

**NC Department of Insurance
Office of the State Fire Marshal - Engineering Division
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Straightening Bowed Studs

Code: 2018 Residential Code
Sections: R601.2, Table R602.3(1)

Date: January 21, 2020

Question:

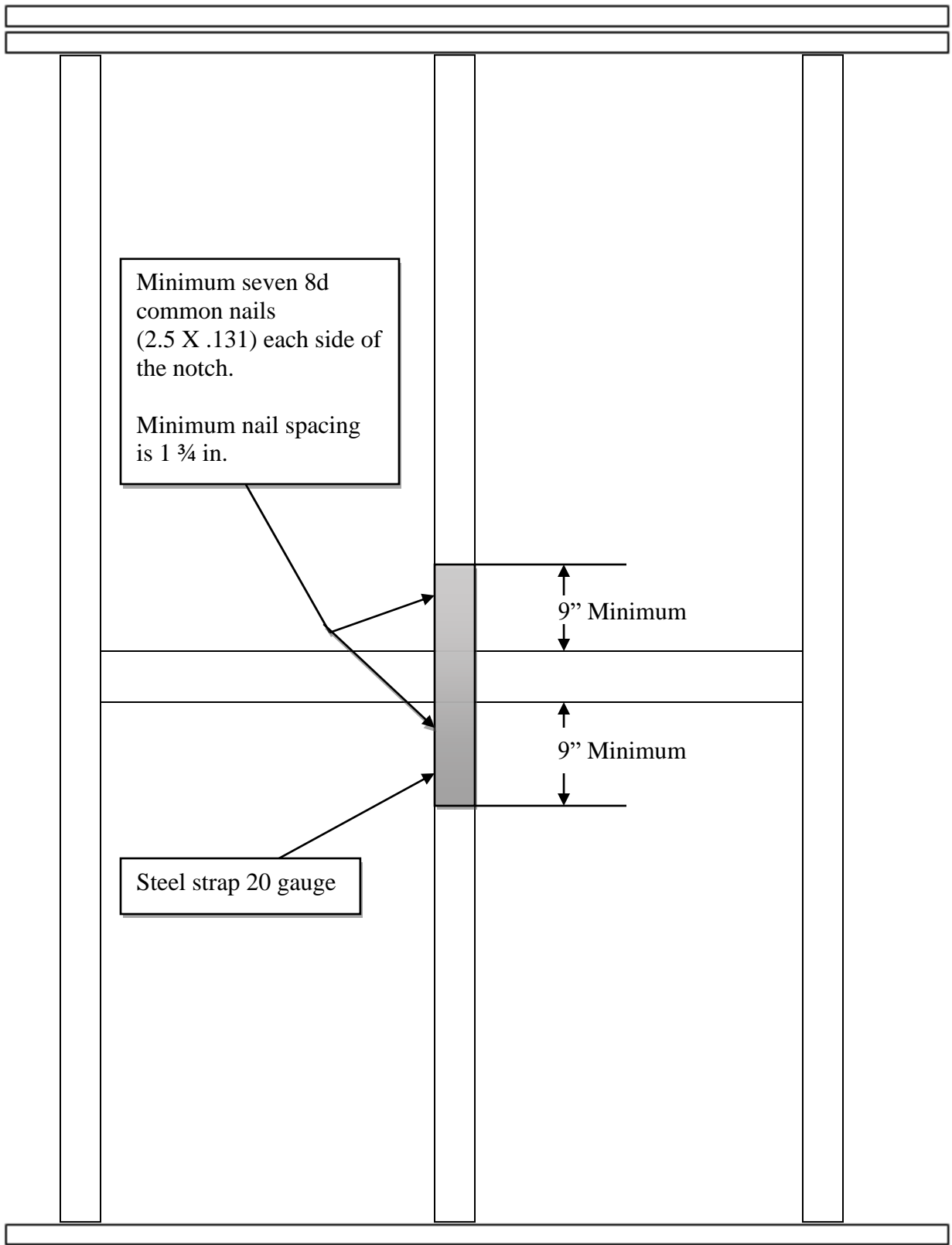
Sometimes we have installed studs that are bowed. Is there a method to straighten out 2 X 4 studs that would not require an engineer's evaluation?

Answer:

Yes, in wind zones up to 120 mph, the contractor may straighten bowed studs without the need for an engineer's evaluation by following one of the methods listed below.

1. Install a stud next to the bowed stud and fasten the two studs together using the "Double Studs" detail in Table R602.3(1).
2. Install a braced wood horizontal member in a notched-out section of the bowed stud/studs connecting it to the adjacent studs (see picture). Following are requirements for repair of a stud:
 - a. The bracing must be in the center third of the stud.
 - b. Maximum notch depth into the stud is 1 5/8 inches.
 - c. The horizontal member must be tight in the notch so there is no gap above or below the horizontal member.
 - d. A steel strap is required across the notch. The strap must be at least 20 gauge by 1.25 inches wide.
 - e. Strap is to extend at least 9 inches beyond the top and bottom of the notch.
 - f. At least seven 8d common nails (2.5" X .131") are required above and below the notch.
 - g. Multiple studs may be repaired.

In wind zones higher than 120 mph an engineered solution is required.





Keywords: bracing, horizontal bracing, vertical bracing