

CAD/TB

Lecture Notes by Rangi Siebert

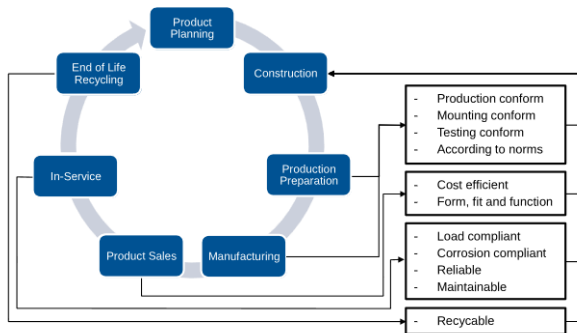
October 21, 2023

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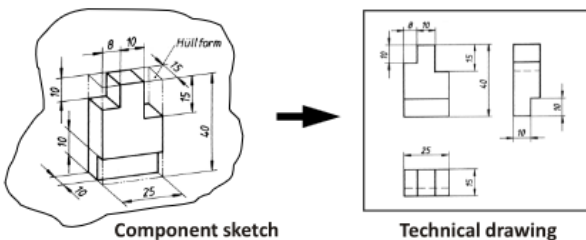
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1 Introduction to Technical Drawings

The product life cycle & technical drawings



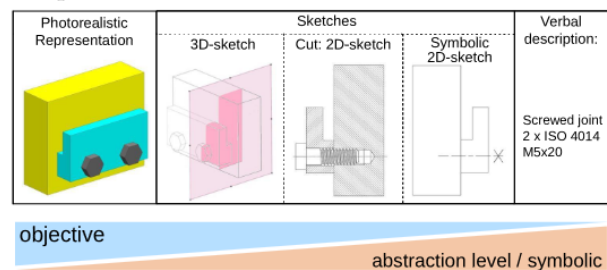
What is a technical drawing?



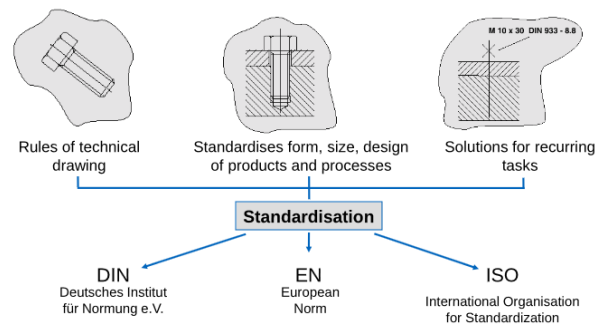
- The possibility of illustrating forms and transport thoughts in graphic form.
- Means of communication between persons and departments.
- Form of information and documentation.

Technical drawings are required to be complete, unambiguous and fully understandable in order to outlive its creator.

Purpose and classification of sketches:



1.1 Norms and Standards



TUM access to a high number of norms through Peri-

norm: ub.tum.de/perinorm.

1.1.1 DIN EN ISO 5457

We will use the drawing sheet according to DIN EN ISO 5457.

- Definition of sheet sizes based on the area of format A0 as 1m^2 .
→ Aspect ration: $\sqrt{2} : 1$
→ Enlargement and reduction: factor $\sqrt{2}$
- Creation of next smaller format by halving the area, e.g. $A0 : A1 = 2 : 1$

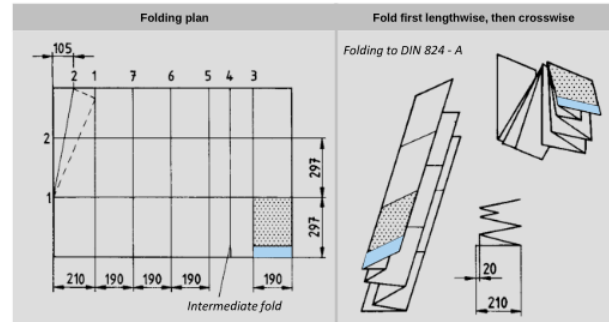
Sheet sizes Series A	Cropped drawing		Drawing area		Uncropped sheet		Preferred roll width
	Width	Height	Width	Height	Width	Height	
A0	1189	841	1159	821	1230	880	900
A1	841	594	811	574	880	625	900 660
A2	594	420	564	400	625	450	900 660
A3	420	297	390	277	450	330	900 660
A4	210	297	180	277	240	330	660

Text field: Completion of a text field for a production drawing with the following information:

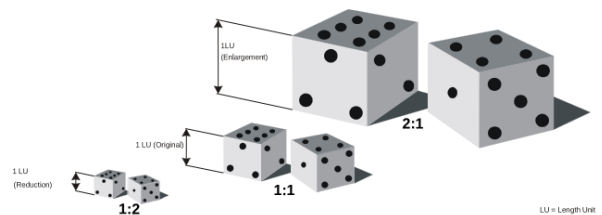
- Component designation
- Material specification
- Tolerance specification
- Information of the creator of the drawing
- Specification of the scale used

Responsible dept. ABC 2	Technical reference Patricia Johnson	Created by Jane Smith	Approved by David Brown	
Legal owner		Document type Sub-assembly drawing	Document status Released	
		Title, Supplementary title Apparatus plate Complete with brackets	AB123 456-7	
		Rev. A	Date of issue 2002-05-14	Lang. en Sheet 1/5
180 mm				

Folding: Hand-folding A0 to Form A4 for filing with punched edge:



1.1.2 Scales



Scales according to DIN ISO 5455: All parts need to be drawn in a defined scale in relation to the original dimensions of the final part:

- Enlargement / reduction scales may be used along defined ratios to e.g. fit drawing formats or to highlight small details / enlarge small parts.

Category	Recommended scales		
Enlargement scales	50 : 1	20 : 1	10 : 1
	5 : 1	2 : 1	
Natural scale			1 : 1
Reduction scales	1 : 2	1 : 5	1 : 10
	1 : 20	1 : 50	1 : 100
	1 : 200	1 : 500	1 : 1.000
	1 : 2.000	1 : 5.000	1 : 10.000