

DIN EN 10305-3:2024-02 (E)

Steel tubes for precision applications - Technical delivery conditions - Part 3: Welded cold sized tubes

Contents		Page
European foreword		4
Introduction		5
1	Scope	6
2	Normative references	6
3	Terms and definitions	7
4	Symbols	8
5	Classification and designation	8
5.1	Classification	8
5.2	Designation	8
6	Information to be supplied by the purchaser	9
6.1	Mandatory information	9
6.2	Options	9
6.3	Examples of orders	10
7	Manufacturing process	11
7.1	Steelmaking process	11
7.2	Tube manufacture, surface conditions and delivery conditions	11
8	Requirements	12
8.1	General	12
8.2	Chemical composition	12
8.3	Mechanical properties	14
8.4	Appearance and internal soundness	16
8.5	Dimensions and tolerances	18
8.5.1	Circular tubes	18
8.5.2	Square and rectangular tubes	20
8.5.3	Tubes of other shapes	24
8.5.4	Lengths	24
8.5.5	Straightness	25
8.5.6	Preparation of tube ends	25
9	Inspection	25
9.1	Types of inspection	25
9.2	Inspection documents	26
9.2.1	Types of inspection documents	26
9.2.2	Content of inspection documents	26
9.3	Summary of inspection and testing	27
10	Sampling	27
10.1	Test unit	27
10.2	Preparation of samples and test pieces	28
10.2.1	Selection and preparation of samples for product analysis	28
10.2.2	Location, orientation and preparation of samples and test pieces for mechanical tests	28
10.2.3	Test pieces for roughness measurement	29

11	Test methods	29
11.1	Chemical analysis	29
11.2	Tensile test	29
11.3	Flattening test	30
11.4	Drift expanding test	31
11.5	Dimensional inspection	32
11.6	Roughness measurement	32
11.7	Visual examination	32
11.8	Non-destructive testing	32
11.8.1	Testing for longitudinal imperfections	32
11.8.2	Leak-tightness	32
11.8.3	Testing of transverse strip end welds of coiled tubing for imperfections	32
11.9	Retests, sorting and reprocessing	32
12	Marking	33
13	Protection and packaging	33
	Annex A (informative) Available options in the EN 10305 series	34
	Annex B (informative) Other innovative steel tubes available in the market - Single-phase ferrite microstructure strengthened with nano-precipitates	36
	Bibliography	38