INTERNATIONAL STANDARDIZED PROFILE

ISO/IEC ISP 12071-2

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1997-04-15

Information technology — International Standardized Profile FCG-nnn — Computer Graphics Metafile interchange format —

Part 2:

FCG23 — Advanced Scientific and Technical graphics (AST)

Technologies de l'information — Profil normalisé international FCG-nnn — Format d'échange de métafichier en infographie —

Partie 2: FCG23 — Graphiques avancés scientifiques et techniques (AST)

Reference number
ISO/IEC ISP 12071-2:1997(E)

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. In addition to developing International Standards, ISO/IEC JTC 1 has created a Special Group on Functional Standardization for the elaboration of International Standardized Profiles.

An International Standardized Profile is an internationally agreed, harmonized document which identifies a standard or group of standards, together with options and parameters, necessary to accomplish a function or a set of functions.

Draft International Standardized Profiles are circulated to national bodies for voting. Publication as an International Standardized Profile requires approval by at least 75 % of the national bodies casting a vote.

International Standardized Profile ISO/IEC ISP 12071-2 was prepared with the collaboration of

— Asia-Oceania Workshop (AOW);

— European Workshop for Open Systems (EWOS);

— Open Systems Environment Implementors' Workshop (OIW).

ISO/IEC ISP 12071 consists of the following parts, under the general title *Information technology — International Standardized Profile FCG-nnn — Computer Graphics Metafile interchange format*:

— *Part 1: FCG11 — Basic Scientific and Technical graphics (BST)*

— *Part 2: FCG23 — Advanced Scientific and Technical graphics (AST)*

— *Part 3: FCG32 — Basic Presentation and Visualization — Model Profile*

— *Part 4: FCG33 — Advanced Presentation and Visualization (APV)*

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Introduction

ISO/IEC ISP 12071 is defined within the context of Functional Standardization in accordance with the principles specified in ISO/IEC TR 10000, "Framework and Taxonomy of International Standardized Profiles".

This part of ISO/IEC ISP 12071 was developed within EWOS (Structured Multimedia Group) with input from OIW through the Regional Workshop Coordination Committee (RWS-CC). RWS-CC requested AOW to explicitly or tacitly support the progression of the work. Input to the process was also made by JTC1/SC24 who provided CGM expertise. The work was harmonized at a meeting in June 1994 prior to PDISP ballot.

This part of ISO/IEC ISP 12071 provides a profile suitable for advanced scientific and technical graphics, for example CAD, mapping, earth sciences.

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Information technology — International Standardized Profile FCG-nnn — Computer Graphics Metafile interchange format —

Part 2:

FCG23 - Advanced Scientific and Technical graphics (AST)

1 Scope

1.1 General

The Computer Graphics Metafile provides a file format suitable for the storage and retrieval of picture information. The file format consists of a set of elements that can be used to describe pictures in a way that is compatible between systems of different architectures and devices of differing capabilities and design.

The AST profile, described in this part of ISO/IEC 12071, defines a subset of CGM elements, sets limits and generation and interpretation behaviour according to the rules for profile definition defined in ISO/IEC 8632. The AST profile defines a version 2 CGM suitable for use in advanced scientific and technical graphics, for example CAD, mapping, earth sciences.

1.2 Position within the taxonomy

AST is one of four core profiles defined within the taxonomy for CGM profiles. These are shown in Figure 1 in diagramatic form. The diagram uses the following conceptual framework to define profiles:

1) CGM version — this is a part of the standard and describes the group of elements available to the profile

2) complexity of the problem

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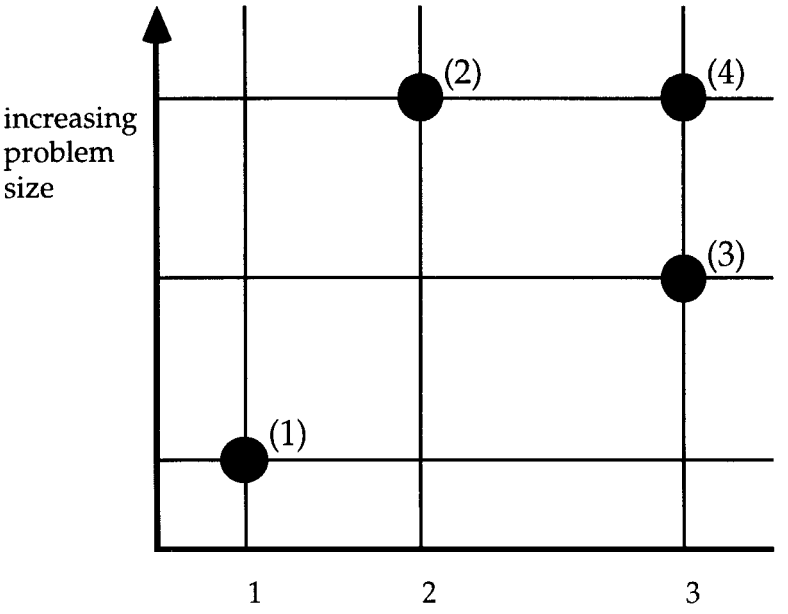

Figure 1— The 4 Core Profiles for CGM

The four core profiles (as indicated in Figure 1) are:

	Taxonomy identifier:	Profile Name:
1	FCG-11	Basic Scientific and Technical graphics (BST) e.g. business presentation graphics, simple desk top publishing
2	FCG-23	Advanced Scientific and Technical graphics (AST) e.g. CAD, mapping, earth sciences
3	FCG-32	Basic Presentation and Visualization — the Model Profile from the CGM standard, e.g. graphics arts, high end desk top publishing
4	FCG-33	Advanced Presentation and Visualization (APV) e.g. imaging, scientific visualization.

This part of ISO/IEC ISP 12071 defines the AST profile.

1.3 User requirements and scenario

This part of ISO/IEC ISP 12071 provides a profile, AST, which is suitable for advanced scientific and technical graphics, for example CAD, mapping, earth sciences.

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2 Normative References

The following documents contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC ISP 12071. At the time of publication, the editions indicated were valid. All documents are subject to revision, and parties to agreements based on this part of ISO/IEC ISP 12071 are warned against automatically applying any more recent editions of the documents listed below, since the nature of references made by ISPs to such documents is that they may be specific to a particular edition. Members of IEC and ISO maintain registers of currently valid International Standards and ISPs, and ITU-T maintain published editions of its current Recommendations.

ISO/IEC 8632-1:1992, *Information technology - Computer Graphics Metafile for the storage and transfer of picture description information - Part 1: Functional specification.*

ISO/IEC 8632-2:1992, *Information technology - Computer Graphics Metafile for the storage and transfer of picture description information - Part 2: Character encoding.*

ISO/IEC 8632-3:1992, *Information technology - Computer Graphics Metafile for the storage and transfer of picture description information - Part 3: Binary encoding.*

ISO/IEC 8632-4:1992, *Information technology - Computer Graphics Metafile for the storage and transfer of picture description information - Part 4: Clear text encoding.*

ISO/IEC 8632:1992/Amd.1:1994, *Information technology - Computer Graphics Metafile for the storage and transfer of picture description information* (all parts) - *AMENDMENT 1 - Rules for profiles.*

ISO/IEC TR 10000-1:1995, *Information technology - Framework and taxonomy of International Standardized Profiles - Part 1: General principles and documentation framework (third edition).*

ISO/IEC TR 10000-2:1995, *Information technology - Framework and taxonomy of International Standardized Profiles - Part 2: Principles and Taxonomy for OSI profiles (fourth edition).*

3 Definitions

For the purposes of this part of ISO/IEC ISP 12071, the definitions given in ISO/IEC 8632:1992 apply.

4 Abbreviations

For the purposes of this part of ISO/IEC ISP 12071, the abbreviations given in ISO/IEC 8632:1992 apply.

5 Conformance

Conformance of metafiles to ISO/IEC 8632 is defined in terms of conformance to profiles. A metafile conforms to ISO/IEC 8632 if it conforms to a profile. A metafile may conform to ISO/IEC 8632 if it conforms to the AST profile defined in this part of ISO/IEC ISP 12071.

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6 Specification of the AST Profile

This clause completes the Profile Pro Forma from ISO/IEC 8632 (Amendment 1) as required by the standard and is detailed in the following tables which are copied, including the table numbers, from that standard. The corrections which have been approved by ISO are marked up on the tables. The references in the pro forma are to ISO/IEC 8632 and to ISO/IEC 8632 Amendment 1.

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Table 13 - Metafile rules

Functionality	Specifications - PPF	Specifications - Model Profile
T.13.1	Same as Model Profile ☑	
Encodings	Select 1 or more encodings: Binary ☐ Character ☐ Clear text ☐	Select 1 or more encodings: Binary ☑ Character ☑ Clear text ☑
T.13.2	Same as Model Profile ☑	
Number of pictures	Number of pictures permitted in a metafile: minimum (≥0)? maximum (≥0 or no limit)? Other:	Number of pictures permitted in a metafile: minimum (≥0)? *1.* maximum (≥0 or no limit)? *No limit.* Other: *None.*
T.13.3	Same as Model Profile ☑	
Empty pictures	Are pictures allowed which have no graphical primitives? (yes/no) Other:	Are pictures allowed which have no graphical primitives? (yes/no) *Yes.* Other: *None.*
T.13.4	Same as Model Profile ☑	
Metafile size	Any restrictions on metafile size? Other:	Any restrictions on metafile size? *None.* Other: *None.*

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Table 14 - Multi-element rules

Functionality	Specifications - PPF	Specifications - Model Profile
T.14.1 Colour References: 7.5.4.1	Same as Model Profile ☑	
	Select which rule applies to each metafile (choose 1): Either all colours or none shall be defined. ☐ All colours shall be defined. ☐ No colours shall be defined. ☐ Are colour indexes allowed to be redefined within a picture or metafile? (yes/no) Any restrictions on the number of distinct colours used within a picture or metafile? (Monochrome metafiles shall use at most two distinct colours.) Are conformance categories defined? (yes/no) If yes, specify. Other:	Select which rule applies to each metafile (choose 1): Either all colours or none shall be defined. ☑ All colours shall be defined. ☐ No colours shall be defined. ☐ Are colour indexes allowed to be redefined within a picture or metafile? (yes/no) ***No.*** Any restrictions on the number of distinct colours used within a picture or metafile? (Monochrome metafiles shall use at most two distinct colours.) ***None.*** Are conformance categories defined? (yes/no) ***Yes.*** If yes, specify. ***3 categories: monochrome, greyscale, and colour.*** Other: ***None.***
T.14.2 Line primitives - geometric degeneracies References: 7.5.4.3	Same as Model Profile ☑	
	Geometric degeneracies are: Permitted ☐ Prohibited ☐ If permitted, graphical meaning of the degeneracy: Other:	Geometric degeneracies are: Permitted ☑ Prohibited ☐ If permitted, graphical meaning of the degeneracy: ***A line primitive element, whose entire locus is a single point, denotes a graphical dot which is a filled circle, with diameter equal to the current line width and colour equal to the current line colour.*** Other: ***None.***

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Table 14 - Multi-element rules (continued)

Functionality	Specifications - PPF	Specifications - Model Profile
T.14.3 Filled area primitives - geometric degeneracies References: 7.5.4.4	Same as Model Profile ☑	
	Geometric degeneracies are: Permitted ☐ Prohibited ☐ If permitted, graphical meaning of the degeneracy: Other:	Geometric degeneracies are: Permitted ☑ Prohibited ☐ If permitted, graphical meaning of the degeneracy: ***A filled-area primitive element, whose entire locus is either a single point or a line has the following meaning:*** ***- If the locus of a filled-area primitive is a single point, then the meaning is a dot (which is a filled circle).*** ***- If the locus of a filled-area primitive is a non-degenerate line segment, then the meaning is a line.*** ***The dot or line is displayed with the fill colour if EDGE VISIBILITY is 'off', unless INTERIOR STYLE is 'empty', in which case it is not rendered. If EDGE VISIBILITY is 'on', the interior treatment is the dot or line displayed in the fill colour, and then a dot or line superimposed with the current edge attributes.*** Other: *None.*
T.14.4 Graphical text strings References: 7.5.4.5	Same as Model Profile ☑	
	Minimum string length (bytes): Maximum string length (bytes): Any restrictions on the use of ISO/IEC 2022 switching controls? Other:	Minimum string length (bytes): *0.* Maximum string length (bytes): *254.* Any restrictions on the use of ISO/IEC 2022 switching controls? ***Any character set used in the metafile which is accessed by ISO/IEC 2022 switching techniques shall be in the Character Set List (defined in this profile).*** C0 control codes (except NUL and ISO/IEC 2022 switching) are prohibited. Other: *None.*

Table 14 - Multi-element rules (continued)

Functionality	Specifications - PPF	Specifications - Model Profile
T.14.5 Non-graphical text strings References: 7.5.4.6	Same as Model Profile ☑	
	Maximum string length (bytes): for type SF: for type SF within type D: Format effectors and ESC: Permitted ☐ Prohibited ☐ Other C0 control codes (except NUL and ISO/IEC 2022 switching) are prohibited. Any limits on the set of acceptable character sets? Any restrictions on the use of ISO/IEC 2022 switching controls? Other:	Maximum string length (bytes): for type SF: ***254.*** for type SF within type D: ***1024.*** Format effectors and ESC: Permitted ☑ Prohibited ☐ Other C0 control codes (except NUL and ISO/IEC 2022 switching) are prohibited. Any limits on the set of acceptable character sets? ***The permitted character sets are ISO 8859-1 LHS No.1 and ISO 8859-1 RHS No.1.*** Any restrictions on the use of ISO/IEC 2022 switching controls? ***Any character set used in the metafile which is accessed by ISO/IEC 2022 switching techniques shall be in the character set list (defined in this profile).*** Other: *None.*
T.14.6 Data record strings References: 7.5.4.7	Same as Model Profile ☑	
	Maximum string length (bytes) or state "no limit": SDR-coding techniques must be used (see annex C.2.2). Other:	Maximum string length (bytes) or state "no limit": ***32767.*** SDR-coding techniques must be used (see annex C.2.2). Other: *None.*

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Table 15 - Delimiter elements

Element	Specifications - PPF	Specifications - Model Profile
T.15.1 BEGIN METAFILE END METAFILE [v1] References: 5.2.1 5.2.2 7.5.4.6 T.14.5	Same as Model Profile ☑ Element is: Required ☑ The *metafile identifier* shall follow the rules for non-graphical text, clause 7.5.4.6 and T.14.5. Other:	 Element is: Required ☑ The *metafile identifier* shall follow the rules for non-graphical text, clause 7.5.4.6 and T.14.5. Other: *None.*
T.15.2 BEGIN PICTURE BEGIN PICTURE BODY END PICTURE [v1] References: 5.2.3 5.2.4 5.2.5 7.5.4.6 T.14.5	Same as Model Profile ☑ Element is: Required ☐ Permitted ☐ Prohibited ☐ The *picture identifier* shall follow the rules for non-graphical text, clause 7.5.4.6 and T.14.5. Number of occurrences of these elements allowed in the metafile: Other:	 Element is: Required ☐ Permitted ☑ Prohibited ☐ The *picture identifier* shall follow the rules for non-graphical text, clause 7.5.4.6 and T.14.5. Number of occurrences of these elements allowed in the metafile: ***No limit.*** Other: *None.*

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Table 15 - Delimiter elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.15.3 BEGIN SEGMENT END SEGMENT [v2] References: 5.2.6 5.2.7	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Maximum number of simultaneously defined segments (both global and local) at any point in the metafile: Any limits on the number of elements or restrictions on which elements compose a segment? Is there any meaning given to the *segment identifier* parameter? (yes/no) If yes, specify. (Meaning shall have no graphical effect.) Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Maximum number of simultaneously defined segments (both global and local) at any point in the metafile: ***1024.*** Any limits on the number of elements or restrictions on which elements compose a segment? ***None.*** Is there any meaning given to the *segment identifier* parameter? (yes/no) ***No.*** If yes, specify. (Meaning shall have no graphical effect). Other: ***When global segments are specified in the Metafile Descriptor, all global segment definitions shall follow all other Metafile Descriptor elements. When segments are specified in the Picture Descriptor, all such segment definitions shall follow all other Picture Descriptor elements.***
T.15.4 BEGIN FIGURE END FIGURE [v2] References: 5.2.8 5.2.9	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Limits on the number of elements or restrictions on which elements comprise a figure definition: Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Limits on the number of elements or restrictions on which elements comprise a figure definition: ***Maximum number of elements = 128. No restrictions on which eligible elements may be included.*** Other: ***None.***

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Table 15 - Delimiter elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.15.5 BEGIN PROTECTION REGION END PROTECTION REGION [v3] References: 5.2.10 5.2.11	Same as Model Profile ☐	
	Element is: Required ☐ Permitted ☐ Prohibited ☑ Maximum number of simultaneously defined protection regions: Maximum number of elements within each protection region: Is there any meaning to the *region index* parameter other than as a unique identifier for each protection region? (yes/no) If yes, specify. (Meaning shall have no graphical effect). Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Maximum number of simultaneously defined protection regions: ***32.*** Maximum number of elements within each protection region: ***128.*** Is there any meaning to the *region index* parameter other than as a unique identifier for each protection region? (yes/no) ***No.*** If yes, specify. (Meaning shall have no graphical effect). Other: ***None.***
T.15.6 BEGIN COMPOUND LINE END COMPOUND LINE [v3] References: 5.2.12 5.2.13	Same as Model Profile ☐	
	Element is: Required ☐ Permitted ☐ Prohibited ☑ Limits on the number of elements and identity of elements comprising a path definition: Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Limits on the number of elements and identity of elements comprising a path definition: ***Maximum number of elements is 128. No restrictions on which eligible elements may be included.*** Other: ***None.***

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Table 15 - Delimiter elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.15.7 BEGIN COMPOUND TEXT PATH END COMPOUND TEXT PATH [v3] References: 5.2.14 5.2.15	Same as Model Profile ☐	
	Element is: Required ☐ Permitted ☐ Prohibited ☑ Limits on the number and identity of elements comprising a path definition: Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Limits on the number and identity of elements comprising a path definition: ***Maximum number of elements is 128. No restrictions on which eligible elements may be included.*** Other: ***None.***
T.15.8 BEGIN TILE ARRAY END TILE ARRAY [v3] References: 5.2.16 5.2.17	Same as Model Profile ☐	
	Element is: Required ☐ Permitted ☐ Prohibited ☑ Maximum number of tiles in path direction: Maximum number of tiles in line direction: Maximum number of cells/tile in path direction: Maximum number of cells/tile in line direction: Limits on pel path: Limits on line progression: Limits on image offset: Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Maximum number of tiles in path direction: ***16.*** Maximum number of tiles in line direction: ***16.*** Maximum number of cells/tile in path direction: ***1024.*** Maximum number of cells/tile in line direction: ***1024.*** Limits on pel path: ***None.*** Limits on line progression: ***None.*** Limits on image offset: ***None.*** Other: ***None.***

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Table 16 - Metafile descriptor elements

Element	Specifications - PPF	Specifications - Model Profile
T.16.1 METAFILE VERSION [v1] References: 5.3.1	Same as Model Profile ☐	
	Element is: Required ☑ Metafile versions permitted by this profile: 1, 2 Other: None	Element is: Required ☑ Metafile versions permitted by this profile: ***1, 2, 3.*** Other: ***None.***
T.16.2 METAFILE DESCRIPTION [v1] References: 5.3.2 7.5.2.1 7.5.2.2 7.5.4.6 T.14.1 T.14.5	Same as Model Profile ☐	
	Element is: Required ☑ The *description* parameter shall follow the rules for non-graphical text, clause 7.5.4.6 and T.14.5. The substring within the SF parameter shall be of the form: "keyword:item", where the double quotes are part of the substring. Maximum number of occurrences of this element? unlimited Profile identification (use keyword, "ProfileId:"): "ProfileId:AST" Profile edition (use keyword, "ProfileEd:"): "ProfileEd:1" If the profile edition is not given, then the edition defaults to 1.	Element is: Required ☑ The *description* parameter shall follow the rules for non-graphical text, clause 7.5.4.6 and T.14.5. The substring within the SF parameter shall be of the form: "keyword:item", where the double quotes are part of the substring. Maximum number of occurrences of this element? ***Unlimited.*** Profile identification (use keyword, "ProfileId:"): ***"ProfileId:Model-Profile".*** Profile edition (use keyword, "ProfileEd:"): ***"ProfileEd:1".*** If the profile edition is not given, then the edition defaults to 1.

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Table 16 - Metafile descriptor elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.16.2 continued METAFILE DESCRIPTION	Additional information content: Metafile colour conformance class, source, and date items shall be encoded as substrings of the *description* parameter using the keywords: "ColourClass:", "Source:", and "Date:", respectively. ColourClass: Required ☑ Permitted ☐ Content: AS Model Source: Required ☑ Permitted ☐ Content: AS Model Date: Required ☑ Permitted ☐ Content shall be date of metafile generation. AS Model Other: None	Additional information content: Metafile colour conformance class, source, and date items shall be encoded as substrings of the *description* parameter using the keywords: "ColourClass:", "Source:", and "Date:", respectively. ColourClass: Required ☑ Permitted ☐ Content: ***(One of: colour, greyscale, or monochrome.)*** Source? Required ☑ Permitted ☐ Content: ***(Vendor, product, and version).*** Date? Required ☑ Permitted ☐ Content shall be date of metafile generation. ***The form and content shall be in accordance with ISO 8601:1988.*** Other: *None.*
T.16.3 VDC TYPE [v1] References: 5.3.3	Same as Model Profile ☐ Element is: Required ☐ Permitted ☑ Any restrictions on the parameter value? Other:	Element is: Required ☑ Permitted ☐ Note - expected to be 'Permitted' in next Edition Any restrictions on the parameter value? *None.* Other: *None.*
T.16.4 INTEGER PRECISION [v1] References: 5.3.4	Same as Model Profile ☑ Element is: Required ☐ Permitted ☐ The parameter value of this element is encoding dependent. Restrictions are specified in parts 2, 3, and 4 of ISO/IEC 8632. Other:	Element is: Required ☐ Permitted ☑ The parameter value of this element is encoding dependent. Restrictions are specified in parts 2, 3, and 4 of ISO/IEC 8632. Other: *None.*

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Table 16 - Metafile descriptor elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.16.5 REAL PRECISION [v1] References: 5.3.5	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ The parameter value of this element is encoding dependent. Restrictions are specified in parts 2, 3, and 4 of ISO/IEC 8632. Other:	Element is: Required ☐ Permitted ☑ The parameter value of this element is encoding dependent. Restrictions are specified in parts 2, 3, and 4 of ISO/IEC 8632. Other: *None.*
T.16.6 INDEX PRECISION [v1] References: 5.3.6	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ The parameter value of this element is encoding dependent. Restrictions are specified in parts 2, 3, and 4 of ISO/IEC 8632. Other:	Element is: Required ☐ Permitted ☑ The parameter value of this element is encoding dependent. Restrictions are specified in parts 2, 3, and 4 of ISO/IEC 8632. Other: *None.*
T.16.7 COLOUR PRECISION [v1] References: 5.3.7	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ The parameter value of this element is encoding dependent. Restrictions are specified in parts 2, 3, and 4 of ISO/IEC 8632. Other:	Element is: Required ☐ Permitted ☑ The parameter value of this element is encoding dependent. Restrictions are specified in parts 2, 3, and 4 of ISO/IEC 8632. Other: *None.*

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Table 16 - Metafile descriptor elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.16.8 COLOUR INDEX PRECISION [v1] References: 5.3.8	Same as Model Profile ☑ Element is: Required ☐ Permitted ☐ The parameter value of this element is encoding dependent. Restrictions are specified in parts 2, 3, and 4 of ISO/IEC 8632. Other:	Element is: Required ☐ Permitted ☑ The parameter value of this element is encoding dependent. Restrictions are specified in parts 2, 3, and 4 of ISO/IEC 8632. Other: *None.*
T.16.9 MAXIMUM COLOUR INDEX [v1] References: 5.3.9	Same as Model Profile ☐ Element is: Required ☐ Permitted ☑ Prohibited ☐ Is this element required to be a least upper bound? (yes/no) No Any restrictions on the parameter values? Other: None 0-1 monochrome 0-63 greyscale 0-4095 colour	Element is: Required ☐ Permitted ☑ Prohibited ☐ Is this element required to be a least upper bound? (yes/no) *No.* Any restrictions on the parameter values? *0-1 for monochrome metafiles.* *0-63 for greyscale metafiles.* *0-255 for colour metafiles.* Other: *None.*
T.16.10 COLOUR VALUE EXTENT [v1] References: 5.3.10	Same as Model Profile ☑ Element is: Required ☐ Permitted ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Any restrictions on the parameter value? *None.* Other: *None.*

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Table 16 - Metafile descriptor elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.16.11 METAFILE ELEMENT LIST [v1] References: 5.3.11	Same as Model Profile ☐ Element is: Required ☑ Other: Only those elements allowed in Versions 1 and 2	[redacted] Element is: Required ☑ Other: *None.*
T.16.12 METAFILE DEFAULTS REPLACEMENT [v1] References: 5.3.12	Same as Model Profile ☑ Element is: Required ☐ Permitted ☐ Prohibited ☐ Is each occurrence of the MDR restricted to defining just one default? (yes/no) Additional restrictions may be specified in parts 2, 3, and 4 of ISO/IEC 8632. NOTE — Profile specifications regarding use of MDR shall be consistent with other profile specifications. For example, if a profile restricts metafiles to a single picture, then it makes little sense for the profile to require the MDR element in metafiles. Other:	[redacted] Element is: Required ☐ Permitted ☑ Prohibited ☐ Is each occurrence of the MDR restricted to defining just one default? (yes/no) *No.* Additional restrictions may be specified in parts 2, 3, and 4 of ISO/IEC 8632. Other: *None.*

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Table 16 - Metafile descriptor elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.16.13 FONT LIST [v1] References: 5.3.13 annex H	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ This element is required for all metafiles containing graphical text. Maximum number of fonts in the list: All font indexes referenced in the metafile, including the default (nominally index 1) shall be defined in the FONT LIST element, with font name construction consistent with the rules of ISO/IEC 9541. List of permitted fonts: Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ This element is required for all metafiles containing graphical text. Maximum number of fonts in the list: ***64.*** All font indexes referenced in the metafile, including the default (nominally index 1) shall be defined in the FONT LIST element, with font name construction consistent with the rules of ISO/IEC 9541. List of permitted fonts: ***Times-Roman*** ***Times-Bold*** ***Times-Italic*** ***Times-BoldItalic*** ***Helvetica*** ***Helvetica-Bold*** ***Helvetica-Oblique*** ***Helvetica-BoldOblique*** ***Courier*** ***Courier-Bold*** ***Courier-Oblique*** ***Courier-BoldOblique*** ***Symbol*** NOTE — Theses font names are trademarked and some are proprietary and copyrighted. Times and Helvetica are registered trademarks of Allied Corporation, the owner of the copyright on the fonts of those names. Metric equivalents of the named fonts may be substituted by interpreters. Times is a serif font. Helvetica is a sans-serif font. Courier is a monospaced, serif font. The association of character code to glyph which shall be used for each of the fonts and the metrics of the named fonts are contained in annex H. Other: ***None.***

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Table 16 - Metafile descriptor elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.16.14 CHARACTER SET LIST [v1] References: 5.3.14	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ This element is required for all metafiles containing graphical text. Maximum limit for the number of character sets in the character set list: Character sets shall be selected from the ISO Registry of Character Sets. This list may be extended by adding profile-defined character sets. List character sets: If any of these character sets is of type "complete code", specify the content of the complete code and its associated sequence tail: Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ This element is required for all metafiles containing graphical text. Maximum limit for the number of character sets in the character set list: ***4.*** Character sets shall be selected from the ISO Registry of Character Sets. This list may be extended by adding profile-defined character sets. List character sets: ***"94-character G-set", 4/2 (ISO 8859-1 LH);*** ***"96-character G-set", 4/1 (ISO 8859-1 RH);*** ***"94-character G-set", 2/10 3/10 (Symbol LH);*** ***"94-character G-set", 2/6 3/10 (Symbol RH).*** If any of these character sets is of type "complete code", specify the content of the complete code and its associated sequence tail: ***Not applicable.*** Other: ***None.***
T.16.15 CHARACTER CODING ANNOUNCER [v1] References: 5.3.15	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Any restrictions on the parameter values? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the parameter values? ***Values shall be 'basic 7-bit' and 'basic 8-bit'.*** Other: ***None.***

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Table 16 - Metafile descriptor elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.16.16 NAME PRECISION [v2] References: 5.3.16	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ The parameter value of this element is/en coding dependent. Restrictions are specified in parts 2, 3, and 4 of ISO/IEC 8632. Other:	Element is: Required ☐ Permitted ☑ The parameter value of this element is/en coding dependent. Restrictions are specified in parts 2, 3, and 4 of ISO/IEC 8632. Other: ***None.***
T.16.17 MAXIMUM VDC EXTENT [v2] References: 5.3.17	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Any restrictions on the parameter values? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the parameter values? ***None.*** Other: ***None.***
T.16.18 SEGMENT PRIORITY EXTENT [v2] References: 5.3.18	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Any restrictions on the parameter values? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the parameter values? ***None.*** Other: ***None.***
T.16.19 COLOUR MODEL [v3] References: 5.3.19	Same as Model Profile ☐	
	Element is: Required ☐ Permitted ☐ Prohibited ☑ Any restrictions on the set of colour models? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the set of colour models? ***None.*** Other: ***None.***

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Table 16 - Metafile descriptor elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.16.20 COLOUR CALIBRATION [v3] References: 5.3.20	Same as Model Profile ☐	
	Element is: Required ☐ Permitted ☐ Prohibited ☑ Calibration selection values permitted in accordance with the permitted model(s): If CYMK is permitted, minimum number of grid locations: Any restrictions on the number of colour lookup table entries, n? Any restrictions on the number of grid locations, m?: If CYMK is permitted, algorithms for interpolation between grid locations? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Calibration selection values permitted in accordance with the permitted model(s): ***Values 1..6, 9.*** If CYMK is permitted, minimum number of grid locations: ***3.*** Any restrictions on the number of colour lookup table entries, n? ***None.*** Any restrictions on the number of grid locations, m? ***None.*** If CYMK is permitted, algorithms for interpolation between grid locations? ***None.*** Other: ***None.***
T.16.21 FONT PROPERTIES [v3] References: 5.3.21	Same as Model Profile ☐	
	Element is: Required ☐ Permitted ☐ Prohibited ☑ Any restrictions on the parameter values? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the parameter values? ***All defined index and enumerated values of all parameters shall be permitted.*** Other: ***None.***

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Table 16 - Metafile descriptor elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.16.22 GLYPH MAPPING [v3] References: 5.3.22	Same as Model Profile ☐ Element is: Required ☐ Permitted ☐ Prohibited ☑ Subset of AFII registered glyphs which may be referenced: Maximum number of glyphs which may be defined: Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Subset of AFII registered glyphs which may be referenced: ***None.*** Maximum number of glyphs which may be defined: ***8192.*** Other: ***None.***
T.16.23 SYMBOL LIBRARY LIST [v3] References: 5.3.23	Same as Model Profile ☐ Element is: Required ☐ Permitted ☐ Prohibited ☑ Libraries which may be accessed and their encoding rules: Maximum number of libraries which may be accessed: Other:	Element is: Required ☐ Permitted ☐ Prohibited ☑ Libraries which may be accessed and their encoding rules: Maximum number of libraries which may be accessed: Other: ***NOTE — There are currently no registered symbol libraries.***

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Table 17 - Picture descriptor elements

Element	Specifications - PPF	Specifications - Model Profile
T.17.1 SCALING MODE [v1] References: 5.4.1	Same as Model Profile ☑ Element is Required ☐ Permitted ☐ Prohibited ☐ Any restrictions on the parameter values? Other:	Element is Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the parameter values? ***If SCALING MODE is metric then the 'metric scale factor' shall be positive.*** Other: ***None.***
T.17.2 COLOUR SELECTION MODE [v1][v2] References: 5.4.2	Same as Model Profile ☑ Element is Required ☐ Permitted ☐ Any restrictions on the parameter values? Other:	Element is Required ☐ Permitted ☑ Any restrictions on the parameter values? ***None.*** Other: ***None.***
T.17.3 LINE WIDTH SPECIFICATION MODE [v1][v2] References: 5.4.3	Same as Model Profile ☐ Element is Required ☐ Permitted ☑ Any restrictions on the parameter values? Only 'absolute' or 'scaled' are permitted. Other: None	Element is Required ☐ Permitted ☑ Any restrictions on the parameter values? ***None.*** Other: ***None.***

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Table 17 - Picture descriptor elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.17.4 MARKER SIZE SPECIFICATION MODE [v1][v2] References: 5.4.4	Same as Model Profile ☐ Element is Required ☐ Permitted ☑ Any restrictions on the parameter values? Only 'absolute' or 'scaled are permitted. Other: None	Element is Required ☐ Permitted ☑ Any restrictions on the parameter values? *None.* Other: *None.*
T.17.5 EDGE WIDTH SPECIFICATION MODE [v1][v2] References: 5.4.5	Same as Model Profile ☐ Element is Required ☐ Permitted ☑ Any restrictions on the parameter values? Only 'absolute' or 'scaled' are permitted. Other: None	Element is Required ☐ Permitted ☑ Any restrictions on the parameter values? *None.* Other: *None.*
T.17.6 VDC EXTENT [v1] References: 5.4.6	Same as Model Profile ☑ Element is Required ☐ Permitted ☐ Limits on the sense and orientation of the VDC space: Is zero-area VDC extent permitted? (yes/no) If yes, specify its meaning. Other:	Element is Required ☐ Permitted ☑ Limits on the sense and orientation of the VDC space: *None.* Is zero-area VDC extent permitted? (yes/no) *No.* If yes, specify its meaning. Other: *None.*

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Table 17 - Picture descriptor elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.17.7 BACKGROUND COLOUR [v1] References: 5.4.7 7.5.4.1 T.14.1	Same as Model Profile ☑ Element is Required ☐ Permitted ☐ The *colour value* parameter shall follow the rules for colour, clause 7.5.4.1 and T.14.1. Other:	Element is Required ☐ Permitted ☑ The *colour value* parameter shall follow the rules for colour, clause 7.5.4.1 and T.14.1. Other: *None.*
T.17.8 DEVICE VIEWPORT [v2] References: 5.4.8	Same as Model Profile ☑ Element is Required ☐ Permitted ☐ Prohibited ☐ Interaction of this element with environmental presentation directives: Meaning of this element if the specified value is inconsistent with the presentation device: Other:	Element is Required ☐ Permitted ☐ Prohibited ☑ Interaction of this element with environmental presentation directives: Meaning of this element if the specified value is inconsistent with the presentation device: Other: ***NOTE — This element is prohibited due to its device dependence.***
T.17.9 DEVICE VIEWPORT SPECIFICATION MODE [v2] References: 5.4.9	Same as Model Profile ☑ Element is Required ☐ Permitted ☐ Prohibited ☐ Set of legal values: Other:	Element is Required ☐ Permitted ☐ Prohibited ☑ Set of legal values: Other: ***NOTE — This element is prohibited due to its device dependence.***

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Table 17 - Picture descriptor elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.17.10 DEVICE VIEWPORT MAPPING [v2] References: 5.4.10	Same as Model Profile ☑	
	Element is Required ☐ Permitted ☐ Prohibited ☐ Set of legal values: Other:	Element is Required ☐ Permitted ☐ Prohibited ☑ Set of legal values: Other: ***NOTE — This element is prohibited due to its device dependence.***
T.17.11 LINE REPRESENTATION [v2] References: 5.4.11 7.5.2.6 7.5.4.2 T.20.1	Same as Model Profile ☑	
	Element is Required ☐ Permitted ☐ Prohibited ☐ Maximum number of simultaneous bundle definitions: Other:	Element is Required ☐ Permitted ☑ Prohibited ☐ Maximum number of simultaneous bundle definitions: ***20.*** Other: *None.*
T.17.12 MARKER REPRESENTATION [v2] References: 5.4.12 7.5.2.6 7.5.4.2 T.20.5	Same as Model Profile ☑	
	Element is Required ☐ Permitted ☐ Prohibited ☐ Maximum number of simultaneous bundle definitions: Other:	Element is Required ☐ Permitted ☑ Prohibited ☐ Maximum number of simultaneous bundle definitions: ***20.*** Other: *None.*

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Table 17 - Picture descriptor elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.17.13 TEXT REPRESENTATION [v2] References: 5.4.13 7.5.2.6 7.5.4.2 T.20.9	Same as Model Profile ☑ Element is Required ☐ Permitted ☐ Prohibited ☐ Maximum number of simultaneous bundle definitions: Other:	Element is Required ☐ Permitted ☑ Prohibited ☐ Maximum number of simultaneous bundle definitions: ***20.*** Other: ***None.***
T.17.14 FILL REPRESENTATION [v2] References: 5.4.14 7.5.2.6 7.5.4.2 T.20.21	Same as Model Profile ☑ Element is Required ☐ Permitted ☐ Prohibited ☐ Maximum number of simultaneous bundle definitions: Other:	Element is Required ☐ Permitted ☑ Prohibited ☐ Maximum number of simultaneous bundle definitions: ***20.*** Other: ***None.***
T.17.15 EDGE REPRESENTATION [v2] References: 5.4.15 7.5.2.6 7.5.4.2 T.20.26	Same as Model Profile ☑ Element is Required ☐ Permitted ☐ Prohibited ☐ Maximum number of simultaneous bundle definitions: Other:	Element is Required ☐ Permitted ☑ Prohibited ☐ Maximum number of simultaneous bundle definitions: ***20.*** Other: ***None.***

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Table 17 - Picture descriptor elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.17.16 INTERIOR STYLE SPECIFICATION MODE [v3] References: 5.4.16	Same as Model Profile ☐ Element is Required ☐ Permitted ☐ Prohibited ☑ Any restriction on the parameter value? Other:	Element is Required ☐ Permitted ☑ Prohibited ☐ Any restriction on the parameter value? *None.* Other: *None.*
T.17.17 LINE AND EDGE TYPE DEFINITION [v3] References: 5.4.17	Same as Model Profile ☐ Element is Required ☐ Permitted ☐ Prohibited ☑ Any limits on the number of definitions? Any limits on the number of elements in a given definition? Any restrictions on the dash cycle repeat length? Any restrictions on complexity of definition to prevent degeneracies? Other:	Element is Required ☐ Permitted ☑ Prohibited ☐ Any limits on the number of definitions? ***Maximum of 32 line types shall be specified simultaneously.*** Any limits on the number of elements in a given definition? ***Number of values in the dash gap list shall not exceed 8.*** Any restrictions on the dash cycle repeat length? *None.* Any restrictions on complexity of definition to prevent degeneracies? *None.* Other: *None.*

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Table 17 - Picture descriptor elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.17.18 HATCH STYLE DEFINITION [v3] References: 5.4.18	Same as Model Profile ☐ Element is Required ☐ Permitted ☐ Prohibited ☑ Limit on the number of hatch styles? Limit on the number of gaps in a given definition? Any limits on duty cycle length? Any restrictions on complexity of definition to prevent degeneracies? Any restrictions on the style indicator: Other:	Element is Required ☐ Permitted ☑ Prohibited ☐ Limit on the number of hatch styles? ***Maximum of 32 hatch styles shall be specified simultaneously.*** Limit on the number of gaps in a given definition? ***Number of entries in the gap width list shall not exceed 8.*** Any limits on duty cycle length? ***None.*** Any restrictions on complexity of definition to prevent degeneracies? ***None.*** Any restrictions on the style indicator? ***None.*** Other: ***None.***
T.17.19 GEOMETRIC PATTERN DEFINITION [v3] References: 5.4.19	Same as Model Profile ☐ Element is Required ☐ Permitted ☐ Prohibited ☑ Any limits on the number of geometric patterns defined? NOTE — The number of geometric patterns cannot exceed the number of segments. Any limits on the classes of primitives? Other:	Element is Required ☐ Permitted ☑ Prohibited ☐ Any limits on the number of geometric patterns defined? ***The maximum number of geometric patterns is 64.*** Any limits on the classes of primitives? ***None.*** Other: ***None.***

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Table 18 - Control Elements

Element	Specifications - PPF	Specifications - Model Profile
T.18.1 VDC INTEGER PRECISION [v1] References: 5.5.1	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ The parameter values of this element are encoding dependent. Restrictions are specified in parts 2, 3, and 4 of ISO/IEC 8632. Other:	Element is: Required ☐ Permitted ☑ The parameter values of this element are encoding dependent. Restrictions are specified in parts 2, 3, and 4 of ISO/IEC 8632. Other: *None.*
T.18.2 VDC REAL PRECISION [v1] References: 5.5.2	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ The parameter values of this element are encoding dependent. Restrictions are specified in parts 2, 3, and 4 of ISO/IEC 8632. Other:	Element is: Required ☐ Permitted ☑ The parameter values of this element are encoding dependent. Restrictions are specified in parts 2, 3, and 4 of ISO/IEC 8632. Other: *None.*
T.18.3 AUXILIARY COLOUR [v1] References: 5.5.3 7.5.4.1 T.14.1 D.4.4.1	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ The *auxiliary colour specifier* parameter shall follow the rules for colour, clause 7.5.4.1 and T.14.1. Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ The *auxiliary colour specifier* parameter shall follow the rules for colour, clause 7.5.4.1 and T.14.1. Other: *None.*

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Table 18 - Control Elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.18.4 TRANSPARENCY [v1] References: 5.5.4 T.14.1	Same as Model Profile ☑ Element is: Required ☐ Permitted ☐ Prohibited ☐ Any restriction on the parameter value? Other:	 Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restriction on the parameter value? ***None.*** Other: ***None.***
T.18.5 CLIP RECTANGLE [v1] References: 5.5.5 D.4.4.2	Same as Model Profile ☑ Element is: Required ☐ Permitted ☐ Prohibited ☐ Meaning of boundary cases for: zero-area: area greater than VDC extent: additional cases? NOTE — Because objects "inside and on the boundary are drawn", then zero-area does not have the sometimes claimed effect of hiding subsequent primitives - there will be a visible effect, a dot or a line, if the object intersects the boundary of the degenerate area. Other:	 Element is: Required ☐ Permitted ☑ Prohibited ☐ Meaning of boundary cases for: zero-area: ***Prohibited.*** area greater than VDC extent: ***Clipping shall be done to the intersection of CLIP RECTANGLE and VDC EXTENT.*** additional cases: ***None.*** Other: ***None.***

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Table 18 - Control Elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.18.6 CLIP INDICATOR [v1] References: 5.5.6	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the parameter value? *None.* Other: *None.*
T.18.7 LINE CLIPPING MODE [v2] References: 5.5.7 D.4.4.3	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the parameter value? *None.* Other: *None.*
T.18.8 MARKER CLIPPING MODE [v2] References: 5.5.8 D.4.4.3	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the parameter value? *None.* Other: *None.*
T.18.9 EDGE CLIPPING MODE [v2] References: 5.5.9 D.4.4.3	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the parameter value? *None.* Other: *None.*

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Table 18 - Control Elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.18.10 NEW REGION [v2] References: 5.5.10	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ This element shall be permitted only if BEGIN FIGURE is permitted. Any restrictions on the number of occurrences? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ This element shall be permitted only if BEGIN FIGURE is permitted. Any restrictions on the number of occurrences? ***None.*** Other: ***None.***
T.18.11 SAVE PRIMITIVE CONTEXT [v2] References: 5.5.11	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Maximum number of simultaneously saved contexts: Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Maximum number of simultaneously saved contexts: ***1024.*** Other: ***None.***
T.18.12 RESTORE PRIMITIVE CONTEXT [v2] References: 5.5.12	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ This element is permitted only if SAVE PRIMITIVE CONTEXT is permitted. Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ This element is permitted only if SAVE PRIMITIVE CONTEXT is permitted. Other: ***None.***

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Table 18 - Control Elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.18.13 PROTECTION REGION INDICATOR [v3] References: 5.5.13	Same as Model Profile ☐ Element is: Required ☐ Permitted ☐ Prohibited ☑ This element shall be permitted only if BEGIN PROTECTION REGION is permitted. Other:	 Element is: Required ☐ Permitted ☑ Prohibited ☐ This element shall be permitted only if BEGIN PROTECTION REGION is permitted. Other: ***None.***
T.18.14 GENERALIZED TEXT PATH MODE [v3] References: 5.5.14	Same as Model Profile ☐ Element is: Required ☐ Permitted ☐ Prohibited ☑ Any restrictions on the parameter value? Other:	 Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the parameter value? ***None.*** Other: ***None.***
T.18.15 MITRE LIMIT [v3] References: 5.5.15	Same as Model Profile ☐ Element is: Required ☐ Permitted ☐ Prohibited ☑ Any restrictions on the parameter value? Other:	 Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the parameter value? ***None.*** Other: ***None.***

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Table 18 - Control Elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.18.16 TRANSPARENT CELL COLOUR [v3] References: 5.5.16	Same as Model Profile ☐	
	Element is: Required ☐ Permitted ☐ Prohibited ☑ The *transparent cell colour specifier* parameter shall follow the rules for colour, clause 7.5.4.1 and T.14.1. Any restrictions on the parameter values? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ The *transparent cell colour specifier* parameter shall follow the rules for colour, clause 7.5.4.1 and T.14.1. Any restrictions on the parameter values? ***None.*** Other: ***None.***

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Table 19 - Graphical primitive elements

Element	Specifications - PPF	Specifications - Model Profile
T.19.1 POLYLINE [v1] References: 5.6.1 ~~7.5.4.3~~ T14.2 D.2.21	Same as Model Profile ☐ Element is: Required ☐ Permitted ☑ Prohibited ☐ Maximum number of points or state "no limit": 32767 Zero-length geometric degeneracies shall be as defined in clause ~~7.5.4.3~~. T14.2 Other: None	Element is: Required ☐ Permitted ☑ Prohibited ☐ Maximum number of points or state "no limit": *4096.* Zero-length geometric degeneracies shall be as defined in clause ~~7.5.4.3~~. T14.2 Other: *None.*
T.19.2 DISJOINT POLYLINE [v1] References: 5.6.2 ~~7.5.4.3~~ T14.2 D.2.2.1	Same as Model Profile ☐ Element is: Required ☐ Permitted ☑ Prohibited ☐ Maximum number of points or state "no limit": 32767 Zero-length geometric degeneracies shall be as defined in clause ~~7.5.4.3~~. T14.2 Other: None	Element is: Required ☐ Permitted ☑ Prohibited ☐ Maximum number of points or state "no limit": *4096.* Zero-length geometric degeneracies shall be as defined in clause ~~7.5.2.3~~ T14.2 Other: *None.*
T.19.3 POLYMARKER [v1] References: 5.6.3	Same as Model Profile ☐ Element is: Required ☐ Permitted ☑ Prohibited ☐ Maximum number of points or state "no limit": 32767 Other: None	Element is: Required ☐ Permitted ☑ Prohibited ☐ Maximum number of points or state "no limit": *4096.* Other: *None.*

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Table 19 - Graphical primitive elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.19.4 TEXT [v1] References: 5.6.4 7.5.4.5	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ The *string* parameter shall follow the rules for graphical text, clause 7.5.4.5. Is the 'not final' flag allowed: (yes/no) Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ The *string* parameter shall follow the rules for graphical text, clause 7.5.4.5. Is the 'not final' flag allowed: (yes/no) ***Yes.*** Other: ***None.***
T.19.5 RESTRICTED TEXT [v1] References: 5.6.5 7.5.4.5 T.25.7 D.4.5.2	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ The *string* parameter shall follow the rules for graphical text, clause 7.5.4.5. Is the 'not final' flag allowed: (yes/no) For [v1/2] metafiles, is the realization of RESTRICTED TEXT according to one of the standard or registered values for RESTRICTED TEXT TYPE? (yes/no) If yes, specify. For [v3] metafiles, RESTRICTED TEXT TYPE shall be used if this element is used. Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ The *string* parameter shall follow the rules for graphical text, clause 7.5.4.5. Is the 'not final' flag allowed: (yes/no) ***Yes.*** For [v1/2] metafiles, is the realization of RESTRICTED TEXT according to one of the standard or registered values for RESTRICTED TEXT TYPE? (yes/no) ***Yes.*** If yes, specify. ***Boxed-cap, also see T.25.7*** For [v3] metafiles, RESTRICTED TEXT TYPE shall be used if this element is used. Other: ***None.***

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Table 19 - Graphical primitive elements (continued)

Element	Specifications - PPF	Specifications Model Profile
T.19.6 APPEND TEXT [v1] References: 5.6.6. 7.5.4.5 D.4.5.1	Same as Model Profile ☑ Element is: Required ☐ Permitted ☐ Prohibited ☐ The *string* parameter shall follow the rules for graphical text, clause 7.5.4.5. Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ The *string* parameter shall follow the rules for graphical text, clause 7.5.4.5 Other: *None.*
T.19.7 POLYGON [v1] References: 5.6.7 ~~7.5.4.4~~ T14.3 D.2.2.2	Same as Model Profile ☐ Element is: Required ☐ Permitted ☑ Prohibited ☐ Maximum number of points: 32767 Zero-area geometric degeneracies shall be as defined in clause ~~7.5.4.4.~~ T14.3 Other: None	Element is: Required ☐ Permitted ☑ Prohibited ☐ Maximum number of points: *4096.* Zero-area geometric degeneracies shall be as defined in clause ~~7.5.4.4.~~ T14.3 Other: *None.*
T.19.8 POLYGON SET [v1] References: 5.6.8 ~~7.5.4.4~~ T14.3 D.2.2.2	Same as Model Profile ☐ Element is: Required ☐ Permitted ☑ Prohibited ☐ Maximum number of points: 32767 in the set Number of polygons in a set? No limit Zero-area geometric degeneracies shall be as defined in clause ~~7.5.4.4.~~ T14.3 Other: As Model	Element is: Required ☐ Permitted ☑ Prohibited ☐ Maximum number of points: *4096.* Number of polygons in a set? *No limit.* Zero-area geometric degeneracies shall be as defined in clause ~~7.5.4.4.~~ T14.3 Other: ***Each individual polygon within a set shall have at least 3 points.***

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Table 19 - Graphical primitive elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.19.9 CELL ARRAY [v1] References: 5.6.9 D.4.5.3	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Limit for nx: Limit for ny: Limit for nx · ny: Are rotated and skewed cell arrays allowed? (yes/no) If yes, specify the graphical meaning. Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Limit for nx: ***2048.*** Limit for ny: ***2048.*** Limit for nx · ny: ***4194304.*** Are rotated and skewed cell arrays allowed? (yes/no) ***No.*** If yes, specify the graphical meaning. Other: ***Zero-area cell arrays are prohibited.***
T.19.10 GENERALIZED DRAWING PRIMITIVE [v1] References: 5.6.10	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ List all registered GDPs that are allowed: List all profile-defined GDPs that are allowed and attach complete description: NOTE — Only registered GDPs and profile-defined GDPs shall be allowed in profiles. Other:	Element is: Required ☐ Permitted ☐ Prohibited ☑ List all the registered GDPs that are allowed: List all profile-defined GDPs that are allowed and attach complete description: Other:

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Table 19 - Graphical primitive elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.19.11 RECTANGLE [v1] References: 5.6.11 ~~7.5.4.4~~ T14.3 D.2.2.2	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Zero-area geometric degeneracies shall be as defined in clause ~~7.5.4.4~~. T14.3 Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Zero-area geometric degeneracies shall be as defined in clause ~~7.5.4.4~~. T14.3 Other: *None.*
T.19.12 CIRCLE [v1] References: 5.6.12 ~~7.5.4.4~~ T14.3 D.2.2.2	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Zero-area degeneracies shall be as defined in clause ~~7.5.4.4.~~ T14.3 Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Zero-area geometric degeneracies shall be as defined in clause ~~7.5.4.4~~. T14.3 Other: *None.*
T.19.13 CIRCULAR ARC 3 POINT [v1] References: 5.6.13 ~~7.5.4.3~~ T14.2 D.2.2.2 D.4.5.4	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Zero-length geometric degeneracies shall be as defined in clause ~~7.5.4.3~~. T14.2 Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Zero-length geometric degeneracies shall be as defined in clause ~~7.5.4.3~~. T14.2 Other: *None.*

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Table 19 - Graphical primitive elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.19.14 CIRCULAR ARC 3 POINT CLOSE [v1] References: 5.6.14 ~~7.5.4.4~~ T14.3 D.2.2.2 D.4.5.5	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Zero-area geometric degeneracies shall be as defined in clause ~~7.5.4.4.~~ T14.3 Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Zero-area geometric degeneracies shall be as defined in clause ~~7.5.4.4.~~ T14.3 Other: *None.*
T.19.15 CIRCULAR ARC CENTRE [v1] References: 5.6.15 ~~7.5.4.3~~ T14.2 D.2.2.2 D.4.5.6	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Zero-length geometric degeneracies shall be as defined in clause ~~7.5.4.3.~~ T14.2 Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Zero-length geometric degeneracies shall be as defined in clause ~~7.5.4.3.~~ T14.2 Other: *None.*
T.19.16 CIRCULAR ARC CENTRE CLOSE [v1] References: 5.6.16 ~~7.5.4.4~~ T14.3 D.2.2.2 D.4.5.7	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Zero-area geometric degeneracies shall be as defined in clause ~~7.5.4.4.~~ T14.3 Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Zero-area geometric degeneracies shall be as defined in clause ~~7.5.4.4.~~ T14.3 Other: *None.*

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Table 19 - Graphical primitive elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.19.17 ELLIPSE [v1] References: 5.6.17 ~~7.5.4.4~~ T14.3 D.2.2.2 D.4.5.9 D.4.5.10	Same as Model Profile ☑ Element is: Required ☐ Permitted ☐ Prohibited ☐ Zero-area geometric degeneracies shall be as defined in clause ~~7.5.4.4~~. T14.3 Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Zero-area geometric degeneracies shall be as defined in clause ~~7.5.4.4~~. T14.3 Other: *None.*
T.19.18 ELLIPTICAL ARC [v1] References: 5.6.18 ~~7.5.4.3~~ T14.2 D.2.2.1 D.4.5.11	Same as Model Profile ☑ Element is: Required ☐ Permitted ☐ Prohibited ☐ Zero-length geometric degeneracies shall be as defined in clause ~~7.5.4.3~~. T14.2 Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Zero-length geometric degeneracies shall be as defined in clause ~~7.5.4.3~~. T14.2 Other: *None.*
T.19.19 ELLIPTICAL ARC CLOSE [v1] References: 5.6.19 ~~7.5.4.4~~ T14.3 D.2.2.2 D.4.5.12	Same as Model Profile ☑ Element is: Required ☐ Permitted ☐ Prohibited ☐ Zero-area geometric degeneracies shall be as defined in clause ~~7.5.4.4~~. T14.3 Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Zero-area geometric degeneracies shall be as defined in clause ~~7.5.4.4~~. T14.3 Other: *None.*

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Table 19 - Graphical primitive elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.19.20 CIRCULAR ARC CENTRE REVERSED [v2] References: 5.6.20 ~~7.5.4.9~~ T14.2 D.2.2.1 D.4.5.8	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Zero-length geometric degeneracies shall be as defined in clause ~~7.5.4.3~~. T14.2 Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Zero-length geometric degeneracies shall be as defined in clause ~~7.5.4.9~~. T14.2 Other: *None.*
T.19.21 CONNECTING EDGE [v2] References: 5.6.21 ~~7.5.4.3~~ T14.2 D.2.2.1	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ This element shall be permitted only if BEGIN/END FIGURE is permitted. Zero-length geometric degeneracies shall be as defined in clause ~~7.5.4.3~~. T14.2 Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ This element shall be permitted only if BEGIN/END FIGURE is permitted. Zero-length geometric degeneracies shall be as defined in clause ~~7.5.4.3~~ T14.2 Other: *None.*
T.19.22 HYPERBOLIC ARC [v3] References: 5.6.22 ~~7.5.4.3~~ T14.2 D.2.2.1	Same as Model Profile ☐	
	Element is: Required ☐ Permitted ☐ Prohibited ☑ Zero-length geometric degeneracies shall be as defined in clause ~~7.5.4.3~~. T14.2 Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Zero-length geometric degeneracies shall be as defined in clause ~~7.5.4.3~~. T14.2 Other: *None.*

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Table 19 - Graphical primitive elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.19.23 PARABOLIC ARC [v3] References: 5.6.23 ~~7.5.4.3~~ T14.2 D.2.2.1	Same as Model Profile ☐	
	Element is: Required ☐ Permitted ☐ Prohibited ☑ Zero-length geometric degeneracies shall be as defined in clause ~~7.5.4.3~~. T14.2 Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Zero-length geometric degeneracies shall be as defined in clause ~~7.5.4.3~~. T14.2 Other: *None.*
T.19.24 NON-UNIFORM B-SPLINE [v3] References: 5.6.24 ~~7.5.4.3~~ T14.2 D.2.2.1	Same as Model Profile ☐	
	Element is: Required ☐ Permitted ☐ Prohibited ☑ Set of spline orders: Maximum number of control points: Zero-length geometric degeneracies shall be as defined in clause ~~7.5.4.3~~. T14.2 Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Set of spline orders: ***cubic spline.*** Maximum number of control points: ***4096.*** Zero-length geometric degeneracies shall be as defined in clause ~~7.5.4.3~~. T14.2 Other: *None.*
T.19.25 NON-UNIFORM RATIONAL B-SPLINE [v3] References: 5.6.25 ~~7.5.4.3~~ T14.2 D.2.2.1	Same as Model Profile ☐	
	Element is: Required ☐ Permitted ☐ Prohibited ☑ Set of spline orders: Maximum number of control points: Zero-length geometric degeneracies shall be as defined in clause ~~7.5.4.3~~. T14.2 Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Set of spline orders: ***cubic spline.*** Maximum number of control points: ***4096.*** Zero-length geometric degeneracies shall be as defined in clause ~~7.5.4.3~~. T14.2 Other: *None.*

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Table 19 - Graphical primitive elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.19.26 POLYBEZIER [v3] References: 5.6.26 ~~7.5.4.3~~ T14.2 D.2.2.1	Same as Model Profile ☐ Element is: Required ☐ Permitted ☐ Prohibited ☑ Maximum number of points: Any restrictions on the continuity indicator? Zero-length geometric degeneracies shall be as defined in clause ~~7.5.4.3.~~ T14.2 Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Maximum number of points: ***4096.*** Any restrictions on the continuity indicator? ***None.*** Zero-length geometric degeneracies shall be as defined in clause ~~7.5.4.3.~~ T14.2 Other: ***None.***
T.19.27 POLYSYMBOL [v3] References: 5.6.27 D.2.2.1	Same as Model Profile ☐ Element is: Required ☐ Permitted ☐ Prohibited ☑ Point list: Effect of a reference to a symbol index parameter which is not in the symbol library: Other:	Element is: Required ☐ Permitted ☐ Prohibited ☑ Point list: Effect of a reference to a symbol index parameter which is not in the symbol library. Other: ***NOTE — This element is prohibited because SYMBOL LIBRARY LIST is prohibited.***

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Table 19 - Graphical primitive elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.19.28 BITONAL TILE [v3] References: 5.6.28 D.2.2.1 D.4.5.13	Same as Model Profile ☐	
	Element is: Required ☐ Permitted ☐ Prohibited ☑ List allowable compression types: Requirements on row padding: Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ List allowable compression types: ***Values 0..6.*** Requirements on row padding: ***None.*** Other: ***CCITT compression methods (T6 and T4) should be used with 1 bit cell colour precision and indexed colour.*** ***NOTE — Work is in progress on registration of JPEG. When JPEG is registered, it may be added to the allowable compression type values in a future edition of this profile.***
T.19.29 TILE [v3] References: 5.6.29 D.2.2.1 D.4.5.13	Same as Model Profile ☐	
	Element is: Required ☐ Permitted ☐ Prohibited ☑ List allowable compression types: Requirements on row padding: Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ List allowable compression types: ***Values 0..6.*** Requirements on row padding? ***None.*** Other: ***CCITT compression methods (T6 and T4) should be used with 1 bit cell colour precision and indexed colour.*** ***NOTE — Work is in progress on registration of JPEG. When JPEG is registered, it may be added to the allowable compression type values in a future edition of this profile.***

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Table 20 - Attribute elements

Element	Specifications - PPF	Specifications - Model Profile
T.20.1 LINE BUNDLE INDEX [v1] References: 5.7.1 7.5.4.2 D.4.6.1 T.17.11	Same as Model Profile ☑ Element is: Required ☐ Permitted ☐ Prohibited ☐ The *line bundle index* parameter shall follow the rules for indexes, clause 7.5.4.2. For [v1] metafiles, allowable index values: For [v2/3] metafiles, any referenced bundle shall have an explicit representation definition. Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ The *line bundle index* parameter shall follow the rules for indexes, clause 7.5.4.2. and meanings of values For [v1] metafiles, allowable index values) *1..5.* *index* 1 2 3 4 5 *line type* 1 2 3 4 5 *line width* 1.0 1.0 1.0 1.0 1.0 *line colour* 1 1 1 1 1 For [v2/3] metafiles, any referenced bundle shall have an explicit representation definition. Other: *None.*
T.20.2 LINE TYPE [v1] References: 5.7.2 5.4.17 D.4.6.2	Same as Model Profile ☐ Element is: Required ☐ Permitted ☑ Prohibited ☐ Select 1 or more of the following: ☑ values 1..5; ☐ subset of registered values (attach list); ☐ profile-defined values (attach complete description); For [v3] metafiles, ☐ negative values assigned by the LINE AND EDGE TYPE DEFINITION element. Other: None	Element is: Required ☐ Permitted ☑ Prohibited ☐ Select 1 or more of the following: ☑ values 1..5; ☐ subset of registered values (attach list); ☐ profile-defined values (attach complete description); For [v3] metafiles, ☑ negative values assigned by the LINE AND EDGE TYPE DEFINITION element. Other: *None.*

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Table 20 - Attribute elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.20.3 LINE WIDTH [v1] References: 5.7.3 D.4.6.3	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Is value zero allowed? (yes/no) If yes, specify its meaning. Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Is value zero allowed? (yes/no) ***Yes.*** If yes, specify its meaning. ***Minimum available line width.*** Any restrictions on the parameter value? ***None.*** Other: ***None.***
T.20.4 LINE COLOUR [v1] References: 5.7.4 7.5.4.1 T.14.1	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ The *line colour specifier* parameter shall follow the rules for colour, clause 7.5.4.1 and T.14.1. Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ The *line colour specifier* parameter shall follow the rules for colour, clause 7.5.4.1 and T.14.1. Any restrictions on the parameter value? ***None.*** Other: ***None.***

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Table 20 - Attribute elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.20.5 MARKER BUNDLE INDEX [v1] References: 5.7.5 7.5.4.2 T.17.12 D.4.6.1	Same as Model Profile ☑ Element is: Required ☐ Permitted ☐ Prohibited ☐ The *marker bundle index* parameter shall follow the rules for indexes, clause 7.5.4.2. For [v1] metafiles, allowable index values: For [v2/3] metafiles, any referenced bundle shall have an explicit representation definition. Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ The *marker bundle index* parameter shall follow the rules for indexes, clause 7.5.4.2. And meanings of values For [v1] metafiles, allowable ~~index~~ values: *1..5.* *index* 1 2 3 4 5 *marker type* 1 2 3 4 5 *marker width* 1.0 1.0 1.0 1.0 1.0 *marker colour* 1 1 1 1 1 For [v2/3] metafiles, any referenced bundle shall have an explicit representation definition. Other: *None.*
T.20.6 MARKER TYPE [v1] References: 5.7.6 D.4.6.4	Same as Model Profile ☐ Element is: Required ☐ Permitted ☑ Prohibited ☐ Indicate one or more of the following restrictions: ☑ values 1-5; ☐ subset of registered values (attach list); ☐ profile-defined values (attach complete description). Other: None	Element is: Required ☐ Permitted ☑ Prohibited ☐ Indicate one or more of the following restrictions: ☑ values 1..5; ☐ subset of registered values (attach list); ☐ profile-defined values (attach complete description). Other: *None.*

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Table 20 - Attribute elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.20.7 MARKER SIZE [v1] References: 5.7.7 D.4.6.5	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Is value zero allowed? (yes/no) If yes, specify its meaning. Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Is value zero allowed? (yes/no) ***Yes.*** If yes, specify its meaning. ***Minimum available size.*** Any restrictions on the parameter value? ***None.*** Other: ***None.***
T.20.8 MARKER COLOUR [v1] References: 5.7.8 7.5.4.1 T.14.1	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ The *marker colour specifier* parameter shall follow the rules for colour, clause 7.5.4.1 and T.14.1. Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ The *marker colour specifier* parameter shall follow the rules for colour, clause 7.5.4.1 and T.14.1. Any restrictions on the parameter value? ***None.*** Other: ***None.***

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Table 20 - Attribute elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.20.9 TEXT BUNDLE INDEX [v1] References: 5.7.9 7.5.4.2 T.17.13 D.4.6.1	Same as Model Profile ☑ Element is: Required ☐ Permitted ☐ Prohibited ☐ The *text bundle index* parameter shall follow the rules for indexes, clause 7.5.4.2. For [v1] metafiles, allowable index values: For [v2/3] metafiles, any referenced bundle shall have an explicit representation definition. Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ The *text bundle index* parameter shall follow the rules for indexes, clause 7.5.4.2. and meanings of values For [v1] metafiles, allowable index values *1..2*. *index* 1 2 *font index* 1 1 *text precision* stroke stroke *character expansion factor* 1.0 0.7 *character spacing* 0.0 0.0 *text colour* 1 1 For [v2/3] metafiles, any referenced bundle shall have an explicit representation definition. Other: *None.*
T.20.10 TEXT FONT INDEX [v1] References: 5.7.10 7.5.4.2 T.16.13	Same as Model Profile ☑ Element is: Required ☐ Permitted ☐ Prohibited ☐ Every referenced index shall refer to an entry in the FONT LIST (see T.16.13). Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Every referenced index shall refer to an entry in the FONT LIST (see T.16.13). Other: *None.*

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Table 20 - Attribute elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.20.11 TEXT PRECISION [v1] References: 5.7.11	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the parameter value? ***None.*** Other: ***None.***
T.20.12 CHARACTER EXPANSION FACTOR [v1] References: 5.7.12 D.4.6.7	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Is value zero allowed? (yes/no) If yes, state the meaning. Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Is value zero allowed? (yes/no) ***No.*** If yes, state the meaning. Any restrictions on the parameter value? ***Values shall be restricted to the range 0.1..10.0*** Other: ***None.***
T.20.13 CHARACTER SPACING [v1] References: 5.7.13 D.4.6.8	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the parameter value? ***Values shall be restricted to the range of -1.0..5.0.*** Other: ***None.***

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Table 20 - Attribute elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.20.14 TEXT COLOUR [v1] References: 5.7.14 7.5.4.1 T.14.1	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ The *text colour specifier* parameter shall follow the rules for colour, clause 7.5.4.1 and T.14.1. Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ The *text colour specifier* parameter shall follow the rules for colour, clause 7.5.4.1 and T.14.1. Any restrictions on the parameter value? *None.* Other: *None.*
T.20.15 CHARACTER HEIGHT [v1] References: 5.7.15 D.4.6.9	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Is zero height allowed? (yes/no) If yes, state its meaning. Any restrictions on the parameter? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Is zero height allowed: (yes/no) *Yes.* If yes, state its meaning: ***Minimum available height.*** Any restrictions on the parameter? *None.* Other: *None.*
T.20.16 CHARACTER ORIENTATION [v1] References: 5.7.16 D.4.6.10	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Any restrictions on the following distortion aspects? rotation? skewing? mirroring? aspect ratio? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the following distortion aspects? rotation? *None.* skewing? *None.* mirroring? *None.* aspect ratio? *None.* Other: *None.*

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Table 20 - Attribute elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.20.17 TEXT PATH [v1] References: 5.7.17 D.4.6.11	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the parameter value? *None.* Other: *None.*
T.20.18 TEXT ALIGNMENT [v1] References: 5.7.18 D.4.6.12	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Any restrictions on the horizontal and vertical alignment values? Any restrictions on the continuous horizontal and vertical alignment values? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the horizontal and vertical alignment values? *None.* Any restrictions on the continuous horizontal and vertical alignment values? *None.* Other: *None.*
T.20.19 CHARACTER SET INDEX [v1] References: 5.7.19 7.5.4.2 T.16.14 T.16.22 D.4.6.13	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Every referenced index shall refer to an entry in the CHARACTER SET LIST or GLYPH MAPPING. This includes implicit reference to the default index value. Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Every referenced index shall refer to an entry in the CHARACTER SET LIST or GLYPH MAPPING. This includes implicit reference to the default index value. Other: *None.*

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Table 20 - Attribute elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.20.20 ALTERNATE CHARACTER SET INDEX [v1] References: 5.7.20 7.5.4.2 T.16.14 T.16.22 D.4.6.13	Same as Model Profile ☑ Element is: Required ☐ Permitted ☐ Prohibited ☐ Every referenced index shall refer to an entry in the CHARACTER SET LIST or GLYPH MAPPING. This includes implicit reference to the default index value. Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Every referenced index shall refer to an entry in the CHARACTER SET LIST or GLYPH MAPPING. This includes implicit reference to the default index value. Other: *None.*
T.20.21 FILL BUNDLE INDEX [v1] References: 5.7.21 7.5.4.2 T.17.14 D.4.6.1	Same as Model Profile ☑ Element is: Required ☐ Permitted ☐ Prohibited ☐ The *fill bundle index* parameter shall follow the rules for indexes, clause 7.5.4.2. For [v1] metafiles, allowable index values: For [v2/3] metafiles, any referenced bundle shall have an explicit representation definition. Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ The *fill bundle index* parameter shall follow the rules for indexes, clause 7.5.4.2. For [v1] metafiles, allowable index values: *1..5.* *index* 1 2 3 4 5 *interior style* *hatch* *hatch* *hatch* *hatch* *hatch* *fill colour* *1* *1* *1* *1* *1* *hatch index* *1* *2* *3* *4* *5* *pattern index* *1* *1* *1* *1* *1* For [v2/3] metafiles, any referenced bundle shall have an explicit representation definition. Other: *None.*

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Table 20 - Attribute elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.20.22 INTERIOR STYLE [v1] References: 5.7.22 D.4.6.15	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ For 'hollow' interior style, line type and width of the bounding line: Any restrictions on the parameter value?: Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ For 'hollow' interior style, line type and width of the bounding line: ***Solid line type and default line width.*** Any restrictions on the parameter value? ***None.*** Other: ***None.***
T.20.23 FILL COLOUR [v1] References: 5.7.23 7.5.4.1 T.14.1	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ The *fill colour specifier* parameter shall follow the rules for colour, clause 7.5.4.1 and T.14.1. Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ The *fill colour specifier* parameter shall follow the rules for colour, clause 7.5.4.1 and T.14.1. Any restrictions on the parameter value? ***None.*** Other: ***None.***

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Table 20 - Attribute elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.20.24 HATCH INDEX [v1] References: 5.4.18 5.7.24 5.7.4.2 D.4.6.16	Same as Model Profile ☐ Element is: Required ☐ Permitted ☑ Prohibited ☐ Select 1 or more of the following: ☑ values 1..6; ☐ subset of registered values (attach list); ☐ profile-defined values (attach complete description); For [v3] metafiles, ☐ negative values assigned by the HATCH STYLE DEFINITION element. Other: None	Element is: Required ☐ Permitted ☑ Prohibited ☐ Select 1 or more of the following: ☑ values 1..6; ☐ subset of registered values (attach list); ☐ profile-defined values (attach complete description); For [v3] metafiles, ☑ negative values assigned by the HATCH STYLE DEFINITION element. Other: *None.*
T.20.25 PATTERN INDEX [v1] References: 5.7.25 7.5.4.2	Same as Model Profile ☑ Element is: Required ☐ Permitted ☐ Prohibited ☐ The *pattern index* parameter shall follow the rules for indexes, clause 7.5.4.2. Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ The *pattern index* parameter shall follow the rules for indexes, clause 7.5.4.2. Any restrictions on the parameter value? *None.* Other: *None.*

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Table 20 - Attribute elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.20.26 EDGE BUNDLE INDEX [v1] References: 5.7.26 7.5.4.2 T.17.15 D.4.6.1	Same as Model Profile ☑ Element is: Required ☐ Permitted ☐ Prohibited ☐ The *edge bundle index* parameter shall follow the rules for indexes, clause 7.5.4.2. For [v1] metafiles, allowable index values: For [v2/3] metafiles, any referenced bundle shall have an explicit representation definition. Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ The *edge bundle index* parameter shall follow the rules for indexes, clause 7.5.4.2. and meanings of values For [v1] metafiles, allowable index values: *1..5.* *index* 1 2 3 4 5 *edge type* 1 2 3 4 5 *edge width* 1.0 1.0 1.0 1.0 1.0 *edge colour* 1 1 1 1 1 For [v2/3] metafiles, any referenced bundle shall have an explicit representation definition. Other: *None.*
T.20.27 EDGE TYPE [v1] References: 5.4.17 5.7.27 D.4.6.17	Same as Model Profile ☐ Element is: Required ☐ Permitted ☑ Prohibited ☐ Select 1 or more of the following: ☑ values 1..5; ☐ subset of registered values (attach list); ☐ profile-defined values (attach complete description); For [v3] metafiles, ☐ negative values assigned by the LINE AND EDGE TYPE DEFINITION element. Other: None	Element is: Required ☐ Permitted ☑ Prohibited ☐ Select 1 or more of the following: ☑ values 1..5; ☐ subset of registered values (attach list); ☐ profile-defined values (attach complete description); For [v3] metafiles, ☑ negative values assigned by the LINE AND EDGE TYPE DEFINITION element. Other: *None.*

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Table 20 - Attribute elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.20.28 EDGE WIDTH [v1] References: 5.7.28 D.4.6.18	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Is value zero allowed? (yes/no) If yes, specify its meaning. Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Is value zero allowed? (yes/no) ***Yes.*** If yes, specify its meaning. ***Minimum available edge width.*** Any restrictions on the parameter value? ***None.*** Other: ***None.***
T.20.29 EDGE COLOUR [v1] References: 5.7.29 7.5.4.1 T.14.1	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ The *edge colour specifier* parameter shall follow the rules for colour, clause 7.5.4.1 and T.14.1. Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ The *edge colour specifier* parameter shall follow the rules for colour, clause 7.5.4.1 and T.14.1. Any restrictions on the parameter value? ***None.*** Other: ***None.***
T.20.30 EDGE VISIBILITY [v1] References: 5.7.30	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the parameter value? ***None.*** Other: ***None.***

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Table 20 - Attribute elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.20.31 FILL REFERENCE POINT [v1] References: 5.7.31	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the parameter value? *None.* Other: *None.*
T.20.32 PATTERN TABLE [v1] References: 5.7.32	Same as Model Profile ☐	
	Element is: Required ☐ Permitted ☑ Prohibited ☐ Maximum size for nx: 64 Allowable values for nx: 8, 16, 32, 64 Maximum size for ny: 64 Allowable values for ny: 8, 16, 32, 64 Any restrictions on the number of pattern definitions? 64 Any restrictions on allowable combinations of nx and ny? None Any restrictions on the number of colours? None Other: None	Element is: Required ☐ Permitted ☑ Prohibited ☐ Maximum size for nx: *32.* Allowable values for nx: *8, 16, or 32.* Maximum size for ny: *32.* Allowable values for ny: *8, 16, or 32.* Any restrictions on the number of pattern definitions? *64.* Any restrictions on allowable combinations of nx and ny? *None.* Any restrictions on the number of colours? *None.* Other: *None.*

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Table 20 - Attribute elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.20.33 PATTERN SIZE [v1] References: 5.7.33 D.4.6.19	Same as Model Profile ☑ Element is: Required ☐ Permitted ☐ Prohibited ☐ Must pattern vertors be parallel to coordinate axes? (yes/no) If no, state the meaning of skewed or non-aligned patterns. Other: NOTE — The description of the layout order of pattern cells in the PATTERN SIZE element (5.7.33) contains an error. The error is corrected by a defect report.	Element is: Required ☐ Permitted ☑ Prohibited ☐ Must pattern vertors be parallel to coordinate axes? (yes/no) Yes If no, state the meaning of skewed or non-aligned patterns. Other:
T.20.34 COLOUR TABLE [v1] References: 5.7.34 7.5.4.1 T.14.1	Same as Model Profile ☑ Element is: Required ☐ Permitted ☐ Prohibited ☐ Any limits on the length of colour list? Any restrictions on the index values? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Any limits on the length of colour list? ***Monochrome: 2, Greyscale: 64, Colour: 256.*** Any restrictions on the index values? ***Index values shall not exceed the maximum colour index.*** Other: ***None.***
T.20.35 ASPECT SOURCE FLAGS [v1] References: 5.7.35 D.4.6.20	Same as Model Profile ☑ Element is: Required ☐ Permitted ☐ Prohibited ☐ Are all ASF values to be the same: for the metafile? (yes/no) within each class (line, marker, text, fill, edge) of primitive? (yes/no) Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Are all ASF values to be the same: for the metafile? (yes/no) ***No.*** within each class (line, marker, text, fill, edge) of primitive? (yes/no) ***Yes.*** Other: ***None.***

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Table 20 - Attribute elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.20.36 PICK IDENTIFIER [v2] References: 5.7.36	Same as Model Profile ☑ Element is: Required ☐ Permitted ☐ Prohibited ☐ Any restrictions on the parameter value? Other:	 Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the parameter value? *None.* Other: *None.*
T.20.37 LINE CAP [v3] References: 5.7.37 7.5.7.5 T.25.7	Same as Model Profile ☐ Element is: Required ☐ Permitted ☐ Prohibited ☑ Any restrictions on the set of values for the line cap indicator? (choose 1 or both) ☐ values 1..5; ☐ subset of registered values (attach list). Any restrictions on the set of values for the dash cap indicator? (choose 1 or both) ☐ values 1..3; ☐ subset of registered values (attach list). Other:	 Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the set of values for the line cap indicator? (choose 1 or both) ☑ values 1..5; ☐ subset of registered values (attach list). Any restrictions on the set of values for the dash cap indicator? (choose 1 or both) ☑ values 1..3; ☐ subset of registered values (attach list). Other: *None.*

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Table 20 - Attribute elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.20.38 LINE JOIN [v3] References: 5.7.38 7.5.7.5 T.25.7	Same as Model Profile ☐ Element is: Required ☐ Permitted ☐ Prohibited ☑ Any restrictions on the set of values? (choose 1 or both) ☐ values 1...4; ☐ subset of registered values (attach list). Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the set of values? (choose 1 or both) ☑ values 1..4; ☐ subset of registered values (attach list). Other: *None.*
T.20.39 LINE TYPE CONTINUATION [v3] References: 5.7.39 7.5.7.5 T.25.7	Same as Model Profile ☐ Element is: Required ☐ Permitted ☐ Prohibited ☑ Any restrictions on the set of values? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the set of values? *1..4.* Other: *None.*
T.20.40 LINE TYPE INITIAL OFFSET [v3] References: 5.7.40	Same as Model Profile ☐ Element is: Required ☐ Permitted ☐ Prohibited ☑ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the parameter value? *None.* Other: *None.*

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Table 20 - Attribute elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.20.41 TEXT SCORE TYPE [v3] References: 5.7.41	Same as Model Profile ☐ Element is: Required ☐ Permitted ☐ Prohibited ☑ Any restrictions on the set of values? (choose 1 or both) ☐ Values 1..4; ☐ Subset of registered values (attach list). Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the set of values? (choose 1 or both) ☑ Values 1..4; ☐ Subset of registered values (attach list). Other: ***None.***
T.20.42 RESTRICTED TEXT TYPE [v3] References: 5.7.42 7.5.7.5 T.25.7	Same as Model Profile ☐ Element is: Required ☐ Permitted ☐ Prohibited ☑ Any restrictions on the set of values? (choose 1 or both) ☐ Values 1..6; ☐ Subset of registered values (attach list). Algorithms for achieving restriction type? (attach) Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the set of values? (choose 1 or both) ☑ Values 1..6; ☐ Subset of registered values (attach list). Algorithms for achieving restriction type? (attach) ***Not specified.*** Other: ***None.***

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Table 20 - Attribute elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.20.43 INTERPOLATED INTERIOR [v3] References: 5.7.43	Same as Model Profile ☐ Element is: Required ☐ Permitted ☐ Prohibited ☑ Any limits on the number of stages? Any restrictions on the set of values? (choose 1 or both) ☐ Values 1..3; ☐ Subset of registered values (attach list). *Other:*	Element is: Required ☐ Permitted ☑ Prohibited ☐ Any limits on the number of stages? ***Maximum number of stages is 8.*** Any restrictions on the set of values? (choose 1 or both) ☑ Values 1..3; ☐ Subset of registered values (attach list). Other: *None.*
T.20.44 EDGE CAP [v3] References: 5.7.44 7.5.7.5 T.25.7	Same as Model Profile ☐ Element is: Required ☐ Permitted ☐ Prohibited ☑ Any restrictions on the set of values for the edge cap indicator? (choose 1 or both) ☐ values 1..5; ☐ subset of registered values (attach list). Any restrictions on the set of values for the dash cap indicator? (choose 1 or both) ☐ values 1..3; ☐ subset of registered values (attach list). Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the set of values for the edge cap indicator? (choose 1 or both) ☑ values 1..5; ☐ subset of registered values (attach list). Any restrictions on the set of values for the dash cap indicator? (choose 1 or both) ☑ values 1..3; ☐ subset of registered values (attach list). Other: *None.*

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Table 20 - Attribute elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.20.45 *EDGE JOIN* [v3] References: 5.7.45 7.5.7.5 T.25.7	Same as Model Profile ☐ Element is: Required ☐ Permitted ☐ Prohibited ☑ Any restrictions on the set of values? (choose 1 or both) ☐ values 1...4; ☐ subset of registered values (attach list). Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the set of values? (choose 1 or both) ☑ values 1..4; ☐ subset of registered values (attach list). Other: ***None.***
T.20.46 EDGE TYPE CONTINUATION [v3] References: 5.7.46 7.5.7.5 T.25.7	Same as Model Profile ☐ *Element is:* Required ☐ Permitted ☐ Prohibited ☑ Any restrictions on the set of values? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the set of values? ***1..4.*** Other: ***None.***
T.20.47 EDGE TYPE INITIAL OFFSET [v3] References: 5.7.47	Same as Model Profile ☐ Element is: Required ☐ Permitted ☐ Prohibited ☑ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the parameter value? ***None.*** Other: ***None.***

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Table 20 - Attribute elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.20.48 SYMBOL LIBRARY INDEX [v3] References: 5.7.48 7.5.4.2 T.16.23	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Every referenced index shall refer to an entry in the SYMBOL LIBRARY LIST (see T.16.23). Other:	Element is: Required ☐ Permitted ☐ Prohibited ☑ Every referenced index shall refer to an entry in the SYMBOL LIBRARY LIST (see T.16.23). Other: ***This element is prohibited because SYMBOL LIBRARY LIST is prohibited.***
T.20.49 SYMBOL COLOUR [v3] References: 5.7.49 7.5.4.1 T.14.1 T.16.23 D.4.6.21	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ The *symbol colour specifier* parameter shall follow the rules for colour, clause 7.5.4.1 and T.14.1. Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☐ Prohibited ☑ The *symbol colour specifier* parameter shall follow the rules for colour, clause 7.5.4.1 and T.14.1. Any restrictions on the parameter value? Other: ***This element is prohibited because SYMBOL LIBRARY LIST is prohibited.***
T.20.50 SYMBOL SIZE [v3] References: 5.7.50 T.16.23	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Is value zero allowed: (yes/no) ? If yes, specify its meaning. Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☐ Prohibited ☑ Is value zero allowed: (yes/no) ? If yes, specify its meaning. Any restrictions on the parameter value? Other: ***This element is prohibited because SYMBOL LIBRARY LIST is prohibited.***

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Table 20 - Attribute elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.20.51 SYMBOL ORIENTATION [v3] References: 5.7.51 T.16.23 D.4.6	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Any restrictions on rotation? Any restrictions on skewing? Any restrictions on mirroring? Any restrictions on distortion of aspect ratio? Other:	Element is: Required ☐ Permitted ☐ Prohibited ☑ Any restrictions on rotation? Any restrictions on skewing? Any restrictions on mirroring? Any restrictions on distortion of aspect ratio? Other: ***This element is prohibited because SYMBOL LIBRARY LIST is prohibited.***

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Table 21 - Escape elements

Element	Specifications - PPF	Specifications - Model Profile
T.21.1 ESCAPE [v1] References: 5.8.1	Same as Model Profile ☑	
	Element: Required ☐ Permitted ☐ Prohibited ☐ List all registered ESCAPEs that are allowed: List all profile-defined ESCAPEs that are allowed and attach complete description: Other: NOTE — Only registered ESCAPEs and profile-defined ESCAPEs shall be allowed in profiles.	Element: Require ☐ Permitted ☑ Prohibited ☐ List all registered ESCAPEs that are allowed: ***ESCAPE 22, Transparent Cell Colour [v1/v2 metafiles only]*** List all profile-defined ESCAPEs that are allowed and attach complete description: ***None.*** Other: ***None***

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Table 22 - External elements

Element	Specifications - PPF	Specifications - Model Profile
T.22.1 MESSAGE [v1] References: 5.9.1	Same as Model Profile ☑	
	Element: Required ☐ Permitted ☐ Prohibited ☐ Values of the *action required flag* parameter: 'action' Permitted ☐ Prohibited ☐ (if permitted, specify the messages and actions taken) 'no action' Permitted ☐ Prohibited ☐ Any restrictions on the length of the message string, other than those for type SF parameter? Other:	Element: Required ☐ Permitted ☑ Prohibited ☐ Values of the *action required flag* parameter: 'action' Permitted ☐ Prohibited ☑ (if permitted, specify the messages and actions taken) 'no action' Permitted ☑ Prohibited ☐ Any restrictions on the length of the message string, other than those for SF parameter? ***None.*** Other: ***None.***
T.22.2 APPLICATION DATA [v1] References: 5.9.2	Same as Model Profile ☑	
	Element: Required ☐ Permitted ☐ Prohibited ☐ The use of this element shall not be restricted. Attach a syntactic and semantic description of all application data elements associated with this profile. Other:	Element: Required ☐ Permitted ☑ Prohibited ☐ The use of this element shall not be restricted. Attach a syntactic and semantic description of all application data elements associated with this profile. Other: ***None***

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Table 23 - Segment elements

Element	Specifications - PPF	Specifications - Model Profile
T.23.1 COPY SEGMENT [v2] References: 5.10.1 D.4.9.2	Same as Model Profile ☑	
	Element: Required ☐ Permitted ☐ Prohibited ☐ Every segment identifier shall refer to a defined segment. Any limits on the segment transformation application value? Any restrictions on the nature of the transformation (e.g., permitting only isotropic transformations)? Other:	Element: Required ☐ Permitted ☑ Prohibited ☐ Every segment identifier shall refer to a defined segment. Any limits on the segment transformation application value? ***None.*** Any restrictions on the nature of the transformation (e.g., permitting only isotropic transformations)? ***Non-singular.*** Other: ***None.***
T.23.2 INHERITANCE FILTER [v2] References: 5.10.2	Same as Model Profile ☑	
	Element: Required ☐ Permitted ☐ Prohibited ☐ Any limits on the filter selection list? Any limits on the selection setting? Other:	Element: Required ☐ Permitted ☑ Prohibited ☐ Any limits on the filter selection list? ***None.*** An limits on the selection setting? ***None.*** Other: ***None.***
T.23.3 CLIP INHERITANCE [v2] References: 5.10.3 D.4.9.2	Same as Model Profile ☑	
	Element: Required ☐ Permitted ☐ Prohibited ☐ Any limits on the parameter? Other:	Element: Required ☐ Permitted ☑ Prohibited ☐ Any limits on the parameter? ***None.*** Other: ***None.***

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Table 23 - Segment elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.23.4 SEGMENT TRANS-FORMATION [v2] References: 5.10.4	Same as Model Profile ☑	
	Element: Required ☐ Permitted ☐ Prohibited ☐ Any restrictions on the nature of the transformation (e.g., permitting only isotropic transformations)? Other:	Element: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the nature of the transformation (e.g., permitting only isotropic transformations)? ***Non-singular.*** Other: ***None.***
T.23.5 SEGMENT HIGHLIGHTING [v2] References: 5.10.5	Same as Model Profile ☑	
	Element: Required ☐ Permitted ☐ Prohibited ☐ Any restrictions on the parameter values? Other:	Element: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the parameter values? ***None.*** Other: ***None.***
T.23.6 SEGMENT DISPLAY PRIORITY [v2] References: 5.10.6	Same as Model Profile ☑	
	Element: Required ☐ Permitted ☐ Prohibited ☐ Any restrictions on the parameter values? Other:	Element: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the parameter values? ***None.*** Other: ***None.***

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Table 23 - Segment elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.23.7 SEGMENT PICK PRIORITY [v2] References: 5.10.7	Same as Model Profile ☑ Element: Required ☐ Permitted ☐ Prohibited ☐ Any restrictions on the parameter values? Other:	 Element: Required ☐ Permitted ☑ Prohibited ☐ Any restrictions on the parameter values? *None.* Other: *None.*

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Table 24 - Generator implementation requirements

Functionality	Specifications - PPF	Specifications - Model Profile
T.24.1 Colour requirements References: 7.5.4.1 7.5.6.2.2	Same as Model Profile ☑	
	Colour mapping is: Permitted ☐ Prohibited ☐ Reduction of the number of colours? Definition of mapping algorithms, metrics, and colour space? For [v1/2] metafiles, implicit colour calibration specifications? Other:	Colour mapping is: Permitted ☑ Prohibited ☐ Reduction of the number of colours? *Not specified.* ***NOTE — If mapping of application colours to metafile colour specifications is required, it is recommended that colour distance in the mapping be computed by the Euclidean metric in CIEXYZ space.*** Definition of mapping algorithms, metrics, and colour space? ***No specific colour mapping techniques or selection of metafile colour sets are defined.*** For [v1/2] metafiles, implicit colour calibration specifications? ***No specifications are defined.*** Other: *None.*
T.24.2 Geometric accuracy and latitude References: 7.5.6.2.1	Same as Model Profile ☑	
	Accuracy and latitude for mapping application graphics to CGM graphical primitive elements:	Accuracy and latitude for mapping application graphics to CGM graphical primitive elements: Accuracy and latitude for mapping application graphics to CGM graphical primitive elements: ***Generators shall produce a metafile whose graphical primitive elements match the application graphical primitives accurately to within ±0.1% of relative position within the VDC Extent box or ±½ pixel of the intended size, whichever is greater. Generators shall produce geometric size aspects of the primitives (e.g., text size, line width, and edge width) to within 1% of the intended size or ±½ pixel of the intended size, whichever is greater.*** ***This requirement shall apply to all graphical primitive elements, unless superseded by specific element requirements in this clause.***

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Table 24 - Generator implementation requirements (continued)

Functionality	Specifications - PPF	Specifications - Model Profile
T.24.3 Text accuracy and latitude References: 7.5.6.2.3	Same as Model Profile ☑	
	Is text accuracy and latitude addressed? (yes/no) If yes, specify.	Is text accuracy and latitude addressed? (yes/no) ***Yes.*** If yes, specify. ***Metafile text specifications shall match the text of the application picture to within ±1% of relative to the intended size or ±½ pixel of the intended size, whichever is greater, for the placement and overall extent of each text string.***
T.24.4 Font substitution References: 7.5.6.2.4 annex H	Same as Model Profile ☑	
	Font substitution is: Permitted ☐ Prohibited ☐ Similarity of font visual characteristics? Font metrics? Note — Annex H of ISO/IEC 8632 Am. 1. Individual glyph metrics? Other:	Font substitution is: Permitted ☑ Prohibited ☐ Similarity of font visual characteristics? ***Substituted fonts shall have similar visual characteristics (e.g., posture, weight, proportionate width).*** Font metrics? ***Specified in annex H.*** Individual glyph metrics? ***Specified in annex H.*** Other: ***None.***
T.24.5 Preservation of primitives References: 7.5.6.3	Same as Model Profile ☑	
	Is preservation of graphical primitive elements addressed? (yes/no) If yes, specify allowable substitutions.	Is preservation of graphical primitive elements addressed? (yes/no) ***No.*** If yes, specify allowable substitutions.

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Table 24 - Generator implementation requirements (continued)

Functionality	Specifications - PPF	Specifications - Model Profile
T.24.6 Semantic latitude References: 7.5.6.4	Same as Model Profile ☑	
	Drawing priority and mode:	Drawing priority and mode: ***Priority shall correspond to the metafile order (i.e., primitives occurring later in the file shall overlay primitives occurring earliest in the file). Mode shall be "replacement" mode.***
	Clipping:	Clipping: ***Clipping shall be to the intersection of the clip rectangle, the VDC EXTENT, the device viewport, and the device view surface limits.***
	Edge centreing:	Edge centreing: ***Edges shall be centred on the ideal mathematically-defined edge of the area.***
	Meaning of predefined line types and edge types:	Meaning of predefined line types and edge types: ***The exact on-off definitions for the predefined line types and edge types are not specified.***
	Meaning of predefined hatch styles:	Meaning of predefined hatch styles: ***The inter-line spacing is not specified. Use the latitudes of annex D.4.6.16 for the angular directions.***
	Other:	Other: *None.*
T.24.7 Error processing References: 7.5.6.5	Same as Model Profile ☑	
	Is error processing addressed? (yes/no) If yes, specify the action taken. Classification of error severity? Requirements for error recovery? Requirements for error reporting? Additional areas?	Is error processing addressed? (yes/no) *No.* If yes, specify the action taken. Classification of error severity? Requirements for error recovery? Requirements for error reporting? Additional areas?
	Other:	Other: *None.*

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Table 24 - Generator implementation requirements (continued)

Functionality	Specifications - PPF	Specifications - Model Profile
T.24.8 Reporting References: 7.5.6.6	Same as Model Profile ☑	
	Is reporting required? (yes/no) If yes, specify the action taken. Method and format of the reporting? Requirement to report substitution, error, fallback behaviour, mappings, or other behaviors? Additional areas? Other:	Is reporting required? (yes/no) *No.* If yes, specify the action taken. Method and format of the reporting? Requirement to report substitution, error, fallback behaviour, mappings, or other behaviors? Additional areas? Other: *None.*
T.24.9 Degeneracies References: 7.5.6.7 7.5.4.4 D.2 D.4	Same as Model Profile ☑	
	Is the generation of degenerate primitives addressed? (yes/no) If yes, attach specifications. Other:	Is the generation of degenerate primitives addressed? (yes/no) *No.* ***The generation of degenerate primitives is not restricted.*** If yes, attach specifications. Other: *None.*

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Table 25 - Interpreter implementation requirements

Functionality	Specifications - PPF	Specifications - Model Profile
T.25.1 Number of pictures References: 7.5.7.2 T.13.2	Same as Model Profile ☑	
	If 0 pictures are permitted (see T.13.2), describe the interpreter behaviour:	If 0 pictures are permitted (see T.13.2), describe the interpreter behaviour: ***Prohibited by T.13.2.***
T.25.2 Empty pictures References: 7.5.7.3 T.13.3	Same as Model Profile ☑	
	If permitted (see T.13.3), interpreter behavior:	If permitted (see T.13.3), interpreter behavior: ***The graphical effect shall be one picture in the background colour.***
T.25.3 Colour requirements References: 7.5.4.1 7.5.7.4.2 7.5.4.5	Same as Model Profile ☑	
	Interpreters shall be classified as either monochrome, greyscale, or colour interpreters (depending on the colour capability of the interpreter), and shall meet the criteria in attachment 25.#3	Interpreters shall be classified as either monochrome, greyscale, or colour interpreters (depending on the colour capability of the interpreter), and shall meet the criteria in attachment 25.#3
	Conversions between different colour models shall be according to the conversions in annex G.	Conversions between different colour models shall be according to the conversions in annex G.
	Mapping of metafile colour to device components?	Mapping of metafile colour to device components? ***If mapping (to fewer colour, or greyscale, or monochrome) is required for RGB metafiles, the recommendations of annex D.3.2 shall be used.***
	For [v1/2] metafiles, implicit colour calibration specifications?	For [v1/2] metafiles, implicit colour calibration specifications? ***No specifications are defined.***
	Other:	Other: ***None.***

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Table 25 - Interpreter implementation requirements (continued)

Functionality	Specifications - PPF	Specifications - Model Profile
T.25.4 Geometric accuracy and latitude References: 7.5.7.4.1	Same as Model Profile ☑	
	Accuracy and latitude for placement and realization of geometric aspects when geometric primitive elements are rendered.	Accuracy and latitude for placement and realization of geometric aspects when geometric primitive elements are rendered. ***Interpreters shall render graphical primitive elements accurately to within ± 0.1% of relative position within the VDC Extent box or ±½ of the pixel resolution of the output device, whichever is greater. Interpreters shall render the geometric size aspect of primitives (e.g., text size, line width, and edge width) to within 1% of the intended size or ±½ pixel of resolution of the output device, whichever is greater.*** ***This requirement shall apply to all graphical primitive elements, unless superseded by specific element requirements in this clause.***
T.25.5 Text rendering References: 7.5.7.4.3 T.25.3	Same as Model Profile ☑	
	Is text accuracy and latitude addressed? (yes/no) If yes, specify.	Is text accuracy and latitude addressed? (yes/no) ***Yes.*** If yes, specify. ***Interpreter-rendered text shall match the text specification of the metafile to within 1% relative to the intended size or ±½ pixel of resolution of the output device, whichever is greater, for the placement and overall extent of each text string.***
	Is precision of text rendering is addressed? (yes/no) If yes, specify interpreter action.	Is precision of text rendering is addressed? (yes/no) ***Yes.*** If yes, specify interpreter action. ***Interpreters shall render text using 'stroke' precision, regardless of the actual value of the TEXT PRECISION of the metafile.***

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Table 25 - Interpreter implementation requirements (continued)

Functionality	Specifications - PPF	Specifications - Model Profile
T.25.6 Font substitution References: T.16.13 7.5.7.4.4 annex H	Same as Model Profile ☑	
	Font substitution is: Permitted ☐ Prohibited ☐ If prohibited, use the font as specified in the FONT LIST. If permitted, include a reference set of font and glyph metrics which correspond to the canonical instances of the substitutable font. Are substitution methods, latitudes, and constraints addressed? (yes/no) If yes, specify: Similarity of font visual characteristics? Font metrics? Individual glyph metrics? Additional areas? Other:	Font substitution is: Permitted ☑ Prohibited ☐ If prohibited, use the font as specified in the FONT LIST. If permitted, include a reference set of font and glyph metrics which correspond to the canonical instances of the substitutable font. ***See the FONT LIST element and annex H.*** Are substitution methods, latitudes, and constraints addressed? (yes/no) ***Yes.*** If yes, specify: Similarity of font visual characteristics? ***Substituted fonts shall have similar visual characteristics to the fonts specified in the metafile*** Font metrics? ***Substituted fonts shall have similar metrics to the fonts specified in the metafile.*** Individual glyph metrics? ***As specified in annex H.*** Additional areas? ***None.*** Other: ***None.***
T.25.7 Semantic latitude References: 7.5.7.5 T.20.37 T.20.38 T.20.39 T.20.42 T.20.44 T.20.45 T.20.46	Same as Model Profile ☑	
	Drawing priority and mode: View surface clearing at picture start: Clipping:	Drawing priority and mode: ***Priority shall correspond to the metafile order (i.e., primitives occurring later in the file shall overlay primitives occurring earliest in the file. Mode shall be "replacement" mode.*** View surface clearing at picture start: ***Surface will be cleared upon the occurrence of BEGIN PICTURE BODY.*** Clipping: ***When CLIP INDICATOR is 'off', clipping shall be to the intersection of the device viewport and the device view surface limits. When CLIP INDICATOR is 'on', clipping shall be to the intersection of the clip rectangle, the VDC EXTENT, the device viewport, and the device view surface limits.***

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Table 25 - Interpreter implementation requirements (continued)

Functionality	Specifications - PPF	Specifications - Model Profile
T.25.7 continued Semantic latitude	Edge centreing:	Edge centering: ***Edges shall be centred on the ideal mathematically-defined edge of the area.***
	Meaning of predefined line types and edge types:	Meaning of predefined line types and edge types: ***The exact on-off definitions for the predefined line types and edge types are not specified.***
	Meaning of predefined hatch styles:	Meaning of predefined hatch styles: ***The inter-line spacing is not specified. Use the latitudes of annex D.4.6.16 for the angular directions.***
	For [v1/v2] metafiles, text restriction method for RESTRICTED TEXT elements, chosen from the set of standard and registered styles of the RESTRICTED TEXT TYPE element:	For [v1/v2] metafiles, text restriction method for RESTRICTED TEXT elements, chosen from the set of standard and registered styles of the RESTRICTED TEXT TYPE element: ***Value 2.***
	For [v1/2] metafiles, interpreter treatment of the 2 aspects of line cap shall be either: ☐ in the style of one specific parameter value pair from the set of standard and registered values (excluding values 1) of the LINE CAP element. Values = ? ☐ in the style of any parameter value pair from the set of standard and registered values (excluding values 1) of the LINE CAP element.	For [v1/2] metafiles, interpreter treatment of the 2 aspects of line cap shall be either: ☐ in the style of one specific parameter value pair from the set of standard and registered values (excluding values 1) of the LINE CAP element. Values = ? ☑ in the style of any parameter value pair from the set of standard and registered values (excluding values 1) of the LINE CAP element.
	For [v1/2] metafiles, interpreter treatment of the 2 aspects of edge cap shall be either: ☐ in the style of one specific parameter value pair, from the set of standard and registered values (excluding values 1) of the EDGE CAP element. Values = ? ☐ in the style of any parameter value pair, from the set of standard and registered values (excluding values 1) of the EDGE CAP element.	For [v1/2] metafiles, interpreter treatment of the 2 aspects of edge cap shall be either: ☐ in the style of one specific parameter value pair, from the set of standard and registered values (excluding values 1) of the EDGE CAP element. Values = ? ☑ in the style of any parameter value pair, from the set of standard and registered values (excluding values 1) of the EDGE CAP element.
	For [v1/2] metafiles, interpreter treatment of line join shall be either: ☐ in the style of one specific parameter value, from the set of	For [v1/2] metafiles, interpreter treatment of line join shall be either: ☐ in the style of one specific parameter value, from the set of

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Table 25 - Interpreter implementation requirements (continued)

Functionality	Specifications - PPF	Specifications - Model Profile
T.25.7 continued Semantic latitude	standard and registered values (excluding value 1) of the LINE JOIN element. Value = ? ☐ in the style of any parameter value, from the set of standard and registered values (excluding value 1) of the LINE JOIN element. For [v1/2] metafiles, interpreter treatment of edge join shall be either: ☐ in the style of one specific parameter value, from the set of standard and registered values (excluding value 1) of the EDGE JOIN element. Value = ? ☐ in the style of any parameter value, from the set of standard and registered values (excluding value 1) of the EDGE JOIN element. For [v1/2] metafiles, interpreter treatment of line type continuation shall be either: ☐ in the style of one specific parameter value, from the set of standard and registered values (excluding value 1) of the LINE TYPE CONTINUATION element. Value = ? ☐ in the style of any parameter value, from the set of standard and registered values (excluding value 1) of the LINE TYPE CONTINUATION element. For [v1/2] metafiles, interpreter treatment of edge type continuation shall be either: ☐ in the style of one specific parameter value, from the set of standard and registered values (excluding value 1) of the EDGE TYPE CONTINUATION element. Value = ? ☐ in the style of any parameter value, from the set of standard and registered values (excluding value 1) of the EDGE TYPE CONTINUATION element. Other:	standard and registered values (excluding value 1) of the LINE JOIN element. Value = ? ☑ in the style of any parameter value, from the set of standard and registered values (excluding value 1) of the LINE JOIN element. For [v1/2] metafiles, interpreter treatment of edge join shall be either: ☐ in the style of one specific parameter value, from the set of standard and registered values (excluding value 1) of the EDGE JOIN element. Value = ? ☑ in the style of any parameter value, from the set of standard and registered values (excluding value 1) of the EDGE JOIN element. For [v1/2] metafiles, interpreter treatment of line type continuation shall be either: ☐ in the style of one specific parameter value, from the set of standard and registered values (excluding value 1) of the LINE TYPE CONTINUATION element. Value = ? ☑ in the style of any parameter value, from the set of standard and registered values (excluding value 1) of the LINE TYPE CONTINUATION element. For [v1/2] metafiles, interpreter treatment of edge type continuation shall be either: ☐ in the style of one specific parameter value, from the set of standard and registered values (excluding value 1) of the EDGE TYPE CONTINUATION element. Value = ? ☑ in the style of any parameter value, from the set of standard and registered values (excluding value 1) of the EDGE TYPE CONTINUATION element. Other: *None*

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Table 25 - Interpreter implementation requirements (continued)

Functionality	Specifications - PPF	Specifications - Model Profile
T.25.8 Error processing References: 7.5.7.6	Same as Model Profile ☑	
	Is error processing addressed? (yes/no) If yes, specify the action taken. Classification of error severity? Requirements for error recovery? Requirements for error reporting? Additional areas? Other:	Is error processing addressed? (yes/no) *No.* If yes, specify the action taken. Classification of error severity? Requirements for error recovery? Requirements for error reporting? Additional areas? Other: *None*
T.25.9 Reporting References: 7.5.7.7	Same as Model Profile ☑	
	Is reporting required? (yes/no) If yes, specify the action taken. Method and format of the reporting? Requirement to report any substitution, error, fallback behaviour, mappings, or other behaviors? Additional areas? Other:	Is reporting required? (yes/no) *No.* If yes, specify the action taken. Method and format of the reporting? Requirement to report any substitution, error, fallback behaviour, mappings, or other behaviors? Additional areas? Other: *None.*
T.25.10 Degeneracies References: 7.5.7.8 7.5.4.4 D.2 D.4	Same as Model Profile ☑	
	Is the interpretation of degenerate primitives addressed? (yes/no) If yes, for each primitive, specify the degeneracy including its source (i.e., intrinsic or computational). Other:	Is the interpretation of degenerate primitives addressed? (yes/no) *Yes.* If yes, for each primitive, specify the degeneracy including its source (i.e., intrinsic or computational). ***Intrinsically degenerate primitives shall be rendered as specified in annex D subsections: D.2.2, D.2.3, D.4.5.4 through D.4.5.8, D.4.5.11, and D.4.5.12. Interpreters are not required to detect computational degeneracy. If interpreters do detect computational degeneracies, they shall be rendered as specified in annex D subsections: D.2.2, D.2.3, D.4.5.4 through D.4.5.8, D.4.5.11, and D.4.5.12*** Other: *None.*

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Table 25 - Interpreter implementation requirements (continued)

Attachment 25.~~4~~ 3
Colour requirements, ~~Model Profile~~:

The colour mapping step (CMS) and colour rendering step (CRS) for each class of interpreters is as follows:

monochrome:	CMS	all foreground information is mapped to one colour, background information to another colour.
	CRS	all foreground information is mapped to one colour, background information to another colour.
greyscale:	CMS	32 grey levels, the recommendations of annex D.3.2 is used to map colour to grey.
	CRS	a unique representation of each of the levels of grey.
full colour:	CMS	~~6R,0G,6B~~ grid of RGB colour cube, plus a 32 grey levels (0-1), some of which are already on the grid.
	CRS	a unique representation of ~~the 254 (255) "colours"~~ these 4096 "colours".

16R, 16G, 16B

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CHARACTER ENCODING

Table 5 - Metafile descriptor elements

Element	Specifications - PPF	Specifications - Model Profile
T.5.1 INTEGER PRECISION [v1] References: 8.2.4	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Any restrictions on the parameter value? ***5, 8, 10, 15, 16, 17, or 32.*** Other: ***None.***
T.5.2 REAL PRECISION [v1] References: 8.2.5	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Any restrictions on the parameter value? ***10 16 32 32 64 (largest real)*** ***-10 16 -32 -9 -12 (smallest real)*** ***-10 -16 -32 -9 -12 (default exponent)*** ***1 1 1 0 0 (exponent allowed)*** Other: ***None.***
T.5.3 INDEX PRECISION [v1] References: 8.2.6	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Any restrictions on the parameter value? ***5, 8, 10, 15, 16, 17, or 32.*** Other: ***None.***

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Table 5 - Metafile descriptor elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.5.4 COLOUR PRECISION [v1] References: 8.2.7	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Any restrictions on the parameter value? ***5, 8, 10, 15, 16, or 17.*** Other: ***None.***
T.5.5 COLOUR INDEX PRECISION [v1] References: 8.2.8	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Any restrictions on the parameter value? ***5, 8, 10, 15, 16, or 17.*** Other: ***None.***
T.5.6 NAME PRECISION [v2] References: 8.2.16	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Any restrictions on the parameter value? ***5, 10, 15, 16, or 32.*** Other: ***None.***

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Table 6 - Control elements

Element	Specifications - PPF	Specifications - Model Profile
T.6.1 VDC INTEGER PRECISION [v1] References: 8.4.1	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Any restrictions on the parameter value? *5, 8, 10, 15, 16, 17, or 32.* Other: *None.*
T.6.2 VDC REAL PRECISION [v1] References: 8.4.2	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Any restrictions on the parameter value? *10 16 32 32 64 (largest real)* *-10 16 -32 -9 -12 (smallest real)* *-10 -16 -32 -9 -12 (default exponent)* *1 1 1 0 0 (exponent allowed)* Other: *None.*

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Table 7 - Escape elements

Element	Specifications - PPF	Specifications - Model Profile
T.7.1 DOMAIN RING [v1] References: 8.7.2	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Any restrictions on the parameter value? Other:	Element is: Permitted ☐ Prohibited ☑ Any restrictions on the parameter value? Other: ***None.***

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BINARY ENCODING

Table 12 - Delimiter elements

Element	Specifications - PPF	Specifications - Model Profile
T.12.1 no-op [v1] References: 7.2	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Any restrictions on the parameter value? ***None.*** Other: ***None.***

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Table 13 - Metafile descriptor elements

Element	Specifications - PPF	Specifications - Model Profile
T.13.1 INTEGER PRECISION [v1] References: 7.3	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Any restrictions on the parameter value? ***8, 16, or 32.*** Other: ***None.***
T.13.2 REAL PRECISION [v1] References: 7.3	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Any restrictions on the parameter value? ***(1, 16, 16) or (0, 9, 23).*** Other: ***None.***
T.13.3 INDEX PRECISION [v1] References: 7.3	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Any restrictions on the parameter value? ***8, 16, or 32.*** Other: ***None.***

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Table 13 - Metafile descriptor elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.13.4 COLOUR PRECISION [v1] References: 7.3	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Any restrictions on the parameter value? ***8 or 16.*** Other: ***None.***
T.13.5 COLOUR INDEX PRECISION [v1] References: 7.3	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Any restrictions on the parameter value? ***8 or 16.*** Other: ***None.***
T.13.6 NAME PRECISION [v2] References: 7.3	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Any restrictions on the parameter value? ***16 or 32.*** Other: ***None.***

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Table 14 - Control elements

Element	Specifications - PPF	Specifications - Model Profile
T.14.1 VDC INTEGER PRECISION [v1] References: 7.5	Same as Model Profile ☑ Element is: Required ☐ Permitted ☐ Any restrictions on the parameter value? Other:	 Element is: Required ☐ Permitted ☑ Any restrictions on the parameter value? ***16 or 32.*** Other: ***None.***
T.14.2 VDC REAL PRECISION [v1] References: 7.5	Same as Model Profile ☑ Element is: Required ☐ Permitted ☐ Prohibited ☐ Any restrictions on the parameter value? Other:	 Element is: Required ☐ Permitted ☑ Any restrictions on the parameter value? ***(1, 16, 16) or (0, 9, 32).*** Other: ***None.***

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Table 1 - Metafile descriptor elements

CLEAR TEXT ENCODING

Element	Specifications - PPF	Specifications - Model Profile
T.1.1 INTEGER PRECISION [v1] References: 6.2	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Any restrictions on the parameter value? *[-256, 255], [-32767, 32767],* *[-32768, 32767], or* *[-2147483648, 2147483647].* Other: *None.*
T.1.2 REAL PRECISION [v1] References: 6.2	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Any restrictions on the parameter value? *-32767, 32767, 4; or* *-32768, 32767, 10; or* *-3.4028235E38, +3.4028235E38,8.* ***NOTE —the latter two values are the closest approximation, in base 10 clear text, to the REAL PRECISION values allowed in Binary encoded CGMs.*** Other: *None.*
T.1.3 INDEX PRECISION [v1] References: 6.2	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Any restrictions on the parameter value? *[0, 127], [-256, 255], [-32767, 32767],* *[-32768, 32767], or* *[-2147483648, 2147483647].* Other: *None.*

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Table 1 - Metafile descriptor elements (continued)

Element	Specifications - PPF	Specifications - Model Profile
T.1.4 COLOUR PRECISION [v1] References: 6.2	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Any restrictions on the parameter value? ***255 or 65535*** Other: ***None.***
T.1.5 COLOUR INDEX PRECISION [v1] References: 6.2	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Any restrictions on the parameter value? ***127, 255, 32767.*** Other: ***None.***
T.1.6 NAME PRECISION [v2] References: 6.2	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Any restrictions on the parameter value? ***[-256, 255], [-32767, 32767],*** ***[-32768, 32767], or*** ***[-2147483648, 2147483647].*** Other: ***None.***

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Table 2 - Control elements

Element	Specifications - PPF	Specifications - Model Profile
T.2.1 VDC INTEGER PRECISION [v1] References: 6.4	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Any restrictions on the parameter value? ***[-32767, 32767], [-32768, 32767], or [-2147483648, 2147483647].*** Other: ***None.***
T.2.2 VDC REAL PRECISION [v1] References: 6.4	Same as Model Profile ☑	
	Element is: Required ☐ Permitted ☐ Prohibited ☐ Any restrictions on the parameter value? Other:	Element is: Required ☐ Permitted ☑ Any restrictions on the parameter value? ***0.0, 1.0, 4; or*** ***-32767, 32767, 4; or*** ***-32768, 32767, 10; or*** ***-3.4028235E38, +3.4028235E38,8.*** ***NOTE —the latter two values are the closest approximation, in base 10 clear text, to the REAL PRECISION values allowed in Binary encoded CGMs.*** Other: ***None.***

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