



Test method T902

Tensile properties of steel bar and wire (Elongation after rupture)

NOVEMBER 2012



Revision Summary

Ed/Rev Number	Clause Number	Description of Revision	Authorisation	Date
		Reformatted and Revision Summary Added.	D.Dash	Jun 2001
Ed 2/ Rev 0	All	Reformatted RMS template	J Friedrich	November 2012

Note that Roads and Maritime Services is hereafter referred to as 'RMS'.

The most recent revision to Test method T902 (other than minor editorial changes) are indicated by a vertical line in the margin as shown here.

Test method T902

Tensile properties of steel bar and wire (Elongation after rupture)

1. Scope

This test method sets out the procedure for determining the elongation after rupture of reinforcing steel bar, prestressing steel bar for use in concrete structures and test pieces cut from structural steel and is adapted from those laid down in the Australian Standard 1391.

2. Definition

Term	Definition
Percentage elongation after rupture	The permanent increase in length of the gauge length expressed as a percentage of the original gauge length.

3. Materials for Test

Steel reinforcing bars for concrete complying with AS 1302.

4. Equipment

- (a) Appropriate jigs, punches, scribes etc., for marking the required gauge length on the test pieces.
- (b) Tensile testing machine calibrated in technical units of force in accordance with the British Standard 1610 part 1 and maintained to Grade A Standard. The test pieces are to be held by wedges, screwed holders, shouldered holders or other positive means as most convenient. The test pieces are to be held in such a way that the load is applied axially so that no premature break may occur due to deformation of the test piece in the grips.

5. Preparation of Test Pieces

- (a) Mark the gauge length for the test piece by means of a fine dot punched or a scribed line. An alternative method is first to paint the specimen with a quick drying ink and then mark the gauge length by fine scribed lines. Incised markings are not recommended for notch-sensitive materials as premature failure may occur.
- (b) In the case of deformed steel specimens, the surface deformations are determined according to the Australian Standard 1302-1973 prior to testing.

6. Rate of Application of Force

The Australian Standard 1302 for Steel Reinforcing Bars states that the rate of straining when approaching the yield stress or proof stress shall lie within the highest range of the strain rate given in AS 1391.

7. Procedure

- (a) Place and lock the test specimen in the grips and apply the tensile force at the speed specified and taking into account the requirements set out in (6) above.
- (b) Continue the application of force until fracture of the specimen occurs.
- (c) Remove the pieces of bar from the machine and place the broken ends together taking care to ensure proper contact between the broken parts of the test piece. If necessary tap an end to bring the pieces into intimate contact and measure the distance between the two most appropriate consecutive gauge points straddling the break.

8. Calculation and Report

Express the permanent increase in length over one gauge length as a percentage of the gauge length and report as the percentage elongation after fracture.