



UNDERWRITERS' LABORATORIES, INC.

333 PFINGSTEN ROAD • NORTHBROOK, ILLINOIS 60062

an independent, not-for-profit organization testing for public safety

PLAINTIFF'S EXHIBIT

BIR-467

December 6, 1968

in reply, please refer to

R46
68NK3598

Mr. Leonard W. Weaver
Product Development Manager
Bird & Son, Inc.
East Walpole, Massachusetts 02032

Dear Mr. Weaver:

On November 12 and 13, your Mr. Price and Mr. Bianco witnessed the conduct of Class A fire tests on 285 lb (green) and 325 lb (white) square tab strip shingles, having no cutouts, which were manufactured at your Charleston, South Carolina plant on September 12.

These tests were conducted in accordance with the methods described in our Standard 790 with all test decks mounted at an incline of 5 in. to the horizontal foot. The following is a summary of the results obtained.

SPREAD-OF-FLAME TESTS

In the tests of duplicate decks of each shingle, flames spread to maximums of 7 ft and 6-1/2 ft on the 285-lb shingle and to 5-1/2 and 5-2/3 ft on the 325-lb shingle. It was also noted on the lighter shingle that there was considerable sliding of the weather side coating and some lateral spread of flame on the first five courses of each deck. These results indicate that the 325-lb shingle complies with Class A requirements for this test, but the 285-lb shingle complies only with Class B requirements.

FLAME EXPOSURE TESTS

On the basis of the results obtained in the Spread-of-Flame-tests, duplicate decks of the 325-lb shingle were subjected to the Class A test (fifteen 2-min applications of the test flame) while duplicate decks of the 285-lb shingle were subjected to the Class B test (eight 2-min applications of the test flame). Surface flaming on the 325-lb shingles did not extend beyond the fifth course, while that on the 285-lb shingles did not extend beyond the ninth course. On all four decks tested, however, the surface flames extinguished themselves in the "off" period between applications of the test flame. The only action observed on the underside of these decks was light smoke and asphalt dripping at the first two cracks between deck boards.

BIRD 015592

December 6, 1968

Examination of the decks after the tests revealed that, although they were stained with asphalt in a pattern similar to that of the test flame, there was no charring in evidence.

These results indicated that the 325-lb shingles complied with Class A requirements in this test while the 285-lb shingles complied with Class B requirements.

BURNING BRAND TESTS

Three Class B brands were placed on two decks of the 285-lb shingle and in each case the shingle protected the deck from ignition. The brands were consumed in 11 to 14 min and subsequent action lasted an additional 4 to 6 min. A Class A brand was then placed on the second deck, which had only one "B" brand on it, for the sake of information. Although heavy smoke and asphalt dripping occurred on the underside, no flames or glows were noted at any time on the underside.

A Class A brand was then placed on each of two decks of the 325-lb shingle and each caused failure, with sustained flaming occurring at the third crack between deck boards at approximately 47 min and 35 min, respectively.

At this point, Mr. Price noted that the joints between shingles in adjacent courses were only 4 in. apart instead of the 6-in. minimum specified on your application instructions. Accordingly, two additional decks were prepared, following these instructions. A Class A brand was placed on each of these two decks and again failure resulted when sustained flaming of the deck boards occurred at approximately 25 and 35 min, respectively.

On the basis of the above test results, the 325-lb shingle does not comply with Class A requirements, while the 285-lb shingle is eligible only for Listing as a Class B roof covering. This was mentioned to Mr. Price while he was here and he indicated that we would be advised as to whether we should proceed with Class B Listing or not. Since we are awaiting your advices in this regard, we are cancelling our anticipated completion date of December 27, 1968 and are placing Assignment 68NK3598 on an inactive status.

R46

-3-

December 6, 1968

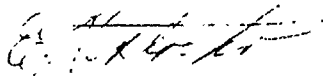
The physical characteristics of these two shingles and components are shown on the attached sheet.

Very truly yours,



R. L. DONAHUE
Senior Project Engineer
Fire Protection Department

Reviewed by:



E. K. STOEHR
Associate Managing Engineer
Fire Protection Department

RLD:clm

Physical Characteristics of 285-Lb and 325-Lb Shingles

<u>Characteristic</u>	<u>285 lb</u>	<u>325 lb</u>
<u>Finished Product -</u>		
Finished weight, lbs per 100 sq ft	125.4	131.1
Felt weight, lbs per 100 sq ft	11.6	12.0
Granule adhesion loss, grams	0.3	0.5
<u>Dry Felt -</u>		
Weight, lbs per 100 sq ft	12.3	12.7
<u>Saturated Felt -</u>		
Desaturated felt weight, lbs per 100 sq ft	11.3	11.5
Per cent saturation	178	174
<u>Saturant -</u>		
Flash point, F, (PMCT)	565	560
Softening point, F, (R & B)	139	139
<u>Unfilled Coating -</u>		
Flash point, F, (PMCT)	575	505
Softening point, F, (R & B)	221	224
Penetration, at 77 F	15	15
<u>Filled Coating -</u>		
Per cent insoluble in chloroform	45.0	50.4

