

DIN EN 13602:2013-09 (E)

Copper and copper alloys - Drawn, round copper wire for the manufacture of electrical conductors

Contents		Page
Foreword		4
1	Scope	5
2	Normative references	5
3	Terms and definitions	6
4	Designations	6
4.1	Material	6
4.2	Material condition	6
4.3	Product	7
5	Ordering information	8
6	Requirements	9
6.1	Composition	9
6.2	Mechanical properties	10
6.3	Electrical properties	10
6.4	Dimensions	10
6.5	Ductility	10
6.6	Surface condition	10
7	Sampling	11
7.1	General	11
7.2	Analysis	11
7.3	Mechanical, electrical and tin coating tests	11
8	Test methods	11
8.1	Analysis	11
8.2	Tensile test	11
8.3	Ductility test	12
8.4	Electrical resistivity test	12
8.5	Assessment of tin coatings	12
8.6	Retests	12
8.7	Rounding of results	12
9	Declaration of conformity and inspection documentation	13
9.1	Declaration of conformity	13
9.2	Inspection documentation	13
10	Marking, packaging, labelling	13
Annex A (informative) Characteristics of coppers for electrical purposes		20
A.1	General grouping of copper types	20
A.2	General characteristics	20
A.3	Particular characteristics	20
Bibliography		22

Table 1 -- Composition of Cu-ETP1 (CW003A) and Cu-OF1 (CW007A)	14
Table 2 -- Composition of Cu-ETP (CW004A), Cu-FRHC (CW005A) and Cu-OF (CW008A)	15
Table 3 -- Mechanical properties of plain wire	16
Table 4 -- Mechanical properties of tinned wire	17
Table 5 -- Electrical properties (at 20 °C)	18
Table 6 -- Tolerances on diameter	19
Table 7 -- Requirements of coatings	19
Table 8 -- Number of bends for annealed wire	19
Table 9 -- Number of bends for hard drawn wire	19
Table A.1 -- Particular characteristics of copper grades for electrical purposes	21