

LABORATORY TESTS WITH ONE (1) SLAB

SET OF TESTS PERFORMED AT UNIV OF WISCONSIN-MILWAUKEE, JANUARY 25-30, 2004 AND AUGUST, 2004

2" Flange Thickness - Simulate Sandwich Wall Panel, 2" Wythe

Test Results - January, 2004

Use Square Mini-V w/ hole (MVS05)	Ultimate (kips)	Displacement (in)	Slug Dimensions	Weld Dimen	Precast Reinforcing
Mono Horiz Shear w/o Tension (A36 Steel)	8.650	0.55	3/4" diameter x 4" long	flare bevel x 3"	16"x10" W2.5 x W4.0 wwf
Mono Horiz Shear w/o Tension (A36 Steel)	9.300	0.83	3/4" diameter x 4" long	flare bevel x 3"	16"x10" W2.5 x W4.0 wwf
Mono Horiz Shear w/o Tension (A36 Steel)	8.730	0.71	3/4" diameter x 4" long	flare bevel x 3"	16"x10" W2.5 x W4.0 wwf
Cyclic Horiz Shear w/o Tension (A36 Steel)	8.925	0.036	3/4" diameter x 4" long	flare bevel x 3"	16"x10" W2.5 x W4.0 wwf
Cyclic Horiz Shear w/o Tension (A36 Steel)	8.550	0.055	3/4" diameter x 4" long	flare bevel x 3"	16"x10" W2.5 x W4.0 wwf
Test Results - August, 2004					
Vertical Shear (A36 Steel)	3.703	0.55	3/4" diameter x 4" long	flare bevel x 3"	16"x10" W2.5 x W4.0 wwf

Cylinder Break #1 @ 15 days	6329 psi	Cylinder Break #6 @ 15 days	6966 psi
Cylinder Break #2 @ 15 days	6130 psi	Cylinder Break #7 @ 15 days	6409 psi
Cylinder Break #3 @ 15 days	6250 psi	Cylinder Break #8 @ 15 days	6369 psi
Cylinder Break #4 @ 15 days	6488 psi	Cylinder Break #9 @ 15 days	6289 psi
Cylinder Break #5 @ 15 days	6409 psi		

Concrete Strength @ 15 days - Average = 6404 psi

PRELIMINARY SET OF TESTS PERFORMED BY MICHAEL OLIVA - SEPTEMBER 2001

2" Flange Thickness w/ 2" Topping - Simulate Field-Topped Double-Tees

Used Preliminary Square Mini-V w/out hole for all tests

Test Results - Sept 2001

Used Preliminary Square Mini-V w/out hole for all tests	P Yield (kips)	P Ultimate (kips)	Slug Dimensions	Weld Dimen	Precast Reinforcing
Mono Horiz Shear w/o Tension (304-Stainless)	10.5	13.9	3/4" x 3/4" x 4"	3/16" fillet x 4"	12"x6" W2.5 x W4 wwf, 60ksi
Cyclic Horiz Shear w/o Tension (304-Stainless)	10.2	10.9	3/4" x 3/4" x 4"	3/16" fillet x 4"	12"x6" W2.5 x W4 wwf, 60ksi
Cyclic Horiz Shear w/o Tension (304-Stainless)	9.4	12.1	3/4" x 3/4" x 4"	3/16" fillet x 4"	12"x6" W2.5 x W4 wwf, 60ksi
Cyclic Horiz Shear w/o Tension (304-Stainless)	8.5	9.5	3/4" x 3/4" x 4"	3/16" fillet x 4"	12"x6" W2.5 x W4 wwf, 60ksi
Cyclic Horiz Shear w/o Tension (A36 Steel)	9.3	10.4	3/4" x 3/4" x 4"	3/16" fillet x 4"	12"x6" W2.5 x W4 wwf, 60ksi

Notes:

- 1 - Vertically located miniv without blockout so top of miniv faceplate was even with top of siderail. Legs sat on top of mesh. Slanted from horizontal by 1/8" to simulate production mis-alignment conditions.
- 2 - Used rectangular slug, located 3/16" below top of faceplate, 3/4" wide x 3/4" thick x 4" long. **(Confirm w/ Oliva)**
- 3 - Weld used was 3/16" throat by 4" long fillet weld using 6012 electrodes with carbon and 308-16 with stainless.
- 4 - Concrete slab 4' x 4' x 2" with design strength of 5,000 psi at 28 days.
- 5 - Slabs were reinforced with 12"x6" W2.5 x W4 wwf, 6" spacing along flange edge and W4 wire perpendicular to edge. Special reinforcing used in slab away from miniv for lab load conditions.