

ACCELERATED WEATHERING AND UV EXPOSURE OF LIQUID BOOT® VAPOR BARRIER

EXECUTIVE SUMMARY

LIQUID BOOT® vapor barrier, a seamless, sprayed-applied, water based membrane used as a barrier for vapor intrusion, is installed in phases. First, the LIQUID BOOT® vapor barrier membrane is sprayed onto a CETCO BASEFABRIC geotextile and allowed to cure. After curing, the LIQUID BOOT® vapor barrier membrane is protected from weathering and UV exposure by a protection course (geotextile or geomembrane) and a structural slab. Some exposure of the LIQUID BOOT® vapor barrier membrane is inevitable during the installation process. To understand the limits on this exposure time, an accelerated weathering test was performed on a 60-mil sample of LIQUID BOOT® vapor barrier. When exposed for 500 hours with a twin carbon-arc weatherometer, although the specimen were raised and wrinkled, they remained elastic in nature and were free of holes or defects that may affect the vapor barrier properties. Although LIQUID BOOT® vapor barrier performed well in this accelerated weathering test, note that CETCO guidelines recommend that LIQUID BOOT® vapor barrier be covered with a protection course within 14 calendar days.

OBJECTIVES AND PROCEDURES

Experimental Objective: The object of this experiment is to test the ability of LIQUID BOOT® vapor barrier to withstand weathering.

Accelerated Weathering Procedure: A prepared specimen was submitted for testing. The specimen was a two foot square panel coated with a spray applied waterproofing membrane, LIQUID BOOT® 60 mils vapor barrier. The outer surface of three specimens was exposed in a Twin Carbon-Arc Weatherometer for 500 hours. In accordance with ASTM D 822, the specimens were examined following the exposure time and any outward changes were noted.

RESULTS AND DISCUSSION

The results of the experiment can be seen in the attached pictures. As stated in the United States Testing Company, Inc. report number 176066-1, "The exposed surfaces were crazed in appearance, with raised and wrinkled areas. The material remained elastic in nature, with no brittle or hardened spots. There were no blisters, holes, tears, or other visible defects that would appear to affect the moisture barrier properties of the material."

CONCLUSIONS AND RECOMMENDATIONS

LIQUID BOOT® 60 mils vapor barrier passed the accelerated weatherization test after 500 days. Although it became wrinkled, it did not tear or obtain any visible defects during testing. The product is capable of being exposed for 500 hours or approximately 20 days, but CETCO recommends a maximum unprotected exposure time of 14 days. Longer periods of exposure will require a sacrificial protective cover.

ATTACHMENTS

United States Testing Company, Inc. report number 176066-1, dated April 27, 1988

United States Testing Company, Inc. report number 176066-2, dated May 16, 1988

UNITED STATES TESTING COMPANY, INC.

CLIENT:

Liquid Boot, Inc.

Number
176066-2
5-16-88

TEST PROCEDURES AND RESULTS(cont.):

3. Accelerated Weathering Test

Procedure:

The outer surface of three specimens was exposed to 500 hours in a Twin Carbon-Arc Weatherometer, operated in accordance with the methods given in ASTM D 822.

Following the exposure, the specimens were examined for outward changes in the surface profile and elastomeric properties.

Results:

The appended photographs show representative areas of the exposed surfaces.

The exposed surfaces were crazed in appearance, with raised and wrinkled areas.

The material remained elastic in nature, with no brittle or hardened spots.

There were no blisters, holes, tears, or other visible defects that would appear to affect the moisture barrier properties of the material.

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