

COMMERCIAL ITEM DESCRIPTION

INK, MARKING, STENCIL, OPAQUE
(POROUS AND NON-POROUS SURFACES)

The General Services Administration has authorized the use of this commercial item description in preference to Federal Specification TT-I-1795, Types I, II, III, and IV.

This commercial item description covers four types of opaque stencil ink for marking porous and non-porous surfaces.

Salient characteristics:

The opaque stencil inks shall be of the following types, as specified:

- Type I - For use on non-porous surfaces (non-pressurized containers).
- Type II - For use on porous surfaces (non-pressurized containers).
- Type III - For use on porous or non-porous surfaces (pressurized containers).
- Type IV - For use on porous or non-porous surfaces (stencil rollers).

Pigment. The type I, II, III, and IV stencil inks shall be made from any pigmentation which will meet the salient characteristics of this commercial item description.

Vehicle - Type I and IV. The vehicle shall be such as to produce a stencil ink conforming to the salient characteristics of this commercial item description. The solids shall be 20 percent minimum by weight of the vehicle except black (Color 37038) shall have a minimum of 11 percent solids.

Vehicle - Type II and III. The vehicle shall be such as to produce a stencil ink conforming to the salient characteristics of this commercial item description. The solids shall be 15 percent minimum by weight of the vehicle except black (Color 37038) shall have a minimum of 12 percent solids.

Propellant. The propellant for type III stencil ink shall be a gas that contains 85 percent isobutane and 15 percent propane or an equal environmentally safe propellant. Propellant may contain 1, 1, 1 - trichloroethane or similar chlorinated solvents to reduce flammability.

Drying capacity (hiding power) (types I, II, III, and IV). The dried films of the types I, II, III, and IV stencil inks, applied at a wet-film thickness of 0.002 inch shall show the minimum contrast ratios indicated for the respective colors listed in table I when tested in accordance with ASTM Test Method D 2805.

Table I. Color and contrast ratios

Color 1/	Minimum contrast ratios
White (No. 37875)	0.90
Black (No. 37038)	1.00
Gray (No. 36231)	1.00
Red (No. 31136)	0.80
Yellow (No. 33538)	0.90
Green (No. 34108)	1.00
Blue (Dark) (No. 35044)	1.00
Blue (Light) (No. 35109)	0.95
Orange (No. 32246)	0.95
Maroon (No. 30111)	1.00
Brown (No. 30117)	1.00
Brown (No. 30140)	1.00
Red (No. 31158)	1.00

1/ The numbers in parenthesis following color names are those covered in FED-STD-595.

Color (types I, II, III, and IV). The color of the types I, II, III, and IV stencil inks shall be as listed in table I when compared with specified color chip of FED-STD-595 by visual inspection under illumination in accordance with ASTM 1729.

Gloss. The type I, II, III, and IV stencil ink shall dry on an impervious or absorbent surface with a maximum gloss reading of 30 when tested in accordance with ASTM D 523.

Container (type III). The container for the type III stencil ink shall be a commercial type metal pressure container generally known as an aerosol container. The container shall be the manufacturer's commercial standard.

Dispensing valve. The valve shall have a spray head which can be removed without releasing pressure from the aerosol. The removable spray head shall contain an orifice of such dimensions to produce desirable spraying properties.

Agitator. Each dispenser of the pigmented material shall contain one or more agitators which is the manufacturer's commercial standard.

Cover cap. The valve shall be protected from accidental functioning and damage by a press fitting metal or plastic cover cap which shall be removable and replaceable. The cap shall be the same color as the ink in the can.

Stenciling. Using a stencil brush for type I and II ink, pressurized spray can for type III ink, a stencil roller for type IV ink, and stencil board with letter approximately $\frac{3}{4}$ inch high, stencil at least five letters on enameled 3 x 6 inch (20 gage) steel panels for types I, III, IV and on 3 x 6 inch solid fiberboard panels for types II, III, and IV. Stenciling shall present legible characters of uniform boldness and general appearance. The ink shall not smear 15 minutes after application at $23^{\circ}\text{C} \pm 1.1^{\circ}\text{C}$ ($73.5^{\circ}\text{F} \pm 2^{\circ}\text{F}$) when rubbed lightly with fingers.

Resistance to water. The stenciled lettering shall be legible, retain its characteristics color, not smear with vigorous rubbing, nor crack or peel when tested one hour after stenciling by placing steel panels or fiberboard panels in distilled water at 70°F for 4 hours and air dried for 1 hour.

Resistance to gasoline (types I, III, and IV). One hour after stenciling, immerse one of the steel panels in regular grade automotive gasoline and distilled water, for five seconds in each liquid, followed by complete evaporation after each wetting. Repeat this cycle five times. Twenty-four hours later, examine for any deleterious effects such as loss of clearness and sharpness, streaking, blurring, and any appreciable color change.

Resistance to light and water spray (type I, III, and IV). Apply ink to enameled steel panels to a wet film thickness of approximately 0.003 inch. Allow the ink coating to air dry at $23^{\circ} \pm 1.0^{\circ}\text{C}$ ($73.5^{\circ}\text{F} \pm 2^{\circ}\text{F}$) and relative humidity of 50 ± 4 percent for 24 hours. Then expose coated panels in the apparatus described in ASTM G 23 for 100 hours. Examine ink coating for checking, cracking, flaking, and change in color.

Resistance to light and water spray (types II, III, and IV). Apply ink to 3 x 6 x $\frac{7}{16}$ inch Western Red Cedar panels using a stencil board with letters about $\frac{3}{4}$ inch high. Use same test procedure as for types I, III, and IV ink using steel panels. Expose panels for 100 hours. Examine inked letters for cracking, flaking, eroding, change of color, and legibility.

Toxicity. The use of straight benzene is prohibited. Trace amounts of benzene or benzene derivatives present in commercial grades of acceptable aromatics are permissible. Inks shall contain no chlorinated compounds or other toxic hydrolyzable chlorine derivatives. Propellant for type III may contain moderately toxic chlorinated solvents to reduce flammability.

Labeling. Stencil ink containers shall be labeled to comply with the "Federal Hazardous Substances Act Regulations" per 16 Code of Federal Regulations, Part 1500.

Effect on applicators. The stencil inks shall contain no ingredients which have a deleterious effect upon the brush, roller, or spray can used in its application. Inks shall not react with nor be reacted upon by the interior surfaces of the spray can or any of the spray can components.

Effect on brass (types I, II, and IV). Apply a liberal coat of ink to a 2 x 2 inch brass panel which has been brightly polished and cleaned with solvent. Allow the ink to remain on the panel for 48 hours at $23^{\circ} \pm 1.1^{\circ}\text{C}$ ($73.5^{\circ} \pm 2^{\circ}\text{F}$) and relative humidity of 50 ± 4 percent. Completely remove the ink by immersing the coated panel in a suitable paint remover or solvent. Examine the metal for etching, corrosion, staining, and discoloration.

Workmanship. The stencil inks shall be in a homogeneous state and free from foreign matter.

The issues of ASTM and Code of Federal Regulations in effect on the date of the solicitation shall be used to determine compliance with stated requirements.

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Certification. The contractor shall certify that the product offered meets the salient characteristics of this description, and that the product conforms to the producer's own drawings, specifications, standards, and quality assurance practices, and is the same product sold commercial marketplace. The Government reserves the right to require proof of such conformance prior to first delivery and thereafter as may be otherwise provided for under the provisions of the contract.

Regulatory requirements. The manufacturer shall utilize recovered materials to the maximum extent practicable.

Packaging, packing, and marking. Packaging, packing, and marking shall be as specified in the contract or order.

ASTM standards are available from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

Federal Standards are available from GSA Business Service Centers and Specification and Consumer Information Distribution Section, Building 197, Washington Navy Yard, Washington DC 20407.

Code of Federal Regulations are for sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402.

MILITARY INTERESTS:

Custodians:

Army - GL
Navy - SA
Air Force - 69

Preparing Activity:

GSA-FSS

Review Activities:

Army - AR, MD, SM
DLA - SS
DOD - DS

User Activity:

Navy - MC