

MONTHLY HIGHLIGHT REPORT - JANUARY 1981
BUILDING MATERIALS R&D

A. ASPHALT PRODUCTS



Proprietary
Information

Shingles

The pilot asphalt roofing machine has been installed and two shake-down runs completed. Improvements in sheet tension control, granule flow and back-surfacing flow are in progress.

Tentative specifications for a 9" wide, glass-based starter strip for Sentinel shingles have been developed in preparation for a trial run.

Built-Up Roofing

Tensile strength profiles of Gafglas Ply 4 roof sections have been determined over a wide temperature range (-25°F to 75°F) and compared with organic felt sections. Three plies of Gafglas Ply 4 exceeds the NBS 0°F tensile criterion of 200 lbs/in and is equivalent to 4 plies of organic felt.

Mineral Shield Mastic made by Monsey, using a longer asbestos fiber to improve durability, was successfully sprayed in the field. A switch to the longer fiber has been recommended.

DOE Contracts

A summary of the pollution control and safety considerations involved in the felt mill saturation project was compiled and sent to DOE at their request.

Experiments continued to map the sulfur particle size and shape in sulfur/asphalt emulsions. Aging at elevated temperatures promotes the formation of large sulfur particles and eventual crystallization.

Asphalt Supply

The use of Hunt asphalt has started at Mt. Vernon, replacing Chevron asphalt, which is no longer available at that location. Mobil Oil asphalt was approved as an alternate source for Dallas and Joliet.

Two trial runs of Little America (LARCO) asphalt saturant (potential savings \$200,000/yr) were attempted at Denver. The initial shipment was satisfactory but the second shipment was returned because it did not meet specifications.

Glass Mat

A 25-hour run of shingle mat using PPG glass fiber was made. Wet tensile strength was double that of OCF 670 glass, and less foaming in the process water and binder system was noted. Dry tensile and tear strengths were reduced but were within specification.

Two new samples of sized J-M fiber show excellent dry and wet tensile strengths in the laboratory. Eighteen tons have been ordered.

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Lab work demonstrates a substantial increase in tensile strength of BUR mat using G rather than K fiber. Substantial increases are also found with the use of a Reichhold binder containing EVA latex.

A new, finer mesh forming fabric is now in use at Chester with marked improvements in white water glass content and cleanliness of wire turning rolls. It has also been possible to run with a better tensile ratio on this fabric.

B. PLASTIC PRODUCTS

Gaftemp Insulation

New R value tables for St. Louis product have been prepared based on aged K factor data developed at St. Louis. Isotherm with a lower cost top facer of organic felt in place of asbestos felt passed FM Class I fire tests.

One-Ply

The current one-ply program calls for purchase and resale of 8 items, preferably all from Uniroyal, starting in August. Purchase specifications have been developed for EPDM membrane, uncured neoprene flashing and lap cement. Product evaluation and purchase specifications are under development for the 5 remaining items, which includes flashing cement and bonding adhesive for adhered membrane.

Gaflex Expansion Joint Cover

Five hundred rolls of Gaflex Expansion Joint Cover have been produced and shipped. R&D continues to monitor production and is following field performance.

GLASS FIBER

C-Glass Composition of Raw Material Studies

Most of the raw materials for the present GAF C-glass formulation have been evaluated and a report listing acceptable sources will be issued.

Mineral Fiber Process

Recent results with blown fiber additions in hand mat sheets have demonstrated the need to develop sizings which can enhance the strength of the glass fiber. Sizings containing coupling agents will be applied in the nozzle and in the dispersion tank. A new, large capacity blowing nozzle has been ordered which should replace the laboratory scale nozzle found to be most effective.

**Proprietary
GAF Information**

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NEW MATERIALS

Johns Manville 100.2P, 100.41P, 100.42P)
100.47P, 100.48P, 100.51P) - Glass Fibers

Pacific Resins 3811-B (advanced)
3811-C (advanced) - U/F Resins

DuPont Neoprene - Latex

Union Carbide All100 - Silane

Crane Co. Craneglass 50-30 (several thicknesses) - Glass Mats

Thilmany 26-lb coated line)
38-lb coated liner) - Kraft
Kraft/foil)

Oxford Poly laminated to GAF mat

Guardian Packaging Poly/kraft/poly)
Kraft/Black poly) - Laminates



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