

Fire Rated Assemblies – OSB substitution for plywood in UL fire-rated assemblies that specify plywood

Many fire-rated assemblies specified and built today were originally tested and approved with plywood as the floor covering. Because APA often supplied panels for tests, some specifications still list APA-rated panels as the approved sheathing in these assemblies. In 2000, engineers at Underwriters Laboratories (UL) of Northbrook, Illinois, determined that OSB of an equivalent thickness could be substituted for plywood in these designs. Going one step further, UL revised its UL fire-rated assemblies to no longer limit use of structural panels to those of a single certification agency. The revision, sponsored by TECO, was necessary because original language appeared to exclude the use of plywood and OSB panels unless certified by APA. While never intending to restrict panel use to a single agency, UL recognized this language as exclusionary and modified the assembly designs to include the use of all panels meeting PS 1 and PS 2 standards.

The new, revised language is included in the 2000 edition of the *UL Fire Resistance Directory*. A subsection 13 has been added to the General section at the beginning of Volume I and includes the following:

"Wood Structural Panel is a structural panel product composed primarily of wood and meeting the requirements of the U.S. Department of Commerce Voluntary Standard PS 1, *Structural Plywood* or the U.S. Department of Commerce Voluntary Product Standard PS 2, *Performance Standard for Wood-Based Structural-Use Panels*. Wood structural panels include all-veneer plywood, composite panels containing a combination of veneer and wood-based material, and mat-formed panels such as oriented strand board and waferboard. The panels are to bear the label of a code-recognized certification organization with a specific reference to the PS 1 or PS 2 standard. The panels shall also be marked Exposure 1 or Exterior. Some individual designs may limit the type of panel that can be used.

As an alternate, wood structural panels evaluated in accordance with APA – The Engineered Wood Association Standard PRP-108, or TECO PRP-133, and meeting the description for the panel type in the individual designs, may be used."

In addition, all references to trade names have been removed from the individual design assembly descriptions and replaced with more generic terminology. Examples include:

"19/32-in. thick wood structural panels, min. grade "C-D" or "Sheathing." Face grain of plywood or strength axis of panels...."

"23/32-in. thick wood structural panels, min. grade "Underlayment" or "Single-Floor." Face grain....."

Architects and engineers specify fire-rated wall, floor and roof assemblies extensively in structures where one- and two-hour fire protection is required. The *UL Fire Resistance Directory* is available from Underwriters Laboratories by calling (847) 272-8800. The complete *UL Fire Resistance Directory* is also available on the Internet at UL's website (<http://www.ul.com>).