



Coffee Break Training - Fire Protection Series

Building Construction: Combustible Material in Noncombustible Buildings

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Learning Objective: The student shall be able to identify some building code exceptions for combustible materials in noncombustible buildings.

The model building codes divide construction types into two major categories: combustible and noncombustible. In general, buildings that are classified as noncombustible must be constructed entirely of materials that will not ignite or sustain combustion.

However, there are many circumstances where combustible materials are permitted, as long as they have been fire-retardant treated, meet certain fire test criteria, or are encapsulated behind fire-resistive gypsum drywall or other thermal barriers.

In today's illustration, there is a combustible wood deck applied to noncombustible steel roof framing in a Type II building (See Coffee Break Trainings 2009-45 through 2009-51 for basics on construction types). Generally, this would not be permitted in a noncombustible building, but like many other conditions, there are exceptions to the rules.



This roof deck material should have been made from fire-retardant treated wood.

Both of the model building codes, the *International Building Code*[®] and National Fire Protection Association (NFPA) 5000, *Building Construction and Safety Code*[®], allow fire-retardant treated wood as part of a roof deck assembly in Type II construction. The wood deck enables the roofing contractor to attach nailed asphalt shingles or other roofing materials.

In this example, however, the plywood veneer that was installed had no fire-retardant treatment, so the code official was compelled to make a choice of leaving it alone, requiring that it be replaced, or approving a different means to protect it as authorized by the administrative provisions of the model codes under "alternate materials, design and methods of construction and equipment."

For additional information, refer to *International Building Code*[®], Chapter 6, or NFPA 5000, Chapter 71.



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