PRODUCT PERFORMANCE EVALUATION

Wind-lock®
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Product(s) Tested: Wind-lock fasteners, WLM-1 and WLM-2, installed into Insulated Concrete Form crosstie supplied by BuildBlock Building Systems, LLC. (See fig. 1)

Figure 1

Purpose of test: Determine pullout strength of the above fasteners installed into the sample material listed. Pullout values shall be determined for fasteners installed into the double-thickness section of the crosstie flange, as well as in the single thickness areas of the flange.

Equipment used:

Dillon motorized test stand – model MWD-5KNE with Dillon Advanced Force/Torque Indicator – 0 to 1000 pound force capacity.

Procedure:

The sections of the crosstie incorporating the double thickness section of flange material were cut from the crosstie. A fastener was installed into each double section as shown in fig. 2, such that the screw body was centered in the rectangular, open area through the flange. The fastener was driven through the flange section until at least ½ inch of the fastener protruded from the inner surface of the flange section.

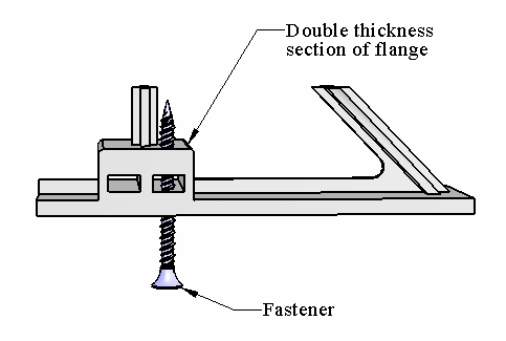

Figure 2

For testing wherein the fastener was not required to penetrate the double section of the flange, (see fig. 3), the screw was simply driven into the single thickness

regions of the crosstie flange, making sure the screw did not engage the central web of the flange, any diagonal webs, or any other area of increased thickness.

The assembly was then loaded into the tensile tester. The fastener head was engaged in the gripping mechanism of the tester, and a uniform rate of pull of .2 inches per minute was applied to the assembly.

Peak readings were recorded for each test. This was repeated five times for each type of fastener, and then the peak values were totaled and divided to find the average, ultimate strength of the assembly.

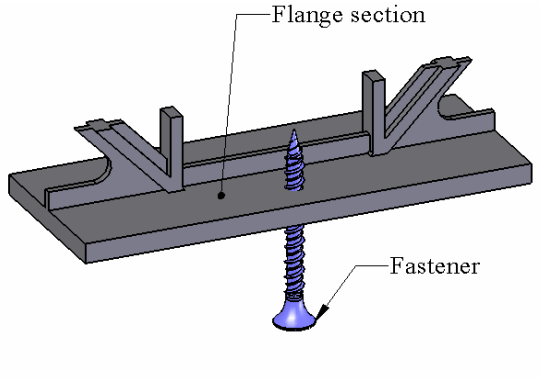

Figure 3

Results:

Single Flange Thickness
Fastener – WLM-1

Pull Number	Value (pounds)
1	163.8
2	164.4
3	174.6
4	177.2
5	172.4
Average	170.5

Double Flange Thickness
Fastener – WLM-1

Pull Number	Value (pounds)
1	494.4
2	505.7
3	501.5
4	508.8
5	476.4
Average	497.4

Single Flange Thickness
Fastener – WLM-2

Pull Number	Value (pounds)
1	175.2
2	177.9
3	176.3
4	169.7
5	165.5
Average	172.9

Double Flange Thickness
Fastener – WLM-2

Pull Number	Value (pounds)
1	490.7
2	475.3
3	494.0
4	478.6
5	503.5
Average	484.4

Note:

All strength values shown herein are ultimate values, recorded at the point of failure of the assembly. The end user should apply an appropriate factor of safety when determining allowable limits for design.

Revisions to part design, configuration, processing, or formulation may have an adverse effect on strength performance, and as such, would invalidate the results contained I this report.

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