FEDERAL SPECIFICATION

PLATE, SURFACE, CAST IRON

This specification was approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal Agencies.

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Delete paragraph 1.1 in its entirety and insert the following:

"1.1 Scope. This specification covers cast iron surface and bench plates for general inspection and layout work."

In paragraph 1.2.1, under "Type I", delete "Grade D-Planed".

In paragraph 2.1, under "Federal Standards" add:

"Fed. Std. H28 Screw-Thread Standards for Federal Services."

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In paragraph 2.2, make changes as follows:

(a) Delete all references to "National Bureau of Standards (NBS)".

(b) Delete all references to "American Standards Association (ASA)" and insert the following:

"American Society of Mechanical Engineers Standard:

ANSI/ASME B46.1 Surface Texture

(Application for copies should be addressed to The American Society of Mechanical Engineers, United Engineering Center, 345 East 47th St., New York, N. Y. 10017.)"

After paragraph 3.1, add the following:

"3.1.1 Availability. Inspection and layout plates required in accordance with this specification shall be products normally manufactured by the prospective producer. These items produced shall also be available on a commercial basis."

After paragraph 3.3, delete 3.3.1 in its entirety and substitute the following:

"3.3.1 Reclaimed Materials. Recycled and recovered raw materials should be used to the maximum extent possible in lieu of virgin raw materials as long as these materials do not jeopardize the intended use and fully comply with all contract requirements. Materials used shall be free from defects which would adversely affect the performance or maintainability of individual components or the overall assembly. Materials not specified herein shall be of the same quality used for the intended purpose in commercial practice. None of the above shall be interpreted to mean that the use of used or rebuilt products will be allowed."

In paragraph 3.3.1.1, delete the last sentence and insert the following:

"Stress relieving procedures shall be of the method normally used by the producer which will produce surface plates of the accuracy specified herein."

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In paragraph 3.5.1, delete the period at the end of the last sentence, and insert the following: "area surface of texture requirements of Table I."

In paragraph 3.5.2, delete the period at the end of the last sentence, and insert the following: "area surface of texture requirements of Table I."

Delete paragraph 3.5.3 in its entirety and insert the following:

3.5.3 Grade C. Grade C working surfaces shall be smooth machined to texture requirements of Table I. Tool marks shall not exceed 0.0005 inch in depth."

Delete paragraph 3.5.4 in its entirety.

In paragraph 3.5.5, make changes as follows:

(a) On lines 4 and 5, delete "ASA B46.1" and insert "ANS1/ASME B46.1".

(b) After the last sentence, insert

"Spotting cavities shall be from 0.0002 to 0.0003 inches in depth with a concentration of 15 to 18 spotting cavities per square inch and a 20 to 40 percent bearing area."

In paragraph 3.6, delete "Grade D.... .0005 inch."

In paragraph 3.6.1, make changes as follows:

(a) On third line, delete "0.0005" and insert "0.002 inches."

(b) On fifth line, delete "0.0005" and insert "0.002".

Delete Table I in its entirety and insert the following:

TABLE I

Requirements for bearing areas

	Maximum plus or minus deviation from mean plane and roughness * height ratings as per ANSI/ASME B46.1 (Micro-inches)			Maximal allowable plus or minus deviation tolerances for					
				Repeat reading measurements (Microinches)			Total flatness of entire plate (Microinches)		
Diagonal Range (Inches)	GRADE A	GRADE B	GRADE C	GRADE A & E	GRADE B	GRADE C	GRADE A & E	GRADE B	GRADE C
Through 25	50	100	200	50	100	200	100	150	300
Over 25 Through 40	75	150	300	75	150	300	150	225	450
Over 40 Through 50	100	200	400	100	200	400	200	300	600
Over 50 Through 60	150	300	600	150	300	600	300	450	900
Over 60 Through 70	200	400	800	200	400	800	400	600	1200
Over 70 Through 85	250	500	1000	250	500	1000	500	750	1500
Over 85 Through 100	350	700	1400	350	700	1400	700	1050	2100
Over 100 Through 125	500	1000	2000	500	1000	2000	1000	1500	3000
Over 125 Through 150	750	1500	3000	750	1500	3000	1500	2250	4500
Over 150	1100	1500	3000	1100	1500	3000	2200	2250	4500

*Above values apply to maximum roughness.

Delete paragraph 3.8 and insert the following:

"3.8 Screw threads. All screw threads used on surface plates shall be in accordance with the screw threads covered in Fed. Std. H28."

In paragraph 3.9, on last line, delete "ASA B46.1" and insert "ANSI ASME B46.1".

In paragraph 3.10, on line 4, delete "standard practice" and insert "normal practice".

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In last sentence of paragraph 3.12, delete "and weights".

Delete Table II in its entirety and insert the following:

TABLE II

Type I Surface Plate, Sizes and Dimensions

Nominal Size		Min. Top Solid Thickness (Inches)	Min. Height (Inches)	Approx Diagonals (Inches)
Width (Inches)	Length (Inches)			
8	12	1/2	2 1/2	14.4
10	14	1/2	2 1/2	17.2
12	14	1/2	3	18.4
12	18	5/8	3 1/4	21.6
12	24	5/8	3 1/4	26.8
14	18	5/8	3 1/2	22.8
16	22	5/8	3 1/2	27.2
18	18	5/8	3 1/2	25.5
18	24	11/16	4 1/4	30
18	30	11/16	4 1/4	34.9
18	36	11/16	4 3/4	40.3
24	24	11/16	4 3/4	33.9
24	30	3/4	4 3/4	38.4
24	36	3/4	6	43.3
24	48	3/4	6 1/2	53.7
30	48	1	6 3/4	56.6
30	60	1	6 3/4	67.1

TABLE II (continued)

Type I Surface, Plate, Sizes and Dimensions

Nominal Size Width (Inches)	Nominal Size Length (Inches)	Min. Top Solid Thickness (Inches)	Min. Height (Inches)	Approx. Diagonals (Inches)
36	36	1	7	50.9
36	48	1	7	60
36	72	1	9	80.5
48	96	1 1/8	10	107.3

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Delete paragraph 4.4.5 in its entirety.

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After paragraph 6.3, add table as follows:

TABLE V

"Metric Conversion Factors"

MICROINCHES	MICRONS (Metric)	INCHES	MM (Metric)	INCHES	METERS (Metric)
50	1	1/2 or .5	12.7	40	1.016
75	2	5/8 or .625	15.875	40.3	1.02362
100	3	11/16 or .6875	17.4625	43.3	1.09982
150	4	3/4 or .75	19.05	48	1.2192
200	5	1	25.4	50	1.27
225	6	1 1/2 or 1.5	38.1	50.9	1.29286
250	6	2 3/8 or 2.375	60.325	53.7	1.36398
300	8	2 1/2 or 2.5	63.5	56.6	1.43764
350	9	3	76.2	60	1.524
400	10	3 1/4 or 3.25	82.55	67.1	1.70434
450	11	3 1/2 or 3.5	88.9	70	1.778
500	13	4 1/4 or 4.25	107.95	72	1.8288
600	15	4 3/4 or 4.75	120.65	80.5	2.0447
700	18	6	152.4	85	2.159

TABLE V (continued)

"Metric Conversion Factors"

MICROINCHES	MICRONS (Metric)	INCHES	MM (Metric)	INCHES	METERS (Metric)
750	19	6 1/2 or 6.5	165.1	96	2.4384
800	20	6 3/4 or 6.75	171.45	100	2.54
900	23	7	177.8	107.3	2.72542
1000	25	8	203.2	125	3.175
1050	27	9	228.6	150	3.81
1100	28	10	254		
1200	30	12	304.8		
1400	36	14	355.6		
1500	38	14.4	365.76		
2000	51	16	406.4		
2100	53	17.2	436.8		
2200	56	18	457.2		
2250	57	18.4	467.36		
3000	76	21.6	548.64		
3300	84	22	558.8		
4400	112	22.8	579.12		
4500	114	24	609.6		
6600	168	25	635		
		25.5	647.7		
		26.8	680.72		
		27.2	690.88		
		30	762		
		33.9	861.06		
		34.9	886.46		
		36.0	914.4		
		38.4	975.36		

NOTE: Microns are millionths of a meter.

Military Custodians:

Army - AR
Navy - SH
Air Force - 99

Review activities:

Army - WC
Navy - SH

User activities:

Navy - WP, YD

Preparing activity:

Air Force - 99

Civil Agency Coordinating Activities:

GSA-FSS
INTERIOR
COM-NBS
VA-DMS

Project Number:

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