

1. SCOPE

The washers described in this standard are for general industrial applications.

2. CONTENTS

- TABLE 1: General Dimensions Flat Washers (ANSI Type A)
- TABLE 2: General Dimensions Additional Selected Washer Sizes (ANSI Type A)
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- TABLE 4: ANSI Standard Flat Washers
- TABLE 5: Non-ANSI Standard Flat Washers
- TABLE 6: Rivet Washers

3. GENERAL

Carbon steel flat washers in this standard shall meet the requirements of ANSI B18.22.1 for material and general requirements unless otherwise specified. The washers listed in TABLE 5 are non-standard sizes used only for special applications. These washers shall be used only when standard washers do not satisfy design requirements.

4. RELATED DOCUMENTS

4.1 RELATED STANDARDS

- STPA020—Fastener Finishes and Material Specifications
- MAT0310—Zinc Plating
- ANSI B18.22.1—Plain Washers
- ASTM A568—Standard Specification for Steel, Sheet, Carbon, and High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, General Requirements for

4.2 REPLACED DOCUMENTS

- Case F-001—Flat Washers (General Specifications)
- Case F-002—Flat Washers – Type A – Preferred
- Case F-003—Flat Washers – Type A and B – Non Preferred
- Case F-004—Flat Washers – Non Designated – Non Preferred
- FNHA 1-B-510—Washer Zn Cr Plated
- FNHA 1-B-520—Washer Plain
- FNHA 1-B-530—SAE Washer Zn Cr Plated
- FNHA 1-B-540— SAE Washer, Plain

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5. REQUIREMENTS

5.1 MATERIAL

Carbon steel flat washers shall be punched from hot-rolled, hot rolled and pickled, cold-rolled steel, or shall be machined from bar stock or tubing; or may be forged at manufacturer's option.

Washer material shall conform to any of the following material specifications:

- MAT1010 except 0.23 max carbon permissible
- MAT1011 except 0.23 max carbon permissible
- MAT1015
- MAT1020 Grade A or B
- MAT1025 Grade A or B

Where MAT. SST is specified, it is Material Stainless Steel

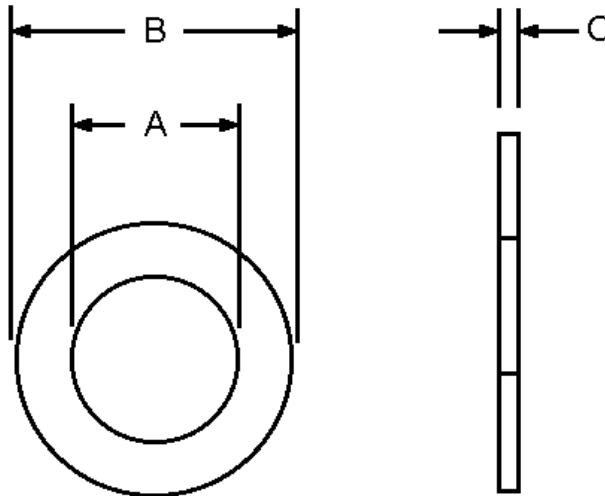
5.2 FINISH

Flat washers shall be supplied in accordance with that designated by the part number and the CNH Fastener Finish Specification: STPA020.

6.0 CROSS REFERENCE

For cross reference listing of company part numbers, go to [PARTsolutions](#).

TABLE 1: General Dimensions Flat Washers (ANSI Type A)



Nominal Bolt Size	Series	Inside Diameter A			Outside Diameter B			Thickness C		
		Nominal	Tolerance		Nominal	Tolerance		Nominal	Max	Min
			Plus	Minus		Plus	Minus			
-	-	0.078	0.000	0.005	0.188	0.000	0.005	0.020	0.025	0.016
-	-	0.094	0.000	0.005	0.250	0.000	0.005	0.020	0.025	0.016
-	-	0.125	0.008	0.005	0.312	0.008	0.005	0.032	0.040	0.025
0.138		0.156	0.008	0.005	0.375	0.015	0.005	0.049	0.065	0.036
0.164		0.188	0.008	0.005	0.438	0.015	0.005	0.049	0.065	0.036
0.190		0.219	0.008	0.005	0.500	0.015	0.005	0.049	0.065	0.036
0.188		0.250	0.015	0.005	0.562	0.015	0.005	0.049	0.065	0.036
0.216		0.250	0.015	0.005	0.562	0.015	0.005	0.065	0.080	0.051
0.250	Narrow	0.281	0.015	0.005	0.625	0.015	0.005	0.065	0.080	0.051
0.250	Wide	0.312	0.015	0.005	0.734	0.015	0.007	0.065	0.080	0.051
0.312	Narrow	0.344	0.015	0.005	0.688	0.015	0.007	0.065	0.080	0.051
0.312	Wide	0.375	0.015	0.005	0.875	0.030	0.007	0.083	0.104	0.064
0.375	Narrow	0.406	0.015	0.005	0.812	0.015	0.007	0.065	0.080	0.051
0.375	Wide	0.438	0.015	0.005	1.000	0.030	0.007	0.083	0.104	0.064
0.438	Narrow	0.469	0.015	0.005	0.922	0.015	0.007	0.065	0.080	0.051
0.438	Wide	0.500	0.015	0.005	1.250	0.030	0.007	0.083	0.104	0.064
0.500	Narrow	0.531	0.015	0.005	1.062	0.030	0.007	0.095	0.121	0.074
0.500	Wide	0.562	0.015	0.005	1.375	0.030	0.007	0.109	0.132	0.086
0.562	Narrow	0.594	0.015	0.005	1.156	0.030	0.007	0.095	0.121	0.074
0.562	Wide	0.625	0.015	0.005	1.469	0.030	0.007	0.109	0.132	0.086
0.625	Narrow	0.656	0.030	0.007	1.312	0.030	0.007	0.095	0.121	0.074
0.625	Wide	0.688	0.030	0.007	1.750	0.030	0.007	0.134	0.160	0.108
0.750	Narrow	0.812	0.030	0.007	1.469	0.030	0.007	0.134	0.160	0.108
0.750	Wide	0.812	0.030	0.007	2.000	0.030	0.007	0.148	0.177	0.122



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TABLE 1: General Dimensions Flat Washers (ANSI Type A) (Continued)

Nominal Bolt Size	Series	Inside Diameter A			Outside Diameter B			Thickness C		
		Nominal	Tolerance		Nominal	Tolerance		Nominal	Max	Min
			Plus	Minus		Plus	Minus			
0.875	Narrow	0.938	0.030	0.007	1.750	0.030	0.007	0.134	0.160	0.108
0.875	Wide	0.938	0.030	0.007	2.250	0.030	0.007	0.165	0.192	0.136
1.000	Narrow	1.062	0.030	0.007	2.000	0.030	0.007	0.134	0.160	0.108
1.000	Wide	1.062	0.030	0.007	2.500	0.030	0.007	0.165	0.192	0.136
1.125	Narrow	1.250	0.030	0.007	2.250	0.030	0.007	0.134	0.160	0.108
1.125	Wide	1.250	0.030	0.007	2.750	0.030	0.007	0.165	0.192	0.136
1.250	Narrow	1.375	0.030	0.007	2.500	0.030	0.007	0.165	0.192	0.136
1.250	Wide	1.375	0.030	0.007	3.000	0.030	0.007	0.165	0.192	0.136
1.375	Narrow	1.500	0.030	0.007	2.750	0.030	0.007	0.165	0.192	0.136
1.375	Wide	1.500	0.045	0.010	3.250	0.045	0.010	0.180	0.213	0.153
1.500	Narrow	1.625	0.030	0.007	3.000	0.030	0.007	0.165	0.192	0.136
1.500	Wide	1.625	0.045	0.010	3.500	0.045	0.010	0.180	0.213	0.153
1.625		1.750	0.045	0.010	3.750	0.045	0.010	0.180	0.213	0.153
1.750		1.875	0.045	0.010	4.000	0.045	0.010	0.180	0.213	0.153
1.750		2.000	0.045	0.010	4.250	0.045	0.010	0.180	0.213	0.153
2.000		2.125	0.045	0.010	4.500	0.045	0.010	0.180	0.213	0.153
2.250		2.375	0.045	0.010	4.750	0.045	0.010	0.220	0.248	0.193
2.500		2.625	0.045	0.010	5.000	0.045	0.010	0.238	0.280	0.210
2.750		2.875	0.065	0.010	5.250	0.065	0.010	0.259	0.310	0.228
3.000		3.125	0.065	0.010	5.500	0.065	0.010	0.284	0.327	0.249



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TABLE 2: General Dimensions Additional Selected Washer Sizes (ANSI Type A)

Inside Diameter A			Outside Diameter B			Thickness C		
Nominal	Tolerance		Nominal	Tolerance		Nominal	Max	Min
	Plus	Minus		Plus	Minus			
0.094	0.000	0.005	0.219	0.000	0.005	0.020	0.025	0.016
0.125	0.000	0.005	0.250	0.000	0.005	0.022	0.028	0.017
0.156	0.008	0.005	0.312	0.008	0.005	0.035	0.048	0.027
0.172	0.008	0.005	0.406	0.015	0.005	0.049	0.065	0.036
0.188	0.008	0.005	0.375	0.015	0.005	0.049	0.065	0.036
0.203	0.008	0.005	0.469	0.015	0.005	0.049	0.065	0.036
0.219	0.008	0.005	0.438	0.015	0.005	0.049	0.065	0.036
0.234	0.008	0.005	0.531	0.015	0.005	0.049	0.065	0.036
0.250	0.015	0.005	0.500	0.015	0.005	0.049	0.065	0.036
0.266	0.015	0.005	0.625	0.015	0.005	0.049	0.065	0.036
0.312	0.015	0.005	0.875	0.015	0.007	0.065	0.080	0.051
0.375	0.015	0.005	0.734	0.015	0.007	0.065	0.080	0.051
0.375	0.015	0.005	1.125	0.015	0.007	0.065	0.080	0.051
0.438	0.015	0.005	0.875	0.030	0.007	0.083	0.104	0.064
0.438	0.015	0.005	1.375	0.030	0.007	0.083	0.104	0.064
0.500	0.015	0.005	1.125	0.030	0.007	0.083	0.104	0.064
0.500	0.015	0.005	1.625	0.030	0.007	0.083	0.104	0.064
0.562	0.015	0.005	1.250	0.030	0.007	0.109	0.132	0.086
0.562	0.015	0.005	1.875	0.030	0.007	0.109	0.132	0.086
0.625	0.015	0.005	1.375	0.030	0.007	0.109	0.132	0.086
0.625	0.015	0.005	2.125	0.030	0.007	0.134	0.160	0.108
0.688	0.030	0.007	1.469	0.030	0.007	0.134	0.160	0.108
0.688	0.030	0.007	2.375	0.030	0.007	0.165	0.192	0.136
0.812	0.030	0.007	1.750	0.030	0.007	0.148	0.177	0.122
0.812	0.030	0.007	2.875	0.030	0.007	0.165	0.192	0.136
0.938	0.030	0.007	2.000	0.030	0.007	0.165	0.192	0.136
0.938	0.030	0.007	3.375	0.045	0.010	0.180	0.213	0.153
1.062	0.030	0.007	2.250	0.030	0.007	0.165	0.192	0.136
1.062	0.045	0.010	3.875	0.045	0.010	0.238	0.280	0.210
1.250	0.030	0.007	2.500	0.030	0.007	0.165	0.192	0.136
1.375	0.030	0.007	2.750	0.030	0.007	0.165	0.192	0.136
1.500	0.045	0.010	3.000	0.045	0.010	0.180	0.213	0.153
1.625	0.045	0.010	3.250	0.045	0.010	0.180	0.213	0.153
1.688	0.045	0.010	3.500	0.045	0.010	0.180	0.213	0.153
1.812	0.045	0.010	3.750	0.045	0.010	0.180	0.213	0.153
1.938	0.045	0.010	4.000	0.045	0.010	0.180	0.213	0.153
2.062	0.045	0.010	4.250	0.045	0.010	0.180	0.213	0.153



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TABLE 3: General Dimensions Flat Washers (ANSI Type B)

Nominal Bolt Size	Series	Inside Diameter A			Outside Diameter B			Thickness C		
		Nominal	Tolerance		Nominal	Tolerance		Nominal	Max	Min
			Plus	Minus		Plus	Minus			
#0 (0.060)	Narrow	0.068	0.000	0.005	0.125	0.000	0.005	0.025	0.028	0.022
	Regular	0.068	0.000	0.005	0.188	0.000	0.005	0.025	0.028	0.022
	Wide	0.068	0.000	0.005	0.250	0.000	0.005	0.025	0.028	0.022
#1 (0.073)	Narrow	0.084	0.000	0.005	0.156	0.000	0.005	0.025	0.028	0.022
	Regular	0.084	0.000	0.005	0.219	0.000	0.005	0.025	0.028	0.022
	Wide	0.084	0.000	0.005	0.281	0.000	0.005	0.032	0.036	0.028
#2 (0.086)	Narrow	0.094	0.000	0.005	0.188	0.000	0.005	0.025	0.028	0.022
	Regular	0.094	0.000	0.005	0.250	0.000	0.005	0.032	0.036	0.028
	Wide	0.094	0.000	0.005	0.344	0.000	0.005	0.032	0.036	0.028
#3 (0.099)	Narrow	0.109	0.000	0.005	0.219	0.000	0.005	0.025	0.028	0.022
	Regular	0.109	0.000	0.005	0.312	0.000	0.005	0.032	0.036	0.028
	Wide	0.109	0.008	0.005	0.406	0.008	0.005	0.040	0.045	0.036
#4 (0.112)	Narrow	0.125	0.000	0.005	0.250	0.000	0.005	0.032	0.036	0.028
	Regular	0.125	0.008	0.005	0.375	0.008	0.005	0.040	0.045	0.036
	Wide	0.125	0.008	0.005	0.438	0.008	0.005	0.040	0.045	0.036
#5 (0.125)	Narrow	0.141	0.000	0.005	0.281	0.000	0.005	0.032	0.036	0.028
	Regular	0.141	0.008	0.005	0.406	0.008	0.005	0.040	0.045	0.036
	Wide	0.141	0.008	0.005	0.500	0.008	0.005	0.040	0.045	0.036
#6 (0.138)	Narrow	0.156	0.000	0.005	0.312	0.000	0.005	0.032	0.036	0.028
	Regular	0.156	0.008	0.005	0.438	0.008	0.005	0.040	0.045	0.036
	Wide	0.156	0.008	0.005	0.562	0.008	0.005	0.040	0.045	0.036
#8 (0.164)	Narrow	0.188	0.008	0.005	0.375	0.008	0.005	0.040	0.045	0.036
	Regular	0.188	0.008	0.005	0.500	0.008	0.005	0.040	0.045	0.036
	Wide	0.188	0.008	0.005	0.625	0.015	0.005	0.063	0.071	0.056
#10 (0.190)	Narrow	0.203	0.008	0.005	0.406	0.008	0.005	0.040	0.045	0.036
	Regular	0.203	0.008	0.005	0.562	0.008	0.005	0.040	0.045	0.036
	Wide	0.203	0.008	0.005	0.734	0.015	0.007	0.063	0.071	0.056
#12 (0.216)	Narrow	0.234	0.008	0.005	0.438	0.008	0.005	0.040	0.045	0.036
	Regular	0.234	0.008	0.005	0.625	0.015	0.005	0.063	0.071	0.056
	Wide	0.234	0.008	0.005	0.875	0.015	0.007	0.063	0.071	0.056
1/4 (0.250)	Narrow	0.281	0.015	0.005	0.500	0.015	0.005	0.063	0.071	0.056
	Regular	0.281	0.015	0.005	0.734	0.015	0.007	0.063	0.071	0.056
	Wide	0.281	0.015	0.005	1.000	0.015	0.007	0.063	0.071	0.056
5/16 (0.312)	Narrow	0.344	0.015	0.005	0.625	0.015	0.005	0.063	0.071	0.056
	Regular	0.344	0.015	0.005	0.875	0.015	0.007	0.063	0.071	0.056
	Wide	0.344	0.015	0.005	1.125	0.015	0.007	0.063	0.071	0.056

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TABLE 3: General Dimensions Flat Washers (ANSI Type B) (Continued)

Nominal Bolt Size	Series	Inside Diameter A			Outside Diameter B			Thickness C		
		Nominal	Tolerance		Nominal	Tolerance		Nominal	Max	Min
			Plus	Minus		Plus	Minus			
3/8 (0.375)	Narrow	0.406	0.015	0.005	0.734	0.015	0.007	0.063	0.071	0.056
	Regular	0.406	0.015	0.005	1.000	0.015	0.007	0.063	0.071	0.056
	Wide	0.406	0.015	0.005	1.250	0.030	0.007	0.100	0.112	0.090
7/16 (0.4375)	Narrow	0.469	0.015	0.005	0.875	0.015	0.007	0.063	0.071	0.056
	Regular	0.469	0.015	0.005	1.125	0.015	0.007	0.063	0.071	0.056
	Wide	0.469	0.015	0.005	1.469	0.030	0.007	0.100	0.112	0.090
1/2 (0.500)	Narrow	0.531	0.015	0.005	1.000	0.015	0.007	0.063	0.071	0.056
	Regular	0.531	0.015	0.005	1.250	0.030	0.007	0.100	0.112	0.090
	Wide	0.531	0.015	0.005	1.750	0.030	0.007	0.100	0.112	0.090
9/16 (0.562)	Narrow	0.594	0.015	0.005	1.125	0.015	0.007	0.063	0.071	0.056
	Regular	0.594	0.015	0.005	1.469	0.030	0.007	0.100	0.112	0.090
	Wide	0.594	0.015	0.005	2.000	0.030	0.007	0.100	0.112	0.090
5/8 (0.625)	Narrow	0.656	0.030	0.007	1.250	0.030	0.007	0.100	0.112	0.090
	Regular	0.656	0.030	0.007	1.750	0.030	0.007	0.100	0.112	0.090
	Wide	0.656	0.030	0.007	2.250	0.030	0.007	0.160	0.174	0.146
3/4 (0.750)	Narrow	0.812	0.030	0.007	1.375	0.030	0.007	0.100	0.112	0.090
	Regular	0.812	0.030	0.007	2.000	0.030	0.007	0.100	0.112	0.090
	Wide	0.812	0.030	0.007	2.500	0.030	0.007	0.160	0.174	0.146
7/8 (0.875)	Narrow	0.938	0.030	0.007	1.469	0.030	0.007	0.100	0.112	0.090
	Regular	0.938	0.030	0.007	2.250	0.030	0.007	0.160	0.174	0.146
	Wide	0.938	0.030	0.007	2.750	0.030	0.007	0.160	0.174	0.146
1 (1.000)	Narrow	1.062	0.030	0.007	1.750	0.030	0.007	0.100	0.112	0.090
	Regular	1.062	0.030	0.007	2.500	0.030	0.007	0.160	0.174	0.146
	Wide	1.062	0.030	0.007	3.000	0.030	0.007	0.160	0.174	0.146
1-1/8 (1.125)	Narrow	1.188	0.030	0.007	2.000	0.030	0.007	0.100	0.112	0.090
	Regular	1.188	0.030	0.007	2.750	0.030	0.007	0.160	0.174	0.146
	Wide	1.188	0.030	0.007	3.250	0.030	0.007	0.160	0.174	0.146
1-1/4 (1.250)	Narrow	1.312	0.030	0.007	2.250	0.030	0.007	0.160	0.174	0.146
	Regular	1.312	0.030	0.007	3.000	0.030	0.007	0.160	0.174	0.146
	Wide	1.312	0.030	0.010	3.500	0.045	0.010	0.250	0.266	0.234
1-3/8 (1.375)	Narrow	1.438	0.030	0.007	2.500	0.030	0.007	0.160	0.174	0.146
	Regular	1.438	0.030	0.007	3.250	0.030	0.007	0.160	0.174	0.146
	Wide	1.438	0.045	0.010	3.750	0.045	0.010	0.250	0.266	0.234



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TABLE 3: General Dimensions Flat Washers (ANSI Type B) (Continued)

Nominal Bolt Size	Series	Inside Diameter A			Outside Diameter B			Thickness C		
		Nominal	Tolerance		Nominal	Tolerance		Nominal	Max	Min
			Plus	Minus		Plus	Minus			
1-1/2 (1.500)	Narrow	1.562	0.030	0.007	2.750	0.030	0.007	0.160	0.174	0.146
	Regular	1.562	0.045	0.010	3.500	0.045	0.010	0.250	0.266	0.234
	Wide	1.562	0.045	0.010	4.000	0.045	0.010	0.250	0.266	0.234
1-5/8 (1.625)	Narrow	1.750	0.030	0.007	3.000	0.030	0.007	0.160	0.174	0.146
	Regular	1.750	0.045	0.010	3.750	0.045	0.010	0.250	0.266	0.234
	Wide	1.750	0.045	0.010	4.250	0.045	0.010	0.250	0.266	0.234
1-3/4 (1.750)	Narrow	1.875	0.030	0.007	3.250	0.030	0.007	0.160	0.174	0.146
	Regular	1.875	0.045	0.010	4.000	0.045	0.010	0.250	0.266	0.234
	Wide	1.875	0.045	0.010	4.500	0.045	0.010	0.250	0.266	0.234
1-7/8 (1.875)	Narrow	2.000	0.045	0.010	3.500	0.045	0.010	0.250	0.266	0.234
	Regular	2.000	0.045	0.010	4.250	0.045	0.010	0.250	0.266	0.234
	Wide	2.000	0.045	0.010	4.750	0.045	0.010	0.250	0.266	0.234
2 (2.000)	Narrow	2.125	0.045	0.010	3.750	0.045	0.010	0.250	0.266	0.234
	Regular	2.125	0.045	0.010	4.500	0.045	0.010	0.250	0.266	0.234
	Wide	2.125	0.045	0.010	5.000	0.045	0.010	0.250	0.266	0.234
2-1/4 (2.250)	Narrow	2.375	0.045	0.010	4.000	0.045	0.010	0.250	0.266	0.234
	Regular	2.375	0.045	0.010	5.000	0.045	0.010	0.250	0.266	0.234
	Wide	2.375	0.065	0.010	5.500	0.065	0.010	0.375	0.393	0.357
2-1/2 (2.500)	Narrow	2.625	0.045	0.010	4.500	0.045	0.010	0.250	0.266	0.234
	Regular	2.625	0.065	0.010	5.500	0.065	0.010	0.375	0.393	0.357
	Wide	2.625	0.065	0.010	6.000	0.065	0.010	0.375	0.393	0.357
2-3/4 (2.750)	Narrow	2.875	0.045	0.010	5.000	0.045	0.010	0.250	0.266	0.234
	Regular	2.875	0.065	0.010	6.000	0.065	0.010	0.375	0.393	0.357
	Wide	2.875	0.065	0.010	6.500	0.065	0.010	0.375	0.393	0.357
3 (3.000)	Narrow	3.125	0.065	0.010	5.500	0.065	0.010	0.375	0.393	0.357
	Regular	3.125	0.065	0.010	6.500	0.065	0.010	0.375	.393	0.357
	Wide	3.125	0.065	0.010	7.000	0.065	0.010	0.375	.393	0.357



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TABLE 4: ANSI Standard Flat Washers

Washer Size	ID	OD	Thickness	Material / Finish	Part Number
#4 (0.112)	0.125	0.312	0.032	ZND	218322
#6 (0.138)	0.156	0.375	0.049	DOR	87529123
#6 (0.138)	0.156	0.375	0.049	PLN	80665
#6 (0.138)	0.156	0.375	0.049	ZND	86511189
#8 (0.164)	0.188	0.375	0.049	DOR	87529125
#8 (0.164)	0.188	0.438	0.049	ZND	280299
#10 (0.19)	0.203	0.469	0.049	ZND	86624136
#10 (0.19)	0.219	0.438	0.049	PTF	87613177
#10 (0.19)	0.219	0.438	0.049	ZND	87613179
#10 (0.19)	0.219	0.5	0.049	PHC	118676
#10 (0.19)	0.219	0.5	0.049	ZND	88612
#10 (0.19)	0.219	0.5	0.049	BZN	84183819
#12 (0.216)	0.25	0.562	0.049	PTF	86625236
3/16 (0.1875)	0.25	0.562	0.049	ZND	80707
#12 (0.216)	0.25	0.562	0.065	ZND	86511190
1/4 (0.25)	0.266	0.625	0.049	ZND	87016587
1/4 (0.25)	0.281	0.625	0.065	BKC	87613178
1/4 (0.25)	0.281	0.625	0.065	DAC	90331797
1/4 (0.25)	0.281	0.625	0.065	PHC	118773
1/4 (0.25)	0.281	0.625	0.065	PLN	84366
1/4 (0.25)	0.281	0.625	0.065	ZND	87361
1/4 (0.25)	0.281	0.625	0.065	SST	90389034
1/4 (0.25)	0.3125	0.734	0.065	PHC	118664
1/4 (0.25)	0.3125	0.734	0.065	PLN	80694
1/4 (0.25)	0.3125	0.734	0.065	ZND	80701
1/4 (0.25)	0.3125	0.734	0.065	SST	84481947
5/16 (0.3125)	0.344	0.688	0.065	PLN	87347
5/16 (0.3125)	0.344	0.688	0.065	ZND	83918746
5/16 (0.3125)	0.344	0.875	0.063	SST	90397985
5/16 (0.3125)	0.375	0.875	0.083	DAC	90331796
5/16 (0.3125)	0.375	0.875	0.083	PLN	80693
5/16 (0.3125)	0.375	0.875	0.083	ZND	80664
5/16 (0.3125)	0.375	1.125	0.065	PLN	86639333
5/16 (0.3125)	0.375	1.125	0.065	ZND	86625240
3/8 (0.375)	0.406	0.734	0.063	ZND	86632580
3/8 (0.375)	0.406	0.812	0.065	DAC	90331795
3/8 (0.375)	0.406	0.812	0.065	DOR	87310596
3/8 (0.375)	0.406	0.812	0.065	PLN	86512838
3/8 (0.375)	0.406	0.812	0.065	ZND	87016
3/8 (0.375)	0.406	1	0.063	ZND	87613182
3/8 (0.375)	0.406	1	0.063	SST	90397981
3/8 (0.375)	0.406	1.25	0.1	ZND	86625257

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TABLE 4: ANSI Standard Flat Washers (Continued)

Washer Size	ID	OD	Thickness	Material / Finish	Part Number
3/8 (0.375)	0.4375	1	0.083	DOR	87310597
3/8 (0.375)	0.4375	1	0.083	PHC	118666
3/8 (0.375)	0.4375	1	0.083	PLN	80692
3/8 (0.375)	0.4375	1	0.083	ZND	80702
3/8 (0.375)	0.4375	1.375	0.083	ZND	86625243
7/16 (0.4375)	0.469	0.922	0.065	PLN	87348
7/16 (0.4375)	0.469	0.922	0.065	ZND	87363
7/16 (0.4375)	0.5	1.25	0.083	DOR	87310599
7/16 (0.4375)	0.5	1.25	0.083	PLN	106264
7/16 (0.4375)	0.5	1.25	0.083	ZND	81541
7/16 (0.4375)	0.5	1.625	0.083	ZND	81872600
1/2 (0.5)	0.531	1	0.063	ZND	87613181
1/2 (0.5)	0.531	1.062	0.095	PLN	9706691
1/2 (0.5)	0.531	1.062	0.095	ZND	87364
1/2 (0.5)	0.531	1.125	0.18	PLN	47516524
1/2 (0.5)	0.531	1.25	0.1	SST	90397979
1/2 (0.5)	0.531	1.75	0.1	DOR	87529126
1/2 (0.5)	0.531	1.75	0.1	ZND	87613183
1/2 (0.5)	0.531	2	0.238	PLN	87029090
9/16 (0.5625)	0.594	1.156	0.095	ZND	86512836
9/16 (0.5625)	0.625	1.469	0.109	ZND	18606
5/8 (0.625)	0.656	1.250	0.10	ZND	84156169
5/8 (0.625)	0.656	1.312	0.095	PLN	87349
5/8 (0.625)	0.656	1.312	0.095	ZND	87365
5/8 (0.625)	0.656	2	0.238	ZND	86625247
5/8 (0.625)	0.688	1.75	0.134	PLN	80695
5/8 (0.625)	0.688	1.75	0.134	ZND	80299
5/8 (0.625)	0.688	1.75	0.134	BZN	47515146
3/4 (0.75)	0.8125	2	0.148	PLN	81543
3/4 (0.75)	0.8125	2	0.148	ZND	86511191
3/4 (0.75)	0.8125	3	0.238	ZND	86637951
7/8 (0.875)	0.938	1.75	0.134	ZND	87366
7/8 (0.875)	0.938	2.25	0.160	ZND	84156172
7/8 (0.875)	0.938	2.25	0.165	ZND	8779
1-1/8 (1.125)	1.188	2.75	0.160	304 SST	90397984
1-1/8 (1.125)	1.25	2.75	0.165	PLN	87352
1-1/8 (1.125)	1.25	2.75	0.165	ZND	87369
1-1/4 (1.25)	1.375	2.5	0.165	ZND	86512837
1-1/4 (1.25)	1.375	3	0.165	ZND	87370
1-3/8 (1.375)	1.5	3.25	0.18	PLN	87357
1-3/8 (1.375)	1.5	3.25	0.18	ZND	87375
1-1/2 (1.5)	1.625	3	0.165	PLN	84156970

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TABLE 4: ANSI Standard Flat Washers (Continued)

Washer Size	ID	OD	Thickness	Material / Finish	Part Number
1-1/2 (1.5)	1.625	3	0.165	ZND	7705445
1-1/2 (1.5)	1.625	3.5	0.18	ZND	87371
1-5/8 (1.625)	1.75	3.75	0.18	PLN	87358
1-5/8 (1.625)	1.75	3.75	0.18	ZND	87376



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TABLE 5: Non-ANSI Standard Flat Washers

Washer Size	ID	OD	Thickness			Finish	Part Number
			Nominal	Max	Min		
#10 (0.19)	0.203	0.437	0.04	0.045	0.036	MAT. SST	1032060
#10 (0.19)	0.203	0.50	0.06	0.067	0.054	MAT. SST	84576085
#10 (0.19)	0.203	0.75	0.06	0.067	0.054	POL	87307800
#10 (0.19)	0.203	0.75	0.06	0.067	0.054	ZND	86625235
#10 (0.19)	0.219	0.562	0.06	0.067	0.054	PLN	87613269
#10 (0.19)	0.219	0.75	0.06	0.067	0.054	ZND	87613206
3/16 (0.1875)	0.25	0.5625	0.049	0.065	0.036	PLN	80697
1/4 (0.25)	0.266	0.5	0.06	0.067	0.054	ZND	86624137
1/4 (0.25)	0.266	0.75	0.06	0.067	0.054	ZND	87613184
1/4 (0.25)	0.266	0.812	0.083	0.104	0.064	PTF	87613173
1/4 (0.25)	0.266	1.25	0.06	0.067	0.054	ZND	87613207
1/4 (0.25)	0.281	0.75	0.12	0.134	0.105	ZND	86624138
1/4 (0.25)	0.281	0.875	0.06	0.067	0.054	ZND	86624140
1/4 (0.25)	0.281	0.625	0.05	0.043	0.057	DOR	51693959
1/4 (0.25)	0.281	1	0.048	0.054	0.042	ZND	87613208
1/4 (0.25)	0.281	1	0.109	0.132	0.086	ZND	87317427
1/4 (0.25)	0.281	1	0.109	0.132	0.086	DAC	90499723
1/4 (0.25)	0.281	1.125	0.06	0.067	0.054	ZND	86624141
1/4 (0.25)	0.281	2	0.048	0.054	0.042	ZND	87012441
1/4 (0.25)	0.3125	2	0.06	0.067	0.054	ZND	87333879
1/4 (0.25)	0.328	0.5	0.164	0.179	0.15	ZND	87026610
1/4 (0.25)	0.33	0.88	0.12	0.134	0.105	ZND	83974432
#16 (0.268)	0.312	0.875	0.065	0.08	0.051	ZND	83916712
5/16 (0.3125)	0.344	0.75	0.06	0.067	0.054	ZND	87613209
5/16 (0.3125)	0.344	0.75	0.12	0.134	0.105	ZND	86624142
5/16 (0.3125)	0.344	1	0.06	0.067	0.054	ZND	86632582
5/16 (0.3125)	0.344	1	0.12	0.134	0.105	ZND	86624143
5/16 (0.3125)	0.344	1.06		0.064		ZND	9672285
5/16 (0.3125)	0.344	1.25	0.05	0.057	0.043	MAT. SST	51666167
5/16 (0.3125)	0.344	1.25	0.06	0.067	0.054	ZND	86979986
5/16 (0.3125)	0.344	1.25	0.12	0.134	0.105	DAC	90399028
5/16 (0.3125)	0.344	1.25	0.12	0.134	0.105	ZND	87013351
5/16 (0.3125)	0.344	1.5	0.06	0.067	0.054	DOR	87529132
5/16 (0.3125)	0.344	1.5	0.06	0.067	0.054	ZND	86625239
5/16 (0.3125)	0.344	1.5	0.12	0.134	0.105	ZND	87020812
5/16 (0.3125)	0.344	1.75	0.179	0.194	0.164	DOR	87529130
5/16 (0.3125)	0.375	0.75	0.054	0.06	0.048	ZND	446548
5/16 (0.3125)	0.375	0.75	0.06	0.067	0.054	PLN	106262
5/16 (0.3125)	0.391	0.625	0.065	0.080	0.051	DAC	90430257

Tolerance Note: I.D.: ± .005 up to and including .219 I.D.
 ± .010 over .219 I.D.
 O.D.: ± .010 all sizes



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TABLE 5: Non-ANSI Standard Flat Washers (Continued)

Washer Size	ID	OD	Thickness			Finish	Part Number
			Nominal	Max	Min		
21/64 (0.328)	0.328	0.59	0.062			ZND	21574
3/8 (0.375)	0.406	0.75	0.12	0.134	0.105	ZND	86624144
3/8 (0.375)	0.406	1	0.12	0.134	0.105	ZND	87613211
3/8 (0.375)	0.406	1	0.135	0.15	0.12	ZND	87613212
3/8 (0.375)	0.406	1	0.179	0.194	0.164	PLN	87613270
3/8 (0.375)	0.406	1	0.179	0.194	0.164	ZND	87613214
3/8 (0.375)	0.406	1	0.224	0.24	0.209	ZND	87613213
3/8 (0.375)	0.406	1.125	0.18	0.213	0.153	PLN	87613277
3/8 (0.375)	0.406	1.25	0.06	0.067	0.054	ZND	86900237
3/8 (0.375)	0.406	1.5	0.12	0.134	0.105	ZND	86637594
3/8 (0.375)	0.406	1.5	0.083			MAT. SST	90397982
3/8 (0.375)	0.406	1.75	0.12	0.134	0.105	ZND	86637950
3/8 (0.375)	0.406	2.5	0.15	0.158	0.142	ZND	87036420
3/8 (0.375)	0.4375	1.25	0.134	0.16	0.108	ZND	86625242
3/8 (0.375)	0.438	1.75	0.078			ZND	5271
7/16 (0.4375)	0.469	0.75	0.03	0.033	0.027	ZND	86624145
7/16 (0.4375)	0.469	0.75	0.065	0.080	0.051	ZND	84129698
7/16 (0.4375)	0.469	1	0.12	0.134	0.105	ZND	87613185
7/16 (0.4375)	0.469	1.25	0.06	0.067	0.054	ZND	84156176
7/16 (0.4375)	0.469	1.5	0.134	0.16	0.108	ZND	87613255
7/16 (0.4375)	0.469	1.75	0.12	0.134	0.105	ZND	87613186
7/16 (0.4375)	0.469	2	0.12	0.134	0.105	ZND	87020813
7/16 (0.4375)	0.5	1	0.06	0.067	0.054	ZND	5868
7/16 (0.4375)	0.516	0.875	0.049	0.065	0.036	PLN	86639334
1/2 (0.5)	0.531	0.75	0.06	0.067	0.054	ZND	87588864
1/2 (0.5)	0.531	0.75	0.12	0.134	0.105	ZND	87613187
1/2 (0.5)	0.531	1	0.03	0.033	0.027	DAC	90331794
1/2 (0.5)	0.531	1	0.03	0.033	0.027	ZND	87026182
1/2 (0.5)	0.531	1	0.085	0.10	0.07	ZND	83935082
1/2 (0.5)	0.531	1	0.12	0.134	0.105	ZND	86624146
1/2 (0.5)	0.531	1.125	0.06	0.067	0.054	ZND	86637949
1/2 (0.5)	0.531	1.25	0.03	0.033	0.027	ZND	87613188
1/2 (0.5)	0.531	1.25	0.06	0.067	0.054	ZND	87613189
1/2 (0.5)	0.531	1.25	0.12	0.134	0.105	PLN	87613279
1/2 (0.5)	0.531	1.25	0.12	0.134	0.105	ZND	87613260
1/2 (0.5)	0.531	1.25	0.179	0.194	0.164	ZND	87613190
1/2 (0.5)	0.531	1.3125	0.239	0.248	0.230	ZND	86541779
1/2 (0.5)	0.531	1.3125	0.239	0.248	0.230	PLN	618086

Tolerance Note:

I.D.: ± .005 up to and including .219 I.D.
 ± .010 over .219 I.D.
 O.D.: ± .010 all sizes

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TABLE 5: Non-ANSI Standard Flat Washers (Continued)

Washer Size	ID	OD	Thickness			Finish	Part Number
			Nominal	Max	Min		
1/2 (0.5)	0.531	1.5	0.12	0.134	0.105	ZND	86624147
1/2 (0.5)	0.531	1.5	0.179	0.194	0.164	ZND	86624148
1/2 (0.5)	0.531	1.75	0.12	0.134	0.105	ZND	86637667
1/2 (0.5)	0.531	2	0.06	0.067	0.054	ZND	86624150
1/2 (0.5)	0.531	2	0.12	0.134	0.105	ZND	87613264
1/2 (0.5)	0.531	2.25	0.179	0.194	0.164	DOR	87529127
1/2 (0.5)	0.531	2.25	0.18	0.213	0.153	ZND	87040707
1/2 (0.5)	0.531	2.5	0.12	0.134	0.105	ZND	86624151
1/2 (0.5)	0.531	2.5	0.12	0.134	0.105	PLN	84156973
1/2 (0.5)	0.532	1.25	0.03	0.033	0.027	DOR	87529128
1/2 (0.5)	0.5625	1.25	0.134	0.16	0.108	ZND	87613256
1/2 (0.5)	0.5625	1.375	0.109	0.132	0.086	DOR	87310600
1/2 (0.5)	0.5625	1.375	0.109	0.132	0.086	PLN	1765
1/2 (0.5)	0.5625	1.375	0.109	0.132	0.086	MAT. SST	92645495
1/2 (0.5)	0.5625	1.375	0.109	0.132	0.086	ZND	80700
1/2 (0.5)	0.5625	1.875	0.109	0.132	0.086	ZND	87613180
9/16 (0.5625)	0.5938	1.0938	0.60			PLN	84341751
9/16 (0.5625)	0.625	1.125	0.048	0.054	0.042	ZND	87325926
5/8 (0.625)	0.656	1	0.03	0.033	0.027	DAC	90331793
5/8 (0.625)	0.656	1	0.03	0.033	0.027	ZND	86624152
5/8 (0.625)	0.656	1	0.06	0.067	0.054	ZND	87613216
5/8 (0.625)	0.656	1	0.12	0.134	0.105	ZND	87613215
5/8 (0.625)	0.656	1.125	0.048	0.054	0.042	ZND	86624154
5/8 (0.625)	0.656	1.125	0.095			ZND	70927381
5/8 (0.625)	0.656	1.25	0.06	0.067	0.054	ZND	86624155
5/8 (0.625)	0.656	1.5	0.03	0.033	0.027	ZND	86625246
5/8 (0.625)	0.656	1.5	0.06	0.067	0.054	ZND	87613191
5/8 (0.625)	0.656	1.5	0.12	0.134	0.105	ZND	84156177
5/8 (0.625)	0.656	1.75	0.239	0.254	0.224	ZND	87613192
5/8 (0.625)	0.656	2	0.12	0.134	0.105	PLN	87613266
5/8 (0.625)	0.656	2	0.179	0.194	0.164	ZND	87613193
5/8 (0.625)	0.656	2.5	0.179	0.187	0.171	ZND	86637662
5/8 (0.625)	0.719	1.25	0.06	0.067	0.054	ZND	87613194
5/8 (0.625)	0.719	1.5	0.12	0.134	0.105	PLN	87613267
5/8 (0.625)	0.719	1.5	0.12	0.134	0.105	ZND	87613195
5/8 (0.625)	0.75	1.253	0.075	0.09	0.067	ZND	3443
5/8 (0.625)	0.75	1.25	0.1345	0.15	0.12	DOR	87698791
5/8 (0.625)	0.76	1.16	0.048	0.054	0.042	ZND	81819327

Tolerance Note:

- I.D.: ± .005 up to and including .219 I.D.
± .010 over .219 I.D.
- O.D.: ± .010 all sizes

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TABLE 5: Non-ANSI Standard Flat Washers (Continued)

Washer Size	ID	OD	Thickness			Finish	Part Number
			Nominal	Max	Min		
5/8 (0.625)	0.76	1.25	0.135	0.15	0.12	ZND	87325968
3/4 (0.75)	0.781	1.125	0.059	0.067	0.054	ZND	87657977
3/4 (0.75)	0.781	1.25	0.03	0.033	0.027	ZND	87613196
3/4 (0.75)	0.781	1.25	0.048	0.054	0.042	ZND	87326958
3/4 (0.75)	0.781	1.25	0.06	0.067	0.054	ZND	249100
3/4 (0.75)	0.781	1.25	0.075	0.09	0.067	DAC	90331792
3/4 (0.75)	0.781	1.25	0.075	0.09	0.067	DOR	87564720
3/4 (0.75)	0.781	1.25	0.075	0.09	0.067	ZND	87613197
3/4 (0.75)	0.781	1.25	0.12	0.134	0.105	ZND	87613198
3/4 (0.75)	0.781	1.25	0.135	0.15	0.12	PLN	84156971
3/4 (0.75)	0.781	1.5	0.06	0.067	0.054	ZND	86624157
3/4 (0.75)	0.781	1.5	0.030	0.033	0.027	ZND	84340204
3/4 (0.75)	0.781	1.5	0.12	0.134	0.105	DOR	87529129
3/4 (0.75)	0.781	1.5	0.12	0.134	0.105	ZND	87034831
3/4 (0.75)	0.781	1.75	0.179	0.187	0.171	ZND	84156178
3/4 (0.75)	0.781	2	0.12	0.134	0.105	PLN	87325942
3/4 (0.75)	0.781	2	0.12	0.134	0.105	ZND	86624158
3/4 (0.75)	0.781	2	0.179	0.194	0.164	ZND	86624159
3/4 (0.75)	0.781	2.5	0.188			ZND	87325443
3/4 (0.75)	0.8125	1.469	0.134	0.16	0.108	PLN	86512839
3/4 (0.75)	0.8125	1.469	0.134	0.16	0.108	ZND	87381
3/4 (0.75)	0.8125	1.5	0.067	0.074	0.06	ZND	86625249
3/4 (0.75)	0.8125	1.5	0.135	0.15	0.12	DOR	87528981
3/4 (0.75)	0.875	2.0	0.187	0.217	0.157	PLN	1666
3/4 (0.75)	0.891	1.25	0.036	0.042	0.033	PLN	86624164
7/8 (0.875)	0.906	1.25	0.06	0.067	0.054	ZND	86624165
7/8 (0.875)	0.906	1.5	0.06	0.067	0.054	ZND	86624166
7/8 (0.875)	0.906	1.5	0.12	0.134	0.105	ZND	87613199
7/8 (0.875)	0.906	1.75	0.12	0.134	0.105	PLN	87495299
7/8 (0.875)	0.906	1.75	0.12	0.134	0.105	ZND	84156179
7/8 (0.875)	0.906	1.75	0.238	0.28	0.21	ZND	87012439
1	1.016	1.5	0.075	0.09	0.067	DOR	87564722
1	1.016	1.5	0.075	0.09	0.067	ZND	87325444
1	1.016	1.5	0.12	0.134	0.105	DOR	87564721
1	1.016	1.75	0.033	0.036	0.03	CAD	86624167
1	1.016	1.75	0.033	0.036	0.03	ZND	92287511
1	1.016	1.81	0.12	0.134	0.105	PLN	82895139
1	1.031	1.25	0.06	0.067	0.054	ZND	87613200

Tolerance Note:

I.D.: ± .005 up to and including .219 I.D.

± .010 over .219 I.D.

O.D.: ± .010 all sizes

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TABLE 5: Non-ANSI Standard Flat Washers (Continued)

Washer Size	ID	OD	Thickness			Finish	Part Number
			Nominal	Max	Min		
1	1.031	1.5	0.03	0.033	0.027	ZND	86624168
1	1.031	1.5	0.06	0.067	0.054	DAC	90331785
1	1.031	1.5	0.06	0.067	0.054	ZND	86624169
1	1.031	1.75	0.12	0.134	0.105	ZND	86624172
1	1.031	1.5	0.12	0.134	0.105	DAC	90333624
1	1.031	1.5	0.12	0.134	0.105	PLN	87613268
1	1.031	1.5	0.12	0.134	0.105	ZND	86624170
1	1.031	1.75	0.03	0.033	0.027	ZND	87613201
1	1.031	1.75	0.06	0.067	0.054	ZND	86624171
1	1.031	1.75	0.06	0.067	0.054	DAC	91748296
1	1.031	2	0.06	0.067	0.054	ZND	87613202
1	1.031	2	0.134	0.16	0.108	DAC	90331781
1	1.031	2	0.134	0.16	0.108	DOR	87528986
1	1.031	2	0.179	0.194	0.164	ZND	86900677
1	1.031	2	0.238	0.28	0.21	PLN	87613278
1	1.031	3	0.239	0.254	0.224	ZND	84156180
1	1.0625	1.625	0.065	0.08	0.051	ZND	87602935
1	1.0625	1.75	0.065	0.08	0.051	PLN	87613271
1	1.0625	1.75	0.134	0.16	0.108	ZND	6669
1	1.0625	2	0.125	0.132	0.118	DOR	51693960
1	1.0625	2	0.134	0.16	0.108	DAC	90331780
1	1.0625	2	0.134	0.16	0.108	PLN	87351
1	1.0625	2	0.134	0.16	0.108	ZND	87367
1	1.0625	2.5	0.164	0.179	0.150	PLN	84156975
1	1.0625	2.5	0.165	0.192	0.136	DAC	90331779
1	1.0625	2.5	0.165	0.192	0.136	DOR	87529124
1	1.0625	2.5	0.165	0.192	0.136	ZND	87374
1	1.094	1.5	0.06	0.067	0.054	ZND	86624173
1	1.094	1.5	0.12	0.134	0.105	ZND	86624174
1-1/8 (1.125)	1.156	2	0.06	0.067	0.054	ZND	86624175
1-1/8 (1.125)	1.1875	1.75	0.065	0.08	0.051	ZND	87613233
1-1/8 (1.125)	1.25	1.875	0.075	0.09	0.067	ZND	87325445
1-1/8 (1.125)	1.25	1.875	0.134	0.16	0.108	ZND	1312
1-1/8 (1.125)	1.265	1.875	0.125	0.135	0.115	ZND	191822
1-1/8 (1.125)	1.266	1.75	0.03	0.033	0.027	ZND	87304341
1-1/8 (1.125)	1.266	1.875	0.048	0.054	0.042	ZND	87613254
1-1/4 (1.25)	1.281	1.75	0.06	0.067	0.054	ZND	87613234

Tolerance Note:

- I.D.: ± .005 up to and including .219 I.D.
- ± .010 over .219 I.D.
- O.D.: ± .010 all sizes



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TABLE 5: Non-ANSI Standard Flat Washers (Continued)

Washer Size	ID	OD	Thickness			Finish	Part Number
			Nominal	Max	Min		
1-1/4 (1.25)	1.281	2	0.06	0.067	0.054	ZND	87613235
1-1/4 (1.25)	1.281	2	0.12	0.134	0.105	ZND	86632583
1-1/4 (1.25)	1.281	2	0.224	0.240	0.209	ZND	84156186
1-1/4 (1.25)	1.281	2.5	0.12	0.134	0.105	ZND	87613236
1-1/4 (1.25)	1.281	2.5	0.25	0.266	0.234	PLN	87613280
1-1/4 (1.25)	1.281	2.5	0.03	0.033	0.027	ZND	84156184
1-1/4 (1.25)	1.281	3	0.25	0.266	0.234	ZND	87613261
1-1/4 (1.25)	1.312	2	0.065	0.08	0.051	PLN	87613272
1-1/4 (1.25)	1.312	2	0.109	0.132	0.086	DAC	90331778
1-1/4 (1.25)	1.312	2	0.109	0.132	0.086	DOR	87529131
1-1/4 (1.25)	1.312	2	0.109	0.132	0.086	ZND	87613257
1-1/4 (1.25)	1.312	2.5	0.156			ZND	70912299
1-1/4 (1.25)	1.344	2	0.06	0.067	0.054	ZND	87613237
1-1/4 (1.25)	1.344	2	0.12	0.134	0.105	PLN	87323847
1-1/4 (1.25)	1.344	2	0.12	0.134	0.105	ZND	87613238
1-1/4 (1.25)	1.344	2.5	0.25	0.266	0.234	PLN	87304449
1-3/8 (1.375)	1.406	2	0.06	0.067	0.054	ZND	87613239
1-3/8 (1.375)	1.406	2.25	0.12	0.134	0.105	ZND	87613240
1-3/8 (1.375)	1.406	2.75	0.048	0.054	0.042	ZND	87613241
1-3/8 (1.375)	1.4375	3	0.164	0.179	0.15	PLN	446301
1-3/8 (1.375)	1.5	2.25	0.075	0.09	0.067	ZND	87334418
1-1/2 (1.5)	1.515	2	0.125	0.135	0.115	ZND	51582953
1-1/2 (1.5)	1.515	2.25	0.125	0.135	0.115	ZND	81900328
1-1/2 (1.5)	1.531	2.25	0.06	0.067	0.054	ZND	86632585
1-1/2 (1.5)	1.531	2.25	0.12	0.134	0.105	ZND	86632584
1-1/2 (1.5)	1.531	2.5	0.06	0.067	0.054	ZND	87613242
1-1/2 (1.5)	1.531	2.5	0.109	0.132	0.086	ZND	86632586
1-1/2 (1.5)	1.531	2.5	0.18	0.213	0.153	PLN	84156977
1-1/2 (1.5)	1.562	3.25	0.164	0.179	0.15	ZND	3562
1-1/2 (1.5)	1.656	2.5	0.030	0.033	0.027	ZND	84156181
1-1/2 (1.5)	1.656	2.5	0.06	0.067	0.054	ZND	84156183
1-5/8 (1.625)	1.75	2.5	0.075	0.083	0.067	ZND	87325446
1-5/8 (1.625)	1.781	2.5	0.033	0.036	0.030	ZND	84476725
1-5/8 (1.625)	1.781	2.5	0.06	0.067	0.054	ZND	87613203
1-5/8 (1.625)	1.781	2.5	0.12	0.134	0.105	ZND	87613204
1-3/4 (1.75)	1.812	2.5	0.109	0.132	0.086	PLN	87613273
1-3/4 (1.75)	1.812	2.5	0.109	0.132	0.086	ZND	87613252

Tolerance Note:

- I.D.: ± .005 up to and including .219 I.D.
- ± .010 over .219 I.D.
- O.D.: ± .010 all sizes



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TABLE 5: Non-ANSI Standard Flat Washers (Continued)

Washer Size	ID	OD	Thickness			Finish	Part Number
			Nominal	Max	Min		
1-3/4 (1.75)	1.812	2.75	0.109	0.132	0.086	PLN	87613274
1-3/4 (1.75)	1.812	3.5	0.134	0.16	0.108	PLN	87613275
1-7/8 (1.875)	1.906	2.5	0.134	0.16	0.108	ZND	87613258
2	2.015	3	0.125	0.135	0.115	ZND	81901837
2	2.016	3	0.135	0.15	0.12	PLN	8464
2	2.031	2.75	0.075	0.09	0.067	ZND	87613205
2	2.031	2.75	0.12	0.134	0.105	ZND	87562757
2	2.046	4	0.25	0.266	0.234	PLN	51200133
2	2.062	2.938	0.06	0.067	0.054	ZND	87613253
2	2.062	3	0.109	0.132	0.086	PLN	87613276
2	2.062	3	0.109	0.132	0.086	ZND	86625259
2-1/4 (2.25)	2.281	3	0.075	0.09	0.067	ZND	48168769
2-3/8 (2.375)	2.4375	3.5	0.238	0.28	0.21	PLN	86529375
2-7/16 (2.4375)	2.5	3.5	0.134	0.16	0.108	PLN	86529374
2-5/8 (2.625)	2.625	4.0	0.25	0.266	0.234	PLN	47655318
2-1/2 (2.5)	2.531	3.25	0.60	0.67	0.54	ZND	84156185
2-1/2 (2.5)	2.5625	4	0.109	0.132	0.086	ZND	87613259

Tolerance Note:

I.D.: $\pm .005$ up to and including .219 I.D. $\pm .010$ over .219 I.D.O.D.: $\pm .010$ all sizes



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TABLE 6: Rivet Washers

Rivet Size	ID	OD	Thickness			Material	Finish	Part Number
			Nominal	Max	Min			
1/8 (0.125)	0.132	0.375	0.040	0.045	0.036	CST	ZND	87698771
#10 (0.190)	0.219	0.500	0.049			BRASS	PLN	88055
3/16 (0.1875)	0.192	0.375	0.078	0.093	0.063	AL	PLN	87670756

Tolerance Note:

I.D.: +0.005, -0.003

O.D.: ±0.020