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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 2101

ALUMINIUM AND ALUMINIUM ALLOYS

SHEAR TEST FOR RIVET WIRE AND RIVETS

1st EDITION

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BRIEF HISTORY

The ISO Recommendation R 2101, *Aluminium and aluminium alloys – Shear test for rivet wire and rivets*, was drawn up by Technical Committee ISO/TC 79, *Light metals and their alloys*, the Secretariat of which is held by the Association Française de Normalisation (AFNOR).

Work on this question led to the adoption of Draft ISO Recommendation No. 2101, which was circulated to all the ISO Member Bodies for enquiry in October 1970. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Austria	Italy	Spain
Belgium	Japan	Sweden
Canada	Korea, Rep. of	Switzerland
Finland	Netherlands	Thailand
France	New Zealand	Turkey
Germany	Norway	U.A.R.
Hungary	Poland	United Kingdom
India	Portugal	U.S.A.
Israel	South Africa, Rep. of	U.S.S.R.

No Member Body opposed the approval of the Draft.

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided to accept it as an ISO RECOMMENDATION.

ISO Recommendation | R 2101 | July 1971

ALUMINIUM AND ALUMINIUM ALLOYS

SHEAR TEST FOR RIVET WIRE AND RIVETS

1. SCOPE

This ISO Recommendation applies to the shear testing of aluminium and aluminium alloy rivet wire and rivets having a diameter not greater than 10 mm (3/8 in).

2. PRINCIPLE OF TEST

The test consists of subjecting a length of wire or a rivet in full cross-section to double shear using a suitable test rig in a tensile testing machine and recording the maximum load, F, to fracture.

The *shear strength*, R_s, is equal to

$$0.5\,\frac{F}{\pi(d_a{}^2/4)} = \frac{2F}{\pi d_a{}^2}$$

where d_a is the actual diameter of the specimen at the shear zone.

3. METHOD OF TEST

3.1 Test rig

The test rig should be made of hardened steel having a hardness of not less than 530 HV. The dimensions of the rig should conform with those in the Figure. To minimize the possible effect of distortion of the rig under load, fitted machined steel bolts should be used. It is also recommended that the interfaces between the middle part and the leg part should be well polished.

3.2 Testing machine

The tensile testing machine should comply with Grade 1.0 of ISO Recommendation R 147, *Load calibration of testing machines for tensile testing of steel.*

3.3 Speed of testing

The speed of testing should be not greater than 20 mm (3/4 in) per minute.