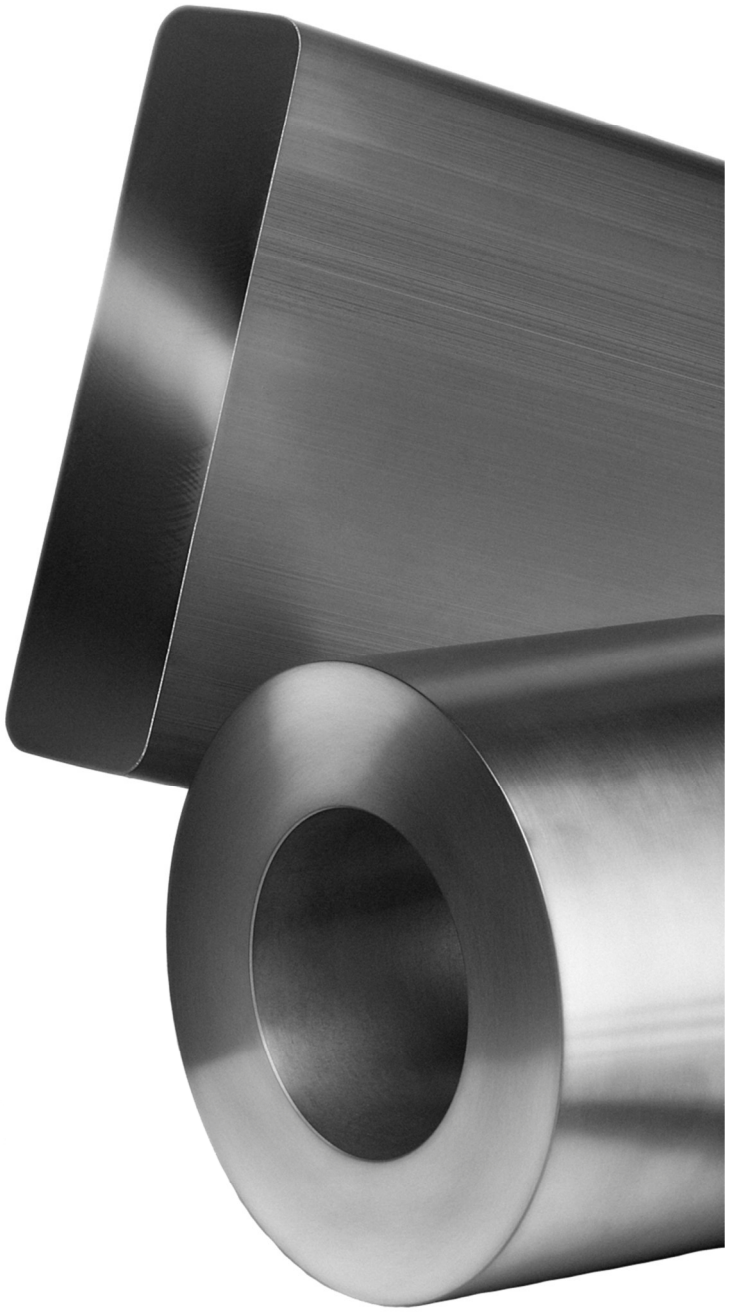
GRÄNGES

DATA SHEET: GPM-4.3.0-DB-014 Rev. 00 (replaced P-4.3-DB-014)

DISPAL® S260

The physical and mechanical properties depend on geometry and the production process. All mechanical properties are preliminary minimal values (average minus 3 Sigma) taken from specimen Ø30mm and for all other geometries only for reference.



Revision 01.2016

PHYSICAL PROPERTIES
(At 20°C)

Property	Unit	Value
Density	g/cm³	2.66 ± 5%
Electrical conductivity	MS/m	14.4 ± 0.5
	%IACS	24.8 ± 0.9
Heat capacity	J/gK	0.88 ± 0.02

THERMAL CONDUCTIVITY

Temperature (°C)	30	100	200	300	400
Value (W/mK)	135.5	132.7	131.5	131.9	124.1

COEFFICIENT OF THERMAL EXPANSION

Property	Unit	Value
CTE-value 20 to 100ºC	10-6/K	17.2 ± 0.5
CTE-value 20 to 200ºC	10-6/K	18.0 ± 0.5
CTE-value 20 to 300ºC	10-6/K	18.8 ± 0.5

THERMAL DATA'S

Solidus temperature = (507.1 ± 3)°C
Liquidus temperature = (775.1 ± 3)°C

MECHANICAL PROPERTIES

HEAT TREATMENT CONDITION F: (minimum values)

Property	Unit	Temperature					
		20°C	100°C	150°C	200°C	250°C	300°C
Tensile strength, Rm	MPa	265			205		87
Yield strength, Rp0,2	MPa	180			144		67
Elongation, A5	%	1.0			2.3		15.3
Young's modulus, E	GPa	85			53		48
Hardness	HV30	110	-	-	-	-	-

EXEMPLARY VALUES IN CONDITION F: (mean values)

Shear modulus, G	GPa	35	34	34	33	32	31
Poisson's ratio, μ		0.277	0.279	0.279	0.281	0.283	0.282

FATIGUE STRENGTH IN CONDITION F: (P50% rotary bending values for 5x10⁷ cycles)

Property	Unit	Temperature					
		20°C	100°C	150°C	200°C	250°C	300°C
σ bW	MPa	189.1					

MECHANICAL PROPERTIES

HEAT TREATMENT CONDITION T6[1]: (minimum values)

Property	Unit	Temperature					
		20°C	100°C	150°C	200°C	250°C	300°C
Tensile strength, Rm	MPa	448		398			
Yield strength, Rp0,2	MPa	396		362			
Elongation, A5	%	0.4		0.6			
Young's modulus, E	GPa	95		81			
Hardness	HV30	190	-	-	-	-	-

EXEMPLARY VALUES IN CONDITION T6[1]: (mean values)

Shear modulus, G	GPa						
Poisson's ratio, μ							

FATIGUE STRENGTH IN CONDITION T6[1]: (P50% rotary bending values for $5x10^7$ cycles)

Property	Unit	Temperature					
		20°C	100°C	150°C	200°C	250°C	300°C
σ bW	MPa	220.9		98.4			

[1] Quenching in water at room temperature.

MECHANICAL PROPERTIES:

HEAT TREATMENT CONDITION T1[1]: (minimum values)

Property	Unit	Temperature					
		20°C	100°C	150°C	200°C	250°C	300°C
Tensile strength, Rm	MPa	421		364			
Yield strength, Rp0,2	MPa	378		329			
Elongation, A5	%	0.55		0.8			
Young's modulus, E	GPa	92		80			
Hardness	HV30	168	-	-	-	-	-

EXEMPLARY VALUES IN CONDITION T7[1]: (mean values)

Shear modulus, G	GPa						
Poisson's ratio, μ							

FATIGUE STRENGTH IN CONDITION T7[1]: (P50% rotary bending values for $5x10^7$ cycles)

Property	Unit	Temperature					
		20°C	100°C	150°C	200°C	250°C	300°C
σ bW	MPa	206.5		101.5			

[1] Quenching in water at room temperature.