

ASME B18.21.1

Type A plain washers - inch series (Table 11 profile)



Standard	ASME B18.21.1		
Product Type	Dimensional requirements, physical properties and related test methods for inch-series helical spring-lock, tooth-lock and plain washers.		
Material	Carbon Steel		
Surface Finish	Zinc Plated, Hot Dip Galvanized, Plain		
Size Range	#0 - 1-1/2 W	Thread	Unified inch UNC / UNF

BASIS OF SPECIFICATION

WHICH STANDARD GOVERNS WHAT

Dimensions to	ASME B18.21.1-2009 (R2016)
Carbon steel mechanical properties to	ASTM F844

DIMENSIONAL DATA - SIZES WE SUPPLY

ALL DIMENSIONS PER THE STANDARD

Nominal Size	Washer Series	A Inner Diameter - in	A + Inner Diameter Plus Tolerance - in	A - Inner Diameter Minus Tolerance - in	B Outer Diameter - in	B + Outer Diameter Plus Tolerance - in	B - Outer Diameter Minus Tolerance - in	C Washer Thickness - in	C (max) Thickness - in	C (min) Thickness - in
1/4 N	N	0.281	0.015	0.005	0.625	0.015	0.005	0.065	0.08	0.051
1/4 W	W	0.312	0.015	0.005	0.734	0.015	0.007	0.065	0.08	0.051
5/16 N	N	0.344	0.015	0.005	0.688	0.015	0.007	0.065	0.08	0.051
5/16 W	W	0.375	0.015	0.005	0.875	0.03	0.007	0.083	0.104	0.064
3/8 N	N	0.406	0.015	0.005	0.812	0.015	0.007	0.065	0.08	0.051
3/8 W	W	0.438	0.015	0.005	1	0.03	0.007	0.083	0.104	0.064
7/16 N	N	0.469	0.015	0.005	0.922	0.015	0.007	0.065	0.08	0.051
7/16 W	W	0.5	0.015	0.005	1.25	0.03	0.007	0.083	0.104	0.064
1/2 N	N	0.531	0.015	0.005	1.062	0.03	0.007	0.095	0.121	0.074
1/2 W	W	0.562	0.015	0.005	1.375	0.03	0.007	0.109	0.132	0.086
5/8 N	N	0.656	0.03	0.007	1.312	0.03	0.007	0.095	0.121	0.074
5/8 W	W	0.688	0.03	0.007	1.75	0.03	0.007	0.134	0.16	0.108
3/4 N	N	0.812	0.03	0.007	1.469	0.03	0.007	0.134	0.16	0.108
3/4 W	W	0.812	0.03	0.007	2	0.03	0.007	0.148	0.177	0.122
7/8 N	N	0.938	0.03	0.007	1.75	0.03	0.007	0.134	0.16	0.108
7/8 W	W	0.938	0.03	0.007	2.25	0.03	0.007	0.165	0.192	0.136
1 N	N	1.062	0.03	0.007	2	0.03	0.007	0.134	0.16	0.108
1 W	W	1.062	0.03	0.007	2.5	0.03	0.007	0.165	0.192	0.136

FURTHER SIZES IN THIS STANDARD

ALL DIMENSIONS PER THE STANDARD

Not held in stock. Available to order; minimum order quantity applies.

Nominal Size	Washer Series	A Inner Diameter - in	A + Inner Diameter Plus Tolerance - in	A - Inner Diameter Minus Tolerance - in	B Outer Diameter - in	B + Outer Diameter Plus Tolerance - in	B - Outer Diameter Minus Tolerance - in	C Washer Thickness - in	C (max) Thickness - in	C (min) Thickness - in
#0	Preferred	0.078	0	0.005	0.188	0	0.005	0.02	0.025	0.016
#2	Preferred	0.094	0	0.005	0.25	0	0.005	0.02	0.025	0.016
#4	Preferred	0.125	0.008	0.005	0.312	0.008	0.005	0.032	0.04	0.025
#6	Preferred	0.156	0.008	0.005	0.375	0.015	0.005	0.049	0.065	0.036
#8	Preferred	0.188	0.008	0.005	0.438	0.015	0.005	0.049	0.065	0.036
#10	Preferred	0.219	0.008	0.005	0.5	0.015	0.005	0.049	0.065	0.036
#12	Preferred	0.25	0.015	0.005	0.562	0.015	0.005	0.065	0.08	0.051
9/16 N	N	0.594	0.015	0.005	1.156	0.03	0.007	0.095	0.121	0.074
9/16 W	W	0.625	0.015	0.005	1.469	0.03	0.007	0.109	0.132	0.086
1-1/8 N	N	1.25	0.03	0.007	2.25	0.03	0.007	0.134	0.16	0.108
1-1/8 W	W	1.25	0.03	0.007	2.75	0.03	0.007	0.165	0.192	0.136
1-1/4 N	N	1.375	0.03	0.007	2.5	0.03	0.007	0.165	0.192	0.136
1-1/4 W	W	1.375	0.03	0.007	3	0.03	0.007	0.165	0.192	0.136
1-3/8 N	N	1.5	0.03	0.007	2.75	0.03	0.007	0.165	0.192	0.136
1-3/8 W	W	1.5	0.045	0.01	3.25	0.045	0.01	0.18	0.213	0.153
1-1/2 N	N	1.625	0.03	0.007	3	0.03	0.007	0.165	0.192	0.136
1-1/2 W	W	1.625	0.045	0.01	3.5	0.045	0.01	0.18	0.213	0.153

TECHNICAL SPECIFICATIONS

Surface Finish	Zinc Plated, Hot Dip Galvanized, Plain
----------------	---

MARKING
Steel — No marking clause

What None. The Standard fixes material and hardness (Clauses 2.3, 3.4) and leaves plain washer material to the purchaser (4.3.1); it carries no marking clause. Hardened plain washers are the one exception - 4.3.2 sends them to ASTM F 436, and any marking obligation comes from there.

Sizes

Clause ASME B18.21.1-2009, Clauses 2.3, 3.4, 4.3 - read page by page, no marking clause

Stainless steel — No marking clause

What None. The Standard fixes material and hardness (Clauses 2.3, 3.4) and leaves plain washer material to the purchaser (4.3.1); it carries no marking clause. Hardened plain washers are the one exception - 4.3.2 sends them to ASTM F 436, and any marking obligation comes from there.

Sizes

Clause ASME B18.21.1-2009, Clauses 2.3, 3.4, 4.3 - read page by page, no marking clause

ASME B18.21.1-2009 sets no marking symbol for washers. Clauses 2.3 and 3.4 fix material and hardness only, and Clause 4.3 leaves plain washer material to the purchaser.

Clause 4.3.1 goes further and states that material or lot traceability is not required for unhardened steel washers identified as low carbon steel, which are often manufactured from scrap materials. A certificate for those washers therefore cannot claim heat or lot traceability.

Hardened plain washers are the exception: Clause 4.3.2 requires them to conform to ASTM F 436, and any marking obligation comes from that specification.

Nominal washer sizes are intended for use with comparable screw or nut sizes; the designation may follow the stated sequence or the code system in ASME B18.24.

Confirm the ordered property class before production.

INSPECTION DOCUMENTS WE CAN ISSUE

EN 10204 3.1 material certificate	Can be included when agreed in the order.
Dimensional inspection report	Can be provided for the agreed inspection scope.
Certificate of conformity	Can be issued against the confirmed order requirements.
Mechanical test report	Available when the required tests are agreed before production.
Chemical analysis report	Available when the material verification scope is agreed.
Coating inspection report	Can record the coating checks agreed for the order.

REFERENCES & NOTES

Note: Dimensional values follow the selected execution standard. Material properties and batch test results are included only when declared or supported by the applicable certificate or test report.

taurusfix.com