



Filling in the voids

Volume #1

Minimum bearing

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How many firms do you think have a specification, note or detail that addresses minimum bearing for hollow core? It seems that most do, but the thinking behind it isn't always clear.

Interestingly enough minimum bearing for hollow core will vary based on the unit length. The ACI Code¹ dictates that the length of the unit divided by 180 ($l_n/180$) but not less than 2 inches is the requirement for precast slabs. This means that for units up to 30 feet long, 2 inches would be the minimum code compliant bearing. The minimum bearing for slabs over 30 feet would be determined by $l_n/180$.

Design of the bearing beams or walls should also be a consideration. Beam type, size, composition, etc. should be evaluated before a decision is reached on what the minimum bearing should be. It is also beneficial to indicate which structural component is the determining factor.

As with nearly all dimensions in construction, bearing is going to have a nominal value. We are all aware that a typical masonry wall along with the tie beam or bond beam it supports is 7-5/8 inches rather than 8 inches. Coreslab Structures (Orlando) Inc. typically specifies 3 inch *nominal* bearing on an 8 inch *nominal* masonry beam or wall.

It is generally understood that precast bearing will vary due to a list of factors. The nominal dimensions for supports we've already mentioned, tolerances in wall/beam construction, and precast manufacturing and erection to name only a few will play a part in effecting hollow core bearing in the field. It is believed that even with these factors a significant majority of the units erected are well within the code guidelines for bearing and that the remainder will safely meet project requirements.

The value of a uniform set of bearing requirements that have the engineered shop drawings in agreement with the contract drawings can not be understated. Conflicts between documents remains a key issue impacting project schedules and budgets. Working with Coreslab Structures (Orlando) Inc. to arrive at a realistic value for minimum bearing can alleviate at least one trouble spot before it becomes a problem.

¹ACI 318-08 16.6.2.2(a)