Eaton Corporation

Inter-Office Correspondence

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BRAKE DIVISION
PRODUCT ENGINEERING

Date	December 14, 1982
To	K. W. Swift
Division & Plant	Brake Division-Galesburg
From	J. A. Urban
Division & Plant	Brake Division-Galesburg
Copy to	R. L. Cook, M. H. Lawrence, R. C. VanWormer
Subject	NONASBESTOS LINING; TRUCK AND BUS BUILDER NEWSLETTER

Supplemental Responses to Plaintiffs' Combined First Set of Interrogatories, Requests for Production and Requests for Admissions, Bendix Corp. et al. v. Abex Corp. et al., No. 1:06-cv-405, 06/18/08

EATON

I will address the first and last items listed on B. W. Sinko's memo of December 1, 1982. The other items are in the providence of the Marketing and Purchasing Departments.

Fade Resistance, Wear, Friction Characteristics - Eaton has tested nonasbestos linings since January, 1980. Carlisle NAB-9M and Abex 931-162 nonasbestos linings have been approved and are available on Eaton Single Anchor Pin S-Cam Brakes. Although their performance is similar and they both have demonstrated longer lining and drum life, they are based on different fiber technologies. NAB-9M is based on processed mineral fibers reinforced by DuPont Kevlar. Abex 931-162 is based on glass fibers. The structure of both materials is bonded by thermoset resins and the performance is tailored by many other ingredients. Both materials exhibit a medium-high friction performance of .40 to .45 coefficient of friction.

In comparison to organic asbestos materials of the same friction rating, the nonasbestos materials have slightly better fade resistance. The big advantages of these two nonasbestos materials are 25% to 50% longer lining life and a 50% to 100% increase in drum life. Decreased lining wear and drum wear extends the reline period and drum replacement interval to provide up to a 50% decrease in brake maintenance cost.

Negatives - Some nonasbestos materials have lower flexure strength and impact strength than typical asbestos materials which results in more damage during shipping, handling, and assembly. Although this is not a problem to vehicle operation, it does contribute to cost.

J. A. Urban

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EXHIBIT
Hobbie 24
9-8-08 VR

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