

### BRIEF DESCRIPTION

Perunal<sup>®</sup>-215 is a high strength alloy mainly used for machine construction and apparatus subject to high static or dynamic loading.

Typical applications include moving components for cutting, stamping machines, frame structures or rotating shafts of machines.

### PROCESSING METHODS

#### Weldability

- TIG/MIG not possible
- by resistance good

#### Anodizing

- technical good
- decorative not adequate

**Machinability** excellent

#### Corrosion Behaviour

- moderate in inland atmosphere
- critical in marine atmosphere

### AVAILABILITY

Perunal<sup>®</sup>-215 plates are available in temper T651 (quenched – stretched - artificially aged) in the following dimensions :

Thickness (over....to ...)	Max. width
3.9 - 6.5 mm	1520 mm
7.9 - 55 mm	2020 mm
55 - 70 mm	1900 mm
70 - 80 mm	1760 mm
80 - 87 mm	1520 mm
87 - 90 mm	1470 mm
90 - 100 mm	1310 mm
100 - 102 mm	1270 mm
100 - 110 mm	1020 mm
110 - 120 mm	950 mm
120 - 122 mm	930 mm (min 920)

(other dimensions on request)

### CHEMICAL COMPOSITION (weight %)

Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti +Zr
max. 0.4	max. 0.5	1.2 2.0	max. 0.30	2.1 2.9	0.18 0.28	5.1 6.1	max. 0.2

### PHYSICAL PROPERTIES (nominal values)

Density	2.81 g/cm <sup>3</sup>
Elastic Modulus	72000 MPa
Lin. thermal expansion coefficient (20°-100°C)	23.6 10 <sup>-6</sup> K <sup>-1</sup>
Thermal conductivity (Temper T651)	115 - 140 W/mK
Electrical conductivity (Temper T651, 20°C)	17 - 21 MS/m

### MECHANICAL STRENGTH

#### Min. tensile properties (Temper T651 / EN Standard 485-2)

Thickness (over ... to)	Rm [MPa]	Rp0.2 [MPa]	A50 [%]
3.9 - 6.0 mm	545	475	8
6.0 - 12.5 mm	540	460	8
12.5 - 25 mm	540	470	6
25 - 50 mm	530	460	5
50 - 60 mm	525	440	4
60 - 80 mm	495	420	4
80 - 90 mm	490	390	4
90 - 100 mm	460	360	3
100 - 120 mm	410	300	2
120 - 122 mm	360	260	2

#### Typical strength for various thicknesses

Thickness (over ... to)	Rm [MPa]	Rp0.2 [MPa]	A50 [%]	HB
3.9 - 25 mm	575	510	10	175
25 - 60 mm	565	500	10	175
60 - 80 mm	540	465	9	175
80 - 100 mm	510	425	9	170
100 - 122 mm	490	390	9	170