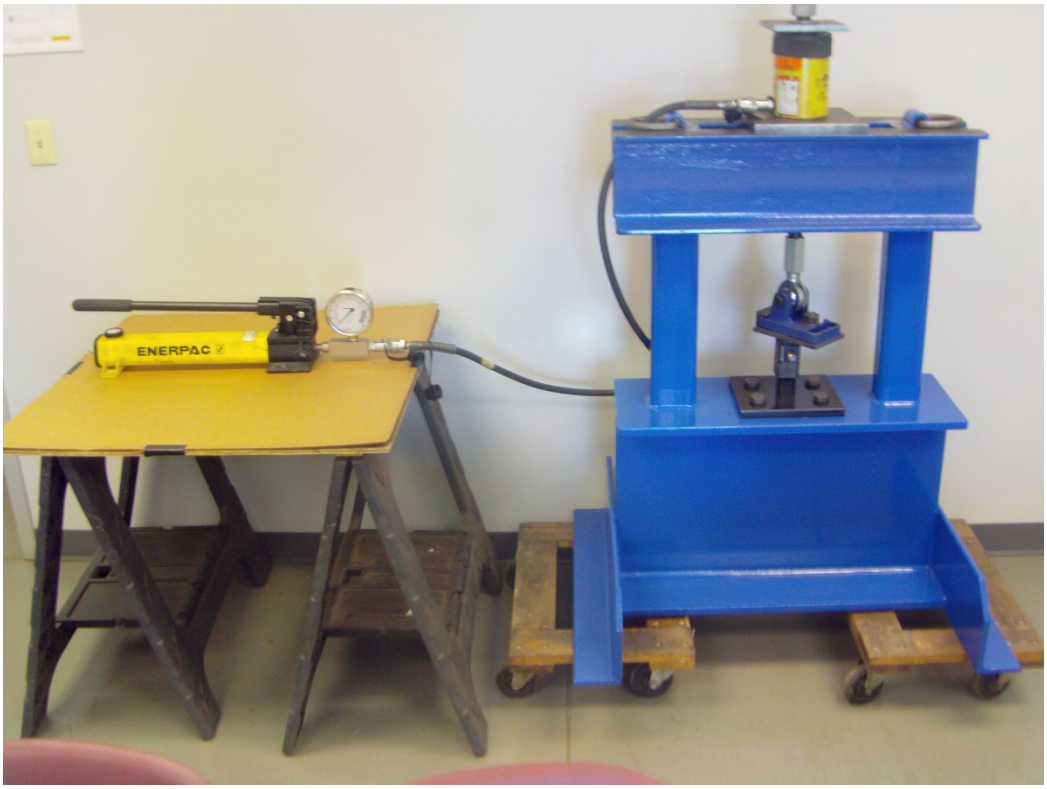
Helical Anchor- Wall Brace

Tests to verify the tension capacity of the AdvanConn Helical Anchor- Wall Brace (H-B) when used with the Dayton Superior (D-S) Accubrace and the B-1 through B-15 series wall braces were conducted on Tuesday, 5 May 2015 at Tincher's Welding, Harveysburg, Ohio.

A series of four tests were conducted using both the D-S shoe #93710 ("Small Foot Plate") and the D-S shoe #122514 ("Heavy Duty Shoe"). The AdvanConn H-Bs used in each test consisted of a plate 3/8" x 5" x 6-1/2", with an angle ¼" x 1-1/2" x 2" welded to one end, a 2" x 2" x 3/16" tube welded on the underside of the plate, and a "B-25" coil nut, also welded on the underside of the plate. A ¾" coil bolt was used to secure the brace shoes to the H-B.

Test loadings were to verify a tensile capacity of the HD equal to the design working load of the D-S B-1 through B-15 wall brace series. Design working load is 9,000 lbs (1,300 psi on the actuator gage) and the design ultimate load is 13,500 lbs (1,800 psi on the actuator gage).

Helical Anchor- Wall Brace



AdvanConn H-B Test Stand

TEST #1: D-S shoe #93710 (“Small Foot Plate”)

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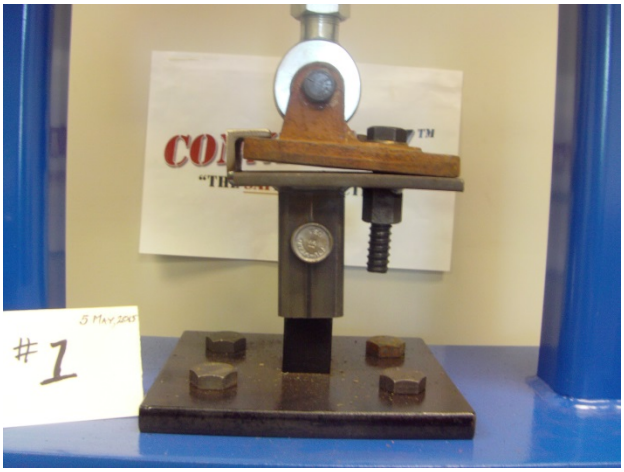
At Rest, No Load



At 9.0 kips, Working Load

At 13.5 kips, Ultimate Load

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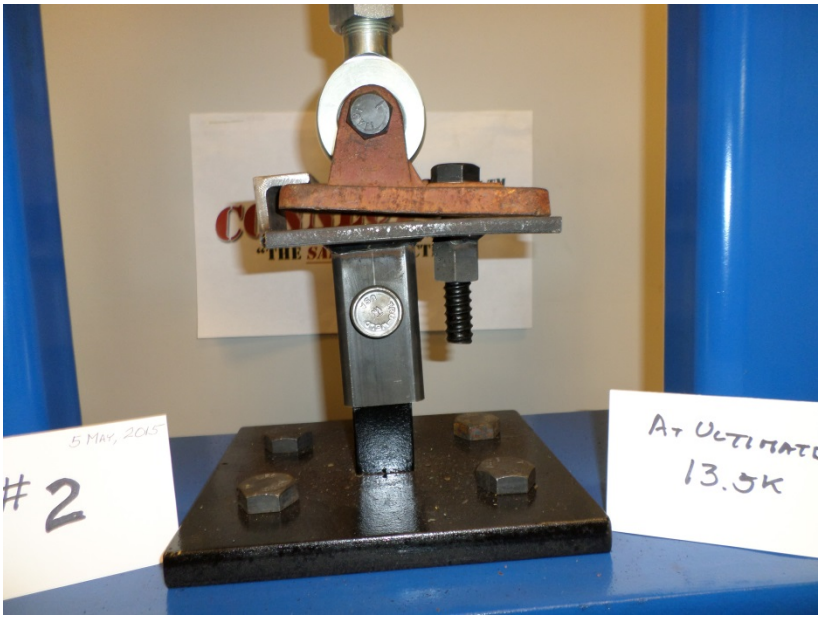
TEST #2: D-S shoe #93710 (“Small Foot Plate”) Note: Not Same Shoe as Test #1

At Rest, No Load

At 9.0 kips, Working Load

Note: Shoe Bent, 5/32” Gap



At 13.5 kips, Ultimate Load

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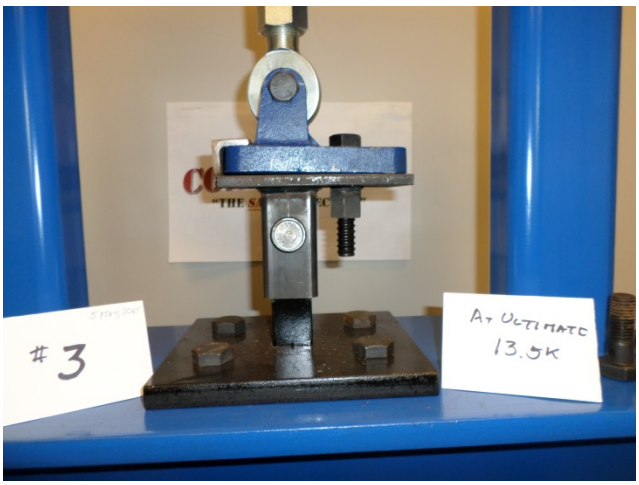
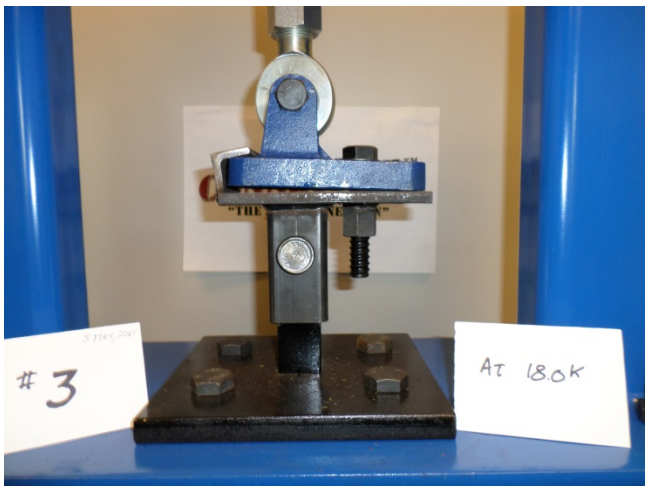
TEST #3: D-S shoe #122514 ("Heavy Duty Shoe")

At Rest, No Load

At 9.0 kips, Working Load



At 13.5 kips, Ultimate Load



At 18.0 Kips, 2X Working Load

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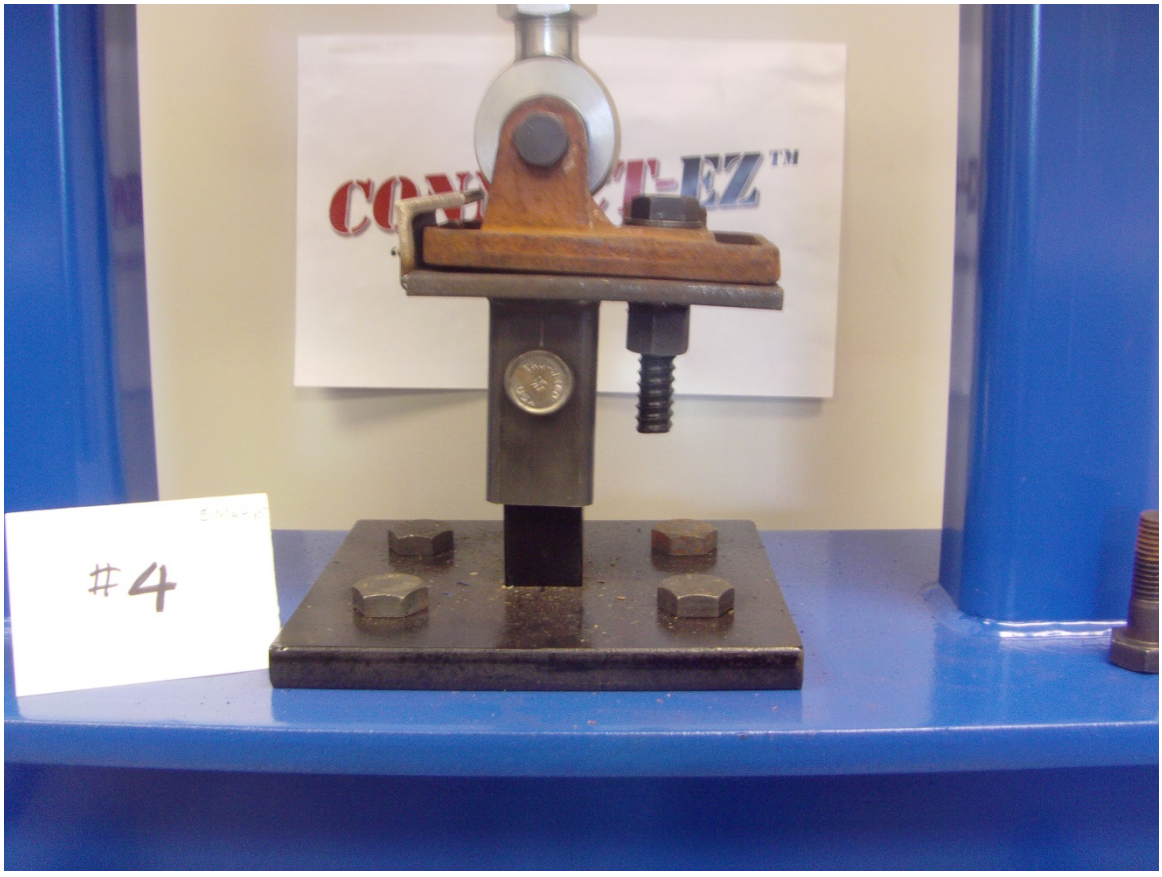
TEST #4 D-S shoe #93710 ("Small Foot Plate")

Note: In this test the shoe from TEST #1 was placed in the H-B used in TEST #3 and loaded in the same sequence of Working and Ultimate Loads as previous tests. The purpose of the test was to determine if the H-B, with the restraining angle deformed (as might possibly be expected due to rough handling in the field), could still resist Ultimate Load with the smaller shoe. It did so successfully, although, using an H-B with obvious deformations is not recommended and should be removed from service until repaired.



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At Rest, No Load

CONCLUSION:

The AdvanConn Helical Anchor- Wall Brace connector will satisfactorily transfer Working Loads of 9.0 kips and Ultimate Loads of 13.5 kips from the Dayton Superior B-1 through B-15 series wall braces to the Accubrace Helical Anchor system. This device, the H-B, eliminates the need to remove the brace shoe from the brace in order to connect the brace to the helical anchor. This will speed the panel erection process and eliminate the loss of brace shoes.

ATTENDING THE TEST SERIES:

Dayton Superior:

Steve Hoffman

Andy Magee

Estella Matemu

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Tincher's Welding /AdvanConn:

Terry Tincher

Helical Anchor- Wall Brace

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