

ISO 23475-1:2021-02 (E)

Testing method for steel tyre cord - Part 1: General requirements

Contents		Page
Foreword		v
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Dimension	1
4.1	Cord diameter	1
4.1.1	Measure with micrometre	1
4.1.2	Measure with profile projector	3
4.2	Unravelled filament diameter	4
4.2.1	Principle	4
4.2.2	Apparatus	4
4.2.3	Procedure	5
4.2.4	Expression of results	5
4.2.5	Test report	5
4.3	Linear density	5
4.3.1	Principle	5
4.3.2	Apparatus	5
4.3.3	Procedure	6
4.3.4	Test report	6
4.4	Lay direction and lay length	6
4.4.1	Lay direction/direction of lay	6
4.4.2	Trace method for lay length	6
4.4.3	Untwisting method for lay length	8
5	Process property	9
5.1	Straightness	9
5.1.1	Principle	9
5.1.2	Apparatus	9
5.1.3	Procedure	9
5.1.4	Test report	9
5.2	Arc height	9
5.2.1	Principle	9
5.2.2	Apparatus	10
5.2.3	Procedure	10
5.2.4	Test report	10
5.3	Flare	10
5.3.1	Principle	10
5.3.2	Apparatus	10
5.3.3	Procedure	10
5.3.4	Test report	11
5.4	Residual torsion	11
5.4.1	Principle	11
5.4.2	Apparatus	11
5.4.3	Procedure	11
5.4.4	Test report	11
6	Mechanical property	12
6.1	Breaking load and elongation at fracture	12
6.1.1	Principle	12
6.1.2	Apparatus	12
6.1.3	Procedure	12
6.1.4	Test report	13

6.2	Elongation between defined forces (EDF)	13
6.2.1	Principle	13
6.2.2	Apparatus.....	14
6.2.3	Procedure.....	15
6.2.4	Test report.....	15
6.3	Loop test (Elasticity).....	15
6.3.1	Principle	15
6.3.2	Apparatus.....	15
6.3.3	Procedure.....	16
6.3.4	Test report.....	17
7	Determination of mass and composition of coating by X-Ray fluorescence spectroscopy...17	
7.1	Principle.....	17
7.2	Apparatus.....	17
7.2.1	WDXRFS or EDXRFS.....	17
7.2.2	Analytical balance, which can be read to the nearest 0,001 g.	17
7.2.3	Dispenser, with the accuracy of 25,00 ml ± 0,05 ml.....	17
7.2.4	X/Y shaker, with variable frequency.....	17
7.3	Reagents.....	17
7.3.1	Acetone or diethyl ether	17
7.3.2	Ammonium persulphate (mass fraction >98 %)	17
7.3.3	Ammonia (mass fraction >25 %, not more than “ <i>d</i> =0,91” at temperature 20 °C)17	
7.3.4	Stripping solution, for 1 l: weigh 16 g ammonia persulphate into a beaker of 600 ml and dissolve in 400 ml demineralized water. Transfer quantitatively into a 1 l volumetric flask. Add 120 ml ammonia. Fill up to the mark with demineralized water. Shake well.	17
7.3.5	Standard, the matrix and range should cover the sample range. Prepare the calibration standards according to the XRFS user’s manual or according to an example in Table 1	17
7.4	Preparation of test samples	18
7.5	Procedure	18
7.6	Expression of results.....	18
7.7	Test report.....	19