



H. H. HOLMES TESTING LABORATORIES, INC.

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Report No. 1471.4
Re: Riser

Date: 23 November 1998

TESTS CONDUCTED FOR: Tuf-Tite
1125 Old Rand Road
Wauconda, IL 60084

Attn.: Ted Meyers

ITEMS TESTED: Three (3) sample columns of assembled Risers, each consisting of (7) round HDPE Risers with round gasketed HDPE lids secured with 10 x 1-3/4" S/S screws. Riser joints sealed with 5/16" Butyl rope conforming to ASTM C-990-91. Risers further identified as:

- a 12" x 42" column secured in concrete
- b 20" x 42" column secured in concrete
- c 24" x 42" column secured in concrete

OBJECT OF TEST: To determine the compressive strength of Riser and the load bearing capacity of the lid

FINDINGS:

COMPRESSIVE STRENGTH
(Lbs.)

a		b		c	
<u>Full Assembly</u>	<u>Center loaded w/6" Cylinder</u>	<u>Full Assembly</u>	<u>Center loaded w/6" Cylinder</u>	<u>Full Assembly</u>	<u>Center loaded w/6" Cylinder</u>
3750* (33.2psi) 7600*1	2000*2	4500* (14.3psi) 9700*1	2000*2	4500* (9.9psi) 15000*3	2000*2

- * dome flat, supporting weight, load released with total recovery apparent
- *1 Sidewall failure of riser, top area
- *2 lid severely deflected, still loading, lid remained securely fastened to riser, test terminated, apparent total recovery of lid after approximately 1-hour
- *3 No sidewall failure, test terminated

Respectfully submitted,

Scott R. Nelson
President

Kenneth M. Clibourn
Vice President