

RESEARCH AND DEVELOPMENT PROGRESS REPORT

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Project No. 007

Report No. 45

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Date Sept. 5, 1979

Project Title: STUDIES OF PERFORMANCE PROPERTIES OF ROOFING

**Subject: Program for Testing Current Bird Shingle Plant
Dry Felt and Shingles Made From the Same Felts**

**Object: Sampling and Testing Current Standard Shreveport
Production. The purpose of this study was to
sample standard FS 55 lb. dry felt A, B & C
rolls and the shingles made from them. The dry
felt and shingles were to be then tested every
2" across the 48" width for felt weight, %
saturation, kerosene number and back coating weight.**

Conclusions:

1. Shreveport "standard" shingles made with "A", "B" and "C" rolls of organic felt were considerably below U/L minimum saturation and back coating weights when made with dry felt that tested at current levels of weight and saturating properties.
2. The low saturations were verified on samples of saturated felt taken at base coating breaks run through the saturator at normal speeds and wiper bar settings.
3. The Shreveport saturator apparently cannot saturate to proper levels the current organic felt when run at the production speed, temperature and other conditions now used.

Results:

1. "Standard" FS shingles obtained from production material run at normal speed and asphalt temperatures during the week of April 1, 1979, were tested every 2" across the 48" width and were found to be considerably below the U/L minimum standard.

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BIR-1035

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Back coating was also at or below the U/L minimum 4.5 lb. and considerably below the Bird standard of 5.5 to 6 lbs. for thick butt shingles.

2. Dry felt from A, B and C rolls was obtained from the butt end of rolls which were run into the above shingles and were tested in strips 2"x16" across the 48" width. These showed the usual DS extreme variability in weight and kerosene number. The kerosene numbers were average for DS, being in the 170's to 180's.
3. Two samples of saturated felt from "B" rolls were obtained at base coating breaks. These were tested for OD weight and % saturation every 2" across the 48" width. These verified the poor saturation and wild weight profiles obtained from the shingle and dry felt samples mentioned previously.

Recommendation:

1. Try an experiment to determine whether a more uniform and better saturating felt can be saturated properly at FS. This would be a #3 machine felt from Phillipsdale selected to be high in kerosene number and have a uniform O.D. basis weight. The felt would be run under normal FS conditions and the finished shingles would be tested across the 48" width for % saturation. This would be important in determining if the speed, temperature and spray saturator at FS can give uniform saturation across the 48" width. The finished shingles could be exposed along with FS felt based shingles run at the same time to see if the felt influences weathering in the south-west division. The shingle should be a dark color to accelerate the heat-humidity degradation that is experienced in the Houston or other gulf coast areas. If FS cannot saturate the Phillipsdale #3 satisfactorily, then management will have to consider deep tank saturation for FS.

Discussion:

This work involved extensive monitoring of the Shreveport saturator when it ran its own A, B and C rolls under its own saturating conditions. This was done while there was a rain shower and the outside test decks could not be inspected.

The first set of conditions was to check that an A, B or C roll was running at standard FS speeds and conditions on a W/S shingle.

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Spray paint then marked the entire 48" wide web in the cooler looper. This was retrieved at the cutter with lane 1 through 4 shingles from before and after the mark. Samples of dry felt with tag data were also obtained for testing with the shingles made from them.

This was done for an A (front), B (center) and C (back) roll of dry felt on a separate color of FS Wind Seal shingles. The shingles were tested at the painted area every 2" across the 48" wide web from front to back. The tests were % saturation, weight of felt and back coating weight. These were plotted using a computer program to show trend across the web from aisle (lane 1) to back (lane 4).

The entire program was repeated at one or two other locations across the finished web. In addition, the dry felts were tested every 2" across the web for weight and kerosene number.

Additional monitoring was done by obtaining saturated felt samples at a base coating break. This was for two separate "B" rolls that were run at standard conditions up to the break. The saturated felts were tested for O.D. basis weight and % saturation every 2" across the web from aisle to back. These were repeated as far apart as the sample length would permit. These test results verified the information previously obtained from the finished shingles. The % saturation was considerably below U/L minimum except at the edges which had surface material. Weight was quite variable across the web.

The back coating weights were determined by weighing a 2"x4" sample before and after a heated 3" broad knife removed the back coating. The removal was quite complete and in fact it would cause a slightly high reading if all the back coating was not removed. The very low readings could cause weathering problems by not completely sealing the bottom of the rough Shreveport felt.

Data: See attached.

References: J. Doherty, Lab Notebook #335, pp 17-21 23-26, 39-45
R. Jagocki, Lab Notebook #302, pp 24-25

RFJ/ac
attach.

Robert F. Jagocki

Lot 1 from FS

"A" roll of felt R-10-AJT K-187

Shingle: W/S Moire Black

"A" roll means the 48" roll that is trimmed out of
the front or aisle side of the jumbo reel.

Lot 2 from FS

"B" roll of felt R-10-BJT K-187

Shingle: W/S Snow White

"B" roll means the center 48"+ that is trimmed
out of the jumbo reel.

Lot 3 from FS

"C" roll of felt R-31CHA K-179, X-22

Shingle: W/S Acorn

"C" roll means the 48"+ roll that is trimmed out of
the back side of the jumbo reel.

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ARE NOT IMAGED