



## Material: FTL136

### General Description

136 is one of the ICP range of non-asbestos friction materials. It is a rigid, moulded product and is manufactured from a variety of mineral fibres.

136 is not suitable for operating in oil.

The frictional characteristics of 136 in both its initial flexible and heat treated states are virtually identical. It exhibits excellent temperature and wear resistance and is quiet in operation. This material is manufactured with a ground surface on both sides so may be bonded on either.

This material was specifically developed for attaching to brake-shoes by bonding and is unsuitable for rivetting.

### Application

Industrial drum and band-brakes  
Crane and excavator brake and clutch linings.  
Miscellaneous industrial devices

### Bonding

136 may be bonded using any of the established adhesives recommended for friction material. However, to obtain the best results it is necessary to use a thermosetting adhesive.

### Mating Surface

A good quality, fine grained, pearlitic cast iron or cold rolled steel with a Brinell hardness of 180. Cast steels are not recommended.

### TECHNICAL DATA

#### Friction

for design purposes: Static (cold)	0.35
Dynamic	0.38

#### Recommended operating range

##### Pressure

Dynamic	70 - 860 kN/m <sup>2</sup> (10 - 125 lbf/in <sup>2</sup> )
Static	70 - 2410 kN/m <sup>2</sup> (10 - 350 lbf/in <sup>2</sup> )

Max. rubbing speed	25 m/s (82 ft/s)
Max. continuous temperature	150 0C
Max. intermittent temperature	250 0C
Max. temperature	325 0C

#### Size range

On application.

### Test Conditions

Temperature Sensitivity (see over)  
Application speed 15 m/s  
Clamping pressure 0.61 MN/m<sup>2</sup> (88.5 lbf/in<sup>2</sup>)  
Temperatures ranging from 50 to 3500C in steps of 250C

Initial Bedding  
Application speed 15 m/s  
Clamping pressure 0.61 MN/m<sup>2</sup> (88.5 lbf/in<sup>2</sup>)  
Average Temperature 1400C

Pressure Sensitivity  
Application speed 15 m/s  
Average temperature 800C

Speed Sensitivity  
Clamping pressure 0.61 MN/m<sup>2</sup> (88.5 lbf/in<sup>2</sup>)  
Average temperature 800C

### Physical Properties

Density	1.71 g/cc
Hardness (Gogan 'c')	Below 30Gc
Ultimate tensile strength Longitudinal	7.6 MN/m <sup>2</sup> (1,100 lbf/in <sup>2</sup> )
Ultimate compressive strength 45.0 MN/m <sup>2</sup> (6,550 lbf/in <sup>2</sup> )	
Ultimate shear strength Longitudinal	5.2 MN/m <sup>2</sup> (750 lbf/in <sup>2</sup> )

(All the physical properties shown above are mean values and based on the initial, as supplied, semi-cured condition)



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