INTERNATIONAL STANDARD

ISO 4251-3

Third edition
1994-11-01

Tyres (ply rating marked series) and rims for agricultural tractors and machines —

Part 3: Rims

Pneumatiques (série à marquage «ply rating») et jantes pour tracteurs et machines agricoles —

Partie 3: Jantes

Reference number
ISO 4251-3:1994(E)

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 4251-3 was prepared by Technical Committee ISO/TC 31, *Tyres, rims and valves*, Subcommittee SC 5, *Agricultural tyres and rims*.

This third edition cancels and replaces the second edition (ISO 4251-3:1985), of which it constitutes a minor revision. "Existing series" is now called "ply rating marked series".

ISO 4251 consists of the following parts, under the general title *Tyres (ply rating marked series) and rims for agricultural tractors and machines*:

— *Part 1: Tyre designation and dimensions, and approved rim contours*

— *Part 2: Tyre load ratings*

— *Part 3: Rims*

— *Part 4: Tyre classification and nomenclature*

— *Part 5: Log skidder tyres*

Annex A forms an integral part of this part of ISO 4251. Annexes B and C are for information only.

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Tyres (ply rating marked series) and rims for agricultural tractors and machines —

Part 3:
Rims

1 Scope

This part of ISO 4251 sets out rim dimensions for tyres of the ply rating marked series for agricultural tractors and machines.

Tyre designation and dimensions, load ratings and tyre classification and nomenclature are given in ISO 4251-1, ISO 4251-2 and ISO 4251-4 respectively. The rims specified in this part of ISO 4251 may also be used for the tyres specified in ISO 7867-1[2] and ISO 8664[3].

All dimensions in this part of ISO 4251 are given in millimetres.

NOTE 1 Terms used are in accordance with ISO 3911:1977[1].

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 4251. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 4251 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 4000-2:1987, *Passenger car tyres and rims — Part 2: Rims.*

ISO 4209-2:1993, *Truck and bus tyres and rims (metric series) — Part 2: Rims.*

3 Rim diameters and circumferences

Nominal rim diameter codes D_R are as shown in table 1 related to the specified rim diameter given in figure 1.

For rim diameter measurements, see annex A.

A tolerance of ± 1,2 mm on the rim circumference is permitted.

4 Rim contours and valve holes

4.1 Drop-centre W and DW rims

Dimensions and tolerances of drop-centre W and DW rims shall be as given in table 2 and shown in figure 2.

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

The nominal valve seat angle is 30° ± 5°. 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 ± 5°.

4.2 Drop-centre DH rims

Dimensions and tolerances of drop-centre DH rims shall be as given in table 3 and shown in figure 3.

The location of valve holes is shown in figure 4.

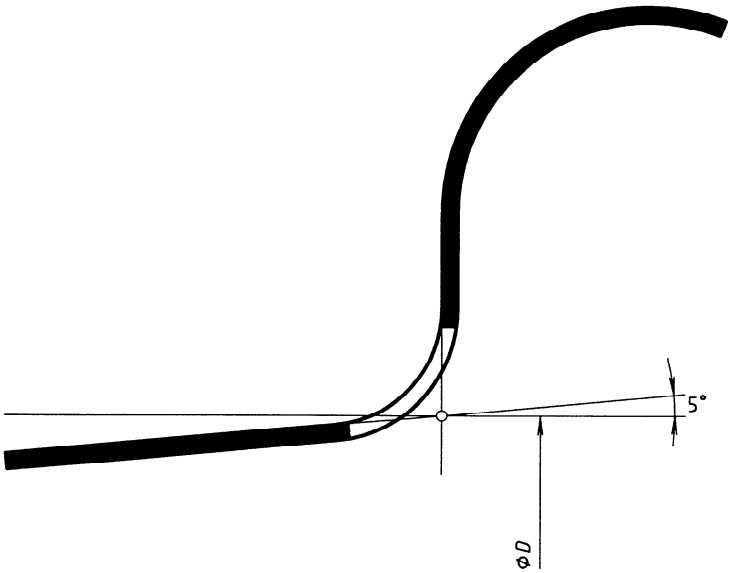
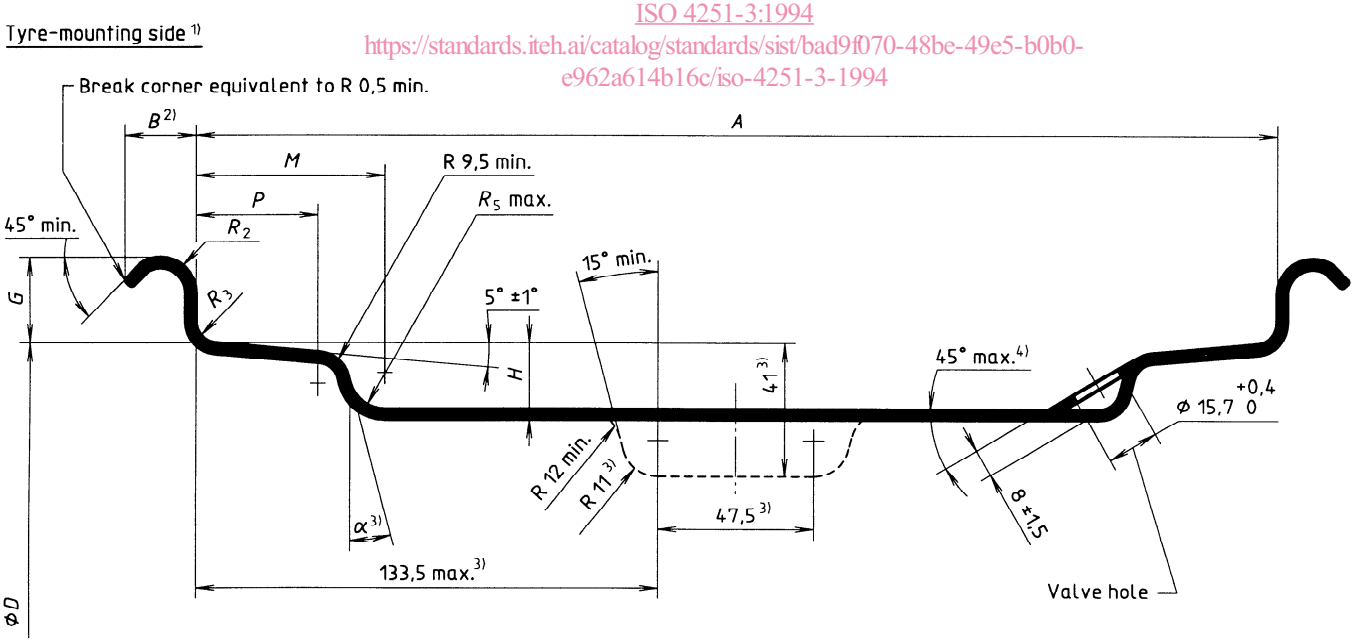


Figure 1 — Specified rim diameter



1) The tyre-mounting side is that side of the rim for which the dimension *M* is applied.
2) Flange width includes edge radius. The portion of flange beyond the minimum width shall be lower than the highest point of the flange.
3) These dimensions comprise the minimum well envelope for tyre-mounting purposes.
4) For any angle selected for a given rim, the tolerance is ±5°.

Figure 2 — Contour of W and DW rims

Table 1 — Rim diameters

Nominal rim diameter code D_R	Specified rim diameter[1] D
8	202,4
9	227,8
10	253,2
12	304
13	329,4
14	354,8
15	380,2
16	405,6
17	436,6
18	462
19	487,4
20	512,8
24	614,4
26	665,2
28	716
30	766,8
32	817,6
34	868,4
36	919,2
38	970
40	1 020,8
42	1 071,6
44	1 122,4
46	1 173,2
48	1 224

1) The specified rim diameters, D, in millimetres, are derived from the nominal rim diameter codes, D_R, as follows:

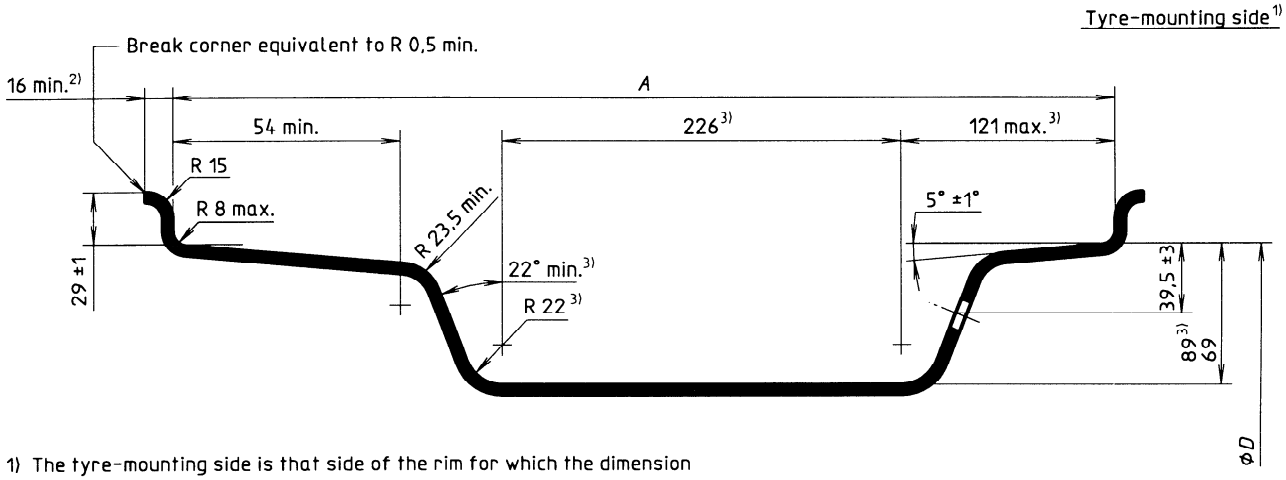
a) $D_R \leqslant 16$, $D = 25{,}4(D_R - 0{,}031\ 25)$

b) $D_R > 16$, $D = 25{,}4(D_R + 0{,}187\ 5)$

The values are rounded to 0,1 mm

Table 2 — Dimensions of W and DW rims

Rim size	A	tol.	B min.	G ± 1	H min.	M max.	P min.	R_2	R_3 max.	R_5 max.	α min.
W 6	152,5	± 2,5	8,5	22,5	20,5	44,5	23,5	9,5	6,5	11	6°
W 7	178										
W 8	203										15°
W 8 H			10	25,5		57,5	33	11			
W 8 L				22		51	27				
W 9	228,5			25,5		57,5					6°
W 10	254										15°
W 10 H							33				
W 10 L				22			27				
W 11	279,5			25,5							
W 12	305										
W 13	330										
W 14 L	355,5	± 5							8		
W 15 L	381										
W 16 L	406,5			25,5		66	33				
W 17 L	432										
W 18 L	457										
DW 10	254	± 2,5				54	27		6,5	14,5	
DW 11	279,5										
DW 12	305										
DW 18	457	± 5	11,5	29	27	63,5	36,5		8		
DW 14 L	355,5			25,5					6,5		
DW 15 L	381										
DW 16 L	406,5				20	95,5	50,5		8		
DW 17 L	432										
DW 18 L	457										
DW 16 A	406,5		16	29	27	63,5	36,5	15			
DW 20 A	508	± 6,5				95,5	50,5				
DW 21 A	533,5										
DW 25 A	635										
DW 27 A	686										



1) The tyre-mounting side is that side of the rim for which the dimension 121 max. is applied.
2) Flange width includes edge radius. The portion of flange beyond the minimum width shall be lower than the highest point of the flange.
3) These dimensions comprise the minimum well envelope for tyre-mounting purposes.

Figure 3 — Contour of DH rims

Table 3 — Dimensions of DH rims

Rim size	A tol.
DH 21	533,5 ± 6,5
DH 27	686

4.3 Other drop-centre rims

Dimensions and tolerances of other drop-centre rims shall be as given in table 4 and shown in figure 5.

The normal location of valve holes in these rims is shown in figure 5. The valve hole may be on either side of the rim well.

The valve hole diameter shall be

a) 15,7 mm $^{+0,4}_{0}$ mm for rims of nominal rim diameter code 15 and above;

b) 11,3 mm $^{+0,4}_{0}$ mm for rims of nominal rim diameter code 14 and below.

An optional location of valve holes in rims of diameter code 15 and above (valve hole diameter 15,7 mm $^{+0,4}_{0}$ mm) is shown in figure 6.

A valve hole in the corner of the well as shown in figure 7 is an optional location and provides valve-to-vehicle clearance. Valve seat angles of 15° minimum to 50° maximum are permissible. For any angle selected for a given rim, the tolerance is ± 5°.

4.4 Semi-drop-centre rims

Dimensions and tolerances of semi-drop-centre rims shall be as given in table 5 and shown in figure 8.

The location of valve holes is shown in figure 9.

4.5 Divided rims

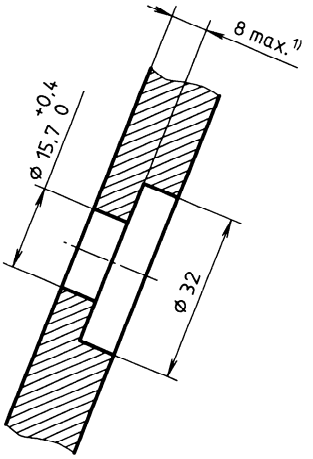
Dimensions and tolerances of divided rims shall be as given in table 6 and shown in figure 10.

The location of valve holes is shown in figure 10.

The valve hole diameter shall be

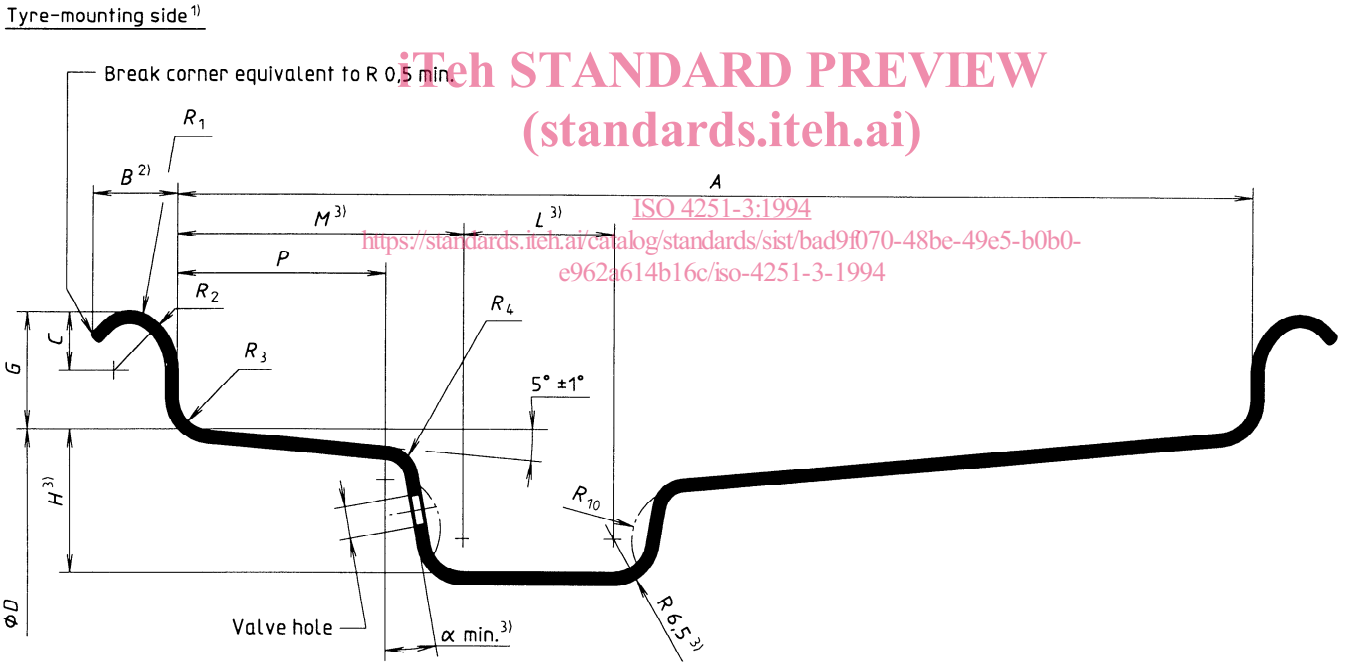
a) 15,7 mm $^{+0,4}_{0}$ mm for rims of nominal rim diameter code 15 and above;

b) 11,3 mm $^{+0,4}_{0}$ mm for rims of nominal rim diameter code 14 and below.



1) Maintain 8 max. dimension by counterboring on the weather side of the rim only.

Figure 4 — Location of valve holes in DH rims



1) The tyre-mounting side is that side of the rim for which the dimension *M* is applied.
2) Flange width includes edge radius. The portion of flange beyond the minimum width shall be lower than the highest point of the flange.
3) These dimensions comprise the minimum well envelope for tyre-mounting purposes.

Figure 5 — Contour of other drop-centre rims

Table 4 — Dimensions of other drop-centre rims

Rim size[1]	A	tol.	B min.	G ± 1	H [2]	C	L	M max.	P min.	R_1	R_2	R_3 max.	R_4 min.	R_{10}	α [2] min.	Valve hole: see figure
2.50 A	63,5	± 2	9,5	11,5	12	6,5	12,5	25,5	11,5	—	6,5	4	4	—	10°	5 or 6
2.50 C			11	16,5	13,5	11,5			12	7,5	12	3,5	6	28,5	13°	
3.00 D	76		11,5	18	18	12,5	17,5	29	14	8	13	6,5		32		
3.50 D	89						19	34	15,5					35		
3.75 I	95,5		10	16	22	9	25	35	14	—	9	4,5		—	10°	
4.00 E	101,5		12,5	20	19	13,5	19		18	8,5	14	6,5		38		
4.25 KA	108		9,5		26	10,5	22	42	20,5	—	10,5			—	15°	
4.50 E	114,5		12,5		23	13,5		40	18	8,5	14				10°	
4 1/2 K			12		20	10,5	21	47	19,5	—	10,5		4		15°	
4 1/2 KB			10				22	45								
5.00 F	127		13	22,5	26	14,5	25	54	23,5	9,5	15,5		6			
5 JA			8,5	16	19	8	48	38,5	17,5		8	5,5				
5 K			12	20	20	10,5	21	47	19,5	—	10,5	6,5	4			
5 KB			10				25	45								
5.50 F	139,5		13	22,5	26	14,5	25	54	23,5	9,5	15,5		6			
5 1/2 K			12	20	20	10,5	21	47	19,5	—	10,5		4			
6.00 F	152,5	± 2,5	13	22,5	26	14,5	25	54	23,5	9,5	15,5		6			
6 L			12,5	22			22	45		6,5	12		4			
6 LB			10		27		28,5	48,5	25	7			6		10°	5 or 7
7.00	178		12	20,5	31		30	60	19,5	—	11				15°	5 or 6
7 LB			10	22	27	11	28,5	54	25	7	12				10°	5 or 7
8 LB	203															
9	228,5			25,5	31		50	60	27	—	11				15°	
10 LB	254			22	27		28,5	54	25	7	12				10°	
11	279,5			25,5	31		60	65	31,5	—	11				15°	
13.00	330		12	19			61		30							
13				25,5		12	90		31,5		12					
14	355,5	± 5														

1) For rim sizes 3.00 B, 4 J, 4 1/2 J, and 5 1/2 J, see ISO 4000-2 and/or ISO 4209-2.

2) Larger values may be required to ensure sufficient space for tubeless tyre valve seating.

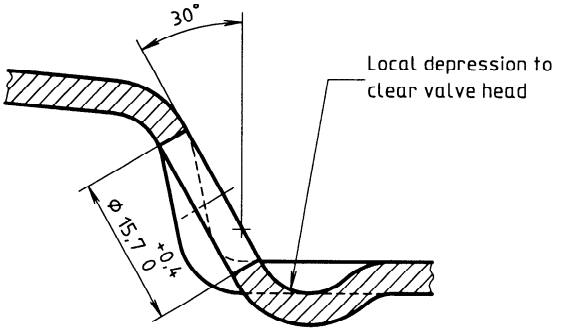
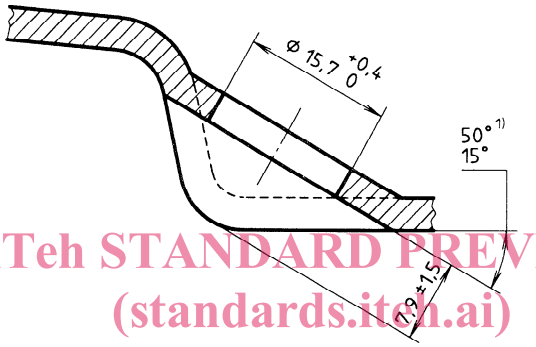
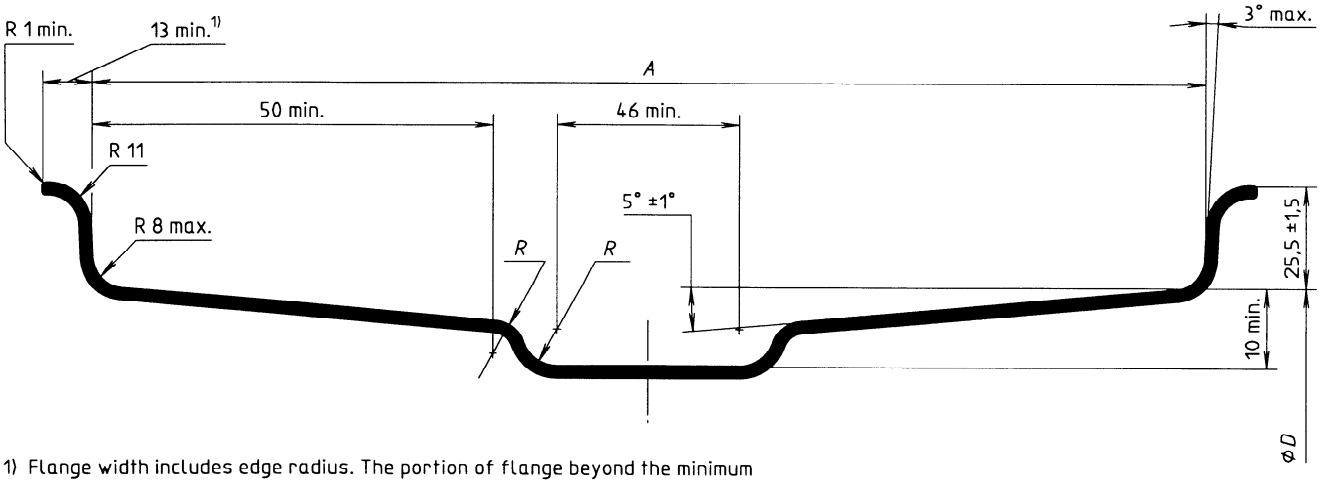


Figure 6 — Optional location of 15,7 mm valve hole



1) For any angle selected for a given rim, the tolerance is ±5°.

Figure 7 — Location of valve hole in corner of well



1) Flange width includes edge radius. The portion of flange beyond the minimum width shall be lower than the highest point of the flange.

NOTE — Flange and bead seat removable on one side of rim.

Figure 8 — Contour of semi-drop-centre rims

Table 5 — Dimensions of SDC rims

Rim size	A	tol.
11	279,5	± 5
12	305	± 6,5
13	330	

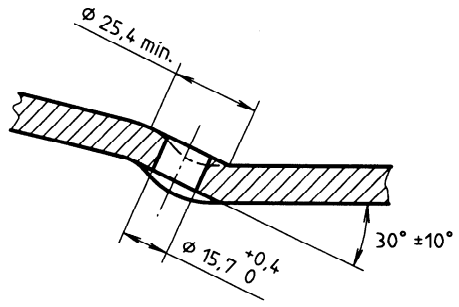
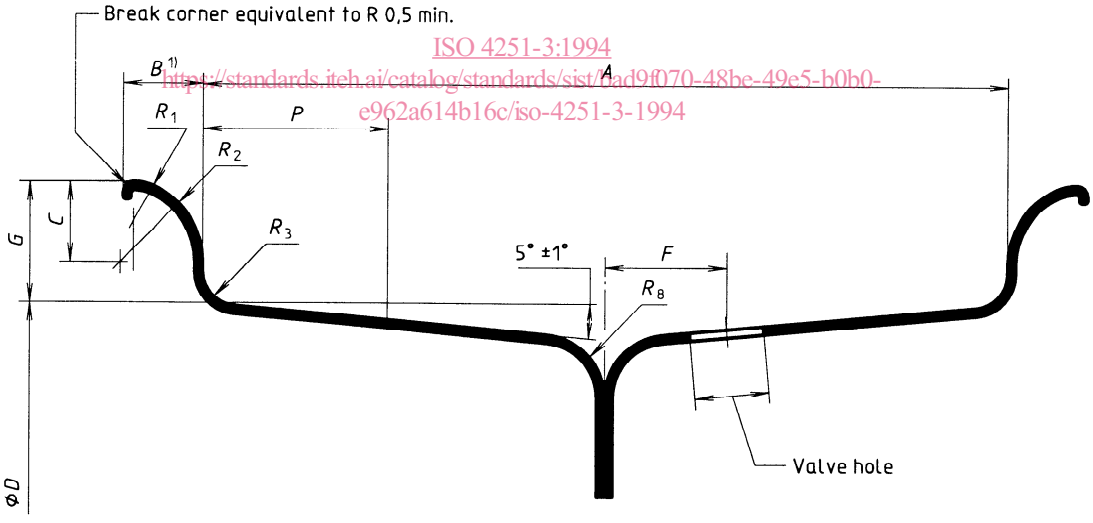


Figure 9 — Location of valve holes in SDC rims



1) Flange width includes edge radius. The portion of flange beyond the minimum width shall be lower than the highest point of the flange.

Figure 10 — Contour of divided rims