

DIN ISO 15787:2018-08 (E)

Technical product documentation - Heat-treated ferrous parts - Presentation and indications (ISO 15787:2016)

Contents	Page
National foreword	4
National Annex NA (informative) Bibliography	5
Foreword	6
Introduction	7
1 Scope	7
2 Normative references	7
3 Terms, definitions	7
4 Abbreviated terms	8
5 Indications in drawings	8
5.1 General	8
5.2 Material data	10
5.3 Heat-treatment condition	10
5.4 Hardness data	10
5.4.1 Surface hardness	10
5.4.2 Core hardness	10
5.4.3 Hardness value and limit deviations	10
5.5 Markings	11
5.5.1 Marking of test points	11
5.5.2 Marking of slip zones	12
5.6 Key for the allocation test point and nominal value	12
5.7 Indication of local areas	12
5.8 Hardness depth	13
5.9 Carburizing depth (CD)	13
5.10 Compound layer thickness (CLT)	14
5.11 Oxide layer thickness (OLT)	14
5.12 Strength data	15
5.13 Microstructure	15
5.14 Heat-treatment order (HTO)	15
5.15 Heat-treatment document (HTD)	15
6 Graphical representation	16
6.1 General	16
6.2 Heat-treatment of the entire part	16
6.2.1 Uniform condition	16
6.2.2 Areas with different conditions	16
6.3 Local heat-treatment	16
6.3.1 General	16
6.3.2 Areas requiring heat-treatment	17
6.3.3 Areas that may be heat-treated	17
6.3.4 Areas that shall not be heat-treated	17
6.4 Heat-treatment sketch	18

7	Practical examples	18
7.1	General.....	18
7.2	Quench-hardening, quench-hardening and tempering, austempering.....	18
7.2.1	Heat-treatment of the entire part — All over uniform requirements.....	18
7.2.2	Heat-treatment of the entire part — Areas with different hardnesses.....	20
7.2.3	Local heat-treatment.....	21
7.3	Surface-hardening.....	22
7.3.1	General.....	22
7.3.2	Specification of surface hardness.....	22
7.3.3	Specification of surface-hardening hardness depth (SHD).....	22
7.3.4	Practical examples.....	22
7.4	Case-hardening.....	28
7.4.1	Specification of surface hardness.....	28
7.4.2	Specification of case-hardening hardness depth (CHD).....	28
7.4.3	Specification of carburizing depth (CD).....	29
7.4.4	Practical examples.....	29
7.5	Nitriding and nitrocarburizing.....	34
7.5.1	Specification of nitriding hardness depth (NHD).....	34
7.5.2	Specification of compound layer thickness (CLT).....	34
7.5.3	Practical examples.....	35
7.6	Boriding.....	37
7.7	Annealing.....	37
	Annex A (normative) Graphical symbols	38
	Bibliography	40