

**CONSTRUCTION
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LABORATORY, INC.**

WESTERN DIVISION

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Report No: M87-2748-1

Date: December 16, 1987

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DUAL MOMENT LOAD TEST ON

DOOR CORNER SAMPLES

Wide Stile

TESTED FOR: UNITED STATES ALUMINUM CORPORATION
767 Monterey Pass Rd.
Monterey Park, CA 91754

TESTED BY: CONSTRUCTION CONSULTING LABORATORY INC.-WESTERN DIVISION
4749 W. State St. Bldg H
Ontario, CA 91761

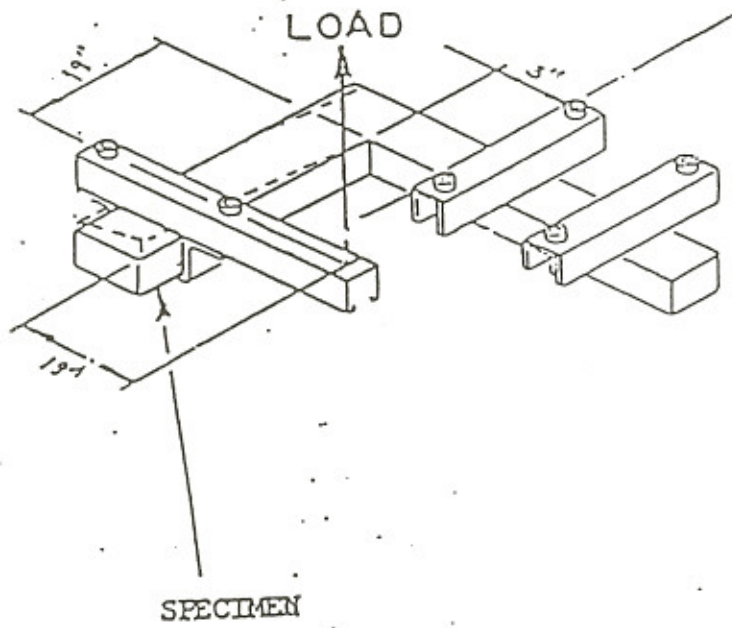


FIGURE 2



1.0 Description of Test Sample

- 1.1 The test samples submitted by United States Aluminum Corporation were five (5) Door Corner Assemblies, consisting of two extruded aluminum pieces 5" x 1 3/4" x 24" long and 6 1/2" x 1 3/4" x 12" long. Four (4) of the five (5) Test Assemblies were assembled using a mechanical connection and then welding interior and exterior joint, the other Test Assembly was not welded but was mechanically connected.

2.0 TEST PROCEDURE

- 2.1 The 12" leg of test specimen was secured to the stationary portion of the test stand with inside edge of 24" leg 3 inches from the edge of the stand.
- 2.2 The second moment arm was then secured 19 inches from the inside edge of the 12" member and the load applied 19 inches from the inside edge of the 24" member (See Fig. II.)
- 2.3 The second moment arm was loaded until the free end of the 24" member would vertically rise to form the designated angle of 2°, 3°, and 4° for each specimen. At the designated angle: The load applied and measurement of the gap at point "B" were recorded. Also recorded when applicable: Maximum load, Maximum Rotation, Maximum Gap, Weld Break, and Gap after load.



3.0 TEST DATA

	<u>SPECIMEN NO. 1 LARGE STILE</u>			<u>UNITS</u>
DESIGNATED ANGLE OF RISE UNDERLOAD:	2°	3°	4°	DEGREES
LOAD AT ANGLE OF RISE	225	395	not achieved	POUND
GAP AT POINT "B" AT ANGLE OF RISE:	.045	.092	-	INCHES

MAXIMUM LOAD APPLIED: 475 lbs

PERMANENT ROTATION WITH NO LOAD: 2.22°

MAXIMUM GAP AT POINT "B"
AT MAXIMUM LOAD: Not recorded

PERMANENT GAP AT POINT "B"
WITH NO LOAD .085"

NOTE: At 375 lbs. The weld began to crack at point "B"



3.0 TEST DATA

SPECIMEN NO. 2 LARGE STILE

				<u>UNITS</u>
DESIGNATED ANGLE OF RISE UNDER LOAD:	2°	3°	4°	DEGREES
LOAD AT ANGLE OF RISE	315	465	not achieved	POUNDS
GAP AT POINT "B" AT ANGLE OF RISE:	.072	.135	-	INCHES

MAXIMUM LOAD APPLIED: 475 lbs.

PERMANENT ROTATION WITH NO LOAD: 3.19°

MAXIMUM GAP AT POINT "B" AT MAXIMUM LOAD: .135"

PERMANENT GAP AT POINT "B" WITH NO LOAD: .095"

NOTE: The weld broke at 420 lbs. And the gap at point "B" measured .110"



3.0 TEST DATA

SPECIMEN NO. 3 LARGE STILE

				<u>UNITS</u>
DESIGNATED ANGLE OF RISE UNDER LOAD:	2°	3°	4°	DEGREES
LOAD AT ANGLE OF RISE	400	not achieved		POUNDS
GAP AT POINT "B" AT ANGLE OF RISE	.082	-		INCHES

MAXIMUM LOAD APPLIED: 485 lbs.

PERMANENT ROTATION WITH NO LOAD: 2.68°

MAXIMUM GAP AT POINT "B"
AT MAXIMUM LOAD: .127"

PERMANENT GAP AT POINT "B"
WITH NO LOAD: .074"

NOTE: Weld broke at 425 lbs and the gap at point "B" measured .101"



3.0 TEST DATA

SPECIMEN NO. 4 LARGE STILE

UNITS

DESIGNATED ANGLE OF RISE UNDER LOAD:	2°	3°	4°	DEGREES
LOAD AT ANGLE OF RISE:	450	not achieved		POUNDS
GAP AT POINT "B" AT ANGLE OF RISE:	.105	-	-	INCHES

MAXIMUM LOAD APPLIED: 475 lbs

PERMANENT ROTATION WITH NO LOAD: 3.13°

MAXIMUM GAP AT POINT "B" AT MAXIMUM LOAD: .130"

PERMANENT GAP AT POINT "B" WITH NO LOAD: .082"

NOTE: Weld broke at 450 lbs and gap at point "B" measured .105"



3.0 TEST DATA

SPECIMEN NO. 5 LARGE STILE

UNITS

(NO WELD CONNECTIONS—MECHANICAL CONNECTION ONLY)

DESIGNATED ANGEL OF RISE UNDER LOAD:	2°	3°	4°	5°	DEGREES
LOAD AT ANGEL OF RISE:	215	315	385	430	POUNDS
GAP AT POINT "B" AT ANGLE OF RISE:	.072	.108	.140	.165	INCHES

MAXIMUM LOAD APPLIED: 430 lbs.

PERMANENT ROTATION WITH NO LOAD: 1/2°

MAXIMUM GAP AT POINT "B" AT MAXIMUM LOAD: .165"

PERMANENT GAP AT POINT "B" WITH NO LOAD: .20"

NOTE: Without the welded interior and exterior the Test Assemblies' Permanent Rotation and Permanent Gap were minimized.

TESTING COMPLETED: November 20, 1987

CONSTRUCTION CONSULTING LABORATORY, INC.
WESTERN DIVISION

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PC/vv