

KE factory standard based on EN-1563: 2012-03 ductile iron (nodular cast iron)

Material Designation	EN-1563	EN-GJS-	350-22-LT	400-18-LT	400-18	400-15	500-7	600-3	600-10
EN-Material Nr.	EN-JS		1015	1025	1020	1030	1050	1060	-
			1019	1049	1062	1072	1082	1092	-
Predominant structure			100% Ferrit			95-100% Ferrit	40-60% Perlit	70-85% Perlit	95-100% Ferrit

Mechanical Properties

Sample: 1) separately cast specimens and cast-on specimens for definitive wall thickness $t \leq 30$ mm
2) cast-on test pieces for decisive wall thickness $30 \leq t \leq 60$ mm

Tensile Strength	1)	R _m	N/mm ²	350	400	400	400	500	600	600
	2)	R _m	N/mm ²	330	390	390	390	450	600	580
0,2% Elastic Limit	1)	R _{p0,2}	N/mm ²	220	240	250	250	320	370	470
	2)	R _{p0,2}	N/mm ²	210	230	250	250	300	360	450
Failure Strain	1)	A ₅	%	22	18	18	15	7	3	10
	2)	A ₅	%	18	15	15	14	7	2	8
Energy of Impact	1)	A _v	J/°C	12/9/-40°C	12/9/-20°C	Average of 3 tests / permissible single value				
	2)	A _v	J/°C	10/7/-40°C	10/7/-20°C					
Brinell Hardness		HB		< 170	120-175	130-190	130-190	170-230	190-270	200-230
Elasticity Modulus		E	GN/m ²	169	169	169	169	169	174	170
Fatigue Limit (Wöhler) ²⁾			N/mm ²	180	195	195	200	224	248	275
Fracture Toughness		K _{IC}	Mpa * √[?]	90	82	82	82	63	38	65

Physical Properties

Mass Density	ρ	kg/dm ³	7,1	7,1	7,1	7,1	7,1	7,2	7,0
Specific Thermal Capacity 20° C - 550° C		J/(kg*K)	515	515	515	515	515	515	-
Thermal Expansion-coefficient 20° C - 400° C		μm/(m*K)	12,5	12,5	12,5	12,5	12,5	12,5	-
Specific Thermal Conductivity bei 330° C		W/(K*m)	36,2	36,2	36,2	36,2	35,2	35,2	-
Electric Resistance		μΩ*m	0,5	0,5	0,5	0,5	0,51	0,53	-

Technological Properties (++)highly applicable +applicable • less applicable - not applicable)

Machinability		++	++	++	++	+	+	++
Wear Resistance		-	-	-	-	•	•	-
Surface Curability		-	-	-	-	•	+	-
Weldability		+	+	+	+	+	•	•
Corrosion Resistance		-	-	-	-	-	-	-

Comparable Standards

ISO 1083	Type	350-22L	400-18L	400-18	400-15	500-7	600-3	700-2
ASTM A 536 (USA)	Grade			60-40-18		70-50-05	80-60-03	100-70-03

Bainitic Cast Iron

Material Name	GJS				
Predominant structure					

Mechanical Properties (measured on the separately cast test piece)

Tensile Strength	R _m	N/mm ²			
0,2%-Elastic Limit	R _{p0,2}	N/mm ²			
Failure Strain	A ₅	%			
Brinell Hardness	HB				
Elasticity Modulus	E	NGN/m ²			

1) zwischen Hersteller und Käufer zu vereinbaren

2) Dauerschwingversuch ungekerbte Probe



700-2

1070

1102

95-100%
Perlit

700

700

420

400

2

2

220-300

176

280

30

7,2

515

12,5

31,1

0,54

+

+

++

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-

800-2

110-80-03

1) zwischen Hersteller und Käufer zu vereinbaren
2) Dauerschwingversuch ungekerbte Probe