

Tolerances for Bars of CW118C

Dimensions: EN 12167:2016*

Tolerances on width and thickness of bar

Nominal thickness t (mm)	Tolerance on width	Tolerance on thickness for range of thickness (mm)					
		3 < t ≤ 6	6 < t ≤ 10	10 < t ≤ 18	18 < t ≤ 30	30 < t ≤ 50	50 < t ≤ 60
Class A tolerance							
3 ≤ t ≤ 18	± 0,27	± 0,18	± 0,22	± 0,27	-	-	-
18 < t ≤ 30	± 0,33	± 0,18	± 0,22	± 0,27	± 0,33	-	-
30 < t ≤ 50	± 0,62	± 0,22	± 0,27	± 0,33	± 0,45	± 0,62	-
50 < t ≤ 80	± 1,20	± 0,27	± 0,33	± 0,45	± 0,52	± 0,74	± 1,00
80 < t ≤ 120	± 2,20	± 0,33	± 0,45	± 0,52	± 0,74	± 1,00	± 1,20
Class B tolerance							
3 ≤ t ≤ 18	± 0,15	± 0,10	± 0,12	± 0,15	-	-	-
18 < t ≤ 30	± 0,22	± 0,10	± 0,12	± 0,15	± 0,22	-	-
30 < t ≤ 50	± 0,30	± 0,13	± 0,15	± 0,18	± 0,22	± 0,30	-
50 < t ≤ 80	± 0,37	± 0,16	± 0,18	± 0,22	± 0,30	± 0,37	-
80 < t ≤ 120	± 0,45	± 0,18	± 0,22	± 0,27	± 0,35	± 0,45	-
Class C tolerance							
3 ≤ t ≤ 18	± 0,10	± 0,07	± 0,09	± 0,10	-	-	-
18 < t ≤ 30	± 0,15	± 0,07	± 0,09	± 0,10	± 0,15	-	-
30 < t ≤ 50	± 0,20	± 0,09	± 0,10	± 0,12	± 0,15	± 0,20	-
50 < t ≤ 80	± 0,25	± 0,11	± 0,12	± 0,15	± 0,20	± 0,25	-
80 < t ≤ 120	± 0,30	± 0,12	± 0,15	± 0,18	± 0,23	± 0,35	-

* Values are referred from Table 17 of EN 12167:2016

Dimensions: EN 12167:2016*

Tolerances on length of bar

Nominal width w (mm)	Preferred (available) lengths (mm)	Tolerance on length (mm)
3 ≤ w ≤ 18	3000, 4000	± 50
18 < w ≤ 30	3000, 4000	± 100
30 < w ≤ 50	2000, 3000, 4000	± 150
50 < w ≤ 80	2000, 3000	± 200
80 < w ≤ 120	1000, 2000	± 200

* Values are referred from Table 18 of EN 12167:2016

Dimensions: EN 12167:2016*

Tolerances on straightness of bar, for widths 10 mm and over

Tolerance class	Maximum deviation from straightness (mm)	
	Localized over any 400 mm length	Over whole length L of bar in metres (L ≥ 1m)
A	2,4	6,0 * L
B	1,6	4,0 * L
C	0,8	2,0 * L

* Values are referred from Table 19 of EN 12167:2016

Dimensions: EN 12167:2016*

Maximum twist of bar

Nominal width w (mm)	Maximum permitted twist V in any 1000 mm length of bar (See Figure 2 in EN 12167:2016)		
	Class A	Class B	Class C
3 ≤ w ≤ 18	2,0	1,5	1,0
18 < w ≤ 30	3,0	2,3	1,5
30 < w ≤ 50	4,0	3,0	2,0
50 < w ≤ 80	6,0	4,5	3,0
80 < w ≤ 120	9,0	9,0	4,5

For bar of total length greater than 2000 mm, the permitted twist over the total length shall be twice the appropriate maximum given in the table for "in any 1000 mm".

* Values are referred from Table 20 of EN 12167:2016

Dimensions: EN 12167:2016*
Corner radii of bar

Nominal thickness t (mm)	Radii of corners	
	Sharp max.	Rounded range
$3 \leq t \leq 6$	0,3	0,3 – 0,5
$6 < t \leq 10$	0,4	0,4 – 0,8
$10 < t \leq 18$	0,5	0,5 – 1,2
$18 < t \leq 30$	0,6	0,6 – 1,8
$30 < t \leq 40$	0,7	0,7 – 2,8
$40 < t \leq 60$	0,8	0,8 – 4,0

NOTE: A bar having rounded corners of radius greater than those covered by this table is considered to be a profile

* Values are referred from Table 21 of EN 12167:2016

Dimensions: EN 12164:2016*				
Dimensional tolerances for round, square and hexagonal rod and wire				
Nominal diameter / width across-flats d (mm)	Tolerances (mm)			
	Class A	Diameter of round rod Class B	Class A	Width across-flats of regular polygonal rod
2 < d ≤ 3	0 - 0,04	0 - 0,025	0 - 0,015	0 - 0,06
3 < d ≤ 6	0 - 0,05	0 - 0,030	0 - 0,020	0 - 0,08
6 < d ≤ 10	0 - 0,06	0 - 0,036	0 - 0,025	0 - 0,09
10 < d ≤ 18	0 - 0,07	0 - 0,043	-	0 - 0,11
18 < d ≤ 30	0 - 0,08	0 - 0,052	-	0 - 0,13
30 < d ≤ 50	0 - 0,16	-	-	0 - 0,16
50 < d ≤ 80 / 60	0 - 0,19	-	-	0 - 0,19

* Values are referred from Table 14/15 of EN 12164:2016

Dimensions: EN 12164:2016*		
Tolerances on straightness of rod		
Nominal diameter or width across-flats (mm)	Maximum deviation from straightness (mm)	
	Localized over any 400 mm length	Over whole length L of rod in metres (L ≥ 1m)
Round rod		
10 < d ≤ 50	0,8	2,0 * L
Polygonal rod		
10 < w ≤ 20	1,2	3,0 * L

* Values are referred from Table 16 of EN 12164:2016

Dimensions: EN 12164:2016*		
Tolerances on length of nominal length rod		
Nominal diameter or width across-flats (mm)	Preferred (available) lengths (mm)	Tolerance on length (mm)
2 < d ≤ 30	3000 or 4000	± 50
30 < d ≤ 50	3000 or 4000	± 100
50 < d ≤ 80	3000	± 100

* Values are referred from Table 17 of EN 12164:2016

Dimensions: EN 12164:2016*	
Maximum twist of square, hexagonal and octagonal rod	
Nominal width across-flats w (mm)	Maximum permitted twist V in any 1 m length of rod
10 < w ≤ 18	1,0
18 < w ≤ 30	2,0
30 < w ≤ 60	3,0

* Values are referred from Table 19 of EN 12164:2016

Dimensions: EN 12164:2016*	
Sampling rate	
Nominal diameter or width across-flats (mm)	Mass of inspection lot for one test sample (kg)
d ≤ 25	m ≤ 1000
25 < d	m ≤ 2000

* Values are referred from Table 20 of EN 12164:2016