



An IC Industries Company

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Friction Products Division

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October 31, 1980

(Handwritten: Ford)

Mr. T. D. Baughman
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Heavy Truck Chassis Design
20000 Rotunda Drive - Room 2235
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Subject: Non-Asbestos Non-Metallic Drum Brake Lining

Dear Tom:

John Brown has been keeping well up to date regarding the results of our tests in Jennerstown on your L9000. It appears like our product development people, along with our research activity, have developed a couple of formulations that are improvements over our widely-used high volume 693-551C and -551D materials. I am specifically referring to our 931-162 and 931-92. The purpose of this letter is to tell you about them in order to assure you that a production run of trucks utilizing this material is not only feasible but a timely, logical approach to take.

These friction materials contain no asbestos. They do utilize the same types of binders and friction modifiers used in our asbestos materials. For all practical purposes, we pulled out the asbestos and put in fiberglass. We arrived at fiberglass after evaluating numerous other materials against performance and cost. Fiberglass, being a man-made material, is available from a variety of suppliers and is found to be more consistent shipment to shipment than natural asbestos fibers. We also do not anticipate any difficulties with OSHA or any government agencies regarding fiberglass in the form we are using.

Insofar as manufacturing processes are concerned 931-162 and 931-92 are essentially the same as our standard heat and pressure processes. There are some minor changes relative to times and techniques. I cannot go into further detail because that would disclose proprietary information.

I want to assure you these materials have not been presented to you directly out of the laboratory. In March 1980 we released a non-asbestos formula 931-66 for the aftermarket on 15" brakes for hydraulically-braked medium duty trucks. We planned this vehicle as our first target in order to increase lining and drum life. Test results showed that our

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new material improved both of these characteristics. Thus far over 2,000 sets have been sold and we are getting very positive unsolicited feed-back from the field.

The majority of our business is in the medium and heavy truck area so our next aim was to get an original equipment release of non-asbestos heavy duty blocks. Dynamometer tests at our customers and at our Research Center were completed. One Jennerstown test was successfully completed in conjunction with a major brake supplier and vehicle manufacturer. Field test installations are underway on a number of fleets. Our first on-highway order has just been received and the other Jennerstown test program with you and Rockwell has thus far been very successful.

A program is also underway to introduce 931-162 into the block after-market. The introduction date is not firm but it will at least be by January 1981 or sooner. This block, like the 15" strip material, will be sold under the Starline trade name.

Several months ago we started work with another vehicle manufacturer to specifically develop a non-asbestos material to be used on a rear drum brake for a front wheel drive passenger car. Progress has been good, passing the parking brake test with ease where many other non-asbestos materials failed. All parameters of FMVSS 105 were passed. Wear was so minimal that rather than ask us to change the formula, we have been advised they want to rebalance the brake system so our rear material will do more of the work.

We have also been in close contact with your research laboratory and have supplied samples of our non-asbestos materials. Results have shown our material to be stronger than the standard asbestos-based material relative to transverse rupture strength and shear. Considering all other aspects, none have been found to be significantly less desirable than present asbestos materials.

We feel we are the best lining supplier in the business. We have a 13 dynamometer Research and Engineering Center in Mahwah, New Jersey, which is second to none in the world. According to all the figures we can gather, we are the largest heavy-duty friction material supplier and our development dollars and manufacturing equipment expense are being spent to maintain that position.

Yours truly,

J. J. Lukas
Vice President,
Original Equipment Sales
JJBrown

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bcc: BWarsson
REHelson

ADIndelicato
CWCowan