

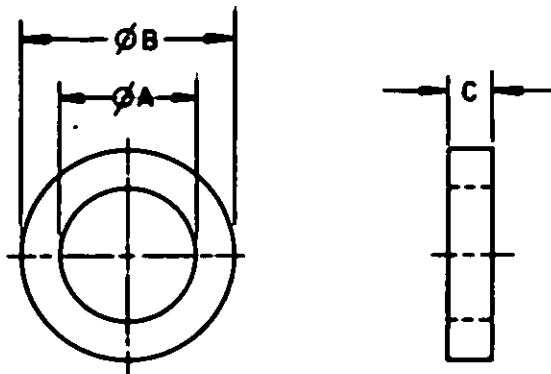
FED SUP CLASS
5310

TABLE 1. DASH NUMBERS AND DIMENSIONS.

| DASH NUMBERS | | | | | | NOMINAL WASHER SIZE | ØA | | ØB | | C | |
|----------------|-----------------|------------------------|------------------------|---------|------|---------------------------|------|------|-------|-------|------|------|
| ALLOY STEEL | NICKEL ALLOY | AL. ALY 2024, T3 | AL. ALY 7075, T6 | BRASS | CRES | | MAX | MIN | MAX | MIN | MAX | MIN |
| 115 | 88 | 01 | 21 | 41 | 61 | .060 | .068 | .063 | .130 | .120 | .028 | .022 |
| 116 | 89 | 02 | 22 | 42 | 62 | .060 | .068 | .063 | .161 | .151 | .019 | .013 |
| 117 | 90 | 03 | 23 | 43 | 63 | .073 | .099 | .089 | .161 | .156 | .028 | .022 |
| 118 | 91 | 19 | 39 | 59 | 79 | .073 | .099 | .089 | .140 | .130 | .013 | .010 |
| 119 | 92 | 04 | 24 | 44 | 64 | .099 | .109 | .104 | .219 | .214 | .028 | .022 |
| 200 | 93 | 05 | 25 | 45 | 65 | .112 | .125 | .120 | .180 | .170 | .032 | .029 |
| 201 | 94 | 06 | 26 | 46 | 66 | .112 | .125 | .120 | .255 | .250 | .019 | .013 |
| 202 | 95 | 20 | 40 | 60 | 80 | .112 | .125 | .120 | .180 | .170 | .019 | .013 |
| 203 | 96 | 121 (B) | 141 (B) | 161 (B) | 81 | .112 | .125 | .120 | .200 | .180 | .045 | .035 |
| 204 | 97 | 07 | 27 | 47 | 67 | .112 | .125 | .120 | .255 | .250 | .036 | .028 |
| 205 | 98 | 08 | 28 | 48 | 68 | .138 | .156 | .146 | .284 | .274 | .019 | .013 |
| 206 | 99 | 09 | 29 | 49 | 69 | .138 | .156 | .146 | .284 | .274 | .035 | .029 |
| 207 | 100 | 10 | 30 | 50 | 70 | .164 | .176 | .169 | .284 | .278 | .035 | .029 |
| 208 | 101 | 11 | 31 | 51 | 71 | .164 | .199 | .189 | .315 | .305 | .032 | .029 |
| 209 | 102 | 12 | 32 | 52 | 72 | .164 | .199 | .189 | .315 | .305 | .063 | .060 |
| 210 | 103 | 122 (B) | 142 (B) | 162 (B) | 82 | .190 | .220 | .210 | .400 | .395 | .050 | .040 |
| 211 | 104 | 13 | 33 | 53 | 73 | .190 | .210 | .200 | .365 | .355 | .032 | .029 |
| 212 | 105 | 14 | 34 | 54 | 74 | .190 | .210 | .200 | .365 | .355 | .063 | .060 |
| 213 | 106 | 15 | 35 | 55 | 75 | .250 | .270 | .260 | .460 | .450 | .032 | .029 |
| 214 | 107 | 123 (B) | 143 (B) | 163 (B) | 83 | .250 | .280 | .260 | .375 | .350 | .090 | .070 |
| 215 | 108 | 124 (B) | 144 (B) | 164 (B) | 84 | .251 | .280 | .260 | .375 | .350 | .028 | .022 |
| 216 | 109 | 16 | 36 | 56 | 76 | .250 | .270 | .260 | .460 | .450 | .063 | .060 |
| 217 | 110 | 17 | 37 | 57 | 77 | .250 | .288 | .278 | .480 | .430 | .032 | .029 |
| 218 | 111 | 18 | 38 | 58 | 78 | .312 | .317 | .307 | .525 | .515 | .032 | .029 |
| 219 | 112 | 125 (B) | 145 (B) | 165 (B) | 85 | .375 | .421 | .401 | .630 | .620 | .055 | .045 |
| 220 | 113 | 126 (B) | 146 (B) | 166 (B) | 86 | .625 | .656 | .640 | 1.062 | 1.032 | .050 | .040 |
| 221 | 114 | 127 (B) | 147 (B) | 167 (B) | 87 | .750 | .812 | .790 | 1.125 | 1.100 | .019 | .013 |

(B) DENOTES CHANGE(S)

| | | | |
|--------------------------------------|---------------------------|------------------------------|-------------------|
| P.A. ARMY-AR | INTERNATIONAL INTEREST | TITLE | MILITARY STANDARD |
| Other Com | | WASHER, FLAT (NARROW SERIES) | MS51496 |
| AIR FORCE-99 | | | |
| PROCUREMENT SPECIFICATION FF-W-92 | SUPPLIES DES: | PAGE | 1 OF 2 |

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.
This military standard is approved for use by all Departments and Agencies of the Department of Defense.
Modifications for all new engineering and design applications and for repetitive use shall be made from this document when applicable.

USER ACTIVITIES:
NAVY-MC, SM

REVIEWER ACTIVITIES:
ARMY-ER, GL
AIR FORCE - 15, 82
DLA-15

AMSC N/A

DD FORM 1 MAY 73 672-1 (COORDINATED)

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

5310-1568

APPROVED 30 MAY 84 REVISED A 20 MAY 86 B 7 OCT 86

FED. SUP CLASS
5310

REQUIREMENTS:

1. MATERIAL.

ALUMINUM ALLOY, 2024-T4, IN ACCORDANCE WITH QQ-A-250/5,
ALUMINUM ALLOY, 7075-T6, IN ACCORDANCE WITH QQ-A-250/12,
BRASS, COMPOSITION 11, (UNS C28000), IN ACCORDANCE WITH QQ-B-613,
CORROSION RESISTANT STEEL, TYPE 302 (UNS S30200), 304 (UNS S30400), 305 (UNS S30500), 316 (UNS S31600),
321 (UNS S32100), 347 (UNS S34700) IN ACCORDANCE WITH QQ-S-766;
NICKEL ALLOY, UNS N06600, IN ACCORDANCE WITH ASTM B168, CONDITION A, SPRING TEMPER,
ALLOY STEEL, UNS C81300, IN ACCORDANCE WITH MIL-S-6758, CONDITION (4).

2. PROTECTIVE COATING AND SURFACE FINISH.

ALUMINUM ALLOY, ANODIZE IN ACCORDANCE WITH MIL-A-8625, TYPE I OR TYPE II, CLASS 1, OR CHEMICAL SURFACE TREATMENT
IN ACCORDANCE WITH MIL-C-5541, CLASS A.
BRASS - BLACK CHEMICAL FINISH IN ACCORDANCE WITH MIL-P-495.
NICKEL PLATING IN ACCORDANCE WITH QQ-N-290, CLASS 1, GRADE F.
TIN PLATING IN ACCORDANCE WITH ASTM B545, .0001 INCH THICKNESS.
CORROSION RESISTANT STEEL - CLEANED, DESCALED AND PASSIVATED IN ACCORDANCE WITH ASTM A380.
ALLOY STEEL - CADMIUM PLATED IN ACCORDANCE WITH QQ-P-416 TYPE II, CLASS 2.

3. HARDNESS.

NICKEL ALLOY, CONDITION 5, 30HRC MIN
ALUMINUM ALLOY, 2024-T4, 94-103HRP
ALUMINUM ALLOY, 7075-T6, 85-95HRB
BRASS, COMPOSITION 11, 1/2 HARD, 57-77HRB
CORROSION RESISTANT STEEL, 20HRC MIN.
ALLOY STEEL, 38HRC MIN

4. MAGNETIC PERMEABILITY. CORROSION RESISTANT STEEL WASHERS SHALL HAVE A MAGNETIC PERMEABILITY OF 2.0
MAXIMUM ($\mu = 1.0$) FOR A FIELD STRENGTH OF $H = 200$ OERSTEDS USING A MAGNETIC INDICATOR PER MIL-I-17214.5. FLATNESS. WASHERS SHALL BE FLAT TO WITHIN .007 INCH.6. PARALLELISM. WASHERS SHALL BE PARALLEL TO WITHIN .002 INCH.7. PART NUMBER. THE PART NUMBER CONSISTS OF THE BASIC MS NUMBER, FOLLOWED BY A FINISH CODE LETTER, FOLLOWED
BY A DASH NUMBER FROM TABLE 1.

EXAMPLE: MS51496CD1

DASH NUMBER FROM TABLE 1

FINISH CODES

D - ANODIZE
C - CHEMICAL SURFACE TREATMENT
G - BLACK CHEMICAL
N - NICKEL
P - PASSIVATE
T - TIN
E - CADMIUM

BASIC MS NUMBER

MS51496CD1 - INDICATES, WASHER, FLAT-NARROW SERIES, CHEMICAL SURFACE TREATMENT, ALUMINUM
ALLOY 2024-T4, .065 ID, .130 OD, .028 THICK.

NOTES:

- ALL DIMENSIONS ARE IN INCHES.
- REMOVE ALL BURRS AND SHARP EDGES BEFORE FINISH.
- IN THE EVENT OF A CONFLICT BETWEEN THE TEXT OF THIS STANDARD AND THE REFERENCES CITED HEREIN, THE TEXT OF THIS STANDARD SHALL TAKE PRECEDENCE.
- REFERENCED GOVERNMENT (OR NONGOVERNMENT) DOCUMENTS OF THE ISSUE LISTED IN THAT ISSUE OF THE DEPARTMENT OF DEFENSE INDEX OF SPECIFICATIONS AND STANDARDS (DoDISS) SPECIFIED IN THE SOLICITATION FORM A PART OF THIS STANDARD TO THE EXTENT SPECIFIED HEREIN.

APPROVED 30 MAY 84 REVISED (B) FOR CHANGE(S) SEE PAGE(S) 1

| | | | |
|--------------------------------------|---------------------------|---|----------------------------------|
| P. A. ARMY - AR Other Cast | INTERNATIONAL INTEREST | TITLE WASHER, FLAT (NARROW SERIES) | MILITARY STANDARD MS51496 |
| AIR FORCE-99 | | | |
| PROCUREMENT SPECIFICATION FF-W-92 | SUPERSEDED | PAGE 2 OF 2 | |

USER ACTIVITIES:
NAVY-MC, SHREVIEWER ACTIVITIES:
ARMY-ER, GL
AIR FORCE-15, 82
DLA-IS

This military standard is approved for use by all Departments and Agencies of the Department of Defense. Selection for all new engineering and design applications and for repetitive use shall be made from this document.