

# DIN EN ISO 15630-3:2011-02 (E)

## Steel for the reinforcement and prestressing of concrete - Test methods - Part 3: Prestressing steel (ISO 15630-3:2010)

---

<b>Contents</b>		<b>Page</b>
Foreword .....		4
Introduction .....		5
1	Scope .....	6
2	Normative references .....	6
3	Symbols .....	7
4	General provisions concerning test pieces .....	9
5	Tensile test .....	9
5.1	Test piece .....	9
5.2	Test equipment .....	9
5.3	Test procedure .....	9
5.3.1	General .....	9
5.3.2	Determination of the modulus of elasticity .....	10
6	Bend test .....	10
6.1	Test piece .....	10
6.2	Test equipment .....	11
6.3	Test procedure .....	11
6.4	Interpretation of test results .....	11
7	Reverse bend test .....	11
7.1	Test piece .....	11
7.2	Test equipment .....	12
7.3	Test procedure .....	12
8	Isothermal stress relaxation test .....	12
8.1	Principle of test .....	12
8.2	Test piece .....	13
8.3	Test equipment .....	13
8.3.1	Frame .....	13
8.3.2	Force-measuring device .....	13
8.3.3	Length-measuring device (extensometer) .....	13
8.3.4	Anchoring device .....	13
8.3.5	Loading device .....	13
8.4	Test procedure .....	13
8.4.1	Provisions concerning the test piece .....	13
8.4.2	Application of force .....	14
8.4.3	Initial force .....	14
8.4.4	Force during the test .....	15
8.4.5	Maintenance of strain .....	15
8.4.6	Temperature .....	15
8.4.7	Frequency of force recording .....	15
8.4.8	Frequency of strain recording .....	15
8.4.9	Duration of the test .....	15
9	Axial force fatigue test .....	16

9.1	Principle of test .....	16
9.2	Test piece .....	16
9.3	Test equipment .....	16
9.4	Test procedure .....	17
9.4.1	Provisions concerning the test piece .....	17
9.4.2	Stability of force and frequency .....	17
9.4.3	Counting of force cycles .....	17
9.4.4	Frequency .....	17
9.4.5	Temperature .....	17
9.4.6	Validity of the test .....	17
10	Stress corrosion test in a solution of thiocyanate .....	17
10.1	Principle of test .....	17
10.2	Sample and test piece .....	17
10.3	Test equipment .....	18
10.3.1	Frame .....	18
10.3.2	Force-measuring device .....	18
10.3.3	Time-measuring device .....	18
10.3.4	Cell containing the test solution .....	18
10.3.5	Test solution .....	18
10.4	Test procedure .....	19
10.4.1	Provisions concerning the test pieces .....	19
10.4.2	Application and maintenance of force .....	19
10.4.3	Filling of the cell .....	19
10.4.4	Temperature during the test .....	19
10.4.5	Termination of the test .....	19
10.4.6	Determination of median lifetime to fracture ( ft ) .....	20
11	Deflected tensile test .....	20
11.1	Principle of test .....	20
11.2	Sample and test piece .....	20
11.3	Test equipment .....	20
11.3.1	General description .....	20
11.3.2	Dimensions .....	20
11.3.3	Anchorage .....	21
11.3.4	Mandrel .....	21
11.3.5	Loading device .....	23
11.4	Test procedure .....	23
12	Chemical analysis .....	23
13	Measurement of the geometrical characteristics .....	23
13.1	Test piece .....	23
13.2	Test equipment .....	24
13.3	Test procedures .....	24
13.3.1	Rib measurements .....	24
13.3.2	Indentation measurements .....	25
13.3.3	Lay length of strand (P) .....	25
13.3.4	Straightness .....	25
14	Determination of the relative rib area (fR) .....	26
14.1	General .....	26
14.2	Calculation of fR .....	26
14.2.1	Relative rib area .....	26
14.2.2	Simplified formulae .....	28
14.2.3	Formula used for the calculation of fR .....	28
15	Determination of deviation from nominal mass per metre .....	28
15.1	Test piece .....	28
15.2	Accuracy of measurement .....	28
15.3	Test procedure .....	28
16	Test report .....	29
	Bibliography .....	30