

## Riser spacing on stairs. The dirt on open risers

Submitted by DonHester on Sun, 03/16/2014 - 07:57.

Many rules on risers and baluster spacing is aimed at the little ones in our lives. Those smaller children have a habit of sticking their little heads in places.



So many of the codes are geared at protecting them. This is where the 4 inch rule comes in. But in an odd quirk of codes we have a loop hole for a head hole.

R311.7.5.1 Risers. ((from the 2012 IRC) (bold and underline mine)  
The maximum riser height shall be 7<sup>3</sup>/<sub>4</sub> inches (196 mm). The riser shall be measured vertically between leading edges of the adjacent treads. The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8 inch (9.5 mm).

Risers shall be vertical or sloped from the underside of the nosing of the tread above at an angle not more than 30 degrees (0.51 rad) from the vertical. **Open risers are permitted provided that the opening between treads does not permit the passage of a 4-inch-diameter (102 mm) sphere.**

**Exception: The opening between adjacent treads is not limited on stairs with a total rise of 30 inches (762 mm) or less.**

So in this photo the open risers on the stairs are considered a safety/code violation.

And in this photo the riser spacing is perfectly okay by code, but what about safety? (There are other issues with these stairs, missing landing and handrail)



I wonder if the code official have ever had children. The last time I looked it seemed that those little ones are much closer to the ground and I would assume if the issue is their heads being stuck it is much easier at lower height than with a very tall run.

Toddler heights at 12 months, for boys is around 29 to 30 inches and for girls is 28.5 to 30 inches. At 15 months boys average 30.5 to 32 and for girls its 30 to 31.

The circumference of the baby head is usually around 16 to 18 inches which is a diameter of 5 to 5.7 inches. Be we know that heads are typically narrow in one direction.

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So if the little one went up and stuck there head it that lower height could have just as much issue , and maybe more so than the higher one. Code are minimums and I will recommend that these risers meet the criteria of those over 30 inches. Knowing the rules is important, especially in new construction.

“If you think it's expensive to hire a professional to do the job, wait until you hire an amateur.”

Red Adair

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