



FEDERAL STANDARD 595B COLORS USED IN GOVERNMENT PROCUREMENT

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Note

The existence of a color chip 1xxxx in the Federal Standard specification doesn't imply that there is a color chip for 3xxxx. However, references to such "virtual" chips built on the principle "same color, but different sheen" are a widespread practice.

INFORMATION SHEET

ON

FEDERAL STANDARDS

This Federal Standard is issued in loose-leaf form to permit the insertion or removal of new revised material.

All users of Federal Standards should keep them up to date by inserting revised or new material as issued.

New and revised material will be issued under Change Notices which will be numbered consecutively and will bear the date of issuance. Change Notices should be retained and filed in front of the Standard until such time as it is superseded by a reissue of the entire Standard.

FED-STD-595B
December 15, 1989
SUPERSEDING
FED-STD-5 95A
January 2, 1968

FEDERAL STANDARD No. 595B

COLORS USED IN GOVERNMENT PROCUREMENT

Authority. This standard is issued pursuant to the Federal Property and Administrative Services Act of 1949, as amended, and its application to the purchase of commodities referred to herein is mandatory on all Federal agencies.

S1. Scope. This standard presents the colors used by Government Activities in a format suitable for color selection, color matching and for quality control inspection. This document describes the designation and use of the color chips of this standard. For reference purposes, each color is reproduced herein as a 1/2 by 1 inch sample. The standard color chips are also available in the following formats:

1. Specification - - This specification supplied in loose leaf 8-1/2x11 paper with 1/2x1" color samples. Suitable for color identification and selection.

2. Fan Deck - - Suitable for color identification and selection.

3. Sets of color chips - - A set containing one 3 x 5 inch color chip each in its protective envelope -- suitable for color matching and quality control inspection purposes.

S2. Applicable Documents.

American Society for Testing and Materials (ASTM) Standards:

D 523 -- Specular Gloss.

D 1729 -- Visual Evaluation of Color Differences of Opaque Materials.

D 2244 -- Calculation of Color Differences from instrumentally measured color coordinates.

E 308 -- Spectrophotometry and Description of Color in CIE 1931 System.

(Copies may be obtained from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

S3. Color Identification and Reference.

S3.1 Color Identification. Each color is identified by a five-digit code. Colors in this standard are not to be referenced without giving the five-digit code, otherwise the reference is ambiguous.

S3.2 Numbering System.

S3.2.1 First Digit. The first digit of the color number indicates the color at a level or degree of gloss. The colors are divided only into three generalized finishes; gloss, semi—gloss and flat. For ease in judging the color matching (see also 3.3) the color number closest in gloss to that required should be specified. Specific levels of gloss, other than these standard levels must be separately specified in the procurement documents.

<u>First Digit</u>	<u>Finish</u>
1	Gloss
2	Semi—Gloss
3	Flat or Lusterless

S3.2.2 Second Digit. The second digit of the color number indicates an arbitrarily selected color classification grouping.

<u>Second Digit</u>	<u>Predominate Color Grouping</u>
0	Brown
1	Red
2	Orange
3	Yellow
4	Green
5	Blue
6	Gray
7	Miscellaneous (whites, blacks, etc.)
8	Fluorescent

S3.2.3 Last Three Digits. The last three digits of the color number are assigned in the approximate order of increasing reflectance.

S3.3 Color Matching.

S3.3.1 General. This standard covers color chips for color matching and control of items produced for Government use. Unless otherwise specified or designated by the contracting officer, color chips shall be the latest in effect by date of contract. Color matching by chromaticity coordinates or tristimulus values is not authorized for colors referenced in this standard.

S3.3.2 Metamerism. Colors that visually match in lights of certain spectral compositions but not in others are said to be metameric. The light source, condition of viewing and specular reflectance is critical to overcome metamerism and to determine correct matches. Therefore, light sources as specified in ASTM D 1729 shall be used for visual color matching.

S3.3.3 Color Matching Criteria. In specifying color, the procurement documents should state:

- a. The FED-STD-595 color number;
- b. The source (or sources) of illumination under which the color is to be matched; and
- c. The method by which the color is to be matched; either:
 - (1) ASTM D 1729 --Visual Evaluation of Color Differences of Opaque Materials -- state whether critical or general match; or,
 - (2) ASTM D 2244 --Calculation of Color Differences from instrumentally measured color coordinates. --State for CIEL1B color space the maximum color difference and the maximum hue difference tolerated. Name and address of organization supplying paint chip.

S3.4 Color Chip Authorized for Use.

S3.4.1 After the publication of this standard, only color chips marked FED—STD--595B shall be used.

S3.4.2 Color chips which are soiled, stained, faded, or otherwise damaged due to improper handling, storage or exposure to light or chemicals shall not be used.

S3.5 Care of color chips. All color chips will change with time and some will change more than others. Color change can be minimized by observing the following procedures.

- a. Store the color chips in a cool, dark place;
- b. Avoid exposure of the color chips to direct or scattered UV light or chemicals;
- c. Minimize exposure of the color chips to light from any source;
- d. Keep the color chips covered when not in use;
- e. Do not touch the face of the color chips.

S4. Color Cross Reference. The following colors meet the special requirements for safety, highway and camouflage colors.

<u>Safety Colors (OSHA)</u>			<u>Highway Colors (DOT)</u>			<u>Camouflage Colors</u>		
Red	--	11120	Brown	--	10055	Green 383	--	34094
	--	11105	Red	--	11086	Brown 383	--	30051
	--	11140		--	11105	Black	--	37030
Orange	--	12300	Orange	--	12243	Tan 686	--	33446
	--	12246	Yellow	--	13507	Dark Green	--	34082
Yellow	--	13591		--	13538	Field Drab	--	33105
	--	13655	Green	--	14066	Earth Yellow	--	33245
Green	--	14120		--	14109	Sand	--	33303
	--	14260	Blue	--	15065	Aircraft Green	--	34031
Blue	--	15092		--	15090	Aircraft Gray	--	36300
	--	15102	School Bus			Dark Sandstone	--	33510
Purple	--	17155	Yellow	--	13415	Interior		
	--	17142				Aircraft Black	--	37031

International Orange –12197

Note: The chips for camouflage colors shall be used for general color matching purposes only. The specifications for camouflage coatings contain requirements for infrared reflectance which must be met in addition to color. The color cards (chips) for the camouflage colors will contain pigments chosen for their stability and compatibility with the color card coating and, therefore, have different infrared reflectance characteristics than those required for camouflage coatings. Merely matching the color chip for color will not be sufficient to assure product acceptance by the contracting activity. For further information, contact:

Commander, U.S. Army Belvoir RDE Center,
ATTN: STRBE-VO, Fort Belvoir, VA 22060—5606.

S5. Color Chip Reproduction. Color chips may not be reproduced without the authorization of General Services Administration. Reproduction of color chips from any source other than the master standard is not authorized. The General Services Administration must approve all color matches made when the color chips are reproduced.

S7. International standardization agreement. Several colors listed in this standard are the subject of international standardization agreement, MAS Army 440, 7 December 1987, NATO STANAG 2321, Edition 4. When there is a change, revision, or cancellation of this standard which will affect or violate the international agreement concerned, the preparing activity will take appropriate reconciliatory action through international standardization channels including departmental standardization offices, if required. The following colors are covered by the above agreement: silver/aluminum 17178, brown 30117 or 30140, red 31136, light red 31158, yellow 33538, light green 34558 or 34449, dark green 34108, light blue 35109, gray 36231, black 37038, violet 37100, and white 37875.

**CHANGE NOTICES ARE NOT
CUMULATIVE AND SHALL BE
RETAINED UNTIL SUCH TIME
AS THE ENTIRE STANDARD
IS REVISED**

**Federal Standard No. 595B
December 15, 1989
Change Notice 1
January 11, 1994**

FEDERAL STANDARD

COLORS USED IN GOVERNMENT PROCUREMENT

The General Services Administration has authorized the use of this Change in Federal Standard No. 595B, dated December 15, 1989, for all Federal users.

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S3.2.1 Delete the table and replace with the following table:

First Digit	Finish	Gloss Level	
		Min	Max
1	Gloss	80	--
2	Semi-gloss	30	45
3	Flat or Lusterless	--	6