

[INCH-POUND]
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TO SUPERSEDE
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COMMERCIAL ITEM DESCRIPTION

RAGS, WIPING (COTTON AND COTTON-SYNTHETIC)

The General Services Administration has authorized the use of this commercial item description as a replacement for Federal Specification DDD-R-30 which is canceled.

1. SCOPE AND CLASSIFICATION

1.1 Scope. This commercial item description covers cotton and cotton-synthetic blended wiping rags made from unused or reclaimed fabrics intended for use in wiping water, oil, and grease from machinery and for miscellaneous cleaning.

1.2 Classification. The wiping rags covered in this commercial item description shall be of the following grades and colors as specified (see 6.3).

Grade A - 2.0 to 7.0 oz/yd² (67.8 to 237.4 g/m²)

White (only) - (see 6.1.1)

Mixed Colors - (see 6.1.2)

Grade B - 3.0 to 10.0 oz/yd² (101.7 to 339.1 g/m²)

Mixed Colors - (see 6.1.2)

2. APPLICABLE DOCUMENTS.

2.1 The documents referenced in this commercial item description shall be the issues in effect on the date of issuance of the invitation for bids or request for proposal unless otherwise specified. These documents form a part of this commercial item description to the extent specified. In the event of a conflict between this commercial item description and a document referenced herein, this commercial item description shall take precedence.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data which may improve this document should be sent to: General Services Administration, Engineering Group (7FXEE), 819 Taylor Street, Fort Worth, TX 76102

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Military Standard:

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

Copies of military standards may be obtained from Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

ASTM Standards:

D 276 - Standard Test Methods for Identification of Fibers in Textiles.

D 3776 - Standard Test Methods for Mass Per Unit Area (Weight) of Woven Fabric

Copies of ASTM standards may be obtained from ASTM, 1916 Race Street, Philadelphia, PA 19103.

3. SALIENT CHARACTERISTICS

3.1 Material. Wiping rags shall be all cotton or cotton-synthetic blends made from either clean mill ends and mill remnants or reclaimed fabrics from household articles and garments. Rags shall be soft, absorbent, and of either woven or knitted construction. Heavily napped fabrics, mesh fabrics constructed from hard twisted yarns, and starched or stiffened fabrics are not acceptable. Rags made from United States flags, national flags of foreign countries, or remnants thereof are strictly prohibited.

3.2 Size and measurement. Each wiping rag shall have an area of not less than 200 in² (1290 cm²) and shall be not less than 9.0 inches (22.9 cm) in width and not greater than 44.0 inches (111.8 cm) in length (see 6.1.4).

3.3 Weight.

3.3.1 Grade A. Grade A wiping rags shall not weigh less than 2.0 oz/yd² (67.8 g/m²) or greater than 7.0 oz/yd² (237.4 g/m²) (see 4.7.5).

3.3.2 Grade B. Grade B wiping rags shall not weigh less than 3.0 oz/yd² (101.7 g/m²) or greater than 10.0 oz/yd² (339.1 g/m²) (see 4.7.5).

3.4 Absorbency rate. All rags shall absorb water and oil within 15.0 seconds when tested in accordance with 4.7.1.

3.5 Moisture Content. Rags shall have a moisture content not greater than 7.5 percent when tested in accordance with 4.7.4.

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3.6 Washing and sanitization. All rags shall be thoroughly washed, rinsed, and sanitized (see 6.1.3 and 6.2). The sanitizing process shall include subjecting the rags to temperatures of not less than 180°F (82°C) during washing cycles (see 6.1.3). This processing shall be performed in the United States, its possessions, or Puerto Rico.

3.7 Defective Characteristics. Rags exhibiting any of the following characteristics shall be considered defective:

- (a) Rags containing stains which cover more than 10 percent of the area of the rag.
- (b) Rags containing an aggregate of more than 1 in² (6.5 cm²) of hardened surface.
- (c) Rags containing dirt, dust, abrasives, or other clearly noticeable nonfibrous materials.
- (d) Rags made of mesh fabrics, such as lace, scrim, and netting, except that mesh will be acceptable as a border if not greater than 1.0 inch (2.5 cm) in depth on an otherwise acceptable rag.
- (e) Rags badly worn or tender so as to be unsuitable for the intended purpose (see 4.6).
- (f) Tattered parts less than 3.0 inches (7.6 cm) in width and greater than 6.0 inches (15.2 cm) in length (see 6.1.5).
- (g) Edges frayed or raveled continuously or intermittently to a depth greater than 2.0 inches (5.1 cm).
- (h) Rags made from unopened sleeves and pants, shorts, and drawer legs.
- (i) Any rags made from United States flags, national flags of foreign countries, or remnants thereof.
- (j) Rags containing buttons, hooks, eyes, pins, or any other metallic or plastic fittings.
- (k) Rags containing elastic yarns amounting to more than 5 percent of the area of the rag.
- (l) (Grade A only). Rags made from fabrics containing crotches, cuff hems, waistbands, pockets, collar reinforcements, weltings, and pipings greater than 0.5 inch (1.3 cm) in width, and unopened hems greater than 0.5 inch (1.3 cm) in width are unacceptable, except for rags made from sheets and pillow cases containing hems greater than 4.0 inches (10.2 cm) in width.
- (m) (Grade B only). Rags weighing greater than 8 oz/yd² (271.3 g/m²) and made from pants, overalls, jackets, coats, and skirts, having pockets, reinforcements (including collar, cuffs, buttonholes, and waistband reinforcements), crotches, welting, piping (such as used on slip covers, etc.), unopened hems greater than 1.0 inch (2.5 cm) in width, and patches with an area greater than 4 in² (25.8 cm²) are unacceptable.

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3.8 Put up. Rags shall be baled in machine compressed bales of 50 lb (22.7 kg) minimum net weight with a volume not greater than 3.5 ft³ (0.1 m³). The bales shall be secured with steel strapping, wire ties, or rope in a regular and uniform manner allowing the bales to be stacked during transportation and storage. Any bale weighing less than 49.75 lb (22.6 kg) or measuring greater than 3.5 ft³ (0.1 m³) shall be cause for rejection of the lot (see 4.4).

3.9 Workmanship. The wiping rags shall function for the purpose intended (see 1.1). No defects that affect serviceability shall be permitted.

3.10 Regulatory Requirements. The offeror/contractor is encouraged to use recovered materials in accordance with Public Law 94-580, as amended, to the maximum extent practicable.

3.11 Metric products. Products manufactured to metric dimensions will be considered on an equal basis with those manufactured using inch-pound units, provided they fall within the tolerances specified and all other requirements of this document are met. If a product is manufactured to metric dimensions and those dimensions exceed the tolerances specified in the inch-pound units, a request should be made to the specification preparing activity for changes to this document.

3.12 Measurement system. The values stated in inch-pound units are to be regarded as the standard. The metric values stated in parentheses are for information purposes only.

3.13 Commercial item. The use of the term "commercial item description" in this document does not imply that any item or items offered are not required to conform with all requirements specified herein.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the contractor may utilize 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 that supplies and services conform to prescribed requirements.

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4.1.1 Certificate of compliance. When certificates of compliance for test requirements are submitted, the Government reserves the right to inspect such items to determine the validity of the certification. Certificates of compliance shall be accompanied by actual test results dated not more than one year prior to the date of the start of the contract or date of purchase order. The contractor shall provide the name and address of the laundry where the rags have been washed, rinsed, and sanitized if this process is not performed by the contractor.

4.2 Sampling. Unless otherwise specified, sampling shall be in accordance with MIL-STD-105.

4.3. Lot formation. All bales of wiping rags of the same grade and color from the same manufacturer offered for delivery at one time shall be considered a lot for purposes of inspection.

4.4 Weight/volume verification. Select 10 bales from the lot and determine the minimum net weight per bale. The average minimum weight of the bales shall be 50 lb (22.7 kg). Any single weight determination of less than 49.75 lb (22.6 kg) shall be cause for rejection of the lot (see 3.8).

Select 5 of the 10 bales and determine the volume of each bale. Any bale measuring greater than 3.5 ft³ (0.1 m³) in volume shall be cause for rejection of the lot (see 3.8).

4.5 Sampling for visual and dimensional examination. For the purpose of visual and dimensional inspection, the lot shall be defined as the number of rags submitted for inspection (this shall be the number of bales multiplied by 200, the approximate number of rags per bale). Sampling shall be in accordance with inspection level S-4, AQL 2.5 percent defective for major defects and 4.0 percent defective for minor defects. The sample unit shall be one rag. No more than five rags shall be selected from any one sample bale. Rags shall be selected at random and examined for the defects as listed in Table I. During this examination, if any rag is suspected of not containing cotton by visual examination or by feel, all rags in the sample are to be tested in accordance with 4.7.3. If any rag fails the test in accordance with 4.7.3, it shall be classified as a major defect.

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TABLE I. Examination for visual and dimensional characteristics.

Category	Defects	Classification	
		Major	Minor
General	One or more rags made from United States flags, national flags of foreign countries, or remnants thereof (see 3.1) shall cause the entire lot to be rejected.		
Grades A and B	a. Rags containing no cotton fiber (any amount of linen or flax fiber is acceptable)	X	
	b. Dirt, dust, and abrasive material		X
	c. Rags containing elastic yarns in excess of 5 percent of the area of the rag		X
	d. Objectionable odor		X
	e. Not of specified dimensions (see 3.2)	X	
	f. An aggregate of more than 1.0 in ² (6.5 cm ²) of hardened surface	X	
	g. Rags weighing less than or more than the amount specified (see 3.3)	X	
	h. Rags made of mesh fabrics, such as lace, scrim, and netting, except that mesh will be acceptable as a border not more than 1 inch (2.5 cm) in depth on an otherwise acceptable rag (see 3.7(d))	X	
	i. Rags made from starched or stiffened fabrics	X	
	j. Rags made from heavy napped fabrics and fabrics woven with hard twisted yarns	X	
	k. Stains which cover more than 10 percent of the area of the rag	X	
	l. Badly worn or tendered as to be unsuited for the intended purpose	X	
	m. Tattered parts less than 3.0 inches (7.6 cm) in width and greater than 6.0 inches (15.2 cm) in length		X
	n. Edge frayed or raveled continuously or intermittently to a depth greater than 2.0 inches (5.1 cm) (see 3.7(g))		X
	o. Unopened sleeves, pants and drawer legs		X

TABLE I. Examination for visual and dimensional characteristics (continued).

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Category	Defects	Classification	
		Major	Minor
Grades A and B (continued)	p. Buttons, hooks, eyes, closed safety pins, or any other metallic or plastic fittings (one or more)		X
	q. Rags that have not been thoroughly washed, rinsed, and sanitized	X	
	r. Rags containing fiber content labels that declare 100 percent synthetic fiber	X	
	s. Foreign objects or dangerous materials such as nails, tacks, pins, opened safety pins, needles, glass, sharp edged metal items, etc.	3X*	
Grade A (only)	a. Unopened hems greater than 0.5 inch (1.3 cm) in width (see 3.7(1))		X
	b. Rags containing crotches, cuff hems, waistbands, collar reinforcements, pockets, weltings, and pipings greater than 0.5 inch (1.3 cm) in width which are not sheets (see 3.7(1))	X	
	c. Rags not white when specified (see 6.1.1 and 6.4)	X	
Grade B	a. Rags weighing greater than 8 oz/yd ² (271.3 g/m ²) and made from pants, overalls, jackets, coats, and skirts, having pockets, reinforcements (including collar, cuffs, buttonholes, and waistband reinforcements), crotches, welting, piping (such as used on slip covers, etc.), unopened hems greater than 1.0 inch (2.5 cm) in width, and patches with an area over 4 in ² (25.8 cm ²) (see 3.7(m))	X	

* Defect is equivalent to three major defects as signified by "3X"

4.6 Examination for tenderness. Wiping rags which are in question as to tenderness (see 3.7(e)) shall be examined in the following manner:

The rag shall be grasped on opposite edges so that it remains fully opened and flat. There shall be approximately 3 inches of material gathered in each hand. With the arms extended, the rag shall be subjected to a steady outward force. If the rag can be easily separated in this manner, it shall be considered tender.

4.7 Testing. Rags shall be tested for characteristics detailed below for each lot of material presented for delivery.

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4.7.1 Absorption. The lot size shall be expressed in terms of quantity of rags in the lot, based on 200 rags per bale. The inspection level shall be S-3, AQL 6.5 percent defective. The sample unit shall be one rag. Each sample rag shall be supported so that the area being tested does not contact any surface. One drop of distilled water and one drop of light machine oil (ISO 32 grade lubricating oil), each 0.04 milliliter in volume and $70 \pm 2^{\circ}\text{F}$ ($21 \pm 1^{\circ}\text{C}$), shall be applied separately to applicable sample rags through a capillary tube. The drops shall fall freely onto the rag from a height of approximately 2 inches (5.1 cm). The time, from initial contact of the drop with the rag until the drop is completely absorbed by the rag, shall be measured using a stopwatch. The time shall be noted to the nearest 0.1 second. Failure to completely absorb the drop in less than 15.0 seconds shall fail the sample.

4.7.2 Cotton Fiber Content. The lot size shall be expressed in terms of quantity of rags in the lot, based on 200 rags per bale. The sample unit shall be one rag. The sample rags shall be randomly selected using inspection level S-3, AQL 6.5 percent defective. Rags chosen for the absorbency test may be used. The rags shall be tested in accordance with paragraph 4.7.2.1 or 4.7.2.2 to determine the presence of cotton fiber (see 3.1).

4.7.2.1 Identification of cotton. Oils, waxes, and dirt shall be removed from the specimen by washing in one of the following: ether, acetone, alcohol, or a 5-percent aqueous solution of sodium hydroxide. Dyes shall be removed using one of the following methods:

- (a) By oxidation, using nitric acid, hydrogen peroxide, or chlorine water;
- (b) By solution, using alcohol, acetic acid, hydrochloric acid, or pyridine; or,
- (c) By reduction using hydrosulphite, stannous chloride, or hydrochloric acid with metallic zinc.

After dirt, oils, waxes, and dyes have been removed, place a dozen fibers from the sample onto a slide. The fibers shall be immersed in 3 or 4 drops of Herzberg's stain, covered with a slide (avoiding air bubbles), and allowed to stand 2 minutes with surplus stain drained off. Examine the prepared fibers with a microscope using transmitted light and 100 diameters magnification. Magnification up to 500 diameters may be used if a more detailed examination is necessary. The sample fibers shall be compared with a reference sample which has been treated in the same manner.

The color of cotton (*Gossypium* species) in the natural state, ranges from white to ecru. The staple length of commercial cottons varies from about 1.24 inch (3.1 cm) to slightly more than 2 inches (5.08 cm). Microscopically, most fibers appear much like a twisted ribbon with rounded edges. They have no longitudinal or cross markings; the lumens vary from very narrow to over 2/3 of the diameter of the fiber. Diameters of the fibers vary from about 9

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to 25 microns and average from 16-20 microns. Undyed cotton fibers are stained pink to dark red in color by Herzberg's stain.

4.7.2.2 As an alternative to the identification method described in paragraph 4.7.2.1, ASTM Standard Test Method D 276 (see 2.1) may be used to identify cotton fiber content.

4.7.3 Moisture Content. From the inspection sample for weight verification, randomly select 5 rags each from 5 bales (25 rags) with the moisture content to be determined immediately. If testing for moisture content is not possible immediately upon selection, the samples shall be placed in an air tight container or plastic bag and sealed to prevent moisture loss. To determine moisture content, place the rags in a tared air tight container and weigh. This weight minus the tare weight of the container is the original weight of the rags, symbolized below by "Wo". Remove the lid from the container and immediately place the container in an oven which has been preheated to a temperature of 221 - 230°F (105 - 110°C). After a minimum of 2 hours, remove the container and immediately reseal. Allow to cool. After the container has cooled, reweigh. This weight minus the tare weight of the container is the dry weight of the rags, symbolized below by "Wd". The percentage of moisture present in the samples shall be calculated using the following formula:

$$\text{Percent Moisture Content} = [(Wo - Wd)/Wo] \times 100$$

The moisture content of the samples shall be considered the moisture content of the entire lot. If the moisture content of the sample unit exceeds 7.5 percent, the entire lot shall be rejected.

4.7.4 Cloth weight verification. The lot size shall be in terms of the quantities of rags, based on 200 rags per bale. The inspection level shall be S-3, AQL 2.5 percent defective. The sample rags shall be measured for their mass per unit area as specified by ASTM D 3776. Standard conditioning of samples for weighing shall not be required except in cases of dispute. The results shall be reported to the nearest 0.1 oz/yd² (3.3 g/m²). For Grade A rags, any rag weighing less than 2.0 oz/yd² (66.7 g/m²) or greater than 7.0 oz/yd² (233.3 g/m²) shall fail. For Grade B rags, any rag weighing less than 3.0 oz/yd² (100.0 g/m²) or greater than 10.0 oz/yd² (333.3 g/m²) shall fail.

4.8 Examination of preparation for delivery. A random sample of bales shall be selected from each lot for examination for conformance with the preservation, packaging, packing, labeling, and marking required in the contract or order. Samples shall be selected in accordance with inspection level S-2, AQL 6.5, expressed in terms of defects per hundred units. The sample unit shall be one bale.

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5. PREPARATION FOR DELIVERY.

5.1 Commercial packing. Wiping rags of one grade only shall be furnished in bales of weight and volume as specified in paragraph 3.8. The bales shall be covered with clean serviceable material and secured with strapping, wire ties, or rope. Packaging and packing requirements other than those listed herein shall be specified in the contract or purchase order.

5.2 Marking. Marking shall be as specified in the contract or purchase order. In addition, each bale shall be marked with the manufacturer's lot number.

6. NOTES

6.1 Definition of terms.

6.1.1 White. The term "white" (see 1.2.2) shall be interpreted to mean the following type of rags: unbleached, fully bleached, and colored rags from which the dye color has been completely removed (stripped rags) except that evidence of a dye color on seams of stripped rags will be acceptable. Ornamental colored trimmings are acceptable provided the trimmings do not cover more than 5 percent of the area of the rag.

6.1.2 Mixed Colors. The term "mixed colors" (see 1.2.2) is intended to include rags of any color, including "white" rags, as acceptable.

6.1.3 Sanitization. The term "sanitized" (see 3.6) means that the rags have been subjected to temperatures of not less than 180°F (82°C) during washing cycles.

6.1.4 Size and Measurements. The terms "width" and "length" (see 3.2) are defined as follows:

The minimum "width" of a rag shall be the measurement between the two closest opposing points on the perimeter of the rag. The maximum "length" of a rag shall be the distance between the two most distant points along opposing edges of the rag. When rags are nearly rectangular, the longest edge shall be considered the "length".

6.1.5 Tatter. The term "tatter" (see 3.7(f) and Table I) means a fabric part protruding from the edge of the body of the fabric.

6.2 Rinsing Agents. In the process of rinsing rags (see 3.6), use of a wetting agent (surfactant) to increase the absorbency of the rags is permissible provided the rags so treated meet all requirements of this commercial item description and are non-toxic.

