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ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 204

NON-INTERRUPTED CREEP TESTING OF STEEL AT ELEVATED TEMPERATURES

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BRIEF HISTORY

The ISO Recommendation R 204, *Non Interrupted Creep Testing of Steel at Elevated Temperatures*, was drawn up by Technical Committee ISO/TC 17, *Steel*, the Secretariat of which is held by the British Standards Institution (B.S.I.).

Work on this matter, which was begun by the Technical Committee in 1955, was completed in 1958, with the adoption of a proposal as a Draft ISO Recommendation.

On 4 November 1959, the Draft ISO Recommendation (No. 293) was distributed to all the ISO Member Bodies and was approved, subject to some editorial amendments, by the following Member Bodies:

Australia	Finland	Netherlands
Austria	France	Norway
Belgium	Germany	Portugal
Brazil	Greece	Romania
Bulgaria	Hungary	Spain
Burma	India	Sweden
Chile	Israel	Turkey
Czechoslovakia	Italy	United Kingdom
Denmark	Japan	U.S.S.R.

One Member Body opposed the approval of the Draft: Poland.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in June 1961, to accept it as an ISO RECOMMENDATION.

NON-INTERRUPTED CREEP TESTING OF STEEL AT ELEVATED TEMPERATURES

1. SCOPE

This ISO Recommendation applies to those tests in which the strain is measured under tensile creep stress and lies between 0.1 and 1.0 per cent, and in which the period of testing does not exceed 10 000 hours.*

It applies to tests in single machines and to each test in multiple testing machines.

2. PRINCIPLE OF TEST

The test consists of heating a test piece to a uniform temperature and subjecting it to constant tensile load at that constant temperature without interruption, and determining the strain as a function of time under load.

3. DEFINITIONS

- 3.1 *Gauge length.* At any moment during the test, the prescribed part of the cylindrical or prismatic portion of the test piece on which elongation is measured. In particular,
Original gauge length (L_o). Gauge length measured at ambient temperature, before applying the load.
- 3.2 *Stress* (actually "nominal stress"). At any moment during the test, load divided by the original cross-sectional area of the test piece (at ambient temperature).
- 3.3 *Percentage permanent elongation.* Variation of the gauge length of a test piece subjected to a prescribed stress (see clause 3.2) and, after removal of same, expressed as a percentage of the original gauge length.

* This limit of 10 000 hours is fixed as a function of the conditions of test, and in particular of the temperature limits specified in section 7. For tests of more than 10 000 hours, the tolerances should be agreed between the parties.