Engineering Drawings to International Standards

International Standards documents are available from the National Standards Authority of Ireland. These documents are available from the University of Galway Library. Use the link below or search for NSAI on the library webpage.

https://eu-i2-saiglobal-com.nuigalway.idm.oclc.org/management/search/index

Title Blocks:

Revisions:				NATIONAL UNIVERSITY OF IRELAND: GALWAY		
REV	BY	DATE		Title:	Baby Buggy General Assembly	
				Project:	Nui Galway Baby Buggy	
Notes:				Drawing No:	ME-08-001-BB-GA	Date: 18/10/08
Tolerance ± 0.5				Scale	Drawn By: Chkd By:	
NAME: WARREN DAVIES	ID: 66656666			1:20	W.D S.O.S	⊕⊣◁
All Dimensions in mm - Do Not Scale from the drawing				Sheet No: 1/60	Sheet Size: A 4	

Technical product documentation — Data fields in title blocks and document headers

ISO 7200: 2004 Second Edition 2004-02-15

Mandatory Data:

The following data field must be present in a Title Block on an engineering drawing for it to comply to international standards.

Legal owner, Identification (Drawing) number, Date of issue, Segment/sheet number, Title, Approval person, Creator, Document type.

Scales and Projection symbols are included on drawings although these do not necessarily have to be inside the Title Block. Drawing should also include the note: All Dimensions in mm. Do not Scale from the drawing.

Additional Data:

The following data field can also be presented in a Title Block on an engineering drawing depending on requirements of the organisation producing the drawing but is not mandatory.

. Revision index, Number of segments/sheets, Supplementary title, Responsible department, Approval person, Classification/key words, Document status, Paper size

Drawing Sheet Sizes:

Table 1 — Sizes of trimmed and untrimmed sheets and the drawing space

Dimensions in millimetres

Designation	Figure	Trimmed sheet (T)		Drawing space		Untrimmed sheet (U)	
		a_1	b_1	a_2	b_2	a_3	b_3
		1)	1)	± 0,5	± 0,5	± 2	± 2
A0	1	841	1 189	821	1 159	880	1 230
A1	1	594	841	574	811	625	880
A2	1	420	594	400	564	450	625
A3	1	297	420	277	390	330	450
A4	2	210	297	180	277	240	330
NOTE — For sizes > A0, see ISO 216.							
1) For tolerances, see ISO 216.							

ISO 5457: 1999 Second Edition 1999-02-01

Although there are specifications for border widths for documents filed in cabinets these are ignored and generally there is a minimum 10mm blank outer border to accommodate digital printer margins.

Drawing Scales:

Category	Recommended scales		
Enlargement scales	50 : 1 5 : 1	20 : 1 2 : 1	10 : 1
Full size			1 : 1
Reduction scales	1 : 2 1 : 20 1 : 200 1 : 2 000	1 : 5 1 : 50 1 : 500 1 : 5 000	1 : 10 1 : 100 1 : 1 000 1 : 10 000

Section 4.2 of this standard specifies that the main scale should be incorporated in the Title Block and all other scales should be adjacent to the item reference number or the view that are different to the main scale. This often applies to detail views where the scale is identified next to the view label or when there are multiple base views of separate items on the one drawing sheet.

Note: If a view scale is not to a standard it is permitted to enter NTS in the scale box. This is not referred to in the standards document.

ISO 5455: 1979 First Edition 1979-02-015

Drawing Text Heights:

Range of nominal sizes

The range of nominal sizes is specified as follows:

1,8 mm; 2,5 mm; 3,5 mm; 5 mm; 7 mm; 10 mm; 14 mm; 20 mm

CAD programs incorporate the parameters of lettering styles automatically. How ever these are specified in the Standard document and computer software developers work to these standards.

 ISO 3098-1: 1979 Second Edition 2015-03-01

General principles of representation - Part 3: Views, sections and cuts:

International standards state that either first or third angle projection can be used for technical drawings. Third Angle is more predominant in the USA whilst in Europe and the UK first angle was used in the past with a move to third angle now recommended by institutes of engineering.

I.S. EN ISO 128-3:2022 V2.00
ISO 128-3:2022(E)
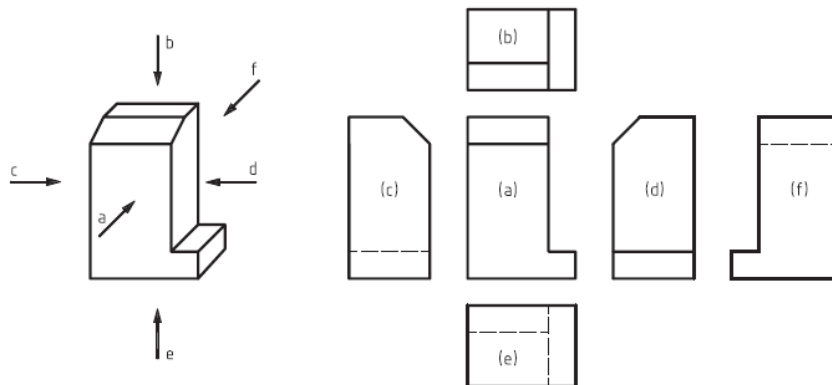
Figure 6 — Third-angle projection method

4.10 Third-angle projection graphical symbol

The graphical symbol for the third-angle projection method is shown in Figure 7. The proportions and dimensions of this graphical symbol are specified in ISO 5456-2.
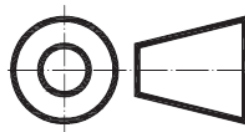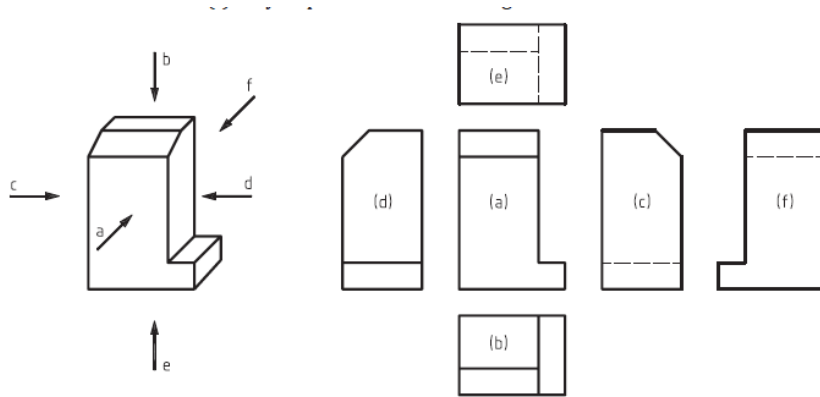

Figure 7 — Third-angle projection graphical symbol

Figure 4 — First-angle projection method

4.7 First-angle projection graphical symbol

The graphical symbol for the first angle projection method is shown in Figure 5. The proportions and dimensions of this graphical symbol are specified in ISO 5456-2.
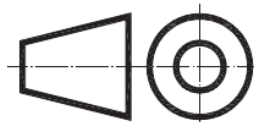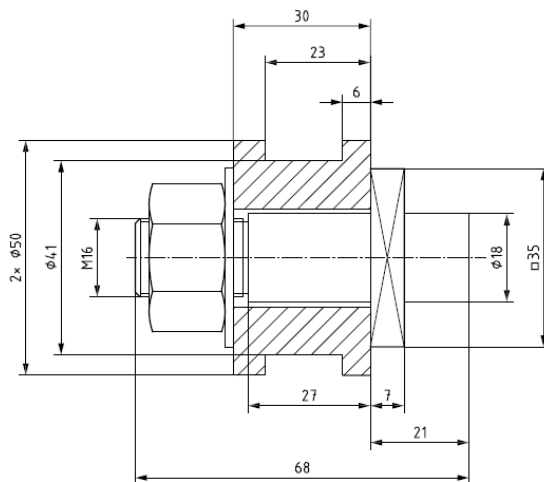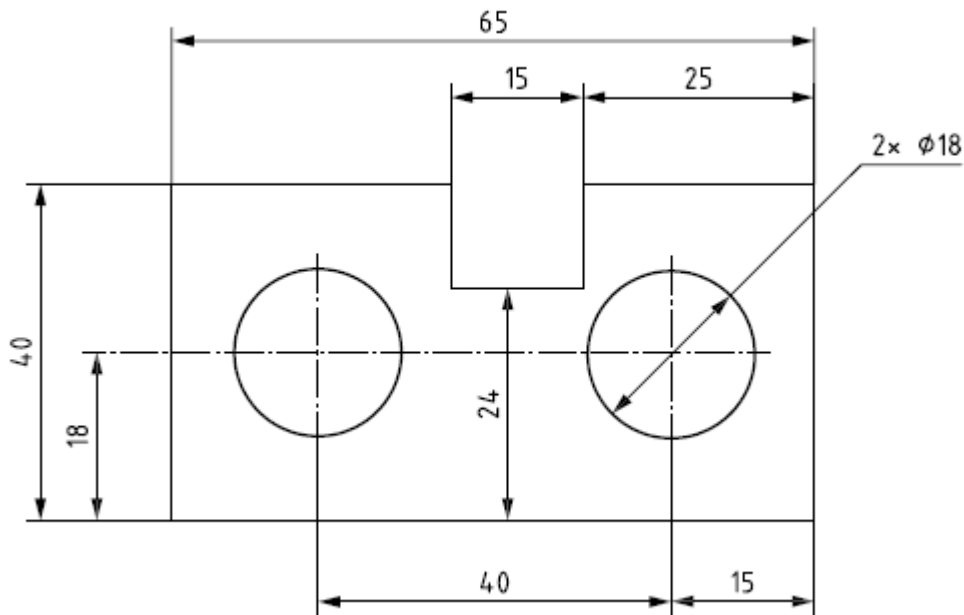

Figure 5 — First angle projection graphical symbol

ISO 128-3: 2022 Version 2

Technical product documentation (TPD) - Presentation of dimensions and tolerances - Part 1: General principles

Dimensioning rules are set by standards that an organisation is using. ISO standards differ from ANSI standards (USA) when it comes to detailing drawings. ISO sizes are in metric whilst ANSI tend to use imperial units although they also can also use metric units. The illustrations show the rules for linear and radial dimension presentation. The text is above the dimension line and centred as shown. How ever these standards rules are often tweaked to suit the needs of an organisation. An example of this is radial dimensions text being Horizontal and centred on the dimension line. Or TYP being used for repetitive dimensions.

ISO 129-1:2019&A1:2021