

## Datasheet AS 311

**Material description:** Nonmetallic paper bonded friction material (kevlar fibers) with high percentage of aramid fiber, high wear resistance, low abrasion to counter material (alternative for sintered metalliferous materials).

**Application:** Used over a wide range of applications, passenger cars and motorcycle clutches, heavy vehicle clutches, industrial brakes and clutches of dry and wet applications.

**Resistance:** Resistant to oil.

(1): Test standard.  
(2): No test standard.

The listed temperatures in this datasheet are average friction surface temperatures at the surface of brake lining and/or drum or disc. By the maximum permitted temperature (intermittent operation) is meant a peak value that might be reached in an emergency situation. If this temperature is lasting for more than two minutes, the friction material can get permanently damaged. To exceed this temperature limit can cause as well a very strong decrease of the friction coefficient. The maximum temperature in the area of lining attachments shall generally not exceed the value of 200 °C. Differences in color cannot be excluded due to natural raw materials.

Availability	Unit	Value
Width	mm	>30
Length	mm	<760

Physical Properties	Test Standard	Unit	Value
Hardness (shore D)	DIN 53505		80±3 <sup>(1)</sup>
Thermal conductivity (100 °C)	ASTM E1952-01 Coefficient 22x 10 <sup>-5</sup> K <sup>-1</sup>	W/mK	11 <sup>(1)</sup>

Mechanical Properties	Test Standard	Unit	Value
Tensile strength	ASTM D638-10 Young Modulus 5639 N/mm <sup>2</sup>	N/mm <sup>2</sup>	28 <sup>(1)</sup>
Compressive strength	UNE 53205	N/mm <sup>2</sup>	360 <sup>(1)</sup>

Thermal Properties	Test Standard	Unit	Value
Temperature (intermittent max. permanent)		°C	<400
Temperature (continuous max. permanent)		°C	<360

### Friction Properties

