

भारतीय मानक ब्यूरो

DRAFT FOR WIDE CIRCULATION

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भारतीय मानक मसौदा

वेल्डिंग और संबद्ध प्रक्रियाएं — आर्क वेल्ड धातु में हाइड्रोजन सामग्री का निर्धारण

(आईएस 11802 का पहला पुनरीक्षण)

Draft Indian Standard

WELDING AND ALLIED PROCESSES — DETERMINATION OF HYDROGEN CONTENT IN ARC WELD METAL

(First Revision of IS 11802)

ICS 25.160.40

Welding General and its Applications
Sectional Committee, MTD 11

Last date of comment:
10/09/2023

NATIONAL FOREWORD

This draft standard is identical to ISO 3690 : 2018 'Welding and allied processes — Determination of hydrogen content in arc weld metal' issued by the International Organization for Standardization (ISO), and subject to its finalization, is to be adopted by the Bureau of Indian Standards on the recommendation of the Welding General and its Applications Sectional Committee and approval of the Metallurgical Engineering Division Council.

This standard was originally published in 1986. The first revision of this standard has been undertaken to align it with ISO 3690 : 2018 under dual numbering system to harmonize it with the latest developments that have taken place at international level.

The text of ISO standard has been approved as suitable for publication as an Indian Standard without deviations. Certain terminologies and conventions are, however, not identical with those used in Indian Standard. Attention is especially drawn to the following:

- Wherever the words 'International Standard' appear referring to this standard, it should be read as 'Indian Standard'.
- Comma (,) has been used as a decimal marker, while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exists. The corresponding Indian Standards which are to be substituted in their place are listed below along with their degree of equivalence for the edition indicated:

<i>International Standard</i>	<i>Corresponding Indian Standard</i>	<i>Degree of Equivalence</i>
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ISO 14175 : 2008 Welding consumables — Gases and gas mixtures for fusion welding and allied processes	Doc : MTD/11/22962 Welding consumables — Gases and gas mixtures for fusion welding and allied processes	Identical
ISO 80000 - 1 : 2022 Quantities and units — Part 1 : General	IS / ISO 80000 - 1 : 2022 Quantities and units Part 1 General (First Revision)	Identical

The technical committee responsible for the preparation of this standard has reviewed the provisions of following International Standards referred in these adopted standards and decided their acceptability for use in conjunction with this standard.

International Standard

Title

ISO/TR 17671-1 : 2002 Welding — Recommendations for welding of metallic materials — Part 1: General guidance for arc welding

In reporting the result of a test or analysis made in accordance with this standard, is to be rounded off, it shall be done in accordance with IS 2 : 2022 ‘Rules for rounding off numerical-values (*second revision*)’.

The scope of the standard is as follows:

SCOPE

This document specifies the sampling and analytical procedure for the determination of diffusible hydrogen in martensitic, bainitic, and ferritic steel weld metal arising from the welding of such steels using arc welding processes with filler material.

The techniques specified in this document include collection of diffusible hydrogen via displacement of mercury or collection into a headspace filled with an inert gas such as argon. The amount of hydrogen collected is determined by measuring the displaced volume in the former and by, for example, thermal conductivity in the latter.

The temperature for collection of diffusible hydrogen is controlled to avoid thermal activation of non-diffusible hydrogen.

NOTE — Recommendations and restrictions in regard to older methods of measurement using glycerine are given in [Annex B](#) for any comparison work to these older methods.

The complete document/text of ISO 3690 : 2018 ‘Welding and allied processes — Determination of hydrogen content in arc weld metal may be made available, on request to:

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