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Standards

Irish Standard
I.S. EN 16603-35:2014

Space engineering - Propulsion general requirements

I.S. EN 16603-35:2014

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Table of contents

Foreword	5
Introduction	6
1 Scope	7
2 Normative references	8
3 Terms, definitions and abbreviated terms	9
3.1 Terms defined in other standards	9
3.2 Terms specific to the present standard	9
3.2.1 General terms	9
3.2.2 Definition of masses	20
3.3 Abbreviated terms.....	21
3.4 Symbols.....	23
4 Propulsion engineering activities	25
4.1 Overview	25
4.1.1 Relationship with other standards	25
4.1.2 Characteristics of propulsion systems	25
4.2 Mission	26
4.3 Development	26
4.4 Propulsion system interfaces	27
4.5 Design	28
4.5.1 General	28
4.5.2 Global performance.....	28
4.5.3 Reference envelope	29
4.5.4 Transients	31
4.5.5 Sizing	31
4.5.6 Dimensioning	32
4.5.7 Imbalance	32
4.5.8 Thrust vector control	33
4.5.9 Contamination and cleanliness.....	33
4.5.10 Plume effect.....	34

4.5.11	Leak tightness.....	35
4.5.12	Environment.....	35
4.5.13	Impact of ageing on sizing and dimensioning.....	36
4.5.14	Components.....	36
4.5.15	Monitoring and control system.....	38
4.6	Ground support equipment (GSE)	38
4.6.1	General.....	38
4.6.2	Mechanical and fluid	39
4.6.3	Electrical	39
4.7	Materials.....	39
4.8	Verification.....	39
4.8.1	Verification by analyses	39
4.8.2	Verification by tests.....	40
4.9	Production and manufacturing	41
4.9.1	Overview.....	41
4.9.2	Tooling and test equipment.....	41
4.9.3	Marking.....	41
4.9.4	Component manufacturing and assembly	42
4.10	In-service.....	42
4.10.1	Operations	42
4.10.2	Propulsion system operability.....	42
4.11	Deliverables.....	43
Annex A (normative) Propulsion performance analysis report (AR-P) - DRD		44
Annex B (normative) Gauging analysis report (AR-G) - DRD		48
Annex C (normative) Addendum: Specific propulsion aspects for thermal analysis - DRD		52
Annex D (normative) Plume analysis report (AR-PI) - DRD		61
Annex E (normative) Nozzle and discharge flow analysis report (AR-N) - DRD		65
Annex F (normative) Sloshing analysis report (AR-S) - DRD		69
Annex G (normative) Propulsion transients analysis report (AR-Tr) - DRD		73
Annex H (normative) Propulsion subsystem or system user manual (UM) - DRD		77

EN 16603-35:2014 (E)

Annex I (normative) Mathematical modelling for propulsion analysis (MM-PA) - DRD	85
Annex J (normative) Addendum: Additional propulsion aspects for mathematical model requirements (MMR) - DRD	89
Annex K (normative) Addendum: Additional propulsion aspects for mathematical model description and delivery (MMDD) - DRD	91
Annex L (normative) Propulsion system instrumentation plan - DRD	93
Annex M (informative) Standards for propellants, pressurants, simulants and cleaning agents	95
Bibliography.....	98
Figures	
Figure 3-1 Burning time	10
Figure 3-2: NPSP	15
Figure 3-3 Relief flap or floater	16
Tables	
Table 4-1 Deliverable DRD.....	43

Foreword

This document (EN 16603-35:2014) has been prepared by Technical Committee CEN/CLC/TC 5 "Space", the secretariat of which is held by DIN.

This standard (EN 16603-35:2014) originates from ECSS-E-ST-35C Rev. 1.

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 March 2015, and conflicting national standards shall be withdrawn at the latest by March 2015.

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

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

This document has been developed to cover specifically space systems and has therefore precedence over any EN covering the same scope but with a wider domain of applicability (e.g. : aerospace).

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

The requirements in this Standard (ECSS-E-ST-35) and in the three space propulsion standards dedicated to particular type of propulsion (ECSS-E-ST-35-01, ECSS-E-ST-35-02 and ECSS-E-ST-35-03) are organized with a typical structure as follows:

- Functional
- Constraints
- Interfaces
- Design
- GSE
- Materials
- Verification
- Production and manufacturing
- In-service (operation and disposal)
- Deliverables.

All the normative references, terms, definitions, abbreviated terms, symbols and DRDs of the ECSS Propulsion standards are collected in this ECSS-E-ST-35 standard.

The ECSS Propulsion standards structure is as follows.

ECSS-E-ST-35 Propulsion general requirements

- Standards, covering particular type of propulsion
 - ECSS-E-ST-35-01 Liquid and electric propulsion for spacecrafts
 - ECSS-E-ST-35-02 Solid propulsion for spacecrafts and launchers
 - ECSS-E-ST-35-03 Liquid propulsion for launchers.
- Standard covering particular propulsion aspects
 - ECSS-E-ST-35-06 Cleanliness requirements for spacecraft propulsion hardware
 - ECSS-E-ST-35-10 Compatibility testing for liquid propulsion systems

Further information on the use of conventional propellants, pressurants, simulants and cleaning agents is given in Annex M.

1

Scope

This Standard defines the regulatory aspects that apply to the elements and processes of liquid propulsion for launch vehicles and spacecraft, solid propulsion for launch vehicles and spacecraft and electric propulsion for spacecraft. The common requirements for the three types of space propulsion are written in the ECSS-E-ST-35 document. The specific requirements for each type of propulsion are given in ECSS-E-ST-35-01, ECSS-E-ST-35-02 and ECSS-E-ST-35-03. It specifies the activities to be performed in the engineering of these propulsion systems and their applicability. It defines the requirement for the engineering aspects such as functional, physical, environmental, quality factors, operational and verification.

Other forms of propulsion (e.g. nuclear, nuclear–electric, solar–thermal and hybrid propulsion) are not presently covered in this issue of the Standard.

This standard applies to all types of space propulsion systems used in space applications, including:

- Liquid and electric propulsion for spacecraft.
- Solid propulsion for launch vehicles and spacecraft;
- Liquid propulsion for launch vehicles.

This standard may be tailored for the specific characteristic and constraints of a space project in conformance with ECSS-S-ST-00.

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