

Metallic tube connections for fluid power and general use - Test methods for hydraulic fluid power connections (ISO 19879:2021)

This document is a preview generated by EVS

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 19879:2021 sisaldab Euroopa standardi EN ISO 19879:2021 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 19879:2021 consists of the English text of the European standard EN ISO 19879:2021.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 31.03.2021.	Date of Availability of the European standard is 31.03.2021.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 23.040.60, 23.100.40

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardimis- ja Akrediteerimiskeskusele. Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardimis- ja Akrediteerimiskeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardimis- ja Akrediteerimiskeskusega: Koduleht www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation and Accreditation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation and Accreditation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation and Accreditation:

Homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

EUROPEAN STANDARD

EN ISO 19879

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2021

ICS 23.040.60; 23.100.40

Supersedes EN ISO 19879:2010

English Version

**Metallic tube connections for fluid power and general use -
Test methods for hydraulic fluid power connections (ISO
19879:2021)**

Raccords de tubes métalliques pour transmissions
hydrauliques et pneumatiques et applications
générales - Méthodes d'essai pour raccords pour
transmissions hydrauliques (ISO 19879:2021)

Metallische Rohrverschraubungen für Fluidtechnik
und allgemeine Anwendung - Prüfverfahren für
hydraulische Rohrverschraubungen in der
Fluidtechnik (ISO 19879:2021)

This European Standard was approved by CEN on 4 March 2021.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

This document (EN ISO 19879:2021) has been prepared by Technical Committee ISO/TC 131 "Fluid power systems" in collaboration with Technical Committee CEN/TC 459/SC 10 "Steel tubes, and iron and steel fittings" the secretariat of which is held by UNI.

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 September 2021, and conflicting national standards shall be withdrawn at the latest by September 2021.

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.

This document supersedes EN ISO 19879:2010.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 19879:2021 has been approved by CEN as EN ISO 19879:2021 without any modification.

Contents

	Page
Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 General requirements	2
4.1 Test assemblies.....	2
4.2 Test equipment.....	5
4.2.1 Test block.....	5
4.2.2 Test seals.....	5
4.3 Procedure.....	5
4.3.1 Thread lubrication.....	5
4.3.2 Torque.....	6
4.3.3 Temperature.....	6
4.4 Test report.....	6
5 Repeated assembly test	6
5.1 Principle.....	6
5.2 Procedure.....	6
5.3 Re-use of components.....	6
6 Leakage test	7
6.1 Principle.....	7
6.2 Procedure.....	7
6.3 Re-use of components.....	7
7 Proof test	8
7.1 Principle.....	8
7.2 Procedure.....	8
7.3 Re-use of components.....	8
8 Burst test	9
8.1 Principle.....	9
8.2 Procedure.....	9
8.3 Re-use of components.....	9
9 Cyclic endurance test	9
9.1 Principle.....	9
9.2 Procedure.....	9
9.3 Re-use of components.....	9
10 Vacuum test	10
10.1 Principle.....	10
10.2 Procedure.....	10
10.3 Re-use of components.....	10
11 Overtightening test	10
11.1 Principle.....	10
11.2 Test equipment.....	11
11.3 Procedure.....	11
11.4 Re-use of components.....	11
12 Vibration test	11
12.1 Principle.....	11
12.2 Procedure.....	11
12.3 Re-use of components.....	14
13 Cyclic endurance (impulse) test with vibration	14

13.1	Principle.....	14
13.2	Procedure.....	14
13.3	Re-use of components	15
14	Identification statement (Reference to this document).....	15
	Annex A (informative) Typical test data form	16
	Bibliography	19

This document is a preview generated by EVS

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 131, *Fluid power systems*, Subcommittee SC 4, *Connectors and similar products and components*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 459/SC 10, *Steel tubes, and iron and steel fittings*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 19879:2010), which has been technically revised.

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

- clarification of the language used to describe the connector end, and of the proper method for selecting tubes for test assemblies;
- minor changes to [10.1](#), [10.2](#) ([Table 7](#)) and [12.2.2](#).

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

In hydraulic fluid power systems, power is transmitted and controlled through a liquid under pressure within an enclosed circuit. It is suggested that components be designed to meet these requirements under varying conditions. Testing of components to meet performance requirements provides a basis of assurance for determining design application and for checking component conformance with the stated requirements.

This document is a preview generated by EVS

Metallic tube connections for fluid power and general use — Test methods for hydraulic fluid power connections

1 Scope

This document specifies uniform methods for the testing and performance evaluation of metallic tube connections, stud ends for ports and flange connections for use in hydraulic fluid power applications. This document does not apply to the testing of hydraulic quick-action couplings, which is covered by ISO 18869.

Tests outlined in this document are independent of each other and document the method to follow for each test. See the appropriate component International Standard for indications of which tests to conduct and for performance criteria.

For qualification of the connector, the minimum number of samples specified in this document is tested, unless otherwise specified in the relevant connector standard or as agreed upon by the manufacturer and the user.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 48-2, *Rubber, vulcanized or thermoplastic — Determination of hardness — Part 2: Hardness between 10 IRHD and 100 IRHD*

ISO 3448, *Industrial liquid lubricants — ISO viscosity classification*

ISO 3601-3, *Fluid power systems — O-rings — Part 3: Quality acceptance criteria*

ISO 5598, *Fluid power systems and components — Vocabulary*

ISO 6508-1, *Metallic materials — Rockwell hardness test — Part 1: Test method*

ISO 6605, *Hydraulic fluid power — Test methods for hoses and hose assemblies*

ISO 6743-4, *Lubricants, industrial oils and related products (class L) — Classification — Part 4: Family H (Hydraulic systems)*

ISO 10763, *Hydraulic fluid power — Plain-end, seamless and welded precision steel tubes — Dimensions and nominal working pressures*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5598 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>