

6 Conformance requirements

Conformance to this part of ISO 10303 includes satisfying the requirements stated in this part, the requirements of the implementation method(s) supported, and the relevant requirements of the normative references.

An implementation shall support at least one of the following implementation methods:

- ISO 10303-21;
- ISO 10303-28.

Requirements with respect to implementation methods-specific requirements are specified in annex C.

The Protocol Information Conformance Statement (PICS) proforma lists the options or the combinations of options that may be included in the implementation. The PICS proforma is provided in annex D.

This part of ISO 10303 provides for a number of options that may be supported by an implementation. These options have been grouped into the following conformance classes:

- class 1 - provides piping system functional information;
- class 2 - provides equipment and component spatial information;
- class 3 - provides plant layout and piping design information;
- class 4 - provides piping fabrication and installation information;
- class 5 - provides piping inspection information;
- class 6 - provides HVAC system functional information;
- class 7 - provides HVAC spatial information;
- class 8 - provides cableway spatial information;
- class 9 - provides piping and HVAC analysis information
- class 10 - provides mechanical system functional information;
- class 11 - provides mechanical system spatial information.

Support for a particular conformance class requires support of all the options specified in this class. All eleven conformance classes include information concerning plant item characterization, connectors, connections, and shape information.

Table 2 defines the units of functionality included within each conformance class.

Conformance to a particular class requires that all AIM elements defined as part of that class be supported. Table 3 defines the classes that each AIM element belongs to.

NOTE ISO 10303-32: describes the conformance assessment process.

6.1 Conformance class 1, piping system functional information

This conformance class provides piping system functional information. This conformance class contains functional information of the piping system and catalogue reference information, but no shape or spatial information. This conformance class enables the following activity:

- exchange of functional information on plant piping systems.

NOTE 1 The purpose of this conformance class is to provide an interface with ISO 10303-221² [3] and piping functional design and schematics software.

NOTE 2 This conformance class is related to the following data flows between AAM activities:

- piping and instrumentation diagrams (preliminary) A222 to A223, A224, and A225;
- piping and instrumentation diagrams (AFD) A222 to A232 and A235;
- piping and instrumentation diagrams (design) A232 to A241;
- piping and instrumentation diagrams A241 to A242, A243, A244, A245, and O4.

6.2 Conformance class 2, equipment and component spatial information

This conformance class provides equipment and component spatial information. This conformance class contains basic equipment performance characteristics, connector location and orientation information, material specifications, version information, explicit shape, and catalogue reference information. This conformance class enables the exchange of minimal vendor equipment and component information.

NOTE This conformance class is related to the following data flows between AAM activities:

- equipment list C3 to A32;
- equipment characteristics C3 to A32;
- material requirements C3 to A32;
- specifications and standards C3 to A32 and A33;
- plant items A35 to A43.

6.3 Conformance class 3, plant layout and piping design information

This conformance class provides plant layout and piping design information. This conformance class contains design, layout, and spatial information for the plant, and catalogue reference information. This conformance class enables the exchange of plant layout and piping design information and supports the following activities:

- area classification;
- space analysis;
- plant arrangement (placement of space occupying elements);

- spatial design of piping systems including pipe routing and component placement and placement of pipe supports;
- operation and maintenance analysis;
- constructability reviews;
- interference checking;
- development of equipment list and line list;
- development of equipment takeoffs;
- development of material takeoffs for piping and piping components;
- connectivity and topology checks;
- material and connection compatibility checks;
- provision of spatial design information to support fabrication and construction;
- spool and weld identification;
- plant startup;
- plant commissioning;
- plant operation;
- configuration management of plant items and piping system information.

NOTE 1 Although not explicitly cited above, this conformance class also supports the activities listed for the other conformance classes, except for piping inspection information.

NOTE 2 This conformance class is related to the following data flows between AAM activities:

- corporate standards to A22 and A24;
- societal requirements to A22 and A24;
- site information (existing) I3 to A222 and A224;
- site information (existing) I1 to A242;
- process flow diagrams C2 to A222, A223, A224, and A225;
- process flow diagrams C4 to A241;
- equipment list A223 to A222, A232, A233, and A241;

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- equipment list A241 to A242, A245, and A32;
- equipment list C3 to A32;
- equipment characteristics (required) C1 to A222 and A223;
- equipment characteristics (functional) A222 to A223;
- equipment characteristics (performance) A223 to A222, A232, A233, and A241;
- equipment characteristics (performance) A241 to A242, A245, and A32;
- equipment characteristics (process) C1 to A241;
- equipment characteristics C3 to A32;
- piping and instrumentation diagrams (preliminary) A222 to A223, A224, and A225;
- piping and instrumentation diagrams (AFD) A222 to A232, A234, and A235;
- piping and instrumentation diagrams (design) C2 to A241;
- system layout (preliminary) A224 to A222, A232, A234, A235, and A242;
- system design (preliminary) A222 to A224, A232, A234, A235, and A242;
- system layout and design A242 to A243, A244, A245, and A41;
- change request (design) A222, A223, A224, and A225 to A21;
- change request (design) A241, A242, and A245 to A23;
- supplier documentation I3 to A241 and A242;
- specifications and standards C9 to A241, A242, A243, and A244;
- specifications and standards C3 to A32 and A33;
- material requirements A241 to A242, A245, and A32;
- material requirements C3 to A32;
- project-specific documents A241, A242, A243 to A32, A33, A34, and A35;
- plant items A35 to A43.

6.4 Conformance class 4, piping fabrication and installation information

This conformance class provides piping fabrication and installation information. This conformance class contains system, plant item, and line identification, piping information, plant item characteristics and shape, and catalogue reference information. This conformance class enables the exchange of piping fabrication and installation information.

NOTE This conformance class is related to the following data flows between AAM activities:

- plant items I1 to A43;
- change request A43 to A2;
- specifications and standards to A43;
- company requirements to A43;
- project-specific documents to A43;
- supplier documentation C1 to A43;
- piping materials I2 to A4233;
- piping installation documents C2 to A42331;
- piping fabrication documents C7 to A42331;
- piping materials I2 to A42331;
- standard practice C3 to A42332;
- shop fabrication details and schedule I1 to A42332.

6.5 Conformance class 5, piping inspection information

This conformance class provides piping inspection information in addition to the piping fabrication and installation information provided in conformance class 4. This conformance class contains system, plant item, and line identification, piping information, plant item characteristics and shape, catalogue reference information, and piping inspection information. This conformance class enables the exchange of piping inspection information in addition to piping fabrication and installation information.

NOTE 1 There are two categories of piping inspection information. Category A focuses on the whereabouts of the inspected result only. Category B focuses on both the whereabouts and the details of the inspected result.

NOTE 2 This conformance class is related to the following data flows between AAM activities:

- plant items I1 to A43;
- change request A43 to A2;
- specifications and standards to A43;
- company requirements to A43;

- project-specific documents to A43;
- supplier documentation C1 to A43;
- piping materials I2 to A4233;
- piping installation documents C2 to A42331;
- piping fabrication documents C7 to A42331;
- piping materials I2 to A42331;
- standard practice C3 to A42332;
- shop fabrication details and schedule I1 to A42332;
- piping inspection documents C5 to A42333;
- inspection procedure C8 to A42333;
- construction documentation C4 to A42334.

6.6 Conformance class 6, HVAC system functional information

This conformance class provides HVAC system functional information. This conformance class contains functional information of the HVAC system and catalogue reference information, but no shape or spatial information. This conformance class enables the following activity:

- exchange of functional information on heating, ventilation, and air-conditioning (HVAC) systems.

NOTE This conformance class is related to the following data flows between AAM activities:

- piping and instrumentation diagrams (preliminary) A222 to A223, A224, and A225;
- piping and instrumentation diagrams (AFD) A222 to A232 and A235;
- piping and instrumentation diagrams (design) A232 to A241;
- piping and instrumentation diagrams A241 to A242, A243, A244, A245, and O4.

6.7 Conformance class 7, HVAC spatial information

This conformance class provides HVAC layout and design information. This conformance class contains design, layout, and spatial information for the HVAC systems within the plant, and catalogue reference information. This conformance class enables the exchange of HVAC layout and design information and supports the following activities:

- area classification;
- space analysis;
- plant arrangement (placement of space occupying elements);

- spatial design of HVAC systems including component placement;
- HVAC operation and maintenance analysis;
- HVAC constructability reviews;
- interference checking;
- development of HVAC equipment list and line list;
- development of HVAC equipment takeoffs;
- development of material takeoffs for HVAC and HVAC components;
- connectivity and topology checks;
- material and connection compatibility checks;
- provision of spatial design information to support HVAC fabrication and construction.

NOTE This conformance class is related to the following data flows between AAM activities:

- corporate standards to A22 and A24;
- societal requirements to A22 and A24;
- site information (existing) I3 to A222 and A224;
- site information (existing) I1 to A242;
- HVAC equipment list A223 to A222, A232, A233, and A241;
- HVAC equipment list A241 to A242, A245, and A32;
- HVAC equipment list C3 to A32;
- HVAC equipment characteristics (required) C1 to A222 and A223;
- HVAC equipment characteristics C3 to A32;
- system layout (preliminary) A224 to A222, A232, A234, A235, and A242;
- system design (preliminary) A222 to A224, A232, A234, A235, and A242;
- system layout and design A242 to A243, A244, A245, and A41;
- change request (design) A222, A223, A224, and A225 to A21;
- change request (design) A241, A242, and A245 to A23;
- supplier documentation I3 to A241 and A242;

- specifications and standards C9 to A241, A242, A243, and A244;
- specifications and standards C3 to A32 and A33;
- material requirements A241 to A242, A245, and A32;
- material requirements C3 to A32;
- project-specific documents A241, A242, A243 to A32, A33, A34, and A35;
- plant items A35 to A43.

6.8 Conformance class 8, cableway spatial information

This conformance class provides cableway spatial information. This conformance class contains layout and spatial information for the cableway systems within the plant. This conformance class enables the exchange of cableway layout and spatial information, but does not provide the details of the cableway contents or the operating characteristics. Details of cableway contents or operating are beyond the scope of this edition of ISO 10303-227.

NOTE This conformance class is related to the following data flows between AAM activities:

- corporate standards to A22 and A24;
- societal requirements to A22 and A24;
- site information (existing) I3 to A222 and A224;
- site information (existing) I1 to A242;
- system layout (preliminary) A224 to A222, A232, A234, A235, and A242;
- system design (preliminary) A222 to A224, A232, A234, A235, and A242;
- system layout and design A242 to A243, A244, A245, and A41;
- change request (design) A222, A223, A224, and A225 to A21;
- change request (design) A241, A242, and A245 to A23.

6.9 Conformance class 9, piping and HVAC analysis information

This conformance class provides piping and HVAC analysis information. It enables the exchange of sufficient information about a piping or HVAC system for the performance of stress or flow analysis on the receiving system. It does not, however, include exchange of the results of such an analysis.

NOTE This conformance class is related to the data flow in the following AAM activity:

- analyze final plant design A245.

6.10 Conformance class 10, mechanical system functional information

This conformance class provides mechanical system functional information. This conformance class contains functional information of the mechanical system, catalogue and reference data library information, but no shape or spatial information. This conformance class enables the following activity:

- exchange of functional information on propulsion, manoeuvring, lifting and transmission systems.

6.11 Conformance class 11, mechanical system spatial information

This conformance class provides mechanical spatial information. This conformance class contains design, layout and spatial information for the mechanical systems within the plant, catalogue and reference data library information. This conformance class enables the exchange of mechanical system layout and design information and supports the following activities:

- weight distribution analysis (the spatial distribution of weights);
- spatial design of mechanical systems including component placement;
- interference checking;
- development of mechanical component and arrangement lists;
- connectivity and topology checks;
- material and connection compatibility checks;
- provision of spatial design information to support machinery installation, operation and maintenance.

6.12 Options within a conformance class

Conformance classes define usage by discipline and life cycle stage. Examples are: 1 (Piping system functional information), 4 (Piping fabrication and installation information), or 7 (HVAC spatial information). Each conformance class may be augmented by one or more Options, which are intended to specify the capabilities of conforming systems while recognizing the limitations of existing system. Options are defined for three types of usage: shape representation (geometry and topology), plant usage, and unit of functionality. The resulting conformance class with Option is specified as a combination of conformance class number and Option letters. An example would be: Conformance Class 3 with Options A, R.

A shape representation Option specifies the type of geometric and topological entities used to provide a shape representation for plant_items. These options are mutually exclusive; for example, only one of A, B, or C may be specified. However, for conformance class numbers (2, 3, 4,5, 7, or 8) that include shape representation, one shape representation Option must be specified. The entities included by each Option are defined in Table 3.

- Option A indicates the use of Brep (Boundary representation) shape representation for the plant_item entities in the conformance class. This option is intended for use with software systems that utilize surface models and/or Brep solid models.
- Option B indicates the use of simple CSG shape representations for the plant_item entities in the conformance class. A simple CSG shape representation is generated entirely from CSG primitive solids.

The use of solids constructed by swept surfaces, extrusion, or Brep is not supported. This option is intended for use with software systems that utilize traditional CSG solid models.

— Option C indicates the use of hybrid CSG shape representations for the plant_item entities in the conformance class. A hybrid CSG shape representation is generated from CSG primitive solids, Brep solids, or solids defined by swept surfaces, or extrusions. This option is intended for use with software systems that utilize both Brep and CSG solid models.

A plant usage Option specifies the type of plant information exchanged: generic plant information or shipbuilding information. These options are typically mutually exclusive; for example, only one of P or S is specified.

— Option P indicates all of the entities for the plant characterization UoF are supported, except Ship.

— Option S indicates all of the entities for the plant characterization UoF are supported, such that all Plant application objects are of type Ship.

A unit of functionality Option specifies additional capabilities manifested by a specific unit of functionality. Many software systems currently provide only limited support for these units of functionality. The use of these Options indicates support for all of the entities defined by that unit of functionality. These options are not mutually exclusive. One or more of these options may be specified.

— Option H indicates use of hull applicability to exchange data about multiple ships. Option S must also be specified. The entities included by this Option are defined in Table 3.

— Option M indicates that all of entities for the associative schematics UoF are supported.

— Option R indicates all of the entities for the change information UoF are supported. Change information allows revision history to be optionally included in an ISO 10303-227 file for any conformance class.

— Option T indicates all of the entities for the site characterization UoF are supported. Option P must also be specified.

Table 2 — Conformance classes

Units of functionality	Conformance classes										
	1 PSFN	2 EPSP	3 PLSP	4 PFB	5 PIN	6 HSFN	7 HSP	8 CSP	9 PHAN	10 MSFN	11 MSSP
Cableway component characterization	-	-	X	-	-	-	-	X	-	-	-
Connection	X	X	X	X	X	X	X	X	X	X	X
Connector	X	X	X	X	X	X	X	X	X	X	X
HVAC component characterization	-	-	X	-	-	X	X	-	X	-	-
HVAC system functional characterization	-	-	X	-	-	X	X	-	X	-	-
Mechanical component characterization	-	-	X	-	-	-	-	-	-	X	X
Mechanical system functional characterization	-	-	X	-	-	-	-	-	-	X	X
Piping inspection	-	-	-	-	X	-	-	-	-	-	-
Piping component characterization	X	X	X	X	X	-	-	-	X	-	-
Piping system functional characterization	X	X	X	-	-	-	-	-	X	-	-
Plant item characterization	X	X	X	X	X	X	X	X	X	X	X
Shape	X	X	X	X	X	X	X	X	X	X	X
Shape representation Options (Note 1) (Options A, or B, or C)		A, B, C	A, B, C	A, B, C	A, B, C		A, B, C	A, B, C			A, B, C
Plant Usage Options (Options P, S)	P, S	P, S	P, S	P, S	P, S	P, S	P, S	P, S	P, S	P, S	P, S
Hull applicability (Option H)	H	H	H	H	H	H	H	H	H	H	H
Associative schematics (Option M)	M	M	M	-	-	M	M	M	M	M	M
Change information (Option R)	R	R	R	R	R	R	R	R	R	R	R
Site characterization (Option T)	T	T	T	T	T	T	T	T	T	T	T

- 1 – PSFN - Piping system functional information
2 – EPSP - Equipment and piping spatial information
3 – PLSP - Plant spatial information
4 – PFB - Piping fabrication and installation information
5 – PIN - Piping inspection information
6 – HSFN - HVAC system functional information
7 – HSP - HVAC spatial information
8 – CSP - Cableway spatial information
9 – PHAN - Piping and HVAC analysis information
10 - MSFN – Mechanical system functional information
11- MSSP – Mechanical system spatial information

Note 1: All conformance classes include geometric entities to represent locations, connect points, and reference geometry, e.g., centrelines. These specific geometric entities are specified in the mapping tables

Table 2 specifies which units of functionality participate in specific conformance classes. An “X” indicates that all ARM entities in the unit of functionality are included in the conformance class. An option, “M”, “R”, or “T”, indicates that all the ARM entities for that unit of functionality are also included. A shape representation option, “A”, “B”, “C”, indicates that specific geometry and topology entities defined in Table 3 are included in the conformance class. An Option “H” indicates that specific effectivity entities defined in Table 3 are included in the conformance class. A plant usage Option, “P” or “S”, indicates plants may not be of type ship or must be of type ship respectively.

Table 3 explicitly specifies which AIM entities participate in specific conformance classes. Since specific change objects apply to specific ARM entities, Table 3 also defines which objects in the change information UoF are required within a given conformance class.

Table 3 — Conformance class (1 –11) elements

AIM element	Conformance class										
	1	2	3	4	5	6	7	8	9	10	11
action	X	X	X	X	X	X	X	X	X	X	X
action_assignment	X	X	X	X	X	X	X	X	X	X	X
action_directive	X	X	X	X	X	X	X	X	X	X	X
action_method	R	R	R	R	R	R	R	R	R	R	R
action_method_relationship	X	X	X	X	X	X	X	X	X	X	X
action_relationship	R	R	R	R	R	R	R	R	R	R	R
action_request_assignment	X	X	X	X	X	X	X	X	X	X	X
action_request_solution	R	R	R	R	R	R	R	R	R	R	R
action_request_status	X	X	X	X	X	X	X	X	X	X	X
action_status	R	R	R	R	R	R	R	R	R	R	R
advanced_face	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
amount_of_substance_measure_with_unit	X	X	X	X	X	X	X	X	X	X	X
amount_of_substance_unit	X	X	X	X	X	X	X	X	X	X	X
analysis_tracing_representation	-	-	-	-	-	-	-	-	-	X	X
angular_location	X	X	X	X	X	X	X	X	X	X	X
annotation_curve_occurrence	X	X	X	-	-	X	X	X	X	X	X
annotation_fill_area	X	X	X	-	-	X	X	X	X	X	X
annotation_fill_area_occurrence	X	X	X	-	-	X	X	X	X	X	X
annotation_occurrence	X	X	X	-	-	X	X	X	X	X	X
annotation_occurrence_relationship	X	X	X	-	-	X	X	X	X	X	X
annotation_point_occurrence	X	X	X	-	-	X	X	X	X	X	X
annotation_symbol	X	X	X	-	-	X	X	X	X	X	X
annotation_symbol_occurrence	X	X	X	-	-	X	X	X	X	X	X
annotation_text	X	X	X	-	-	X	X	X	X	X	X
annotation_text_occurrence	X	X	X	-	-	X	X	X	X	X	X
annotation_text_with_extent	X	X	X	-	-	X	X	X	X	X	X
application_context	X	X	X	X	X	X	X	X	X	X	X
application_context_element	X	X	X	X	X	X	X	X	X	X	X
application_protocol_definition	X	X	X	X	X	X	X	X	X	X	X
applied_action_request_assignment	X	X	X	X	X	X	X	X	X	X	X
applied_approval_assignment	X	X	X	X	X	X	X	X	X	X	X

Table 3 — Conformance class (1 –11) elements

AIM element	Conformance class										
	1	2	3	4	5	6	7	8	9	10	11
applied_classification_assignment	X	X	X	X	X	X	X	X	X	X	X
applied_date_and_time_assignment	X	X	X	X	X	X	X	X	X	X	X
applied_date_assignment	X	X	X	X	X	X	X	X	X	X	X
applied_document_reference	X	X	X	X	X	X	X	X	X	X	X
applied_document_usage_constraint_assignment	X	X	X	X	X	X	X	X	X	X	X
applied_effectivity_assignment	H	H	H	H	H	H	H	H	H	H	H
applied_effectivity_context_assignment	H	H	H	H	H	H	H	H	H	H	H
applied_identification_assignment	X	X	X	X	X	X	X	X	X	X	X
approval	P, R	P, R	P, R	P, R	P, R	P, R	P, R	P, R	P, R	P, R	P, R
approval_assignment	P, R	P, R	P, R	P, R	P, R	P, R	P, R	P, R	P, R	P, R	P, R
approval_date_time	R	R	R	R	R	R	R	R	R	R	R
approval_person_organization	R	R	R	R	R	R	R	R	R	R	R
approval_role	R	R	R	R	R	R	R	R	R	R	R
approval_status	P	P	P	P	P	P	P	P	P	P	P
area_dependent_annotation_representation	X	X	X	-	-	X	X	X	X	X	X
area_in_set	X	X	X	-	-	X	X	X	X	X	X
arrangement_branch_connection	-	-	-	-	-	-	-	-	-	X	X
arrangement_less_mechanical_system	-	-	-	-	-	-	-	-	-	X	X
arrangement_load	-	-	-	-	-	-	-	-	-	X	X
arrangement_plant_item_branch_connection	-	-	-	-	-	-	-	-	-	X	X
arrangement_plant_item_connection	-	-	-	-	-	-	-	-	-	X	X
arrangement_termination_connection	-	-	-	-	-	-	-	-	-	X	X
assembly_component_usage	X	X	X	X	X	X	X	X	X	X	X
axis1_placement	X	X	X	X	X	X	X	X	X	X	X
axis2_placement_2d	X	X	X	X	X	X	X	X	X	X	X
axis2_placement_3d	X	X	X	X	X	X	X	X	X	X	X
b_spline_curve	X	X	X	X	X	X	X	X	X	X	X
b_spline_curve_with_knots	X	X	X	X	X	X	X	X	X	X	X
b_spline_surface	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
b_spline_surface_with_knots	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T

Table 3 — Conformance class (1 –11) elements

AIM element	Conformance class										
	1	2	3	4	5	6	7	8	9	10	11
bezier_curve	X	X	X	X	X	X	X	X	X	X	X
bezier_surface	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
blank_fitting_class	X	X	X	X	X	-	-	-	X	-	-
block	-	B,C	B,C	B,C	B,C	-	B,C	B,C	-	-	B,C
bolt_and_nut_component_class	X	X	X	X	X	X	X	X	X	X	X
bolt_and_nut_component_definition	X	X	X	X	X	X	X	X	X	X	X
bolt_and_nut_set_definition	X	X	X	X	X	X	X	X	X	X	X
boolean_result	-	B,C	B,C	B,C	B,C	-	B,C	B,C	-	-	B,C
boundary_curve	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
bounded_curve	X	X	X	X	X	X	X	X	X	X	X
bounded_pcurve	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
bounded_surface	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
bounded_surface_curve	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
brep_with_voids	-	A,C	A,C	A,C	A,C	-	A,C	A,C	-	-	A,C
cableway_component_class	-	-	X	-	-	-	-	X	-	-	-
cableway_component_definition	-	-	X	-	-	-	-	X	-	-	-
cableway_connector_class	-	-	X	-	-	-	-	X	-	-	-
cableway_system	P	P	P	P	P	P	P	P	P	P	P
calendar_date	X	X	X	X	X	X	X	X	X	X	X
camera_image	X	X	X	-	-	X	X	X	X	X	X
camera_model	X	X	X	-	-	X	X	X	X	X	X
camera_model_d2	X	X	X	-	-	X	X	X	X	X	X
camera_model_d2_shape_clipping	X	X	X	-	-	X	X	X	X	X	X
camera_usage	X	X	X	-	-	X	X	X	X	X	X
cartesian_point	X	X	X	X	X	X	X	X	X	X	X
cartesian_transformation_operator	X	X	X	X	X	X	X	X	X	X	X
cartesian_transformation_operator_3d	X	X	X	X	X	X	X	X	X	X	X
catalogue	X	X	X	X	X	X	X	X	X	X	X
catalogue_connector	X	X	X	X	X	X	X	X	X	X	X
catalogue_item	X	X	X	X	X	X	X	X	X	X	X
celsius_temperature_measure_with_unit	X	X	X	X	X	X	X	X	X	X	X
centre_of_symmetry	X	X	X	X	X	X	X	X	X	X	X
change_action	R	R	R	R	R	R	R	R	R	R	R

Table 3 — Conformance class (1–11) elements

AIM element	Conformance class										
	1	2	3	4	5	6	7	8	9	10	11
change_item_id_assignment	R	R	R	R	R	R	R	R	R	R	R
change_life_cycle_stage_assignment	R	R	R	R	R	R	R	R	R	R	R
characterized_object	X	X	X	X	X	X	X	X	X	X	X
circle	X	X	X	X	X	X	X	X	X	X	X
clamp_component_definition	X	X	X	X	X	X	X	X	X	X	X
clamp_set_definition	X	X	X	X	X	X	X	X	X	X	X
classification_assignment	X	X	X	X	X	X	X	X	X	X	X
classification_role	X	X	X	X	X	X	X	X	X	X	X
closed_shell	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
colour	X	X	X	X	X	X	X	X	X	X	X
colour_rgb	X	X	X	X	X	X	X	X	X	X	X
colour_specification	X	X	X	X	X	X	X	X	X	X	X
composite_curve	X	X	X	X	X	X	X	X	X	X	X
composite_curve_on_surface	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
composite_curve_segment	X	X	X	X	X	X	X	X	X	X	X
conic	X	X	X	X	X	X	X	X	X	X	X
conical_surface	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
connected_face_set	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
connection_functional_class	X	X	X	X	X	X	X	X	X	X	X
connection_material_definition	X	X	X	X	X	X	X	X	X	X	X
connection_motion_class	X	X	X	X	X	X	X	X	X	X	X
connection_node	X	X	X	-	-	-	-	-	X	-	-
connector_end_type_class	X	X	X	X	X	X	X	X	X	X	X
context_dependent_invisibility	X	X	X	-	-	X	X	X	X	X	X
context_dependent_unit	X	X	X	X	X	X	X	X	X	X	X
conversion_based_unit	X	X	X	X	X	X	X	X	X	X	X
coordinated_universal_time_offset	X	X	X	X	X	X	X	X	X	X	X
csg_solid	-	B,C	B,C	B,C	B,C	-	B,C	B,C	-	-	B,C
curve	X	X	X	X	X	X	X	X	X	X	X
curve_bounded_surface	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
curve_replica	X	X	X	X	X	X	X	X	X	X	X
curve_style	X	X	X	-	-	X	X	X	X	X	X
curve_style_font	X	X	X	-	-	X	X	X	X	X	X
curve_style_font_pattern	X	X	X	-	-	X	X	X	X	X	X

Table 3 — Conformance class (1 –11) elements

AIM element	Conformance class										
	1	2	3	4	5	6	7	8	9	10	11
curve_style_wide	X	X	X	-	-	X	X	X	X	X	X
cyclide_segment_solid	-	B,C	B,C	B,C	B,C	-	B,C	B,C	-	-	B,C
cylindrical_surface	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
data_environment	-	-	-	-	X	-	-	-	-	-	-
date	X	X	X	X	X	X	X	X	X	X	X
date_and_time	X	X	X	X	X	X	X	X	X	X	X
date_and_time_assignment	X	X	X	X	X	X	X	X	X	X	X
date_assignment	X	X	X	X	X	X	X	X	X	X	X
date_role	X	X	X	X	X	X	X	X	X	X	X
date_time_role	X	X	X	X	X	X	X	X	X	X	X
defined_symbol	X	X	X	-	-	X	X	X	X	X	X
definitional_representation	X	X	X	X	X	X	X	X	X	X	X
degenerate_pcurve	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
degenerate_toroidal_surface	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
derived_shape_aspect	X	X	X	X	X	X	X	X	X	X	X
derived_unit	X	X	X	X	X	X	X	X	X	X	X
derived_unit_element	X	X	X	X	X	X	X	X	X	X	X
description_attribute	-	-	-	-	-	-	-	-	-	-	-
descriptive_colour	X	X	X	X	X	X	X	X	X	X	X
descriptive_representation_item	X	X	X	X	X	X	X	X	X	X	X
design_arrangement_performance	-	-	-	-	-	-	-	-	-	X	X
design_project	X	X	X	X	X	X	X	X	X	X	X
design_project_assignment	X	X	X	X	X	X	X	X	X	X	X
dimensional_characteristic_representation	X	X	X	X	X	X	X	X	X	X	X
dimensional_exponents	X	X	X	X	X	X	X	X	X	X	X
dimensional_location	X	X	X	X	X	X	X	X	X	X	X
dimensional_size	X	X	X	X	X	X	X	X	X	X	X
directed_action	X	X	X	X	X	X	X	X	X	X	X
direction	X	X	X	X	X	X	X	X	X	X	X
document	X	X	X	X	X	X	X	X	X	X	X
document_reference	X	X	X	X	X	X	X	X	X	X	X
document_relationship	X	X	X	X	X	X	X	X	X	X	X
document_representation_type	X	X	X	X	X	X	X	X	X	X	X

Table 3 — Conformance class (1–11) elements

AIM element	Conformance class										
	1	2	3	4	5	6	7	8	9	10	11
document_type	X	X	X	X	X	X	X	X	X	X	X
document_usage_constraint	X	X	X	X	X	X	X	X	X	X	X
document_usage_constraint_assignment	X	X	X	X	X	X	X	X	X	X	X
document_usage_role	X	X	X	X	X	X	X	X	X	X	X
draughting_callout	X	X	X	-	-	X	X	X	X	X	X
draughting_callout_relationship	X	X	X	-	-	X	X	X	X	X	X
drawing_definition	X	X	X	-	-	X	X	X	X	X	X
drawing_revision	X	X	X	-	-	X	X	X	X	X	X
drawing_revision_sequence	X	X	X	-	-	X	X	X	X	X	X
drawing_sheet_revision	X	X	X	-	-	X	X	X	X	X	X
drawing_sheet_revision_usage	X	X	X	-	-	X	X	X	X	X	X
ducting_system	P	P	P	P	P	P	P	P	P	P	P
eccentric_cone	-	B,C	B,C	B,C	B,C	-	B,C	B,C	-	-	B,C
edge	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
edge_curve	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
edge_loop	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
effectivity	H	H	H	H	H	H	H	H	H	H	H
effectivity_assignment	H	H	H	H	H	H	H	H	H	H	H
effectivity_context_assignment	H	H	H	H	H	H	H	H	H	H	H
effectivity_context_role	H	H	H	H	H	H	H	H	H	H	H
elbow_fitting_class	X	X	X	X	X	-	-	-	X	-	-
electric_current_measure_with_unit	X	X	X	X	X	X	X	X	X	X	X
electric_current_unit	X	X	X	X	X	X	X	X	X	X	X
electrical_connector_class	X	X	X	X	X	X	X	X	X	X	X
electrical_system	P	P	P	P	P	P	P	P	P	P	P
elementary_surface	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
ellipse	X	X	X	X	X	X	X	X	X	X	X
ellipsoid	-	B,C	B,C	B,C	B,C	-	B,C	B,C	-	-	B,C
evaluated_degenerate_pcurve	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
executed_action	X	X	X	X	X	X	X	X	X	X	X
external_source	X	X	X	X	X	X	X	X	X	X	X
external_source_relationship	X	X	X	X	X	X	X	X	X	X	X
externally_defined_class	X	X	X	X	X	X	X	X	X	X	X

Table 3 — Conformance class (1 –11) elements

AIM element	Conformance class										
	1	2	3	4	5	6	7	8	9	10	11
externally_defined_curve_font	X	X	X	-	-	X	X	X	X	X	X
externally_defined_document	P	P	P	P	P	P	P	P	P	P	P
externally_defined_hatch_style	X	X	X	-	-	X	X	X	X	X	X
externally_defined_item	X	X	X	X	X	X	X	X	X	X	X
externally_defined_item_relationship	X	X	X	X	X	X	X	X	X	X	X
externally_defined_plant_item_definition	X	X	X	X	X	X	X	X	X	X	X
externally_defined_representation_item	X	X	X	X	X	X	X	X	X	X	X
externally_defined_symbol	X	X	X	-	-	X	X	X	X	X	X
externally_defined_text_font	X	X	X	-	-	X	X	X	X	X	X
externally_defined_tile_style	X	X	X	-	-	X	X	X	X	X	X
extruded_area_solid	-	A,C	A,C	A,C	A,C	-	A,C	A,C	-	-	A,C
extruded_face_solid	-	A,C	A,C	A,C	A,C	-	A,C	A,C	-	-	A,C
face	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
face_bound	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
face_outer_bound	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
face_surface	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
faceted_brep	-	A,C	A,C	A,C	A,C	-	A,C	A,C	-	-	A,C
fill_area_style	X	X	X	-	-	X	X	X	X	X	X
fill_area_style_colour	X	X	X	-	-	X	X	X	X	X	X
fill_area_style_hatching	X	X	X	-	-	X	X	X	X	X	X
fill_area_style_tile_symbol_with_style	X	X	X	-	-	X	X	X	X	X	X
fill_area_style_tiles	X	X	X	-	-	X	X	X	X	X	X
flange_fitting_class	X	X	X	X	X	-	-	-	X	-	-
flange_fitting_neck_type_class	X	X	X	X	X	-	-	-	X	-	-
founded_item	X	X	X	X	X	X	X	X	X	X	X
functionally_defined_transformation	X	X	X	X	X	X	X	X	X	X	X
geometric_curve_set	X	X	X	X	X	X	X	X	X	X	X
geometric_representation_context	X	X	X	X	X	X	X	X	X	X	X
geometric_representation_item	X	X	X	X	X	X	X	X	X	X	X
geometric_set	X	X	X	X	X	X	X	X	X	X	X
geometric_set_replica	X	X	X	X	X	X	X	X	X	X	X
global_uncertainty_assigned_context	X	X	X	X	X	X	X	X	X	X	X

Table 3 — Conformance class (1–11) elements

AIM element	Conformance class										
	1	2	3	4	5	6	7	8	9	10	11
global_unit_assigned_context	X	X	X	X	X	X	X	X	X	X	X
graphical_transformation	X	X	X	-	-	X	X	X	X	X	X
group	X	X	X	X	X	X	X	X	X	X	X
group_assignment	X	X	X	X	X	X	X	X	X	X	X
group_relationship	X	X	X	X	X	X	X	X	X	X	X
half_space_2d	-	-	-	-	-	-	-	-	-	-	-
half_space_solid	-	B,C	B,C	B,C	B,C	-	B,C	B,C	-	-	B,C
heat_tracing_representation	X	X	X	X	X	X	X	X	X	X	X
hvac_branch_connection	X	X	X	X	X	X	X	X	X	X	X
hvac_component_definition	-	-	X	-	-	X	X	-	X	-	-
hvac_connector	X	X	X	X	X	X	X	X	X	X	X
hvac_cross_section	X	X	X	X	X	X	X	X	X	X	X
hvac_fitting_class	-	-	X	-	-	X	X	-	X	-	-
hvac_plant_item_branch_connection	-	-	X	-	-	X	X	-	X	-	-
hvac_plant_item_connection	-	-	X	-	-	X	X	-	X	-	-
hvac_run_definition	-	-	X	-	-	X	X	-	X	-	-
hvac_section_definition	-	-	X	-	-	X	X	-	X	-	-
hvac_section_termination	-	-	X	-	-	X	X	-	X	-	-
hvac_support_class	-	-	X	-	-	X	X	-	X	-	-
hvac_support_definition	-	-	X	-	-	X	X	-	X	-	-
hvac_system	P	P	P	P	P	P	P	P	P	P	P
hvac_termination_connection	-	-	X	-	-	X	X	-	X	-	-
hybrid_shape_representation	-	A,C	A,C	A,C	A,C	-	A,C	A,C	-	-	A,C
hyperbola	X	X	X	X	X	X	X	X	X	X	X
id_attribute	-	-	-	-	-	-	-	-	-	-	-
identification_assignment	X	X	X	X	X	X	X	X	X	X	X
identification_role	X	X	X	X	X	X	X	X	X	X	X
inline_equipment	X	X	X	X	X	-	-	-	X	-	-
instrumentation_and_control_system	P	P	P	P	P	P	P	P	P	P	P
interfering_shape_element	X	X	X	X	X	X	X	X	X	X	X
intersection_curve	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
invisibility	X	X	X	-	-	X	X	X	X	X	X
item_defined_transformation	X	X	X	-	-	X	X	X	X	X	X
item_identified_representation_usage	X	X	X	X	X	X	X	X	X	X	X

Table 3 — Conformance class (1–11) elements

AIM element	Conformance class										
	1	2	3	4	5	6	7	8	9	10	11
known_source	X	X	X	X	X	X	X	X	X	X	X
length_measure_with_unit	X	X	X	X	X	X	X	X	X	X	X
length_unit	X	X	X	X	X	X	X	X	X	X	X
line	X	X	X	X	X	X	X	X	X	X	X
line_branch_connection	X	X	X	-	-	-	-	-	X	-	-
line_less_piping_system	P	P	P	P	P	P	P	P	P	P	P
line_plant_item_branch_connection	X	X	X	-	-	-	-	-	X	-	-
line_plant_item_connection	X	X	X	-	-	-	-	-	X	-	-
line_termination_connection	X	X	X	-	-	-	-	-	X	-	-
local_time	X	X	X	X	X	X	X	X	X	X	X
loop	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
luminous_intensity_measure_with_unit	X	X	X	X	X	X	X	X	X	X	X
luminous_intensity_unit	X	X	X	X	X	X	X	X	X	X	X
make_from_usage_option	X	X	X	X	X	X	X	X	X	X	X
manifold_solid_brep	-	A,C	A,C	A,C	A,C	-	A,C	A,C	-	-	A,C
mapped_item	X	X	X	X	X	X	X	X	X	X	X
mass_measure_with_unit	X	X	X	X	X	X	X	X	X	X	X
mass_unit	X	X	X	X	X	X	X	X	X	X	X
material_designation	X	X	X	X	X	X	X	X	X	X	X
material_designation_characterization	X	X	X	X	X	X	X	X	X	X	X
material_property	X	X	X	X	X	X	X	X	X	X	X
material_property_representation	X	X	X	X	X	X	X	X	X	X	X
measure_representation_item	X	X	X	X	X	X	X	X	X	X	X
measure_with_unit	X	X	X	X	X	X	X	X	X	X	X
mechanical_component_class	-	-	-	-	-	-	-	-	-	X	X
mechanical_component_definition	-	-	-	-	-	-	-	-	-	X	X
mechanical_connector_class	-	-	-	-	-	-	-	-	-	X	X
mechanical_system	-	-	-	-	-	-	-	-	-	X	X
name_assignment	R	R	R	R	R	R	R	R	R	R	R
name_attribute	-	-	-	-	-	-	-	-	-	-	-
named_unit	X	X	X	X	X	X	X	X	X	X	X
object_role	R	R	R	R	R	R	R	R	R	R	R
offset_curve_2d	X	X	X	X	X	X	X	X	X	X	X

Table 3 — Conformance class (1 –11) elements

AIM element	Conformance class										
	1	2	3	4	5	6	7	8	9	10	11
offset_curve_3d	X	X	X	X	X	X	X	X	X	X	X
offset_surface	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
one_direction_repeat_factor	X	X	X	-	-	X	X	X	X	X	X
open_shell	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
organization	X	X	X	X	X	X	X	X	X	X	X
organization_assignment	X	X	X	X	X	X	X	X	X	X	X
organization_role	X	X	X	X	X	X	X	X	X	X	X
organizational_project	X	X	X	X	X	X	X	X	X	X	X
oriented_closed_shell	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
oriented_edge	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
oriented_face	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
oriented_open_shell	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
oriented_path	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
outer_boundary_curve	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
parabola	X	X	X	X	X	X	X	X	X	X	X
parametric_representation_context	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
path	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
pcurve	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
person	X	X	X	X	X	X	X	X	X	X	X
person_and_organization	X	X	X	X	X	X	X	X	X	X	X
person_and_organization_assignment	X	X	X	X	X	X	X	X	X	X	X
person_and_organization_role	X	X	X	X	X	X	X	X	X	X	X
person_assignment	X	X	X	X	X	X	X	X	X	X	X
person_role	X	X	X	X	X	X	X	X	X	X	X
pipe_class	X	X	X	X	X	-	-	-	X	-	-
pipe_closure_fitting_class	X	X	X	X	X	-	-	-	X	-	-
piping_component_class	X	X	X	X	X	-	-	-	X	-	-
piping_component_definition	X	X	X	X	X	X	X	X	X	X	X
piping_connector_class	X	X	X	X	X	-	-	-	X	-	-
piping_spool_definition	X	X	X	X	X	-	-	-	X	-	-
piping_support_definition	X	X	X	X	X	-	-	-	X	-	-
piping_support_fitting_class	X	X	X	X	X	-	-	-	X	-	-
piping_system	P	P	P	P	P	P	P	P	P	P	P
placement	X	X	X	X	X	X	X	X	X	X	X

Table 3 — Conformance class (1–11) elements

AIM element	Conformance class										
	1	2	3	4	5	6	7	8	9	10	11
planar_box	X	X	X	-	-	X	X	X	X	X	X
planar_extent	X	X	X	-	-	X	X	X	X	X	X
plane	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
plane_angle_measure_with_unit	X	X	X	X	X	X	X	X	X	X	X
plane_angle_unit	X	X	X	X	X	X	X	X	X	X	X
plant	P	P	P	P	P	P	P	P	P	P	P
plant_arrangement_definition	-	-	-	-	-	-	-	-	-	X	X
plant_arrangement_segment_definition	-	-	-	-	-	-	-	-	-	X	X
plant_arrangement_segment_termination	-	-	-	-	-	-	-	-	-	X	X
plant_csg_shape_representation	-	B,C	B,C	B,C	B,C	-	B,C	B,C	-	-	B,C
plant_design_csg_primitive	-	B,C	B,C	B,C	B,C	-	B,C	B,C	-	-	B,C
plant_item_connection	X	X	X	X	X	X	X	X	X	X	X
plant_item_connector	X	X	X	X	X	X	X	X	X	X	X
plant_item_interference	X	X	X	X	X	X	X	X	X	X	X
plant_item_route	X	X	X	X	X	X	X	X	X	X	X
plant_item_weight_representation	X	X	X	X	X	X	X	X	X	X	X
plant_line_definition	X	X	X	-	-	-	-	-	X	-	-
plant_line_segment_definition	X	X	X	-	-	-	-	-	X	-	-
plant_line_segment_termination	X	X	X	-	-	-	-	-	X	-	-
plant_spatial_configuration_change_assignment	R	R	R	R	R	R	R	R	R	R	R
plant_spatial_configuration_organization_assignment	X	X	X	X	X	X	X	X	X	X	X
plant_spatial_configuration_person_and_organization_assignment	P,R,T	P,R,T	P,R,T	P,R,T	P,R,T	P,R,T	P,R,T	P,R,T	P,R,T	P,R,T	P,R,T
plant_spatial_configuration_person_assignment	X	X	X	X	X	X	X	X	X	X	X
point	X	X	X	X	X	X	X	X	X	X	X
point_on_curve	X	X	X	X	X	X	X	X	X	X	X
point_on_surface	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
point_replica	X	X	X	X	X	X	X	X	X	X	X
point_style	X	X	X	-	-	X	X	X	X	X	X
poly_loop	X	X	X	X	X	X	X	X	X	X	X

Table 3 — Conformance class (1–11) elements

AIM element	Conformance class										
	1	2	3	4	5	6	7	8	9	10	11
polyline	X	X	X	X	X	X	X	X	X	X	X
pre_defined_colour	X	X	X	-	-	X	X	X	X	X	X
pre_defined_curve_font	X	X	X	-	-	X	X	X	X	X	X
pre_defined_item	X	X	X	X	X	X	X	X	X	X	X
pre_defined_text_font	X	X	X	-	-	X	X	X	X	X	X
precision_qualifier	X	X	X	X	X	X	X	X	X	X	X
presentation_area	X	X	X	-	-	X	X	X	X	X	X
presentation_layer_assignment	X	X	X	X	X	X	X	X	X	X	X
presentation_layer_usage	X	X	X	-	-	X	X	X	X	X	X
presentation_representation	X	X	X	-	-	X	X	X	X	X	X
presentation_representation_relationship	X	X	X	-	-	X	X	X	X	X	X
presentation_scaled_placement	X	X	X	-	-	X	X	X	X	X	X
presentation_set	X	X	X	-	-	X	X	X	X	X	X
presentation_size	X	X	X	-	-	X	X	X	X	X	X
presentation_style_assignment	X	X	X	-	-	X	X	X	X	X	X
presentation_style_by_context	X	X	X	-	-	X	X	X	X	X	X
presentation_view	X	X	X	-	-	X	X	X	X	X	X
presentation_with_association	X	X	X	-	-	X	X	X	X	X	X
presented_item	X	X	X	-	-	X	X	X	X	X	X
presented_item_association	X	X	X	-	-	X	X	X	X	X	X
presented_item_representation	X	X	X	-	-	X	X	X	X	X	X
presented_item_with_association	X	X	X	-	-	X	X	X	X	X	X
process_capability	P	P	P	P	P	P	P	P	P	P	P
product	X	X	X	X	X	X	X	X	X	X	X
product_context	X	X	X	X	X	X	X	X	X	X	X
product_data_representation_view	X	X	X	-	-	X	X	X	X	X	X
product_definition	X	X	X	X	X	X	X	X	X	X	X
product_definition_context	X	X	X	X	X	X	X	X	X	X	X
product_definition_formation	X	X	X	X	X	X	X	X	X	X	X
product_definition_formation_relationship	X	X	X	X	X	X	X	X	X	X	X
product_definition_formation_with_specified_source	X	X	X	X	X	X	X	X	X	X	X

Table 3 — Conformance class (1–11) elements

AIM element	Conformance class										
	1	2	3	4	5	6	7	8	9	10	11
product_definition_relationship	X	X	X	X	X	X	X	X	X	X	X
product_definition_shape	X	X	X	X	X	X	X	X	X	X	X
product_definition_substitute	X	X	X	X	X	X	X	X	X	X	X
product_definition_usage	X	X	X	X	X	X	X	X	X	X	X
product_definition_with_associated_documents	X	X	X	-	-	-	-	-	X	-	-
product_material_composition_relationship	X	X	X	X	X	X	X	X	X	X	X
property_definition	X	X	X	X	X	X	X	X	X	X	X
property_definition_relationship	X	X	X	X	X	X	X	X	X	X	X
property_definition_representation	X	X	X	X	X	X	X	X	X	X	X
purchase_assignment	X	X	X	X	X	X	X	X	X	X	X
qualified_representation_item	X	X	X	X	X	X	X	X	X	X	X
quasi_uniform_curve	X	X	X	X	X	X	X	X	X	X	X
quasi_uniform_surface	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
ratio_measure_with_unit	X	X	X	X	X	X	X	X	X	X	X
ratio_unit	X	X	X	X	X	X	X	X	X	X	X
rational_b_spline_curve	X	X	X	X	X	X	X	X	X	X	X
rational_b_spline_surface	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
rectangular_composite_surface	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
rectangular_pyramid	-	B,C	B,C	B,C	B,C	-	B,C	B,C	-	-	B,C
rectangular_trimmed_surface	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
reducer_fitting_class	X	X	X	X	X	-	-	-	X	-	-
reference_geometry	X	X	X	X	X	X	X	X	X	X	X
reinforcing_component_definition	X	X	X	X	X	-	-	-	X	-	-
reparametrised_composite_curve_segment	X	X	X	X	X	X	X	X	X	X	X
representation	X	X	X	X	X	X	X	X	X	X	X
representation_context	X	X	X	X	X	X	X	X	X	X	X
representation_item	X	X	X	X	X	X	X	X	X	X	X
representation_item_relationship	X	X	X	X	X	X	X	X	X	X	X
representation_map	X	X	X	X	X	X	X	X	X	X	X
representation_relationship	X	X	X	-	-	X	X	X	X	X	X

Table 3 — Conformance class (1–11) elements

AIM element	Conformance class										
	1	2	3	4	5	6	7	8	9	10	11
representation_relationship_with_transformation	X	X	X	-	-	X	X	X	X	X	X
required_material_property	X	X	X	X	X	X	X	X	X	X	X
reserved_space	X	X	X	X	X	X	X	X	X	X	X
revolved_area_solid	-	A,C	A,C	A,C	A,C	-	A,C	A,C	-	-	A,C
revolved_face_solid	-	A,C	A,C	A,C	A,C	-	A,C	A,C	-	-	A,C
right_angular_wedge	-	B,C	B,C	B,C	B,C	-	B,C	B,C	-	-	B,C
right_circular_cone	-	B,C	B,C	B,C	B,C	-	B,C	B,C	-	-	B,C
right_circular_cylinder	-	B,C	B,C	B,C	B,C	-	B,C	B,C	-	-	B,C
role_association	R	R	R	R	R	R	R	R	R	R	R
seam_curve	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
serial_numbered_effectivity	H	H	H	H	H	H	H	H	H	H	H
shape_aspect	X	X	X	X	X	X	X	X	X	X	X
shape_aspect_deriving_relationship	X	X	X	X	X	X	X	X	X	X	X
shape_aspect_relationship	X	X	X	X	X	X	X	X	X	X	X
shape_definition_representation	X	X	X	X	X	X	X	X	X	X	X
shape_dimension_representation	X	X	X	X	X	X	X	X	X	X	X
shape_representation	X	X	X	X	X	X	X	X	X	X	X
shell_based_wireframe_model	-	A,C	A,C	A,C	A,C	-	A,C	A,C	-	-	A,C
si_unit	X	X	X	X	X	X	X	X	X	X	X
site	T	T	T	T	T	T	T	T	T	T	T
site_building	T	T	T	T	T	T	T	T	T	T	T
site_feature	T	T	T	T	T	T	T	T	T	T	T
site_representation	T	T	T	T	T	T	T	T	T	T	T
sited_plant	T	T	T	T	T	T	T	T	T	T	T
solid_angle_measure_with_unit	X	X	X	X	X	X	X	X	X	X	X
solid_angle_unit	X	X	X	X	X	X	X	X	X	X	X
solid_model	-	B,C	B,C	B,C	B,C	-	B,C	B,C	-	-	B,C
spacer_fitting_class	X	X	X	X	X	-	-	-	X	-	-
specialty_item_class	X	X	X	X	X	-	-	-	X	-	-
sphere	-	B,C	B,C	B,C	B,C	-	B,C	B,C	-	-	B,C
spherical_surface	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
stream_design_case	X	X	X	-	-	X	X	-	X	-	-
stream_phase	X	X	X	-	-	-	-	-	X	-	-

Table 3 — Conformance class (1–11) elements

AIM element	Conformance class										
	1	2	3	4	5	6	7	8	9	10	11
structural_load_connector_class	X	X	X	X	X	X	X	X	X	X	X
structural_system	P	P	P	P	P	P	P	P	P	P	P
styled_item	X	X	X	-	-	X	X	X	X	X	X
support_constraint_representation	X	X	X	X	X	X	X	X	X	X	X
surface	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
surface_curve	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
surface_of_linear_extrusion	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
surface_of_revolution	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
surface_patch	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
surface_replica	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
swage_fitting_class	X	X	X	X	X	-	-	-	X	-	-
swept_area_solid	-	A,C	A,C	A,C	A,C	-	A,C	A,C	-	-	A,C
swept_face_solid	-	A,C	A,C	A,C	A,C	-	A,C	A,C	-	-	A,C
swept_surface	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
symbol_colour	X	X	X	-	-	X	X	X	X	X	X
symbol_representation	X	X	X	-	-	X	X	X	X	X	X
symbol_representation_map	X	X	X	-	-	X	X	X	X	X	X
symbol_representation_relationship	X	X	X	-	-	X	X	X	X	X	X
symbol_style	X	X	X	-	-	X	X	X	X	X	X
symbol_target	X	X	X	-	-	X	X	X	X	X	X
symmetric_shape_aspect	X	X	X	X	X	X	X	X	X	X	X
system_class	P	P	P	P	P	P	P	P	P	P	P
system_space	X	X	X	X	X	X	X	X	X	X	X
text_literal	X	X	X	-	-	X	X	X	X	X	X
text_literal_with_associated_curves	X	X	X	-	-	X	X	X	X	X	X
text_literal_with_blanking_box	X	X	X	-	-	X	X	X	X	X	X
text_literal_with_delineation	X	X	X	-	-	X	X	X	X	X	X
text_literal_with_extent	X	X	X	-	-	X	X	X	X	X	X
text_string_representation	X	X	X	-	-	X	X	X	X	X	X
text_style	X	X	X	-	-	X	X	X	X	X	X
text_style_for_defined_font	X	X	X	-	-	X	X	X	X	X	X
text_style_with_box_characteristics	X	X	X	-	-	X	X	X	X	X	X
text_style_with_mirror	X	X	X	-	-	X	X	X	X	X	X

Table 3 — Conformance class (1–11) elements

AIM element	Conformance class										
	1	2	3	4	5	6	7	8	9	10	11
thermodynamic_temperature_measure_with_unit	X	X	X	X	X	X	X	X	X	X	X
thermodynamic_temperature_unit	X	X	X	X	X	X	X	X	X	X	X
time_measure_with_unit	X	X	X	X	X	X	X	X	X	X	X
time_unit	X	X	X	X	X	X	X	X	X	X	X
topological_representation_item	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
toroidal_surface	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
torus	-	B,C	B,C	B,C	B,C	-	B,C	B,C	-	-	B,C
trimmed_curve	X	X	X	X	X	X	X	X	X	X	X
two_direction_repeat_factor	X	X	X	-	-	X	X	X	X	X	X
type_qualifier	X	X	X	X	X	X	X	X	X	X	X
uncertainty_measure_with_unit	X	X	X	X	X	X	X	X	X	X	X
uniform_curve	X	X	X	X	X	X	X	X	X	X	X
uniform_surface	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
valve_class	X	X	X	X	X	-	-	-	X	-	-
vector	X	X	X	X	X	X	X	X	X	X	X
versioned_action_request	X	X	X	X	X	X	X	X	X	X	X
vertex	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
vertex_loop	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
vertex_point	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
vertex_shell	T	A,C,T	A,C,T	A,C,T	A,C,T	T	A,C,T	A,C,T	T	T	A,C,T
view_dependent_annotation_representation	X	X	X	-	-	X	X	X	X	X	X
wire_shell	-	A,C	A,C	A,C	A,C	-	A,C	A,C	-	-	A,C