



**International
Standard**

ISO 21538

**Blanks for superabrasive cutting-
off wheels — Mounting and fixing
bores — Building construction and
civil engineering**

*Âmes pour meules de tronçonnage superabrasives — Alésages de
montage et de fixation — Bâtiment et génie civil*

**Third edition
2024-03**

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Contents		Page
Foreword.....		iv
1	Scope.....	1
2	Normative references.....	1
3	Terms and definitions.....	1
4	Dimensions	1
5	Designation.....	9

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Foreword

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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 document 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 29, *Small tools*, Subcommittee SC 5, *Grinding wheels and abrasives*.

This third edition cancels and replaces the second edition (ISO 21538:2016), which has been technically revised.

The main changes are as follows:

- [Figures 1](#) and [2](#) have been modified;
- new dimensions have been added to [Table 1](#).

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.

Blanks for superabrasive cutting-off wheels — Mounting and fixing bores — Building construction and civil engineering

1 Scope

This document specifies the most common dimensions for mounting and fixing bores in blanks. These mounting and fixing bores conform to the relevant dimensions of the clamping flanges specified in ISO 21537-2.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 2768-1, *General tolerances — Part 1: Tolerances for linear and angular dimensions without individual tolerance indications*

ISO 21537-2, *Clamping flanges for superabrasive cutting-off wheels — Part 2: Building and construction*

3 Terms and definitions

No terms and definitions are listed in this document.

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/>

4 Dimensions

The dimensions of a centre bore without hole circle (type A), of a centre bore with one hole circle for a driving pin (type B), of a centre bore with up to two hole circles for driving pins (type C), of a centre bore with up to two hole circles for mounting (type D) and of a centre bore with one hole circle for driving pins and one for mounting (type E) are shown in [Figures 3 to 7](#), respectively and are given in [Table 1](#).

Details which are not specified shall be chosen according to need.

The countersinks may only be on one side of the blade. A maximum of two different pitch diameters for countersinks are allowed. In addition to the countersunk bores, two through boreholes are permitted.

Additional drive holes shall be located within the flange area.

- The distance between the drive holes shall be at least 14 mm in the radial direction (see [Figure 1](#)).
- The distance between the drive holes shall be at least 30 mm in the tangential direction (see [Figure 1](#)).
- The distance between the pitch circles shall be min. 20 mm in radial direction (see [Figure 2](#)).

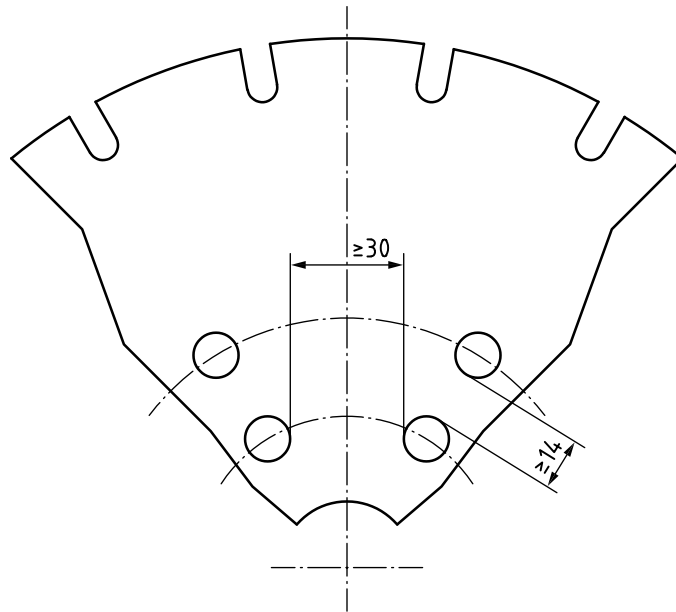


Figure 1 — Location of drive holes within the flange area

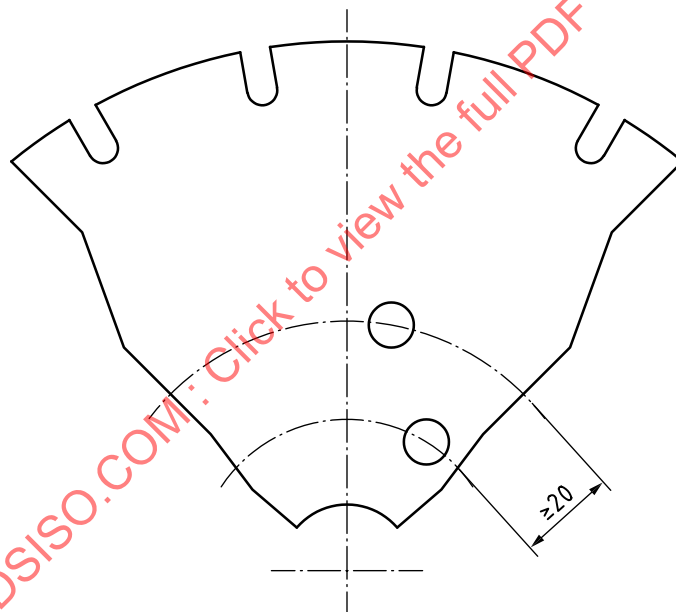


Figure 2 — Minimum space between the pitch diameters

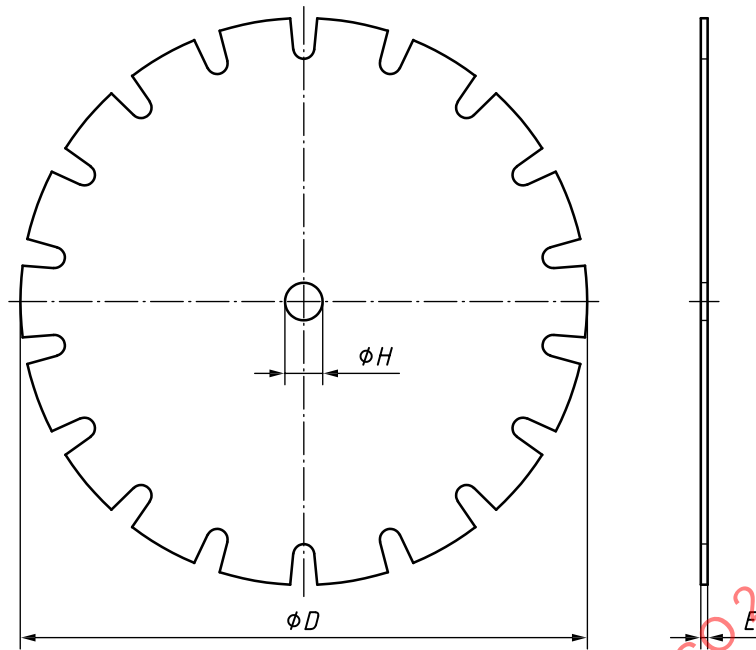


Figure 3 — Type A

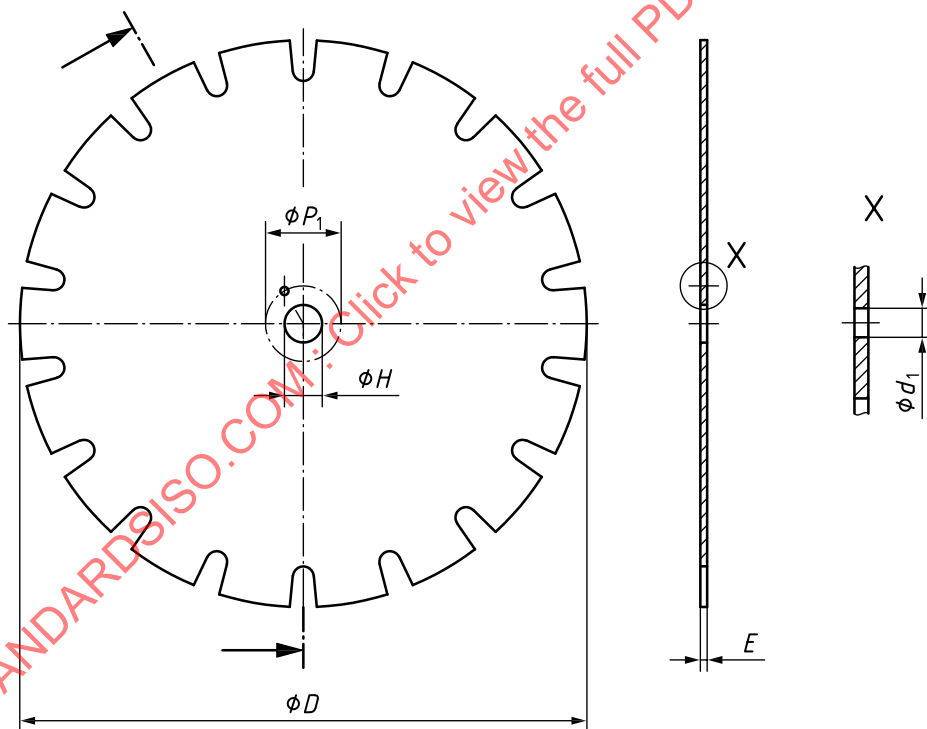


Figure 4 — Type B

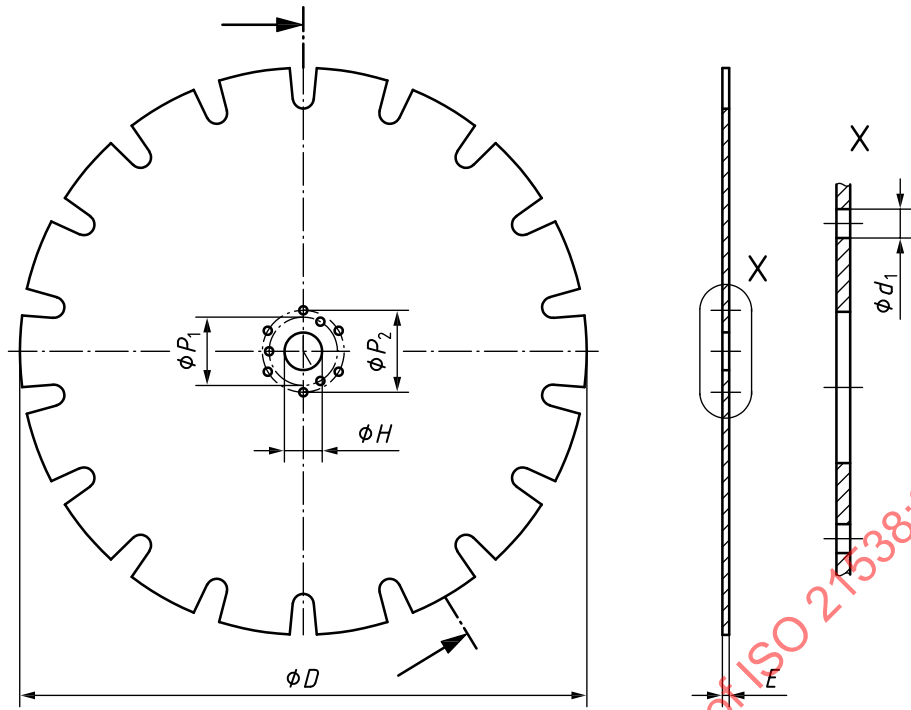


Figure 5 — Type C

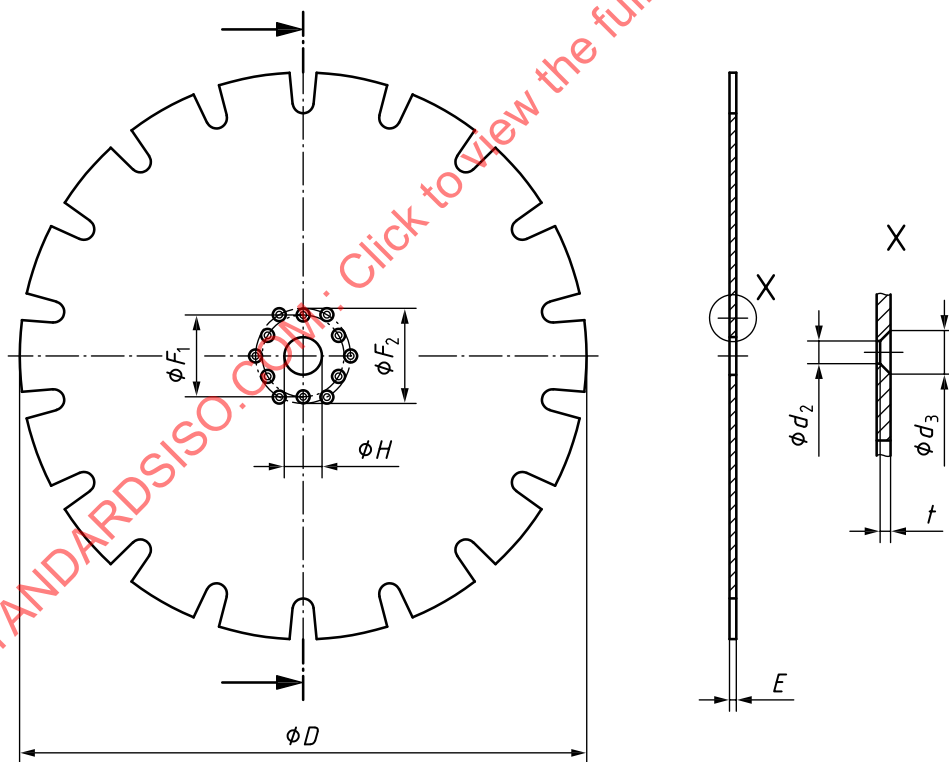


Figure 6 — Type D

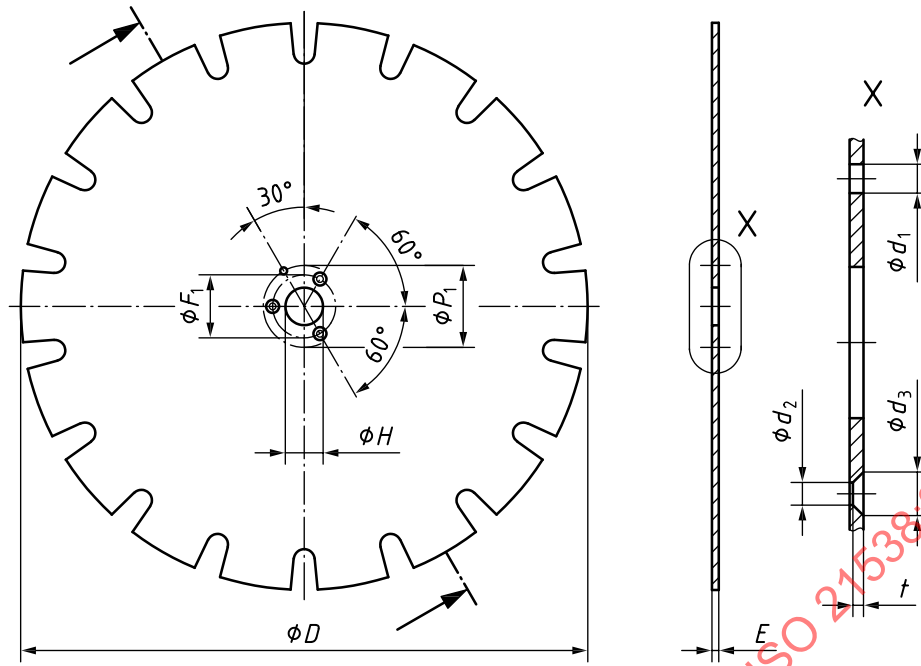


Figure 7 — Type E

Table 1 — Dimensions of mounting and fixing bores

Dimensions in millimetres
General tolerances ISO 2768-m

<i>D</i> ^a	<i>E</i>	<i>H</i> ^a	<i>d</i> ₁	<i>d</i> ₂ ^b	<i>d</i> ₃	<i>P</i> ₁ and <i>P</i> ₂ ±0,1						Number of driving holes	<i>F</i> ₁ and <i>F</i> ₂ ±0,1						Maximum number of fixing bores
						57,4	80	90	100	120	130		45	60	70	90	110	125	
<i>D</i> ≤ 230	1,2	M14	—	5,5	10,4	—	—	—	—	—	—	—	—	—	—	—	—	—	6 × 60°
		22,23	—	5,5	10,4	—	—	—	—	—	—	—	—	—	—	—	—	6 × 60°	
230 < <i>D</i> ≤ 300	1,2	20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
		22,23	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		25,4	11,5	—	—	—	—	—	—	—	—	—	—	—	—	—			
		30	—	—	—	X	—	—	—	—	—	—	—	—	—	—			
300 < <i>D</i> ≤ 350	1,6	20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
		25,4	11,5	—	—	X	—	—	—	—	—	—	—	—	—	—	—		
350 < <i>D</i> ≤ 400	1,6	20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4 × 90° — — 6 × 60° —
		25,4	—	5,5	10,4	X	—	—	—	—	—	X	—	—	—	—	—		
		35	11,5	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
		50	—	6,6	12,6	X	—	—	—	—	—	—	X	—	—	—	—		
		60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
^a Dimension <i>D</i> and <i>H</i> shall conform to ISO 21537-2.																			
^b If the thickness of the blank is less than the depth, <i>t</i> , then <i>d</i> ₂ results if dimension <i>d</i> ₃ is respected.																			
<i>D</i> = outer diameter of the blank																			
<i>E</i> = thickness of the blank																			
<i>H</i> = centre bore diameter																			
<i>F</i> ₁ , <i>F</i> ₂ = pitch diameter for countersunk bores																			
<i>P</i> ₁ , <i>P</i> ₂ = pitch diameter for through boreholes																			
<i>d</i> ₁ = diameter for drive hole																			
<i>d</i> ₂ = pilot hole diameter																			
<i>d</i> ₃ = countersunk diameter																			
<i>t</i> = depth of counter sunk																			

Table 1 (continued)

D^a	E	H^a	d_1	d_2^b	d_3	P_1 and P_2 $\pm 0,1$							Number of driving holes	F_1 and F_2 $\pm 0,1$						Maximum number of fixing bores
						57,4	80	90	100	120	130	45		60	70	90	110	125	130	
$400 < D \leq 500$	2,0	25,4	11,5	H13	15,5	X	—	—	—	—	—	—	—	—	X	—	—	—	6 $\times$ 60° on F_1	
		9		16,5																
		11		17,3																
				21																
$500 < D \leq 600$	2,5	25,4	11,5	9	15,5	X	—	—	—	—	—	—	—	X	—	—	—	6 $\times$ 60° on F_1		
		35		16,5																
		11		17,3																
				21																

^a Dimension D and H shall conform to ISO 21537-2.

^b If the thickness of the blank is less than the depth, t , then d_2 results if dimension d_3 is respected.

D = outer diameter of the blank

E = thickness of the blank

H = centre bore diameter

F_1, F_2 = pitch diameter for countersunk bores

P_1, P_2 = pitch diameter for through boreholes

d_1 = diameter for drive hole

d_2 = pilot hole diameter

d_3 = countersunk diameter

t = depth of counter sunk