products in new nonresidential building construction. Specific objectives are to (1) estimate amounts and types of lumber, structural panels, nonstructural panels, and engineered wood products used by type of building, application, and region in 2003, (2) estimate use per unit of construction activity for each wood product, building type, application, and region, (3) evaluate historical trends in nonresidential

construction activity and wood products use, (4) identify areas where wood products use could be increased, and (5) evaluate the effects of the IBC on the nonresidential construction market.

Approach

The approach is to use information from building plans to determine wood use in nonresidential construction. F.W. Dodge, Inc., a recognized authority in nonresidential construction in the United States, maintains nonresidential building plan and blueprint databases. About 3,500 plans are typically available, with new plans being added and removed daily. The Dodge database will be used to identify buildings by type, region, construction characteristic, and use of building products. This information will enable the estimation of frequency or incidence of wood use for each building type, region, application (floors, walls, roofs), and wood product. Next, online blueprints from a subsample of these buildings will be downloaded. Material takeoffs will be obtained from these blueprints to measure the amounts of each wood product used, by type and application. This information will be the basis for a set of wood use factors—the amount of each wood product used per unit of construction activity. The incidence of use and wood use factors will be applied to national levels of construction activity, resulting in overall estimates of wood products consumption for new nonresidential construction.

Expected Outcome

This study will result in a Wood Products Council research report on the use of wood products in new nonresidential buildings in 2003 and an evaluation of changes that occurred since the previous study was conducted in 1995. Forintek Canada Corp. will evaluate and publish a report of the effects of IBC on wood use in new nonresidential buildings. A report summarizing key findings of the study will be submitted to the Forest Products Journal, and presentations will be made at appropriate conferences.

Timeline

Data extraction will begin in September 2003. Final report publication is expected by spring 2004.

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