

FINAL
DRAFT

INTERNATIONAL
STANDARD

ISO/FDIS
18804

ISO/TC 31/SC 5

Secretariat: UNI

Voting begins on:
2021-03-01

Voting terminates on:
2021-04-26

Rims for agricultural, forestry and construction machines

*Jantes pour machines agricoles, engins forestiers et engins de
construction*

iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO/FDIS 18804

<https://standards.iteh.ai/catalog/standards/sist/ed32d5e7-26dc-4fb4-98d2-7a64a47c196d/iso-fdis-18804>

RECIPIENTS OF THIS DRAFT ARE INVITED TO SUBMIT, WITH THEIR COMMENTS, NOTIFICATION OF ANY RELEVANT PATENT RIGHTS OF WHICH THEY ARE AWARE AND TO PROVIDE SUPPORTING DOCUMENTATION.

IN ADDITION TO THEIR EVALUATION AS BEING ACCEPTABLE FOR INDUSTRIAL, TECHNOLOGICAL, COMMERCIAL AND USER PURPOSES, DRAFT INTERNATIONAL STANDARDS MAY ON OCCASION HAVE TO BE CONSIDERED IN THE LIGHT OF THEIR POTENTIAL TO BECOME STANDARDS TO WHICH REFERENCE MAY BE MADE IN NATIONAL REGULATIONS.



Reference number
ISO/FDIS 18804:2021(E)

© ISO 2021

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[ISO/FDIS 18804](https://standards.iteh.ai/catalog/standards/sist/ed32d5e7-26dc-4fb4-98d2-7a64a47c196d/iso-fdis-18804)

<https://standards.iteh.ai/catalog/standards/sist/ed32d5e7-26dc-4fb4-98d2-7a64a47c196d/iso-fdis-18804>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2021

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

	Page
Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 General	1
5 Rim diameter and circumferences	1
6 Rim contours and valve holes	3
6.1 Drop-centre W, DW and TW rims	3
6.2 Drop-centre DH rims	6
6.3 Drop-centre MW rims	8
6.4 Drop-centre DD rims	9
6.5 Other drop-centre rims	10
6.6 Semi-drop-centre rims (multi-piece)	15
6.7 Divided rims	16
6.8 5° and 3° flat base rims (multi-piece) — DWM, VF and HF	17
6.9 Full tapered bead seat rims (multi-piece) — TH	19
6.10 AG 15° drop-centre rims	20
7 Rim knurling	22
Annex A (normative) Rim diameter measurements	24
Annex B (informative) 5° drop-centre rims with nominal diameter codes 15.3 and 16.1	26
Annex C (informative) 15° drop-centre rims with nominal diameter codes 14.5, 15.5, 16.5, and 17.5	27
Bibliography	28

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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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 31, *Tyres, rims and valves*, Subcommittee SC 5, *Agricultural tyres and rims*.

This second edition cancels and replaces the first edition (ISO 18804:2017), which has been technically revised.

The main changes compared to the previous edition are as follows:

- all figures and tables have been corrected;
- the valve hole description for other drop-centre rims has been revised.

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.

Rims for agricultural, forestry and construction machines

1 Scope

This document specifies rim dimensions for rims for agricultural, forestry, and construction machines.

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 3911, *Wheels and rims for pneumatic tyres — Vocabulary, designation and marking*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 3911 apply.

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

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

4 General

ISO/FDIS 18804
<https://standards.iteh.ai/catalog/standards/sist/ed32d5e7-26dc-4fb4-98d2-7a64a47c196d/iso-fdis-18804>

All dimensions in this document are given in millimetres and are applicable to the side of the rim which is in contact with the tyre during the mounting and in service.

5 Rim diameter and circumferences

Nominal rim diameter codes, D_R , are shown in [Table 1](#) in relation to the specified rim diameter given in [Figure 1](#).

Actual rim diameter measurements shall be as given in [Annex A](#).

Table 1 — Rim diameters

Table 1.A — 5° drop-centre rims

Dimensions in millimetres

Nominal rim diameter code D_R	Specified rim diameter ^a D
4	100,8
6	151,6
8	202,4
9 ^b	227,8
10	253,2
12	304,0
13 ^b	329,4

Table 1.B — 15° drop-centre rims

Dimensions in millimetres

Nominal rim diameter code D_R	Specified rim diameter D
19.5	495,3
22.5	571,5
24.5	622,3
26.5	673,1
28.5	723,9
30.5	774,7

See [Annex C](#) for additional regionally recognized

Table 1 (continued)

14	354,8
15	380,2
16	405,6
17 ^b	436,6
18	462,0
19 ^b	487,4
20	512,8
22	563,6
24	614,4
26	665,2
28	716,0
30	766,8
32	817,6
34	868,4
36	919,2
38	970,0
40	1 020,8
42	1 071,6
44	1 122,4
46	1 173,2
48	1 224,0
50	1 274,8
52	1 325,6
54	1 376,4

^a The specified rim diameters, D , in millimetres, are derived from the nominal rim diameter codes, D_R , as follows:
a) $D_R > 16, D = 25,4 (D_R + 0,187 5)$;
b) $D_R \leq 16, D = 25,4 (D_R - 0,031 25)$.
The values are rounded to 0,1 mm.
^b Value not recommended.
See [Annex B](#) for additional regionally recognized 5° diameter codes.

15° diameter codes.

Table 1.C — Semi-drop-centre rims (multi-piece)

Dimensions in millimetres

Nominal rim diameter code D_R	Specified rim diameter D
20	512,8
24	614,4

See [6.6](#).

Table 1.D — Divided rims

Dimensions in millimetres

Nominal rim diameter code D_R	Specified rim diameter D
4	100,8
6	151,6
8	202,4
9	227,8
10	253,2
12	304,0

See [6.7](#).

iTech STANDARD PREVIEW
(standards.itech.ai)

ISO/FDIS 18804

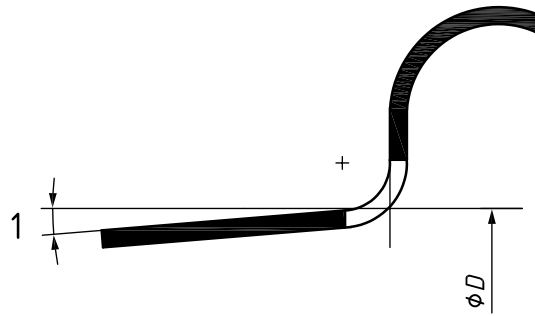
<https://standards.itech.ai/catalog/standards/sist/ed32d5e7-26dc-4fb4-98d2-7a64a47c196d/iso-fdis-18804>

Table 1.E — Flat base rims and Full tapered bead seat rims

Dimensions in millimetres

Nominal rim diameter code D_R	Specified rim diameter D
20	514,4
25	635,0
32	817,6

See [6.8](#) and [6.9](#).

**Key**

1 bead taper

Figure 1 — Specified rim diameter**6 Rim contours and valve holes****6.1 Drop-centre W, DW and TW rims**

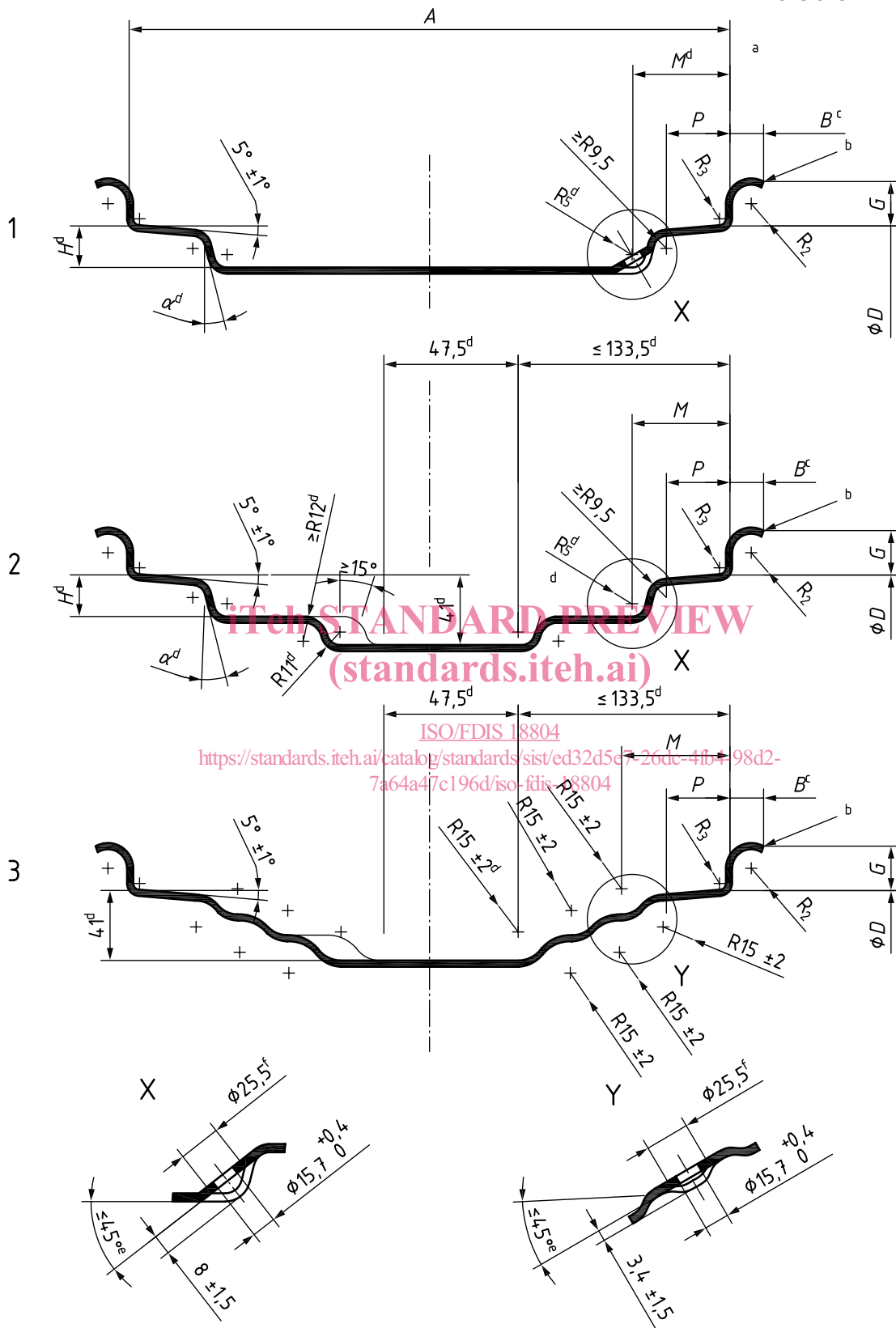
Dimensions and tolerances of drop-centre W, DW and TW rims (includes all suffixes, for example, DW-A) shall be as given in [Table 2](#) and shown in [Figure 2](#). For W-C rims, refer to [Annex B](#).

The valve hole shall have a diameter of $15,7 \text{ mm}^{+0,4}_0$ and may be on either side of the rim.

The nominal valve seat angle is $30^\circ \pm 5^\circ$. To provide for valve-to-vehicle clearance, optional valve seat angles of 45° maximum are permissible. For any angle selected for a given rim, the tolerance is $\pm 5^\circ$.

<https://standards.iteh.ai/catalog/standards/sist/ed32d5e7-26dc-4fb4-98d2-7a64a47c196d/iso-fdis-18804>

Dimensions in millimetres



Key

- 1 W contour
- 2 DW contour
- 3 TW contour

- X valve hole detail (W and DW contour)
- Y valve hole detail (TW contour)
- a The tyre-mounting side is that side of the rim for which the dimension M is shown.
- b The break corner is equivalent to $R = 0,5$ min.
- c The flange width includes the edge radius. The portion of flange beyond the minimum width shall be lower than the highest point of the flange. For suffix B (example: DW20B), the contour can either follow a continuation of R_2 to full width or, if conical shaped, a minimum 30° angle applies between the upper G horizontal reference line.
- d These dimensions comprise the minimum well envelope for tyre-mounting purposes.
- e For any angle selected for a given rim, the tolerance is $\pm 5^\circ$.
- f Flat surface for valves.

EXAMPLE Dimensions A, B, G, M, P, R_2 and R_3 all apply to W, DW and TW contours; H and R_5 apply to W and DW contours.

Figure 2 — Contour W, DW and TW rims

Table 2 — Dimensions of W, DW and TW rims

Dimensions in millimetres

Rim width code	A	A_{tol}	B_{min}	$G \pm 1,0$	H_{min}	M_{max}	P_{min}	R_2	$R_{3,max}$	$R_{5,max}$	α_{min}			
W6	152,5	$\pm 2,5$	10,0	22,5	20,5	44,5	23,5	9,5	6,5	11,0	6°			
W7	178,0			19,3		22,5						44,5		
W7L													60,5	
W8	203,0			11,5		22,0	57,5	33,0	11,0		15,0	8,0		15°
W8H													22,5	
W8L														
W9	228,5			16,0		25,5	57,5	27,0	11,0		6,5	11,0	6°	
W10														254,0
W10A	57,5													
W10H				27,0										
W10L	279,5					16,0	25,5	66,0	41,0		15,0	8,0	11,0	15°
W11				11,5										
W11H	305,0					11,5	22,0	57,5	27,0		11,0	6,5	11,0	15°
W12				330,0										
W12A	11,5													
W13		330,0	16,0	25,5	57,5	27,0	11,0	6,5	11,0	15°				
W13A	11,5													
W14L		355,5	16,0	25,5	66,0	41,0	15,0	8,0	11,0	15°				
W15A	11,5													
W15L		381,0	16,0	25,5	57,5	33,0	11,0	6,5	11,0	15°				
W15L	11,5													

Nominal rim diameters 16 to 54 for W rims and 24 to 54 for DW and TW rims; see details in Table 1.A.

NOTE 1 Where DW rims are specified, also the optional TW contour is allowed.

NOTE 2 Rim width guidelines:

- rim width codes to be in increments of 2,00 for width codes ≤ 48 ;
- rim width codes to be in increments of 4,00 for width codes > 48 .

Table 2 (continued)

Rim width code	A	A _{tol}	B _{min}	G ± 1,0	H _{min}	M _{max}	P _{min}	R ₂	R _{3,max}	R _{5,max}	α _{min}
W16A	406,5	±5,0	16,0			66,0	41,0	15,0	8,0		
W16L			11,5				33,0	11,0			
W17L	432,0		16,0				41,0	15,0			
W18A	457,0		11,5				33,0	11,0			
W18L											
DW10	254,0	±2,5	11,5	25,5	20,5	54,0	27,0	11,0	6,5		
DW11	279,5										
DW12	305,0										
DW13	330,0	±5,0		25,5	27,0	63,5	36,5		8,0	14,5	15°
DW13L	330,0										
DW14L	355,5										
DW15L	381,0										
DW16L	406,5										
DW17L	432,0										
DW18L	457,0				27,0	95,5	50,5				
DW10A	254,0	±2,5			20,5	57,0	41,0				
DW11A	279,5										
DW12A	305,0										
DW13A	330,0	±5,0	16,0	25,5		63,5	66,0		8,0	14,5	15°
DW14A	355,5										
DW15A	381,0										
DW16A	406,5										
DW18A	457,0										
DW20B	508,0										
DW21B	535,5										
DW23B	584,0										
DW24B	609,5										
DW25B	635,0										
DW27B	686,0										
DW28B	711,0										
DW30B	762,0										
DW31B	787,5										
DW36B	914,5										
DW44B	1 117,5				21,0	29,0	95,5	50,5			

Nominal rim diameters 16 to 54 for W rims and 24 to 54 for DW and TW rims; see details in Table 1.A.

NOTE 1 Where DW rims are specified, also the optional TW contour is allowed.

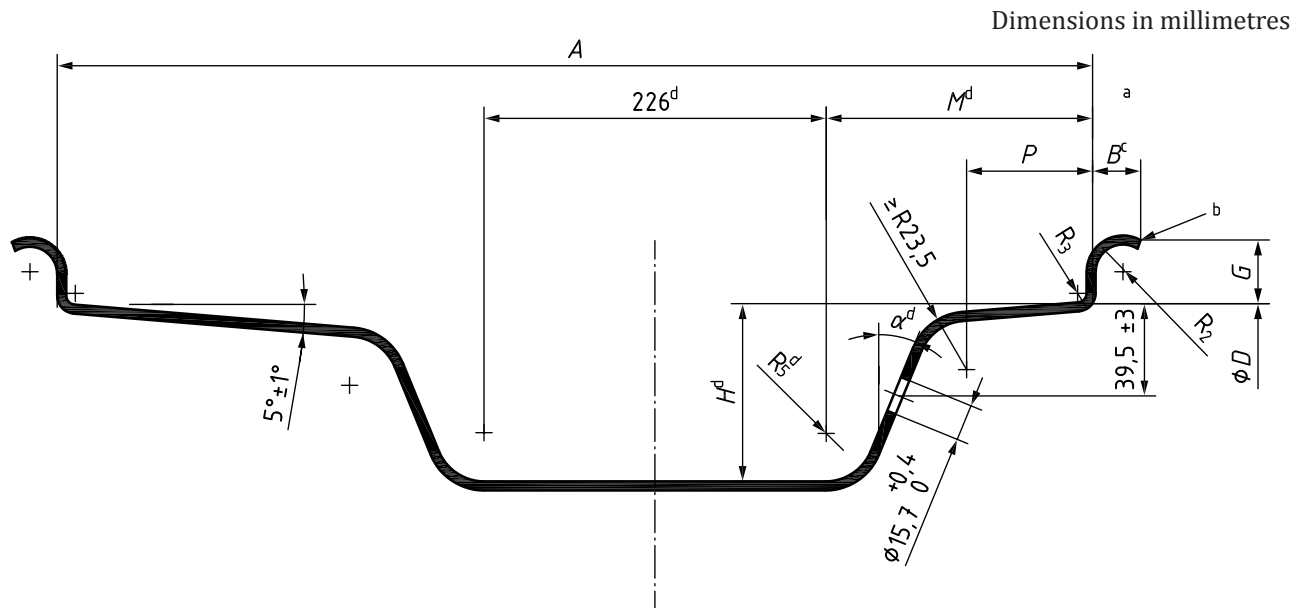
NOTE 2 Rim width guidelines:

- rim width codes to be in increments of 2,00 for width codes ≤ 48;
- rim width codes to be in increments of 4,00 for width codes > 48.

6.2 Drop-centre DH rims

Dimensions and tolerances of drop-centre DH rims (includes all suffixes, for example, DH-H) shall be as given in Table 3 and shown in Figure 3.

The valve hole shall have a diameter of $15,7 \text{ mm} \begin{smallmatrix} +0,4 \\ 0 \end{smallmatrix}$ with location shown in Figure 4.



- a The tyre-mounting side is that side of the rim for which the dimension M is shown.
- b The break corner is equivalent to $R = 0,5 \text{ min.}$
- c The flange width includes the edge radius. The portion of flange beyond the minimum width shall be lower than the highest point of the flange. For suffix B, the contour can either follow a continuation of R_2 to full width or, if conical shaped, a minimum 30° angle applies between the upper G horizontal reference line.
- d These dimensions comprise the minimum well envelope for tyre-mounting purposes.

Figure 3 — Contour of DH rims

Table 3 — Dimensions of DH rims

Dimensions in millimetres

Rim width code	A	A_{tol}	B_{min}	$G \pm 1,0$	H_{min}	M_{max}	P_{min}	R_2	$R_{3,\text{max}}$	$R_{5,\text{max}}$	α_{min}
DH21	533,5	$\pm 6,5$	16,0	29,0	69,0	121,0	54,0	15,0	8,0	22,0	22°
DH21H			21,0				60,0				
DH21HB			16,0				54,0				
DH27	686,0		16,0				60,0				
DH27H			21,0				54,0				
DH27HB			16,0				60,0				
DH31	787,5		16,0				54,0				
DH31H			21,0				60,0				
DH31HB			16,0				54,0				
DH36	914,5		16,0				60,0				
DH36H			21,0				54,0				
DH36HB			16,0				60,0				

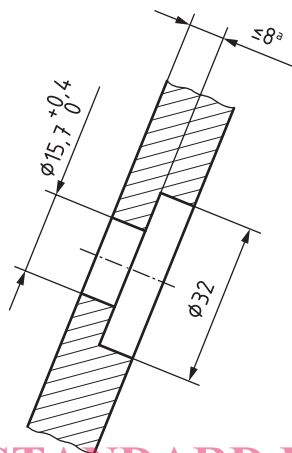
Nominal rim diameters 32 and 46; see details in Table 1.A.

Table 3 (continued)

Rim width code	A	A _{tol}	B _{min}	G ± 1,0	H _{min}	M _{max}	P _{min}	R ₂	R _{3,max}	R _{5,max}	α _{min}
DH44	1 117,5		16,0				54,0				
DH44H							60,0				
DH44HB			21,0								

Nominal rim diameters 32 and 46; see details in Table 1.A.

Dimensions in millimetres



iTeh STANDARD PREVIEW
(standards.iteh.ai)

^a Maintain 8 maximum dimension by counterboring on the weather side of the rim only.

Figure 4 — Dimension of the valve holes in DH rims
ISO/FDIS 18804
<https://standards.iteh.ai/catalog/standards/sist/ed32d5e7-26dc-4fb4-98d2-7a64a47c196d/iso-fdis-18804>

6.3 Drop-centre MW rims

Dimensions and tolerances of drop-centre MW rims (includes all suffixes, for example, MW-A) shall be as given in [Table 4](#) and shown in [Figure 5](#).

The valve hole shall have a diameter of 15,7 mm ^{+0,4}/₀ and may be on either side of the rim.