IAPMO IGC 100-2019

Copper Wrought Solder-Filled Joint Fittings

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Preface

This is the second edition of IAPMO IGC 100, Copper Wrought Solder-Filled Joint Fittings. This Standard supersedes IAPMO IGC 100-1998(R2013), Copper Wrought Solder-Filled Joint Fittings.

This Standard was developed by the IAPMO Standards Review Committee (SRC) in accordance with the policies and procedures regulating IAPMO industry standards development, Policy S-001, Standards Development Process. This Standard was approved as an IAPMO Industry Standard on August 12, 2019.

Notes:

(1) The use of the singular does not exclude the plural (and vice versa) when the sense allows.

(2) The use of IAPMO Standards is completely voluntary; their existence does not in any respect preclude anyone, whether he has approved the standards or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standards.

(3) This standard was developed using an open process and in accordance with IAPMO Standards Policy S-001, Standards Development Process*, which is available on the IAPMO Standards website (www.IAPMOstandards.org).*

(4) During its development, this Standard was made available for public review, thus providing an opportunity for additional input from stakeholders from industry, academia, regulatory agencies, and the public at large. Upon closing of public review, all comments received were duly considered and resolved by the IAPMO Standards Review Committee.

(5) This Standard was developed in accordance with the principles of consensus, which is defined as substantial agreement; consensus implies much more than a simple majority, but not necessarily unanimity. It is consistent with this definition that a member of the IAPMO Standards Review Committee might not be in full agreement with all sections of this Standard.

(6) Although the intended primary application of this Standard is stated in its scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.

(7) IAPMO Standards are subject to periodic review and suggestions for their improvement will be referred to the IAPMO Standards Review Committee. To submit a proposal for change to this Standard, you may send the following information to the International Association of Plumbing and Mechanical Officials, Attention Standards Department, at standards@IAPMOstandards.org or, alternatively, at 4755 East Philadelphia Street, Ontario, California, 91761, and include "Proposal for change" in the subject line:

(a) standard designation (number);

(b) relevant section, table, or figure number, as applicable;

(c) wording of the proposed change, tracking the changes between the original and the proposed wording; and

(d) rationale for the change.

(8) Requests for interpretation should be clear and unambiguous. To submit a request for interpretation of this Standard, you may send the following information to the International Association of Plumbing and Mechanical Officials, Attention Standards Department, at standards@IAPMOstandards.org or, alternatively, at 4755 East Philadelphia Street, Ontario, California, 91761, and include "Request for interpretation" in the subject line:

(a) the edition of the standard for which the interpretation is being requested;

(b) the definition of the problem, making reference to the specific section and, when appropriate, an illustrative sketch explaining the question;

(c) an explanation of circumstances surrounding the actual field conditions; and

(d) the request for interpretation phrased in such a way that a "yes" or "no" answer will address the issue.

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(11) Participation by federal or state agency representative(s) or person(s) affiliated with industry is not to be interpreted as government or industry endorsement of this Standard.

(12) Proposals for amendments to this Standard will be processed in accordance with the standards-writing procedures of IAPMO industry standards development, Policy S-001, Standards Development Process.

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IAPMO IGC 100-2019
Copper Wrought Solder-Filled Joint Fittings

1 Scope

1.1 General

1.1.1 This Standard covers copper wrought solder-filled joint fittings for installation on copper tubing and specifies requirements for materials, physical characteristics, performance testing, and markings.

1.1.2 This Standard serves to supplement the provisions of IAPMO IS 3.

1.2 Alternative Materials

The requirements of this standard are not intended to prevent the use of alternative materials or methods of construction provided such alternatives meet the intent and requirements of this Standard.

1.3 Terminology

In this Standard,

(a) "shall" is used to express a requirement, i.e., a provision that the user is obliged to satisfy to comply with the Standard;
(b) "should" is used to express a recommendation, but not a requirement;
(c) "may" is used to express an option or something permissible within the scope of the Standard; and
(d) "can" is used to express a possibility or a capability.

Notes accompanying sections of the Standard do not specify requirements or alternative requirements; their purpose is to separate explanatory or informative material from the text. Notes to tables and figures are considered part of the table or figure and can be written as requirements.

1.4 Units of Measurement

SI units are the primary units of record in global commerce. In this Standard, the inch/pound units are shown in parentheses. The values stated in each measurement system are equivalent in application, but each unit system is to be used independently. All references to gallons are to U.S. gallons.

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2 Reference Publications

This Standard refers to the following publications and, where such reference is made, it shall be to the current edition of those publications, including all amendments published thereto.

ASME International (The American Society of Mechanical Engineers)
ASME B16.22
Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings

ASTM International
ASTM B32
Standard Specification for Solder Metal

ASTM E8/E8M
Standard Test Methods for Tension Testing of Metallic Materials

IAPMO
IAPMO IS 3
Copper Plumbing Tube, Pipe, and Fittings

3 Definitions and Abbreviations

This section is reserved for later use.

4 General Requirements

4.1 Materials

Copper wrought solder-filled joint fittings covered under this Standard shall comply with the material requirements, dimensions and tolerances as in accordance with ASME B16.22.

4.2 Solder

Solder covered under this Standard shall be lead-free and meet the requirements of the Federal Clean Drinking Water Act, ASTM B32, and IAPMO IS 3.

4.3 Soldering flux

Lead free soldering flux for copper pipe and fitting covered under this Standard shall comply with the appropriate standard as meeting the requirements of the Federal Clean Drinking Water Act and IAPMO IS 3.

4.4 Joining Method

Fittings covered in this Standard shall be joined on hard and annealed type K, L and M copper tubing.

4.5 Solder Channels

All couplings and fittings covered in this Standard shall have internal channels within the solder cup circumference that will hold an ample amount of solder needed to complete the solder bond of the fitting and tube. The location and size of the internal channel on the solder cup shall be dimensioned in accordance with the manufacturer's dimensional requirements as indicated in Figure 1 as an example.

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