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ISO 6076

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Adhesives — Installation of floor coverings, wood flooring, levelling compounds and tiles — Specification of trowel notch sizes

Adhésifs — Pose de revêtements de sol, planchers en bois, ragréages et carrelages — Spécifications des tailles des crans des peignes et spatules

Reference number
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Contents

Page

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 11 *Products,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 193, *Adhesives,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

For installation of floor coverings, wood flooring and ceramic tiles, adhesives, thin bed mortars and similar products are spread (combed) onto the substrate commonly using grooved (notched) spatulas or trowels. The notches of the respective tools permit flow of the substance to be applied which will then settle on the substrate in the form of strips (ridges). Consequently, the quantity of applied material per unit area essentially depends on the geometry of the notches.

Adhesives — Installation of floor coverings, wood flooring, levelling compounds and tiles — Specification of trowel notch sizes

1 Scope

This document specifies the individual measurements of notches. It assigns specific codes used to label notched tools according to the measurements and tolerances specified in this document.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
notched trowel
notched spatula
rectangular or trapezoidal sheet steel, with evenly spaced grooves on at least one long side, commonly designated as "notches"

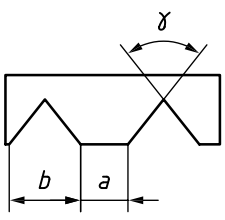
Note 1 to entry: Normally, spatulas have a hand grip opposite the grooved (notched) side.

Note 2 to entry: The hand grip of a trowel is typically attached parallel to the sheet surface.

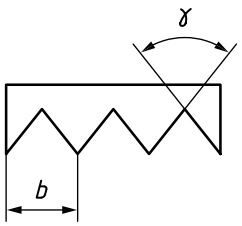
3.2
notched strips
rectangular, narrow sheet steel strips with evenly spaced grooves (notches) on one or both long sides

4 Shapes

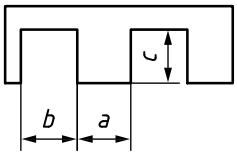
Depending on the application and the desired ridge profile, notches can have a triangular, rectangular, U-shaped or semi-circular shape.



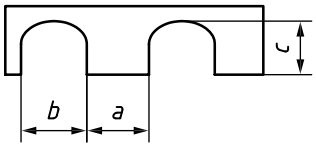
a) Triangular notch



b) Triangular notch, special S-shape, pointed notch



c) Rectangular notch, special R-shape



d) Round notch, special U-shape

Key

a bridge width or groove clearance
b notch width or groove width
c notch depth or groove depth
γ notch angle

Figure 1 — Different notch geometries

For manufacturing reasons, the inner points of the triangular notches and the inner right angles of the rectangular notches are rounded off. The radius of curvature is 0,2 mm to 0,3 mm, on average 0,25 mm.

A special type of the triangular notch is the "pointed notch" with a bridge width "a" of 0 mm to 0,2 mm. Other special types of notches with rounded off tops include U-notches, where the end of the notch is a semicircle with a diameter of "b".

5 Tolerances

The tolerances of the dimensional specifications specified in Figure 1 are given in Table 1.

Table 1 — Tolerances

Dimensional specifications	Tolerances
a	±0,1 mm
b	±0,1 mm
$(a + b)$	±0,1 mm
c	±0,1 mm
γ	±0,5°

6 Material

Depending on material hardness and thickness of the sheet steel, notched strips wear out more or less quickly. Accordingly, notch area and consequently flow rate gradually decrease. To ensure long durability of the notched strips, we recommend using spring steel with a minimum hardness of 46 HRD or higher. Thickness of the sheet steel shall not fall below 0,5 mm.

7 Labelling

Notched trowels fully complying with specifications of this document and subject to adequate quality controls shall be labelled on the steel plate by the manufacturer as follows:

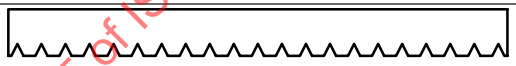
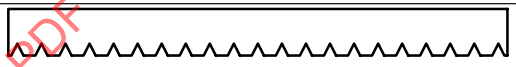
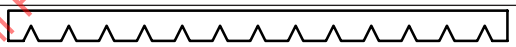
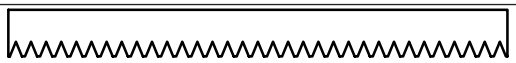
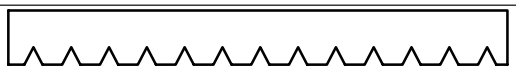
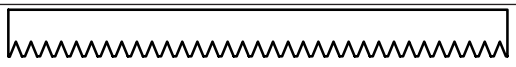
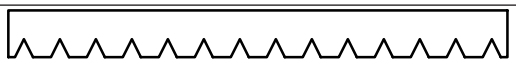
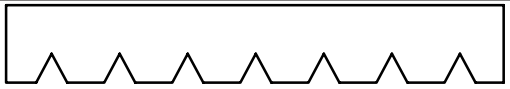
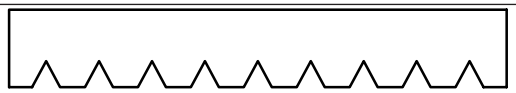
Manufacturer/notch size code/Reference to this document

Annex A (Table A.1) shows the assignment of common European, Japanese and US notch designations to the notch sizes codes specified in this document.

8 Trowel notch sizes — Designations, dimensional specifications and illustrations

The specified sizes in Table 2 are average values to be established by controlled sampling.

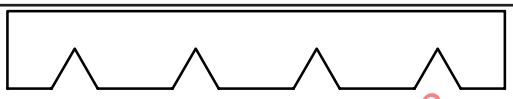
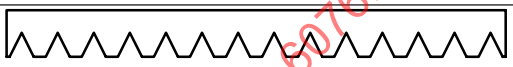
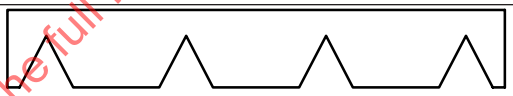
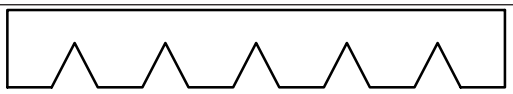
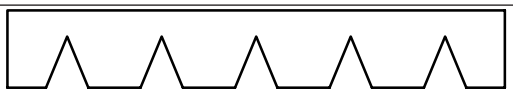
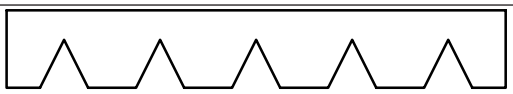
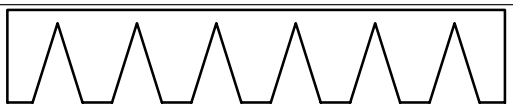
Table 2 — Specified trowel notch sizes

ISO Notch size code	Width of bridge *a* mm	Width of notch *b* mm	Depth of notch *c* mm	Notch angle γ °	Geometry/ Shape "X"	Geometric factor mm	Illustration real size
01-T	1,45	1,35	0,98	55,0	T	235	
02-T	0,40	1,10	0,74	55,0	T	270	
03-T	1,30	1,70	1,31	55,0	T	372	
04-T	1,59	1,59	1,59		T	397	
05-T	3,00	2,00	2,00	53,0	T	400	
06-T	0,50	1,50	1,12	55,0	T	420	
07-T	2,60	2,40	1,98	55,0	T	476	
08-T	0,40	1,60	1,49	45,0	T	595	
09-T	2,38	2,38	2,38		T	595	
10-T	14,30	5,70	5,15	55,0	T	734	
11-T	2,00	3,00	2,56	55,0	T	768	
12-T	4,90	4,10	3,62	55,0	T	824	
13-T	3,30	3,70	3,23	55,0	T	855	
14-T	4,40	3,60	3,90	45,0	T	878	
15-T	3,90	4,10	3,62	55,0	T	927	

NOTE 1 Notch depths *c* for triangular notches shown in italic were calculated in cases where notch angle γ is known.

NOTE 2 The numbers given in Table 2 for "geometric factor" are pure geometry defined values, which are calculated by the quotient of the area of the groove per unit length. As a first approximation the values are proportional to the application rate of an adhesive (in volume adhesive/area of spread adhesive), but do not consider important factors influencing the real application rate of an adhesive, like angel to the ground and the materials characteristics of the adhesive (e.g. viscosity, elasticity, surface tension, density, etc.). The "geometric factor" allows to sort the trowels based on geometry in a reasonable order.

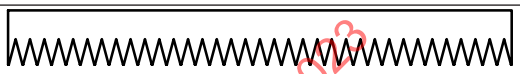
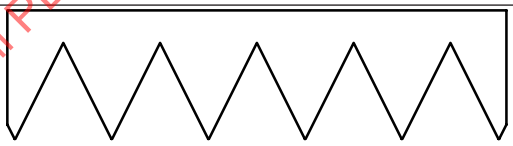
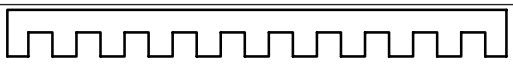
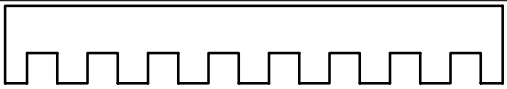
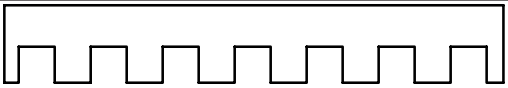
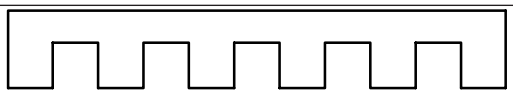
Table 2 *(continued)*

ISO Notch size code	Width of bridge *a* mm	Width of notch *b* mm	Depth of notch *c* mm	Notch angle *γ* °	Geometry/ Shape "X"	Geometric factor mm	Illustration real size
16-T	9,90	6,10	5,01	60,0	T	955	
17-T	9,90	5,10	5,71	45,0	T	971	
18-T	1,59	3,18	3,18		T	1 058	
19-T	7,90	6,10	5,01	60,0	T	1 091	
20-T	7,94	4,76	6,35		T	1 191	
21-T	11,40	7,10	6,50	55,0	T	1 247	
22-T	4,90	5,10	5,09	50,0	T	1 299	
23-T	5,90	6,10	5,54	55,0	T	1 408	
24-T	6,90	5,60	6,32	45,0	T	1 415	
25-T	11,90	8,10	7,46	55,0	T	1 511	
26-T	6,35	6,35	6,35		T	1 588	
27-T	4,76	7,94	7,94		T	2 480	
28-T	1,59	7,94	6,35		T	2 646	
29-T	3,90	6,60	9,83	35,0	T	3 088	

NOTE 1 Notch depths *c* for triangular notches shown in italic were calculated in cases where notch angle *γ* is known.

NOTE 2 The numbers given in Table 2 for "geometric factor" are pure geometry defined values, which are calculated by the quotient of the area of the groove per unit length. As a first approximation the values are proportional to the application rate of an adhesive (in volume adhesive/area of spread adhesive), but do not consider important factors influencing the real application rate of an adhesive, like angel to the ground and the materials characteristics of the adhesive (e.g. viscosity, elasticity, surface tension, density, etc.). The "geometric factor" allows to sort the trowels based on geometry in a reasonable order.

Table 2 *(continued)*

ISO Notch size code	Width of bridge *a* mm	Width of notch *b* mm	Depth of notch *c* mm	Notch angle *γ* °	Geometry/ Shape "X"	Geometric factor mm	Illustration real size
40-TS	0,10	2,60	1,80	65,0	T/S	868	
41-TS	0,10	1,90	2,76	30,0	T/S	1 310	
42-TS	0,10	4,30	3,45	60,0	T/S	1 685	
43-TS	0,10	4,76	3,97		T/S	1 944	
44-TS	0,10	6,35	4,76		T/S	2 344	
45-TS	0,10	10,40	5,09	90,0	T/S	2 519	
46-TS	0,10	12,70	12,70		T/S	6 300	
50-R	1,59	1,59	1,59		R	794	
51-R	2,38	2,38	2,38		R	1 191	
52-R	3,00	3,00	3,00		R	1 500	
53-R	3,18	3,18	3,18		R	1 588	
54-R	6,35	6,35	3,18		R	1 588	
55-R	4,00	4,00	4,00		R	2 000	
56-R	1,50	4,00	3,00		R	2 182	
57-R	4,76	4,76	4,76		R	2 381	
58-R	6,00	6,00	6,00		R	3 000	

NOTE 1 Notch depths *c* for triangular notches shown in italic were calculated in cases where notch angle *γ* is known.

NOTE 2 The numbers given in Table 2 for "geometric factor" are pure geometry defined values, which are calculated by the quotient of the area of the groove per unit length. As a first approximation the values are proportional to the application rate of an adhesive (in volume adhesive/area of spread adhesive), but do not consider important factors influencing the real application rate of an adhesive, like angel to the ground and the materials characteristics of the adhesive (e.g. viscosity, elasticity, surface tension, density, etc.). The "geometric factor" allows to sort the trowels based on geometry in a reasonable order.

Table 2 *(continued)*

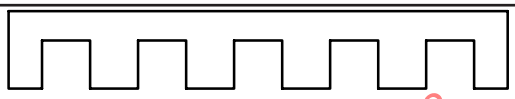
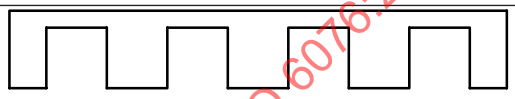
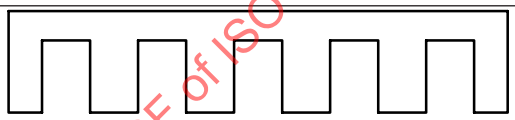
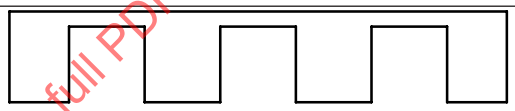
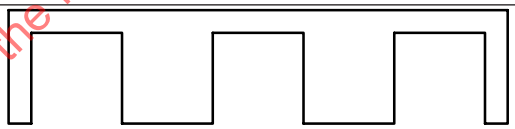
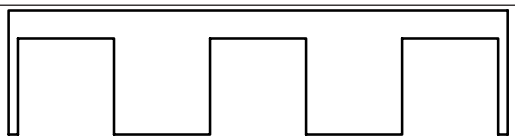
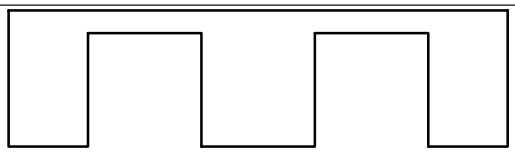
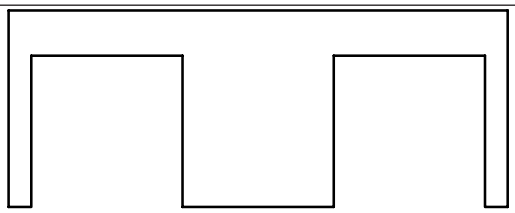
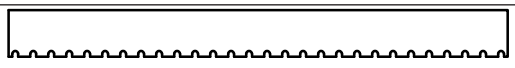
ISO Notch size code	Width of bridge *a* mm	Width of notch *b* mm	Depth of notch *c* mm	Notch angle *γ* °	Geometry/ Shape "X"	Geometric factor mm	Illustration real size
59-R	6,35	6,35	6,35		R	3 175	
60-R	2,00	4,00	5,00		R	3 333	
61-R	8,00	8,00	8,00		R	4 000	
62-R	6,35	6,35	9,53		R	4 763	
63-R	10,00	10,00	10,00		R	5 000	
64-R	12,00	12,00	12,00		R	6 000	
65-R	12,70	12,70	12,70		R	6 350	
66-R	15,00	15,00	15,00		R	7 500	
67-R	20,00	20,00	20,00		R	10 000	
80-U	3,18	3,18	0,79		U	227	
81-U	1,59	0,79	0,79		U	236	

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Table 2 *(continued)*

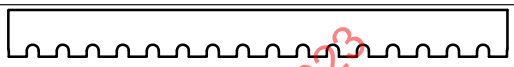
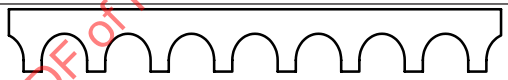
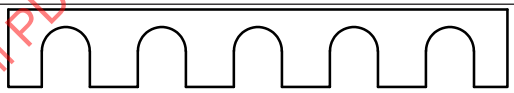
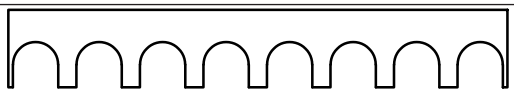
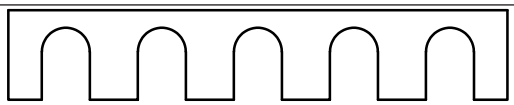
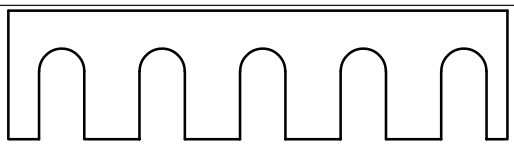
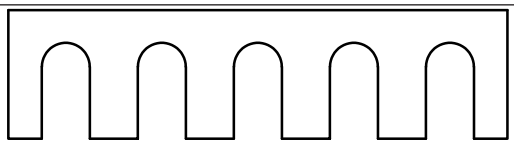
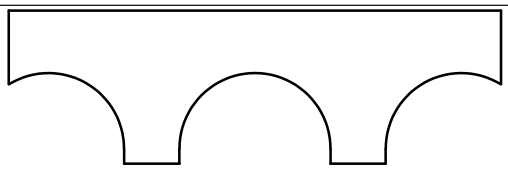
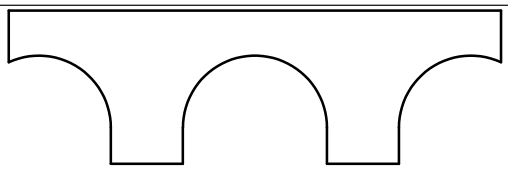
ISO Notch size code	Width of bridge *a* mm	Width of notch *b* mm	Depth of notch *c* mm	Notch angle *γ* °	Geometry/ Shape "X"	Geometric factor mm	Illustration real size
82-U	1,59	1,98	0,79		U	323	
83-U	2,38	1,59	1,59		U	567	
84-U	3,18	3,18	3,18		U	1 417	
85-U	1,59	3,18	3,18		U	1 890	
86-U	3,18	3,18	4,76		U	2 211	
87-U	2,40	6,00	5,00		U	3 112	
88-U	6,35	6,35	7,94		U	3 628	
89-X	2,40	6,00	6,00		U	3 826	
90-X	6,35	6,35	9,53		U	4 422	
91-X	7,30	6,00	12,00		U	5 123	
92-X	6,35	6,35	12,70		U	6 009	
93-X	7,30	20,00	12,00		U	7 219	
94-X	9,53	19,05	14,29		U	8 162	

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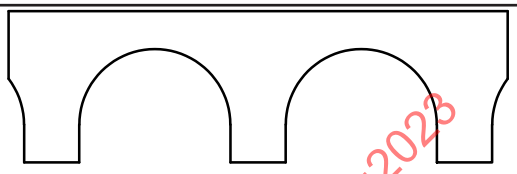
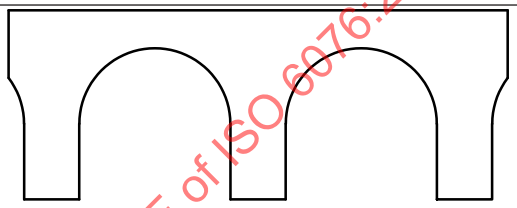
Table 2 *(continued)*

ISO Notch size code	Width of bridge *a* mm	Width of notch *b* mm	Depth of notch *c* mm	Notch angle *γ* °	Geometry/ Shape "X"	Geometric factor mm	Illustration real size
95-X	7,30	20,00	15,00		U	9 417	
96-X	7,30	20,00	20,00		U	13 080	

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