TECHNICAL REPORT

ISO/TR 13567-3

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Technical product documentation — Organization and naming of layers for CAD —

Part 3: Application of ISO 13567-1 and ISO 13567-2

Document technique de produits — Organisation et dénomination des couches de CAO —

Partie 3: Application de l'ISO 13567-1 et de l'ISO 13567-2

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Contents

Page

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 3.

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 exceptional circumstances, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example), it may decide by a simple majority vote of its participating members to publish a Technical Report. A Technical Report is entirely informative in nature and does not have to be reviewed until the data it provides are considered to be no longer valid or useful.

Attention is drawn to the possibility that some of the elements of this part of ISO/TR 13567 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO/TR 13567-3 was prepared by Technical Committee ISO/TC 10, *Technical drawings, product definition and related documentation,* Subcommittee SC 8, *Construction documentation*. It provides a guide to the application of the requirements of ISO 13567-1 and ISO 13567-2.

ISO 13567 consists of the following parts, under the general title *Technical product documentation — Organization and naming of layers for CAD*:

— *Part 1: Overview and principles*

— *Part 2: Concepts, format and codes used in construction documentation*

— *Part 3: Application of ISO 13567-1 and ISO 13567-2*

Introduction

This Technical Report is of value for the following reasons:

— Mandatory and optional layer name fields, together with default field sizes and, in certain cases default codes, are detailed in ISO 13567-2. However, the coding of certain layer name fields is not included in the standard, as it is recognized that for these specific fields the coding is more appropriately determined at national or project level.

— ISO 13567-2 also requires that the order of fields in a layer name, and the number of characters for each field, should be maintained as noted in the standard, unless an alternative is specifically agreed by the project parties. Furthermore, it is required that the layer name standard used is documented in a way that assures future retrieval of the layer structured information.

— This Technical Report provides detailed guidelines on how to document project specific layer structure and coding conforming to the requirements of ISO 13567-1 and ISO 13567-2. It also addresses the commonly employed practice of incorporating constant elements of the layer name coding in the name of the file containing these layers.

Technical product documentation — Organization and naming of layers for CAD —

Part 3:
Application of ISO 13567-1 and ISO 13567-2

1 Scope

This part of ISO 13567 provides a guide to the application of the requirements of ISO 13567-1 and ISO 13567-2 and in particular as a guide to documenting and communicating specific CAD layer name structure and coding complying with those standards. ISO 13567 consists of three parts dealing with organization and naming of layers for CAD. ISO 13567-1 has general application, while ISO 13567-2 details the concepts, formats, and codes to be used for naming of CAD layers employed in the preparation of construction documentation. This Technical Report deals with the mechanics of documenting and communicating the specific structure and coding used in an application of the layer name standard.

2 Conformance to ISO 13567-1 and ISO 13567-2

ISO 13567-1 and ISO 13567-2 provide a detailed definition of structure and coding of the CAD layer names to be used on construction projects. The standard specifies a default structure and coding rules, but also allow for national and project specific implementations, which vary from the default.

The following sections describe the differences between a layer naming system using the ISO 13567-1 and ISO 13567-2 default structure and coding (*Default conformance*) and a system which uses a project specific application of the standard (*Conceptual conformance*).

2.1 Default conformance

Default conformance to ISO 13567-2 requires that all of the mandatory and optional codes defined in the standard be used in the order specified, with the default field sizes, and using those codes set out in the standard. The optional fields need only be included up to the last used field with the underline character "_" used to fill unused internal layer name fields.

Default conformance provides a layer name convention which, in the absence of an agreed project alternative, is assumed to be the format used on the project.

An example of a layer name structure which satisfies the requirements of the standard using *Default conformance,* is shown in Figure 1.

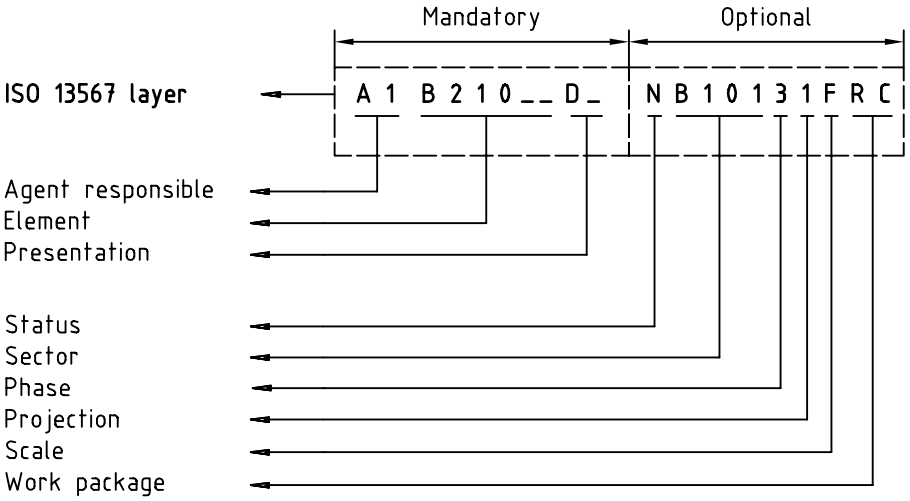

Figure 1 — Example of a "Default conformance" layer name structure

As *Default conformance* requires that the default field sizes be used, and that all fields be used in the order listed in the standard, it will usually lead to sparse and inelegant layer names which would not have strong user support and it is therefore not expected to be used in normal working situations.

However, a *Default conformance* definition is needed to provide a "neutral" framework to which alternative layer definitions can be converted when data is to be archived, and to provide a base definition which can be used in the absence of either a national standard or an agreed layer naming convention for a project.

In other words, *Default conformance* is a common starting point for defining national or project standards.

2.2 Conceptual conformance

2.2.1 Layer name fields

Conceptual conformance to ISO 13567-2 is designed to allow national standards bodies (or projects where agreement is reached between the parties) to implement layer naming conventions which satisfy the requirements of the standard while using alternative and more convenient layer naming structures and codes.

Conceptual conformance requires that the mandatory fields be always used, but allows for varying the number of optional fields and the order of these fields, and for varying the size of all fields from the default field sizes. However, the conceptual content of each field cannot be varied from the definitions in ISO 13567-2.

An example of the syntax of a layer name using a structure, which satisfies the requirements of the standard using *Conceptual conformance,* is shown in Figure 2.

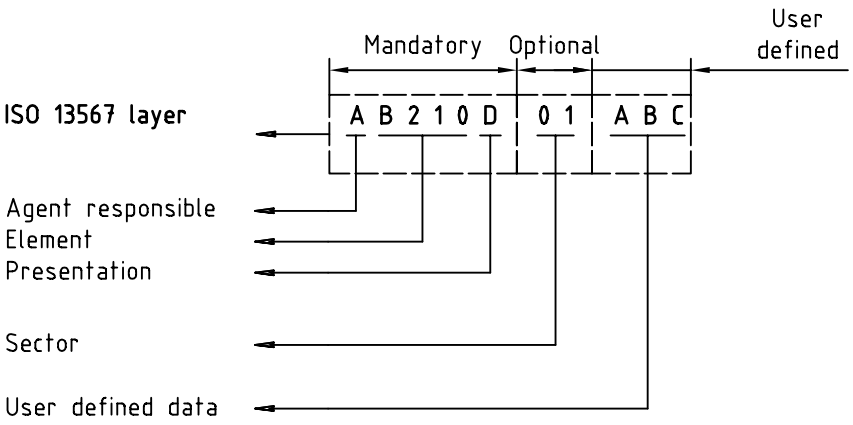

Figure 2 — Example of "Conceptual conformance" layer name structure

2.2.2 Coding for file names and layer names

In a construction industry design project CAD files are the basic package containing graphic information, whereas layers are the principle means of categorising the graphic data within the CAD files.

Layer names conforming to the requirements of ISO 13567-2 provide a comprehensive mechanism for categorizing data within CAD files. However, by using file names in conjunction with layer names it is possible to reduce duplication of coding information and to facilitate ordered use of reference files on a project.

Typically the file name may include one or more codes for particular layer name fields where these codes would be constant for all layers contained in the CAD file. In such a situation the fields in question are omitted from the layer name, and the file name and layer name are read together to fully describe the contents of a particular layer in the file.

Using a combined file name and layer name convention is clearly in conformance with the requirements of ISO 13567-2, provided the coded information can be translated into a *Default Conformance* layer name structure, if required.

This Technical Report includes an example (in annex A) of definition and communication of codes, which are to be coded in the file name instead of the layer name and thus constant for all layers in a CAD file.

3 Structure and coding of CAD layer names

3.1 Minimum documentation requirements

To adequately document the structure and coding of a naming system for CAD layers (or combined naming system for CAD files and layers) as used on a project it is necessary to provide the following:

3.1.1 A link to ISO 13567-2 subclause number for each CAD layer name field

The concept, format and code for each of the mandatory layer name fields are specified in clause 6 of ISO 13567-2. Similarly, the details for each of the optional layer name fields are specified in clause 7 of that standard.

The documentation of the project specific CAD layer naming system must identify those fields used in the layer name by direct reference of the given field name to the relevant ISO 13567-2 subclause.

3.1.2 The size of the layer name fields

ISO 13567-2 details default sizes for each layer name field. However, since the order and size of each field may be varied from these defaults, it is necessary to clearly document the size used for each field to ensure accurate interpretation of each field value.

The documentation of the project specific CAD layer naming system must identify the size in character positions of each field used. This information is supplied in conjunction with the given field name and ISO 13567-2 subclause reference.

3.1.3 The order of the layer name fields

Layer name fields may be reordered in another order than the default order detailed in ISO 13567-2 to suit project requirements. However, it would be appropriate to use the fields in the order in which they are defined in the standard (in particular the mandatory fields), unless specific circumstances require an alternative order. The order, in which each field appears in the layer name (or in the file name if appropriate) for a specific application of the standard, needs to be documented.

The documentation of the project specific CAD layer naming system must identify the order in which the fields used in the layer name (or file name) are stored by listing or tabulation of the fields in that order.