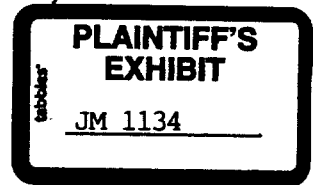


Manville
April 24, 1947

MEMORANDUM

Owens-Corning Fiberglas Corporation
Meeting - April 22



At the request of Dr. C. F. Rassweiler, a meeting was held in the Board Room on April 22, 1947 to discuss the possibility of licensing arrangements with the Owens-Corning Fiberglas Corp. Specifically the main problem involves the use of Fiberglas mat in built-up roofing construction.

The following Johns-Manville men were present throughout all or part of the discussion:

C. F. Rassweiler
H. R. Berlin
W. R. Wilkinson
V. C. Kline
E. J. Lyons
W. S. Miles
D. T. Colton
G. W. Clarvoe

The Owens-Corning Fiberglas Corp. was represented by:

Harold Boeschstein, President
W. J. Kane, Manager, Industrial Div.
W. K. Sidwell, Project Technologist
→ J. M. Briley, Lawyer - *New York*

The Owens-Corning people presented two short movies to open the discussion. The first of these was of general interest only since it dealt with various textiles and moulded Fiberglas-resin applications such as, luggage, flooring and wall surfacing. The second movie demonstrated the application of a three-ply Fiberglas tar and gravel roof on a large industrial building. In this case, the roof was applied over a precast concrete deck. After sealing the joints between the roof slabs, Fiberglas mat (approximately 15 mils thick and weighing 1 lb. per square) was unrolled on the deck surface for about 25 lin. ft. Tar, heated to approximately 550°F, was applied with a sprinkling can device on approximately the lower half of the unrolled mat. The process was repeated with a second and third layer of the Fiberglas mat material. It was reported that approximately 40 lbs. of tar were used per square per ply. The roof was surfaced with a flood coat of tar applied with long-handled dippers in such a way as to obtain a coverage of approximately 70 lbs. per square. Limestone aggregate was immediately spread on this hot finish surfacing.

In the discussion which followed, the Owens-Corning people made these claims:

1. The 3 Fiberglas mats were well distributed throughout the thickness of the roof rather than concentrated at the bottom of the roof cross-section.
2. Weatherometer testing indicated failure in built-up rag felt roofs due to excessive cracking.

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3. The reinforcing effect of the Fiberglas mat obviated this cracking in the case of weatherometer tests on the Fiberglas roof construction.
4. The present Fiberglas construction involves some savings in shipping costs as only dry felts and asphalts need to be furnished to the job.
5. Coated Fiberglas mats for pipeline protection were shown. It was stated that these were not economically practical at this time for use in roofing.
6. It was stated that the glass composition used in producing the mat gave a product highly resistant to weathering.

Messrs. Lyons, Miles, and Clarvoe made a number of statements with regard to roofing which could be summarized as follows:

- a. Actual built-up rag felt roofs fail, not by cracking, but by progressive weathering to the top felt, destruction of saturant in the felt by the sun, disintegration of the felt and weathering of the next ply cement layer.
- b. Definite question was raised with regard to the correlation between the Owens-Corning accelerated weathering test and actual weathering.
- c. Impervious felts provide protection for underlying layers of asphalt from the effects of photo-oxidation. The open porous Fiberglas mat does not furnish this protection.
- d. In present roofing practice where pitches of more than 3 in. per foot are involved, the base felt is normally nailed to the roof deck. Since this is not done with Fiberglas, the possibility of slippage was suggested.
- e. The use of factory saturated and coated felts in present roof practice insures better control of the amount and position of the asphalt in the finished roof. This is not true of the Fiberglas mat construction where, in effect, the saturating is done on the roof under field conditions.
- f. Heating of asphalts to temperatures in the range of 550°F, as required by the Fiberglas construction, would measurably decrease the expected life of the bitumen.
- g. There is doubt as to the uniformity of position of the Fiberglas mats throughout the depth of the roof.

Prior to the discussion of any licensing agreement, it is obvious that Johns-Manville must have complete information concerning the advantages and disadvantages of the Fiberglas roof system. Specifically, the theory of the Fiberglas people with respect to the value of reinforcing in the asphalt film must be determined. It was pointed out that, historically, the Fiberglas construction has not been in service for a period long enough to be of significance in making this evaluation. It was stated that the oldest jobs (two in Newark) were applied some three years ago, but that most of the decks have had only one or two years' exposure. In order that evaluation of the Fiber-

glas system might be done more expeditiously, Dr. Rassweiler suggested that Mr. Lyons work with Mr. Kane in arranging for the field inspections. Messrs. Colton and Clarvoe will participate in enough of these inspections to become familiar with the methods of application and results to date. Mr. Clarvoe will cooperate with Mr. Sidwell in performing the necessary laboratory determinations.

Upon completion of the roofing discussion, Mr. Sidwell produced samples of Owens-Corning PF 66 Roof Insulation. This material is a resin-bonded Fiberglass of approximately 9 lbs. per cu. ft. density with a thermal conductivity of 0.26 btu. The insulation, furnished in thicknesses ranging from 13/16" to 1-1/2" or greater, is distinguished by a folded and looped fiber structure which adds greatly to the strength and stiffness of the finished product. In the past, it has been surfaced with a Kraft paper adhered with asphalt. Experimental samples have been submitted to Mr. Clarvoe with a white, hard surfacing which appears to be some form of casein composition. The Owens-Corning Corp. plans on producing the material with an asphaltic surfacing as demonstrated by one of the samples shown. Johns-Manville's interest in the insulation product is due primarily to the fact that the Company is called upon to bond roofs applied over this type of insulation. Since the asphalt surfaced material will not be available for some ninety days, several jobs will be installed with the Kraft paper surfacing. It was agreed that these would be considered satisfactory if the heavy asphalt adhesive coat was maintained in accordance with one of the samples shown. This sample was retained by Mr. Clarvoe. Mr. Sidwell arranged to submit samples of the new product from the first factory runs.

The Owens-Corning people exhibited samples of a low-cost glass fabric for use as a waterproofing fabric such as normally employed in parapet wall flashing. Samples of the material were shown plain, asphalt impregnated and plied to a 15 mil Fiberglass mat. Mr. Sidwell agreed to furnish test quantities to Mr. Clarvoe.

D. T. Colton

DTC:map

cc: C. F. Rassweiler, G.H.
H. R. Berlin, G.H.
W. R. Wilkinson, G.H.
V. C. Kline, G.H.
E. J. Lyons, G.H.
W. S. Miles, G.H.
G. W. Clarvoe
E. R. Williams
H. T. Coss
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