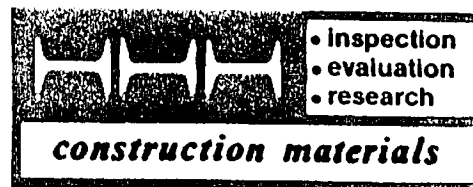


H. H. HOLMES TESTING LABORATORIES, INC.



• 170 Shepard Avenue • Wheeling, Illinois 60090 • 708 • 541-4040 • Fax: 708 • 537-9098

TEST NO. C-Q2225

DATE: 06 March 1991

TESTS CONDUCTED FOR: Tuf-Tite, Inc.
8A Hillside Drive
Barrington, IL 60010

Attn.: Ted Meyers

ITEM(S) TESTED: Four (4) sets of plastic containers identified as follows:

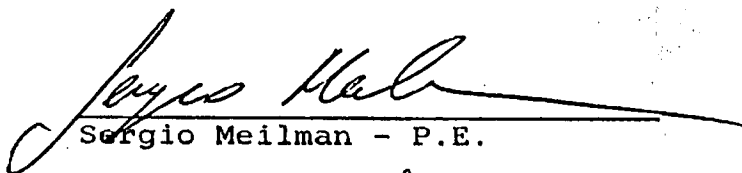
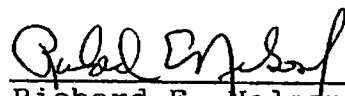
- 1 Nominal 15" x 15" x 13-3/4" square box with 7 pre-punched sidewall holes, material unknown, manufactured by American Mfr. Co., Inc., Manassas, VA
- 2 Nominal 15" x 15" x 13-3/4" solid wall square box, material unknown, manufactured by American Mfr. Co., Inc., Manassas, VA
- 3 Nominal 22" x 15" x 14-1/2" rectangular HDPE box with 9 pre-punched sidewall holes, manufactured by Tuf-Tite, Inc.
- 4 Nominal 22" x 15" x 14-1/2" rectangular HDPE solid wall box, manufactured by Tuf-Tite, Inc.

PURPOSE OF TEST: Comparative evaluation of the physical strengths of the two submitted containers.

TEST PROCEDURE: Compressive Strength (ASTM D-642, Modified)

FINDINGS: Actual test results can be found on attached page


Stephen C. Powell - Consultant


Sergio Meilman - P.E.

Richard E. Nelson, Jr.
President

Top - to - Bottom Compression (Load in Pounds)

Ambient Temperature (69 - 71°F)

	Box 1 (7-holes)	Box 3 (9-holes)
Max Load Sustained, Lbs.	2850	6850

Note: Both containers incurred sidewall failure

Cold Temperature (34 - 36°F)

	Box 1 (7-holes)	Box 3 (9-holes)
Max Load Sustained, Lbs.	3985	10,000
	Box 2 (No-holes)	Box 4 (No-holes)
Max Load Sustained, Lbs.	4530	10,250

Note: All four containers incurred sidewall failure

(Utilizing a 6" dia. concrete cylinder centered on the cover)

	Cover (with Box 2)	Cover (with Box 4)
Max Load Sustained, Lbs.	3590	5100

Notes:

1. Cover with box 2 shattered at failure point
2. Cover with box 4 distorted but did not break/fracture at failure point

Compression Testing of Rectangular 9-Hole Tuf-Tite Box (Mfg. by Tuf-Tite, Inc.) vs Square 7-Hole Box (Mfg. by American Manufacturing)

