



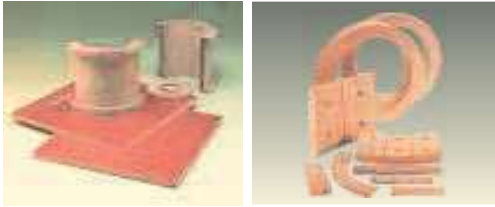
INDUSTRIAL PRODUCTS CATALOGUE



ASBESTOS FRICTION SHEETS

COMPO

FRICTION SHEET WAS-80



is a clutch facing material having a non – metallic woven asbestos base impregnated with an infusible bond which gives it good durability and resistance to fade. It possesses a medium coefficient of friction and is capable of satisfactory performance under reasonably high clutch temperatures.

It is recommended for general engineering requirements where exigencies of exceptional flange width or other dimensions force the adoption of facings in two or more segments. It is intended for use under dry conditions of operations. It is available in flat sheet form.

APPLICATIONS INDUSTRIAL CLUTCHES:- General engineering application. Tractor main engine clutches.

TECHNICAL DATA:-

Co-efficient of Friction for Design Purpose : 0.30 (dry)

PHYSICAL PROPERTIES:-

Data based on standard test methods.

Ultimate Tensile Strength	: 280 kg/cm ²
Ultimate Shear Strength	: 360 kg/cm ²
Ultimate Compressive Strength	: 1500 kg/cm ²
Rivet Holding Capacity	: 1200 kg/cm ²
(load to failure on rivet lead hole projected area).	
Specific Gravity	: 1.44/1.76

RECOMMENDED OPERATING TEMPERATURES:-

Maximum operating temperature	: 350°C
Maximum continuous temperature	: 125°C

CLUTCH DESIGN:- The applied load in a clutch is not transmitted as efficiently as in a brake and the full effective torque radius is not always developed. It is usual, therefore, to use a lower design friction value for a clutch than for a brake with similar torque characteristics. The coefficient of friction for design should be based upon severity of the application and the maximum anticipated operating temperature. Normal engineering practice should be followed in applying an appropriate safety factor to the torque requirements of the unit.

NOTE:- It is possible to exceed the recommended maximum continuous temperature in commensurate with a reasonable rate of wear.

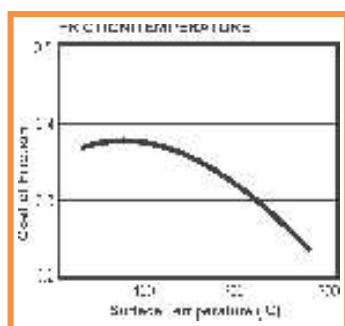
RECOMMENDED MATING SURFACE:- Good quality close grain or alloy cast-iron. If steel, then forged or cold rolled with a Brinell hardness of 150 or over. Cast steels are not recommended for use as mating surface.

MACHINING DETAILS:- High speed steel tools are satisfactory for use with this material.

SIZE RANGE :-

Thickness : 3 mm to 100 mm
Sheet Size : 1000 mm x 1000 mm

This graph is derived from the results of a large number of tests and therefore represents the average friction level of the material.



COMPO

FRICTION SHEET WASM-80



is a clutch facing material having a woven asbestos base with metallic inclusions in the form of brass wire. It is impregnated with an infusible bond capable of withstanding reasonably high clutch temperatures. It has a medium coefficient of friction, combined with good resistance to temperature and wear.

WASM-80 is intended for use under dry operating conditions and is available in flat sheet form.

APPLICATIONS INDUSTRIAL CLUTCHES:- General engineering applications. Tractor main engine clutches.

TECHNICAL DATA:-

Co-efficient of Friction for Design Purpose : 0.32 (dry)

PHYSICAL PROPERTIES:-

Data based on standard test methods:

Ultimate tensile strength	: 280 kg/cm ²
Ultimate shear strength	: 360 kg/cm ²
Ultimate compressive strength	: 1500 kg/cm ²
Rivet holding capacity	: 1230 kg/cm ²
Specific gravity	: 1.53/1.87
% ASM Content	: 35-50%

RECOMMENDED OPERATING TEMPERATURE:-

Maximum operating temperature	: 350°C
Maximum continuous temperature	: 125°C

CLUTCH DESIGN:- A friction clutch should be capable of transmitting without slip, the maximum torque that can be applied to it once the clutch is fully engaged. The applied load in a clutch is not transmitted as efficiently as in brake and the fully effective torque radius is not always developed. This should be borne in mind when selecting the design co-efficient of friction, also taking into account the severity of the application and maximum operating temperatures of clutch surface. Normal engineering practice should be followed in applying an appropriate safety factor to the torque requirements of the unit.

NOTE:- It is possible to exceed the recommended maximum temperature for a short period. The recommended maximum continuous temperature is commensurate with a reasonable rate of wear.

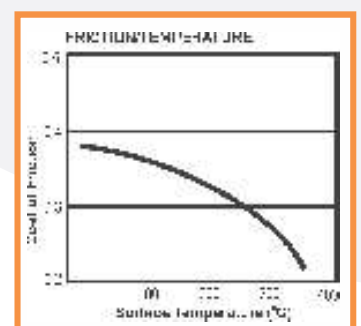
RECOMMENDED MATING SURFACE:- Good quality close grain or alloy cast-iron. If steel, then forged or cold rolled with a Brinell Hardness of 200 or over. Cast steels are not recommended for use as mating surfaces.

MACHINING DETAILS:- High speed steel tools are satisfactory for use with this material.

SIZE RANGE:-

Thickness : 3 mm to 100 mm
Sheet Size : 1000 mm x 1000 mm

This graph is derived from the results of a large number of tests and therefore represents the average friction level of the material.



ASBESTOS FRICTION SHEETS

COMPO

FRICTION SHEET CM-11



is a rigid moulded non-metallic friction material with a random fibre asbestos base. It possesses high mechanical strength together with a medium coefficient of friction and a low rate of wear. It is suitable for either dry or under oil immersed conditions.

CM-11 is available in flat sheet form. Gear tooth can be cut from CM-11 with normal gear cutting facilities.

APPLICATIONS INDUSTRIAL CLUTCHE:- Industrial clutches, Marine Gear Box clutches, Tractor steering Clutches and Industrial Brakes.

TECHNICAL DATA :-

Co-efficient of Friction for Design Purpose : 0.32 (dry)

PHYSICAL PROPERTIES:-

Data based on standard test methods.

Ultimate Tensile Strength	: 280 kg/cm ²
Ultimate Shear Strength	: 112 kg/cm ²
Ultimate Compressive Strength	: 1500 kg/cm ²
Specific Gravity	: 1.65/2.0
%ASH Content	: 55-65%

RECOMMENDED OPERATING TEMPERATURES:-

Maximum operating temperature	: 350°C
Maximum continuous temperature	: 175°C

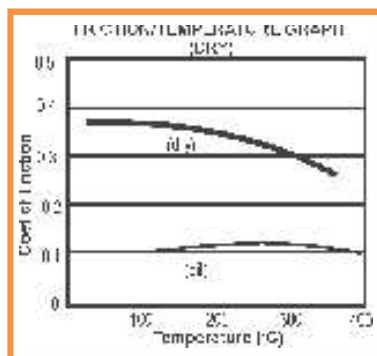
NOTE:- It is possible to exceed the recommended maximum temperature for short periods. The recommended maximum continuous temperature is commensurate with a reasonable rate of wear.

RECOMMENDED MATING SURFACE:- Good quality close grain or alloy cast iron. If steel, then forged or cold rolled with a Brinell hardness of 200 or over. Cast steels are not recommended for use as mating surfaces.

SIZE RANGE:-

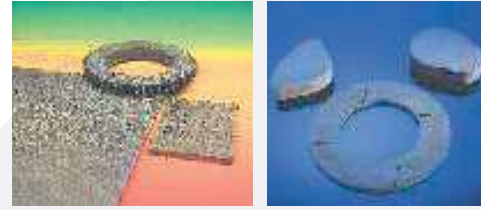
Thickness	: 3 mm to 70 mm
Maximum Length	: 838 mm (33")
Maximum width	: 533 mm (21")

MACHINING DATA:- Carbide tipped tools are recommended for use with this material for drilling and boring. More details on machining data can be supplied on request.



COMPO

FRICTION SHEET CM-16



is a rigid moulded friction material, slate grey in colour, having a random fibre asbestos base and containing metallic inclusions in form of brass chippings. It is available in flat sheet form and is suitable for use either dry or in oil immersed applications.

CM-16 possesses high mechanical strength together with a medium coefficient of friction and a low rate of wear. It machines well and discs can be gear-cut on the circumference, for use in multi-plate, clutches. When used in oil, the coefficient of friction is reduced considerably as the curves show. The friction level in oil can be influenced by the presence of or lack of a suitable grooving pattern. This material is suitable for use at medium to heavy levels of duty.

APPLICATIONS:- Clutches for marine gear boxes. Steering clutches for tractors. Clutches for power presses, machine tools and other industrial plant & machinery etc.,

TECHNICAL DATA:-

Co-efficient of Friction for Design Purpose : 0.28 (dry)

PHYSICAL PROPERTIES:-

Data based on standard test methods:

Specific gravity	: 2.00/2.40
Ultimate tensile strength	: 290 kg/cm ²
Ultimate compressive strength	: 1500 kg/cm ²
Ultimate shear strength	: 120 kg/cm ²

RECOMMENDED OPERATING TEMPERATURE:-

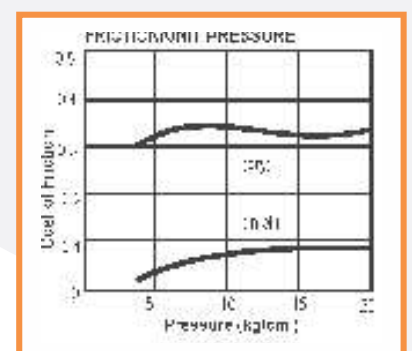
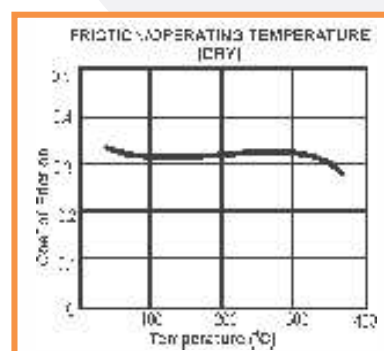
Dry	: 1.0-7.0 kg/cm ²
In oil	: 2-21 kg/cm ²
Maximum operating temperature	: 350°C
Maximum continuous temperature	: 175°C

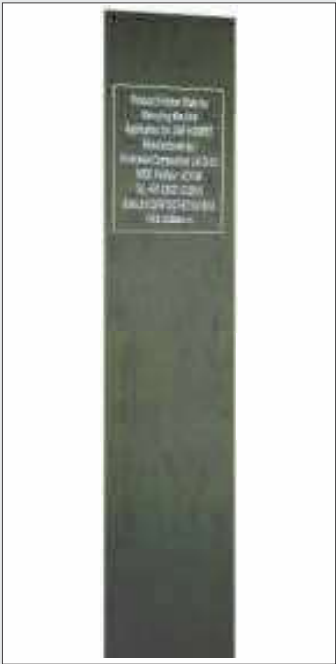
RECOMMENDED MATING SURFACE:- Good quality fine grained pearlitic cast iron. Cast steel is not suitable for use as a mating surface but forged or cold rolled steel with a Brinell hardness of 200 or more may be used.

SIZE RANGE:-

Thickness	: 3 mm to 70 mm
Maximum Length	: 838 mm (33")
Maximum width	: 533 mm (21")

MACHINING DATA:- Carbide tipped tools are recommended for use with this material for drilling and boring. More details on machining data can be supplied on request.





CR-84 Grade

COMPO COMPESTOS SHEET LS-10/30

is asbestos based woven moulded friction material which is reddish brown in appearance having non-metallic asbestos cloth with friction modifiers in a matrix of a special phenolic resin. It is available in flat sheet form only & is suitable for use in either dry or in oil immersed application. Asbestos based LS-10/30 possesses high mechanical strength together with a medium co-efficient of friction and low wear rate. It machines well and discs can be gear - cut on the circumference, for use in multiplate clutches. This material is suitable for use at medium to heavy levels of duty.

APPLICATION :-

A very versatile material suitable for most industrial clutches & brake applications requiring a asbestos type lining, including power presses for both forging and sheet metal, earth-moving equipment, machines etc. The material is suitable for Gear -cutting.

TECHNICAL DATA :-	LS-10	LS-30
Co-efficient of Friction for Design Purpose	: 0.20 / 0.35	0.20 / 0.35
PHYSICAL PROPERTIES :-		
Data based on standard test methods:		
Specific Gravity	: 1.50 / 1.85	1.50 / 1.70
% Ash Content	: 35 / 50	35 / 50
Ultimate Compression	: 1500 kg/cm2	1500 kg/cm2
RECOMMENDED OPERATING TEMPERATURE :-		
Maximum Opreating temperature	: 400°C	400°C
Maximum Continuous temperature	: 300°C	300°C

RECOMMENDED MATING SURFACES :-

Good quality close grain or alloy cast iron. All steels, except cast, with a brinell hardness of 200 or over.

MACHINING DETAILS :-

High speed carbide tools / drills are recommended for use with this material for drilling, turning and boring.

AVAILABILITY :-

Flat sheets 1000 mm x 1000 mm are available in thicknesses 5 to 120 mm from which rings and segments can be readily cut or machined to size.

DROP HAMMER PAD CR-84 GRADE

is one of the Compo range of Asbestos Flexible molded product Dark Grey color and having short filaments of asbestos fiber and organic fibers and used highly thermally stable Synthetic Rubber (Styrene-Butadiene/Acrylonitrile-Butadiene Rubber) as a binder and fused in a matrix which contribute the strength, performance in terms of Friction/Wear properties suitable for use Band Brakes & Hammer plate applications in steel industry in stamping station conversion of coke into coal operation. It is suitable for use under dry & wet operating condition only. Owing to it its flexibility, it is easy to use for Riveting and Bonding application.

APPLICATIONS :-

It is used in Band Brakes and Hammer Plate application in steel industry in stamping station of coke into coal operation.

TECHNICAL DATA :-

Co-efficient for Design Purpose : 0.50 (Dry Condition)

RECOMMENDED MATING SURFACE :-

Maximum Temperature : 250°C

Maximum Continuous Operating Temperature : 125°C

(Possible to exceed for shorter period)