

COMPO

RAILWAY BRAKE BLOCKS, ROOFING SHEETS & DISC BRAKE PADS

Asbestos Free Range

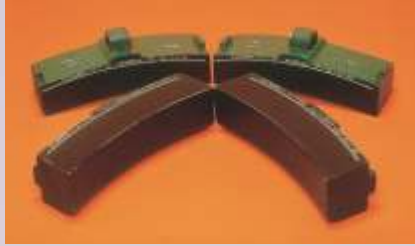


**HINDUSTAN
COMPOSITES
LIMITED**

Committed to safety. Always.

COMPO HC AF GRADE C/01/K/NAC

Compo HC AF Grade C/01/K/NAC is a Non Asbestos Composition Railway Brake Block. It is a rigid moulded product in Dark Grey color having 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 Passenger Coaches and Electric Multiple Units (EMU) for speeds up to 160 KMPH. This product meets the requirements of U.I.C. specification on the Dynamometer.

APPLICATION: -

It is used in Air Brake System (Radial Block / Tread Braking) in Railway application like Mainline Coaches and Electric Multiple Units (EMU).

TECHNICAL DATA: -

Average Mean Co-efficient of Friction for Design Purpose	0.3 (dry and Wet)
Average Instantaneous Friction for Design Purpose	0.28 (Dry and Wet)

RECOMMENDED OPERATING RANGE:

Maximum Temperature:	- 400°C
Maximum Continuous Operating Temperature:	- 300°C
Maximum Brake shoe force	- 2.0 Tons

RECOMMENDED MATING SURFACE

Recommended mating surface	- Good Quality Forged Wheel/ Cast Wheel/Tyred Wheel
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

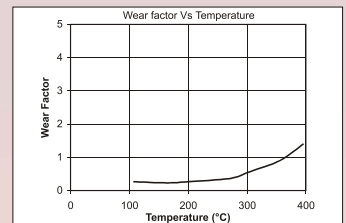
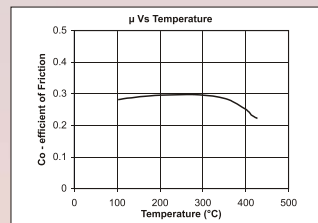
TYPICAL PHYSICAL PROPERTIES

Density	2.0
Hardness	90 in Rockwell HRR
Heat Swell @ 200°C	0.18 mm
Water Swell	0.02 mm
Cross Breaking Strength Kg/cm ²	225
Back Plate Pull off Strength (Tons)	4.0
Crushing Strength (Tons)	1.8
Compression Modulus N/mm ²	1500
Maximum Continuous Operating Temperature (°C)	300
Classification as per UIC specification	K type High Friction 0.2 - 0.4 μ

TYPICAL CHEMICAL PROPERTIES

Acetone Extract	2.5%
Loss on Ignition	35.0%

TYPICAL FRICTION / WEAR PROPERTIES



COMPO HC AF GRADE C/03/L/NAC



Compo HC AF Grade C/03/L/NAC is a Non Asbestos Composition Railway Brake Block. It is a rigid moulded product in Dark Grey color having 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 Passenger Coaches for speeds up to 140 KMPH. This product meets the requirements of U.I.C. specification on the Dynamometer.

APPLICATION: -

It is used in Air Brake System (Radial Block / Tread Braking) in Railway application like Mainline Coaches

TECHNICAL DATA: -

Average Mean Co-efficient of Friction for Design Purpose	- 0.18 (dry and Wet)
Average Instantaneous Friction for Design Purpose	- 0.16 (Dry and Wet)

RECOMMENDED OPERATING RANGE:

Maximum Temperature	: 400°C
Maximum Continuous Operating Temperature	: 300°C
Maximum Brake shoe force	: 2.5 Tons

RECOMMENDED MATING SURFACE

Recommended mating surface	: Good Quality Forged Wheel / Cast Wheel
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

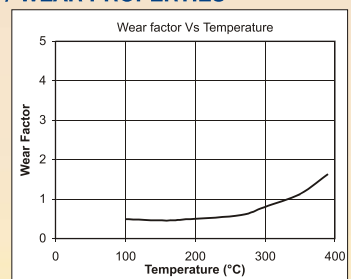
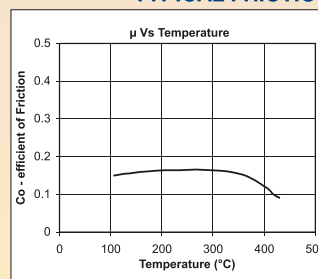
TYPICAL PHYSICAL PROPERTIES

Density	1.9
Hardness	85 in Rockwell HRR
Heat Swell @ 200°C	0.14 mm
Water Swell	0.02 mm
Cross Breaking Strength Kg/cm ²	250
Back Plate Pull off Strength (Tons)	2.5
Crushing Strength (Tons)	2.5
Compression Modulus N/mm ²	1750
Maximum Continuous Operating Temperature (°C)	300
Classification as per UIC specification	L type Low Friction 0.11 - 0.22 μ

TYPICAL CHEMICAL PROPERTIES

Acetone Extract	2.6%
Loss on Ignition	40.0%

TYPICAL FRICTION / WEAR PROPERTIES



COMPO HC AF GRADE C/04/L/NAC

Compo HC AF Grade C/04/L/NAC is a Non Asbestos Composition Railway Brake Block. It is a rigid moulded product in Dark Grey color having 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 Diesel / Electric Locomotives for speeds up to 160 KMPH. This product meets the requirements of U.I.C. specification on Dynamometer.



APPLICATION: -

It is used in Air Brake System (Radial Block / Tread Braking) in Railway application like Diesel / Electric Locomotive

TECHNICAL DATA: -

Average Mean Co-efficient of Friction for Design Purpose 0.17 (dry and Wet)
Average Instantaneous Friction for Design Purpose 0.16 (Dry and Wet)

RECOMMENDED OPERATING RANGE:

Maximum Temperature: - 400°C
Maximum Continuous Operating Temperature: - 300°C
Maximum Brake shoe force - 4.0 Tons

RECOMMENDED MATING SURFACE

Recommended mating surface - Good Quality Forged Wheel / Tyred Wheel
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

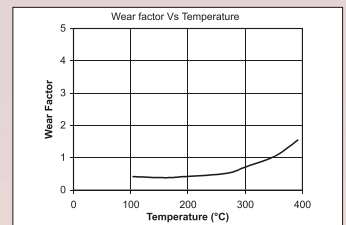
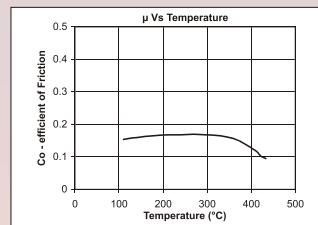
TYPICAL PHYSICAL PROPERTIES

Density 2.1
Hardness 95 in Rockwell HRR
Heat Swell @ 200°C 0.18 mm
Water Swell 0.02 mm
Cross Breaking Strength Kg/cm² 300
Back Plate Pull off Strength (Tons) 3.0
Crushing Strength (Tons) 2.75
Compression Modulus N/mm² 2000
Maximum Continuous Operating Temperature (°C) 300
Classification as per UIC specification L type Low Friction 0.11 - 0.22 μ

TYPICAL CHEMICAL PROPERTIES

Acetone Extract 2.25%
Loss on Ignition 47.0%

TYPICAL FRICTION / WEAR PROPERTIES



We also manufacture "LL" type Low Friction Brake Blocks as a direct replacement for Cast Iron Brake Blocks.

COMPO HC AF GRADE C/05/L/NAC



Compo HC AF Grade C/05/L/NAC is a Non Asbestos Composition Railway Brake Block. It is a rigid moulded product in Dark Grey color having 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 Freight Wagon (Boxn / Boy Type) for speeds up to 120 KMPH. This product meets the requirements of U.I.C. specification on Dynamometer.

APPLICATION: -

It is used in Air Brake System (Radial Block / Tread Braking) in Railway application like Freight Wagon Boxn / Boy Type

TECHNICAL DATA: -

Average Mean Co-efficient of Friction for Design Purpose 0.17 (Dry and Wet)
Average Instantaneous Friction for Design Purpose 0.16 (Dry and Wet)

RECOMMENDED OPERATING RANGE:

Maximum Temperature: - 400°C
Maximum Continuous Operating Temperature - 300°C
Maximum Brake shoe force - 4.5 Tons

RECOMMENDED MATING SURFACE

Recommended mating surface - Good Quality Forged Wheel / Tyred Wheel
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

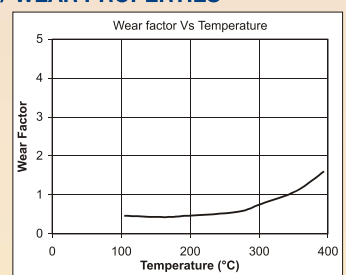
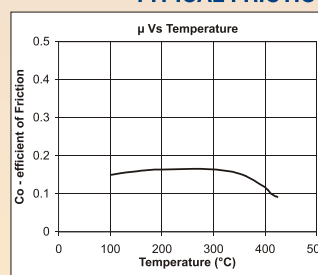
TYPICAL PHYSICAL PROPERTIES

Density 2.0
Hardness 95 in Rockwell HRR
Heat Swell @ 200°C 0.18 mm
Water Swell 0.02 mm
Cross Breaking Strength Kg/cm² 275
Back Plate Pull off Strength (Tons) 4.5
Crushing Strength (Tons) 2.0
Compression Modulus N/mm² 2250
Maximum Continuous Operating Temperature (°C) 300
Classification as per UIC specification L type Low Friction 0.11 - 0.22 μ

TYPICAL CHEMICAL PROPERTIES

Acetone Extract 1.5%
Loss on Ignition 42.0%

TYPICAL FRICTION / WEAR PROPERTIES



We also manufacture "LL" type Low Friction Brake Blocks as a direct replacement for Cast Iron Brake Blocks.

NON ASBESTOS "LIMPET" CEILING SHEET

"NA LIMPET" Sheet is a material of very special characteristics, being made basically of mineral and natural fibers. It is hard, impervious to water, weather proof, being unaffected by humidity and change of climate or temperature.



PRACTICAL APPLICATIONS:

Large size sheets, 3048 mm x 1524 mm. (10 ft. x 5 ft.), eliminate joints. Bends to 9" radius without steaming. Smaller radii can be readily obtained after steaming.

TOUGH: Exceedingly tough and of optimum Tensile Strength.

STABLE: Unaffected by moisture or heat, does not warp, swell or split.

WEATHER PROOF: Unaffected by climatic changes.

FIRE RESISTANT:

Complies with D. S. I. R. Classification "very low inflammability" and U. I. C. Code 564 2 OR Appendix 4, Class B, Material.

FEWER COATS:

Its surface is ready for painting either by hand or spray. Requires no rubbing down or other special preparation. To obtain a good finish it requires less paint than any other comparable product.

EASILY DECORATED:

Buff surface is specially prepared for painting with oil, cellulose, synthetic or distemper. Non absorbant face ensures economy of surface coating.

VERMIN PROOF:

Is not affected by termites and does not encourage growth of mould or fungus.

NON DRUMMING: Does not reverberate, as wood or sheet metal.

The expansion and contraction of "NA LIMPET" is negligible and its strength and elasticity makes it practically suitable for along with steel frames. It is a good non conductor of heat; has been found suitable for

use in humid climate and therefore has extensive use in Indian and African Railways. A unique combination of properties thus renders it particularly suitable for use in tropical countries.

USES:

"NA LIMPET" sheet is suitable for interior linings, Ceiling, Panelling of Railway Carriages, Motor Bus Caravans and on Ships, Yachts and Launches where its non-conductive properties assist in avoiding condensation.

It is also specially suited as a lining material for Industrial applications where high humidity is encountered as in dye houses, malt kilns, etc. Its fire resisting properties and ease with which it can take different finishes make it a desirable material for exhibition stand fitting, theatre scenery and display work.

PHYSICAL PROPERTIES		
Sr. No	Properties	Specs
1	Water Absorption	Not to Exceed 8% by weight
2	Density	2.0 ± 0.20
3	Dimensional Tolerances	
	a) Thickness	2 ± 0.2mm
	b) Tolerance on length and width.	± 10 mm
	c) Out of squareness	Max 10mm / 1500 mm length
4	Tensile Strength	
	a) Along the Grain	400 Kgs./sq. Cm (min)
	b) Right angle to Grain	150 Kgs./sq. Cm (min)
5	Breaking Load	
	a) Along the Grain	7 Kg. (min)
	b) Perpendicular to Grain	5 Kg. (min)

COMPO C/RDB/33

Compo C/RDB/33 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 and organic fibers and uses 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. This material is integrally moulded along with back plate suitable for use as Disc Brake Pad for Railway Brake application. It meets the criteria specified in the UIC Code 541 3.

It is suitable for use in high-speed intercity passenger coaches, suburban multiple units and freight vehicles up to a speed of 200 Km/h. It can be manufactured in two different sizes of surface areas of 166 cm² and 200 cm².

APPLICATION: -

Suitable for use as Disc Brake Pad for Railway Brake application, It meets the specifications in UIC Code 541 3.

TECHNICAL DATA: -

Co-efficient of Friction for Design Purpose : 0.38 (dry, wet condition)

RECOMMENDED OPERATING RANGE:

Maximum Temperature : 500°C
Maximum Continuous Operating Temperature : 250°C



Committed to safety. Always.

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