suppress brake squeal. Tests are in progress to determine the precise influence of the asbestos grade on the lining performance. Recent laboratory testing indicates that a blending of two different grades of asbestos and a slight modification of previous formulations may overcome the limitations of using only 5K04 asbestos.

Besides looking into new asbestos-resin materials which may satisfy more stringent braking requirements, we have been looking into the use of glass fiber-resin and filled metallic materials. An additional impetus for looking at the non-asbestos systems resulted from the recent governmental concern about airborne asbestos in brake wear debris.

The simple substitution of glass fibers for asbestos in disc brake formulations resulted in high wear and unsatisfactory friction; however, one new resin-glass fiber material survived the 65 and 90 mph dynamometer fade tests without structural failure. Additional formulations are being tested in this cooperative program with Owens-Corning Fiberglas.

Studies of sintered ferrous brake lining formulations, indicate that the shear strength of the material should be increased. Attempts to increase the shear strength by heat treatment and coining have met only with limited success. A joint study has been undertaken with personnel in the Process Research Department to increase the strength of these materials without altering their functional properties. An alternative program is under way in which the base powders are bonded with an organic resin.

Our new materials program is currently directed toward the more stringent brake requirements proposed by the government for 1974 vehicles.

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