



SELECTING BRAKE LININGS

Selecting the perfect brake lining for a heavy-duty brake application is very important to insure that the vehicle and the load type can be stopped according to the requirements of FMVSS 121 law. The selection of lining must not be taken lightly.

The perfect brake lining will need to have an appropriate coefficient of friction that will remain constant for the life of the vehicle under all operating conditions of speed, braking pressure, vehicle load, temperature, and humidity. The perfect lining would not score or wear the drum, would not be subject to vibration and noise, would wear slowly, and would not have an offensive odor while working. The selection of lining is a balance of all these factors and will depend on the service that the brake will be subjected to during its useful life

Coefficient Of Friction

The coefficient of friction is a measure of the braking effectiveness of a lining. If the coefficient of friction is too high, the brake will be overly aggressive and grabby. If the coefficient of friction is too low, the brake will not provide enough stopping power.

Coefficient of friction varies depending on the temperature of the braking surface, the rubbing speed, the condition of the surfaces, and the amount of pressure being applied on the friction material. The effectiveness of the brake is directly related to the coefficient of friction of the lining. A lining that delivers consistent, predictable friction is the most important need in a friction material.

Fade

Lining fade is the inability of friction material to maintain its normal effectiveness when it is forced to work at elevated temperatures. This is called "heat fade" and is the result of reduced coefficient of friction as the brake temperatures increase.

Recovery is the rate at which the lining returns to its original friction level after having been exposed to a fade condition. Recovery is typed as Normal recovery, slow recovery, or over recovery. Most desired is normal recovery in that it will return to its pre-fade friction level with very little temperature reduction. Other, less-expensive friction may require almost returning to ambient temperatures before braking again.

Speed Sensitivity is the measure of a lining's ability to maintain its coefficient of friction at different rubbing speeds. The friction level of most friction materials is reduced with increasing speed. A lining may not stop as well at 60 miles per hour as it would at 40 miles per hour.

Brake Noise is a vibration in the brake system whose frequency is in the normal hearing range. Vibration is always present in a brake system but not in the human hearing range.

Brake Wear is a cost of operation consideration. The best lining will have minimum wear at low to normal operating temperatures and only a modest increase in wear rate at elevated operating temperatures.

Brakepro Ltd. friction materials are specifically designed for all of these specifications. Our wide selection of linings meets all of the demands of today's loads and vehicles.