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Technical product documentation – Lettering – Part 5: CAD lettering of the Latin alphabet, numerals and marks (ISO 3098-5:1997)

The European Standard EN ISO 3098-5:1997 has the status of a Swedish Standard. This document contains the official English version of EN ISO 3098-5:1997.

Swedish Standards corresponding to documents referred to in this Standard are listed in "Catalogue of Swedish Standards", issued by SIS. The Catalogue lists, with reference number and year of Swedish approval, International and European Standards approved as Swedish Standards as well as other Swedish Standards.

Ritregler – Textning – Del 5: CAD- textning, siffror och tecken (ISO 3098-5:1997)

Europastandarden EN ISO 3098-5:1997 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN ISO 3098-5:1997.

Motsvarigheten och aktualiteten i svensk standard till de publikationer som omnämns i denna standard framgår av "Katalog över svensk standard", som ges ut av SIS. I katalogen redovisas internationella och europeiska standarder som fastställts som svenska standarder och övriga gällande svenska standarder.

Svensk kommentar införd på
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ICS 01.110; 01.140.10; 35.040

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EUROPEAN STANDARD
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EN ISO 3098-5

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ICS 01.110; 01.140.10; 35.040

Descriptors: drawings, technical drawings, computer aided design, writing, graphic characters, letter (symbols), Latin characters, digits, marks, specifications

English version

**Technical product documentation – Lettering – Part 5: CAD
lettering of the Latin alphabet, numerals and marks
(ISO 3098-5:1997)**

Documentation technique de produits –
Ecriture – Partie 5: Ecriture en conception
assistée par ordinateur de l'alphabet latin, des
chiffres et des signes (ISO 3098-5:1997)

This European Standard was approved by CEN on 10 November 1997.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 BRUSSELS

Foreword

The text of the International Standard ISO 3098-5:1997 has been prepared by Technical Committee ISO/TC 10 "Technical drawings, product definition and related documentation" in collaboration with CEN/CS.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 1998, and conflicting national standards shall be withdrawn at the latest by June 1998.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 3098-5:1997 was approved by CEN as a European Standard without any modification.

Technical product documentation — Lettering —

Part 5:

CAD lettering of the Latin alphabet, numerals and marks

1 Scope

This part of ISO 3098 specifies the general requirements for computer-aided design and draughting (CADD) lettering, in accordance with all other parts of this International Standard, to be used in technical product documentation (in particular on technical drawings).

It includes basic conventions as well as rules for the application of CAD lettering using the techniques of numerically controlled lettering and draughting systems.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 3098. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 3098 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 3098-0:1997, *Technical product documentation — Lettering — Part 0: General requirements*.

ISO/TR 10623:1991, *Technical product documentation — Requirements for computer-aided design and draughting — Vocabulary*.

3 Definitions

For the purposes of this part of ISO 3098, the definitions given in ISO 3098-0 apply. Further definitions used in computer-aided design and draughting are given in ISO/TR 10623.

3.1 proportional spacing arrangement: Arrangement of graphic characters in the direction of writing spaced according to their natural width.

3.2 tabular spacing arrangement: Arrangement of graphic characters in the direction of writing within a constant-width space at predetermined positions, independent of the natural width of the characters.

4 General requirements

The general requirements for CAD lettering are specified in ISO 3098-0.

5 Requirements for CAD lettering

5.1 The types of CAD lettering are as follows:

- lettering type CB, vertical (V): see figure 1 (preferred application);
- lettering type CB, sloped (S);
- lettering type CA, vertical (V): see figure 2;
- lettering type CA, sloped (S).

The dimensions of these types of CAD lettering are specified in table 1.

NOTE — In contrast with type CB, the character width (in the direction of lettering) and the line width of lettering type CA may be reduced by a factor of $\sqrt{2}$ (to give approximately lettering type A in accordance with ISO 3098-0).

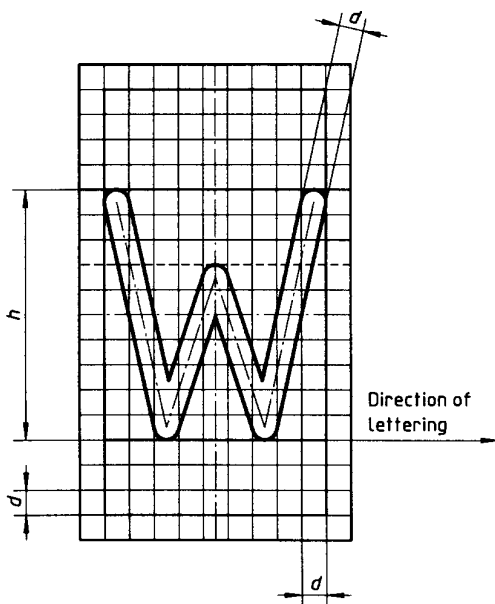


Figure 1

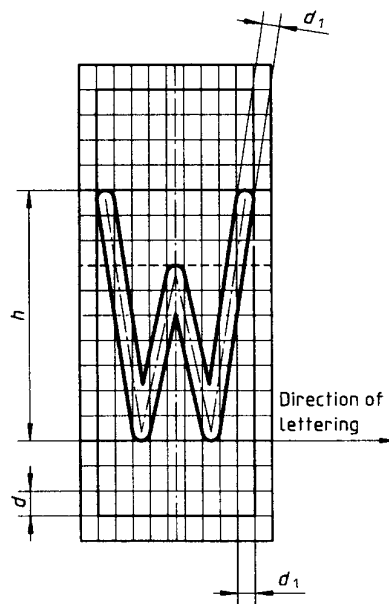


Figure 2

5.2 The types of spacing arrangements are as follows:

- tabular spacing (T): see figure 3;
- proportional spacing (P): see figure 4.

5.3 Each member of a graphic character set is established within a character box. The elements of the characters shall be positioned by means of a grid system. The following criteria for any member of a graphic character set shall be met:

- a) dimensions (see figures 5 and 6), shape and location;
- b) type of spacing arrangement (see figures 3 and 4);
- c) points of adjustment within the character box (see figure 7).

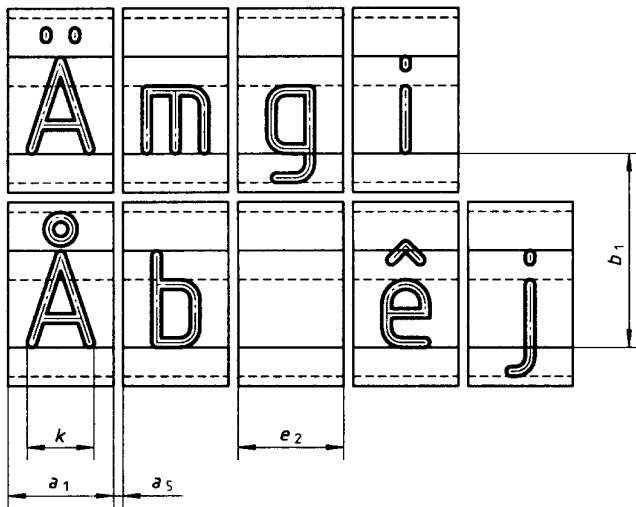


Figure 3

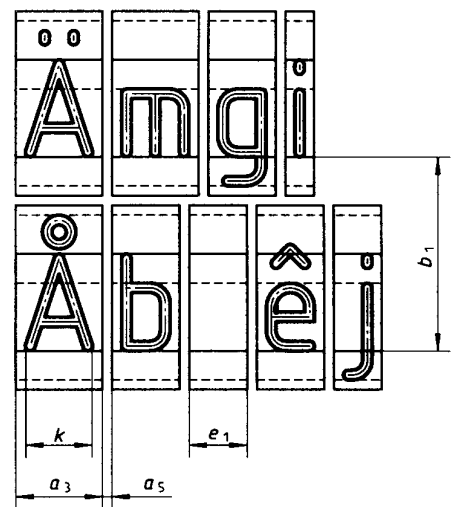


Figure 4

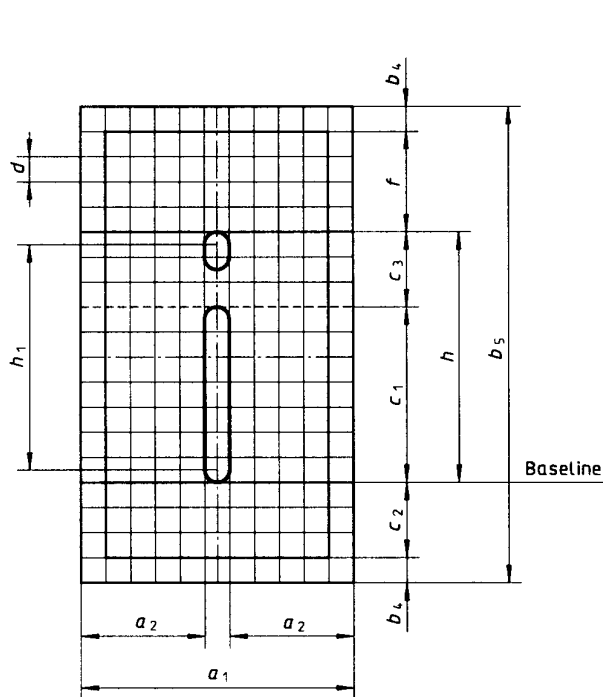


Figure 5

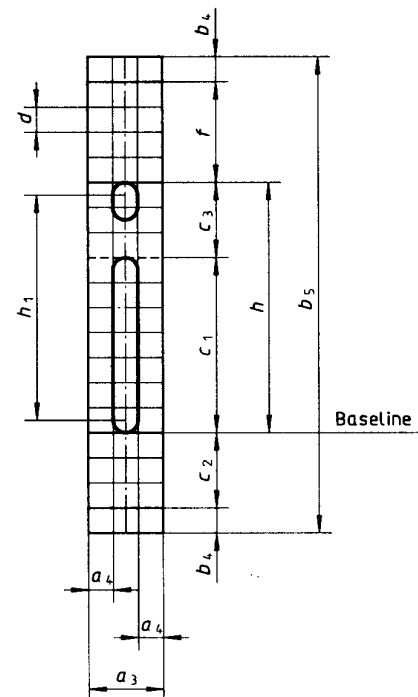


Figure 6

Table 1 — Dimensioning of lettering types CB and CA

Dimensions in millimetres

Characteristic		Multiple of h	Dimensions							
			1,8	2,5	3,5	5	7	10	14	20
Lettering height	h	$(10/10)h$	1,8	2,5	3,5	5	7	10	14	20
Height of lower-case letters (x-height)	c_1	$(7/10)h$	1,26	1,75	2,5 ³⁾	3,5	5 ³⁾	7	10 ³⁾	14
Tail of lower-case letters	c_2	$(3/10)h$	0,54	0,75	1,05	1,5	2,1	3	4,2	6
Stem of lower-case letters	c_3									
Area of diacritical marks (upper-case letters)	f	$(4/10)h$	0,72	1	1,4	2	2,8	4	5,6	8
Width of any character (lettering type CB) ¹⁾	k	—	See clause 8 and tables 3 to 6							
Height of the central line	h_1	$(9/10)h$	1,62	2,25	3,15	4,5	6,3	9	12,6	18
Width of the character box (lettering type CB) ¹⁾	T	a_1	1,98	2,75	3,85	5,5	7,7	11	15,4	22
	P	a_3	$[(2/10)h]+k$ See clause 8 and tables 3 to 6							
Spacing between baselines ²⁾	b_1	$(19/10)h$	3,42	4,75	6,65	9,5	13,3	19	26,6	38
Height of the character box	b_5	$(19/10)h$								
Horizontal spacing between character box and character (lettering type CB) ¹⁾	T	a_2	$(a_1 - k)/2$ See clause 8 and tables 3 to 6							
	P	a_4	$(1/10)h$							
Vertical spacing between character box and character	b_4	$(1/10)h$	0,18	0,25	0,35	0,5	0,7	1	1,4	2
Line width	lettering	type CB	d $(1/10)h$							
		type CA	d_1	$(1/14)h$	0,13 ³⁾	0,18 ³⁾	0,25	0,35	0,5	0,7 ³⁾
Spacing between words (lettering type CB) ¹⁾	P	e_1	1,08	1,5	2,1	3	4,2	6	8,4	12
	T	e_2	1,98	2,75	3,85	5,5	7,7	11	15,4	22
Spacing between character boxes	a_5	≥ 0	—							

1) In case of lettering type CA the values of the dimensions k , a_1 , a_3 , a_2 , a_4 , e_1 and e_2 are calculated by dividing the values of the lettering type CB by $\sqrt{2}$.

2) Lettering style: Upper-case and lower-case letters with diacritical marks; for spacings by b_2 and b_3 , see ISO 3098-0:1997, table 2.

3) Rounded values.

6 Alignment

Each character, each line of text and each area to be filled by several lines of text shall have one point of alignment.

The indication and location of points of alignment are given in table 2 and figures 7 and 8.

If numerical values are written in decimal form, the alignment shall be made with respect to the decimal sign (comma¹⁾). An example is shown in figure 9.

Table 2 — Indication of points of alignment

Direction		Horizontal		
		left	centre	right
Vertical	top	1	4	7
	centre	2	5	8
	bottom	3	6	9

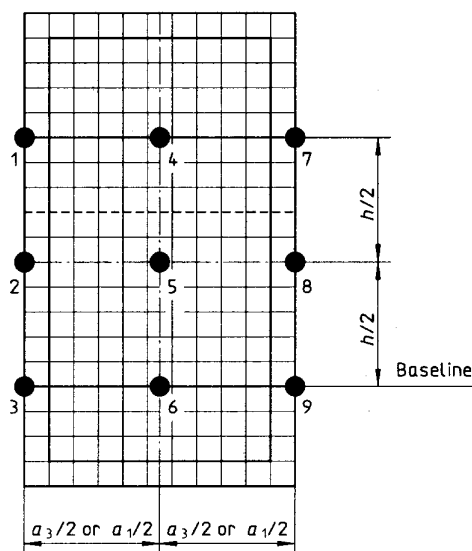


Figure 7

1) See IEC/ISO Directives, Part 3, 1997, 6.6.7.1.

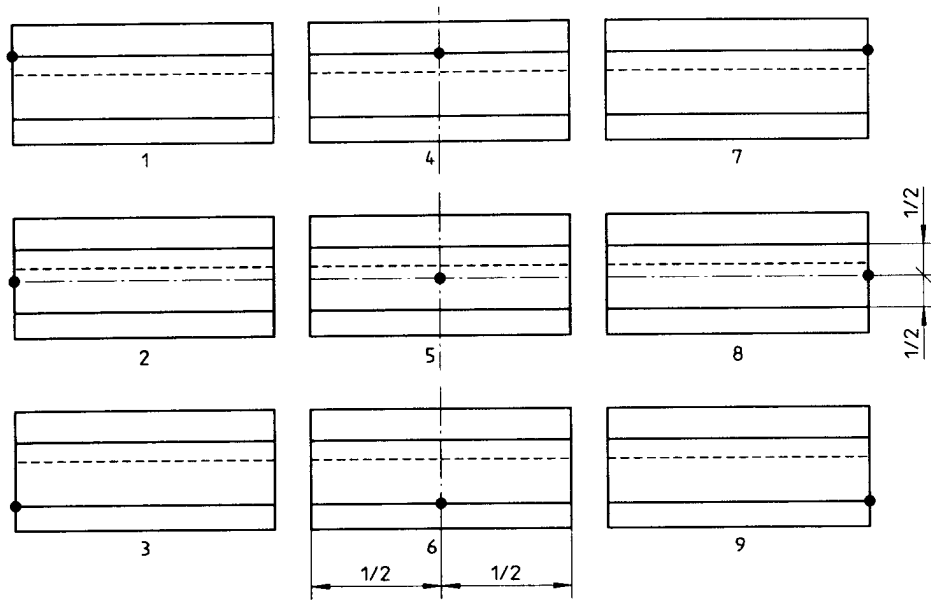


Figure 8

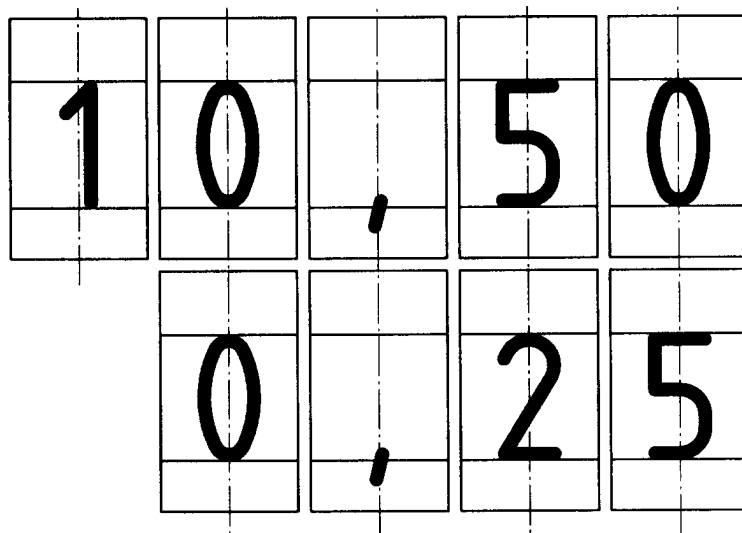


Figure 9

Several lines within an area filled by text may be arranged left-aligned, centred or right-aligned (see figure 10). An example of the location of the point of alignment for a complete area is shown in figure 11.

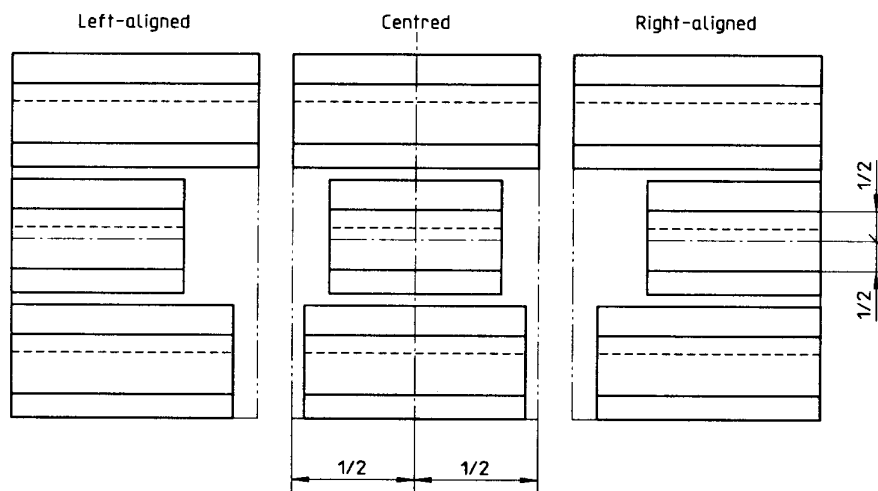


Figure 10

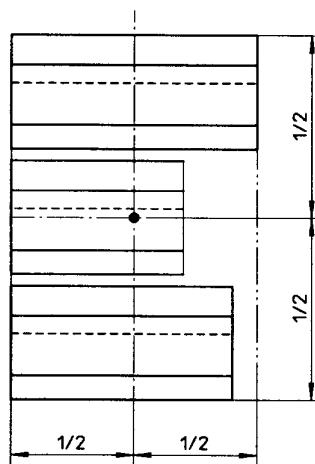


Figure 11