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SUPERSEDING
Int. Fed. Spec. O-P-00166d(AGR-ARS)
June 20, 1960 and
Fed. Spec. Q-P-166c
December 17, 1955

FEDERAL SPECIFICATION

PEAT, MOSS; PEAT, HUMUS; AND PEAT, REED-SEDGE

This specification was approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal agencies.

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers four general types of peat for agricultural use (see 6.1).

1.2 Classification.

1.2.1 *Types and classes.* Peat covered by this specification shall be furnished in the following types and classes, as specified (see 6.5).

Type I.—Sphagnum moss peat.

Class A.—Finely divided.

Class B.—Medium divided.

Class C.—Coarsely divided.

Type II.—Other moss peats.

Type III.—Humus peat (peat muck).

Type IV.—Reed-sedge peat.

2. APPLICABLE STANDARDS

2.1 The following standards, of the issues in effect on date of invitation for bids, form a part of this specification:

Federal Standards:

Fed. Std. No. 102—Preservation, Packaging, and Packing Levels.

Fed. Std. No. 123—Marking for Domestic Shipment (Civilian Agencies).

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(Single copies of this specification and other product specifications required by activities outside the Federal Government for bidding purposes are available without charge at the General Services Administration Regional Offices in Boston, New York, Atlanta, Chicago, Kansas City, Mo., Dallas, Denver, San Francisco, Los Angeles, Seattle, and Washington, D. C.

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3. REQUIREMENTS

3.1 Bid sample. A bid sample shall be furnished with the bid for showing physical characteristics such as: Color, texture, and character of plant remains as described in 3.2. The bidder shall certify that deliveries of peat will be at least equal to the quality of the bid sample; the specification to apply in all other respects.

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3.2 Material.

3.2.1 *Type I, classes A, B, and C.* Sphagnum moss peat shall consist of at least 75 percent of partially decomposed stems and leaves of sphagnum in which the fibrous and cellular structure is still recognizable. Its texture may vary from porous fibrous to spongy fibrous, and it shall be either crumbly or compact, but fairly elastic. It shall be nearly free from decomposed colloidal residue, wood, etc., and shall be essentially brown in color.

3.2.2 *Type II.* Other moss peat shall consist of at least 75 percent of partially decomposed stems and leaves of hypnum, polytrichum, and other mosses in which the cellular structure is still recognizable. Its texture may vary from porous fibrous to spongy fibrous, and it shall be either crumbly or compact, but fairly elastic. It shall be nearly free from decomposed colloidal residue, wood, etc., and shall be essentially brown to black in color.

3.2.3 *Type III.* Humus peat (peat muck) shall be finely divided plant debris so decomposed that its biological identity is lost. It shall be furnished in granular form, of uniform composition and size, free from hard lumps. It shall be low in wood or other extraneous matter, and shall be brown to black in color.

3.2.4 *Type IV.* Reed-sedge peat shall be the moderately decomposed stems, leaves and roots of rushes, coarse grasses, sedges, reeds, canes, cat tails, and similar plants. It shall be coarse or finely fibrous, and brown to black in color. It shall be low to moderately low in decomposed colloidal plant residue and low in wood or other extraneous materials.

3.3 Characteristics. Peat shall conform to the characteristics shown in table I.

3.4 Coarseness classification. Type I, moss peat, shall be furnished in three classes of coarseness, as specified.

3.4.1 *Class A.* Class A sphagnum moss peat shall be finely divided material. Particles shall vary in size from dust up to the size of wheat bran.

3.4.2 *Class B.* Class B sphagnum moss peat shall be medium divided material. Particle size to run from the size of a pea to the size of a man's thumb, with a minimum (not over 25 percent) of finer particles and dust.

3.4.3 *Class C.* Class C sphagnum moss peat shall be coarsely divided material. Particle size to run from the size of a man's thumb to the size of a man's fist, with a minimum (not over 25 percent) of finer particles and dust.

4. SAMPLING, INSPECTION, AND TEST PROCEDURES

4.1 Unless otherwise specified herein, the supplier is responsible for the performance of all inspection requirements prior to sub-

TABLE I.—*Characteristics*

	Type I	Type II	Type III	Type IV	Test paragraph
Moisture content as normally marketed, percent by weight (see 6.5)	35 to 45	55 (max.)	55 (max.)	50 (max.)	4.5.1
Ash content, percent maximum	10	20	20	15	4.5.2
[1]Acidity	3.2 to 4.5	3.2 to 7.0	4.0 to 7.5	4.0 to 7.5	4.5.3
Water holding capacity at 1 gravity on oven-dry basis, percent by weight, minimum	800	400	200	400	5.5.4

[1] The approximate pH shall be specified by the purchaser (see 6.5).

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mission for Government inspection and acceptance. Except as otherwise specified, the supplier may utilize his own facilities or any commercial laboratory acceptable to the Government. Inspection records of the examinations and tests shall be kept complete and available to the Government as specified in the contract or order.

4.2 Sampling. From each lot offered for Government test, at least one pound of material shall be taken. Samples shall be taken from not less than 10 percent of the bags or bales offered for delivery, unless this process necessitates samples from 20 or more bags or bales; in which case, a sample (see 4.2.1) shall be taken from one bag or bale for each additional ton represented. If there are less than 10 bags or bales, the entire shipment shall be sampled.

4.2.1 *Procedure.* Portions shall be removed from the containers by removing six inches of surface material of sufficient diameter to allow a wedge to be inserted, and then removing six inches of material. The portions taken shall be thoroughly mixed on clean oilcloth or paper, reduced by quartering to the quantity of sample required, and placed in a clean, dry, air-tight metal or glass container, sealed, marked and forwarded to the testing laboratory designated by the activity concerned.

4.3 Inspection.

4.3.1 *Inspection of filled containers.* All containers shall be carefully examined and any which show evidence of loss of contents, or unsatisfactory marking shall be considered as not meeting the requirements of this specification.

4.4 Lot acceptance tests. The sample specimen selected in accordance with 4.2 shall be subjected to the tests specified in 4.5. If the specimen fails one or more of these tests, the lot shall be rejected.

4.5 Tests.

4.5.1 *Moisture content.* Place a 5 to 10 gram sample in a tared, covered vessel and weigh to the nearest milligram. Remove the cover and heat the vessel and contents at 70° C. to constant weight. Cool vessel and contents in a desiccator. Compute the percent of moisture (see table I). This oven-dried material may be used for the ash determination (see 4.5.2).

4.5.2 *Ash.* Carefully ignite the sample at 650° C. to constant weight either the dried material used in the determination of moisture content (see 4.5.1), or a new weighed sample of approximately 5 grams of oven-dried material. Compute the percent of ash, based on the oven-dry weight.

4.5.3 *Acidity.* Determine the pH value by any convenient electrolytic method for determining hydrogen ion concentration. In preparing the solution for this test, use distilled water and sample approximately in the ratio of 4 to 1 (unless a wider solid-water ratio is required for a liquid condition), respectively, by weight, shaking the mixture well. Determine the pH value at approximately 25° C.

4.5.4 *Water holding capacity.* Place an unweighed sample of 25 to 50 grams taken from the center of the composite sample, in a tared covered container having a wire screen bottom of approximately 25 meshes to the linear inch. Immerse in water at room temperature (20° to 30° C.) for 18 to 24 hours. Remove the container with sample from the water and allow to drain for one hour while supported on glass rods under a bell jar. Carefully wipe the excess water from the outside of the container and weigh. Heat in an oven at 70° C. to constant weight; cool in a desiccator and weigh. From the difference in weight between the saturated sample and the oven-dry sample, compute the percent of absorbed water, based on the oven-dry weight. (CAUTION: It is important that the sample shall not have been subjected to partial pre-

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liminary drying, as dried or partially dried peat or muck may not reabsorb water to its original absorbing capacity.

5. PREPARATION FOR DELIVERY

For civil agency procurement the definitions and applications of the levels of packaging and packing shall be in accordance with Federal Standard No. 102.

5.1 Packaging.

5.1.1 *Level C.* Unless otherwise specified, commercial packages are acceptable under this specification.

5.2 Packing.

5.2.1 *Level B.* Peat shall be procured in bulk; in bales wrapped with burlap, wood veneer, asphalt laminated paper or plastic lined multi-wall paper; or in bags made of burlap, plastic lined burlap, or plastic lined multi-wall paper.

5.2.2 *Level C.* Unless otherwise specified, peat shall be packed in substantial commercial containers of the type, size, and kind commonly used for the purpose, so constructed as to insure acceptance and safe delivery by common or other carriers at the lowest rate to point of delivery called for in the contract or purchase order.

5.3 Standard pack. Standard pack is not applicable to this item.

5.4 Marking. Marking shall be in accordance with Federal Standard No. 123 and, if specified, should include a certificate as to the approximate pH of the material.

6. NOTES

6.1 Intended use.

6.1.1 *Soil improvement.* Peat of any type can be used to improve the physical condition of heavy-textured soils and to improve the water-holding capacity of sandy soils. Acid peat is an excellent medium in which to grow acid-loving plants and as a mulch for such plants. Horticultural experience indicates that a finely divided or granular peat is preferable for incorporating into soils for such uses as seed beds and lawn establishment; whereas, a fibrous peat is generally more satisfactory as a mulch or when used as a growing medium for fibrous rooted plants in greenhouses.

6.2 The various types of peat specified herein commonly have a water-absorbing capacity greatly in excess of the minimum specified. Higher water-absorbing capacities than the minimum specified are often desirable.

6.3 Ordering data. Purchasers should exercise any desired options offered herein and should include the following information in the invitations for bids and contracts:

(*a*) Title, number, and date of this specification.

(*b*) Type and class of material required (see 1.2.1).

(*c*) The approximate pH required (see table I and 6.5).

(*d*) Unit quantities and levels of packing required (see 5.1 and 5.2).

6.4 Method of purchase. Peat shall be purchased in bales, bags, or bulk on a volume dry measure basis (cubic yards, cubic feet, etc.) or by weight. Volume dry measure must be stated where purchased by weight. Peat may be purchased on a compressed (bales) or loosened (bags or bulk) volume basis. If purchased on a compressed volume basis the loosened material shall measure at least twice the compressed volume.

6.5 Peat having a higher moisture content than is permitted by this specification but otherwise meeting specification requirements, may be considered acceptable by the inspector, at an appropriate deduction from contract price. The approximate pH should

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be specified by the purchaser for a specific purpose for which the peat is to be used. For instance, acid peat, pH range 3.5 to 4.5, should be specified for acid-loving plants.

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