

# Fire Engineering®

## Construction Concerns: Porches, Decks, and Stairs

*July 20, 2015*

*By Gregory Havel*

In the 21st century, exterior porches, decks, and stairways for residential and some light commercial buildings appear much as they have for the past 100 years.

Photo 1 shows a recently-constructed building entry.



(1)

July 20, 2015

Although it looks very much like traditional construction of painted wood, please note that all of the visible building surfaces in the photo are plastic.

- Plastic deck and riser boards on the steps
- Plastic skirting boards under the porch
- Plastic railings and spindles on the steps
- Plastic deck boards on the porch
- Plastic siding and trim boards around the windows

The deck boards and railings are usually made of recycled plastic materials and are reinforced with fiber (often cellulose fiber, sometimes glass fiber). The siding and trim boards are usually made of unreinforced plastic. The finished surface may be smooth, like wood that has been sanded and painted. Or, it may have a pattern of raised wood grain, like wood that has been weathered and then painted.

An advantage of plastic decks, steps, and railings is that the surface color is the color of the plastic so that wear will not change the color as it does with painted wood.

Photo 2 shows plastic deck boards assembled into the floor of a porch and deck. These boards are usually tongue-and-groove or splined, like the traditional wood deck boards.



(2)

Photo 3 shows plastic handrail sections before assembly into a complete railing.



(3)

Photo 4 shows several fiber-reinforced column covers and the wood columns that they will cover.



(4)

July 20, 2015

The framing for these plastic decks and porches are usually of dimensional lumber and usually pressure-treated, although sometimes manufactured wood products or fiber-reinforced plastic lumber are used.

Photo 5 shows a nearly complete porch stairway. The plastic deck boards, the plastic railings, the plastic skirting, and plastic trim are visible. Also visible is the wood framing that supports the plastic deck (one board has been removed on the bottom step) and the wood post that will receive a plastic column cover. The plastic siding and trim are also visible in the back of the photo.



(5)

When sounded by firefighters, plastic decks and steps are less resonant than wood boards. Plastic decks and steps do not act like wood decks and steps under fire conditions. The properties of floors and other supports should be of interest to the firefighters who may need to work from them.

For more information, do an Internet search for “plastic deck boards,” “plastic siding,” and “plastic trim.”

For a comparison of the wood and plastic siding under fire conditions, see my “Construction Concerns” article “Misleading Marketing” from April 7, 2015.

July 20, 2015



**Gregory Havel** is a member of the Town of Burlington (WI) Fire Department; retired deputy chief and training officer; and a 30-year veteran of the fire service. He is a Wisconsin-certified fire instructor II, fire officer II, and fire inspector; an adjunct instructor in fire service programs at Gateway Technical College; and safety director for Scherrer Construction Co., Inc. Havel has a bachelor's degree from St. Norbert College; has more than 30 years of experience in facilities management and building construction; and has presented classes at FDIC.

[CLICK HERE](#) for more 'Construction Concerns' articles!

### ***MORE CONSTRUCTION CONCERNS***

- [Repurposed Structures](#)
- [Fuels and Fire Behavior](#)
- [Blocked Emergency Exits](#)
- [Types of Gypsum Drywall Board](#)
- [Radiant Floor Heating Panels](#)
- [Vertical Rolling Fire Doors](#)
- [Misleading Marketing](#)
- [Snow Load](#)
- [Fire Doors](#)
- [Fire Extinguisher Installation](#)
- [Wood Frame Concealed Spaces](#)