

# **JAN-C-178A**

**23 OCTOBER 1945**

**SUPERSEDING**

**JAN-C-178**

**31 January 1945**

## **JOINT ARMY-NAVY SPECIFICATION**

### **CHARCOAL**

**(For Use in Munitions)**

**Army Number**  
**50-11-42D**

**Navy Number**  
**51C51a**

This specification was approved by the War Department and the Navy Department for use of procurement services of the Army and the Navy and supersedes the following specifications:

**U. S. Army**  
**50-11-42c**  
**31 Jan. 1945**

**Navy Department**  
**51C51**  
**31 Jan. 1945**

#### **A. APPLICABLE SPECIFICATIONS**

**A-1.** The following specifications, of the issue in effect on date of invitation for bids, form a part of this specification:

##### **U. S. ARMY SPECIFICATIONS**

**50-0-1—General Specification for Ammunition except Small Arms Ammunition.<sup>1</sup>**

**100-2—Standard Standard Specification for Marking Shipments by Contractors.**

##### **NAVY DEPARTMENT SPECIFICATION**

**General Specifications for Inspection of Material.<sup>2</sup>**

##### **FEDERAL SPECIFICATION**

**RR-S-366—Sieves; Standard, Testing.**

##### **INTERSTATE COMMERCE COMMISSION SPECIFICATION**

**37D—Steel Drums, Single Trip Container.**

#### **B. CLASSES**

**B-1.** This specification covers charcoal furnished in the following classes as specified in the contract or order. (See par. H-2):

- Class a.**
- Class b.**
- Class c.**
- Class d.**

<sup>1</sup> Applicable only to Army purchases.

<sup>2</sup> Applicable only to Navy purchases.

**C. MATERIAL AND WORKMANSHIP**

C-1. *Material.*—Charcoal shall be uniform and free from excess extraneous material such as unburned wood, sticks, dirt, grit, etc.

**D. GENERAL REQUIREMENTS**

D-1. See section E.

**E. DETAIL REQUIREMENTS**

E-1. *Composition.*—Charcoal shall be prepared by the destructive distillation of willow, alder, or suitable hardwoods in such a manner as to yield charcoal of the best composition and cleanliness of burning. When specified in the contract or order, charcoal produced from a specific source shall be required. (See par. H-2.)

E-2. *Moisture.*—Unless otherwise specified in the contract or order the moisture content of charcoal shall not exceed 5 percent. (See par. H-2.)

E-3. *Ash.*—The ash content shall not exceed 5 percent; except when charcoal from a specific source is specified, the ash content shall be as specified in the contract or order. (See par. H-2.)

E-4. *Granulation.*—Charcoal shall meet the granulation requirements shown in table I using U. S. standard sieve conforming to the requirements of Federal Specification RR-S-366.

TABLE I—Granulation

	Class a	Class b	Class c	Class d
Through No. 50 sieve (minimum)...		Percent 99.9	Percent	Percent
Through No. 60 sieve (minimum)...		-----	-----	98.0
Through No. 100 sieve (minimum)...		-----	99.9	-----
Through No. 140 sieve (maximum)...		1.0	-----	-----
Through No. 140 sieve (minimum)...		-----	-----	80.0
Through No. 325 sieve.....		-----	-----	50.0
				80.0

1 Minimum.

2 Maximum.

**F. METHODS OF SAMPLING, INSPECTION, AND TESTS**

F-1. *Size of lots.*—The maximum size of a lot shall not exceed 10,000 pounds.

F-2. *Sampling.*—A minimum of 10 percent of the containers shall be selected by the Government inspector in such a manner as to be representative of the lot. When lots comprise less than 100 containers, either 10 containers or all the containers in the lot shall be selected. From each 100 pounds of selected containers sufficient of the material to form a primary sample of 1 pound shall be removed. The pieces shall be thoroughly broken up if necessary, to facilitate blending. A 4-ounce portion shall be placed in a rubber-stoppered bottle and labeled so that the container from which it was taken can be easily identified. The remaining portions of the primary samples shall be mixed thoroughly and quartered until a composite sample of approximately 1 pound is obtained. The composite sample shall be placed in a rubber-stoppered bottle or tin canister and labeled so as to show the name of the material, manufacturer, plant, contract or order number, lot number and number of pounds in the lot. The primary samples shall be held for possible future examination should the composite sample fail to meet the requirements of this specification.

F-3. *Inspection.*—

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**F-3a. Army.**—Inspection shall be made in accordance with U. S. Army Specification No. 50-0-1.

**F-3b. Navy.**—Inspection shall be made at the point of delivery unless otherwise specified in the contract or order.

**F-4. Tests.**—The laboratory tests shall be made in accordance with the following paragraphs. For Navy purchases the tests shall be made at a Government laboratory unless otherwise specified in the contract or order:

**F-4a. Moisture.**—Transfer a weighed portion of approximately 2 gm. of the sample to a tared platinum or porcelain crucible. Heat the crucible and contents for  $1\frac{1}{4}$  hours at  $100^{\circ}$  to  $105^{\circ}$  C., cool in a desiccator and weigh. Calculate the loss in weight as percentage of moisture.

**F-4b. Ash.**—Ignite the dried charcoal, obtained as described in paragraph F-4a, in the crucible, by means of a gas flame or muffle furnace. Continue heating until constant weight is obtained, cool in a desiccator and weigh. Calculate the weight of the residue in the crucible as percentage of ash in the charcoal on a moisture-free basis.

**F-4c. Granulation.**—The following granulation tests shall be made to determine the compliance of classes b, c, and d with the requirements of paragraph E-4. Nest the designated sieves from top to bottom in order of decreasing size of opening and attach a receiving pan to the bottom sieve. Place a 100-gm. portion of the sample on the upper sieve, cover and shake. Class b and c charcoal shall be shaken 10 minutes by hand or 5 minutes mechanically. Class d charcoal shall be shaken for 25 minutes mechanically. The mechanical shaker shall be geared to produce  $300 \pm 15$  gyrations and  $150 \pm 10$  taps of the striker per minute. Weigh the portions retained on each sieve and calculate to percentage passing through each of the sieves.

**F-5. Resubmission.**—If the composite sample representative of the lot fails to pass the inspection tests, the manufacturer shall have the option of having analysis of each primary sample made at no further expense to the Government. The manufacturer may then remove or replace defective portions of the lot represented by the primary samples which fail to meet the requirements of this specification and submit the lot for acceptance, provided that the markings on the container are such that complete removal or replacement of defective portions of the lot can be made to the satisfaction of the Government inspector.

#### **G. PACKAGING, PACKING, AND MARKING FOR SHIPMENT**

**G-1. Packing.**—

**G-1a. Class a.**—Unless otherwise specified, class a charcoal shall be furnished in burlap bags of not more than 100 pounds capacity, or in other containers, complying with applicable regulations of the Interstate Commerce Commission as specified in the contract or order. (See par. H-2.)

**G-1b. Classes b and c.**—Unless otherwise specified, classes b and c charcoal shall be furnished in sealed metal cans of 5 pounds capacity.

**G-1c. Class d.**—Unless otherwise specified, class d charcoal shall be furnished in sealed metal drums of 50 pounds capacity, which conform to the requirements of Interstate Commerce Commission Specification 37D. The drums shall have a removable head fitted with flanged-in or tubular gaskets. In order to remove trapped air from the charcoal during the filling operation, the drum may be vibrated.

**G-2. Marking.**—In addition to any special marking required by the contract or order, shipments for the Army shall be marked in accordance with U. S. Army Specification 100-2; for the Navy, in accordance with

the requirements of the latest issue of the Navy Shipment Marking Handbook.

#### H. NOTES

H-1. Requests, requisitions, schedules, and contracts or orders should contain the title of the specification, the number, and date.

H-2. Requests, requisitions, schedules, and contracts or orders should cover the following features:

- (a) Class desired. (See par. B-1.)
- (b) Specific source of charcoal, if required. (See par. E-1.)
- (c) Moisture content if a special limitation is required. (See par. E-2.)
- (d) Ash content if specific source of charcoal is required. (See par. E-3.)
- (e) Packing desired. (See par. G-1a.)

H-3. Use.—The primary use for class a charcoal, covered by this specification, is as an ingredient of black powder. Classes b and c charcoal are intended for use as ingredients of tracers, signals, flares, igniters and other similar uses. Class d charcoal is intended for use in pyrotechnic mixtures.

H-4. Copies of Interstate Commerce Regulations for Transportation of Explosives and Other Dangerous Articles by Freight, of which ICC Specification 37D forms a part, may be obtained upon application, accompanied by postal note (or money order), coupon, or cash, to the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Price 40 cents.

H-5. Copies of Joint Army-Navy specifications and Federal specifications (required for Army purchases) and U. S. Army specifications may be obtained as indicated in the "Index of United States Army, Joint Army-Navy, and Federal Specifications Used by the War Department." Copies of the Index may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Agencies within the War Department will obtain copies of Joint Army-Navy, United States Army, and Federal Specifications through established War Department channels. Both the title and identifying symbol number should be stipulated when requesting copies of specifications.

H-6. Copies of Joint Army-Navy specifications and Federal specifications (required for Navy purchases), Navy Department specifications, and the Navy Shipment Marking Handbook may be obtained upon application to the Bureau of Supplies and Accounts, Navy Department, Washington 25, D. C., except that Naval activities should make application to the Supply Officer in Command, Naval Supply Depot, Bayonne, N. J. Both the title and identifying symbol number should be stipulated when requesting copies of specifications.

H-7. Copies of this Joint Army-Navy specification (required for Army purchases) may be obtained from the Office, Chief of Ordnance, Army Service Forces, Washington 25, D. C.

H-8. Copies of this Joint Army-Navy specification (required for Navy purchases) may be obtained as indicated in paragraph H-6.

Notice.—When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said specifications, or other data, is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

NAVY: OS.

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SPECIFICATION ANALYSIS SHEET		Form Approved Budget Bureau No. 119-R004
<p style="text-align: center;"><u>INSTRUCTIONS</u></p> <p>This sheet is to be filled out by personnel either Government or contractor, involved in the use of the specification in procurement of products for ultimate use by the Department of Defense. This sheet is provided for obtaining information on the use of this specification which will insure that suitable products can be procured with a minimum amount of delay and at the least cost. Comments and the return of this form will be appreciated. Fold on lines on reverse side, staple in corner, and send to preparing activity (as indicated on reverse hereof).</p>		
SPECIFICATION		
ORGANIZATION (Of submitter)		CITY AND STATE
CONTRACT NO.	QUANTITY OF ITEMS PROCURED	DOLLAR AMOUNT \$
MATERIAL PROCURED UNDER A		
<input type="checkbox"/> DIRECT GOVERNMENT CONTRACT <input type="checkbox"/> SUBCONTRACT		
1. HAS ANY PART OF THE SPECIFICATION CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE?		
A. GIVE PARAGRAPH NUMBER AND WORDING.		
B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES.		
2. COMMENTS ON ANY SPECIFICATION REQUIREMENT CONSIDERED TOO RIGID		
3. IS THE SPECIFICATION RESTRICTIVE?		
<input type="checkbox"/> YES <input type="checkbox"/> NO IF "YES", IN WHAT WAY?		
4. REMARKS (Attach any pertinent data which may be of use in improving this specification. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity)		
SUBMITTED BY (Printed or typed name and activity)		DATE