

**Ministry of Defence  
Defence Procurement Agency, ADRP2  
Abbey Wood  
Bristol  
BS34 8JH**

## **OBSOLESCENCE NOTICE**

All DTD specifications were declared obsolescent from 1<sup>st</sup> April 1999. All DTD 900 series approvals also lapsed at that time. The standards will no longer be updated but will be retained as obsolescent documents to provide for the servicing of existing equipment.

### **Further Guidance**

The aim in declaring the specifications obsolescent is to recognise that the documents are not being updated and thus should be used with care by both purchaser and supplier. For example, a specification could contain valid technical information but may also contain type approval clauses that contradict procurement policy and/or use materials that do not comply with environmental legislation. The obsolescent specification can still be used as a basis for a purchase provided that the supplier and purchaser agree suitable changes to the specification within the purchase order/contract.

For the DTD 900 system, each specification has provided an MoD approved material and process. For these items, the declaration of obsolescence will constitute the termination of both the extant MoD approval and the continuing MoD assessment that had underpinned those approvals. Again, the technical content of the document remains valid and can be used by both purchaser and supplier as a basis for a contract but an acceptable (to the parties) approval/assessment procedure would be required.

**Aircraft Material Specification**  
**NON-CORRODIBLE STEEL STRIPS**  
**(Suitable for magneto contact breaker springs)**

*NOTE.-This specification is one of a series issued by the Ministry of Aviation, either to meet a limited requirement not covered by any existing British Standard for aircraft material or to serve as a basis for inspection of materials the properties and uses of which are not sufficiently developed to warrant submission to the British Standards Institution for standardisation.*

**1. Chemical composition**

(a) The chemical composition of the strips shall be :

Carbon	..	..	..	..	..	..	not less than 0.27 nor more than 0.32 per cent.
Silicon	..	..	..	..	..	..	not more than 0.5 per cent.
Manganese	..	..	..	..	..	..	not more than 1.0 per cent.
Sulphur	..	..	..	..	..	..	not more than 0.05 per cent.
Phosphorus	..	..	..	..	..	..	not more than 0.05 per cent.
Nickel	..	..	..	..	..	..	not more than 1.0 per cent.
Chromium	..	..	..	..	..	..	not less than 12.5 nor more than 13.5 per cent.

(b) The complete analysis of every cast shall be supplied to the inspector.

**2. Heat treatment**

(a) The strips shall be supplied in the hardened and tempered condition.

(b) The strips shall be hardened by heating at a temperature not exceeding 1,000°C., for a period not exceeding two minutes. The strips shall then be tempered to pass the mechanical tests specified in Clause 6.

(c) The final hardening and tempering shall be carried out by the continuous or other approved heat treatment process and not in the coil.

(d) After heat treatment, the surface of the strips shall be polished to remove heat-treatment scale.

**3. Freedom from Defects**

(a) The strips shall be free from harmful defects.

(b) Any strip may be rejected for faults in manufacture, although it has been passed previously on chemical composition and mechanical tests.

(c) The strips shall be so free from lateral curvature that when laid out flat no part of their edges shall be distant from a 10-foot chord by more than  $\frac{1}{4}$  inch.

**4. Dimensional tolerances**

The tolerances on the nominal width and thickness of the strips shall not exceed the following :

Nominal width and thickness of parcel strip	Tolerance on width	Tolerance on thickness
Up to 1 inch wide ; not exceeding 20 S.W.G. (0.036 in.) in thickness .. .. .	+ 0 - 0.010	+0.0010-0

**5. Selection and preparation of mechanical test samples**

(a) One tensile and one single bend test sample shall be selected by the inspector from each strip for the tensile and single bend tests specified in Clause 6.

(b) The longer edges of the single bend test piece shall be carefully smoothed and chamfered so that the cross-section has approximately semi-circular ends.

(c) The samples shall not be further heat treated or mechanically worked before being tested.

## 6. Mechanical tests

The test samples selected and prepared as specified in Clause 5 must pass the following tests to the satisfaction of the inspector.

(a) *Tensile test.*-0.1 per cent proof stress not less than 75 nor more than 85 tons per square inch.  
Tensile strength not less than 105 nor more than 120 tons per square inch.

The load shall be applied axially. Should a tensile test piece break outside the middle half of its gauge length the test may be discarded and another test made.

Proof stress determinations shall be carried out as follows :

(i) On one test sample from each cast of steel, the proof stress shall be obtained from an accurately determined load-elongation diagram. The proof stress is defined as that stress at which the stress-strain curve departs by 0.1 per cent. of the gauge length from the line of proportionality.

This sample shall be broken in tension and the ultimate tensile stress recorded on the diagram.

(ii) On all remaining tensile test samples proof stress determinations shall be carried out by an approved method.

(b) *Single bend test.*-The test piece shall be bent through 180° by steadily applied pressure round the edge of a former of the specified radius. Bending may be effected by pressing the test piece into lead by means of an appropriate former, and in cases of dispute this method shall be used. When the specified radius is less than 0.012 in., the test piece shall first be bent round a radius of 0.012 in., and the " U " piece thus formed shall be subsequently closed in a vice until the inner surfaces of the bend are twice the specified radius apart.

The single bend test pieces selected as specified in Clause 5 must withstand without cracking being bent through 180° over a radius equal to three times the thickness of the strip.

## 7. Re-tests

If any test piece fails to pass the tensile or single bend tests specified in Clause 6, the inspector shall reject the strip represented by that test piece or, at the request of the manufacturer, select for test from the same strip two other samples as specified in Clause 5. These two further samples must pass the tensile and bend tests specified in Clause 6.

## 8. Identification

Each strip passed by the inspector shall be stamped with the mark of the inspector and such other marking as will ensure full identification of the material.

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Approved for issue,

N. J. L. MEGSON.

Director of Materials Research and Development (Air)

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