



SLOVENSKI STANDARD
SIST R009-002:1998

01-november-1998

Železniške naprave – Vodilo za uporabo terminologije pri preskusnih postopkih

Railway applications - Guide for the use of the terminology for testing procedures

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Ta slovenski standard je istoveten z: R009-002:1998

[SIST R009-002:1998](https://standards.iteh.ai/catalog/standards/sist/3094c0c0-939c-4aaf-a6aa-d9d094282866/sist-r009-002-1998)

<https://standards.iteh.ai/catalog/standards/sist/3094c0c0-939c-4aaf-a6aa-d9d094282866/sist-r009-002-1998>

ICS:

01.040.45	Železniška tehnika (Slovarji)	Railway engineering (Vocabularies)
45.020	Železniška tehnika na splošno	Railway engineering in general

SIST R009-002:1998

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST R009-002:1998](#)

<https://standards.iteh.ai/catalog/standards/sist/3094c0c0-939c-4aaf-a6aa-d9d094282866/sist-r009-002-1998>

CENELEC

R009-002

REPORT

March 1998

English version

**Railway applications
Guide for the use of the terminology
for testing procedures**

This CENELEC Report has been prepared by the Technical Committee CENELEC TC 9X, Electrical and electronic applications for railways. It was approved by the Technical Committee on 1997-06-03 and endorsed by the CENELEC Technical Board on 1997-07-01.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

FOREWORD

This European Report was prepared by the CENELEC Technical Committee TC 9X, Electric and Electronic Applications for railways.

It was approved by TC 9X on 1997-06-03 and endorsed by the CENELEC Technical Board on 1997-07-01.

Annexes designated "informative" are given for information only. In this Report, annexes A, B and C are informative.

iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST R009-002:1998

<https://standards.iteh.ai/catalog/standards/sist/3094c0c0-939c-4aaf-a6aa-d9d094282866/sist-r009-002-1998>



ANIM VOR AN FÜR
DIELENE VORAN AS
DIELENE VORAN AS
DIELENE VORAN AS



Introduction

During the work carried out in preparing different documents originating from the work of different IEC and CENELEC Technical Committees, it was noted that uncertainty can arise in the meaning of the definitions of the various kinds of tests or qualifications in use.

The problem increases when taking into account the introduction in the literature of new concepts such as Quality Assurance, fitness for use, certification of products, mutual recognition of certification, etc.. This alters the typical picture taken into consideration by the International Electrotechnical Vocabulary and IEC traditional publications.

It is advisable that the terms used in various Railway Application standards for defining tests and test procedures are harmonized in order to facilitate the comprehension of the standards and drawing up contractual documents.

1 Scope

This report is intended to be a guide, the aim of which is to harmonize the various terms of the European Standards, mainly those for procurement by a Public Entity or by a User.

NOTE: This does not overrule the right of the purchasing entities to choose, in accordance with Directives and legal obligations, the most suitable way to assess the conformity of the goods contracted to the contractual obligations.

This document is particular provides guidance for the use of terminology for testing procedures described in standards applicable to products or units. It is not applicable to the testing of software.

The terminology defined in this report might be of use also in contractual documentation in order to avoid confusion in the requirements and to allow a uniform application of standards in procurement of the above-mentioned purchasers.

Annexes A and B provide information on terminology in connection with matters covered by product standards such as quality assurance, product qualification and technical approval.

Annex C gives guidance on the correct use of these concepts in drawing up contracts.

2 General definitions

NOTE: Most definitions are derived from the International Electrical Vocabulary

2.1 generic (or basic) standard: A standard which has a wide ranging coverage or contains general provisions (either requirements or guidances) for a particular field.

2.2 product standard: A standard that specifies requirements to be fulfilled by a product or a group of products to establish its fitness for use.

2.3 unit: An individual physical item produced by a repetitive manufacturing process or produced as a single piece.

2.4 product: A family of units with a number of common characteristics.

NOTE: This may be either a single component, or a collection of elements interconnected in a manner which meets the specified requirements, or a subsystem, or a system, or an item of software.

2.5 railway product Any product intended to be used for either infrastructure, signalling, electric power supply, rolling stock or for traffic control/command, or for maintenance installations, or in relation to several of these domains.

NOTE: For the purpose of simplification the term "product" is used without differentiation to designate any one of these entities.

2.6 critical railway product: Any railway product which is critical to safety, reliability - availability, health, environmental protection, technical compatibility and operating costs, and the failure of which would cause downgrading transport conditions.

2.7 fitness for use: Ability of a product, process or service to serve a defined purpose under specific conditions (ISO Guide 2:1991)

In railway applications, demonstration of fitness for use consists of tests carried out in testing stations, laboratories and/or in service demonstrating that the behaviour and performance of the product under the specified service conditions is sound during the specified period of time.

2.8 purchaser: The purchasing entity in a bilateral contractual obligation.

The purchaser may delegate parts of his duties and rights to a representative.

NOTE 1: The entity which will ultimately own the equipment is referred to as the "ultimate purchaser" on the "user". In railway applications the term "operator" is sometimes used. However the term "operator" is also used to mean the individual person who has the task of operating a piece of equipment. Therefore use of the term "operator" in the context of purchasing is not recommended.

NOTE 2: In some contexts the purchaser's representative is referred to as the "engineer".

2.9 supplier: The selling entity in a bilateral contractual obligation.

NOTE: The supplier may not be the actual manufacturer of the unit but may supply a system or an equipment incorporating the unit. When necessary, the "manufacturer" should be explicitly indicated.

2.10 manufacturer's testing station: The manufacturer's premises where a test is actually carried out.

NOTE: Some tests may be required to be carried out in a third party laboratory or at the installation site or in service.

2.11 laboratory: Third party premises where a test is actually carried out.

2.12 testing officer: A person who is responsible for the correct performance of the test.

2.13 witnessing officer: A person, generally appointed by the purchaser or by the user (ultimate purchaser), which has the right to attend and to witness the test.

3 Test definitions according to the scope of the test

The definitions contained in this clause are related to the technical aspects of the various tests in use, irrespective of any aspects related to contractual obligations or to procedures in use.

3.1 type test: A test of one or more units or samples of a product made to a certain design to show that the design meets certain specifications.

NOTE 1: Certain procedures require that the design proposals are checked by their submission to the purchaser in the form of drawings or calculations.

NOTE 2: Contractual obligation or certification rules may require that type tests are repeated at intervals to prove that the quality and the design remain unchanged during the production cycle of successive batches. Contractual obligations may accept that evidence produced of successful type tests is considered sufficient to waive repetition of a type test.

3.2 routine test: A test to check that units meet their design specification and that units are free from defects in materials, manufacture and assembly.

3.2.1 routine individual test: A test made on each individual unit during or after manufacture to check if it conforms to the requirements of the standard concerned or the criteria specified.

3.2.2 sampling test: A test on a number of units taken at random from a batch.

NOTE 1: When a large number of products or only patterns of a material are to be tested, agreed procedures or product standards may require that tests are carried out on a specific number of samples/patterns taken with specific modalities, basically of probabilistic nature.

NOTE 2: Sampling tests may be used in order to simplify acceptance procedures in the case of a large number of identical units. The rules for taking samples at random should be stated in the product standard or, if not, in the contract.

4 Other test definitions

4.1 long term operating behaviour tests: A group of tests intended to determine the performance of an equipment throughout its life.

NOTE: Unless otherwise specified in product standards, a long term operating behaviour test is a type test.

The following are particular cases of long term operating behaviour tests.

4.1.1 endurance test: A test over a time interval to investigate how properties of a product are affected by the application of stated stresses during a certain time or for a certain number of repetitions.

NOTE: These tests may include special severe conditions such as short circuits, over-voltages, over-heating, vibrations and shocks.

4.1.2 life and ageing tests: Tests to ascertain the probable life, under specified conditions, of a unit.

The tests are carried out by simulating normal ageing or wear of the equipment in order to take it into account in predicting the probable behaviour of the unit throughout its life.

NOTE 1: A life test is carried out to predict the probability of failure of a unit or to ascertain whether essential performance parameters are met after a simulated life span.

NOTE 2: An ageing test is an endurance test with the aim of reproducing certain conditions of ageing before carrying out a number of other tests, usually dielectric tests or determination of given essential parameters.

4.2 in service test: Tests including a trial run of the unit to verify its behaviour during the time it is subjected to specified service conditions.

4.3 diagnostic maintenance test: A test carried out periodically on a unit to ascertain its condition and, if necessary, allow steps to be taken to ensure that its performance remains within specified limits.

5 Test definitions for contractual purposes

The definitions contained in this clause are related to the contractual aspects of the various tests in use.

5.1 normal type test: A type test (see 3.1) specified by the product standard or by the contract, which is carried out at the simple request of the purchaser at any time before commissioning, even if it has not been mentioned in the tender enquiry specification.

On the unit submitted to type tests, all other acceptance tests should be carried out to have a complete acceptance of the unit.

NOTE 1: In most standards the term "type test" is used.

NOTE 2: Contractual stipulations give indication of the compensation for carrying out the test. The test may be waived by the purchaser particularly in the presence of certificates of type tests carried out on equal or equivalent units, which may satisfy the purchaser.

5.2 supplementary test: A type test (see 3.1) which is mentioned in the product standard, which has to be mentioned in the tender enquiry specification and which is agreed in the offer.

NOTE 1: The test may be waived by the purchaser during the manufacture particularly in the presence of certificates relating to the same test carried out on equal or equivalent units, which may satisfy him.

NOTE 2: The terms "optional test" and "special test" used in some standards for a type test are equivalent to "supplementary test". The wording "optional" should be avoided in this sense since in IEC definitions "optional" test means a test which can be carried out in different ways.

5.3 investigation type test: A test made on the manufacturer's or purchaser's initiative and agreed between purchaser and supplier, carried out in order to obtain additional information, either having the aim of gaining experience in new testing procedures, or of determining possible future acceptance parameters for a revision of a product standard, or of investigating the behaviour of the unit under particular stresses, such as extreme operation or service conditions.

An investigation test has no influence on the contractual obligations and a possible failure has no other consequences than the repair of the unit on an agreed commercial basis.

5.4 acceptance test: A contractual test to prove to the purchaser that the unit meets certain conditions of its specification.

The acceptance test is a routine test (either a routine individual test (3.3.1) or a sampling test (3.3.2)).

The product standard may indicate that the purchaser has the right to waive a routine test; this fact shall be indicated in the tender enquiry.