

FRICTION MATERIAL

Committed to transmission safety



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 **A BRAND. SWISS MADE.**



A BRAND.
SWISS MADE.

YOUR TRUST. OUR SOLUTION.
SUCCESSFUL TOGETHER

Furka Reibbeläge Ltd is the only company in Switzerland that develops, produces and sells friction liners. Switzerland is our key market, but we steadily increase our market presence internationally and supply our products to customers in Europe, the USA and Asia. The industry with the highest turnover is public transportation, with Furka products also being used reliably in a wide variety of application in mechanical and plant engineering as well as construction machinery. In these markets our turnover increases year to year and we are committed to further expand our business activities.

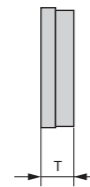
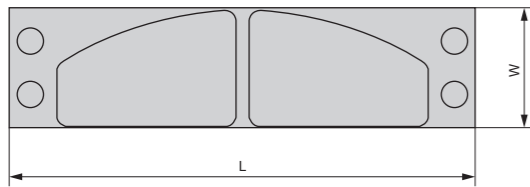
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Description and application

A copper-based sintered friction material product composed of copper as matrix material, abrasive and metal alloy particles as friction adjusting component, solid-lubricants as wear reducing component, free of lead and other harmful heavy-metal and their compounds. This kind of friction material product is produced by the procedures of mixing, press-forming, sintering and so on.

Applied to various kinds of industrial disc brakes.

Specification



Part no.	Dimensions(mm)			Pad area (cm ²)	Material code
	Length (L)	Width (W)	Thickness (T)		
ZW04112.2	230	90	20	113	HFM134
ZW104A.2	212	85	15	105	HFM134
ZW1080.2	546	270	28	1051	HFM236
ZW112.2	230	90	20	113	HFM134
ZW170.2	278	82	20	194	HFM134
ZW180.2	350	90	25	207	HFM236
ZW186.2	240	110	22	161	HFM236
ZW190.2	190	110	19	182	HFM236
ZW210.2	307	90	25	209	HFM236
ZW265.2	320	98	20	180	HFM134
ZW270.2	278	50	20	126	HFM236
ZW280.2	325	110	14	278	HFM236
ZW300.2	286	140	22	273	HFM236
ZW330.2	325	130	14	326	HFM236
ZW350.2	400	120	25	357	HFM236
ZW453.2	360	140	20	430	HFM236
ZW480.2	370	170	24	454	HFM236
ZW495.2	400	140	20	499	HFM236
ZW560.2	440	160	21	514	HFM236
ZW920.2	410	270	24	840	HFM236

Performance of friction materials

HFM134

Physical and mechanical properties

Items	Unit	Test data
Density	g/cm ³	5.15
Hardness	HBW	22.7
Shear strength	MPa	13.5
Inner shear strength	MPa	16.3
Tensile strength	MPa	124
Transverse rupture strength	MPa	52
Impact strength	kJ/m ²	3.8

Friction coefficient

- Average friction coefficient: 0.42
- Static friction coefficient: 0.45
- Recommended Operating Conditions: Specific pressure ≤ 4 MPa, Brake speed ≤ 40 m/s

Wear rate

- 0.30(cm³/MJ)

Application temperature

- Max. Continuous application temperature: 500 C
- Max. short time application temperature: 650 C

HFM236

Physical and mechanical properties

Items	Unit	Test data
Density	g/cm ³	4.96
Hardness	HBW	11
Shear strength	MPa	12.3
Inner shear strength	MPa	17.4
Tensile strength	MPa	99
Transverse rupture strength	MPa	45
Impact strength	KJ/m ²	3.3

Friction coefficient

- Average friction coefficient: 0.40
- Static friction coefficient: 0.42
- Recommended Operating Conditions: Specific pressure $\leq 4\text{MPa}$, Brake speed $\leq 40\text{ m/s}$.

Wear rate

- 0.32(cm³/MJ)

Application temperature

- Max. Continuous application temperature: 500 °C
- Max. short time application temperature: 650 °C

Note:

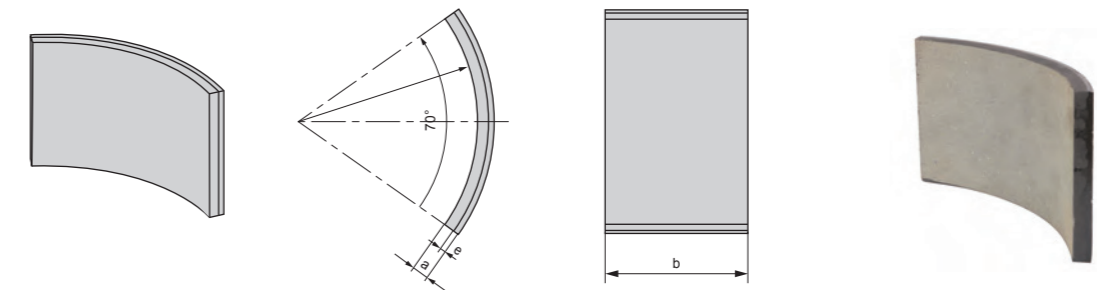
The friction coefficient and wear rate change with the application condition, the above friction coefficient and wear rate is measured in the laboratory, the test is carried out according to the specified test method. these values of friction coefficient and wear can be used as reference data for brake design, but the safety factor must be considered, allowing friction coefficient and wear rate to change in a certain range. more detailed information, please contact us.

Description and application

A resin-based friction material product composed of phenolic resin as matrix binder, various kinds of organic and inorganic fibers as reinforcing component, abrasive, solid lubricant and other fillers, free of lead and its compound, asbestos. This kind of friction material product is produced by the procedures of mixing, forming, curing and so on.

Applied to industrial block brake.

Specification



Part no.	Dimensions(mm)				Material code
	Brake drum dia. (D)	Width (b)	Total thk. (a)	Steel back thk. (e)	
E3-100-70	100	70	8	2	HW541H HW160
E3-150-90	150	90	8	2	HW541H HW160
E3-160-65	160	65	8	2	HW541H HW160
E3-200-70	200	70	9	3	HW541H HW160
E3-200-80	200	80	9	3	HW541H HW160
E3-200-90	200	90	9	3	HW541H HW160
E3-200-100	200	100	9	3	HW541H HW160
E3-250-90	250	90	9	3	HW541H HW160
E3-250-100	250	100	9	3	HW541H HW160

E3-250-125x9	250	125	9	3	HW541H HW160
E3-300-125	300	125	11	3	HW541H HW160
E3-300-140	300	140	11	3	HW541H HW160
E3-305-110	305	110	11	3	HW541H HW160
E3-315-110	315	110	11	3	HW541H HW160
E3-315-125	315	125	11	3	HW541H HW160
E3-400-140	400	140	14	4	HW541H HW160
E3-400-160	400	160	14	4	HW541H HW160
E3-400-180	400	180	14	4	HW541H HW160
E3-500-125	500	125	14	4	HW541H HW160
E3-500-160	500	160	14	4	HW541H HW160
E3-500-180	500	180	14	4	HW541H HW160
E3-500-200	500	200	14	4	HW541H HW160
E3-500-240	500	240	14	4	HW541H HW160
E3-600-240	600	240	15	5	HW541H HW160
E3-630-225	630	225	15	5	HW541H HW160
E3-630-250	630	250	15	5	HW541H HW160
E3-700-280	700	280	18	5	HW541H HW160
E3-710-255	710	255	18	5	HW541H HW160
E3-710-280	710	280	18	5	HW541H HW160
E3-800-280	800	280	18	5	HW541H HW160
E3-800-320	800	320	18	5	HW541H HW160

Performance of friction materials

HW541H

Physical and mechanical properties

Items	Unit	Test data
Density	g/cm ³	2.06
Hardness	HRL	78
Shear strength	MPa	4.5
Inner shear strength	MPa	12
Tensile strength	MPa	70
Rate of expansion (250 °C)	%	0.46

Friction coefficient

- Average friction coefficient: 0.41
- Static friction coefficient: 0.43
- Recommended Operating Conditions: Specific pressure \leq 2MPa, Brake speed \leq 20 m/s.

Wear rate

- 0.25(cm³/MJ)

Application temperature

- Max. Continuous application temperature: 300 °C
- Max. short time application temperature: 450 °C

Performance of friction materials

HW160

Physical and mechanical properties

Items	Unit	Test data
Density	g/cm ³	2.03
Hardness	HRL	77
Shear strength	MPa	3.8
Inner shear strength	MPa	18
Tensile strength	MPa	55
Rate of expansion (250 C.)	%	0.51

Friction coefficient

- Average friction coefficient: 0.42
- Static friction coefficient: 0.45
- Recommended Operating Conditions: Specific pressure \leq 2MPa , Brake speed \leq 20 m/s.

Wear rate

- 0.20(cm³/MJ)

Application temperature

- Max. Continuous application temperature: 300 C
- Max. short time application temperature: 450 C

Note:

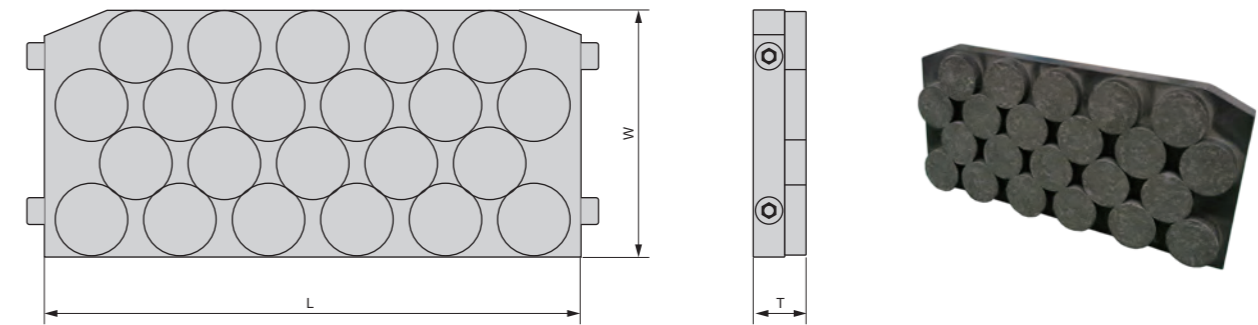
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Description and application

A copper-based sintered friction material product composed of copper as matrix material, abrasive and metal alloy particles as friction adjusting component, solid-lubricants as wear reducing component, free of lead and other harmful heavy-metal and their compounds. This kind of friction material product is produced by the procedures of mixing, press-forming, sintering and so on.

Applied to HS brake for wind turbine.

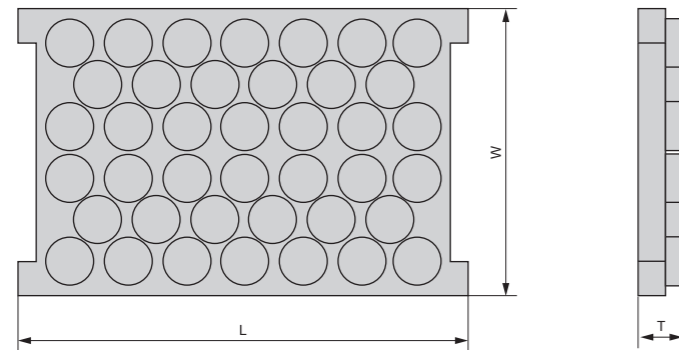
Specification



SBD55 Series

Part no.	Dimensions(mm)			Pad area (cm ²)	Material code
	Length (L)	Width (W)	Thickness (T)		
SBD55.402	255	120	25	198	HFM236
SBD0255.402	250	125	24	198	HFM236

Specification



SBD130 Series

Part no.	Dimensions(mm)			Pad area (cm ²)	Material code
	Length (L)	Width (W)	Thickness (T)		
SBD130.602	324	200	32	360	HFM236
SBD130.603	324	200	32	360	HFM236
SBD01130.602	320	190	32	360	HFM236

Performance of friction materials

HFM236

Physical and mechanical properties

Items	Unit	Test data
Density	g/cm ³	4.96
Hardness	HBW	11
Shear strength	MPa	12.3
Inner shear strength	MPa	17.4
Tensile strength	MPa	99
Transverse rupture strength	MPa	45
Impact strength	KJ/m ²	3.3

Friction coefficient

- Average friction coefficient: 0.40
- Static friction coefficient: 0.42
- Recommended Operating Conditions: Specific pressure \leq 4MPa, Brake speed \leq 40 m/s.

Wear rate

- 0.32(cm³/MJ)

Application temperature

- Max. Continuous application temperature: 500 °C
- Max. short time application temperature: 650 °C

Note:

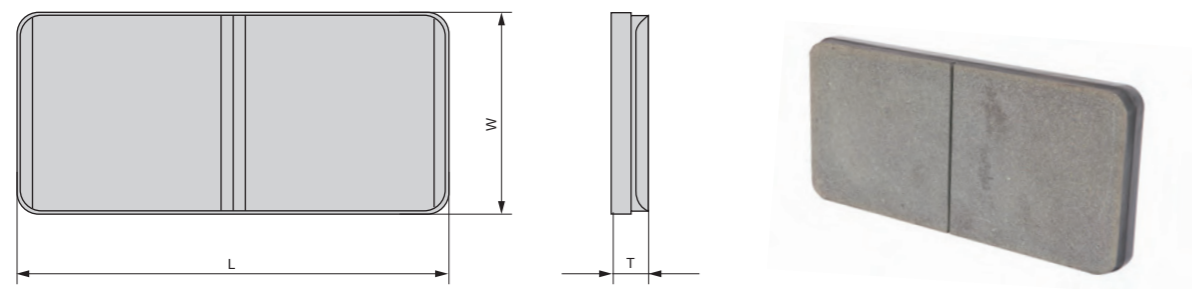
The friction coefficient and wear rate change with the application condition, the above friction coefficient and wear rate is measured in the laboratory, the test is carried out according to the specified test method. these values of friction coefficient and wear can be used as reference data for brake design, but the safety factor must be considered, allowing friction coefficient and wear rate to change in a certain range. more detailed information, please contact us.

Description and application

A resin-based friction material product composed of phenolic resin as matrix binder, various kinds of organic and inorganic fibers as reinforcing component, abrasive, solid lubricant and other fillers, free of lead and its compound, asbestos. This kind of friction material product is produced by the procedures of mixing, forming, curing and so on. No noise during yaw action.

Applied to yaw brake for wind turbine.

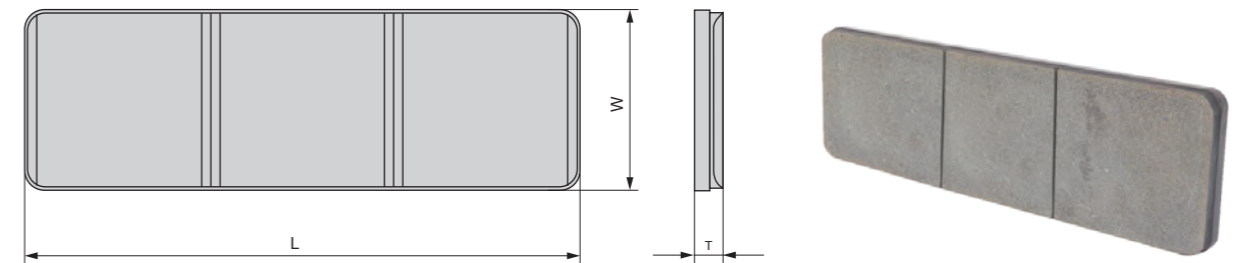
Specification



SB200 Series

Part no.	Dimensions(mm)			Pad area (cm ²)	Material code
	Length (L)	Width (W)	Thickness (T)		
SB03200.3	218	108	18	224	HW512
SB04200.4	219	110	20	230	HW512
SB07200.3	218	108	18	224	HW512
SB09200.1.301	218	108	18	224	HW512
SB10200.1.301	244	98	18	220	HW512
SB11200.3	218	108	18	224	HW512
SB12200.5	292	108	18	300	HW512
SB14200A.3	218	108	18	224	HW512
SB16200.1.3	218	108	18	224	HW512
SB17200.3	283	108	20	253	HW512
SB19200.3	244	98	18	220	HW512
SB200.2	244	98	18	220	HW512
SB200.1.301	244	98	18	220	HW512
SB21200.1.301	244	98	18	220	HW512
SB23200.1.301	218	108	18	224	HW512

Specification



SB540 Series

Part no.	Dimensions(mm)			Pad area (cm ²)	Material code
	Length (L)	Width (W)	Thickness (T)		
SB01540.1.301	422	136	18	550	HW512
SB01540A.1.303	422	136	18	550	HW512
SB02540.1.301	425	138	21	564	HW512
SB02540.1.303	425	138	21	564	HW512
SB03540.3	420	135	18	548	HW512
SB05540.1.301	425	138	21	564	HW512
SB20540.1.3	425	138	21	564	HW512
SB21540.1.301	425	138	21	564	HW512

Performance of friction materials

HW512

Physical and mechanical properties

Items	Unit	Test data
Density	g/cm ³	2.02
Hardness	HRL	107
Shear strength	MPa	4.6
Inner shear strength	MPa	31
Tensile strength	MPa	102
Rate of expansion 250 °C)	%	0.41

Friction coefficient

Specific pressure (MPa)	Static μ	μ
0.75	0.487	0.496
1.50	0.488	0.497
3.00	0.462	0.476
4.50	0.415	0.435
6.00	0.376	0.388
7.50	0.356	0.367
9.00	0.335	0.345
10.50	0.326	0.336
12.00	0.313	0.322

Wear rate

- 0.32(cm³/MJ)

Application temperature

- Max. Continuous application temperature: 500 °C
- Max. short time application temperature: 650 °C