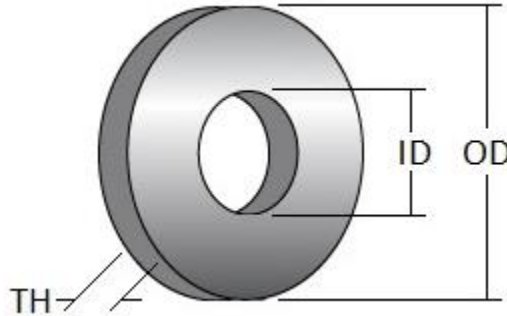


### Flat Washer, Thru-Hardened High Strength, USS, Type A, Yellow Zinc

This product standard contains the required dimensional, mechanical, performance, and chemical characteristics of the products shown in this purchase order (as applicable to the product). Unless specified below, current revisions of national or international standards shall be applicable as of the date of Fastenal's purchase order and must be adhered to in their entirety. If the order received does not meet these requirements, corrective action may be issued which could jeopardize your status as an approved supplier to Fastenal.



USS Flat Washers								
Size	ID			OD			TH	
	Inside Diameter			Outside Diameter			Thickness	
	Basic	Tolerance		Basic	Tolerance		Max.	Min.
		Plus	Minus		Plus	Minus		
3/16	.250	.015	.005	.562	.015	.005	.065	.036
1/4	.312	.015	.005	.734	.015	.007	.080	.051
5/16	.375	.015	.005	.875	.030	.007	.104	.064
3/8	.438	.015	.005	1.000	.030	.007	.104	.064
7/16	.500	.015	.005	1.250	.030	.007	.104	.064
1/2	.562	.015	.005	1.375	.030	.007	.132	.086
9/16	.625	.015	.005	1.469	.030	.007	.132	.086
5/8	.688	.030	.007	1.750	.030	.007	.160	.108
3/4	.812	.030	.007	2.000	.030	.007	.177	.122
7/8	.938	.030	.007	2.250	.030	.007	.192	.136
1	1.062	.030	.007	2.500	.030	.007	.192	.136
1-1/8	1.250	.030	.007	2.750	.030	.007	.192	.136
1-1/4	1.375	.030	.007	3.000	.030	.007	.192	.136
1-3/8	1.500	.045	.010	3.250	.045	.010	.213	.153
1-1/2	1.625	.045	.010	3.500	.045	.010	.213	.153
1-5/8	1.750	.045	.010	3.750	.045	.010	.213	.153
1-3/4	1.875	.045	.010	4.000	.045	.010	.213	.153
1-7/8	2.000	.045	.010	4.250	.045	.010	.213	.153
2	2.125	.045	.010	4.500	.045	.010	.213	.153
2-1/4	2.375	.045	.010	4.750	.045	.010	.248	.193
2-1/2	2.625	.045	.010	5.000	.045	.010	.280	.210
2-3/4	2.875	.065	.010	5.250	.065	.010	.310	.228
3	3.125	.065	.010	5.500	.065	.010	.327	.249

**RECORD OF REVISION CHANGES TO THIS DOCUMENT ARE LOCATED ON THE LAST PAGE**

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Date: October 29, 2019	<b><i>FASTENAL</i></b>	FW.HRD.USS.A.YZ

**Specification Requirements:**

- Dimensions: ASME B18.21.1, Type A, Wide Plain Washers
- Material: ASTM F436/F436M
- Core Hardness: HRC 38 to 45
- Product Marking: Stamped to indicate manufacturer's ID
- Finish: Fe/Zn 5C per ASTM F1941/F1941M
- Hydrogen Embrittlement: Baking to relieve internal hydrogen embrittlement is mandatory and shall be performed after electroplating prior to the application of conversion finish where baking temperatures can damage the conversion film. Baking may be allowed after conversion finish provided temperature does not alter performance. Part temperature shall reach 375°F to 400°F (190°C to 204°C) for a minimum of 4 hours, as soon as practical after plating.
  
- Hydrogen Embrittlement Test Method: Fastenal QA7T-92 Test for Embrittlement of Metallic Coated Flat Washers.
  
- Material Test Reports: The MTR must have documented lot traceability, dimensional results, full chemical test results, full mechanical test results and hydrogen embrittlement test results to the specification(s) above. In addition, the MTR shall be in full compliance with Fastenal's MTR Requirements

**Revision Level Changes to this Document**

Document Name	Revision Level	Revision Date	Rationale for Revision
FW.HRD.USS.A.YZ	00	10/17/2018	Revised title and industry specifications.
FW.HRD.USS.A.YZ	01	10/29/2019	Added HE testing method.

The rationale above may not include all of the changes within each revision. A complete review of the Fastenal Product Standard is required.