

TECHNICAL SPECIFICATION

ISO/TS 81346-10

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Industrial systems, installations and equipment and industrial products — Structuring principles and reference designation —

Part 10: Power plants

*Systèmes industriels, installations et appareils et produits
industriels — Principes de structuration et désignation de
référence —*

Partie 10: Centrales électriques



Reference number
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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

In other circumstances, particularly when there is an urgent market requirement for such documents, a technical committee may decide to publish other types of normative document:

- an ISO Publicly Available Specification (ISO/PAS) represents an agreement between technical experts in an ISO working group and is accepted for publication if it is approved by more than 50 % of the members of the parent committee casting a vote;
- an ISO Technical Specification (ISO/TS) represents an agreement between the members of a technical committee and is accepted for publication if it is approved by 2/3 of the members of the committee casting a vote.

An ISO/PAS or ISO/TS is reviewed after three years in order to decide whether it will be confirmed for a further three years, revised to become an International Standard, or withdrawn. If the ISO/PAS or ISO/TS is confirmed, it is reviewed again after a further three years, at which time it must either be transformed into an International Standard or be withdrawn.

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.

ISO/TS 81346-10 was prepared by Technical Committee ISO/TC 10, *Technical product documentation*, Subcommittee SC 10, *Process plant documentation and tpd-symbols*.

Documents in the 80000 to 89999 range of reference numbers are developed by collaboration between ISO and IEC.

ISO 81346 consists of the following parts, under the general title *Industrial systems, installations and equipment and industrial products — Structuring principles and reference designation*:

- *Part 3: Application rules for a reference designation system* [Technical Specification]
- *Part 10: Power plants* [Technical Specification]

IEC 81346 consists of the following parts, under the general title *Industrial systems, installations and equipment and industrial products — Structuring principles and reference designation*:

- *Part 1: Basic rules*
- *Part 2: Classification of objects and codes for classes*

Further parts on sector-specific rules are under consideration.

NOTE ISO/TC 10/SC 10 and IEC/TC 3 have agreed to integrate their publications on structuring principles and reference designation in the ISO/IEC 81346 series to ensure a consistent set of publications based on IEC 81346-1 and -2. Against this background, ISO/TS 16952-10 has been converted to ISO/TS 81346-10 following its systematic review. At this time, apart from necessary updates, no further changes have been made. Among the issues to be considered at the next review/revision is how to make the referenced VGB publications, although recognized as having wide acceptance and authoritative status as well as being publicly available, better accessible to ISO/IEC users, e.g. by integrating them in the ISO/IEC 81346 series.

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Introduction

Based on ISO/TS 81346-3, this part of ISO 81346 serves to designate plants, sections of plants and items of equipment in any type of installation for industrial production of electrical and thermal energy according to task, type and location. This sector-specific Reference Designation System (RDS) is intended for application by all engineering disciplines for the entire life cycle of a plant, from planning, licensing, construction, operation and maintenance, re-powering, extension and recreation, to dismantling and demolition. Based on the structuring principles and reference designation rules of IEC 81346 and other documents, ISO 81346 breaks down these rules into interdisciplinary guidelines for practical application.

The relationships of input documents with this part of ISO 81346 are shown in [Figure 1](#).

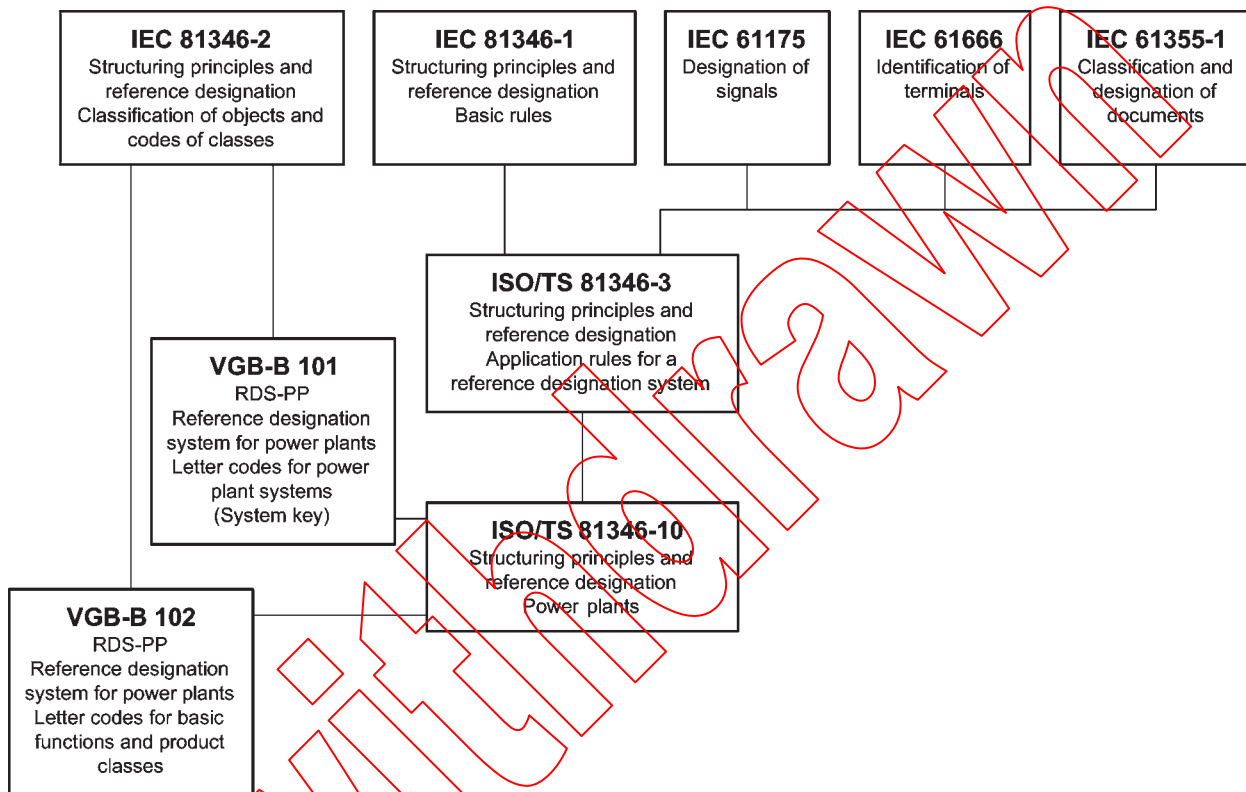


Figure 1 — Structuring and designation standards

This part of ISO 81346 establishes the prerequisites for

- uniform designation of all power plant processes (see [Figure 2](#) for a summary of the energy conversion cycle),
- uniform designation of all power plant types,
- language-independent codes to ensure international applicability,
- adequate capacity and possible detail for designation of all systems, equipment and structures,
- adequate extension possibilities for new technologies,
- consistent designation for planning, licensing, construction, operation, maintenance and decommissioning,
- common applicability in mechanical, electrical, instrumentation and control (I&C) and civil engineering, with the simultaneous possibility to designate according to function, product and location aspects,

- fulfilment of quality management requirements,
- fulfilment of the technical documents management system requirements,
- fulfilment of the requirements for occupational safety and ergonomics.

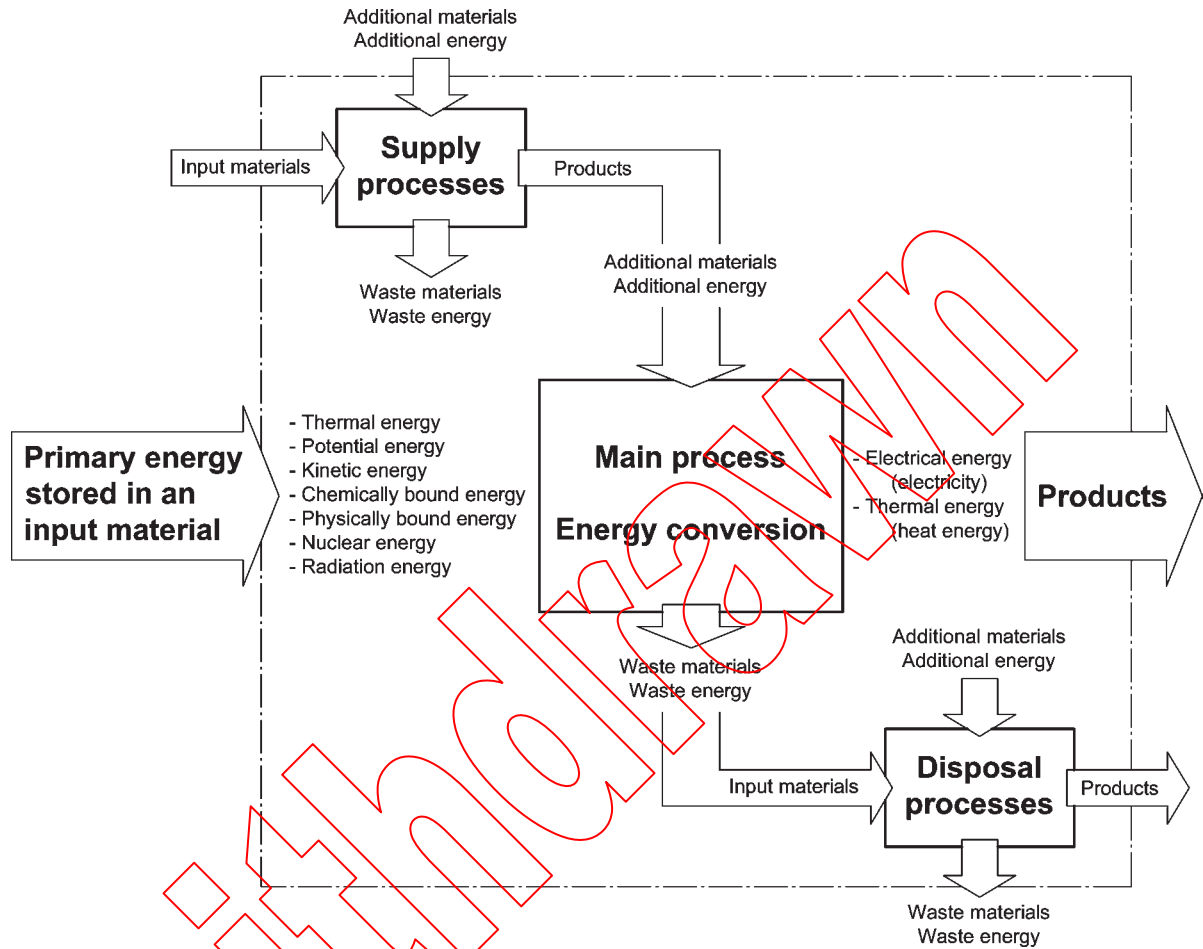


Figure 2 — Principle of energy conversion including supply and disposal processes

Industrial systems, installations and equipment and industrial products — Structuring principles and reference designation —

Part 10: Power plants

1 Scope

This part of ISO 81346 contains sector-specific stipulations for structuring principles and reference designation rules on technical products and technical product documentation of power plants.

It applies in combination with IEC 81346-2, ISO/TS 81346-3, VGB-B 101 and VGB-B 102 for the classification of systems and objects, and for function-, product- and location-specific designation of technical products and their documentation for power plants.

It specifies the designation blocks for the clear identification and localization of the technical products, which are used for their labelling in the plant, for their designation in technical documents and for the designation of the technical documents as well.

This part of ISO 81346 encompasses the process of energy conversion. The specifications in this document apply for the power plant process, for the primary energy supply and final products distribution, as well as for auxiliary media and auxiliary energy supply, waste materials and waste energy disposal.

This part of ISO 81346 is not applicable to recovery of the primary energy and the media for supplying the process, nor to the processing of residues from process disposal (e.g. gypsum, slag products, waste water, etc.).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60445, *Basic and safety principles for man-machine interface, marking and identification — Identification of equipment terminals and of terminations of certain designated conductors, including general rules of an alphanumeric system*

IEC 61082-1, *Preparation of documents used in electrotechnology — Part 1: Rules*

IEC 61175, *Industrial systems, installations and equipment and industrial products — Designations of signals*

IEC 61355-1, *Classification and designation of documents for plants, systems and equipment — Part 1: Rules and application tables*

IEC 61666, *Industrial systems, installations and equipment and industrial products — Identification of terminals within a system*

IEC 81346-1, *Industrial systems, installations and equipment and industrial products — Structuring principles and reference designations — Part 1: Basic rules*

IEC 81346-2, *Industrial systems, installations and equipment and industrial products — Structuring principles and reference designations — Part 2: Classification of objects and codes for classes*

ISO/TS 81346-3:2012, *Industrial systems, installations and equipment and industrial products — Structuring principles and reference designations — Part 3: Application rules for a reference designation system*

EN 50005, *Low Voltage Switchgear and Controlgear for Industrial Use — Terminal Marking and Distinctive Number — General Rules*

VGB-B 101, *Reference designation system for power plants (RDS-PP) — Letter codes for power plant systems (system key)*¹⁾

VGB-B 102, *Reference designation system for power plants (RDS-PP) — Letter codes for basic functions and product classes*¹⁾

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1) Source: www.vgb.org.