

## Casting alloys

### ROTOR ALUMINIUM AI99,5R

### ROTOR ALUMINIUM AI99,7R

Both rotor aluminiums are manufactured from virgin aluminium and are preferably used in the manufacture of rotors for cage anchor motors. The rotor aluminium is preferably processed in the die casting process (AI99,7R) or the coquille casting process (AI99,5R). They are also cast in sand and slip casting. The outstanding feature of both alloys is the high level of electrical conductivity. Conductivity values of 34.8 m/Ωmm<sup>2</sup> (ROTOR ALUMINIUM-AI99,7R) and 34.0 m/Ωmm<sup>2</sup> (ROTOR ALUMINIUM-AI99,5R) as possible in coquille cast parts with proper processing and avoidance of porosity. The tendency to hot cracks is reduced to a minimum through the precisely set ratio of the iron and silicon content. Weldability and corrosion resistance of both alloys are very good, machinability is satisfactory.

#### Composition in % by mass:

##### ROTOR ALUMINIUM AI99,5R

Si	Fe	Cu	Zn	Mn + Ti + Cr + V	Al
0.30	0.40	0.02	0.05	≤ 0.02	≥ 99.5

##### ROTOR ALUMINIUM AI99,7R

Si	Fe	Cu	Zn	Mn + Ti + Cr + V	Al
0.20	0.25	0.01	0.05	≤ 0.02	≥ 99.7

#### Mechanical properties:

##### ROTOR ALUMINIUM AI99,5R

Process condition	0.2% Yield strength R <sub>P0.2</sub> [N/mm <sup>2</sup> ]	Tensile strength R <sub>M</sub> [N/mm <sup>2</sup> ]	Ductile yield A [%]	Brinell hardness HB
Coquille casting	20 - 40	60 - 110	35 - 50	14 - 25

##### ROTOR ALUMINIUM AI99,7R

Process condition	0.2% Yield strength R <sub>P0.2</sub> [N/mm <sup>2</sup> ]	Tensile strength R <sub>M</sub> [N/mm <sup>2</sup> ]	Ductile yield A [%]	Brinell hardness HB
Die casting	20 - 40	80 - 120	10 - 25	15 - 25

Rotor aluminium is delivered exclusively in the form of pigs produced through horizontal continuous casting (HCC). In this way, we offer the following advantages:

- Less scrap through maximum metal purity and uniformity
- Clean pigs without oxide inclusions
- No hard non-metallic inclusions
- Low gas content in the pigs thanks to inline degassing during production
- Lower costs through
  - Reduced metal loss during melting
  - Good and safe stackability
  - Low space requirements thanks to compact pig bunches