Inter Office

Car Product Development Group

February 10, 1977

PLAINTIFF'S EXHIBIT FD-479

To: Mr. P. F. Fadow
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Mr. H. A. Nichol
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Mr. J. D. Velte

cc: Mr. R. B. Alexander
Mr. D. T. Aron
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Mr. J. S. Canterbury
Mr. H. P. Fredas
Mr. S. M. Frey
Mr. C. L. Knight
Mr. D. E. Smith, Jr.

Subject: Asbestos Usage

In response to a recent inquiry from Mr. R. B. Alexander on the status of asbestos, we submitted the attached report as a quick assessment. The information was gathered throughout the Company (including your areas) and is probably incomplete. Vehicle Materials Engineering and Supply Staff have taken joint responsibility to develop a comprehensive Company asbestos plan. Since your areas will be affected, your input is essential. Please direct comments to Dr. G. M. Greene (extension 7[illegible]00) who will be responsible for Vehicle Materials Engineering's work.

G. F. Bush

GMG/hr

Attachment

Information copies to: Mr. A. E. Anderson
Mr. G. F. Bush
Mr. S. Gaft
Mr. D. L. Guertin
Mr. J. L. Mauer
Mr. N. A. Prittinen
Mr. G. A. Schley
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ASBESTOS STATUS

Asbestos has been eliminated from most applications where a suitable substitute was available. There are, however, several major specialty applications in transmission and brake systems for which substitutes are not yet available. These applications require substantial material development in order to meet Ford release requirements.

OSHA Regulations

The basic federal (OSHA) asbestos control laws have been in place since at least 1972 with allowable air-borne asbestos concentration steadily decreasing as shown:

Production Facility
Allowable Air-Borne Asbestos Concentration[a/]

	Passed into Law by OSHA	Recommended to OSHA
1972	5	2
1976	2	0.5 (recommended in 1975)
1977	0.5 (expected)	0.5
1979...	?	Complete ban being discussed

a/ Allowable concentration in fibers/cc air; sampled over an 8 hour period; no single reading to exceed 10 fibers/cc air

Ford - No formal program in place to eliminate asbestos usage.
- Estimated 3 year minimum from a program start to production.

Ford

- Ford is essentially out of the asbestos product manufacturing business. Asbestos-containing components are purchased outside.
- CCD has eliminated asbestos fillers by substitution.
- Chassis

  - Asbestos comprises 50% of the material used in brake pads, linings.
  - Several suppliers are claiming substantial progress in a new generation of brake materials.
  - Materials cost increase estimated at 50%. Assembly cost will increase in addition.
  - Ford Engineering and Scientific Lab expect a minimum of 3 years for non-asbestos brake material development.

- Transmission

  - Employs asbestos in some major components such as converter reactor, bands and clutch plates.
  - Estimated minimum of 2 years development for substitution.
  - At least one vendor claims ability to comply with proposed OSHA regulation.

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Competitive Position

- Delco - claims a new generation, non-asbestos brake material.
  - claims it will cost GM 1.5 times current for new material and additional for other design requirements.
  - has supplied Ford with semi-metallic linings for evaluation.

Anticipated General Motors Brake Program

1977
~~80~~15 Material - Camaro/Firebird: front outboard - semi-metallic
front inboard - organic (with asbestos)

1978
~~80~~15-A Material - selected lines: outboard and inboard - semi-metallic

1981
100% non-asbestos - across the board.

Ford Suppliers

- Ford suppliers are becoming increasingly alarmed at the progression of these laws. Currently, a typical brake pad manufacturing plant with a good control system can expect asbestos concentrations of about .6 fibers/cc.

  Suppliers with newer buildings, up to date control systems, and suitable processes may be able to meet the proposed limit at further increased costs.

  Most suppliers have increased their development efforts toward the total elimination of asbestos. Some material suppliers e.g., GE and Durez have already ceased production of absestos-containing materials for component manufacturers. Major Ford supplier actions are explained:

- Bendix - adding facilities and capital investments to their Tennessee Plant in anticipation of increased non-asbestos lining demand.
  - currently supplying semi-metallic pads for Vega/Monza.
    Memo: Helped solve problem aggravated by Vega's solid rotor.
  - estimates a 50% materials cost increase to be coupled with increases in assembly complexity due to the expected brittleness of the new materials.

    Ford E&R Staff say substantial development is required to solve several major open issues.
    Memo: Scientific Lab says Bendix could be several years away from a usable material.

- Thiokol - has submitted non-asbestos brake linings to Ford for evaluation.
  - Ford expects development will be required.

THE ABOVE COMPETITIVE INFORMATION IS BASED ON GENERALLY AVAILABLE INDUSTRY DATA, TRADE RELEASES, OR MOST COMPETITIVE PRACTICES PROJECTED INTO FUTURE MODEL YEARS.

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ASBESTOS

Recommendations

- Investigate Washington asbestos actions through the Supply Staff; develop better timing estimates and an appropriate strategy.
- Develop a formal program to coordinate Company and supplier efforts to eliminate asbestos usage.
- Target the 1981 Lynx for non-asbestos components.
- Include non-asbestos lining development in the current program for aluminum drums.

G. M. Greene
Vehicle Materials Engineering
February, 1977