

# ISO 15630-1:2019 (E)

## Steel for the reinforcement and prestressing of concrete — Test methods — Part 1: Reinforcing bars, rods and wire

---

### Contents

	Foreword
	Introduction
1	Scope
2	Normative references
3	Terms, definitions and symbols
4	General provisions concerning test pieces
5	Tensile test at room temperature
5.1	Test piece
5.2	Test equipment
5.3	Test procedure
6	Bend test
6.1	Test piece
6.2	Test equipment
6.3	Test procedure
6.4	Interpretation of test results
7	Rebend test
7.1	Test piece
7.2	Test equipment
7.2.1	Bending device
7.2.2	Rebending device
7.3	Test procedure
7.3.1	General
7.3.2	Bending
7.3.3	Artificial ageing
7.3.4	Rebending
7.4	Interpretation of test results
8	Axial force fatigue test
8.1	Principle of test
8.2	Test piece
8.3	Test equipment
8.4	Test procedure
8.4.1	Provisions concerning the test piece
8.4.2	Upper force ( $F_{up}$ ) and force range ( $Fr$ )
8.4.3	Stability of force and frequency
8.4.4	Counting of force cycles
8.4.5	Frequency
8.4.6	Temperature
8.4.7	Validity of the test
9	Chemical analysis
10	Measurement of the geometrical characteristics
10.1	Test piece
10.2	Test equipment

- 10.3 Test procedure
  - 10.3.1 Heights of transverse ribs or depths of indentations
    - 10.3.1.1 Maximum value ( $a_{max}$ )
      - 10.3.1.2 Value at a given position
  - 10.3.2 Height of longitudinal ribs ( $a'$ )
  - 10.3.3 Transverse rib or indentation spacing ( $c$ )
  - 10.3.4 Pitch ( $P$ )
  - 10.3.5 Part of the circumference without ribs or indentations ( $\Sigma e_i$ )
  - 10.3.6 Transverse rib or indentation angle ( $\beta$ )
  - 10.3.7 Transverse rib flank inclination ( $\alpha$ )
  - 10.3.8 Width of transverse rib or width of indentation ( $b$ )
- 11 Determination of the relative rib or indentation area ( $f_R$  or  $f_P$ )
  - 11.1 General
  - 11.2 Measurements
  - 11.3 Calculation of  $f_R$ 
    - 11.3.1 Relative rib area
    - 11.3.2 Simplified formulae
    - 11.3.3 Formula used for the calculation of  $f_R$
  - 11.4 Calculation of  $f_P$ 
    - 11.4.1 Relative indentation area
    - 11.4.2 Simplified formulae
    - 11.4.3 Formula used for the calculation of  $f_P$
- 12 Determination of deviation from nominal mass per metre
  - 12.1 Test piece
  - 12.2 Accuracy of measurement
  - 12.3 Test procedure
- 13 Specialized tests
  - 13.1 Tensile test at elevated temperature
    - 13.1.1 General
    - 13.1.2 Test piece
    - 13.1.3 Test equipment
    - 13.1.4 Test procedure
  - 13.2 Tensile test at low temperature
    - 13.2.1 General
    - 13.2.2 Test piece
    - 13.2.3 Test equipment
    - 13.2.4 Test procedure
  - 13.3 Cyclic inelastic load test
    - 13.3.1 Principle of the test
    - 13.3.2 Test piece
    - 13.3.3 Test equipment
    - 13.3.4 Test procedure
      - 13.3.4.1 Provisions concerning the test piece
      - 13.3.4.2 Upper and minimum strain limits
      - 13.3.4.3 Interruptions
      - 13.3.4.4 Counting of cycles
      - 13.3.4.5 Frequency
      - 13.3.4.6 Temperature
      - 13.3.4.7 Termination of the test
      - 13.3.4.8 Validity of test
- 14 Test report

Annex A (informative) Options for agreement between the parties involved