

[INCH-POUND]
A-A-3048
November 7, 1996

COMMERCIAL ITEM DESCRIPTION

TAPES, MEASURING (STEEL SURVEYORS')

The General Services Administration has authorized the use of this Commercial Item Description for the procurement of the type I, class A, style 1 and 3, and class C, style 1 tapes specified in GG-T-116B for all federal agencies.

1. SCOPE.

1.1 Scope. This Commercial Item Description covers steel surveyors' tapes and reels used for general purpose distance measuring.

2. CLASSIFICATION.

2.1 Classification. This Commercial Item Description covers the following styles:

- Style 1 - Etched, (natural steel colored graduations on a black etched background)
- Style 2 - Chrome plated with black graduations
- Style 3 - Etched, meters-metric graduations (natural steel colored graduations on a black etched background)

3. SALIENT CHARACTERISTICS.

3.1 Design. Surveyor tape assemblies shall consist of a reel, with attached handle and a drum, having one end of the tape securely attached thereto and around which the tape is wound. The tape is held in place in the frame by a spindle to which a winding arm is attached. It shall be possible to remove the tape from the drum without the use of special tools. When specified in the contract or order, tapes shall be furnished without reels (see 7.2). The tape assembly shall be similar to Figure 1.

3.1.1 Reel. The reel frame shall be of steel, stainless steel, or aluminum built to withstand hard use and coated to prevent corrosion. The reel shall consist of two sides held apart by spacers, approximately 3/8 inch long, permanently secured in place.

3.1.2 Handle. The handle shall be of enameled or polished hardwood, or durable plastic, and of ample size to insure a firm hold. The handle shall be fastened to the reel frame by an axial rod through the entire length of the handle.

Beneficial comments, recommendations, additions, deletions, clarifications, etc., and any other data which may improve this document should be sent to: General Services Administration, Federal Supply Service, Tools and Appliances Commodity Center, Kansas City, MO 64131.

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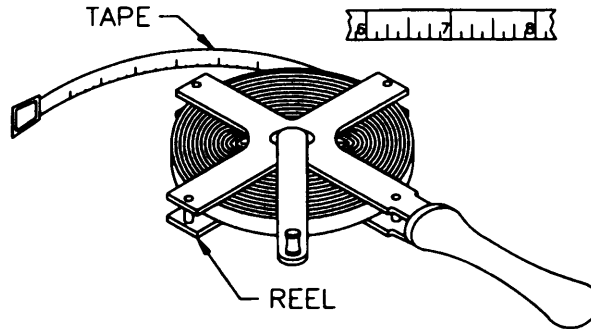


Figure 1. Tape, measuring (steel surveyors').

3.1.3 **Drum.** The diameter of the drum shall be suitable for the size tape but shall be not less than 1-3/8 inches.

3.1.4 **Winding arm.** The length of the winding arm shall be suitable to fit the length of the tape specified and shall have proper clearance with the tape when it is wound on the reel. The winding arm shall be capable of being folded over, and when folded over, shall engage the reel frame locking the tape. The winding arm shall be fitted with a large finger knob to assure speed and ease of winding.

3.1.5 **Spindle.** The spindle shall be constructed so that it will rotate freely in the reel frame when the winding arm is turned and shall cause the drum to rotate without coming in contact with the reel frame.

3.1.6 **Tape.** The tape ribbon shall be spring-tempered steel and free of hazardous sharp edges or burrs. Unless otherwise specified (see 7.2), the tapes shall be graduated for reading left hand to right hand. Unless otherwise specified (see 7.2), the tape shall be furnished with two end loops and two leather thongs; each shall be at least 20 inches in length. If specified (see 7.2), two removable finger rings shall be supplied in lieu of the end loops and leather thongs.

3.1.6.1 **Length/width/thickness.** As specified (see 7.2), the nominal length, width, and thickness of the tape ribbon shall conform to the following:

- a. Length shall be 100, 200, 300, or 500 feet or in metric measurements 30 or 50 meters as specified.
- b. Width shall be 1/4, 3/8, or 5/16 inch as specified.
- c. Thickness shall be 0.012, 0.015, 0.020, or 0.025 inch as specified.

3.1.6.2 **Graduations.** As specified (see 7.2), the graduations shall be one of the following:

- a. Feet, tenths, and hundredths for the entire length.
- b. Feet, with first and last foot to tenths and hundredths.
- c. Feet, with first and last foot to tenths.
- d. Feet, with an extra foot before zero to tenths and hundredths numbered from zero, and with last foot to tenths and hundredths.
- e. Feet, with extra foot before zero to tenths numbered from zero.
- f. Feet with the foot preceding each 100 foot interval graduated in tenths and hundredths.
- g. Feet in eighths for entire length.
- h. Metric graduations shall be in meters and decimeters, with first and last decimeter to millimeters, and the balance of the first and last meter to centimeters.
- i. Metric graduations shall be meters, decimeters and centimeters, with extra decimeter before zero to millimeters numbered from zero.

3.1.6.3 Graduation markings. Style 1 and 3 tapes shall have a black etched background with natural steel graduations raised not less than 0.0005 inch with a clear protective coating. Style 2 tapes shall have a dull chromium plated background with black graduations.

3.2 Identification marking. The tool shall be marked with the manufacturer's name or identifying symbol and the state or country of manufacture, unless otherwise specified. All identification markings shall be engraved, etched, molded, or indented directly on the item's surface in such a manner that it remains clearly legible throughout the life of the item.

3.3 Workmanship. Details of workmanship shall be in accordance with the best commercial practice. Paints, coatings, platings, and finishes shall be smooth, adherent, continuous, and not stained or discolored. External surfaces shall be free of tool and gouge marks, nicks, or other surface imperfections. The item shall be free from manufacturing workmanship defects (e.g., sharp or rough external edges, corners, or surfaces) and material workmanship defects (e.g., pits, rips, fins, burrs, tears, nodules, cracks, blisters) which may adversely impact the item's serviceability, durability, safety, or appearance.

4. REGULATORY REQUIREMENTS.

4.1 Recovered materials. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR).

4.2 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 (using conversion tables contained in the latest revision of Federal Standard 376) 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 contracting officer to determine if the product is acceptable.

5. QUALITY ASSURANCE PROVISIONS.

5.1 Product conformance. The product provided to the Government shall conform to the contractually specified requirements. For product characteristics and requirements which are not contractually specified, the provided product shall conform to the producer's own drawings, standards, specifications, and quality assurance practices for the highest quality product commercially offered by the producer. If the product is not commercially offered by the producer, the best commercial practices shall apply. The Government reserves the right to require proof of such conformances prior to first delivery and thereafter as provided for under the provisions of the contract.

5.2 Responsibility for inspection. Unless otherwise specified, the contractor is responsible for the performance of all inspection requirements and may use any commercial facilities (including the contractor's own facilities) suitable for performance of the inspection requirements, unless disapproved by the Government. The Government reserves the right to perform any inspections deemed necessary to assure the item conforms to the specified requirements.

5.3 Bid sample(s). When a bid sample requirement is specified in the solicitation, the bid sample(s) shall be inspected for all salient characteristics by the Government. A failure of any bid sample to meet the salient characteristics shall be cause for rejection.

5.4 First article sample(s). When a first article requirement is specified in the contract, the first article sample(s) shall be inspected for all salient characteristics. A failure of any first article sample to meet the salient characteristics shall be cause for rejection.

5.5 Accuracy. The tape accuracy of each sample shall be determined by direct comparison to a measured standard calibrated on a continuing basis and directly traceable to NBS standards. The tape shall be extended and tensioned to 20 pounds force while horizontally supported. The calibrated standard and the sample being tested shall be acclimated to the test site ambient conditions prior to comparison. Tapes shall be tested in 100 foot increments and shall have a total accumulated error of not more than 0.100 inch in 100 feet. Total error shall be additive for each 100 foot increment. Metric tapes shall have an accumulated error of not more than 2.5 millimeters per a 30 meter

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length. In addition to the total accumulated error requirement, no intermediate indice shall vary more than ± 0.0100 inch from the indication when randomly examined for accuracy. The metric accuracy shall not vary more than ± 0.25 millimeter at any intermediate indice. Failure to meet this requirement shall be cause for rejection of the sample and the lot it represents.

5.6 End loop and finger ring test. Each sample tape shall be supported at approximately 6 inches from the tip of the end loop or finger ring, and a tension load of 50 pounds minimum shall be applied for five minutes minimum. The tape shall not break or be pulled out of the clip which fastens the loop or finger ring, and the loop or finger ring shall not break or deform. Failure to meet this requirement shall be cause for rejection of the sample and the lot it represents.

5.7 Holding strength at reel. Each sample tape shall be supported at the reel and a tension load of 50 pounds minimum shall be applied to the tape and held for a minimum of five minutes. The ribbon shall not be loosened from the reel. Failure to meet this requirement shall be cause for rejection of the sample and the lot it represents.

5.8 Permanent deformation of tape. Each sample tape shall be tested for permanent set by encircling over a 2-inch diameter rod. The tape shall return to the original condition when released. Failure to meet the test requirement shall be cause for rejection of the sample and the lot it represents.

5.9 Abrasion test. Unless otherwise specified, a ribbon specimen 6 to 6-1/2 inches long shall be cut from each end and from the center of the tape. The three ribbon specimens shall be tested using an abrasion tester (reference 6.1) and standard abrasive sand (reference 6.2) as specified in ASTM D968. Each specimen shall be positioned such that the sand falls on the graduations and figures of the ribbon specimen. Four liters of sand shall be applied to etched tapes, 8 liters of sand to plated tapes, and 16 liters of sand to enameled tapes. If noticeable portion of the graduation or figures has been removed, the specimen is considered to have failed the test. Failure of any of the specimens shall be cause for rejection.

5.10 Flexibility test. Four specimens approximately 8 inches long shall be cut from the ribbon of the sample style 2 tape, from each end and from 1/3 of the distance from each end. The specimens shall be exposed to an atmosphere of 40 degrees Fahrenheit ± 5 degrees for 10 minutes minimum. While at this temperature, the specimen shall be bent over upon itself and there shall be no cracks evident in the chrome plating up to the time the tape-steel snaps. Failure to meet this requirement shall be cause for rejection of the sample and the lot it represents.

5.11 Corrosion-resistance test, enameled and plated tapes. Unless otherwise specified, a ribbon specimen 6 to 6-1/2 inches long shall be cut from each end and from the center of the tape. The three ribbon specimens shall be placed in a 5% salt fog for a period of 48 hours at a temperature of 93 to 98 degrees Fahrenheit. At 24 hour intervals, the specimens shall be rinsed free of collected salt. After 48 hours, the front surface and back surface of each specimen shall be examined. The examined surfaces shall exclude 1 inch at both ends and 1/32 inch from both edges. Each surface shall have no visible evidence of corrosion, blistering, or flaking over the examined surface.

6. PACKAGING.

6.1 Packaging. Requirements of preservation, packing, packaging, and marking of packages shall be as specified in the contract or order.

7. NOTES.

(This section contains information of a general or explanatory nature that is not mandatory.)

7.1 Addresses for obtaining copies of referenced documents:

Federal Specifications and Standards: Federal Supply Service Bureau, Specification Section, Suite 8100, 470 L'Enfant Plaza, SW, Washington, DC 20407.

Federal Acquisition Regulations (FAR): Government Printing Office, Superintendent of Documents, Washington, DC 20402-9371.

ANSI/ASQC Z1.4: American Society for Quality Control, P.O. Box 3005, 611 East Wisconsin Avenue, Milwaukee, WI 43201-4606.

ASTM D968: American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

7.2 Ordering data. Purchasers should select the preferred options permitted herein and should include the following information in procurement documents:

- (a) Title, number, and date of this Commercial Item Description.
- (b) When applicable, the appropriate NSN(s).
- (c) When applicable, the specific styles, as specified in the Commercial Item Description.
- (d) If bid samples are required, the number of samples required, and the subjective inspection requirements.
- (e) If first article samples are required and the number of samples required.
- (f) If lot sampling inspection is required and the applicable lot sampling requirements. For example:

Sampling for inspection. Sampling for inspection (both examinations and testing) shall be in accordance with ANSI/ASQC Z1.4.

Inspection. Each sample tool shall be examined and tested for all salient characteristics. The Inspection Level shall be S-2 with an Acceptable Quality Level of 4.0, expressed in terms of defects per hundred units.

- (g) What preservation, packing, packaging, and marking of packages are required.
- (h) If tapes are to be furnished without reels (see 3.1).
- (i) If tapes are to read right hand to left hand (see 3.1.6).
- (j) If two end loops and two leather thongs are required (see 3.1.6).
- (k) If removable finger rings are required (see 3.1.6).
- (l) Length required (see 3.1.6.1).
- (m) Width required (see 3.1.6.1).
- (n) Thickness required (see 3.1.6.1).
- (o) Type of graduations required (see 3.1.6.2).

7.3 National Stock Numbers (NSNs). The following list of NSNs corresponds to the styles specified in this CID. This list may not be indicative of all possible NSNs associated with this CID.

NSN	STYLE	LENGTH	WIDTH	MARKINGS	GRADUATIONS
5210-00-221-1876	2	100 feet	1/4 inch	English	100ths, 10ths
5210-00-221-1865	3	30 meters	1/4 inch	Metric	mm, dm, m
5210-00-221-1862	3	50 meters	1/4 inch	Metric	mm, dm, m
5210-00-832-9368	2	200 feet	3/8 inch	English	8ths
5210-00-243-2879	1	300 feet	5/16 inch	English	100ths, 10ths

MILITARY INTERESTS:

NONE: DoD has no registered interest in revisions or notices to this Commercial Item Description until further notice.

PREPARING ACTIVITY:

GSA - FSS