

DIN EN 1561:2024-03 (E)

Founding - Grey cast irons

Contents		Page
European foreword		4
Introduction		5
1	Scope	7
2	Normative references	7
3	Terms and definitions	8
4	Designation	9
5	Order information	9
6	Manufacture	10
7	Requirements	10
7.1	Mechanical properties	10
7.2	Tensile properties	10
7.2.1	General	10
7.2.2	Test pieces machined from cast samples	10
7.2.3	Test pieces machined from samples cut from a casting	11
7.3	Hardness properties	15
7.4	Graphite structure	16
8	Sampling	16
8.1	General	16
8.2	Samples for tensile test	17
8.2.1	Size of cast samples	17
8.2.2	Frequency and number of tests	17
8.2.3	Separately cast samples	18
8.2.4	Side-by-side cast samples	19
8.2.5	Cast-on samples	20
8.2.6	Samples cut from a casting	22
8.3	Samples for hardness test	23
9	Test methods	23
9.1	Tensile test	23
9.2	Brinell hardness test	25
9.3	Graphite structure	25
9.4	Alternative test procedures	25
10	Retests	25
10.1	Need for retests	25
10.2	Test validity	25
10.3	Nonconforming test results	25
10.4	Heat treatment of samples and castings	26
11	Inspection documentation	26
Annex A (informative) Additional information on mechanical and physical properties		27

Annex B (informative) Comparison of grey cast iron material designations according to EN 1560 and ISO/TR 15931 [7]	30
Annex C (informative) Additional information on the relationship between hardness and tensile strength	31
Annex D (informative) Additional information on the relationship between tensile strength, hardness and wall thickness of grey iron castings	33
Annex E (informative) Guidance values for tensile strength determined on samples cut from a casting	36
Annex F (informative) Wedge penetration test	38
Annex G (informative) Significant technical changes between this document and the previous edition	41
Bibliography	42