TENSILE BOND STRENGTH OF 60 MILS LIQUID BOOT® VAPOR BARRIER TO CONCRETE

EXECUTIVE SUMMARY

A series of flatwise tensile bond strength laboratory tests were conducted on samples of CETCO LIQUID BOOT® 60 mils vapor barrier and concrete. The results showed an average maximum load of 80 lbs and an average tensile/bond strength of 7 psi. All failures were seen within the specimen and not at the bonded seam.

OBJECTIVE

The objective of this experiment is to test the tensile bond strength of LIQUID BOOT® 60 mils vapor barrier to concrete.

PROCEDURE

Samples were submitted to the lab of 6" × 12" × 1 ½" thick concrete blocks covered with 60 mil thick LIQUID BOOT® vapor barrier and BASEFABRIC™ geotextile. The samples were prepared by first spraying LIQUID BOOT® vapor barrier onto BASEFABRIC™ geotextile and allowed to cure. The concrete was then poured over LIQUID BOOT® vapor barrier with BASEFABRIC™ geotextile backing.

A flatwise tensile bond strength test was performed on the specimen under the procedure of ASTM C 297-94. To begin the test, five 3-inch square steel plates were adhered to the top surface of the specimen. The membrane was then cut along the steel plates through to the concrete surface resulting in a specimen test area of 9 square inches. The LIQUID BOOT® vapor barrier/BASEFABRIC™ geotextile specimens were partially separated from the concrete block a length of 1 inch and individually secured to an Instron UTM (Universal Testing Machine) with the 'flap' in one grip, the concrete block affixed to the other grip and pulled in tension at a constant rate of crosshead separation of 0.02 inches per minute until failure.

RESULTS AND DISCUSSION

TABLE 1. RESULTS OF THE INSTRON UTM TEST

SPECIMEN NUMBER	MAXIMUM LOAD (LBS)	TENSILE/BOND STRENGTH (PSI)
1	93	10
2	84	9
3	57	6
4	75	8
5	92	10
AVERAGE:	**80**	**7**

All five specimens tested resulted in 100% cohesive failure within the membrane. Failures were not seen at the bonded area.

ATTACHMENT

SGS United States Testing Company, Inc., Report No. 94760-R3, dated September 21, 2004

cetco@mineralstech.com | cetco.com | 800.527.9948

UPDATED: JANUARY 2021

SGS

CLIENT: **LBI TECHNOLOGIES INC.**
1001 S. Linwood Avenue
Santa Ana, CA 92705
Attn: James Wang

Test Report No: 94760-R3	**Date: September 21, 2004**

SAMPLE ID: The following test material was submitted and identified by the Client:

Flatwise tensile bond strength samples consisting of eight, 6-inch by 12-inch by 1¼-inch thick concrete blocks with 60 mil thick Liquid Boot® with Geotextile applied to one surface.

DATE OF RECEIPT: Entered into SGS U.S. Testing Company sample tracking system on April 28, 2004 and was assigned Sample Tracking Number 37863.

TESTING PERIOD: May 5 through 27, 2004.

AUTHORIZATION: Signed Order Confirmation dated April 30, 2004.

TESTS REQUESTED: Perform flatwise tensile bond strength tests per ASTM C 297-94 (Reapproved 1999), "Standard Test Method for Flatwise Tensile Strength of Sandwich Constructions".

TEST RESULTS: See pages 2.

Prepared By

Larry Burmer
Project Engineer

Signed for and on behalf of SGS U.S. Testing Company Inc.

Greg Wrona
Manager Hardlines