

Wood Products Consumption for Nonresidential Construction in the United States and Canada, 2011

Construction of new low-rise nonresidential buildings and remodeling and renovation of existing buildings are important markets for steel, concrete, and wood building materials. Nonresidential construction is largely dominated by steel and concrete, whereas in residential construction, wood constitutes over 90% of all building materials used.

Background

In 2008 it was estimated that wood was the principal building material used in just 11% of all low-rise nonresidential buildings in the United States. In that year, 1,758 million board feet of lumber, 56 million board feet of glulam timber, 2,677 million square feet of structural panels (3/8-in. basis), 79 million square feet of nonstructural panels (3/8-in. basis), 68 million linear feet of wood I-joists, and 4 million cubic feet of structural composite lumber were used to construct nearly 84,400 new buildings or additions and for alterations and renovations of numerous existing buildings in the United States. These estimates were based on information about the characteristics of nonresidential construction in 2008 and factors of wood use from a more complete 2003 study. Changes have occurred since the 2003 and 2008 studies, and a new benchmark study is needed to better determine the use of wood in nonresidential construction, to document how wood use has changed, and to evaluate the effect of marketing efforts on overall wood use.

Objective

This study will provide new benchmark information on the use of structural wood products in new



Figure 1. City Library at Beaverton, Oregon.

nonresidential building construction and for alteration and renovation of existing buildings in the United States and Canada. Buildings of six or fewer stories will be evaluated, with several specific objectives:

- Estimate amounts and types of lumber, structural panels, nonstructural panels, and engineered wood products used by type of building, application, and region in 2011, as well as amounts of nonwood competing products.
- Estimate use per unit of construction activity for each building product, building type, application, country, and geographic area.
- Evaluate historical trends in nonresidential construction activity and wood products use.
- Identify areas where wood products use could be increased.

- Quantify potential incremental increases in wood use under different scenarios.

Approach

NAHB Research Center and their partner Reed Construction Data (which offers RSMeans construction cost data) will be contracted to provide basic information needed for the study, to evaluate the information, and to provide summary and final reports. The following tasks will be performed:

1. Develop estimates for nonresidential area, value, and incidence of primary wall material based on Reed Construction Data database of nonresidential construction projects.
2. Develop detailed materials usage specifications based on RSMeans database of detailed specifications of new nonresidential buildings. The database will be used to develop materials use factors for buildings where new floor area has been added.
3. Creation of detailed project characteristic database and preliminary tabulations. This database will use RSMeans data modeling procedures and will be used to obtain usage volumes for each qualifying nonresidential project. The database will also be used to develop estimates for renovation projects where no new floor area has been added.
4. Conversion to appropriate metrics and final report preparation. Results from Task 3 will be used to develop final consumption estimates for the United States and Canada. Opportunities for increasing the use of wood will also be quantified based on relevant building code requirements. Waste factors will also be applied where relevant.

Expected Outcomes

The final report will include an analysis of general building trends and activity, with comparisons to data from previous studies, a summary of wood products volume by assembly, building type, materials type, and geographic areas. Both volume and incidence measures will be analyzed and described.

Timeline

This study started in early 2012, and a final report is expected by mid-2012. Draft tabulations will be completed by spring 2012.

Cooperators

USDA Forest Service, Forest Products Laboratory
APA—The Engineered Wood Association
FPInnovations
Natural Resources Canada
Wood Products Council
WoodWorks
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