

MIL-B-43871

31 January 1974

## MILITARY SPECIFICATION

## BRUSH, CLEANING, TOOLS AND PARTS

This specification is approved for use by all Departments and Agencies of the Department of Defense.

## 1. SCOPE

1.1 This specification covers a brush for cleaning machinery, hand tools, weapons and parts.

## 2. APPLICABLE DOCUMENTS

2.1 The following documents, of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein:

## SPECIFICATIONS

## FEDERAL

- TT-B-838 - Butyl Acetate; Normal (For Use in Organic Coatings)
- TT-B-846 - Butyl Alcohol; Normal (Butanol) (For Use in Organic Coatings)
- TT-M-261 - Methyl Ethyl Ketone, Technical
- TT-T-548 - Toluene; Technical
- PPP-B-1729 - Brushes, Packaging and Packing Of

## STANDARDS

## MILITARY

- MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes

(Copies of specifications and standards required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

## 3. REQUIREMENTS

3.1 Standard product. The brush delivered under this specification shall be the manufacturer's commercial product, except for any changes necessary to comply with specification requirements.

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3.2 Materials and components. Materials and components shall be as specified herein. Materials not definitely specified shall be of the quality normally used by the manufacturer in his standard commercial brushes provided the completed item complies with all provisions of this specification.

3.2.1 Wood. Wood for handles shall be a close-grained and straight-grained hardwood such as beech, birch or maple.

3.2.2 Tampico fiber. Fiber shall be natural and unbleached tampico fiber. When tested as specified in 4.3.1, there shall be no visual evidence of artificial color in the test water.

3.2.3 Ferrule. Ferrule shall be made of steel finished to resist corrosion in accordance with manufacturer's commercial practice.

3.2.4 Setting compound. Fiber setting compounds shall be an epoxy resin capable of withstanding the solvent test in 4.3.3 without softening, deteriorating or loosening of set fibers or filler strips.

3.3 Construction. The brush shall be an assembly of materials and components specified in 3.2 through 3.2.4 and shall conform to the requirements specified hereinafter and in table I. The cleaning brush shall be round, 100% tampico fiber bristles with varnished tapered sash tool type handle. The brush end shall be cone shaped with the point on the longitudinal center of the completed brush. Strands of tampico fiber shall resist removal when tested as specified in 4.3.2. The weight of tampico fiber in the trimmed brush shall be as specified in table I when tested as specified in 4.3.4.

TABLE I. Physical requirements

Fiber:	Overall length (ferrule edge to cone tip)	$2-7/8 \pm 1/4$ inches
	Length of sides (ferrule edge to start of cone shape)	$2 \pm 0$ $- 1/4$
	Weight	$.62 \pm 10\%$ $- 0$ ounces
Handle:	Length beyond ferrule	$6-1/2 \pm 1/2$ inches
Ferrule:	Diameter on handle	$1 \pm 1/16$ inches
	Length	$1-1/2 \pm 1/16$ inches
	Thickness, minimum	0.042 inches

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3.3.1 Ferrule. The ferrule shall be seamless or have a double fold seam and be staked at least 4 times or nailed in 3 places to the handle.

3.4 Marking for identification. Unless otherwise specified (see 6.2), in addition to any special marking required by the contract or order, the supplier shall permanently and legibly indent his name or trademark of such known character easily identifiable on each brush.

3.5 Finish. The handle shall be coated with varnish, lacquer or other clear organic material in accordance with the manufacturer's commercial practice for this type of brush.

3.6 Workmanship. All ferrules and handles shall be free of rough and sharp edges. Wood handles shall be free of loose grain and splinters. Staking or nailing shall be deep enough to prevent a loose ferrule. The finished brushes shall be clean and free from any defects which may affect appearance and serviceability.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.2 Quality conformance inspection. Except as otherwise specified herein, sampling for inspection shall be performed in accordance with the provisions set forth in MIL-STD-105.

4.2.1 Component and material inspection. In accordance with 4.1 above, components and materials shall be inspected and tested in accordance with all the requirements of referenced specifications, drawings, and standards unless otherwise excluded, amended, modified or qualified in this specification or applicable purchase document.

4.2.1.1 Color of tampico fiber. Prior to setting in the compound, the tampico fiber shall be tested in accordance with 4.3.1 for evidence of artificial coloring to determine compliance with 3.2.2. The sample unit shall be 2 ounces of tampico fiber taken from each identifiable lot. Any evidence of artificial coloring in the sample shall be cause for rejection of the lot.

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4.2.2 End item inspection. The inspection lot shall be all brushes offered for inspection at one time.

4.2.2.1 Visual examination. The brushes shall be examined for the defects in table II. The inspection level shall be level II with an AQL of 4.0, expressed in terms of defects per hundred units.

TABLE II. Visual examination

<u>Examine</u>	<u>Defect</u>
Finish	Handle not varnished, lacquered or other clear organic finish
	Ferrule not finished to resist corrosion
Construction and workmanship	Handle not tapered
	Handle not close grained hardwood
	Handle not free of splinters
	Ferrule not properly attached (is loose)
	Ferrule not seamless or double fold seamed
Marking	End of brush not cone shaped
	Omitted, illegible, incomplete

4.2.2.2 Dimensional examination. The brush shall be examined for compliance with dimensions specified. Any dimension not within the specification tolerance shall be a defect. The inspection level shall be S-2 and the AQL shall be 4.0, expressed in terms of defects per hundred units.

4.2.2.3 End item testing. The end item shall be tested as specified in 4.3.2, 4.3.3 and 4.3.4. The inspection level shall be S-2 and the AQL shall be 4.0, expressed in terms of defects per hundred units.

4.2.3 Examination of preparation for delivery. Examination shall be made in accordance with PPP-B-1729.

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### 4.3 Tests.

4.3.1 Color test. The sample tampico fiber shall each be boiled in 8 ounces of clear water at 212°F. for not less than 30 minutes, adding replacement water as required (see 4.2.1.1).

4.3.2 Set retention test. Individual strands of fiber, 10 strands in turn, shall be firmly grasped between the thumb and forefinger and pulled in an attempt to remove it. Any brush having two or more strands removed before breaking or slipping from the grasp shall be classified as a defect (see 3.3).

4.3.3 Setting compound solvent resistance. The solvent shall consist of the following mixture:

	<u>Percent by volume</u>	<u>Specification</u>
Normal butyl acetate	15 $\pm$ 1	TT-B-838
Normal butyl alcohol	15 $\pm$ 1	TT-B-846
Methyl ethyl ketone	10 $\pm$ 1	TT-M-261
Toluene	Remainder	TT-T-548

The ferrule shall be removed from the brush and the set bristles shall be immersed in the solvent mixture at a temperature between 70 and 90°F. After one hour, the set bristles shall be removed from the solvent and air dried for 24 hours and then examined. Any evidence of failure to comply with 3.2.4 shall be classified a defect.

4.3.4 Weight of bristles. After passing the test in 4.3.3, the setting compound and filler strip, if applicable, shall be completely removed from the same set bristles tested as in 4.3.3 by dissolving so that no residual setting compound or solvent remains on the bristles. The bristles only shall be separated and air dried at a temperature of 73  $\pm$  3°F., at a relative humidity of 50  $\pm$  4 percent, for not less than 16 hours. Following this conditioning period the bristles shall be weighed to determine compliance with the weight requirement in table I. Any weight not as specified shall be classified a defect.

## 5. PREPARATION FOR DELIVERY

5.1 Brushes shall be packaged, packed and marked in accordance with the requirements for Brushes, Painters Round of PPP-B-1729, as specified (see 6.2) for level A, B, or C.

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6. NOTES

6.1 Intended use. The brush covered by this specification is intended to be used for cleaning tools, parts, machinery or weapons.

6.2 Ordering data. Procurement documents should specify the following:

- (a) Title, number and date of this specification.
- (b) Whether any special marking is required (see 3.4).
- (c) Selection of applicable levels of packaging and packing (see 5.1).

Custodians:

Army - GL  
Navy - SA  
Air Force - 84

Preparing activity:

Army - GL  
Project No. 7920-0229

User activity:

Army - EL

