



# AUTOMOTIVE BRAKE LININGS, DISC BRAKE PADS & CLUTCH FACINGS

Asbestos Free Range



**HINDUSTAN  
COMPOSITES  
LIMITED**

Committed to safety. Always.

## BRAKE LINING HC AF 393

Compo HC AF 393 is a rigid moulded Non-Asbestos Friction Material in Dark Grey color. It contains short filaments of Synthetic man made mineral fibers and organic fibers with highly thermally stable "Novalak" Phenolic Powder Resin as a binder and fused in a matrix which contributes to the strength and performance in terms of Friction/ Wear properties. Suitable for use in front and Rear Axle Heavy Commercial Vehicle Drum Brake application. It can also be used for Trailer application.

Compo HC AF 393 has excellent Fade and Wear resistance and good recovery characteristics.



### APPLICATION: -

Front and Rear Drum Brake application for Heavy Commercial Vehicles, Trailers and Light Commercial Vehicles.

### TECHNICAL DATA: -

Co-efficient of Friction for Design Purpose : 0.42 (dry)

### RECOMMENDED OPERATING RANGE:

Maximum Temperature : 300°C

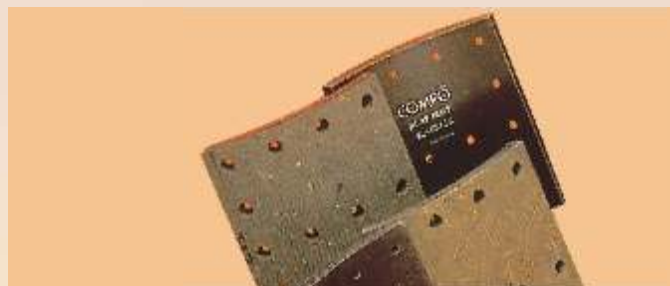
Maximum Continuous Operating Temperature : 250°C

Maximum Operating Pressure (Air Brake) : 8 Bar

## BRAKE LINING HC AF 493

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Compo HC AF 493 has Low Fade and Wear resistance properties upto a maximum temperature 350°C and good recovery characteristics.



### APPLICATION: -

Front and Rear Drum Brake application for Heavy Commercial Vehicles and Trailers.

### TECHNICAL DATA: -

Co-efficient of Friction for Design Purpose : 0.44 (dry)

Recommended operating range:

Maximum Temperature : 350°C

Maximum Continuous Operating Temperature : 300°C

Maximum Operating Pressure (Air Brake) : 8 Bar

### RECOMMENDED MATING SURFACE

Recommended mating surface : Good Quality close grain pearlitic Cast Iron  
Brinell Hardness of mating surface : 200 minimum  
Machining data of mating surface : Carbide tipped tools are generally recommended for use on this material for drilling, turning and Boring

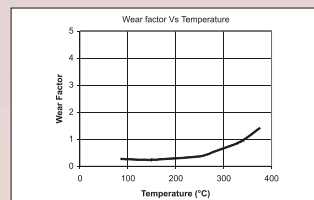
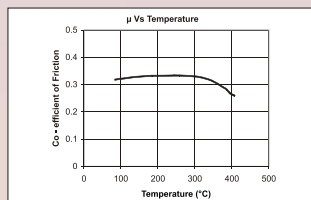
### TYPICAL PHYSICAL PROPERTIES

Density : 1.9  
Hardness : 85 in Rockwell HRL  
Heat Swell @ 200°C : 0.15 mm  
Water Swell : 0.02 mm  
Cross Breaking Strength Kg/cm<sup>2</sup> : 400  
Rivet Holding Capacity (Kg-f) : 200 per Rivet Hole Diameter  
Maximum Continuous Operating Temperature (°C) : 250  
Classification as per SAE J661a : FF

### TYPICAL CHEMICAL PROPERTIES

Acetone Extract : 1.8%  
Loss on Ignition : 32.0%

### TYPICAL FRICTION / WEAR PROPERTIES



### RECOMMENDED MATING SURFACE

Recommended mating surface : Good Quality Close Grain pearlitic Cast Iron  
Brinell Hardness of mating surface : 200 minimum  
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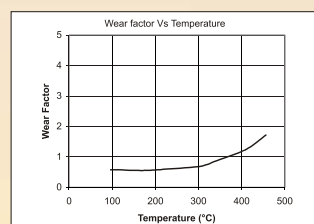
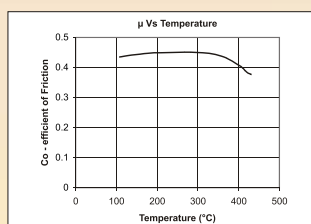
### TYPICAL PHYSICAL PROPERTIES

Density : 2.05  
Hardness : 80 in Rockwell HRL  
Heat Swell @ 200°C : 0.18 mm  
Water Swell : 0.02 mm  
Cross Breaking Strength Kg/cm<sup>2</sup> : 400  
Rivet Holding Capacity (Kg-f) : 250 per Rivet Hole Diameter  
Maximum Continuous Operating Temperature (°C) : 350  
Classification as per SAE J661a : FF

### TYPICAL CHEMICAL PROPERTIES

Acetone Extract : 1.9%  
Loss on Ignition : 38.0%

### TYPICAL FRICTION / WEAR PROPERTIES



## BRAKE LINING HC AF 693

Compo HC AF 693 is a Non-Asbestos Friction Material. It is a rigid moulded product in Dark Grey color and has short filaments of Synthetic man made mineral fibers, Ceramic fibers and Synthetic Potassium



Fibers with Highly thermally stable "Novalak" Phenolic Powder Resin as a binder and fused in a matrix which contributes to the strength and performance in terms of excellent torque characteristics even at high speeds and Friction/ Wear properties stable up to 300°C. Suitable for use in front and Rear Axle Heavy Commercial Vehicle Drum Brake application. It can also be used for Trailer application. HC AF 693 can also be used for Light Commercial Vehicle Front and Rear Hydraulic Brake Application. Compo HC AF 693 has excellent Torque, Fade, Recovery and Wear resistance characteristics. It also has good Wet Recovery Characteristics.

### APPLICATION: -

Front and Rear Drum Brake application for Heavy Commercial Vehicles, Trailers and Light Commercial Vehicles.

### TECHNICAL DATA: -

Co-efficient of Friction for Design Purpose : 0.46 (dry)

### RECOMMENDED OPERATING RANGE:

Maximum Temperature : 400°C  
Maximum Continuous Operating Temperature : 300°C  
Maximum Operating Pressure (Air Brake) : 8 Bar  
Maximum Operating Pressure (Hydraulic) : 80Bar(Hydraulic Brake System)

## RECOMMENDED MATING SURFACE

Recommended mating surface : Good Quality Close Grain pearlitic Cast Iron  
Brinell Hardness of mating surface : 200 minimum  
Machining data of mating surface : Carbide tipped tools are generally recommended for use on this material for drilling, turning and Boring

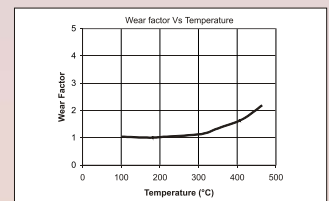
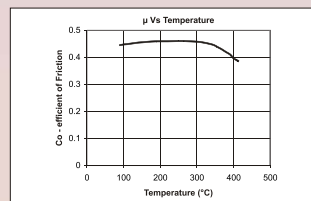
## TYPICAL PHYSICAL PROPERTIES

Density : 2.1  
Hardness : 90 in Rockwell HRL  
Heat Swell @ 200°C : 0.05 mm  
Water Swell : 0.01 mm  
Cross Breaking Strength Kg/cm<sup>2</sup> : 425  
Rivet Holding Capacity (Kg-f) : 250 per Rivet Hole Diameter  
Maximum Continuous Operating Temperature (°C) : 300  
Classification as per SAE J661a : GG

## TYPICAL CHEMICAL PROPERTIES

Acetone Extract : 2.0%  
Loss on Ignition : 18.0%

## TYPICAL FRICTION / WEAR PROPERTIES



## RANDOM WOUND CLUTCH FACINGS HCAF RWC-GDY

Comp HCAF RWC-GDY is a very popular Asbestos - Free Random wound Clutch facing. This grade is manufactured with technology acquired from Bendix Mintex Pty Ltd. Australia. This is manufactured by using Special 'Glass Dreff yarn' incorporated with either Brass, Copper or Zinc wire bonded with specially made Synthetic resin/elastomer matrix by scatter wound procedure. RWC-GDY is suitable for use in dry operating conditions only. Compo HCAF RWC-GDY has a stable medium co-efficient of friction with good fade stability, high wear resistance, good comfort performance and smooth pick-up characteristics with minimum wear and scoring on the mating surfaces. This quality is used on diverse applications such as Cars, Trucks, Buses and Tractors. This material is made in Disc form in a number of sizes, in undrilled as well as with various drill patterns. Availability of any particular size should be checked with Hindustan Composites Limited.

### APPLICATION:

Passenger Cars, Buses, Trucks and Tractors.

### TECHNICAL DATA:

Co-efficient of Friction for Design Purpose : 0.35 (Dry)

### PHYSICAL PROPERTIES

Data Based on standard Test Methods  
Specific Gravity : 2.00  
Rockwell Hardness : L 75-95  
Ultimate Compressive Strength : 1200 Kg/Sq. cm  
Ultimate Shear Strength : 250 Kg/Sq. cm  
Classification as per SAE J661 : FF

### CLUTCH BURST STRENGTH (RPM AT ROOM TEMP.)

350 mm Dia : 6500  
310 mm Dia : 7500  
280 mm Dia : 8000  
240 mm Dia : 9000  
228 mm Dia : 10500  
180 mm Dia : 12000  
160 mm Dia : 13000

### RECOMMENDED OPERATING RANGE

Maximum Temperature : 350°C  
Maximum Continuous Temperature : 200°C





**NOTE:**

The Continuous Temperature quoted is for constant Slip condition for automotive application.

Bulk Temperature of 225°C are acceptable for long periods

**RECOMMENDED MATTING SURFACE**

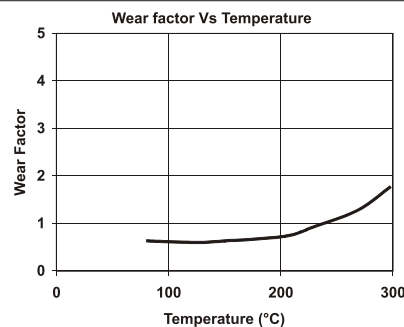
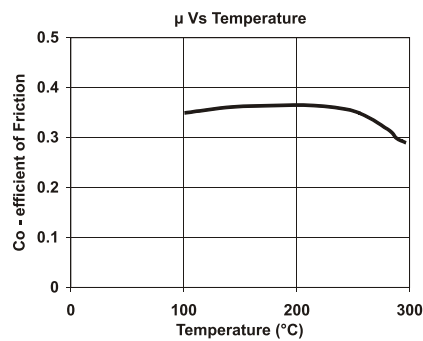
Good Quality, fine grain Pearlitic Cast iron. Cast Steel is not suitable as a mating surface, but forged or cold roll steel with a Brinell hardness of 200 or more may be used.

**MACHINING DATA**

High Speed Tools are recommended for use with this material for Drilling

**Advantages of using HCL's Asbestos Free Clutch Facings -**

- Product will be capable enough to transmit maximum torque
- Product has healthy aesthetics
- Product will help smooth functioning of clutch & will be able to engage gradually & positively without having any jerk
- Product will not make any kind of scoring on pressure plate
- Product will not have any judder
- Product will be capable enough to dissipate max. heat which is generated during operation
- Product will have less wear in terms of Tk. & Wt. Loss.
- No Noise while in operation.
- Product has characteristics of non-stickiness so that engaging and disengaging will be smooth
- Slippage, Glazing & Premature wear will not be observed.



## Moulded Clutch Facings - AF 124

Compo AF 124 is a rigid moulded friction material, brown in colour, having a Non-Asbestos Fiber base with brass chips. It has a very good resistance to fade and a low rate of wear. It is suited for both light and heavy duty clutch applications.

AF 124 possesses a medium co-efficient of friction. The use of AF - 124 clutch facing helps to prevent judder resulting in reduced stresses on clutch driven plates.

It is not suitable for oil immersed applications.

**APPLICATION:**

Light and heavy duty clutches in automotive commercial vehicles and several industrial applications.

**TECHNICAL DATA:**

Co-efficient of Friction for Design Purpose : 0.38 (Dry)  
Maximum Temperature : 350°C  
Maximum Continuous temperature : 200°C

Recommended Operating Range

**Note:**

The continuous temperature quoted is for constant slip condition. For automotive application, such as on car and Commercial vehicle Clutches, bulk temperature of 225°C are acceptable for long periods.

**Recommended Mating surface:**

Good Quality close grain pearlitic Cast Iron. If Steel, then forged or cold rolled with a Brinell Hardness of 200 or more. Cast Steels are not recommended for use as mating surface.

**Machining Data.**

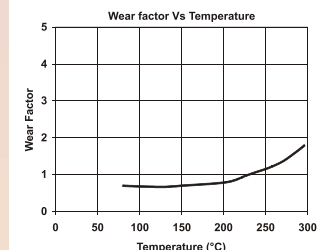
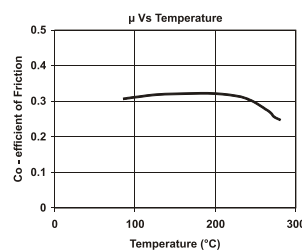
Carbide tipped tools are recommended for use with this material for drilling, turning and boring.

**TYPICAL PHYSICAL PROPERTIES**

Density	1.95
Hardness	100 Rockwell HRL
Cross Breaking Strength Kg/cm <sup>2</sup>	350
Shear Strength Kg/cm <sup>2</sup>	200
Wear By Tk (mm)	0.35
Maximum Continuous Operating Temperature (°C)	200
Classification as per SAE J661a	FF

**TYPICAL CHEMICAL PROPERTIES**

Acetone Extraction %	2.5
Ash Content %	65



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Compo HC AF 393 has excellent Fade and Wear resistance and good recovery characteristics.



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### TECHNICAL DATA: -

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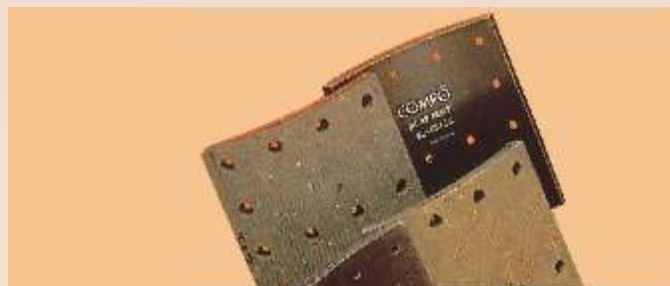
### RECOMMENDED OPERATING RANGE:

Maximum Temperature : 300°C  
Maximum Continuous Operating Temperature : 250°C  
Maximum Operating Pressure (Air Brake) : 8 Bar

## BRAKE LINING HC AF 493

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Compo HC AF 493 has Low Fade and Wear resistance properties upto a maximum temperature 350°C and good recovery characteristics.



### APPLICATION: -

Front and Rear Drum Brake application for Heavy Commercial Vehicles and Trailers.

### TECHNICAL DATA: -

Co-efficient of Friction for Design Purpose : 0.44 (dry)

Recommended operating range:

Maximum Temperature : 350°C  
Maximum Continuous Operating Temperature : 300°C  
Maximum Operating Pressure (Air Brake) : 8 Bar

### RECOMMENDED MATING SURFACE

Recommended mating surface : Good Quality close grain pearlitic Cast Iron  
Brinell Hardness of mating surface : 200 minimum  
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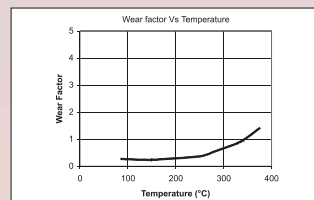
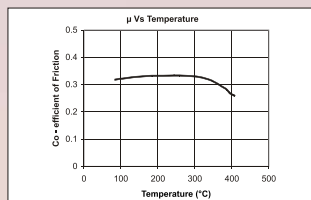
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### TYPICAL CHEMICAL PROPERTIES

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Loss on Ignition : 32.0%

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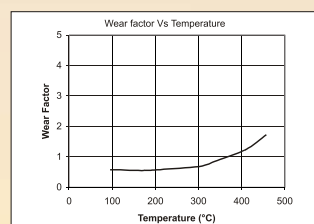
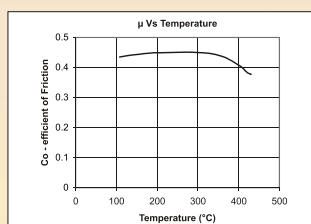
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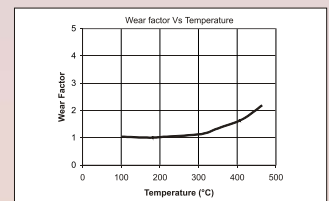
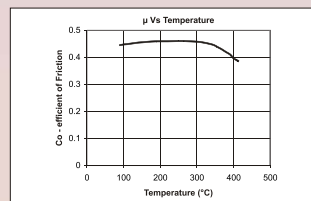
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Rockwell Hardness : L 75-95  
Ultimate Compressive Strength : 1200 Kg/Sq. cm  
Ultimate Shear Strength : 250 Kg/Sq. cm  
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### CLUTCH BURST STRENGTH (RPM AT ROOM TEMP.)

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### RECOMMENDED OPERATING RANGE

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Maximum Continuous Temperature : 200°C

