



**International
Standard**

ISO 17540

**Space systems — Liquid rocket
engines and test stands —
Vocabulary**

*Systèmes spatiaux — Moteurs de fusée liquides et stands d'essai
— Vocabulaire*

**Second edition
2025-10**

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

[ISO 17540:2025](https://standards.iteh.ai/catalog/standards/iso/300d821a-af75-412d-b973-9a68eaaab235/iso-17540-2025)

<https://standards.iteh.ai/catalog/standards/iso/300d821a-af75-412d-b973-9a68eaaab235/iso-17540-2025>

iTeh Standards
(<https://standards.itih.ai>)
Document Preview

ISO 17540:2025

<https://standards.itih.ai/catalog/standards/iso/300d821a-af75-412d-b973-9a68eaaab235/iso-17540-2025>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2025

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
3.1 General	1
3.2 Major engine units	2
3.3 Engine types based on the cycle configuration	2
3.4 Engine types by reusability and multiple-firing capability	2
3.5 Engine types by purpose	3
3.6 Thrusters types based on the cycle configuration	3
3.7 Basic parameters and performance characteristics of the engine	4
3.8 Engine time characteristics, types of operating time and operating life	7
3.9 Thruster performance characteristics	8
3.10 Engine operating modes	9
3.11 Operating modes of liquid-fuelled thruster	10
3.12 Components of the combustion chamber and gas generator	10
3.13 Engine nozzle types	12
3.14 Nozzle components	12
3.15 Nozzle characteristics	13
3.16 Nozzle operating modes	14
3.17 Nozzle flows	14
3.18 Turbopump: components	14
3.19 Pump characteristics	15
3.20 Turbopump performance characteristics	16
3.21 Engine control devices	16
3.22 Devices and methods to create the engine steering efforts	17
3.23 Engine cooling	17
3.24 Engine thermal protection	18
3.25 Engine test: general	18
3.26 Engine test types: thermal loads	18
3.27 Engine test types: by connection with the vehicle being moved	19
3.28 Engine test types: by test site	19
3.29 Engine test types: by organizational factor and test site	19
3.30 Engine test types: by test conditions	19
3.31 Engine test types: by accelerated data acquisition	19
3.32 Engine test types: by test purpose	19
3.33 Types of tests, specific for thrusters	20
3.34 Engine test procedures	21
3.35 Engine test conditions	21
3.36 Test results	22
3.37 Engine reliability	22
3.38 Engine defects	23
3.39 Engine failure modes	23
3.40 Engine operation	23
3.41 Engine health analysis	24
3.42 Engine reliability factors	24
3.43 Engine quality control	24
3.44 Structural and functional analysis of the engine reliability	25
3.45 Test stands: general	25
3.46 Test stand types	26
3.47 Stand systems	26
3.48 Post-test processing systems	28
3.49 Stand systems devices and components	28
3.50 Stand room	29

Index.....	31
------------	----

iTeh Standards
(<https://standards.itih.ai>)
Document Preview

[ISO 17540:2025](https://standards.itih.ai/catalog/standards/iso/300d821a-af75-412d-b973-9a68eaaab235/iso-17540-2025)

<https://standards.itih.ai/catalog/standards/iso/300d821a-af75-412d-b973-9a68eaaab235/iso-17540-2025>

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 document 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).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

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 TC 20, *Aircraft and space vehicles*, Subcommittee SC 14, *Space systems and operations*.

This second edition cancels and replaces the first edition (ISO 17540:2016), which has been technically revised.

The main changes are as follows:

- several terms are revised, including "rocket engine", "liquid rocket propulsion system", "high-altitude firing test", etc.;
- redundant terms are deleted.

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.

