

ID Material: 45  
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# NR

NR is friction material suitable for medium duty, wet and dry industrial applications. The material consists phenol resins. NR is fully cured and suitable for bonding and riveting. Its success may be attributed to its hardness which gives it good wear and tensile strength while still achieving average and stable friction levels. NR is a material special for hydraulic applications because **this material doesn't contain metallic particles.**

## Material data

### Friction Properties (according graphics)

Static Friction Coefficient (15bar, from box):	0.48±0.05	μ
Static Friction Coefficient (15bar, 100°C):	0.53±0.05	μ
Dynamic Friction Coefficient:	see charts	
Wear Rate:	see charts	
T° Fading:	>350	°C

### Physical properties

Hardness (DIN53505):	85±5	Shore-D
Specific Gravity (ASTM D792):	1.83±0.05	gr/cm <sup>3</sup>
Shear resistance (ISO 6312:2001):	22±2	N/mm <sup>2</sup>

### Mechanical properties

Tensile Strength (ASTM D638):	13±5	N/mm <sup>2</sup>
Compressive Strength (ISO 844:2014):	150±5	N/mm <sup>2</sup>
Shear Modulus (ASTM D2344-00):	1534±100	N/mm <sup>2</sup>
Poisson Coefficient (ASTM D638):	0.27±0.03	
Young Modulus (ASTM D638):	3896±100	N/mm <sup>2</sup>

### Recommended Working Values

T° Max. Continuous Operation:	250	°C
T° Max. Intermittent Operation:	350	°C

Material type : Rigid material

### Appearance / Formats



Bonded Machined Rings Sheets

### Applications

Callipers for industrial applications - Cones segments for machinery - Friction pads for hydroelectric applications - Friction washers - Gear discs for industrial devices - Rings segments for machinery

Price Level : € € €

Reach (EC)1907/2023 - RoHS 2015/863/EU : Compliance

### Others

Recommended Mating Surface:	Perlitic cast iron, hardness HB150-200
Recommended Adhesives:	Thermosetting adhesive
Oil Resistant:	Yes

