

INTERNATIONAL STANDARD

NORME INTERNATIONALE



HORIZONTAL STANDARD
NORME HORIZONTALE

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

**Systèmes industriels, installations et appareils, et produits industriels –
Principes de structuration et désignations de référence –
Partie 2: Classification des objets et codes pour les classes**



THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2019 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigendum or an amendment might have been published.

IEC publications search - webstore.iec.ch/advsearchform

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee,...). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and once a month by email.

IEC Customer Service Centre - webstore.iec.ch/csc

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: sales@iec.ch.

Electropedia - www.electropedia.org

The world's leading online dictionary on electrotechnology, containing more than 22 000 terminological entries in English and French, with equivalent terms in 16 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC Glossary - std.iec.ch/glossary

67 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

A propos de l'IEC

La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

A propos des publications IEC

Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

Recherche de publications IEC - webstore.iec.ch/advsearchform

La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études,...). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

IEC Just Published - webstore.iec.ch/justpublished

Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et une fois par mois par email.

Service Clients - webstore.iec.ch/csc

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: sales@iec.ch.

Electropedia - www.electropedia.org

Le premier dictionnaire d'électrotechnologie en ligne au monde, avec plus de 22 000 articles terminologiques en anglais et en français, ainsi que les termes équivalents dans 16 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.

Glossaire IEC - std.iec.ch/glossary

67 000 entrées terminologiques électrotechniques, en anglais et en français, extraites des articles Termes et Définitions des publications IEC parues depuis 2002. Plus certaines entrées antérieures extraites des publications des CE 37, 77, 86 et CISPR de l'IEC.



IEC 81346-2

Edition 2.0 2019-06

INTERNATIONAL STANDARD

NORME INTERNATIONALE



HORIZONTAL STANDARD
NORME HORIZONTALE

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

**Systèmes industriels, installations et appareils, et produits industriels –
Principes de structuration et désignations de référence –
Partie 2: Classification des objets et codes pour les classes**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 01.110; 29.020

ISBN 978-2-8322-7001-1

**Warning! Make sure that you obtained this publication from an authorized distributor.
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references	6
3 Terms and definitions	6
4 Classification principles	7
4.1 General.....	7
4.2 Relation between classification and composition.....	8
4.3 Classification schemes of this document.....	8
5 Classification scheme for the inherent function of objects	9
5.1 General.....	9
5.2 Entry classes	9
5.3 Complete classification scheme	10
6 Classification of spaces	69
7 Classification of objects applicable for infrastructure	79
Annex A (informative) Classification criteria for objects.....	82
A.1 General.....	82
A.2 Structure of classes and subclasses	82
A.3 Definition of classes.....	83
Annex B (informative) Object classes related to a generic process	84
Annex C (informative) Object classes related to objects in a generic infrastructure	85
Annex D (informative) Comparison between Tables 1, 2 and 3 of this document and Tables 1 and 2 of IEC 81346-2:2009.....	87
Annex E (informative) Basic requirements for the development of IEC 81346-2	91
Bibliography.....	92
 Figure 1 – Illustration of a classification hierarchy and a composition hierarchy	8
Figure A.1 – Illustration of class hierarchy	83
Figure B.1 – Object classes related to a generic process	84
Figure C.1 – Object classes related to objects in a generic infrastructure.....	86
 Table 1 – Entry classes.....	10
Table 2 – First two levels of the classification scheme for inherent function of objects	11
Table 3 – Complete classification scheme for inherent function of objects.....	26
Table 4 – Classification scheme for spaces.....	70
Table 5 – Classes of infrastructure objects	80
Table 6 – Examples of branch-related classes B to U of Table 5	81
Table D.1 – Comparison between Table 1 of the current edition and Table 1 of IEC 81346-2:2009.....	87
Table D.2 – Comparison between Table 2 and Table 3 of the current edition and Table 2 of IEC 81346-2:2009	87

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**INDUSTRIAL SYSTEMS, INSTALLATIONS
AND EQUIPMENT AND INDUSTRIAL PRODUCTS –
STRUCTURING PRINCIPLES AND REFERENCE DESIGNATIONS –****Part 2: Classification of objects and codes for classes****FOREWORD**

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 81346-2 has been prepared by IEC technical committee 3: Information structures and elements, identification and marking principles, documentation and graphical symbols, in cooperation with ISO technical committee 10: Technical product documentation.

It is published as a double logo standard.

It has the status of a horizontal standard in accordance with IEC Guide 108.

This second edition cancels and replaces the first edition published in 2009. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) The entry classes of the classification scheme have been defined to reflect the “inherent function” of the object classified;
- b) The classes are defined to align with the principles of ISO 22274 and ISO 704;
- c) A three-level classification scheme has been defined, which provides a greater flexibility for the designer in some technical fields;
- d) Classes are defined by their definition and provided with a preferred term. Examples are provided if needed;
- e) A separate classification scheme for spaces has been provided.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
3/1393/FDIS	3/1402/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 81346 series, published under the general title *Industrial systems, installations and equipment and industrial products – Structuring principles and reference designations*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

The aim of this document is to establish classification schemes for objects with assigned letter codes for the defined classes, which can be applied throughout all technical areas, e.g. electric, mechanical, process and civil engineering as well as all branches of industry, e.g. energy, chemical, construction, automotive, shipbuilding and marine. The letter codes are intended for use with the rules for the construction of reference designations in accordance with IEC 81346-1 and other parts of the ISO/IEC 81346 series. The letter codes can also be used "stand-alone" as a generic type designation where a type of component is to be indicated, for example in specifications.

The classification scheme in Clause 5 of this document is an enumerative and faceted classification scheme with the inherent function as the entry class. It is made in accordance with the rules in ISO 704 and the guidelines in ISO 22274.

At the entry level, as shown in Table 1, the inherent function is used to narrow down the areas of applicability of the individual classes to a manageable size. For the sub-divisions of the entry classes, faceted approaches are applied to specify the nature of the concepts contained in the leaf classes.

By applying this method, this document provides stable class codes for objects (including systems and system elements), which are independent of how the objects are used or applied in any design during the entire lifecycle.

Any class is defined by its definition only. Users should select the appropriate class for their object to be classified based on the definition, and not rely upon the class name or the examples.

INDUSTRIAL SYSTEMS, INSTALLATIONS AND EQUIPMENT AND INDUSTRIAL PRODUCTS – STRUCTURING PRINCIPLES AND REFERENCE DESIGNATIONS –

Part 2: Classification of objects and codes for classes

1 Scope

This part of IEC 81346 establishes classification schemes with defined object classes and their associated letter codes, and is primarily intended for use in reference designations and for designation of generic types.

The classification schemes are applicable for objects in all technical disciplines and all branches of industry.

This document is a horizontal publication also intended for use by technical committees in preparation of publications related to reference designations in accordance with the principles laid down in IEC Guide 108.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 81346-1:2009, *Industrial systems, installations and equipment and industrial products – Structuring principles and reference designations – Part 1: Basic rules*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 81346-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

inherent function

function of an object, independent of any application of the object

Note 1 to entry: Inherent is regarded as existing in something as a permanent, essential, or characteristic attribute.

3.2

classification scheme

descriptive information for an arrangement or division of objects into groups based on criteria such as characteristics, which the objects have in common

Note 1 to entry: A classification scheme is a concept system used for classifying some objects.

[SOURCE: ISO/IEC 11179-1:2015, 3.3.4, modified – examples deleted.]

3.3

class of object

set of objects characterized by the same inherent function

3.4

space

limited three-dimensional extent defined physically or notionally

[SOURCE: ISO 12006-2:2015, 3.1.8]

3.5

type-of relation

relation between two classes where the characteristics defining one of the classes includes that of the other class and at least one additional delimiting characteristic

Note 1 to entry: This term corresponds to the term "generic relation" defined in ISO 1087-1:2000, 3.2.21.

3.6

part-of relation

relation between two classes where one of the classes constitutes the whole and the other class a part of that whole

Note 1 to entry: This term corresponds to the term "partitive relation" defined in ISO 1087-1:2000, 3.2.22.

Note 2 to entry: Part-of relation is also known as partitive relation, part-whole relation or whole-part relation.

Note 3 to entry: See also IEC 81346-1.

3.7

activity space

space defined by the spatial extension of an activity

Note 1 to entry: A spatial extension of an activity, for example, a table or a bed, and the activity space around them.

[SOURCE: ISO 12006-2:2015, 3.1.9]

3.8

built space

space defined by built or natural environment or both, intended for user activity or equipment

Note 1 to entry: A built space is, for example, a room defined by floor, ceiling, and wall, or a footpath, or power-line corridor defined by a natural forest.

Note 2 to entry: Spaces occupied by construction elements are known as construction spaces, and are handled as properties of construction elements themselves.

[SOURCE: ISO 12006-2:2015, 3.4.4]

4 Classification principles

4.1 General

The purpose of classifying is to distinguish among objects in a collection based on differentiation of characteristics of interest. Classes are organized in type-of relations and are defined by different values of a specific characteristic of interest.

The classification in this document is made with an entry class based on function in a broad sense. This is in accordance with ISO 22274:2013, 5.4.4 which recommends an enumerative and faceted classification system with an entry class.

When a class code is applied in a reference designation, the purpose is to classify the occurrence of the object, not the individual, as described in IEC 81346-1:2009, 4.8 and Table 1 (general rules). In such a situation, the object is generally specified and assigned its inherent function in the design stage of the project. Classes can also be used by manufacturers to show multiple potential use of a product. In this way, the classification can enhance searchability.

The class name (preferred term) assigned to the classes and the examples of terms provided in this document are based on the inherent function of an object, i.e. independent of any application.

This classification scheme ensures a life cycle stable class code, as the stable object occurrence is classified by the stable inherent function of the object occurrence: A stake is a stake, a door is a door and so on, no matter what individual is used to realize the occurrence.

Objects related to a class may be considered as a discrete collection of objects, and may therefore be further classified into sub-classes based on the differentiation of a specific characteristic. In this document, this has resulted in a classification scheme starting with classes representing general types based on function in a broad sense (1st letter code), continuing into classes representing types that are more specialized in two steps, represented by 2nd and 3rd class code.

All examples and terms in the classification scheme of this document are recognized as being used to name a member of their class. As different branches have different usage of terminology, the same example or term might occur in different classes.

4.2 Relation between classification and composition

IEC 81346-1 defines rules on how an object may be structured into its constituent objects resulting in a composition hierarchy. For the purpose of classifying objects, this document defines classes and codes that results in a classification hierarchy, see Figure 1, which is a copy of Figure 2 in 4.2 of ISO 12006-2:2015.

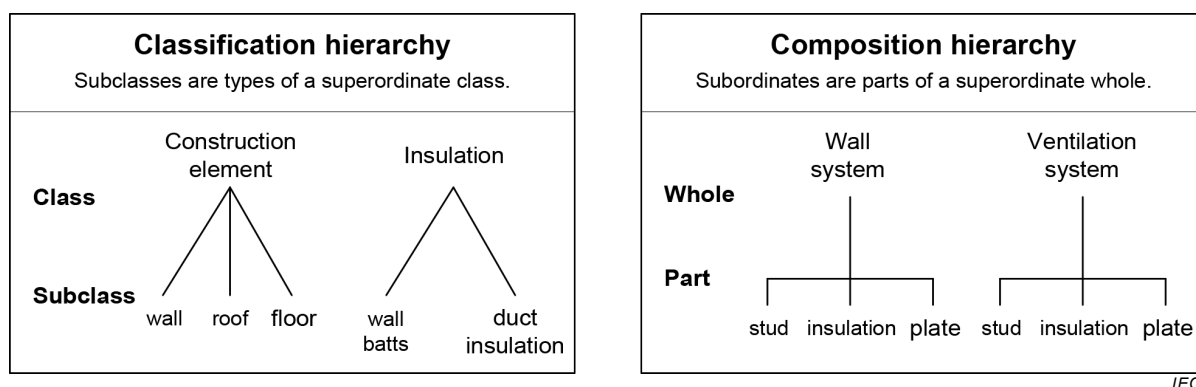


Figure 1 – Illustration of a classification hierarchy and a composition hierarchy

4.3 Classification schemes of this document

This document provides different classification schemes of objects primarily intended for use in reference designations, based on the basic requirements given in Annex E. The provided classification schemes are:

- inherent function of objects, see Clause 5;
- spaces, see Clause 6;
- infrastructure objects, see Clause 7.

The content of any class is determined by the definition of the class only. A preferred term determines the class in daily use and forms part of the definition of subclasses. The classification tables of this document are considered to be complete, and therefore no “miscellaneous” or “other” classes are present. If no appropriate class for an object-of-interest can be found on a sub or sub-sub level, objects shall be classified to the higher level i.e. to the sub-class or entry class.

This document provides classification schemes with multiple classification levels. The user may choose to apply letter codes using

- a single letter, representing the entry class; or
- two letter code, representing a sub-class in the scheme; or
- three letter code, representing a sub-sub-class in the scheme.

5 Classification scheme for the inherent function of objects

5.1 General

The classification scheme defined in this clause is based on the inherent function of objects.

The classification scheme has a hierarchical classification structure that constitute three levels from top to lower.

The entry classes and their respective subclasses are defined considering the inherent function of objects, based on the knowledge of the use of objects in existing designs, and the classification schemes defined in IEC 81346-2:2009.

NOTE 1 When the classification scheme shown in Table 1 and Table 2 refer to high voltage (HV) or low voltage (LV), high voltage is considered to be any voltage $> 1\,000\text{ V AC}$ or $> 1\,500\text{ V DC}$. Low voltage is considered to be any voltage $\leq 1\,000\text{ V AC}$ or $\leq 1\,500\text{ V DC}$. These voltage limits are in accordance with IEC 61140.

NOTE 2 In Annex D the difference between the classification scheme and classes in IEC 81346-2:2009 and the classification scheme and classes of this publication is given.

5.2 Entry classes

Table 1 defines the entry classes for the classification scheme for inherent function of objects.

Table 1 – Entry classes

Class code	Class definition	Class name
B	object for picking up information and providing a representation	sensing object
C	object for storing for subsequent retrieval	storing object
E	object for emitting	emitting object
F	object for protecting against the effects of dangerous or undesirable conditions	protecting object
G	object for providing a controllable flow	generating object
H	object for treating matter	matter processing object
K	object for treating input signals and providing an appropriate output	information processing object
M	object for providing mechanical movement or force	driving object
N	object for enclosing partly or fully another object	covering object
P	object for providing perceptible information	presenting object
Q	object for controlling access or flow	controlling object
R	object for restricting or stabilising	restricting object
S	object for detecting a human action and providing an appropriate response	human interaction object
T	object for transforming	transforming object
U	object for localising of other objects	holding object
W	object for leading from one place to another	guiding object
X	object for interfacing an object	interfacing object
The letters A, I and O shall not be used as a class code. The letters D, J, L, V, Y and Z are reserved for future standardization.		

Each class defined in Table 1 is in this document associated with a set of predefined subclasses allowing a more detailed characterization of an object, if required. The definitions of subclasses of objects (sub-class and sub-sub-class) are presented in Table 2 and Table 3 together with their associated letter codes.

NOTE Subclasses do not define a new level in a composition structure, i.e. they do not describe a subdivision of the object. Class and subclass refer to the same object.

Annex B illustrates how the classes in Table 1 relate to a generic process.

5.3 Complete classification scheme

Table 2 shows the first two levels of the classification scheme for inherent function of object, while Table 3 shows all the three levels defined.

Numerals below class code in Table 2 and Table 3 show the level in the classification structure, that is, level 1, 2 and 3 mean entry class, sub-class and sub-sub class respectively, see Annex A.

Table 2 – First two levels of the classification scheme for inherent function of objects

Class code	Class definition		Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
	1	2			
B		<i>object for picking up information and providing a representation</i>	sensing object		Kind of quantity
	BA	<i>sensing object for electric potential</i>	electric potential sensing object	coupling capacitor, measuring voltage relay, measuring voltage transformer, voltage relay, voltage transformer	Kind of output signal
	BB	<i>sensing object for resistivity or conductivity</i>	resistivity sensing object	electric resistivity detector, electric resistivity sensor, thermal resistivity detector, thermal resistivity detector	Kind of flow and output signal
	BC	<i>sensing object for electric current</i>	electric current sensing object	electronic overload relay, measuring current relay, measuring current transformer, overload relay	Kind of output signal
	BD	<i>sensing object for density</i>	density sensing object	aerometer, density sensor, density switch, density transformer, hydrometer	Kind of output signal
	BE	<i>sensing object for field</i>	field sensing object	electric field detector, electric field sensor, magnetic field detector, magnetic field sensor, reed relay, reed switch	Kind of output signal
	BF	<i>sensing object for flow</i>	flow sensing object	flow sensor, flow switch, flow transmitter, gas flow sensor, gas flow switch, liquid flow sensor, matter flow sensor, matter flow switch, water flow sensor	Kind of output signal
	BG	<i>sensing object of spatial dimension and/or position</i>	physical dimension sensing object	2D-scanner, 3D-scanner, alignment sensor, alignment threshold detector, angle switch, angle transmitter, coordinates scanner, distance switch, distance transmitter, end stop, laser distance sensing switch, laser distance sensor, laser scanner, movement detector, movement sensor (PIR), object scanner, position sensor, position switch, position transmitter, presence indicator, presence locator, radar, rotary encode, visibility sensor, wind direction indicator, wind direction sensor	Kind being sensed and kind of output signal
	BH	<i>sensing object for energy</i>	energy sensing object	condensate sensor, electric energy meter, energy cooling meter, energy meter, energy sensor, flow energy meter, gas energy meter, kWh sensor, thermal energy meter	Kind of energy
	BJ	<i>sensing object for power</i>	power sensing object	kW meter, power limit switch, power meter	Kind of output signal
	BK	<i>sensing object for time</i>	time sensing object	Clock, time counter, time information device, time sensor, timer switch	Kind of output signal
	BL	<i>sensing object for level</i>	level sensing object	level sensor, level switch, level transmitter, liquid level sensor, liquid level switch	Kind of output signal

Class code		Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2				
	BM	<i>sensing object</i> for humidity	humidity sensing object	humidity sensor, humidity switch, humidity transmitter	Kind of output signal
	BP	<i>sensing object</i> for pressure	pressure sensing object	absolute pressure sensor, absolute pressure switch, absolute pressure transmitter, differential pressure sensor, differential pressure switch, differential pressure transmitter, manometer, pressure monitor, pressure sensor, pressure switch, pressure transducer, relative pressure detector, relative pressure sensor, relative pressure switch	Kind of output signal
	BQ	<i>sensing object</i> for substance concentration	concentration sensing object	CO concentration sensor, CO ₂ concentration sensor, concentration sensor, concentration detection switch, fog detector, fog sensor, gas detector, gas sensor, liquid detector, liquid sensor, NH ₃ concentration sensor, petrol concentration sensor, smoke detector, smoke sensor, smoke switch, solid matter detector, solid matter sensor, turbidity detector, turbidity sensor, visibility detector, visibility sensor	Kind of object and kind of output signal
	BR	<i>sensing object</i> for radiation	radiation sensing object	electromagnetic wave detector, electromagnetic wave sensor, Geiger meter, gamma-radiation detector, IR- sensor, light curtain, light detector, light sensor, light transmitter, line detector, low-light relays, lux sensor, photocell, radar-sensor, radiation counter, radiation detector, UV-sensor	Kind of radiation and kind of output signal
	BS	<i>sensing object</i> for time-rate	time-rating object	accelerometer relay, accelerometer transmitter, cycle rate detecting switch, cycle rate sensor, cycle rate transmitter, frequency transmitter, movement detector, movement transmitter, rotation speed relay, rotation speed sensor, seismic sensor, seismic switch, shake switch, speed detecting switch, speed sensing transmitter, speed sensor, tachometer	Kind of time object sensed and kind of output signal
	BT	<i>sensing object</i> for temperature	temperature sensing object	temperature detector, temperature sensor, temperature switch, temperature transmitter	Kind of output signal
	BU	<i>sensing object</i> for multiple quantities	multi-quantity sensing object	Buchholz relay, distance protection relay, impedance protection relay, multi-detector, multi- sensor, multi- sensor switch, negative phase-sequence relay	Kind of output signal
	BW	<i>sensing object</i> for weight, force or torque	force sensing object	force detecting switch, force sensor, force value transmitter, load cell, torque sensor, torque switch, torque value transmitter, weight detecting switch, weight sensor, weight transmitter	Kind of object sensed and kind of output signal

Class code		Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2				
	BX	<i>sensing object</i> of sound and/or visual appearance	audio-visual sensing object	alarm microphone, acoustic detector, acoustic sensor, acoustic survey device, camera, CCTV, face recognition device, finger-print reader, glass breakage detector, image sensor, image detector, iris reader, microphone, profile control, PTZ camera, scanner, video camera	Kind of output signal
	BY	<i>sensing object</i> of stored information	information sensing object	barcode reader, chip card reader, chip reader, electromagnetic reader, magnetic stripe reader, optical disk reader, optical reader, RFC reader, RFID reader, QR-reader, tape reader	Kind of method
	BZ	<i>sensing object</i> for incidents or amounts	incident sensing object	counter, matter detector, person detector, presence detector, threshold counter	Kind of incidents or amounts sensed
	C	<i>object</i> for storing for subsequent retrieval	storing object		Kind of object being stored and the method applied
	CA	<i>storing object</i> for electric energy within an electrostatic field	capacitive storing object	capacitor	Kind of method applied
	CB	<i>storing object</i> for electric energy within an electromagnetic field	inductive storing object	inductor	Kind of method applied
	CC	<i>storing object</i> for electric energy within an electrochemical substance	electrochemical storing object	rechargeable battery	Kind of method applied
	CF	<i>storing object</i> for information	information storing object	information storing media, seat	Kind of method applied
	CL	<i>storing object</i> for matters or persons within a stationary open enclosure	open stationary storing object	bed, bunker, chair, cistern, couch, pit, pool, shelf	Kind of method applied
	CM	<i>storing object</i> for matters within a stationary closed enclosure	enclosed stationary storing object	box, cabinet, cupboard, tank	Kind of matters stored
	CN	<i>storing object</i> for matters or persons within a moveable closed enclosure	moveable storing object	container, drum, elevator bucket, excavator bucket, gas cylinder, lift car	Kind of matters stored
	CP	<i>storing object</i> of thermal energy	thermal energy storing object	calorifier, crystalline tank, gas tank, liquid tank, matter tank	Kind of thermal energy
	CQ	<i>storing object</i> of mechanical energy	mechanical energy storing object	counterweight, elevated mass, flywheel, rubber band, spring	Kind of mechanical energy

Class code		Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2				
E		<i>object for emitting</i>	emitting object		Kind of object being emitted and kind of energy source
	EA	<i>emitting object of light</i>	light object	argon lamp, electro luminescent devices, electric lamp, fluorescent lamp, tube, gas lamp, lamp, lamp bulb, laser, liquid lamp, neon lamp, paraffin lamp	Kind of energy source
	EB	<i>emitting object of heat provided by electric energy</i>	electric heating object	arc heating object, electric arc furnace, electric boiler, electric heating surface, electric hot air blower, electric oven, frying plate, heating cable, heat mat, induction heater, induction oven, infrared heater, sauna	Kind of delivery method
	EC	<i>emitting object of coldness provided by electric energy</i>	electric cooling object	compression chiller, electric cold air blower, electric cooling surface	Kind of method
	EE	<i>emitting object of wireless power</i>	wireless power object	capacitive coupler, gamma ray source, inductive power antenna, magnetron, maser, microwave oven, X-ray source	Kind of method
	EG	<i>emitting object of heat and coldness provided by transfer of thermal energy</i>	thermal energy transfer object	freezer, fridge, heat exchanger, heat pump, Peltier element, refrigerated container, refrigerator, reversible heat pump	Kind of method
	EM	<i>emitting object of heat provided by combustion</i>	combustion heating object	burner, combustion boiler, stove	Kind of object heated
	EP	<i>emitting object of heat provided by thermal energy</i>	thermal heating object	condenser, heating coil, heating panel, heating pipe, heating surface, heating tube, hot air blower, radiator	Kind of method
	EQ	<i>emitting object of coldness provided by thermal energy</i>	thermal cooling object	chiller, condenser, cooler, cooling coil, cooling panel, cooling pipe, cooling surface, cooling tower, cooling tube, evaporator	Kind of method
	ET	<i>emitting object of heat provided by nuclear fission</i>	nuclear powered heating object	boiling water reactor, high-temperature gas-cooled reactor, pebble bed reactor, pressurized water reactor	Kind of output
	EU	<i>emitting object of sub-atomic particles</i>	particle emitting object	alpha-ray device, beta-ray device, neutron-ray device, particle generator, plasma generator	Kind of method
	EV	<i>emitting object of acoustic waves</i>	acoustic wave emitting object	anti-noise loudspeaker, sonar	Kind of method
		<i>object for protecting against the effects of dangerous or undesirable conditions</i>	protecting object		Kind of source
F	FA	<i>protecting object related to overvoltages</i>	overvoltage protecting object	limiter, spark gap surge arrester, surge absorber, varistor surge arrester, zener diode	Kind of method applied

Class code		Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2				
	FB	<i>protecting object</i> related to earth fault currents	earth fault current protecting object	appliance leakage current interrupter (ALCI), earth fault leakage breaker, earth-leakage circuit-breaker (ELCB), ground fault circuit interrupter (GFCI), ground fault interrupter (GFI), neutral earthing impedance, neutral earthing limiter, neutral earthing reactor, Petersen coil, residual current circuit breaker (RCCB), residual current device	Kind of method applied
	FC	<i>protecting object</i> related to overcurrents	overcurrent protecting object	bimetal, bimetal circuit, fuse, miniature circuit-breaker, overload thermal release, thermal overload relay	Kind of method applied
	FE	<i>protecting object</i> related to electric and/or magnetic fields	field protecting object	concrete wall, electric field shield, electromagnetic field shield, Faraday cage, lead block, metal sheets, magnetic field shield, Mu-metal shielding	Kind of method applied
	FL	<i>protecting object</i> related to pressure	pressure protecting object	expansion tank, expansion vessel, rupture disc, safety damper, safety valve, vacuum breaker	Kind of pressure
	FM	<i>protecting object</i> related to fire	fire protecting object	fire and flue damper, fire blind, fire damper, fire extinguisher, flue damper, fire impregnation, fire insulation, fire protecting coating, fire retardant coating, smoke closure, smoke curtain	Kind of method applied and cause for activation
	FN	<i>protecting object</i> related to mechanical force	mechanical force protecting object	cable protection, impact protection, safety clutch	Kind of method applied
	FQ	<i>protecting object</i> by barrier or obstacle	preventive protecting object	break protection, glare protection, glide protection, guard rail, handrail, lock hatch cover, protective fabric, protective grid, protective mesh, protective rail, protective rod, protective roof, snow guard, splatter protection, suspension guard	Kind of purpose of the prevention
	FR	<i>protecting object</i> related to material erosion	wear protecting object	lubrication object, lubricating oil, wear pad	Kind of method applied
	FS	<i>protecting object</i> related to the local environment	environment protecting object	avalanche shed, cathodic protection, corrosion protection, cement, house, impregnation, impregnation sheet, material separating layer, paint, mortar, plaster, protective seal, seismic vibration control device, sacrificial anode, shed, shelter, snow guard	Kind of method applied
G		<i>object</i> for providing a controllable flow	generating object		Kind of object flowing and kind of source
	GA	<i>generating object</i> of electric energy powered by mechanical energy	mechanical to electrical energy generating object	AC generator, DC generator, dynamo, generator	Kind of voltage and current form

Class code		Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2				
	GB	<i>generating object</i> of electric energy powered by chemical reaction	chemical to electrical energy generating object	battery, electric battery, fuel cell	Kind of source method applied
	GC	<i>generating object</i> of electric energy from solar energy	solar to electrical energy generating object	crystalline photovoltaic module, solar cell, thin film photovoltaic module	Kind of method applied
	GF	<i>generating object</i> of signals for carrier of information	signal generating object	electromagnetic wave transmitter, laser transmitter, radio-wave transmitter, signal generator, television station	Kind of source distribution method
	GL	<i>generating object</i> continuously of items	continuous transfer object	belt conveyor, chain conveyor, screw conveyor, vibrating patternster, roller conveyor, conveyor	Direction and size of matters
	GM	<i>generating object</i> discontinuously of items	discontinuous transfer object	crane, elevator, hoist, palletizer, stacker, turntable, vibrating feeder, wagon	Kind of method applied
	GP	<i>generating object</i> of liquid	liquid flow generating object	axial flow circulation pump, centrifugal pump, hydraulic ram pump, impeller, liquid velocity pump, lubricator, oiler, peristaltic pump, piston pump, positive displacement pump, radial-flow circulation pump, rotary gear pump, screw pump, vacuum pump	Kind of method applied
	GQ	<i>generating object</i> of gas	gaseous flow generating object	air curtain, closed propeller fan, gas compressor, gas ejector, mechanical fan, open propeller fan, propeller, squirrel cage fan, ventilator	Kind of flow generating method
	GR	<i>generating object</i> of thermal energy from solar energy	solar to thermal energy generating object	flatbed solar panel, solar panel, solar tower	Kind of method applied
	H	<i>object</i> for treating matter	matter processing object		Kind of method applied
	HJ	<i>matter processing object</i> by primary forming	primary forming object	3D-printer, casting tool, chipboard press, press, sintering press	Kind of initial material state
	HK	<i>matter processing object</i> for surface treatment	surface treatment object	air gun sprayer, anodizer, burnishing machine, dishwasher, electrostatic coating machine, hammer peening machine, hoover, oil-coating machine, polisher, sand paper, shower, surface coating machine, surface modification machine, surface preparation machine, ultrasonic degreaser, vapour degreaser, window wiper, wire brush	Kind of method applied

Class code		Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2				
	HL	<i>matter processing object</i> by joining or assembling	assembling object	assembly robot, chemical joining machine, crimping machine, electric arc welder, friction (inertial) welder, gluing machine, induction brazing machine, mechanical joining machine, pressure (cold) welder, soldering machine, thermal welding machine, ultrasonic welder	Kind of method applied
	HM	<i>matter processing object</i> by separating mixed substances by force	force separating object	centrifuge, cyclone, hydrocyclone, settling tank	Kind of method applied
	HP	<i>matter processing object</i> by thermally separating mixed substances	thermal separating object	distiller, distillation column, dryer, evaporator	Kind of thermal separating method applied
	HQ	<i>matter processing object</i> by mechanically separating mixed substances	mechanical separating object	bag filter, filter, rake, separation grate, sack, skimmer	Kind of mechanical separating method applied
	HR	<i>matter processing object</i> by electromagnetically separating mixed substances	electric or magnetic separating object	electrostatic filter, electrostatic separator, magnetic separator	Kind of method applied
	HS	<i>matter processing object</i> by chemically separating mixed substances	chemical separating object	absorber, absorption washer, adsorber, electrolyser, ion exchanger	Kind of method applied
	HU	<i>matter processing object</i> providing smaller forms of solid material	grinding and crushing object	cutter, crusher, flour mill, mill, stone crusher, waste grinder, water mill	Kind of sorting method applied
	HV	<i>matter processing object</i> providing larger forms of substances	agglomerating object	flocculation apparatus, flocculator, pelletizer	Kind of assembly method applied
	HW	<i>matter processing object</i> mixing different substances	mixing object	humidifier, kneader, mixer	Kind of method applied
	HX	<i>matter processing object</i> providing new material by chemical or biological reaction	reacting object	chemical reactor, fermenter, gasifier	Kind of method applied
K		<i>object</i> for treating input signals and providing an appropriate output	information processing object		Kind of signal
	KE	<i>information processing object</i> for processing electric signals	electric signal processing object	card writer, central processing unit (CPU), communication device, compact disk writer, computer, data network gateway, distance protection and control unit, Ethernet card, firewall, Firewire card, i/o-device, i/o-module, optical disc writer, PC, personal computer, programmable logic controller (PLC), optical disk writer, remote terminal unit (RTU), remote telecontrol unit (RTU), router, security device, synchronizing device, synchronizing relay, tablet computer, tape recorder, USB card	Kind of functionality

Class code		Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2				
	KF	<i>information processing object</i> for relaying electric signals	electric signal relaying object	coupler, electric network bridge, electrical network switch, repeater, relay, time relay	Kind of functionality
	KG	<i>Information processing object</i> of optical signals	optical signalling object	optical network switch, optical repeater, optical router	Kind of functionality
	KH	<i>information processing object</i> of fluid signals	fluid signalling object	fluid controller, pilot valve	Kind of purpose
	KJ	<i>information processing object</i> of mechanical signals	mechanical signalling object	locking cylinder, key coded device, mechanical regulator	Kind of method
	KZ	<i>information processing object</i> of signals of multiple kinds	multiple kind signalling object	multiple kind switch	Kind of method
M		<i>object</i> for providing mechanical movement or force	driving object		Kind of driving force
	MA	<i>driving object</i> in the form of rotational torque, powered by electromagnetic force	electromagnetic rotational driving object	AC motor, asynchronous motor, DC motor, electric motor, induction motor, PM motor, servo-motor, stepper motor, synchronous motor	Kind of movement
	MB	<i>driving object</i> in the form of linear force, powered by electromagnetic force	electromagnetic linear driving object	actuator, electromagnet, linear motor, solenoid	Kind of method
	MC	<i>driving object</i> powered by magnetic force	magnetic force driving object	permanent magnet	Kind of method
	MD	<i>driving object</i> powered by piezoelectric force	piezoelectric driving object	piezoelectric actuator, piezoelectric motor	Kind of method
	ML	<i>driving object</i> powered by mechanical energy	mechanical energy driving object	elastic energy drive, gas turbine, gravity energy drive, roller coaster, spring actuator device, water turbine, wind turbine	Kind of mechanical source
	MM	<i>driving object</i> powered by fluid displacement or pressure	fluid powered driving object	hydraulic cylinder, hydraulic motor, pneumatic cylinder, pneumatic motor	Kind of fluid source
	MS	<i>driving object</i> powered by combustion of fuels	combustion engine	Diesel cycle engine, Otto cycle engine, Wankel engine	Kind of engine
	MT	<i>driving object</i> powered by an external heat source	heat engine	steam engine, Stirling engine	Kind of engine
		<i>object</i> for enclosing partly or fully another object	covering object		Kind of method
N	NA	<i>covering object</i> by filling an opening	infilling object	gasket, gland, grating, grout, pane, panel, sealing joint	Kind of purpose by the filling

Class code		Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2				
	NB	<i>covering object</i> by closing an opening	closure object	cabinet door, cubicle door, cupboard door, door leaf, faceplate, fuel door, leaf, hatch cover, housing cover, inspection hatch, leaf of large door	Kind of object to close
	NC	<i>covering object</i> by finishing structures	finishing object	aircraft fairing, aircraft skin, belly fairing, car body panel, ceiling finish, cockpit fairing, flooring, grass turf, motorcycle fairing plate, paving, plant mat, roofing, unstressed hull, wall covering, window board, window sill	Kind of object to protect
	ND	<i>covering object</i> for terminating another object	terminating object	bargeboard, ceiling edge, crown, curb, fascia, flaunching, lawn edge, plant bed edge, raised floor edge, wall top	Kind of object to terminate
	NE	<i>covering object</i> by hiding joints and transitions	hiding object	architrave, base shoe, bushing, ceiling lining, eaves lead, flashing, reveal liner, ridge flashing, roof flashing, skirting board, wall corner lining	Kind of method and purpose
	P	<i>object</i> for providing perceptible information	presenting object		Kind of presentation form and kind of information to be presented
	PF	<i>presenting object</i> in visible form of discrete states	visible state indicator	semaphore, signal lamp, traffic light	Kind of method and purpose
	PG	<i>presenting object</i> in a visible form of a single scalar variable	scalar display	ampere meter, angle indicator, audio spectrometer, barometer, clock, concentration indicator, cos-phi meter, density indicator, dimension indicator, electromagnetic wave indicator, energy meter, field indicator, flow meter, force indicator, frequency meter, humidity indicator, hygrometer, level indicator, manometer, position indicator, pressure indicator, quantity meter, resistivity indicator, sight glass, temperature indicator, var-hour meter, varmeter, voltmeter, watt-hour meter, wattmeter	Quantity to be presented
	PH	<i>presenting object</i> in visible form by pictures, symbols, text or physical characteristics	graphical display	blackboard, display, marking, marking post, printer, projector, reference point, sign, traffic sign, whiteboard	Kind of presentation means
	PJ	<i>presenting object</i> in audible form	acoustic device	bell, horn, loudspeaker	Kind of method
	PK	<i>presenting object</i> in tactile form	tactile device	braille text sign, free height warning, road grooves, vibrator	Kind of method
	PL	<i>presenting object</i> in an ornamental form	ornamental object	carpet, cornice, figure, frieze, picture, pilaster, stucco	Kind of method applied
	PZ	<i>presenting object</i> in multiple forms	multiple form presenting object	audio-visual alarm, television set	Kind of method applied

Class code		Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2				
Q		<i>object for controlling access or flow</i>	controlling object		Kind of object flowing and kind of method
	QA	<i>controlling object of electric current in an electric circuit</i>	electric controlling object	contactor, circuit breaker, defibrillator, electronic power switch, motor starter, solid state power transistor, thyristor, tube power transistor	Kind of switching method
	QB	<i>controlling object by separating electric circuits</i>	electric separating object	disconnector, fuse-switch disconnector, fused disconnector, fuseless disconnector, load-switch disconnector, switch-fuse disconnector	Kind of purpose
	QC	<i>controlling object by earthing electric circuits</i>	electric earthing object	earthing switch	Kind of purpose
	QM	<i>controlling object of fluids on/off in sealed enclosures</i>	sealed fluid switching object	draw-off tap, faucet, gas shutoff valve, liquid shutoff valve, on-off damper, plug	Kind of fluids
	QN	<i>controlling object for varying the flow of fluids in sealed enclosures</i>	sealed fluid varying object	control damper, gas control valve, liquid control valve	Kind of fluids
	QP	<i>controlling object of fluids in open environment</i>	open flow controlling object	dam plate, liquid gate, lock gate, nose strake, plug, rudder, strake, ventral strake, vortex generator, wing strake	Kind of fluids
	QQ	<i>controlling object to a space</i>	space access object	door, escape hatch, gate, hatch, large door, openable bar, rail scotch block, window, window unit	Kind of purpose of the space access object
	QR	<i>controlling object of solid substance</i>	solid substance flow varying object	dosing machine, flap gate valve, iris valve, rotary air lock valve	Kind of method
	QS	<i>controlling object for mechanical movement</i>	mechanical movement controlling object	latch, lock, railroad switch, track switch	Kind of method
	QZ	<i>controlling object in electrical circuits, utilising different measures</i>	multiple measure controlling object	earthing and disconnecting switch	Kind of purpose
	R	<i>object for restricting or stabilising</i>	restricting object		Kind of object flowing and kind of constraint
	RA	<i>restricting object by restricting a flow of electric energy</i>	electricity restricting object	diode, limiter, reactor, resistor, series reactor	Kind of method
	RB	<i>restricting object by stabilising a flow of electric energy</i>	electricity stabilising object	phase compensator, power equaliser, power factor correction system, power factor correction unit, power filter, uninterruptible power supply, UPS, voltage compensator	Kind of method

Class code		Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2				
	RF	<i>restricting object</i> by stabilising a signal	signal stabilising object	ferrite, signal equaliser, signal filter	Kind of method
	RL	<i>restricting object</i> by restricting movements	movement restricting object	brake, door chain, rail anchor, rubber bushing, security chain, shock absorber, speed bump	Purpose of the mechanical limiting object
	RM	<i>restricting object</i> by restricting a return flow of matter	return flow restricting object	check damper, flap, non-return valve, stench trap	Kind of possible return flow
	RN	<i>restricting object</i> by restricting a guided flow of matter	flow restrictor	adjustable nozzle, air intake, air outlet, diffuser, draw-off tap, fixed nozzle, orifice plate, regulating damper, regulation valve, shower, shower head, solids regulating valve, ventilation inlet, ventilation outlet	Kind of flow and method
	RQ	<i>restricting object</i> of the local environment	local climate stabilising object	brick lining, climate membrane, curtain, insulation, louvered blind, membrane, noise barrier, noise protection, screen, screen wall, shutter, sound baffle, weed control fabric	Kind of effect and method applied
	RU	<i>restricting object</i> by restricting access to an area	access restricting object	bar, bird mesh, bollard, entrance management gate machine, fence, gate machine, one-way door, rodent barrier, rat stop device, stock guard, ticket gate	Kind of method applied
	S	<i>object</i> for detecting a human action and providing an appropriate response	human interaction object		Kind of actuating operation
	SF	<i>human interaction object</i> by eye focusing	face interaction object	eye actuator for positioning operations, eye focus reader	Kind of method
	SG	<i>human interaction object</i> to a hand action	hand interaction object	2- or 3-position enabling device, emergency pull wire, emergency push button, grip handle, key, key switch, lever handle, mechanical lever, potentiometer, pull handle, push handle, rotary switch, turn handle, two-hand control	Kind of method
	SH	<i>human interaction object</i> to a foot position	foot interaction object	2- or 3-position enabling device, pedal switch	Kind of method
	SJ	<i>human interaction object</i> by finger operation	finger interaction object	2-position switch, flip switch, hold-to-run device, keyboard, pushbutton, pushbutton switch, touch actuator, touchpad, turning wheel	Kind of method
	SK	<i>human interaction object</i> by its movement or positioning	movement interaction object	joystick, mouse, light pen, roller ball	Kind of method
	SZ	<i>human interaction object</i> with multiple kinds of interacting means	multi-interaction device	gamepad, game controller, joystick, operating panel	
	T	<i>object</i> for transforming	transforming object		Kind of object changed and kind of transformation

Class code		Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2				
U	TA	<i>transforming object</i> of electric energy while retaining AC or DC	electric energy transforming object	DC/DC converter, frequency converter, isolating transformer, phase shifter, power drive, transformer	Kind of characteristics transformed
	TB	<i>transforming object</i> of electric energy changing between AC and DC	electric energy converting object	bidirectional converter, inverter, power supply, rectifier	Kind of transformation
	TC	<i>transforming object</i> of electric energy from AC and DC to AC or DC	universal power supply	power supply, universal AC power supply, universal DC power supply	Kind of supply output
	TF	<i>transforming object</i> of signal	signal converting object	aerial, amplifier, antenna, cell phone, inductive signal antenna, IR diode, IR sender, mobile phone, optical receiver/transmitter, optocoupler, oscillator, phone, RF signal antenna, signal antenna, signal converter, telephone, transducer	Kind of conversion
	TL	<i>transforming object</i> of mechanical energy	mechanical energy transforming object	automatic gear, control coupling, indexing gear, gear, lever, speed convertor, torque converter	Kind of transformation
	TM	<i>transforming object</i> of matter by mass reduction	mass reduction object	boring machine, drilling machine, electron discharge sawing machine, etching machine, gas cutting machine, grinder, immersion chemical mill, plasma arc cutting machine, punching machine, saw, spray chemical mill, thermal cutter, turning machine	Kind of process
	TP	<i>transforming object</i> of matter by shape reforming	matter reshaping object	bending machine, cold forging machine, curling machine, electrohydraulic forming machine, electromagnetic forming machine, explosive forming machine, extruder, forging machine, hot forging machine, knurling machine, rolling machine, seaming machine, sheet rolling machine, shear spinning machine, thread forming machine, tube drawing machine, wire drawing machine	Kind of process
U	TR	<i>transforming object</i> of radiation by photosynthesis	organic plant	bush, climber, flower, grass, herb, shrub, tree, vegetable plant	Kind of woodiness
		<i>object</i> for localising other objects	holding object		Kind of positioning
	UA	<i>holding object</i> by fixing at a defined position	positioning object	batten, bicycle stand, cable access, cable entry, cable gland, chuck, clamp, dog, espalier, flange, insulator, jaw, lathe chuck, lattice, light fixture, luminaire, rail gauge, stake, stair stringer, stringer, track gauge, vehicle stand	Kind of object to be fixed

Class code		Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2				
	UB	<i>holding object</i> by carrying	carrying object	cable duct, cable ladder, cable rack, cable tray, catwalk, conduit, duct channel, electricity pylon, equipment support structure, hanger, hanging bracket, mast, operating table, platform, pole, portal, post, rung, step, strap, string, transmission tower, supporting bracket, table, tread	Kind of method
	UC	<i>holding object</i> by enclosing	enclosing object	cabinet, cooker hood, cubicle, electrical enclosure, electric panel, plant soil, hose reel cubicle, safety cabinet, sensor housing, service chamber, server rack, sub-rack	Kind of method
	UL	<i>holding object</i> by forming a structural support	structural supporting object	abutment, aggregate base, arch, baluster, base grade, base course, base layer, beam, bearing plate, bilge plate, binding layer, block, brick, bridge deck, bridge pylon, building foundation, buttress, cantilever wall, column, compression member, concrete deck, concrete element, console, corbel, counterfort, deck, dome, earth anchor, facing wall, floor slab, foundation beam, foundation block, foundation column, foundation slab, foundation wall, gravity wall, ground anchor, hole deck, hull plate, lamina, load-bearing wall, machine foundation, pile, pillar, pipe bridge, pipe tunnel, plate, plinth, pressure distribution, retaining wall plate, rock bolt, rope, sheet piling, slab, slab plate, stone, stressed skin panel, strut, support wedge, tension brace, tie, vault, wall, wall plate	Kind of form and function
	UM	<i>holding object</i> by reinforcement	reinforcing object	concrete injection, concrete lining, concrete spurring, diagonal bonding, earth pressure embankment, horizontal rail, lime column, pavement reinforcement, rebar mesh, reinforcement bar, reinforcing mass layer, reinforcing matter, reinforcing mesh, reinforcing rod, security strike plate, soil vertical drain, splice, splice plate, stabilizing cable, stiffener	Kind of method
	UN	<i>holding object</i> by framing other objects	framing object	door frame, fixed frame, glazing bar, glazing bar frame, movable frame, threshold, window frame, windowpane frame	Kind of method
	UP	<i>holding object</i> by jointing devices	jointing object	ball bearing, bearing, cement, chemical joint, hinge, roller bearing, sliding object, structural joint	Kind of method
	UQ	<i>holding object</i> by fastening	fastening object	anchor plate, bolt, chemical bond, elastic fastening, expansion joint, movement joint, mounting bracket, nail, nut, rail fastener, rivet, screw	Kind of method
	UT	<i>holding object</i> by levelling	levelling object	excavation, filling, patterned ground	Kind of method

Class code		Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2				
	UU	<i>holding object</i> by existing ground	existing ground	cohesive soil, filled material, friction soil, organic soil, rock	Kind of material
W		<i>object</i> for leading from one place to another	guiding object		Kind of flow and kind of technology
	WB	<i>guiding object</i> of high voltage electric energy	high voltage electric energy guiding object	high voltage busbar, high voltage bushing, high voltage cable, high voltage wire	Kind of method
	WD	<i>guiding object</i> of low voltage electric energy	low voltage electric energy guiding object	low voltage busbar, low voltage bushing, low voltage cable, low voltage wire	Kind of method
	WE	<i>guiding object</i> of a reference potential	reference potential guiding object	earthing cable, earthing rail, equipotential bonding cable, equipotential bonding rail	Kind of method
	WG	<i>guiding object</i> for electric signals	electric signal guiding object	control cable, data bus, data cable, electric signal bushing	Kind of purpose
	WH	<i>guiding object</i> for light	light guiding object	fibre optical cable, lens, light reflector, mirror, optical light fibre, optical light guide, optical wave guide	Kind of flow
	WJ	<i>guiding object</i> for sound	sound guiding object	sound reflector	Kind of method
	WL	<i>guiding object</i> of solid matter in open enclosure	solid matter guiding object	chute, inclined plane, roller table, tube conveyer	Kind of method
	WM	<i>guiding object</i> of fluid flow in open enclosure	open enclosure guiding object	aeration layer, aeration pipe, aeration well, drainage layer, drainpipe, drain liquid flashing, drip nose, eaves gutter, eaves trough, gutter, gutter drip, infiltration chamber, infiltration layer, infiltration pipe, radon well, rain gutter	Kind of method
	WP	<i>guiding object</i> of matter flow in closed enclosure	closed enclosure guiding object	chimney, duct, hose, pipe	Kind of form applied
	WQ	<i>guiding object</i> of mechanical energy	mechanical energy guiding object	axle, chain, cogwheel, drive axle, drive belt, drive chain, drive link, gearwheel, hydraulic hose, hydraulic pipe, moving line, pneumatic hose, pneumatic pipe, toothed bar, v-belt, wheel	Kind of method
	WR	<i>guiding object</i> for track bound objects	rail object	rail track, track, track crossing	Kind of method
	WV	<i>guiding object</i> for thermal energy	thermal energy guiding object	heat sink, thermal conductor, thermal paste	Kind of method
	WZ	<i>guiding object</i> with multiple kinds of flows	multiple flow guiding object	umbilical, umbilical cable	Kind of method
X		<i>object</i> for interfacing an object	interfacing object		Kind of object flowing and kind of method

Class code		Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2				
	XB	<i>interfacing object</i> for high voltage electric power	high voltage connecting object	clamp, cable head, high voltage cable joint, high voltage connector, high voltage socket, high voltage terminal, high voltage terminal box, junction box	Kind of method
	XD	<i>interfacing object</i> for low voltage electric power	low voltage connecting object	electric terminal, low voltage cable joint, low voltage plug, low voltage power socket, low voltage terminal, plug, power distributor, power outlet, socket, terminal box	Kind of method
	XE	<i>interfacing object</i> for earth or reference potential	potential connecting object	collector, earth electrode, FB terminal, FE terminal, functional bonding terminal, functional earthing terminal, PB terminal, PE terminal, protective bonding terminal, protective conductor terminal, protective earthing conductor terminal	Kind of potential and method
	XG	<i>interfacing object</i> for electric signals	electric signal connecting object	hub, patch panel, signal distributor, signal socket, terminal	Kind of method
	XH	<i>interfacing object</i> of optical fibres	light connecting object	fixed light fibre socket, optical plug, optical socket	Kind of method
	XK	<i>interfacing object</i> collecting for feeding into a flow	collecting interfacing object	bidet, drip cup, floor drain, sink, toilet, urinal, WC	Kind of object collected
	XM	<i>interfacing object</i> for sealed material flow	sealed flow connecting object	chamber, fire hose coupler, glue fitting, hose coupler, hose fitting, hose flange, pipe coupler, pipe fitting, pipe flange, press fitting, solder fitting, tube fitting, tube flange	Kind of method
	XN	<i>interfacing object</i> for continuous transfer of mechanical forces	non-detachable coupling	box coupling, buffer-and-chain coupler, cardan joint, link-and-pin coupler, flange coupler, flexible coupling, Hardy-Spicer joint, Hirth coupler, Hirth coupling, Hirth joint, Hooke's joint, sleeve coupling, split-muff coupler, U-joint, universal coupling	Kind of method
	XP	<i>interfacing object</i> for interruptible transfer of mechanical forces	detachable coupling	centrifugal clutch, fluid coupling, freewheel clutch, friction clutch, hydraulic clutch, magnetic head hoisting device, magnetic hoist, overrunning clutch	Kind of method
	XS	<i>interfacing object</i> connecting levels	level connecting object	fireman's pole, flight of stairs, gangway, ladder, landing, ramp	Kind of method
	XT	<i>interfacing object</i> linking space	space linking object	box-out, cavity, hole, opening	Kind of method
	XZ	<i>interfacing object</i> with multiple kinds of flows	multiple flow connector object	multi connector	Kind of method

Table 3 – Complete classification scheme for inherent function of objects

Class code			Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2	3				
B	BA		<i>object for picking up information and providing a representation</i>	sensing object		Kind of quantity
			<i>sensing object for electric potential</i>	electric potential sensing object		Kind of output signal
		BAA	<i>electric potential sensing object, with scalar output</i>	voltage transformer	coupling capacitor, measuring voltage transformer	
		BAB	<i>electric potential sensing object, with Boolean output</i>	voltage relay	measuring voltage relay	
	BB		<i>sensing object for resistivity or conductivity</i>	resistivity sensing object		Kind of flow and output signal
		BBA	<i>resistivity sensing object for electric current flow, with scalar output</i>	electric resistivity sensor		
		BBB	<i>resistivity sensing object for electric current flow, with Boolean output</i>	electric resistivity detector		
		BBC	<i>resistivity sensing object for thermal flow, with scalar output</i>	thermal resistivity sensor		
		BBD	<i>resistivity sensing object for thermal flow, with Boolean output</i>	thermal resistivity detector		
	BC		<i>sensing object for electric current</i>	electric current sensing object		Kind of output signal
		BCA	<i>electric current sensing object, with scalar output</i>	current transformer	measuring current transformer	
		BCB	<i>electric current sensing object, with Boolean output</i>	current relay	electronic overload relay, measuring current relay, overload relay	
			<i>sensing object for density</i>	density sensing object		Kind of output signal
	BD	BDA	<i>density sensing object, with scalar output</i>	density transmitter	aerometer, density sensor, hydrometer	
		BDB	<i>density sensing object, with Boolean output</i>	density switch	density sensor	
			<i>sensing object for field</i>	field sensing object		Kind of output signal
	BE	BEA	<i>field sensing object for electric field, with scalar output</i>	electric field sensor		
		BEB	<i>field sensing object for electric field, with Boolean output</i>	electric field detector		
		BEC	<i>field sensing object for magnetic field, with scalar output</i>	magnetic field sensor		

Class code			Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2	3				
BF	BED		<i>field sensing object</i> for magnetic field, with Boolean output	magnetic field detector	reed relay, reed switch	
			<i>sensing object</i> for flow	flow sensing object		Kind of output signal
		BFA	<i>flow sensing object</i> , with scalar output	flow transmitter	flow sensor, gas flow sensor, liquid flow sensor, matter flow sensor, water flow sensor	
	BFB		<i>flow sensing object</i> , with Boolean output	flow switch	gas flow switch, matter flow switch	
			<i>sensing object</i> of spatial dimension and/or position	physical dimension sensing object		Kind being sensed and kind of output signal
BG	BGA		<i>physical dimension sensing object</i> of position, with scalar output	position transmitter	position sensor, presence locator, radar, wind direction sensor	
		BGB	<i>physical dimension sensing object</i> of position, with Boolean output	position switch	movement detector, movement sensor (PIR), position sensor, presence indicator	
		BGC	<i>physical dimension sensing object</i> of length, with scalar output	distance transmitter	laser distance sensor, position sensor, visibility sensor	
		BGD	<i>physical dimension sensing object</i> of length, with Boolean output	distance switch	laser distance sensor, laser distance sensing switch, movement detector, movement sensor (PIR), position sensor, presence indicator, visibility detector	
		BGE	<i>physical dimension sensing object</i> of angle or direction, with scalar output	angle transmitter	alignment sensor, end stop, position sensor, position transmitter, rotary encoder, wind direction indicator	
		BGF	<i>physical dimension sensing object</i> of angle or direction, with Boolean output	angle switch	alignment threshold detector, movement detector, movement sensor (PIR), position sensor, presence indicator, radar	

Class code			Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2	3				
		BGG	physical dimension sensing object of physical object	object scanner	2D-scanner, 3D-scanner, coordinates scanner, laser scanner	
	BH		sensing object for energy	energy sensing object		Kind of energy
		BHA	energy sensing object of flow with defined energy density	flow energy meter	energy cooling meter, energy meter, energy sensor, gas energy meter	
		BHB	energy sensing object of thermal flow with defined heat capacity	thermal energy meter	condensate sensor, energy cooling meter, energy meter, energy sensor	
		BHC	energy sensing object of electricity flow	electric energy meter	kWh sensor	
	BJ		sensing object for power	power sensing object		Kind of output signal
		BJA	power sensing object, with scalar output	power meter	kW meter	
		BJB	power sensing object, with Boolean output	power limit switch		
	BK		sensing object for time	time sensing object		Kind of output signal
		BKA	time sensing object, with scalar output	time sensor	clock, time information device	
		BKB	time sensing object, with Boolean output	timer switch	time counter	
	BL		sensing object for level	level sensing object		Kind of output signal
		BLA	level sensing object, with scalar output	level transmitter	level sensor, liquid level sensor	
		BLB	level sensing object, with Boolean output	level switch	liquid level switch	
	BM		sensing object for humidity	humidity sensing object		Kind of output signal
		BMA	humidity sensing object with scalar output	humidity transmitter	humidity sensor	
		BMB	humidity sensing object, with Boolean output	humidity switch	humidity sensor	
	BP		sensing object for pressure	pressure sensing object		Kind of output signal
		BPA	pressure sensing object utilizing one port for absolute pressure sensing, with scalar output	absolute pressure transmitter	absolute pressure sensor, manometer, pressure monitor, pressure sensor, pressure transducer	
		BPB	pressure sensing object utilizing one port for absolute pressure sensing, with Boolean output	absolute pressure switch	pressure switch	

Class code			Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2	3				
		BPC	<i>pressure sensing object</i> utilizing two ports for differential pressure sensing, with scalar output	differential pressure transmitter	differential pressure sensor, pressure sensor, relative pressure sensor	
		BPD	<i>pressure sensing object</i> utilizing two ports for differential pressure sensing, with Boolean output	differential pressure switch	pressure sensor, pressure switch, relative pressure detector, relative pressure switch	
		BQ	<i>sensing object</i> for substance concentration	concentration sensing object		Kind of object and kind of output signal
		BQA	<i>concentration sensing object</i> of gas, with scalar output	gas sensor	CO concentration sensor, CO ₂ concentration sensor, NH ₃ concentration sensor	
		BQB	<i>concentration sensing object</i> of gas, with Boolean output	gas detector	concentration detection switch	
		BQC	<i>concentration sensing object</i> liquid with, scalar output	liquid sensor	concentration sensor, fog sensor, petrol concentration sensor, visibility sensor	
		BQD	<i>concentration sensing object</i> of liquid, with Boolean output	liquid detector	concentration detection switch, fog detector, visibility detector	
		BQE	<i>concentration sensing object</i> of solid matter, with scalar output	solid matter sensor	concentration sensor, smoke sensor, turbidity sensor, visibility sensor	
		BQF	<i>concentration sensing object</i> of solid matter, with Boolean output	solid matter detector	concentration detection switch, smoke detector, smoke switch, turbidity detector, visibility detector	
		BR	<i>sensing object</i> for radiation	radiation sensing object		Kind of radiation and kind of output signal
		BRA	<i>radiation sensing object</i> of visible electromagnetic waves, with scalar output	light sensor		
		BRB	<i>radiation sensing object</i> of visible electromagnetic waves, with Boolean output	light detector	light curtain, light transmitter, line detector, low-light relays, lux sensor, photocell	

Class code			Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2	3				
		BRC	<i>radiation sensing object</i> for non-visible electromagnetic waves, with scalar output	electromagnetic wave sensor	gamma-radiation detector, IR-sensor, radar-sensor, UV-sensor	
		BRD	<i>radiation sensing object</i> for non-visible electromagnetic waves, with Boolean output	electromagnetic wave detector		
		BRE	<i>radiation sensing object</i> of nuclear particles, with scalar output	radiation counter	Geiger meter	
		BRF	<i>radiation sensing object</i> of nuclear particles, with Boolean output	radiation detector		
BS			<i>sensing object</i> for time-rate	time-rating object		Kind of time object sensed and kind of output signal
		BSA	<i>time-rating object</i> of non-rotational cycles, with scalar output	cycle rate transmitter	cycle rate sensor, frequency transmitter	
		BSB	<i>time-rating object</i> of non-rotational cycles, with Boolean output	cycle rate detecting switch		
		BSC	<i>time-rating object</i> of distance, with scalar output	speed sensing transmitter	movement transmitter, speed sensor	
		BSD	<i>time-rating object</i> of distance, with Boolean output	speed detecting switch	movement detector	
		BSE	<i>time-rating object</i> of rotation, with scalar output	tachometer	rotation speed sensor	
		BSF	<i>time-rating object</i> of rotation, with Boolean output	rotation speed relay		
		BSG	<i>time-rating object</i> of speed, with scalar output	accelerometer transmitter	seismic sensor	
		BSH	<i>time-rating object</i> of speed, with Boolean output	accelerometer relay	seismic switch, shake switch	
			<i>sensing object</i> for temperature	temperature sensing object		Kind of output signal
		BTA	<i>temperature sensing object</i> , with scalar output	temperature transmitter	temperature sensor	
		BTB	<i>temperature sensing object</i> , with Boolean output	temperature switch	temperature detector	
BU			<i>sensing object</i> for multiple quantities	multi-quantity sensing object		Kind of output signal
		BUA	<i>multi-quantity sensing object</i> , with scalar output(s)	multi-sensor	multimeter	
		BUB	<i>multi-quantity sensing object</i> , with Boolean output(s)	multi-detector	Buchholz relay, distance protection relay, impedance protection relay, negative phase-sequence relay	

Class code			Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2	3				
BW			<i>sensing object</i> for weight, force or torque	force sensing object		Kind of object sensed and kind of output signal
		BWA	<i>force sensing object</i> of weight, with scalar output	weight transmitter	load cell, weight sensor	
		BWB	<i>force sensing object</i> of weight, with Boolean output	weight detecting switch		
		BWC	<i>force sensing object</i> of force, with scalar output	force value transmitter	force sensor	
		BWD	<i>force sensing object</i> of force, with Boolean output	force detecting switch	force sensor	
		BWE	<i>force sensing object</i> of torque, with scalar output	torque value transmitter	torque sensor	
		BWF	<i>force sensing object</i> of torque, with Boolean output	torque switch	torque sensor	
BX			<i>sensing object</i> of sound and/or visual appearance	audio-visual sensing object		Kind of output signal
		BXA	<i>audio-visual sensing object</i> of sound, with scalar output	acoustic sensor	acoustic survey device, microphone	
		BXB	<i>audio-visual sensing object</i> of sound, with Boolean output	acoustic detector	glass breakage detector	
		BXC	<i>audio-visual sensing object</i> of visual appearance, with scalar output	image sensor	camera, CCTV, PTZ camera, scanner, video camera	
		BXD	<i>audio-visual sensing object</i> of visual appearance, with Boolean output	image detector	face recognition device, finger-print reader, iris reader	
BY			<i>sensing object</i> of stored information	information sensing object		Kind of method
		BYA	<i>Information sensing object</i> by electrical connection	chip reader	chip card reader	
		BYB	<i>Information sensing object</i> by electromagnetic field	electromagnetic reader	magnetic stripe reader, RFC reader, RFID reader, tape reader	
		BYC	<i>Information sensing object</i> by light	optical reader	barcode reader, optical disk reader, QR-reader	
BZ			<i>sensing object</i> for incidents or amounts	incident sensing object		Kind of incidents or amounts sensed
		BZA	<i>incident sensing object</i> detecting the number of incidents, with scalar output	counter		
		BZB	<i>incident sensing object</i> detecting an incident, with Boolean output	threshold detector		

Class code			Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2	3				
		BZC	<i>incident sensing object</i> detecting the presence of humans, with Boolean output	person detector	presence detector	
		BZD	<i>incident sensing object</i> detecting the presence of matters, with Boolean output	matter detector		
	C		<i>object</i> for storing for subsequent retrieval	storing object		Kind of object being stored and the method applied
CA			<i>storing object</i> for electric energy within an electrostatic field	capacitive storing object		Kind of method applied
		CAA	<i>capacitive storing object</i> for electric charge	capacitor		
CB			<i>storing object</i> for electric energy within an electromagnetic field	inductive storing object		Kind of method applied
		CBA	<i>inductive storing object</i> for inductive charge	inductor		
CC			<i>storing object</i> for electric energy within an electrochemical substance	electrochemical storing object		Kind of method applied
		CCA	<i>electrochemical storing object</i> by reversible reactions	rechargeable battery		
CF			<i>storing object</i> for information	information storing object		Kind of method applied
		CFA	<i>information storing object</i> on a carrier medium	information storing media		
CL			<i>storing object</i> for matters or persons within a stationary open enclosure	open stationary storing object		Kind of method applied
		CLA	<i>open stationary storing object</i> for fluids	pool	bunker, cistern, pit	
		CLB	<i>open stationary storing object</i> for solid objects	shelf		
CM		CLC	<i>Open stationary storing object</i> for persons	seat	bed, chair, couch	
			<i>storing object</i> for matters within a stationary closed enclosure	enclosed stationary storing object		Kind of matters stored
		CMA	<i>enclosed stationary storing object</i> for fluids	tank		
CN		CMB	<i>enclosed stationary storing object</i> for solid matters	box	cabinet, cupboard	
			<i>storing object</i> for matters or persons within a moveable closed enclosure	moveable storing object		Kind of matters stored

Class code			Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2	3				
		CNA	moveable storing object for solid matters or persons	container	bucket, elevator bucket, excavator bucket, lift car	
		CNB	moveable storing object for gas	gas cylinder		
		CNC	moveable storing object for liquid	drum		
	CP		storing object of thermal energy	thermal energy storing object		Kind of thermal energy
		CPA	thermal energy storing object of liquid	liquid tank	calorifier	
		CPB	thermal energy storing object of gas	gas tank		
		CPC	thermal energy storing object of solid matter	matter tank		
	CQ	CPD	thermal energy storing object of state changing material	crystalline tank		
			storing object of mechanical energy	mechanical energy storing object		Kind of mechanical energy
		CQA	mechanical energy storing object in the form of kinetic energy	flywheel		
E		CQB	mechanical energy storing object in the form of elastic energy	spring	rubber band	
		CQC	mechanical energy storing object in the form of gravitational energy	counterweight	elevated mass	
			object for emitting	emitting object		Kind of object being emitted and kind of energy source
	EA		emitting object of light	light object		Kind of energy source
		EAA	light object by electricity	electric lamp	argon lamp, electro luminescent devices, fluorescent lamp, fluorescent tube, lamp, lamp bulb, laser, neon lamp	
		EAB	light object by gas combustion	gas lamp		
	EB	EAC	light object by liquid combustion	liquid lamp	paraffin lamp	
			emitting object of heat provided by electric energy	electric heating object		Kind of delivery method
		EBA	electric heating object delivered by fluid	electric boiler		

Class code			Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2	3				
		EBB	<i>electric heating object</i> delivered by a surface	electric heating surface	frying plate, heat mat, sauna	
		EBC	<i>electric heating object</i> delivered by a cable	heating cable		
		EBD	<i>electric heating object</i> delivered by forced air	electric hot air blower		
		EBE	<i>electric heating object</i> delivered by an electric arc	arc heating object	electric arc furnace	
		EBF	<i>electric heating object</i> delivered by a current flow	induction heater	induction oven	
		EBG	<i>electric heating object</i> delivered by infrared radiation	infrared heater		
		EBH	<i>electric heating object</i> delivered by surrounding surfaces	electric oven		
		EC	<i>emitting object</i> of coldness provided by electric energy	electric cooling object		Kind of method
		ECA	<i>electric cooling object</i> applying a cooling surface	electric cooling surface		
		ECB	<i>electric cooling object</i> applying forced air	electric cold air blower		
		ECC	<i>electric cooling object</i> utilizing phase changing	compression chiller		
		EE	<i>emitting object</i> of wireless power	wireless power object		Kind of method
		EEA	wireless power object utilizing inductive coupling	inductive power antenna		
		EEB	<i>wireless power object</i> utilizing microwaves	magnetron	maser, microwave oven	
		EEC	<i>wireless power object</i> utilizing x-rays	X-ray source		
		EED	<i>wireless power object</i> utilizing gamma rays	gamma ray source		
		EEE	<i>wireless power object</i> utilizing capacitive coupling	capacitive coupler		
		EG	<i>emitting object</i> of heat and coldness provided by transfer of thermal energy	thermal energy transfer object		Kind of method
		EGA	<i>thermal energy transfer object</i> utilizing phase changing	heat pump	freezer, fridge, reefer, refrigerated container, refrigerator, reversible heat pump	
		EGB	<i>thermal energy transfer object</i> utilizing Peltier effect	Peltier element		
		EGC	<i>thermal energy transfer object</i> between flows by means of an intermediate material	heat exchanger		
		EM	<i>emitting object</i> of heat provided by combustion	combustion heating object		Kind of object heated
		EMA	<i>combustion heating object</i> for heating of space	stove		

Class code			Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2	3				
EP	EMB	EMC	<i>combustion heating object</i> for heating of fluid	combustion boiler		
		EMC	<i>combustion heating object</i> for heating of solid matter	burner		
	EPA	EPB	<i>emitting object</i> of heat provided by thermal energy	thermal heating object		Kind of method
		EPA	<i>thermal heating object</i> delivered by a permeable heated surface	heating surface		
		EPB	<i>thermal heating object</i> delivered by heated fluid	heating tube	heating coil, heating pipe	
		EPC	<i>thermal heating object</i> delivered by a non-permeable heated surface	heating panel	condenser, radiator	
		EPD	<i>thermal heating object</i> delivered by forced air	hot air blower		
	EQ	EQA	<i>emitting object</i> of coldness provided by thermal energy	thermal cooling object		Kind of method
		EQB	<i>thermal cooling object</i> applying a permeable cold surface	cooling surface		
		EQC	<i>thermal cooling object</i> applying a non-permeable cold surface	cooling panel	condenser, cooling tower, evaporator	
		EQC	<i>thermal cooling object</i> applying forced air	chiller		
ET	EQD	EQE	<i>thermal cooling object</i> providing cold fluid	cooler		
		EQE	<i>thermal cooling object</i> applying chilled liquid in tubes	cooling tube	cooling coil, cooling pipe	
	ETA	ETB	<i>emitting object</i> of heat provided by nuclear fission	nuclear powered heating object		Kind of output
		ETB	<i>nuclear powered heating object</i> providing hot water	boiling water reactor		
	ETC	ETC	<i>nuclear powered heating object</i> providing steam fluid	pressurized water reactor		
		ETC	<i>nuclear powered heating object</i> providing hot gas	high-temperature gas-cooled reactor	pebble bed reactor	
	EU	EUA	<i>emitting object</i> of sub-atomic particles	particle emitting object		Kind of method
		EUB	<i>particle emitting object</i> being ionized	plasma generator		
		EUB	<i>particle emitting object</i> being non-ionized	particle generator	alpha-ray device, beta-ray device, neutron-ray device	
	EV	EVA	<i>emitting object</i> of acoustic waves	acoustic wave emitting object		Kind of method
		EVA	<i>acoustic wave emitting object</i> utilizing ultrasonic frequencies	sonar		

Class code			Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2	3				
		EVB	acoustic wave emitting object utilizing audible frequencies for noise cancellation	anti-noise loudspeaker		
F			object for protecting against the effects of dangerous or undesirable conditions	protecting object		Kind of source
	FA		protecting object related to overvoltages	overvoltage protecting object		Kind of method applied
		FAA	overvoltage protecting object by a spark gap	spark gap surge arrester	limiter	
		FAB	overvoltage protecting object by a varistor	varistor surge arrester	limiter	
		FAC	overvoltage protecting object by a zener diode	zener diode	limiter	
		FAD	overvoltage protecting object by surge absorption	surge absorber		
	FB		protecting object related to earth fault currents	earth fault current protecting object		Kind of method applied
		FBA	earth fault current protecting object that monitors an electric network and switches off in the event of earth fault currents	residual current device	appliance leakage current interrupter (ALCI), earth fault leakage breaker, earth-leakage circuit-breaker (ELCB), ground fault circuit interrupter (GFCI), ground fault interrupter (GFI), residual current circuit breaker (RCCB)	
		FBB	earth fault current protecting object that limits the value of an earth fault current	neutral earthing limiter	neutral earthing reactor, neutral earthing impedance, Petersen coil	
	FC		protecting object related to overcurrents	overcurrent protecting object		Kind of method applied
		FCA	overcurrent protecting object that by fusing opens the circuit in which it is inserted by breaking the current when this exceeds a given value for a sufficient time	fuse		
		FCB	overcurrent protecting object capable of making, carrying and breaking currents under normal circuit conditions and also making, carrying for a specified time, and automatically breaking currents under specified abnormal circuit conditions NOTE This class is intended for circuit-breakers such as those defined in accordance with IEC 60898 series.	miniature circuit-breaker		

Class code			Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2	3				
		FCC	<i>overcurrent protecting object</i> that opens the circuit in which it is inserted by interrupting the current when this exceeds a given value for a sufficient time	bimetal	bimetal circuit-breaker, overload thermal release, thermal overload relay	
	FE		<i>protecting object</i> related to electric and/or magnetic fields	field protecting object		Kind of method applied
		FEA	<i>field protecting object</i> of electric fields	electric field shield	Faraday cage	
		FEB	<i>field protecting object</i> of magnetic fields	magnetic field shield	Mu-metal shielding (against static or low-frequency magnetic fields)	
		FEC	<i>field protecting object</i> of electromagnetic fields	electromagnetic field shield	concrete wall, Faraday cage, lead block, metal sheets	
	FL		<i>protecting object</i> related to pressure	pressure protecting object		Kind of pressure
		FLA	<i>pressure protecting object</i> releasing steam or liquid when the pressure exceeds a set limit value	safety valve		
		FLB	<i>pressure protecting object</i> opening or closing an air flow when the pressure is above or below a set limit value	safety damper		
		FLC	<i>pressure protecting object</i> preventing vacuum	vacuum breaker		
		FLD	<i>pressure protecting object</i> that breaks open irreversibly in the event of excessive pressure difference	rupture disc		
		FLE	<i>pressure protecting object</i> provided by a volume expansion	expansion tank	expansion vessel	
	FM		<i>protecting object</i> related to fire	fire protecting object		Kind of method applied and cause for activation
		FMA	<i>fire protecting object</i> closing an air flow on detection of fire	fire damper		
		FMB	<i>fire protecting object</i> opening or closing an air flow on detection of smoke	flue damper		
		FMC	<i>fire protecting object</i> closing an air flow on detection of smoke and/or fire	fire-and-flue damper		
		FMD	<i>fire protecting object</i> for manual operation	fire extinguisher		
		FME	<i>fire protecting object</i> closing a passage for preventing spread of smoke and/or fire	fire blind		
		FMF	<i>fire protecting object</i> dividing an area into smoke zones	smoke curtain		

Class code			Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2	3				
		FMG	<i>fire protecting object</i> closing a hole for preventing spread of fire	smoke closure		
		FMH	<i>fire protecting object</i> by a surface cover	fire insulation		
		FMJ	<i>fire protecting object</i> by a surface coating	fire retardant coating	fire protecting coating	
		FMK	<i>fire protecting object</i> by impregnation	fire impregnation		
FN			<i>protecting object</i> related to mechanical force	mechanical force protecting object		Kind of method applied
		FNA	<i>mechanical force protecting object</i> providing a disconnection when a torque becomes too high	safety clutch		
		FNB	<i>mechanical force protecting object</i> absorbing impact	impact protection	cable protection	
FQ			<i>protecting object</i> by barrier or obstacle	preventive protecting object		Kind of purpose of the prevention
		FQA	<i>preventive protecting object</i> against objects passing	protective mesh	protective grid	
		FQB	<i>preventive protecting object</i> against objects or matter sliding or drifting	glide protection	snow guard	
		FQC	<i>preventive protecting object</i> against falling	protective rod	handrail, suspension guard	
		FQD	<i>preventive protecting object</i> against falling out or colliding	protective rail	guard rail, protective roof	
		FQE	<i>preventive protecting object</i> against physical penetration	protective fabric		
		FQF	<i>preventive protecting object</i> against glare	glare protection		
		FQG	<i>preventive protecting object</i> against splatter	splatter protection		
		FQH	<i>preventive protecting object</i> against manual breakage	break protection		
		FQJ	<i>preventive protecting object</i> against manual unlocking	lock hatch cover		
FR			<i>protecting object</i> related to material erosion	wear protecting object		Kind of method applied
		FRA	<i>wear protecting object</i> providing liquid material between objects	lubrication object	lubricating oil	
		FRB	<i>wear protecting object</i> providing a solid separating material between objects	wear pad		
FS			<i>protecting object</i> related to the local environment	environment protecting object		Kind of method applied
		FSA	<i>environment protecting object</i> in the form of a solidified paste layer covering another object	plaster	cement, mortar	

Class code			Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2	3				
		FSB	<i>environment protecting object</i> in the form of a hardened liquid film on the surface of another object	paint		
		FSC	<i>environment protecting object</i> in the form of an applied or induced liquid making the object resistant to externally induced decay or destruction	impregnation	impregnation sheet	
		FSD	<i>environment protecting object</i> providing shelter against climatic effects	shelter	avalanche shed, house, shed, snow guard	
		FSE	<i>environment protecting object</i> in the form of vibration control	seismic vibration control device		
		FSF	<i>environment protection object</i> in the form of oxidation of metal	corrosion protection	cathodic protection, sacrificial anode	
		FSG	<i>environment protecting object</i> in the form of a seal on the surface of another object	protective seal		
		FSH	<i>environment protecting object</i> in the form of a capillary action breaking layer	material separating layer		
			<i>object for providing a controllable flow</i>	generating object		Kind of object flowing and kind of source
G	GA		<i>generating object</i> of electric energy powered by mechanical energy	mechanical to electrical energy generating object		Kind of voltage and current form
		GAA	<i>mechanical to electrical energy generating object</i> of alternating current	AC generator	generator	
		GAB	<i>mechanical to electrical energy generating object</i> of direct current	DC generator	dynamo, generator	
			<i>generating object</i> of electric energy powered by chemical reaction	chemical to electrical energy generating object		Kind of source method applied
GB	GBA		<i>chemical to electrical energy generating object</i> from a non-renewable source	electric battery	battery	
		GBB	<i>chemical to electrical energy generating object</i> continuously fed by fuel and oxidant	fuel cell		
			<i>generating object</i> of electric energy from solar energy	solar to electrical energy generating object		Kind of method applied
GC	GCA		<i>solar to electrical energy generating object</i> utilizing wafer based semiconducting material	crystalline photovoltaic module	solar cell	

Class code			Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2	3				
GF	GCB		solar to electrical energy generating object utilizing thin film material	thin film photovoltaic module	solar cell	
			generating object of signals for carrier of information	signal generating object		Kind of source distribution method
	GFA		signal generating object by electromagnetic waves	electromagnetic wave transmitter	laser transmitter, radio-wave transmitter, television station	
			signal generating object by wires	signal generator		
	GFB		generating object continuously of items	continuous transfer object		Direction and size of matters
			continuous transfer object on a belt	belt conveyor	conveyor belt	
	GLA		continuous transfer object on a chain	chain conveyor		
			continuous transfer object on rollers	roller conveyor		
	GLD		continuous transfer object propelled by a screw	screw conveyor		
			continuous transfer object consisting of a chain of steps	escalator		
	GLF		continuous transfer object consisting of chain of containers	paternoster		
			continuous transfer object on a vibrating surface	vibrating conveyor		
	GLG		generating object discontinuously of items	discontinuous transfer object		Kind of method applied
			discontinuous transfer object horizontally	wagon		
GM	GMA		discontinuous transfer object vertically	elevator	hoist	
			discontinuous transfer object lifting and moving objects vertically and/or horizontally	crane		
	GMD		discontinuous transfer object placing objects together	palletizer	stacker	
			discontinuous transfer object turning a conveyed flow	turntable		
	GME		discontinuous transfer object moving objects in a linear flow by vibrating	vibrating feeder		
			generating object of liquid	liquid flow generating object		Kind of method applied
GP	GMF					

Class code			Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2	3				
		GPA	<i>liquid flow generating object</i> by forcing trapped liquid to the discharge side	positive displacement pump	peristaltic pump, piston pump, rotary gear pump, screw pump, vacuum pump	
		GPB	<i>liquid flow generating object</i> by increasing the flow velocity through mechanical motion	liquid velocity pump	axial flow circulation pump, centrifugal pump, impeller, radial-flow circulation pump, vacuum pump	
		GPC	<i>liquid flow generating object</i> by transferring the kinetic energy of an input flow to an output flow	hydraulic ram pump		
		GPD	<i>liquid flow generating object</i> by converting potential energy to kinetic energy by gravity	lubricator	oiler	
	GQ		<i>generating object</i> of gas	<i>gaseous flow generating object</i>		Kind of flow generating method
		GQA	<i>gaseous flow generating object</i> by forcing trapped gas to the discharge side	gas compressor		
		GQB	<i>gaseous flow generating object</i> by increasing the flow velocity through mechanical motion	mechanical fan	air curtain, closed propeller fan, open propeller fan, propeller, squirrel cage fan, ventilator	
		GQC	<i>gaseous flow generating object</i> by transferring the kinetic energy of an input flow to an output flow	gas ejector		
	GR		<i>generating object</i> of thermal energy from solar energy	<i>solar to thermal energy generating object</i>		Kind of method applied
		GRA	<i>solar to thermal energy generating object</i> into a fluid thermal flow	solar panel	flatbed solar panel	
		GRB	<i>solar to thermal energy generating object</i> generating a fluid flow	solar tower		
			<i>object</i> for treating matter	<i>matter processing object</i>		Kind of method applied
H	HJ		<i>matter processing object</i> by primary forming	<i>primary forming object</i>		Kind of initial material state
		HJA	<i>primary forming object</i> from liquid initial material state	casting tool	3D-printer	
		HJB	<i>primary forming object</i> from solid matter initial material state	press	3D-printer, chipboard press, sintering press	

Class code			Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2	3				
HK			<i>matter processing object for surface treatment</i>	surface treatment object		Kind of method applied
		HKA	<i>surface treatment object by preparation</i>	surface preparation machine	dishwasher, Hoover, shower, ultrasonic degreaser, vapour degreaser, window wiper	
		HKB	<i>surface treatment object by modification</i>	surface modification machine	burnishing machine, hammer peening machine, polisher, sand paper, wire brush	
		HKC	<i>surface treatment object by coating</i>	surface coating machine	air gun sprayer, anodizer, electrostatic coating machine, oil-coating machine	
HL			<i>matter processing object by joining or assembling</i>	assembling object		Kind of method applied
		HLA	<i>assembling object by physical assembly</i>	assembly robot		
		HLB	<i>assembling object by mechanical joining</i>	mechanical joining machine	crimping machine, friction (inertial) welder, pressure (cold) welder, ultrasonic welder	
		HLC	<i>assembling object by thermal joining</i>	thermal welding machine	electric arc welder, induction brazing machine, soldering machine	
HM		HLD	<i>assembling object by chemical joining</i>	chemical joining machine	gluing machine	
			<i>matter processing object by separating mixed substances by force</i>	force separating object		Kind of method applied
		HMA	<i>force separating object of particles by gravity</i>	settling tank		
		HMB	<i>force separating object of substances by rotation in a rotating chamber</i>	centrifuge		
HP		HMC	<i>force separating object of substances by rotation in a fixed chamber</i>	cyclone	hydrocyclone	
			<i>matter processing object by thermally separating mixed substances</i>	thermal separating object		Kind of thermal separating method applied
		HPA	<i>thermal separating object removing moisture</i>	dryer		

Class code			Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2	3				
HQ	HPB		<i>thermal separating object</i> generating the vaporized aggregation of a liquid	distillation column	distiller, evaporator	
			<i>matter processing object</i> by mechanically separating mixed substances	mechanical separating object		Kind of mechanical separating method applied
		HQA	<i>mechanical separating object</i> by removing substance from the surface of a liquid	skimmer		
		HQB	<i>mechanical separating object</i> of particles based on their size and/or shape	separation grate	bag filter, filter, rake, sack	
HR	HRA		<i>matter processing object</i> by electromagnetically separating mixed substances	electric or magnetic separating object		Kind of method applied
			<i>electric or magnetic separating object</i> utilizing an electric field	electrostatic separator	electrostatic filter	
		HRB	<i>electric or magnetic separating object</i> utilizing a magnetic field	magnetic separator		
			<i>matter processing object</i> by chemically separating mixed substances	chemical separating object		Kind of method applied
HS	HSA		<i>chemical separating object</i> utilising exchange of ions	ion exchanger	electrolyser	
		HSB	<i>chemical separating object</i> utilising absorption	absorber	absorption washer	
		HSC	<i>chemical separating object</i> utilising adsorption	adsorber		
			<i>matter processing object</i> providing smaller forms of solid material	grinding and crushing object		Kind of sorting method applied
HU	HUA		<i>grinding and crushing object</i> for soft, medium-hard, fibrous and tough matter	cutter	waste grinder	
		HUB	<i>grinding and crushing object</i> for machining parts into precise sizes and shapes	mill	flour mill, water mill	
		HUC	<i>grinding and crushing object</i> of rock kind	crusher	stone crusher	
			<i>matter processing object</i> providing larger forms of substances	agglomerating object		Kind of assembly method applied
HV	HVA		<i>agglomerating object</i> compressing or moulding a material into the shape of a pellet	pelletizer		
		HVB	<i>agglomerating object</i> enabling (a process wherein) colloids to come out of suspension in the form of floc or flake	floculator	floculation apparatus	

Class code			Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2	3				
	HW		<i>matter processing object</i> mixing different substances	mixing object		Kind of method applied
		HWA	<i>mixing object</i> that provides a new property substance from different substances	mixer	kneader	
		HWB	<i>mixing object</i> providing humid gaseous substance	humidifier		
	HX		<i>matter processing object</i> providing new material by chemical or biological reaction	reacting object		Kind of method applied
		HXA	<i>reacting object</i> enabling and controlling a chemical reaction	chemical reactor	gasifier	
		HXB	<i>reacting object</i> enabling and controlling a biological reaction	fermenter		
K			<i>object</i> for treating input signals and providing an appropriate output	information processing object		Kind of signal
			<i>information processing object</i> for processing electric signals	electric signal processing object		Kind of functionality
	KE	KEA	<i>electric signal processing object</i> with human intervention	computer	PC, personal computer, tablet computer	
		KEB	<i>electric signal processing object</i> without human intervention for control of devices	control unit	central processing unit (CPU), distance protection and control unit, programmable logic controller (PLC), remote terminal unit (RTU), remote telecontrol unit (RTU), synchronizing device, synchronizing relay	
	KEC		<i>electric signal processing object</i> without human intervention providing input/output to devices	communication device	Ethernet card, Firewire card, i/o-device, i/o module, USB card	
		KED	<i>electric signal processing object</i> without human intervention forwarding signals between data networks	router	data network gateway, firewall, security device	
		KEE	<i>electric signal processing object</i> without human intervention saving the information provided by the input on a storage device	card writer	compact disk writer, optical disk writer, tape recorder	
	KF		<i>information processing object</i> for relaying electric signals	electric signal relaying object		Kind of functionality
		KFA	<i>electric signal relaying object</i> by forwarding without delay	relay	coupler	
		KFB	<i>electric signal relaying object</i> by forwarding with delay	time relay		

Class code			Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses	
1	2	3					
M	KFC	KFC	electric signal relaying object by repeating the input signal as an improved output signal	repeater			
		KFD	electric signal relaying object by bridging multiple data network segments	electric network bridge			
		KFE	electric signal relaying object by forwarding the input to specific devices within a data network	electric network switch			
	KG	KG	information processing object of optical signals	optical signalling object		Kind of functionality	
		KGA	optical signalling object actively by forwarding the input to specific devices within an optical network	optical network switch			
		KGB	optical signalling object forwarding data packages between computer networks	optical router			
	KGC	KGC	optical signalling object by repeating the input signal as an improved output signal	optical repeater			
		KH	KH	information processing object of fluid signals	fluid signalling object		Kind of purpose
		KHA	fluid signalling object for feedback control	fluid controller			
	KHB	KHB	fluid signalling object relaying signals	pilot valve			
		KJ	KJ	information processing object of mechanical signals	mechanical signalling object		Kind of method
		KJA	mechanical signalling object adjusting an air or fluid flow	mechanical regulator			
	KJB	KJB	mechanical signalling object for locking/unlocking of a locking mechanism	locking cylinder			
		KJC	mechanical signalling object providing a binary state of a mechanical device	key coded device			
		KZ	KZ	information processing object of signals of multiple kinds	multiple kind signalling object		Kind of method
	KZA		multiple kind signalling object forwarding the input to specific devices	multiple kind switch			
MA	MA	object for providing mechanical movement or force	driving object		Kind of driving force		
	MA	driving object in the form of rotational torque, powered by electromagnetic force	electromagnetic rotational driving object		Kind of movement		

Class code			Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2	3				
		MAA	electromagnetic rotational driving object providing continuous rotation	electric motor	AC motor, asynchronous motor, DC motor, induction motor, PM motor, servo-motor, synchronous motor	
		MAB	electromagnetic rotational driving object providing discrete rotational steps	stepper motor		
MB			driving object in the form of linear force, powered by electromagnetic force	electromagnetic linear driving object		Kind of method
		MBA	electromagnetic linear driving object providing a continuous movement	linear motor		
MC		MBB	electromagnetic linear driving object providing discrete steps	electromagnet	actuator, solenoid	
			driving object powered by magnetic force	magnetic force driving object		Kind of method
MD		MCA	magnetic force driving object by permanent magnet	permanent magnet		
			driving object powered by piezoelectric force	piezoelectric driving object		Kind of method
ML		MDA	piezoelectric driving object by piezoelectric crystal	piezoelectric motor	piezoelectric actuator	
			driving object powered by mechanical energy	mechanical energy driving object		Kind of mechanical source
		MLA	mechanical energy driving object releasing gravitational energy	gravity energy drive	roller coaster	
		MLB	mechanical energy driving object releasing elastic energy	elastic energy drive	spring actuator device	
		MLC	mechanical energy driving object in the form of kinetic energy in blowing air	wind turbine		
		MLD	mechanical energy driving object in the form of kinetic energy in streaming water	water turbine		
		MLE	mechanical energy driving object in the form of kinetic energy and reaction force in streaming and/or expanding gases	gas turbine		
			driving object powered by fluid displacement or pressure	fluid powered driving object		Kind of fluid source
MM		MMA	fluid powered driving object providing movement corresponding to a liquid volume	hydraulic cylinder		
		MMB	fluid powered driving object providing movement to end positions depending on the gaseous pressure	pneumatic cylinder		
		MMC	fluid powered driving object providing rotation by a flowing liquid	hydraulic motor		

Class code			Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2	3				
N		MMD	fluid powered driving object providing rotation by a pressurized gas	pneumatic motor		
	MS		driving object powered by combustion of fuels	combustion engine		Kind of engine
		MSA	combustion engine in cylinders with pistons powered by spark ignited combustion	Otto cycle engine		
		MSB	combustion engine in cylinders with pistons powered by compressed ignited combustion	Diesel cycle engine		
		MSC	combustion engine in circular compartment with eccentric rotary piston powered by spark ignited combustion	Wankel engine		
	MT		driving object powered by an external heat source	heat engine		Kind of engine
		MTA	heat engine utilizing expanding steam acting on one piston	steam engine		
		MTB	heat engine utilizing two pistons within one heated and one cooled cylinder or cylinder part	Stirling engine		
			object for enclosing partly or fully another object	covering object		Kind of method
	NA		covering object by filling an opening	infilling object		Kind of purpose by the filling
		NAA	infilling object permitting light entry	pane		
		NAB	infilling object preventing entry of light and solid objects	panel		
		NAC	infilling object permitting fluid entry	grating		
		NAD	infilling object preventing fluid entry	sealing joint	gasket, gland, grout	
	NB		covering object by closing an opening	closure object		Kind of object to close
		NBA	closure object in a door	door leaf		
		NBB	closure object in a large door	leaf of large door		
		NBC	closure object in an enclosure	cabinet door	cubicle door, cupboard door, inspection hatch, fuel door	
NBD		closure object in a gate	gate leaf			
NC		closure object in a hatch	hatch cover	faceplate, housing cover		
		covering object by finishing structures	finishing object		Kind of object to protect	

Class code			Class definition	Class name (preferred term)	Examples of terms	Criteria for definition of subclasses
1	2	3				
		NCA	<i>finishing object of a pavement</i>	paving		
		NCB	<i>finishing object of a wall</i>	wall covering		
		NCC	<i>finishing object of a floor</i>	flooring		
		NCD	<i>finishing object of a ceiling</i>	ceiling finish		
		NCE	<i>finishing object of a roof</i>	roofing		
		NCF	<i>finishing object of an opening</i>	window sill	window board	
		NCG	<i>finishing object of a vegetation area</i>	plant mat	grass turf	
		NCH	<i>finishing object by forming the outer shape of an object</i>	surface forming object	aircraft fairing, aircraft skin, belly fairing, car body panel, cockpit fairing, motorcycle fairing, unstressed hull plate	
ND			<i>covering object by terminating another object</i>	terminating object		Kind of object to terminate
		NDA	<i>terminating object delimiting an edge of pavement or vegetation area</i>	curb	lawn edge, plant bed edge	
		NDB	<i>terminating object delimiting an edge of a wall</i>	crown	flaunching, wall top	
		NDC	<i>terminating object delimiting an edge of a floor</i>	raised floor edge		
		NDD	<i>terminating object delimiting an edge of a ceiling</i>	ceiling edge		
		NDE	<i>terminating object delimiting an edge of a roof</i>	fascia	bargeboard	
NE			<i>covering object by hiding joints and transitions</i>	hiding object		Kind of method and purpose
		NEA	<i>hiding object between a wall and a ceiling</i>	ceiling lining		
		NEB	<i>hiding object between a wall and a floor</i>	skirting board	base shoe	
		NEC	<i>hiding object between two walls</i>	wall corner lining		
		NED	<i>hiding object on a roof</i>	flashing	eaves lead, ridge flashing, roof flashing	
		NEE	<i>hiding object around an opening</i>	reveal liner	architrave, bushing	