



20.1 SCOPE.

20.1.1 Purpose. This Packaging Design Drafting Procedures Section provides a standard for the preparation and interpretation of Company packaging drawings. This section is concerned with drawing format and procedure peculiar to packaging drawings. Packaging Drawing Procedures are normally the same as those of engineering drawings. Drawing procedures not covered here may be found in other sections of this Manual.

20.2 APPLICABLE DOCUMENTS. Note: DoD Policy Memo 05-3 “Elimination of Waivers to Cite Military Specifications and Standards in Solicitation and Contracts” has eliminated the need for waivers to use MIL-SPECS and MIL-STDS on DoD contracts. (See PREFACE 1, Section 2)

MIL-STD-129	Marking for Shipment and Storage
MIL-STD-2073-1D	Standard Practice for Military Packaging (Use latest Change Notice)
DI-PACK-80120B	Preservation and Packing Data
DI-PACK-80121B	Special Packaging Instructions (SPI)
AIM BC1	Uniform Symbology Specification Code 39

20.3 DEFINITIONS. (Alphabetically Listed. For Complete Definitions, see: ANSI MH15.1.)

20.3.1 Special Packaging Instruction (SPI). A procedure or drawing applicable to all phases of the preservation, packaging and packing operation, ranging from the initial cleaning to the final shipping container. An item is considered special if drawings, sketches, illustrations, models, narrative-type instructions are needed to define packaging requirements or if specialized containers are required to satisfy packaging requirements. See clause 3.6.2.9 in MIL-DTL-31000C and MIL-STD-2073-1D for more information about SPI.

20.3.2 Intermediate Package. An interior container which contains two or more unit packages of identical items.

20.3.3 Packing. The insertion of the unit or intermediate packages or unpackaged material into a shipping container and the application of required bracing, blocking, cushioning, and waterproof barriers. Packing is complete with the final closure, strapping, and marking of the shipping containers.

20.3.4 Preservation And Packaging. The application or use of adequate protective measures to prevent deterioration including, as applicable, the use of appropriate cleaning and drying methods, preservatives, protective wrappings, cushioning, interior containers and complete identification marking, up to but not including the exterior shipping container, except when the unit container is also the shipping container.

20.3.5 Preservation And Packaging Levels (per MIL-STD-2073-1D). Preservation and packaging which will afford adequate protection against corrosion, deterioration and physical damage for:

LEVEL A: Protection required to meet the most severe worldwide shipment, handling, and storage conditions.

LEVEL B: Protection required to meet moderate worldwide shipment, handling, and storage conditions.

It is the general policy of the DoD to use commercial packaging for all items unless it is shown that commercial packaging practices cannot provide adequate protection and preservation. See MIL-STD-2073-1D (latest change notice) for more information and the criteria for and limitations of its applicability.

20.3.6 Unit Package. The first tie, wrap, or container applied to a single item or a group of items of a single part number, preserved or unpreserved, which involves a complete or identifiable package suitable for packing inside a shipping container; or items not held by a tie, wrap, or container, preserved or unpreserved, that are individually identified and placed directly into an intermediate package or exterior shipping container.



20.4 GENERAL INFORMATION.

20.4.1 Responsibilities Of Drafting And Drafting Management. (See SECTION 2.)

20.4.2 Responsibilities Of The Checker. (See SECTION 2.)

20.4.3 Responsibilities Of Engineering And Engineering Management. (See SECTION 2.)

20.4.4 Packaged Item Identification. The packaging drawing should reference the part number of the item to be packaged in the general notes, and the part may be outlined in phantom showing its position in the package.

20.5 DRAWING APPLICATION.

20.5.1 Drawing Notes. General notes either apply to the package as a whole or are those which would become unnecessarily repetitive if placed at each point of application.

20.5.2 Flagnotes. Use instead of Local Notes in limited space area, such as Title Block, Parts List, or on the field of the drawing to prevent repetition. See PARAGRAPHS 9.3.2 and 9.3.2.1 for more information.


20.5.3 General Notes Location. General notes are located in the upper left hand corner of the drawing. See SECTION 6. They are numbered consecutively starting with "1".


20.5.4 General Notes Number Assignment. Once a note has been assigned a number, the note may be revised but must not be replaced by a note of different application. See SECTION 21.

20.5.5 General Notes For Multisheet Drawings. On multisheet drawings, the general notes start on Sheet 1. See SECTION 6.


20.5.6 General Notes Examples. The following are recommended examples of general notes used on packaging drawings as applicable.

 IDENTIFY PER _____ (use applicable dash number) WITH PART NUMBER.

 STENCIL IN 1/2" MINIMUM CHARACTERS ICC- (Insert applicable ICC number and gross weight to Interstate Commerce Commission approved containers only. Example: ICC-23F35).

 STENCIL IN 1/2" MINIMUM CHARACTERS BA- (Insert applicable BA number on Bureau of Explosives approved containers only.)

 ESTIMATED NET WEIGHT OF PART x lbs..

 SKIDS TO BE ATTACHED BY NAILING THROUGH THE BASE INTO THE SKID A MINIMUM OF 1/3 THE SKID THICKNESS WITH TWO STAGGERED ROWS 2" APART AND 6" MAXIMUM BETWEEN NAILS.

 ITEM TO BE SUPPLIED AND INSTALLED BY THE COMPANY.

On all main assembly drawings and major subassemblies, use:

 PACKAGING, PACKING, AND MARKING FOR OUT-OF-PLANT SHIPPING PER _____.

 BAR CODING SYMBOLOGY MARKINGS SHALL BE AS SPECIFIED IN AIM BC1.



20.5.7 Classified Marking. The proprietary and security classification notes, as specified in SECTION 6, will be placed on the drawing only when directed by the responsible engineer.

20.6 PARTS LIST.

20.6.1 General Information.

20.6.1.1 Parts List (PL). The Parts List for all packaging design drawings shall conform to DRM SECTION 10, except as modified herein.

20.6.1.2 Stock Size. Lumber callouts in the Parts List shall be called out in the nominal sizes. See TABLE 20-1.

Example: 2 X 4; 1 X 6

THICKNESS (inches)		WIDTH (inches)	
Normal	Actual	Normal	Actual
1	25/32	3	2-5/8
1-1/4	1-1/16	4	3-1/2
1-1/2	1-5/16	5	4-1/2
1-3/4	1-7/16	6	5-1/2
2	1-5/8	7	6-1/2
2-1/2	2-1/8	8	7-1/4
4	3-5/8	9	8-1/4
		10	9-1/4
		11	10-1/4
		12	11-1/4

COMPARISON OF ACTUAL AND NOMINAL
DIMENSIONS FOR SURFACED LUMBER
TABLE 20-1

20.6.1.3 Commercial Sizes. Whenever possible, consider specifying commercial standard lengths and widths.

20.6.1.4 Special Sizes. When special sizes of lumber are required, they shall be called out in the size required.

Example: 3/4 x 2-3/8

20.7 GENERAL DIMENSIONING PRACTICES FOR PACKAGING.

20.7.1 Dimensions Not Otherwise Specified. Conditions not specifically covered should conform to the DRM, SECTION 5 herein.

20.7.2 Expressing Packaging Drawing Dimensions. Dimensions shown on packaging drawings depend on the units used and are usually expressed as follows:

- Drawing prepared Using US Customary Units: Use inches and fractions of an inch. Feet may also be specified where appropriate.
- Drawing prepared Using Metric Units: Use millimeters.

20.7.3 Tolerance On Dimensions. Tolerance on dimensions is usually 1/8 inch.



20.7.4 Tolerance System Used. The bilateral or unilateral tolerance system as defined in SECTION 5 may be used, but only one system shall appear on a single drawing.

20.7.5 Origin Of Dimensions. The primary dimensions that indicate the size of containers are always given as the inside dimensions, in inches, in the following sequence:

LENGTH X WIDTH X DEPTH for Square or Rectangular Containers.

DIAMETER X LENGTH, depth or height for Round Containers.

20.8 PACKAGING IDENTIFICATION AND MARKING.

20.8.1 Identification Not Otherwise Specified. Identification markings not covered will be found in SECTION 11 herein.

20.8.2 Markings.

20.8.2.1 Routing Markings. Routing marking requirements for shipment or storage (MIL-STD-129) are subject to change and should not be shown on packaging drawings. Special markings are either detailed or listed in the general notes.

20.8.2.2 “CENTER OF BALANCE” Marking. Containers over 10 feet in length or those which are unbalanced shall be identified by stenciling or printing in 1-inch letters, the words “CENTER OF BALANCE” immediately above or along a 1-inch wide by 3-inch long vertical line locating the center of balance on both sides.



NOTES: