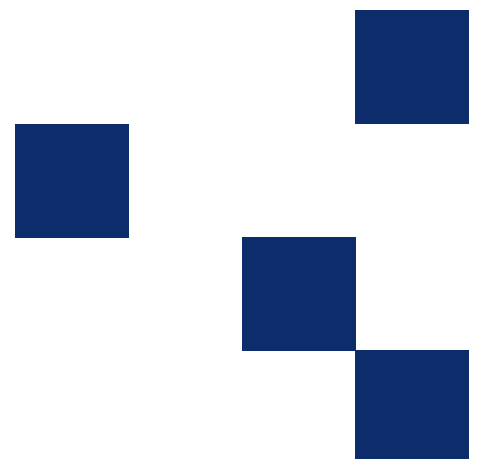




Test method T903

Tensile properties of high tensile steel wire and stand for tendons in prestressed concrete (tensile strength)

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 T903 (other than minor editorial changes) are indicated by a vertical line in the margin as shown here.

Test method T903

Tensile properties of high tensile steel wire and stand for tendons in prestressed concrete (tensile strength)

1. Scope

This test method sets out the procedure for determining the tensile strength of 7-wire strand for use in prestressed concrete and is adapted from the procedures laid down in the Australian Standard 1391.

2. Definition

Term	Definition
Ultimate tensile force	The maximum force required to cause fracture of the test piece expressed in kilonewtons (kN).
Ultimate tensile stress	The maximum force divided by the original or the nominal cross sectional area of the test piece.
Percentage elongation at rupture	The increase in length of a gauge length immediately prior to the fracture of any of the component wires expressed as a percentage of the original gauge length.

3. Materials for Test

- (a) 7-Wire Stress-relieved Steel Strand for Tendon in Prestressed Concrete.
Australian Standard 1311

4. Equipment

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 wedge grips and if necessary protected against damage by the insertion of aluminium angle between the grips and the test piece. Locking of the grips is ensured by the use of anchorages similar to those used in prestressing practice fitted to the strand outside the wedge grips and hard up against them.

5. Preparation of Test Pieces

Determine the cross sectional area of the 7-wire strand by integrating the cross sectional areas of each wire from a section cut from the test piece.

6. Procedure

- Place and lock the test piece in the testing machine and then relax the force until the dial on the machine is just above zero.
- Attach the two grips on the sample 600mm apart using the standard gauge length rod supplied.
- Connect the vernier rule to the grips on the test piece and record the reading.
- Apply the force steadily and note the elongation while the force is being applied. Record the reading as close as possible to the point when the test piece fractures.
- Record the difference of the two readings as the elongation over the gauge length taken.

7. Calculation and Reporting

Report the elongation of the gauge length at fracture as a percentage of the original gauge length i.e. as the percentage elongation at fracture.