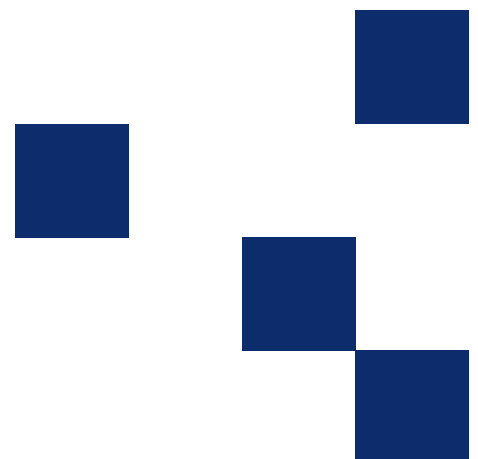




# Test method T904

Tensile properties of high tensile steel wire and strand for tendons in prestressed concrete (elongation at rupture)

NOVEMBER 2012



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

The most recent revision to Test method T904 (other than minor editorial changes) are indicated by a vertical line in the margin as shown here.

## Test method T904

# Tensile properties of high tensile steel wire and strand for tendons in prestressed concrete (elongation at rupture)

### 1. Scope

This test method sets out the procedure for determining the elongation immediately prior to the fracture of any of the component wires of the strand during the tensile strength test. The procedure is adopted from Australian Standard 1391

### 2. Definition

| Term                             | Definition  |
|----------------------------------|---|
| Percentage elongation at rupture | The increase in the length of gauge 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 1312.

### 4. Equipment

- (a) Vernier rule – A vernier rule for the determination of the elongation of the test specimen at rupture.
- (b) Tensile Testing machine calibrated in technical units of force in accordance with AS 2193 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 in prestressing practice fitted to the strand outside the wedge grips and hard up against them.

### 5. Procedure

- (a) 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.
- (b) Attach the two grips on the sample 600 mm apart using the standard gauge length rod supplied.
- (c) Connect the vernier rule to the grips on the test piece and record the reading.
- (d) 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.
- (e) Record the difference of the two readings as the elongation over the gauge length taken.

### 6. 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.