

Balanced Balusters

Simple calculations make for a much more accurate spacing method

BY MICHAEL MAINES

There are countless methods people swear by for laying out balusters. Many of them take a great deal of time and, in the end, are not very precise. I use a method that gives me a precise layout on the first try, on both simple and complicated railing designs.

The symmetrical balustrade pictured here was designed by the architecture firm Albert, Righter & Tittmann and built by Fine Lines Construction. A project of this scope illustrates the importance of being able to accurately determine the spacing and number of balusters.

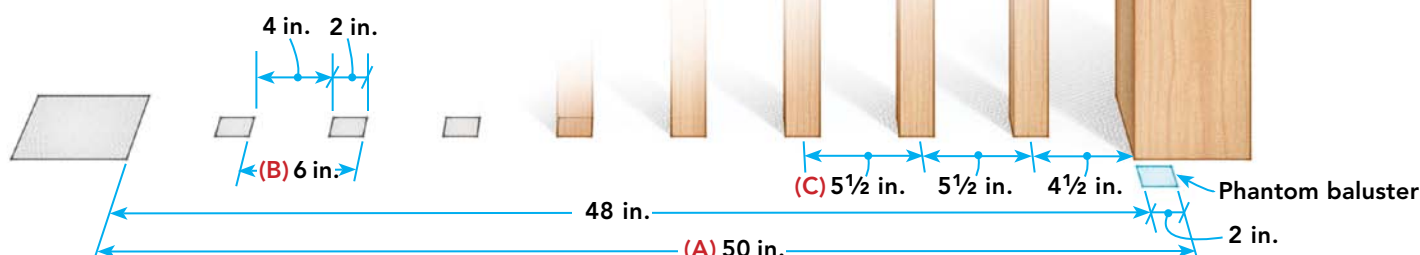
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BASIC BALUSTER EQUATION: $A \div (A \div B) = C$

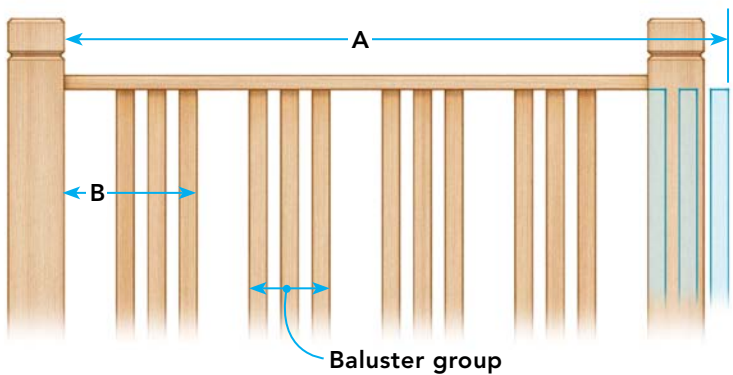
By adding the width of a baluster or group of balusters to the length between newels, this simple equation calculates the number of balusters or groups and the centerline measurement needed for your layout.

SINGLE The length between newels plus the width of one baluster is **A**. **B** is the width of one baluster added to a code-compliant baluster space. Divide **A** by **B**. Round the quotient up if the baluster space is equal to the code maximum; you can round the quotient up or down if the space is less than the code maximum. The rounded quotient is the number of balusters needed, including the phantom one. Now divide **A** by the rounded quotient to calculate **C**, the centerline spacing used for layout. Note that the first centerline will be less one-half the width of a baluster. **Example:** $50 \div (50 \div 6 = 8.3 \text{ [rounded up to 9]}) = 5.5$.

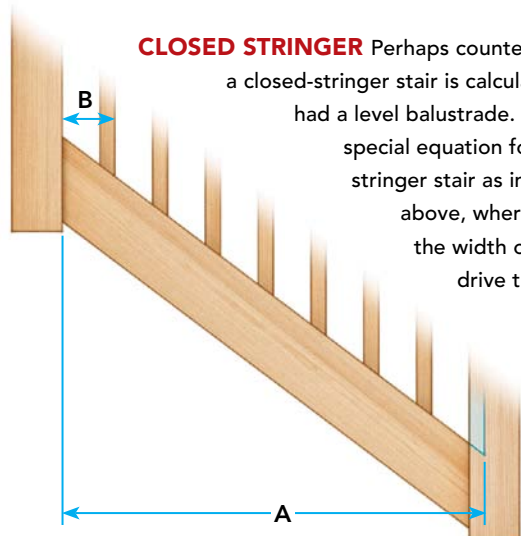




CODE NOTE
 The largest space allowed between balusters is usually 4 in. on level rails and 4³/₈ in. on stairs. For turned newels and balusters, measure the widest space.



GROUPED The same math works for grouped balusters, but B is the width of the group added to a code-compliant space. The first layout mark is the centerline dimension less one-half the width of the group.



CLOSED STRINGER Perhaps counterintuitively, a closed-stringer stair is calculated as if it had a level balustrade. There is no special equation for an open-stringer stair as in the photo above, where code and the width of the tread drive the baluster position.