BS EN ISO 5179:2023
Incorporating corrigendum May 2023

BSI Standards Publication

Investigation of brazeability with spreading and gap-filling test

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National foreword

This British Standard is the UK implementation of EN ISO 5179:2023. It is identical to ISO 5179:2021. It supersedes BS ISO 5179:2021, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee WEE/19, Brazing and braze welding.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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31 May 2023	This corrigendum renumbers BS ISO 5179:2021 as BS EN ISO 5179:2023

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 5179

May 2023

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English Version

Investigation of brazeability with spreading and gap-filling test (ISO 5179:2021)

Étude de l'aptitude au brasage au moyen d'un essai de mouillage et de capillarité (ISO 5179:2021)

Untersuchung der Hartlötbarkeit anhand der Verteilung und mittels der Spaltfüllprüfung (ISO 5179:2021)

This European Standard was approved by CEN on 7 May 2023.

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European foreword

The text of ISO 5179:2021 has been prepared by Technical Committee ISO/TC 44 "Welding and allied processes" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 5179:2023 by Technical Committee CEN/TC 121 "Welding and allied processes" the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2023, and conflicting national standards shall be withdrawn at the latest by November 2023.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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Endorsement notice

The text of ISO 5179:2021 has been approved by CEN as EN ISO 5179:2023 without any modification.

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 13, *Brazing materials and processes*.

This second edition cancels and replaces the first edition (ISO 5179:1983), which has been technically revised.

The main changes compared to the previous edition are as follows:

— the spreading test has been added;

— the T-joint test has been added.

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Introduction

When designing and making a brazed joint, quite apart from the physical properties of the brazing alloy and the mechanical properties which can be expected from the joint, it is important to know the brazeability as a function of the operating conditions adopted. The determination of wettability has already been the subject of numerous investigations and proposals regarding testing methods. In carrying out these investigations, the most frequently used methods are based on the spreading of a drop, or on the measurement of surface tension, but they in fact only take one element of the problem into account. It is important to know not only the way in which the liquid filler metal wets the surface of the parent material but also how this same liquid filler metal behaves in a given gap between the joint components when diffusion takes place.

In this document, brazeability is defined as a total degree of joinability. The joinability consists of both wettability and fluidity to permit distribution into a joint, i.e. ability to fill a joint gap, although total brazeability includes performance of the physical, and mechanical properties in services.

As the tests to be designated for brazeability, three methods are introduced in this document. The traditional varying gap test is described for the most real ability to fill the gap, but it requires a private sample preparation and special evaluation technique with X-ray device. The T-joint test is newly developed to investigate ability to fill the gap in an easier manner. It can be easily operated at industrial laboratories. Moreover, a simple spreading test is designated for practical convenience.

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