E. I. DU PONT DE NEMOURS & COMPANY (INC.)

FILM DEPARTMENT WILMINGTON, DEL.

Manufacturers of Cellophane, Acetate and Polyethylene Films
Cel-O-Seal Bands, Cellulose Sponges and Sponge Yarn



February 25, 1954

EPSH

THE ROCKBESTOS PRODUCTS CORP.
New Haven 4, Conn.

Attention: Mr. C. R. Berlepsch

Dear Mr. Berlepsch:

The wire sample which you submitted at our February 18th meeting has been inspected and the following observations made:

SAMPLE: TL 203WB
1 "Mylar" Tape - Failed approximately 2 months, 1.0 K.V.

OUTER GLASS BRAID - WHITE WITH BLACK TRACER

Outside surface discolored to a light tan over area under test foil. No discoloration evident on under side of braid which was against the asbestos sleeve. No persistent odor present.

IMPREGNATED ASBESTOS SLEEVE

Normal grey white color changed to light tan along entire length of test area. The tan color is present throughout the volume of asbestos although slightly darker spots appear on the surface in contact with the glass braid. Strong acrid smell is definitely produced by the discolored asbestos. Outside the test area this material is odorless in the small quantities tested. The discolored asbestos appears to be somewhat drier than that outside the test area.

1 MIL "MYLAR" A - 1/2 INCH TAPE - BETWEEN CONDUCTOR AND IMPREGNATED ASBESTOS

Over entire test area "Mylar" film was heavily populated with small oblong holes occurring roughly in lines extending along the machine direction of the tape and having ragged edges visible under magnification. The asbestos adhered to the "Mylar" in spots along test area only. Simple visual inspection and handling indicate no embrittlement of the small sample tested. A slight opacity and the physical shape to which the tape tends to revert after being removed from the conductor are indicative

of heat treatment during some portion of the manufacturing process following application of film to the conductor.

CONDUCTOR - ESTIMATED NO. 20 B. & S., STRANDED, TINNED COPPER

Discolored over entire length of test area. A green compound appears in relatively large amounts between the outside strands of wire when viewed under magnification. Outside test area this wire has a bright finish with no evidence of corrosion.

This information will no doubt be similar to your own observations of these samples. A chemical reaction has taken place resulting in the degradation of the asbestos impregnant. The number of holes in the "Mylar" tape indicate a strong possibility that at least a few openings were present for sometime before failure occurred.

As stated in the meeting, we are vitally interested in this problem and do not feel that the performance noted, even under the severity of the 5000 volt test, is typical of "Mylar" polyester film as regards A.C. voltage endurance.

Upon receipt of the sample wire from Rockbestos, we plan to initiate tests at this laboratory which will undoubtedly be effected by the results of your evaluation of the "Mylar"-glass braid or a "Mylar"-unimpregnated asbestos-glass braid insulation system, and on the first results of your existing "Mylar"-Cellulose Acetate butyrate-impregnated asbestos-glass braid system. It will also be very helpful for us to know the exact chemical composition of the impregnant used in the asbestos sleeve as well as a brief description of the manufacturing process for the TL 203WB wire. We would like to hold a second meeting with members of your concern after we have had time to review our findings and determine a definite course of action. Your cooperation in the matter is appreciated, and do not hesitate to contact us regarding further developments in your use of "Mylar" polyester film.

Yours very truly,

D. L. Ormond

D. L. Ormond
SALES DEVELOPMENT AND
TECHNICAL SERVICE LABORATORY

DLO:emh

RBB 01381