FRICTION MATERIALS

All applications for friction brake material should be checked with the Standards Department. The data given below will serve as a general guide.

JOHNS-MANVILLE # 304

Band Type - Flexible - For Oil Service
Thickness = 1/8" to 5/16" - Width = 1" to 24"
Max. Temp. = 500°F - Max. Press. 100 P.S.I.
Max. Rubbing Speed = 5000 ft./min. on iron or steel
Coefficient of Friction = 0.20 ±.07 in oil
Primary Application: Cradle Band Brakes

AMERICAN BRAKE SHOE # A B S-1400

Shoe Type - Non-Flexible - For Dry Service
Bi-Metallic Type Bonded to Steel Backing
Max. Pressure = 300 P.S.I.
Coefficient of Friction = 0.30 dry
Primary Application: Shoe Type Drag Brakes

AMERICAN BRAKEBLOK - FORMULA # 64

Curved Type - Moulded - For Dry Service
Thickness = 3/16" to 3/4" - Width 1-1/4" to 8"
Coefficient of Friction = 0.336 dry
Max. Pressure = 100 P.S.I.
Primary Application: Testing and Lapping Machine Drag Brake

JOHNS-MANVILLE # 232

Band Type - Semi-Flexible (Min. Curve 7" Dia.) - Dry Service
Thickness = 1/8" to 3/8" (Limit ±.020) - Width 1" to 12" (±1/16)
Max. Temp. = 500°F - Max. Press. 100 P.S.I.
Max. Rubbing Speed = 500 ft./min.
Coefficient of Friction = 0.45 ±.07 dry
Primary Application: Testing and Lapping Machine Drag Brake

NOTE: Drawing should specify expanding or contracting type.

JOHNS-MANVILLE # 751

Disc. Type - Rigid Moulded - Dry or Oil Service
Thickness = 1/8" to 1/2" - Max. Diam. = 36"
Max. Temp. = 500°F - Max. Press. = 100 P.S.I.
Max. Rubbing Speed = 5000 ft./min.
Coefficient of Friction = 0.35 ±.07 dry

BEARIUM METAL

Leaded Bronze - Bar or Casting - For Dry Service
Grade #B-4 - Coefficient of Friction = 0.13 dry
Grade #B-8 - Coefficient of Friction = 0.16 dry
Non-Seizing Properties in Absence of Oil

JUNE 1959

FRICTION MATERIALS

All applications for friction brake material should be checked with the Standards Department. The data given below will serve as a general guide.

JOHNS-MANVILLE MX-4663

Band Type - Flexible - For Oil Service
Thickness = .250 to .312 - Width = 1.00 to 24.00
Max. Temp. = 500°F - Max. Press. 100 P.S.I.
Max. Rubbing Speed = 5000 ft./min. on iron or steel
Coefficient of Friction = 0.20 ±.07 in oil
Primary Application: Cradle Band Brakes

AMERICAN BRAKE SHOE # ABS-1400

Shoe Type - Non-Flexible - For Dry Service
Bi-Metallic Type Bonded to Steel Backing
Max. Pressure = 300 P.S.I.
Coefficient of Friction = 0.30 dry
Primary Application: Shoe Type Drag Brakes

AMERICAN BRAKEBLOK - FORMULA # 64

Curved Type - Moulded - For Dry Service
Thickness = .188 to .750 - Width 1.250 to 8.000
Coefficient of Friction = 0.336 dry
Max. Pressure = 100 P.S.I.
Primary Application: Testing and Lapping Machine Drag Brake

JOHNS-MANVILLE # 232

Band Type - Semi-Flexible (Min. Curve 7.000 DIA.) - Dry Service
Thickness = .125 to .375 (Limit ±.020) - Width 1.000 to 12.000 (±.062)
Max. Temp. = 500°F - Max. Press. 100 P.S.I.
Max. Rubbing Speed = 5000 ft./min.
Coefficient of Friction = 0.45 ±.07 dry
Primary Application: Testing and Lapping Machine Drag Brake

NOTE: Drawing should specify expanding or contracting type.

JOHNS-MANVILLE # 751

Disc. Type - Rigid Moulded - Dry or Oil Service
Thickness = .125 to .500 - Max. Diam. = 36.000
Max. Temp. = 500°F - Max. Press. = 100 P.S.I.
Max. Rubbing Speed = 5000 ft./min.
Coefficient of Friction = 0.35 ±.07 dry

BEARIUM METAL

Leaded Bronze - Bar or Casting - For Dry Service
Grade #B-4 - Coefficient of Friction = 0.13 dry
Grade #B-8 - Coefficient of Friction = 0.16 dry
Non-Seizing Properties in Absence of Oil

JOHNS-MANVILLE #510

Band Type - Semi-Flexible - Dry Service
Thickness - .156 to .500 width 1.000 to 12.000
Max. Temp. 500°F constant operation
Max. Rubbing Speed 7500 ft. per min. on steel or iron
Coefficient of friction .450 ±.07 Dry
Primary Application: Main Motor Drive Brake

FEB. 1959

FRICTION MATERIALS

All applications for friction brake material should be reviewed by the Mechanical Analysis and Standards Group. The data given below will serve as a general guide.

Detail drawings specifying brake linings requiring a definite form to permit assembling with their mating brake shoe, must state the following: (NOTE: For molded materials only.)

"MOLDED LINING AS SHOWN. BEND TO FORM AS INDICATED"

METALLIC LININGS

American Brakeblok - Formula #1400

Description - Sintered bronze bonded to steel backing.
Type of brake - Shoe type.
Coefficient of friction - Kinetic
Wet 0.11
Dry 0.30
Static
Wet 0.15
Dry 0.31
Average wear - Wet .0008
Dry .0050
Type of service - Wet or dry.
Maximum pressure - 300 psi

Bearium Metal

Description - Leaded bronze; bar or casting.
Coefficient of friction - Grade B-4 = 0.13 dry
Grade B-8 = 0.16 dry
Non-seizing properties in absence of oil.

"DU" Flat Strip Material

Type of brake - Band type - flexible
Thickness and usable widths available - .0430-.0450 x 4.750
.0738-.0758 x 5.000
.0895-.0915 x 5.000
.1190-.1210 x 5.500
Type of service - Oil service
Length - Strip material is available in coil lengths of 96.0 inches only.
Primary application - Cradle and Work Spindle Band Brakes.
NOTE: Before using, the BLACK layer of TFE (polytetrafluorothylene) approximately .001 inches thick, must be removed from the bearing surface. This information must appear on all brake band detail drawings. For examples of brake linings, see part numbers 43239500, Cradle Brake Band, and 43239510, Work Spindle Brake Band.

MOLDED LININGS

Johns-Manville #JM-230

Description - A rigid molded, medium high friction material containing zinc particles. It has high heat resistance and maintains a constant friction coefficient over a wide temperature range.
Type of brake - Disc, cone, band, curved or shoe.
Type of surface - Furnished standard with ground surface.
Structure - Rigid molded.
Coefficient of friction - $0.36 \pm .07$
Thickness - .125 to .375
Width - 1.00 to 12.00
Type of service - Dry
Maximum rubbing speed ft./min. - 5000
Maximum drum temperature - 500°F
Maximum pressure, psi - 100

GLEASON WORKS, USA

FRICTION MATERIALS

Johns-Manville #JM-232

Description - Identical in composition to JM-230 except that it is a semi-flexible molded lining applicable to either internal expanding or external contracting wrap bands or shoes.
Type of brake - Cone, band, curved or shoe.
Type of surface - Furnished standard with ground surface.
Structure - Semi-flexible.
Coefficient of friction - $0.36 \pm .07$
Thickness - .125 to .375
Width - 1.00 to 12.00
Type of service - Dry
Maximum rubbing speed ft./min. - 5000
Maximum drum temperature - 500°F
Maximum pressure, psi - 100

American Brakeblok - Formula #64 (This material can be used as a substitute for Johns-Manville #JM-232)

Description - General all prupose lining. Medium duty semi-rigid material.
Type of brake - Shoe or curved for testing and lapping machine drag brake or similar applications.
Structure - Semi-rigid.
Coefficient of friction - Kinetic 0.40
Static 0.38
Thickness - .156 to .625
Width - 1.00 to 12.00
Type of service - Dry
Maximum pressure, psi - 100

Johns-Manville #JM-242

Description - A semi-flexible molded lining containing brass particles. Can be applied to bands or shoes. Detail drawings should state whether for internal expanding or external contracting bands or shoes.
Type of brake - Cone, band, curved or shoe.
Type of surface - Furnished standard with ground surface.
Structure - Semi-flexible.
Coefficient of friction - $0.40 \pm .07$
Thickness - .125-.375
Width - 1.00 to 12.00
Type of service - Dry
Maximum rubbing speed ft./min. - 5000
Maximum drum temperature - 500°F
Maximum pressure, psi - 100

APR 1974

FRICTION MATERIALS

MOLDED FACINGS

Raybestos Manhattan Grey Rock #451 (Replaces Johns-Manville Type JM-751)
- Description - A rigid fully formed, cured segment. Is an excellent primary shoe lining for Servo-acting brakes using either steel or cast iron drums
- Type of brake - Disc or shoe
- Structure - Rigid
- Coefficient of friction - .44 dry
  .08 oil
- Thickness - .188 to .375
- Width - To 6.00
- Type of service - Oil or dry

WOVEN LININGS

Raybestos Manhattan Grey Rock #98 (Replaces Johns-Manville Type JM-304)
- Description - A brass wire inserted woven lining with high friction value designed for medium duty service on either internal or external type band or shoe brakes. Surface can be grooved.
- Type of brake - Band or shoe
- Structure - Flexible
- Coefficient of friction - 0.50 dry
  0.12 oil
- Thickness - .156 to .312
- Width - 1.00 to 4.00
- Type of service - Oil or dry

Raybestos Manhattan Grey Rock #2010 (Replaces Johns-Manville Type JM-510)
- Description - Made of heavy duty woven asbestos tape containing brass wire inserted yarn vacuum impregnated to insure through saturation with heat and wear resistant treatment. Lining is heavily compressed and ground on both surfaces. Construction and finish provide a very dense and somewhat rigid lining suitable for all types of heavy duty work where high friction, reisitance to high temperatures and good wear factor is required.
- Typs of brake - Main motor drive brake, pulley brake, band and shoe type
- Structure - Semi-flexible
- Coefficient of friction - High-medium 0.45
- Thickness - .188 to .500
- Width - 1.50 to 8.00
- Type of service - Dry

NOTE: Johns-Manville Brake Linings, Series 200 only, including those shown above are available from the following source:

Scan-Pac Manufacturing Co.
Friction Material Mfg. Div.
9950 N. Port Washington Rd.
Mequon, Wis. 53092

Grey Rock Brake Linings as shown are available from:

Sealing Devices Inc.
4375 Walden Ave.
Lancaster, N.Y. 14086

APR 1974