



Masonry in Hawaii

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What are the advantages/disadvantages of the double open end bond beam unit from the regular cmu and when is it normally used in the field?

As you can see, one of the major features of the double open block (blocks on the left) is that this cmu unit that has no end shell to restrict the flow of grout horizontally. It also has a depressed center web to allow horizontal placement of reinforcing steel on any course, making this unit much like a stay-in-place form system similar to a cast in place concrete wall.



To insure the quality and structural integrity of the block, the thickness of the outside face shell and the center web of the DOE units vary from one sixteenth to about one half inch thicker than regular 8" CMU. This is to compensate for the missing end shells of the unit. Because of the open design of this unit, every cell must be grouted, limiting the use these units only to solid grouted walls.

One of the many common construction uses of these blocks is when the height of the vertical rebars makes it very difficult to place the units. Instead of going over the rebars, it is easily placed by sliding it between rebars. In situations where there is a lot of vertical rebars, this unit only has the single web in the middle of the block, so more vertical rebar can be placed as compared to a regular cmu block. This block is also a very effective ground termite barrier, when used below ground level. The new DAGS specification for masonry continues to specify the use of the double open end masonry blocks for foundation walls under ground level.



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If you are an architect, you may ask your engineer if they ever specified this type of concrete masonry unit to structurally enhance a cmu wall. Perhaps this might be a viable option in place of a cast in place concrete wall. If you are a structural engineer and have not used this block, consider that this block may give you more flexibility in the placing of both horizontal and vertical rebars and will not significantly add to your in place cost. (Cost difference is about \$.11 more for the block and the block weighs about 2 lbs. less than a regular cmu block)

