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MIL-STD-129-1
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MILITARY STANDARD

**MARKING FOR SHIPMENT AND STORAGE -
AMMUNITION AND EXPLOSIVES
(PART 2 OF 4 PARTS)**



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MIL-STD-129-1

FOREWORD

1. This military standard is approved for use by all Departments and Agencies of the Department of Defense (DOD).

2. Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Chief, Logistics Support Activity Packaging, Storage, and Containerization Center, ATTN: AMXLS-TP-P, 11 Midway Road, Tobyhanna, PA 18466-5097, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

MIL-STD-129-1

CONTENTS

<u>PARAGRAPH</u>		<u>PAGE</u>
1.	SCOPE	1
1.1	Purpose	1
1.2	Applicability	1
1.2.1	Exceptions, exemptions, and additions	1
2.	APPLICABLE DOCUMENTS	2
2.1	Government documents	2
2.1.1	Specifications and standards	2
2.1.2	Other Government documents and publications	3
2.2	Non-Government publications	4
2.3	Order of precedence	4
3.	DEFINITIONS	5
3.1	Abbreviations and acronyms	5
3.2	Ammunition	6
3.3	Bar code	6
3.4	Cognizant activity	6
3.5	Consignee (receiver)	6
3.6	Consignor (shipper)	6
3.7	Date packed	6
3.8	Defense Transportation System (DTS)	7
3.9	DOD identification code or Navy Ammunition Logistic Code	7
3.10	Explosive	7
3.11	Exterior container	7
3.12	Hazardous materials (HAZMAT)	7
3.13	Human-readable interpretation (HRI)	7
3.14	Intermediate container	7
3.15	Item description	7
3.16	Kit	7
3.17	National/NATO stock number (NSN)	7
3.18	Packaging	8
3.19	Packing	8
3.20	Palletized unit load	8
3.21	Port of debarkation (POD)	8
3.22	Port of embarkation (POE)	8
3.23	Proper shipping name (PSN)	8
3.24	Protected cargo	8
3.25	Quantity	8
3.26	Quantity per unit pack (QUP)	8
3.27	Required delivery date (RDD)	8
3.28	Serial number	8

MIL-STD-129-1

CONTENTS

<u>PARAGRAPH</u>		<u>PAGE</u>
3.29	Shelf-life	9
3.30	Shipping container	9
3.31	Stamping	9
3.32	Transportation control number (TCN)	9
3.33	Unitization	9
3.34	Unit of issue	9
3.34.1	Definitive unit of issue	9
3.34.2	Nondefinitive unit of issue	9
3.35	Unit pack	9
4.	GENERAL REQUIREMENTS	10
4.1	Identification markings on unit packs, intermediate containers, and unpacked items	10
4.2	Exterior container identification markings	10
4.2.1	Proper shipping name and identification number	11
4.2.2	Empty containers	11
4.2.3	Commercial air shipments	11
4.3	UN-recommended performance-oriented packaging certification markings	11
4.3.1	UN symbol and size of lettering	14
4.3.2	Contractor's responsibilities	14
4.3.3	Containers manufactured to a Government drawing, packaging drawing, or specification	14
4.3.4	Overpack/multipack containers	14
4.4	Transportation special handling/ protective services	15
4.4.1	Documentation for hazardous materials	15
4.5	Palletized unit load	15
4.5.1	Application of identification markings	16
4.6	Address markings	18
4.6.1	Military address markings	18
4.6.1.1	Format of the DD Form 1387	20
4.6.2	Contractor- or vendor-originated address markings	21
4.6.3	Affixing the contractor/vendor or military address label to the shipping container	22

MIL-STD-129-1

CONTENTS

<u>PARAGRAPH</u>		<u>PAGE</u>
4.6.4	Full carload and full truckload shipments	22
4.6.5	Shipment address	22
4.6.6	Palletized loads	22
4.6.7	Data to be bar coded on the DD Form 1387	22
4.6.7.1	Human-readable interpretation	23
4.6.8	Size of the DD Form 1387	23
4.7	Bar code marking requirements	23
4.7.1	Bar code applicability	23
4.7.2	Bar code labels	23
4.7.2.1	Labels on wood containers	24
4.7.2.2	Bar code restrictions	24
4.7.3	Data elements to be bar coded	24
4.7.4	Placement of bar codes on exterior containers	26
4.7.4.1	Rectangular containers	26
4.7.4.2	Cylindrical containers	26
4.7.4.3	Special containers	26
4.7.4.4	More than one serial number	27
4.7.4.5	Stacking labels	27
4.7.4.6	In-line messages/labels	27
4.7.5	Bar coding unit loads	28
4.7.5.1	More than one lot	28
4.7.6	Bar coding shipments to Naval activities	30
5.	DETAILED REQUIREMENTS	33
5.1	Markings and marking materials	33
5.1.1	Marking materials	33
5.1.1.1	Waterproofing materials used as protective coatings	33
5.1.1.2	Stencil-marking material	33
5.1.1.3	Obliterating lacquer, enamel, or paint	33
5.1.1.4	Lithographing, embossing, roller coating, or stamping	33
5.1.2	Labels, paper, pressure-sensitive, water-resistant	33
5.1.2.1	Protective coating of labels	34
5.1.3	Tags	34
5.1.4	Water-resistant envelopes	34
5.1.5	Packing list protectors	34
5.1.6	Conditions of surfaces to be marked	34

MIL-STD-129-1

CONTENTS

<u>PARAGRAPH</u>		<u>PAGE</u>
5.1.7	Legibility, durability, and color of markings	34
5.1.8	Methods of marking unit packs, intermediate and exterior shipping containers, and loose or unpacked items	35
5.1.8.1	Stenciling	35
5.1.8.2	Machine printing	35
5.1.8.3	Labels	35
5.1.8.3.1	Use of labels	35
5.1.9	Marking board or marking panel	35
5.1.10	Size of markings	35
5.2	Special markings	36
5.2.1	Special orientation marking	36
5.2.2	Light box/light load markings	36
5.2.3	Temperatures	37
5.2.4	Method II marking	38
5.2.5	Foreign country requirements	38
5.2.6	Materiel condition markings	38
5.2.6.1	Materiel condition tags	40
5.3	Packing lists	40
5.4	DD Form 1348-1 (DOD Single Line Item Release/Receipt Document) and DD Form 1348-1A (Issue Release/ Receipt Document)	40
5.5	Previous marking requirements	40
5.5.1	Government-owned dangerous goods packaged prior to 1 January 1988	41
5.6	Military-owned demountable container (MILVAN)/International Standards Organization (ISO) container marking	41
5.7	Order of precedence	42
5.8	Marking for North Atlantic Treaty Organization countries	42
5.9	English-metric conversion	42
6.	NOTES (Not applicable)	47
<u>TABLE</u>		
I	Application of supply condition codes to shelf-life items	31
II	Supply-type labels	43

MIL-STD-129-1

CONTENTS

<u>TABLE</u>		<u>PAGE</u>
III	Standard English-metric equivalents	44
IV	MIL-STD-129-1 English-metric conversions	45
<u>FIGURE</u>		
1	Identification markings and the placement of bar code labels for exterior ammunition containers	12
2	Example of UN packaging certification markings (for a fiberboard box)	13
3	Identification markings for a pallet load of ammunition	16
4	DD Form 1387 (Military Shipment Label)	19
5	Sample of a bar coded DD Form 1387	23
6	Bar coding the maintenance due date	25
7	Bar coding lot number and serial number on the same line	25
8	Placement of bar code labels on cylindrical containers	26
9	Placement of bar code labels on special containers	27
10	Placement of bar code labels on palletized unit loads	28
11	Placement of multiple lots on pallet strapping	29
12	Example of the placement of multiple lots on marking boards	30
13	NIIN bar code label for Navy shipments	30
INDEX		48

MIL-STD-129-1

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MIL-STD-129-1

1. SCOPE

1.1 Purpose. This standard provides the minimum requirements for the uniform marking of ammunition and explosives for shipment and storage. It accommodates the requirements for movement processing as specified in DOD 4000.25-1-M, Military Standard Requisitioning and Issue Procedures (MILSTRIP); DOD 4000.25-2-M, Military Standard Transaction Reporting and Accounting Procedures (MILSTRAP); and DOD 4500.32-R, Military Standard Transportation and Movement Procedures (MILSTAMP).

1.2 Applicability. The marking and labeling of ammunition and explosives for shipment and storage shall be accomplished, applied, and positioned on all containers as specified herein. For other than ammunition and explosives, medical material, and subsistence, the marking of all supplies and equipment shall be as specified in the latest revision of MIL-STD-129, Marking for Shipment and Storage. Medical material shall be marked for shipment and storage as specified in MIL-STD-129-2, Marking for Shipment and Storage - Medical Material. Subsistence shall be marked for shipment and storage as specified in MIL-STD-129-3, Marking for Shipment and Storage - Semiperishable and Perishable Subsistence. As defined in ASTM D996, Standard Terminology of Packaging and Distribution Environments, marking is "the application of numbers, letters, labels, tags, symbols, or colors to provide identification and to expedite handling during shipment and storage."

1.2.1 Exceptions, exemptions, and additions. The marking requirements specified in this standard are not all inclusive. Any marking exception, exemption, or addition to the requirements herein must be specified in the acquisition document.

MIL-STD-129-1

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and standards. The following specifications and standards form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation.

SPECIFICATIONS

FEDERAL

- | | | |
|-----------|---|---|
| A-A-900 | - | Tag, Shipping (Paper) |
| A-A-1907 | - | Protector, Packing List |
| UU-T-81 | - | Tag, Shipping and Stock |
| PPP-E-540 | - | Envelope, Water Resistant, for Packing Lists and Shipping Documents |
| PPP-T-60 | - | Tape, Packaging, Waterproof |
| PPP-T-76 | - | Tape, Pressure-sensitive Adhesive, Packaging/Paper (for Carton Sealing) |

MILITARY

- | | | |
|-------------|---|---|
| MIL-L-61002 | - | Labels, Pressure-sensitive Adhesive, for Bar Codes and Other Markings |
|-------------|---|---|

STANDARDS

FEDERAL

- | | | |
|-------------|---|---|
| FED-STD-595 | - | Color (Requirements for Individual Color Chips (3X5 Supplements)) |
|-------------|---|---|

MILITARY

- | | | |
|--------------|---|----------------------------------|
| MIL-STD-129 | - | Marking for Shipment and Storage |
| MIL-STD-1168 | - | Lot Numbering of Ammunition |
| MIL-STD-1189 | - | Bar Code Symbolology |

(Unless otherwise indicated, copies of Federal and military specifications and standards are available by mail from the DODSSP - Customer Service, Standardization Documents Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

MIL-STD-129-1

2.1.2 Other Government documents and publications. The following other Government documents and publications form a part of this document to the extent specified herein. Unless otherwise specified, issues are those cited in the solicitation.

CODE OF FEDERAL REGULATIONS (CFR)

Title 49 CFR - Transportation

(Application for copies should be addressed to Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.)

JOINT MILITARY

AFR 71-4/TM 38-250/NAVSUP	- Packaging and Materials Handling
PUB 505/MCO P4030.19/	- Preparing Hazardous Materials
DLAM 4145.3	for Military Air Shipments
DLAR 4145.41/AR 700-143/	- Performance Oriented Packaging
AFR 71-5/NAVSUPINST	of Hazardous Materials
4030.55/MCO 4030.40	
DOD 4000.25-2-M	- MILSTRAP
DOD 4000.25-6-M	- DOD Activity Address Directory
DOD 4120.18	- Metric System of Measurement
DOD 4145.19-R-1	- Storage and Materials Handling
DOD 4500.32-R	- MILSTAMP

(Joint military publications listed above should be requisitioned through the applicable Service/Agency publications distribution office. All non-DOD activities should obtain copies of the publications from the Defense Logistics Agency, ATTN: DLA-XPD, Cameron Station, Alexandria, VA 22304-6100, Commercial Phone: (703) 274-6011.)

NORTH ATLANTIC TREATY ORGANIZATION (NATO)

(Quadripartite Standardization Agreements (QSTAG)
and Standardization Agreements (STANAG))

QSTAG 481	- Color Code and Markings for Ammunition and Its Packaging
STANAG 2316	- Marking of Ammunition (and its Packaging) of a Calibre Below 20mm
STANAG 2322	- Minimum Markings for the Identification of Ammunition (and its Packaging)

(Copies of QSTAGs and STANAGs are available by mail from the DODSSP - Customer Service, Standardization Documents Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

MIL-STD-129-1

2.2 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation.

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA)

Dangerous Goods Regulations

(Application for copies should be addressed to International Air Transport Association, 2000 Peel Street, Montreal, Quebec, Canada H3A 2R4.)

INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO)

Technical Instructions for the Safe Transportation of Dangerous Goods by Air

(Application for copies should be addressed to International Regulations Publishing and Distributing Organization, P.O. Box 60105, Chicago, IL 60660.)

INTERNATIONAL MARITIME ORGANIZATION (IMO)

International Maritime Dangerous Goods (IMDG) Code

(Application for copies should be addressed to International Maritime Organization, 4 Albert Embankment, London SE1 7SR, England.)

(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

MIL-STD-129-1

3. DEFINITIONS

For purposes of this standard, the following definitions apply:

3.1 Abbreviations and acronyms. The abbreviations and acronyms used in this standard are defined as follows:

AMMO	-	Ammunition
ASTM	-	American Society for Testing and Materials
CFR	-	Code of Federal Regulations
CONUS	-	Continental United States
DCMAO	-	Defense Contract Management Area Operations
DOD	-	Department of Defense
DODAAC	-	Department of Defense Activity Address Code
DODIC	-	DOD Identification Code
DODISS	-	Department of Defense Index of Specifications and Standards
DOT	-	Department of Transportation
DTS	-	Defense Transportation System
ESD	-	Electrostatic Discharge
FMS	-	Foreign Military Sales
FSC	-	Federal Supply Class
HAZMAT	-	Hazardous Materials
HC/D	-	Hazard Class/Division
HRI	-	Human-readable Interpretation
IATA	-	International Air Transport Association
ICAO	-	International Civil Aviation Organization
IMDG	-	International Maritime Dangerous Goods
IMO	-	International Maritime Organization
ISO	-	International Standards Organization
MDD	-	Maintenance Due Date
MILSTAMP	-	Military Standard Transportation and Movement Procedures
MILSTRAP	-	Military Standard Transportation Reporting and Accounting Procedures
MILSTRIP	-	Military Standard Requisitioning and Issue Procedures
MILVAN	-	Military-owned Demountable Container
NA	-	North American
NALC	-	Navy Ammunition Logistic Code
NATO	-	North Atlantic Treaty Organization
NEW	-	Net Explosive Weight
NIIN	-	National Item Identification Number
NMCS	-	Not Mission Capable Supply
NSN	-	National/NATO Stock Number
OCONUS	-	Outside Continental United States
OF	-	Optional Form
PN/MFR	-	Part Number/Manufacturer

MIL-STD-129-1

POD	-	Port of Debarkation
POE	-	Port of Embarkation
POP	-	Performance-oriented Packaging
PSN	-	Proper Shipping Name
QSTAG	-	Quadripartite Standardization Agreement
QUP	-	Quantity Per Unit Pack
RDD	-	Required Delivery Date
ROD	-	Report of Discrepancy
SA	-	Storage Activity
SCG	-	Storage Compatibility Group
STANAG	-	Standardization Agreement
TCN	-	Transportation Control Number
TP	-	Transportation Priority
UI	-	Unit of Issue
UN	-	United Nations
WP	-	White Phosphorus
WT	-	Weight

3.2 Ammunition. A device that is charged with explosives, propellants, pyrotechnics, initiating composition, or nuclear, biological, or chemical material for use in connection with defense or offense, including demolitions. Ammunition includes the device and all its components and materials, as well as arming wires, torpedoes, fins, associated containers, inert training rounds, and all items assigned DOD Identification Codes (DODIC) or Navy Ammunition Logistic Codes (NALC).

3.3 Bar code. An array of rectangular bars and spaces in a predetermined pattern representing coded elements of data that can be read and interpreted by automatic bar code reading devices.

3.4 Cognizant activity. The activity having responsibility for a contract or jurisdiction over it. At a contractor's facility, the cognizant activity is the administrative contracting officer or the procuring contracting officer. Contractor personnel do not qualify as the cognizant activity. At DOD installations, this is the head of the agency, bureau, command, or service that is responsible for storage and shipment.

3.5 Consignee (receiver). Party to whom materiel is shipped and whose name and address appear in the "ULTIMATE CONSIGNEE OR MARK FOR" block of the shipping label.

3.6 Consignor (shipper). Party who ships materiel and whose name and address appear in the "FROM" block of the shipping label.

3.7 Date packed. The date on which the product (item) was packed in the unit pack, regardless of the date of exterior packing, additional processing, or shipping.

MIL-STD-129-1

3.8 Defense Transportation System (DTS). The DTS consists of military-controlled or -operated terminal facilities, Air Mobility Command controlled or arranged airlift, Military Sealift Command controlled or arranged sealift, and Government-controlled air or land transportation.

3.9 DOD Identification Code or Navy Ammunition Logistic Code. The DODIC or NALC consists of one letter and three numerals or two letters and two numerals assigned to an ammunition generic description within the Federal supply class (FSC).

3.10 Explosive. An explosive is any substance or article, including a device, which is designed to function by explosion (i.e., an extremely rapid release of gas and heat) or which, by chemical reaction within itself, is able to function in a similar manner even if it is not designed to function by explosion.

3.11 Exterior container. A container, bundle, or assembly that is sufficient by reason of material, design, and construction to protect unit packs and intermediate containers and their contents during shipment and storage. It can be a unit pack or a container with a combination of unit packs or intermediate containers. An exterior container may or may not be used as a shipping container.

3.12 Hazardous materials (HAZMAT). Substances or materials which have been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce and which have been so designated in Title 49 CFR and in other HAZMAT publications.

3.13 Human-readable interpretation (HRI). Exact interpretation of the encoded bar code data presented in a human-readable font.

3.14 Intermediate container. A wrap, box, or bundle that contains two or more unit packs of identical items.

3.15 Item description. Exact name and description of an item as it appears in the contract, purchase order, or requisition.

3.16 Kit. A packed unit or group of items normally used in modification, installation, or survival.

3.17 National/NATO stock number (NSN). A 13-digit number that is divided into two parts, the FSC number and the national item identification number (NIIN). The FSC is the first four digits of the NSN and establishes its relationship to other items within the same FSC. The NIIN is the last nine digits of the NSN. The first two digits identify the country assigning the number and the remaining seven digits are a serially assigned number. The NIIN

MIL-STD-129-1

fixes the identity of an item of supply and differentiates it from all other items of supply. Ammunition NSNs reflect the packaging, quantity per unit pack, and the contents of the pack.

3.18 Packaging. The processes and procedures used to protect materiel from deterioration, damage, or both. It includes cleaning, drying, preserving, packing, and marking.

3.19 Packing. The assembly of items into unit packs and intermediate or exterior containers, with the necessary blocking, bracing, cushioning, weatherproofing, reinforcement, and marking.

3.20 Palletized unit load. A quantity of items, packed or unpacked, which is arranged on a pallet in a specified manner and is secured, strapped, or fastened on the pallet so that the whole palletized load is handled as a single unit.

3.21 Port of debarkation (POD). Authorized point of entry into a foreign country or the continental United States (CONUS).

3.22 Port of embarkation (POE). Authorized point of departure from a foreign country or CONUS.

3.23 Proper shipping name (PSN). The name of a hazardous material shown in Roman print (not italics) in part 172 of Title 49 CFR and in other hazardous materials related publications.

3.24 Protected cargo. Protected cargo includes items required to be secured, accounted for, identified, segregated, or handled in such a manner as to ensure their safeguard or integrity. Protected cargo is subdivided into classified, controlled, pilferable, and sensitive cargo. Ammunition and explosives are classified as sensitive cargo.

3.25 Quantity. The number of units of issue (lb, oz, ea) in a unit pack, an intermediate container, or a shipping container or in a bundle or a secure lift.

3.26 Quantity per unit pack (QUP). The quantity of items in a unit pack given in the terminology of the definitive unit of issue (UI) (see 3.34.1). If a nondefinitive UI is assigned to the stock item (see 3.34.2), the UI shall be further quantified by a unit of measure and measurement quantity.

3.27 Required delivery date (RDD). The day of the year (e.g., 087, 198, etc.) specified on the requisition when material is required by the requisitioner or the consignee.

3.28 Serial number. The number on the item assigned by the manufacturer or the Government for identification or control.

MIL-STD-129-1

3.29 Shelf-life. The total period of time beginning with the manufactured date, cured date, assembled date, or packed date that an item may remain in the combined wholesale and retail storage system and still be suitable for issue and/or use by the user.

3.30 Shipping container. A container which meets carrier regulations and is of sufficient strength, by reason of material, design, and construction, to be shipped safely without further packing either as a primary pack or as an outer container for unit packs (e.g., wooden boxes or crates, fiber and metal drums, and corrugated and solid fiberboard boxes).

3.31 Stamping. Impressing or imprinting by metal dies or rubber stamps.

3.32 Transportation control number (TCN). The single standard shipment identification number for all DOD-sponsored movements (i.e., materiel and equipment and all vendor shipping transactions involving DOD materiel). The TCN is a 17-position alpha-numeric data element assigned to control a shipment unit through the transportation pipeline (to include CONUS shipments, shipments entering the DTS, and commercial systems).

3.33 Unitization. Assembly of containers comprised of one or more line items of supply into a single load so that the load can be handled as a unit through the distribution system.

3.34 Unit of issue. The UI is a standard or basic quantity that is expressed as a unit and indicated in a requisition, contract, or order as the minimum quantity issued (e.g., bottle, can, dozen, each, foot, gallon, gross, pair, pound, yard, etc.).

3.34.1 Definitive unit of issue. A definitive UI is a type of UI designation that indicates an exact quantity of volume, linear measurement, weight, or count (e.g., assembly, kit, set, etc.).

3.34.2 Nondefinitive unit of issue. A nondefinitive UI is a type of UI designation that does not indicate an exact quantity of volume, linear measurement, weight, or count such as drum, can, box, or roll. When a nondefinitive UI is specified, it must be accompanied by a quantitative expression (e.g., 1 RO (150 ft)).

3.35 Unit pack. The first tie, wrap, or container applied to a single item, or a quantity thereof, or to a group of items of a singled stock number, preserved or unpreserved, which constitutes a complete or identifiable package. A unit pack is also often referred to as a "package" or merely as a "pack."

MIL-STD-129-1

4. GENERAL REQUIREMENTS

4.1 Identification markings on unit packs, intermediate containers, and unpacked items (see figure 1). The following identification markings shall be placed on unit packs, intermediate containers, and unpacked items. Words such as "NSN/NATO stock number," "item description," and "quantity" shall not be included as part of the identification markings.

- a. NSN/NATO stock number. When no NSN/NATO stock number is available, a management control number or part number/manufacturer (PN/MFR) shall be used.
- b. DODIC/NALC. The DODIC/NALC shall be placed on the same line as the NSN/NATO stock number.
- c. Quantity (UI). The unit of issue (UI) is not marked except when it is other than each (e.g., lb, ft, etc.). The quantity always precedes the item description.
- d. Item description (see 3.14).
- e. Lot number and serial number (when assigned). When specified, the lot number and serial number shall be shown. The abbreviations "LOT" and "SER" shall precede the lot number and serial number, respectively. For the formatting of lot numbers, see MIL-STD-1168.

4.2 Exterior container identification markings (see figure 1). In addition to the information required by 4.1, exterior container identification markings shall include the following information. Also, in addition to the marking requirements in 4.1, unpacked items shall be marked with the information in "b" and "c" below.

- a. Gross weight. The capital letters "WT" shall precede the gross weight. The gross weight shall be numerically expressed in pounds rounded up to the nearest pound.
- b. Proper shipping name (PSN) and North American (NA) or United Nations (UN) identification number (see 4.2.1). The UN number contains the serial number assigned to the article or substance under the UN classification system. It is sometimes referred to as the UN Serial No.
- c. Any special precautionary markings and hazardous materials (HAZMAT) labels required by Title 49 CFR and the applicable international documents, such as ICAO Technical Instructions for the Safe Transportation of Dangerous Goods by Air; IATA Dangerous Goods Regulations; and the IMO IMDG Code for water shipments, for the commodity described by the PSN.

MIL-STD-129-1

NOTE: No HAZMAT warning label is shown on the container in figure 1. If this container was shipped as part of a full carload or full truckload shipment, no HAZMAT warning label would be required (see 4.5.1e).

- d. DODIC/NALC and lot number. The DODIC/NALC and lot number shall be placed on both ends of the exterior container, unless otherwise specified.
- e. Lot number on the side of the container. The lot number located on the side of the container shall be underlined (see figure 1). Only one lot number shall be packed per exterior container, except for surveillance samples, test samples, or material destined for demilitarization.
- f. Performance-oriented packaging (POP) certification markings (see 4.3).

4.2.1 Proper shipping name and identification number (see figure 1). As part of exterior container identification markings, the PSN and identification number shall be placed on the outside of each shipping container (see 4.2b). The PSN and identification number must be unobscured and located away from any other markings that could substantially reduce their effectiveness. PSNs and NA or UN identification numbers are listed in the latest revision of Title 49 CFR, part 172.101, and in AFR71-4/TM 38-250/NAVSUP PUB 505/MCO P4030.19/DLAM 4145.3, chapter 4. It should be noted that NA numbers are not authorized for international shipments. For both domestic and international shipments, PSNs for n.o.s. items must be followed by a technical name in parentheses.

4.2.2 Empty containers. Unless otherwise directed by the shipping authority, empty containers shall have the identification markings obliterated prior to shipment or shall have "EMPTY" labels used as specified in AFR 71-4/TM 38-250/NAVSUP PUB 505/MCO P4030.19/DLAM 4145.3.

4.2.3 Commercial air shipments. Each container that is packed for shipment by commercial air must be marked with the letters "NEW" (Net Explosive Weight) followed by the net quantity of explosive. The NEW is the total net explosive weight per package. This information shall be placed under the gross weight marking on the container.

4.3. UN-recommended performance-oriented packaging certification markings. The UN-recommended POP certification markings, including the symbol, that are specified by the cognizant design activity in the contract or on the drawing shall be placed on the

MIL-STD-129-1

side of the container that is opposite the identification-marked side. The markings shall conform to the UN marking requirements that are described in figure 2, or they shall conform to the applicable packing and marking drawings. These POP markings shall not be placed on the bottom of the container. Figure 1 shows an example of the UN-recommended POP certification markings and their recommended placement on an ammunition container.

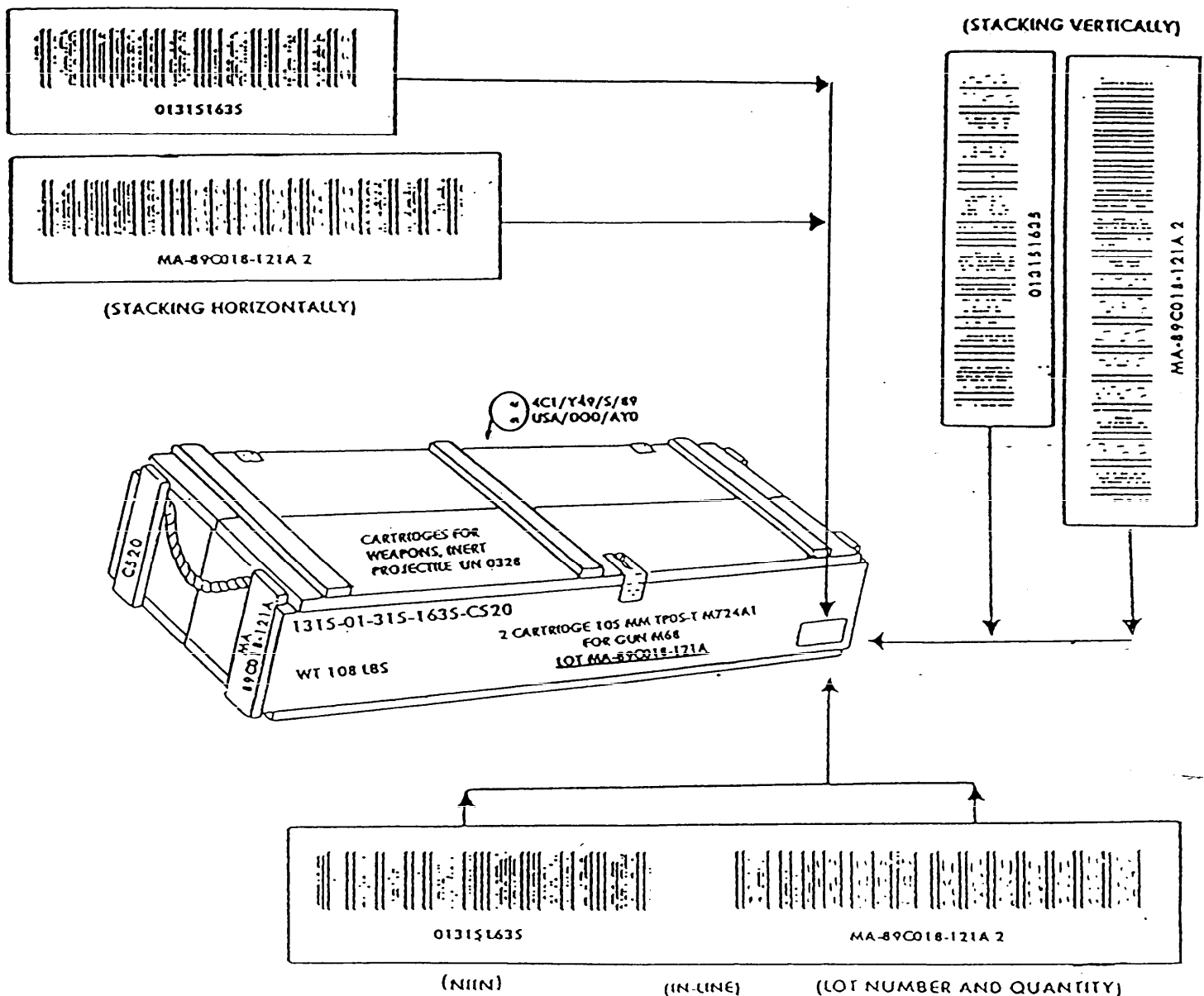


FIGURE 1. Identification markings and the placement of bar code labels for exterior ammunition containers.

MIL-STD-129-1

where	<div style="display: inline-block; border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;"> <div style="text-align: center; width: 15px;">u n</div> <div style="margin-left: 10px;">4G/X6/S/92 USA/***</div> </div>
<div style="display: inline-block; border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;"> <div style="text-align: center; width: 15px;">u n</div> </div>	is the symbol used to CERTIFY that packaging complies with UN recommendations for the item and packaging.
4G	is the UN recognized symbol for a fiberboard box which has been successfully tested to UN recommended drop, stack, vibration, and water absorptive performance criteria.
X	is a letter designating the packing group for which the fiberboard box configuration has been successfully tested. X is used for Packing Group I. Y is used for Packing Group II. Z is used for Packing Group III. Unless the requirements of Title 49 CFR, 173.24a, are met, items of a lesser packing group may be packaged in a box, marked, and tested to a higher packing group provided the tested weight is not exceeded.
6	is the maximum authorized gross weight for solids, expressed in kilograms, for which the packaging has been tested.
S	indicates packaging inner contents are either solids or other inner containers (e.g., cans or bottles).
92	is the last two digits of the year during which the packaging was manufactured.
USA	is State (country) authorizing allocation of the mark.
***	is the symbol of the party that is responsible for ensuring that the UN recommendations have been met. The appropriate symbol shall be the contractor's authorized symbol or as stated in the contract, order, purchase agreement, specification, special packaging instruction, or other written direction by the packaging design agency or by higher headquarters.

FIGURE 2. Example of UN packaging certification markings (for a fiberboard box).

MIL-STD-129-1

4.3.1 UN symbol and size of lettering (see figures 1 and 2). The symbol "un" (lower case) shall be encircled, with the circle being sufficiently large enough to provide a minimum clear spacing around the "un" symbol. For embossed metal packagings, the upper case letters "UN" may be applied as the symbol. The UN logo and other codes shall be in letters that are not less than one half inch in size. For very small packages, the size of the lettering shall be proportionate with the overall size of the package. The methods of marking shall be as specified in 5.1.8 and shall not interfere with or cause confusion with those markings which identify the contents or their hazardous nature. If the party that is responsible for ensuring that the UN recommendations have been met has a certification symbol, the certification symbol must be registered with the U.S. Department of Transportation (DOT), Associate Administrator for Hazardous Materials Safety. When the contractor packing the shipment does not have a DOT-registered symbol, the name and address of the responsible party must be clearly marked on the container in lieu of a certification symbol. The symbol "DOD" has been assigned to the U.S. Department of Defense and is so registered. It is only authorized for use by DOD activities as identified in DLAR 4145.41/AR 700-143/AFR 71-5/NAVSUPINST 4030.55/MCO 4030.40.

4.3.2 Contractor's responsibilities. Unless otherwise stated in the procurement contract or order, contractors must certify the packagings themselves as meeting the UN performance requirements or must have the packagings certified by a DOT-approved testing facility. The contractor is also responsible for determining the use of the registered symbol of the contractor, packaging manufacturer, or the DOT-approved testing facility as part of the UN packaging certification markings. The contractor's certification symbol requirements shall be as specified in 4.3.1 above.

4.3.3 Containers manufactured to a Government drawing, packaging drawing, or specification. When a container is manufactured to a Government-approved drawing or specification, it shall be identified as such, normally by the container manufacturer. When the complete package (inner packing pieces, inner containers, and shipping container) is covered by a detailed procedure in a specification or packaging drawing (shipping container drawing), the applicable specification or packaging drawing shall be marked on the container in accordance with the container drawing and/or the specification, as applicable. This additional marking need not be applied to containers with name-plates when the container is peculiar to the contents (e.g., an MK 46 Torpedo in an MK 535 container).

4.3.4 Overpack/multipack containers. When the authorized packaging configuration has successfully passed the UN-recommended performance tests and the packaging is marked with the applicable

MIL-STD-129-1

UN packaging certification markings, and when military requirements specify overpacking of the packaging configuration in an outer container (placing a fiberboard box in a wood box), then the testing and subsequent marking of the outer container is unnecessary. In addition to the marking requirements specified in 4.2.1, conformance with UN recommendations shall be shown by marking the outer container with the following words: "INNER PACKAGES COMPLY WITH PRESCRIBED SPECIFICATIONS." This marking, however, is not sufficient for combination packages consisting of overpacked inner packagings which contain liquids and are transported by aircraft. For military air shipments of applicable HAZMAT liquids, the outer container shall be marked with the words "AIR ELIGIBLE" to indicate that either the inner receptacles or the outer container meet the internal pressure requirements for air eligibility. Multipack containers comprised of performance-tested packagings shall also be marked with this information to certify conformance with UN recommendations.

4.4 Transportation special handling/protective services. Non-hazardous shipments moving by military controlled aircraft (including military contract airlift) requiring special handling/protective services shall have a DD Form 1387-2 (Special Handling Data/Certification) label affixed to the address-marked side of the exterior container. The form shall be prepared as specified in DOD 4500.32-R for non-hazardous, classified/protected materiel.

4.4.1 Documentation for hazardous materials. The shipper is responsible for the completion of a prescribed declaration form for every military air shipment that contains dangerous goods, including hazardous materials. See Joint Service Regulation AFR 71-4/TM 38-250/NAVSUP PUB 505/MCO P4030.19/DLAM 4145.3 for instructions on how to properly complete the required form.

4.5 Palletized unit load (see figure 3). The identification markings on palletized unit loads shall include the following:

- a. NSN.
- b. DODIC/NALC.
- c. Lot Number.
- d. Quantity.
 - (1) By lot (if more than one lot).
 - (2) Total quantity (if one lot).
- e. Item description.

MIL-STD-129-1

- f. Gross weight.
- g. PSN and identification number (see 4.2b).
- h. POP certification markings (see 4.3).

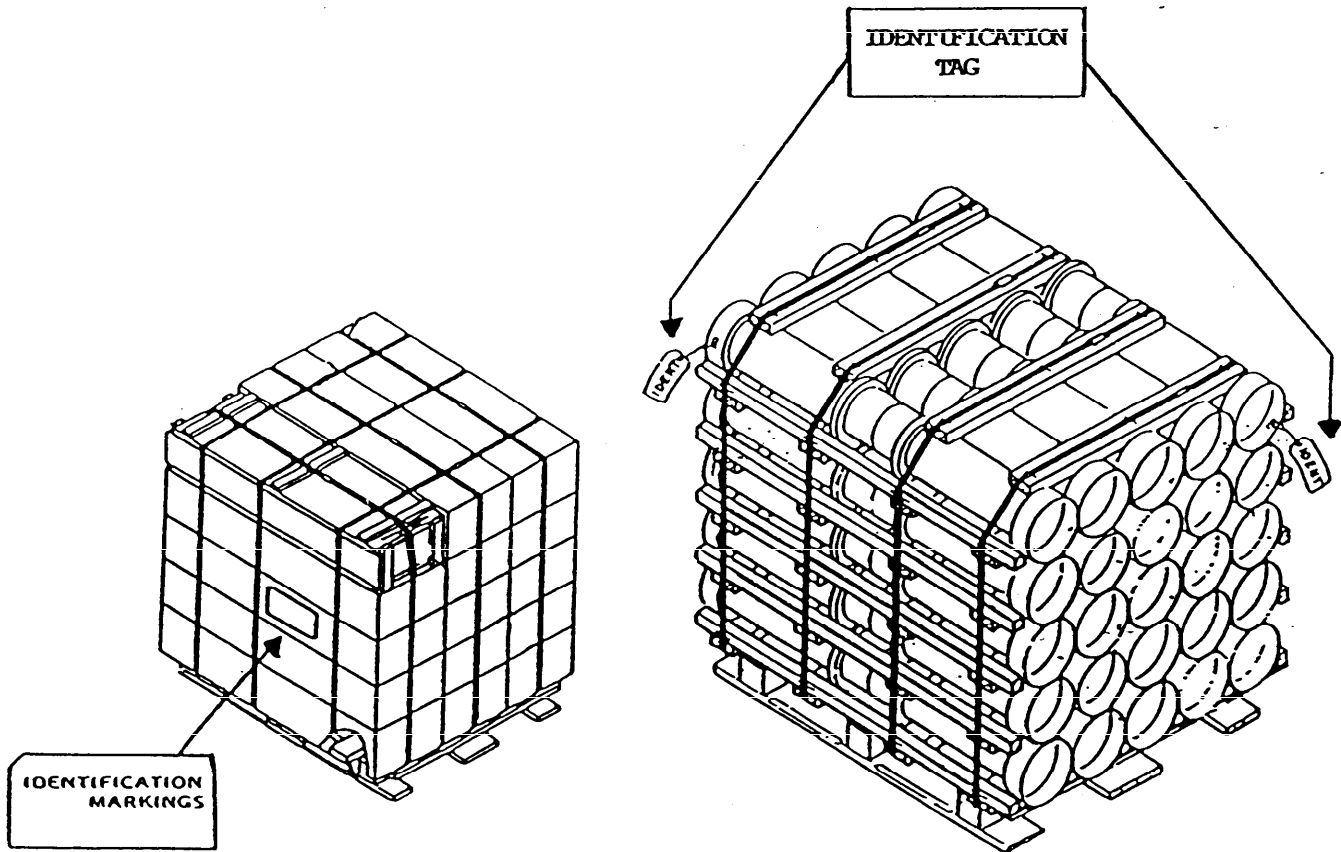


FIGURE 3. Identification markings for a pallet load of ammunition.

4.5.1 Application of identification markings.

a. Unit loads.

- (1) Unit loads require addition of only the identification marking that is not visible on the boxes. This additional marking is normally limited to quantity and partial nomenclature such as 100 grenades or 30 cartridges, gross weight of the unit load, applicable mixed lot identification, and any light box/empty box data (quantity per box or number of empty boxes).

MIL-STD-129-1

- (2) Unless otherwise specified, unit loads may have one or more boxes turned to present a blank surface for marking. Markings shall be applied as prescribed in section 5 herein and shall be in the largest practical size lettering.
 - (3) Boxes which must have all nose ends pointed in the same direction such as some rockets and white phosphorus (WP) rounds shall not be turned.
 - (4) When the unit load is configured in such a way that the box tops are turned inward on the load, the top layer shall be turned top out to permit the PSN and identification number to be visible. When it is not practical to turn the entire top layer, two diagonal corner boxes on the top layer shall be turned to expose the PSN and the identification number.
 - (5) UN-recommended POP certification markings shall also be exposed on at least one place on the unit load.
- b. Unit loads of unpackaged ammunition.
- (1) Unit loads of otherwise unpackaged ammunition such as separate loading projectiles require addition of only those identification markings that are not visible on the projectiles. Any additional markings are normally limited to quantity, nomenclature, gross weight, and mixed lot identification, including quantity per lot.
 - (2) Markings may be applied directly to the pallet by stenciling, embossing, stamping, or machine printing. Tags may be used when the markings cannot be applied directly to the pallet load.
 - (3) The location and content of identification markings shall be specified on the ammunition packaging and marking drawings for separate loading projectiles.
- c. Unit loads of cylindrical containers.
- (1) Unit loads of cylindrical containers such as propelling charges may be marked with labels (see 5.1.2) or tags (see 5.1.3).
 - (2) The total weight and quantity shall be marked.
 - (3) Markings shall be applied diagonally opposite near the ends of the upper layer (see figure 3).

MIL-STD-129-1

- (4) Containers shall be positioned so that the PSN and identification number are visible on at least one container on one side of the load.
- d. Unit loads comprised of multiple lots.
 - (1) Unit loads of ammunition and explosives comprised of more than one lot shall be marked with the appropriate lot numbers. In addition, the lot number and quantity of each lot in unit loads of mixed lots shall be listed on a plain white label or tag, as applicable, and shall be placed adjacent to other identification markings.
 - (2) The maximum size of the label or tag shall be 4 by 6 inches, and the lettering shall be not less than a quarter of an inch in height.
- e. Full carload or full truckload shipments.
 - (1) Packages of military ammunition and explosives shipped by or on behalf of DOD in freight container loads, car loads, or truck loads (including exclusive use) and loaded and unloaded by the shipper or by DOD are exempt from labeling requirements. Also, unitized or palletized breakbulk shipments by cargo ship under charter to DOD may be shipped with a single label per unit load. However, when the logistics flow of material is unknown, general labeling requirements shall be met.
 - (2) See 5.2.4 for special requirements for shipments consigned to foreign countries.

4.6 Address markings. Military and contractor- or vendor-originated address markings shall be accomplished and applied as specified in 4.6.1 and 4.6.2, respectively.

4.6.1 Military address markings (see figure 4). DD Form 1387 (Military Shipment Label) shall be used as the address marking on all shipments of DOD cargo, including ammunition, originated by DOD shipping activities. It shall be completed as specified herein and in DOD 4500.32-R and shall be prepared by automated or manual means (typewriter). Address labels prepared by automated means must be readable by humans and electronic devices. Address labels prepared manually must be readable by employees who are responsible for the movement of cargo. Transportation priority (TP) 1, 2, or 3 shall be identified by a machine-printed, stamped, stenciled, hand-printed, or stick-on numeral placed in the TP block of the DD Form 1387. The minimum height of the TP numeral shall be three-fourths of an inch. When an automatic marking system is used, the applicable TP (1, 2, or 3) shall be identified by preprinting the TP numeral (printed with the same color ink as

MIL-STD-129-1

other data on the label). Bar coded entries on the DD Form 1387 shall be as specified in 4.6.7. Hand printing is not authorized on the label except for blocks 6, 10, 12, 13, 14, 16, and 17. If hand-printed entries are not readable by the receiving activity, a report of discrepancy (ROD) should be prepared. When a DD Form 1387 interferes with or obscures other required markings on a shipping container, the label shall be attached to a paper shipping tag (NSN 8135-01-256-1109) conforming to A-A-900. The tag is large enough (8" long by 7 1/2" wide) to accommodate the label without folding. Separate tags shall be used for identification and address markings.

MILITARY SHIPMENT LABEL		Form Approved OMB No. 0704-0188	
1. TRANSPORTATION CONTROL NUMBER		2. POSTAGE DATA	
3. FROM		4. TYPE SERVICE	
5. SHIP TO/POE		6. TRANS PRIORITY	
7. POO		8. PROJECT	
9. ULTIMATE CONSIGNEE OR MARK FOR	10. WT. (line piece)	11. ROD	
	12. CUBE (line piece)	13. CHARGES	
	14. DATE SHIPPED	15. FMS CASE NUMBER	
	16. PIECE NUMBER		
	17. TOTAL PIECES		

DD Form 1387, NOV 86

Previous editions are obsolete

CPO : 1987 0 - 171-241

FIGURE 4. DD Form 1387 (Military Shipment Label). The label may be attached to a paper shipping tag.

MIL-STD-129-1

4.6.1.1 Format of the DD Form 1387 (see figure 4). The format of the DD Form 1387 and the instructions for its completion are specified below and in DOD 4500.32-R, volume I.

a. The address label shall be completed as follows:

- (1) Transportation Control Number: Enter the 17-character (alphanumeric) TCN, bar coded and in-the-clear. For consolidated shipments, a lead TCN must be placed in this block.
- (2) Postage Data: Leave blank.
- (3) From: Enter shipping activity's DOD Activity Address Code (DODAAC) and in-the-clear address. (See DOD 4000.25-6-M)
- (4) Type Service: Enter Air Express, Overnight Delivery, etc., as applicable. If none, leave blank.
- (5) Ship-to/Port of Embarkation (POE): Enter three digit air/water port code and in-the-clear port address.
- (6) Transportation Priority: Enter applicable TP.
- (7) Port of Debarkation (POD): Enter three digit POD port designator from MILSTAMP, if appropriate.
- (8) Project: Enter project code, if applicable.
- (9) Ultimate Consignee/Mark For: Enter consignee's DODAAC, bar coded and in-the-clear, and it's complete address.
- (10) Weight (this piece): Enter actual weight.
- (11) Required Delivery Date (RDD): Enter RDD (day of the year such as 087 or 198), if appropriate. If the RDD is not appropriate, enter "000."
- (12) CUBE (this piece): Enter the cube. To calculate the cube, multiply the length by the width by the height of the exterior shipping container in inches and then divide the answer by 1728. The resulting cube shall be expressed in decimals and shall be rounded up to the nearest tenth of a cubic foot. Irregular, cylindrical, or round items shall be considered to be rectangular solids.
- (13) Charges: Enter the CONUS inland freight charge on the label of the number one piece of the shipment unit

MIL-STD-129-1

(entry is mandatory for Foreign Military Sales (FMS) shipments).

- (14) Date Shipped: Enter four-digit date (day of the year) (e.g., 0181) or in-the-clear date (e.g., 29 Jun 92).
- (15) FMS Case Number: Enter, as appropriate.
- (16) Piece Number: Enter bar coded and in-the-clear.
- (17) Total pieces: Enter total pieces in shipment unit.

4.6.2 Contractor- or vendor-originated address markings. When making a shipment, contractors or vendors may apply address markings by tagging, silk-screening, stenciling, or alternate labeling (other than a DD Form 1387), provided that the procurement costs are not increased and the markings conform to the requirements of this standard. While it is preferred that contractors and vendors use the latest edition of the DD Form 1387 when shipping cargo to a CONUS (domestic) location, mandatory use of the label is not yet required. Contractors and vendors are also not yet required to bar code the DD Form 1387 for deliveries to CONUS locations. However, when contractor- or vendor-originated shipments are destined for outside continental United States (OCONUS) locations and are shipped through the Defense Transportation System (DTS), they shall comply with the address marking instructions contained in DOD 4500.32-R, volume I, which require the address markings to be placed on a bar coded DD Form 1387. For these shipments, bar code labels may be affixed to the DD Form 1387 as an alternative to direct bar coding of the DD Form 1387 (see 4.6.7). Destinations such as Hawaii, Alaska, Puerto Rico, Canada, and Mexico are considered OCONUS sites and require bar coded DD Form 1387 address labels. Military shipment labels shall be completed as specified in 4.6.1.1. The domestic shipment address for contractor- or vendor-originated shipments shall contain the following minimum information in the order listed. Any additional data required by the procurement contract shall be applied below the piece number and total pieces.

- a. Control Number or Reference Number: As a minimum, the TCN shall be provided as the single standard shipment identification number. The contract number, purchase order number, or Government Bill of Lading number may also be provided.
- b. From: Name and address of consignor (DODAAC and in-the-clear address, if applicable).
- c. To: Name and address of the consignee (DODAAC and in-the-clear address, if applicable).

MIL-STD-129-1

- d. Project Code and required delivery date, when required.
- e. Weight and Cube (see 4.6.5). For information on cube computation, see 4.6.1.1a(12).
- f. Piece Number and Total Pieces (see 4.6.5).
- g. Additional data, when required.

4.6.3 Affixing the contractor/vendor or military address label to the shipping container. When the surface of the shipping container or the surface of a material such as steel or wood does not lend itself to direct application of the address label, the label shall be attached to a paper shipping tag (see 5.1.3) or a marking board or marking panel (see 5.1.9).

4.6.4 Full carload and full truckload shipments. Full carload and full truckload shipments within CONUS do not require address markings to be placed on the packages. They do, however, require at least one completed address label attached to the container or palletized load that is located closest to the door. All other shipments, including shipments to freight forwarders and air or ocean terminals, require 100 percent address markings.

4.6.5 Shipment address. Piece number, total pieces, weight, and cube are not required as part of the address markings on surface shipments.

4.6.6 Palletized loads. Unless otherwise specified in the unitization drawing, space for overseas address markings for palletized loads shall be provided by positioning the box(es) to present a smooth, unmarked surface suitable for the application of address markings. Markings may be applied directly to the palletized load by stenciling, stamping, machine printing using 1/4-inch minimum lettering, or by labeling (waterproofed and stapled) with 1/8-inch minimum lettering. A unit load that does not present a suitable surface such as a pallet load of projectiles shall have the address markings applied by use of a DD Form 1387.

4.6.7 Data to be bar coded on the DD Form 1387 (see figure 5). Using either the preprinted or generated form, those DOD sites having the capability shall bar code the following data on the DD Form 1387 in accordance with DOD 4500.32-R. This is in addition to the human-readable data that is required. See 4.7 for specific information on bar code marking requirements.

a. TCN in block 1 (17 characters).

b. Standard Symbolic Designation in block 5 (6 characters).

c. Piece Number in block 16 (4 characters).

MIL-STD-129-1




MILITARY SHIPMENT LABEL CO FORM 1387		
1. TRANSPORTATION CONTROL NUMBER  46262050980209XXX		2. POSTAGE DATA
3. FROM		4. TYPE SERVICE
5. SHIP TO / POE		6. TRANS PRIORITY
7. PCO		8. PROJECT
9. ULTIMATE CONSIGNEE OR MARK FOR  46262R	10. WT	11. ROO
	12. CUBE	13. CHARGES
	14. DATE	15. FMS CASE NO
	16. PIECE NO  0004	
	17. TOTAL PIECES	

FIGURE 5. Sample of a bar coded DD Form 1387.

4.6.7.1 Human-readable interpretation (see figure 5). The HRI of the bar coded DODAAC and piece number shall appear either below the bar code or in-line with the bar code. When in-line, a 0.25 inch quiet zone is required between the bar code and the HRI. The bar code symbology shall be in accordance with MIL-STD-1189 except for bar code restrictions listed in 4.7.2.2.

4.6.8 Size of the DD Form 1387. For those sites having the capability to generate the DD Form 1387 as well as the data, the form may be reduced in size but shall not be any smaller than 4.0 inches in height by 5.0 inches in width (101.6 by 127.0mm) or 5.0 inches in height by 4.0 inches in width (127.0 by 101.6mm). The basic format shall remain the same. The labels and bar codes in figures 4 and 5 have been reduced in size for ease in publication.

4.7 Bar code marking requirements.

4.7.1 Bar code applicability. Bar code markings shall be applied by means of a label or by direct printing on the packaging material upon authorization by the cognizant activity.

4.7.2 Bar code labels. Unless otherwise specified by the cognizant activity, bar code labels shall meet the following requirements:

MIL-STD-129-1

- a. They shall meet the requirements for a Grade A, Style 2, Composition (b) label as specified in MIL-L-61002. The requirement for solvent and detergent resistance is not required.
- b. They shall be three-quarters of an inch in height.

4.7.2.1 Labels on wood containers. Pressure-sensitive labels shall be affixed to wood containers by stapling both ends of the label to the wood. Any commercial-type staple may be used as long as it is not placed within the bar code or within the quiet zone of the label (0.25 inch on either side of the bar code).

4.7.2.2 Bar code restrictions. Except for the following restrictions, the bar code shall be printed in accordance with MIL-STD-1189.

- a. Density of the bar code shall be 9.4 characters per inch, unless otherwise specified.
- b. Height of the bar code shall be 0.25 inch or greater. The height of the bars may extend to the edge of the label.
- c. Distance between the bar code and the HRI will be between 0.003 and 0.10 inch. The preferred distance is 0.03.
- d. Height of the HRI shall be between 0.09 and 0.15 inch. The preferred height is 0.09.

4.7.3 Data elements to be bar coded. The information to be bar coded is as follows:

- a. The National Item Identification Number (NIIN) shall be the only data element encoded in a message unless otherwise specified (see 4.7.6). The NIIN shall be encoded without the dashes (see figure 1).
- b. The lot number and quantity shall be encoded in the same message. On new production, the lot number, including dashes, shall be encoded, as specified in MIL-STD-1168. On ammunition and explosives that were produced prior to the date of this standard, the lot number shall be bar coded exactly as it appears on applicable reporting records or as it appears on the exterior container. A space (encoded) shall be provided between the lot number and quantity (see figure 1). If the lot number cannot be determined or read, the word "UNKNOWN" shall be encoded as the lot number. When no lot number is assigned, "NONE" shall be encoded.

MIL-STD-129-1

- c. The maintenance due date (MDD) or shelf-life expiration date (when specified) is a 4-digit data element representing the month (01 thru 12) and last two digits of the year. The MDD or shelf-life shall be encoded between the lot number and the quantity. A space (encoded) shall be placed between the lot number and the MDD and between the MDD and the quantity (see figure 6).

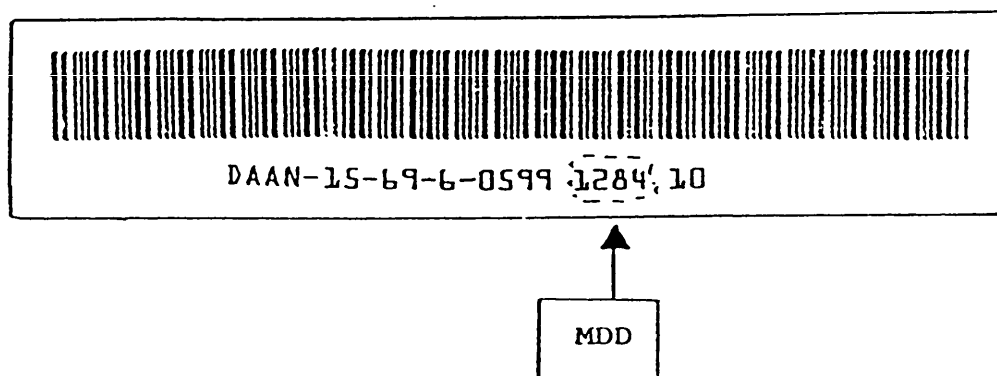


FIGURE 6. Bar coding the maintenance due date.

- d. Serial number (when specified) shall be encoded in lieu of the lot number and shall be preceded by an encoded slash. For Navy use only, an encoded slash shall not be placed before the serial number when there is no lot number. When the lot number and serial number are specified, they shall be coded and a slash (encoded) shall be placed between the lot number and the serial number (see figure 7).

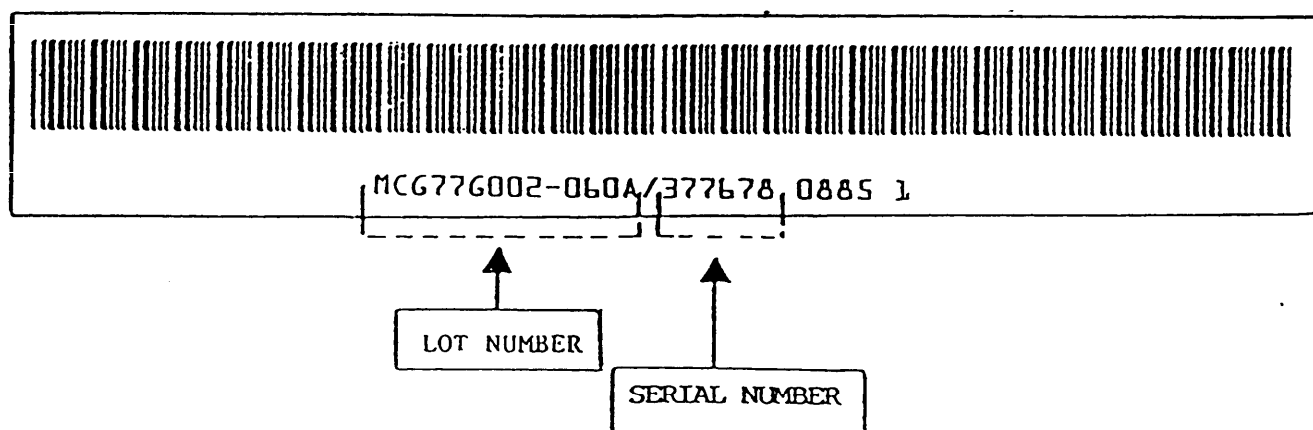


FIGURE 7. Bar coding lot number and serial number on the same line.

MIL-STD-129-1

4.7.4 Placement of bar codes on exterior containers. Bar codes shall be applied to exterior containers as specified herein.

4.7.4.1 Rectangular containers (see figure 1). Bar code labels shall be placed in the lower right quadrant and may be positioned as shown. If sufficient space is not available, the two labels shall be placed in the most convenient space on the front (marked side) of the container.

4.7.4.2 Cylindrical containers (see figure 8). Labels shall be applied immediately to the left of the identification markings and shall always be placed along the container length.

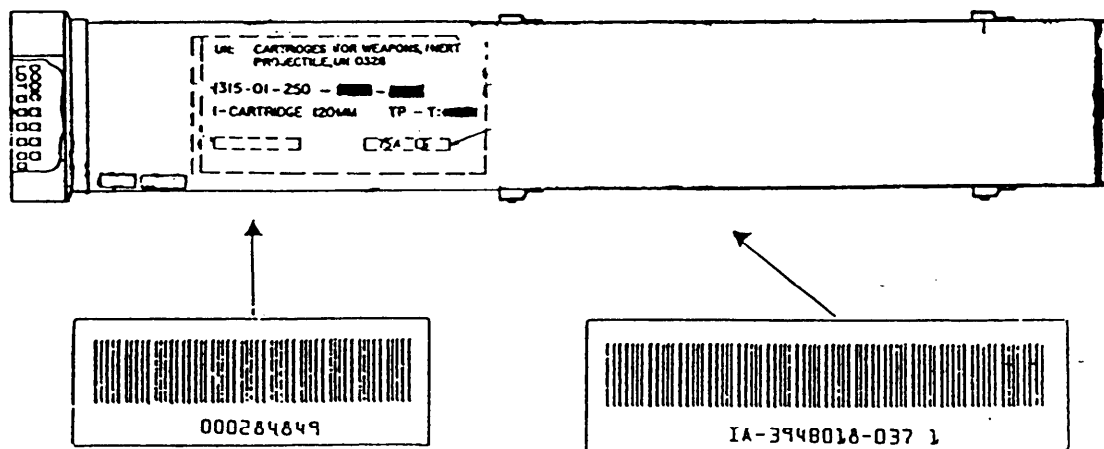
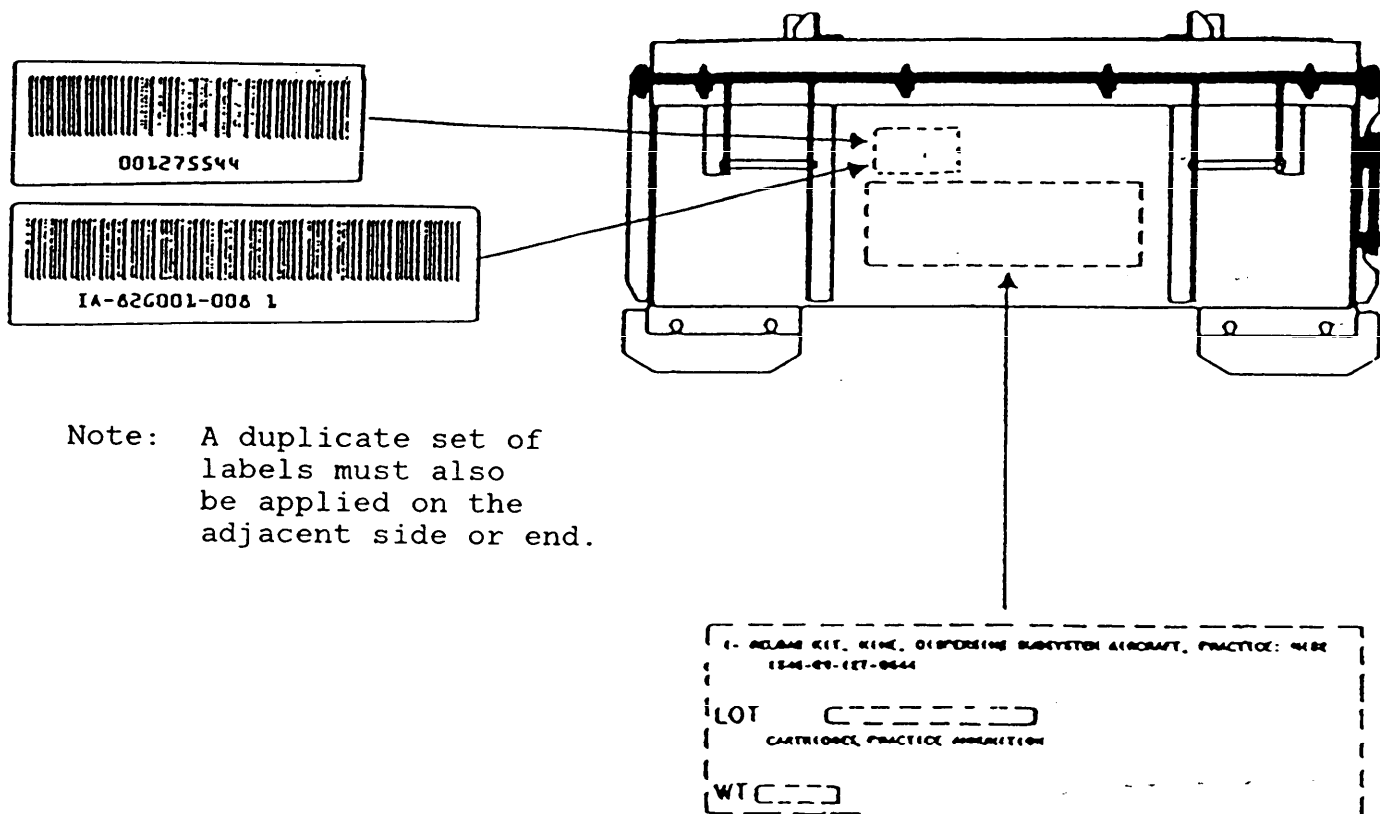


FIGURE 8. Placement of bar code labels on cylindrical containers.

4.7.4.3 Special containers (see figure 9). Unless otherwise specified, a special container is a container having skids or a cube greater than 10 cubic feet. Unless otherwise specified, the required labels shall be applied just above the identification markings, and a duplicate set of labels shall be placed on the adjacent side or end of the container. When the identification markings are absent on a side, the labels shall be placed near another marking such as a "center of balance" marking or near a distinguishing characteristic on the container. If the end of the container is equipped with a servicing facility such as a humidity indicator, the labels shall be placed at that end. For special containers stacked and lined against each other in magazine storage, such as missile containers and oversized containers of ammunition, bar code labels shall be applied on each end of the containers (both forward and aft) above the identification markings, if present. If the identification markings are not present, bar code labels shall be placed on the most conspicuous, smooth area. For special bar code requirements, see 4.7.6.

MIL-STD-129-1



Note: A duplicate set of labels must also be applied on the adjacent side or end.

FIGURE 9. Placement of bar code labels on special containers.

4.7.4.4 More than one serial number (see figure 1). When there is more than one serialized item per container, a label that encodes each different serial number and associated quantity and lot number must be applied. These additional labels shall be applied directly after the preceding lot/serial label using one of the placement methods shown in figure 1.

4.7.4.5 Stacking labels. When stacking labels horizontally or vertically (see figure 1), do not overlap the labels. Spacing between the labels shall be not more than 0.375 inch.

4.7.4.6 In-line messages/labels. A space of at least 0.5 inch shall be provided between bar coded messages on the same label. No spacing is required between labels that do not overlap.

MIL-STD-129-1

4.7.5 Bar coding unit loads (see figure 10). The data elements to be encoded are identified in 4.7.3. Unless otherwise specified, labels shall be applied on the far right vertical straps on the short dimension of the unit load. Labels shall be applied to both sides of the unit load starting 18 inches above the pallet deck. If the top of the load is less than 18 inches, apply labels from the top of the vertical strap. When there are no vertical straps along the short dimension, the labels shall then be applied to vertical straps along the long dimension.

NOTE: A duplicate set of labels must also be applied on the opposite side.

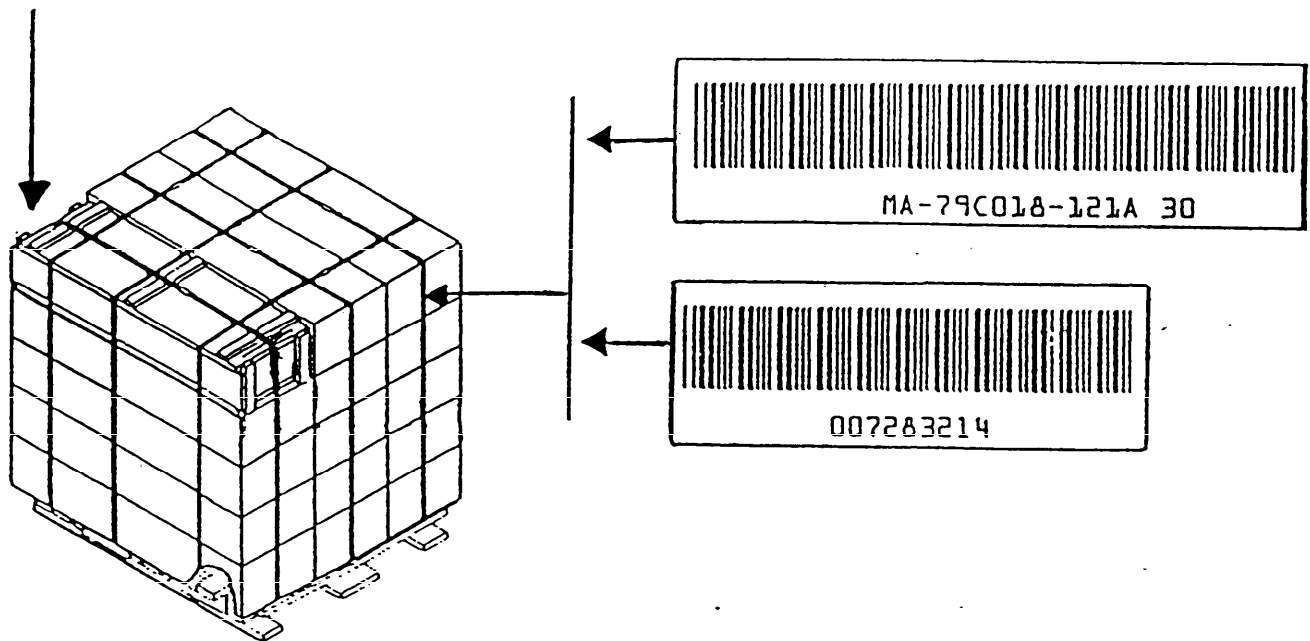


FIGURE 10. Placement of bar code labels on palletized unit loads.

4.7.5.1 More than one lot. Multiple lot labels shall be placed in sequence (see figure 11). If there is not sufficient space on the strapping on the short dimensions, labels shall be placed on a locally fabricated, moisture-proof display board, preferably aluminum, and shall be attached to the unit load (see figure 12).

MIL-STD-129-1

NOTE: A duplicate set of labels must also be applied on the opposite side.

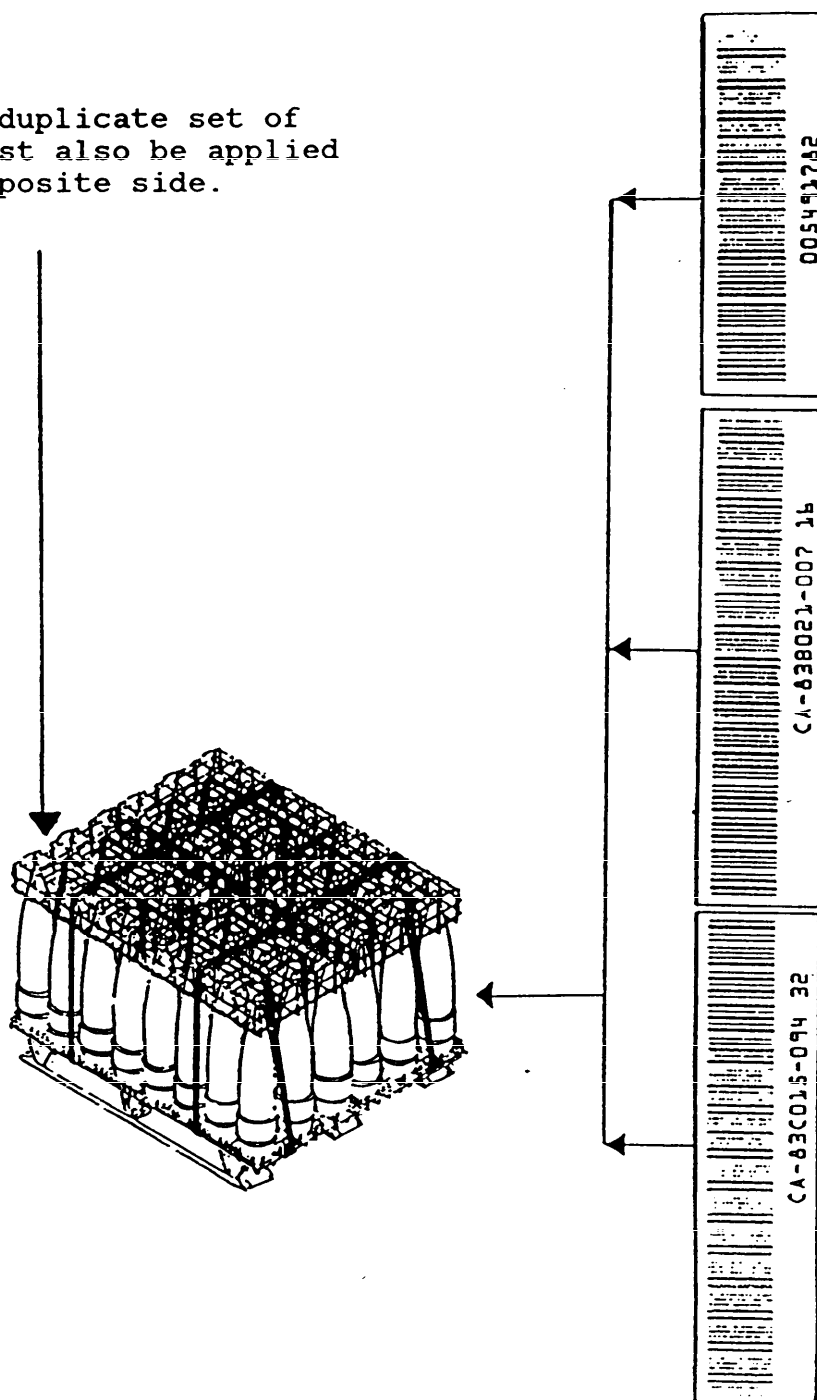


FIGURE 11. Placement of multiple lots on pallet strapping.

MIL-STD-129-1

NOTE: A duplicate set of labels must also be applied on the opposite side.

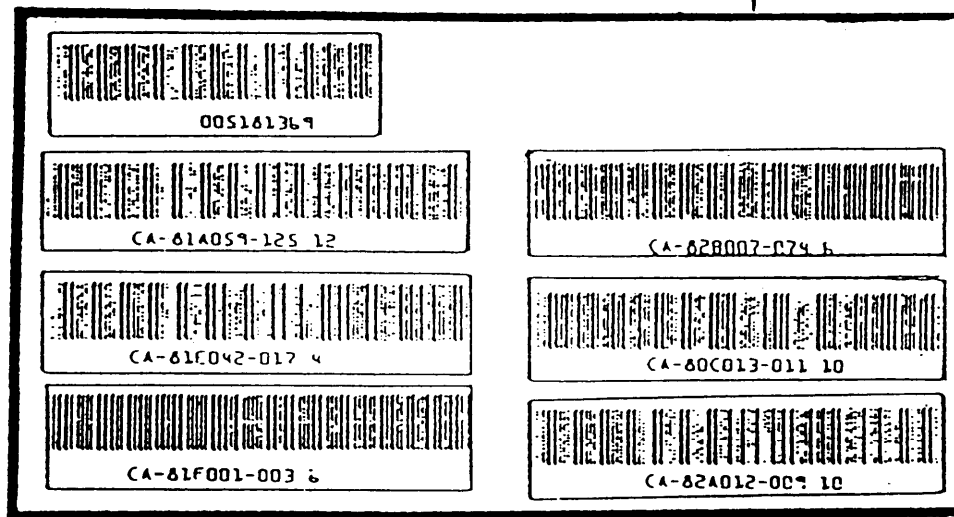


FIGURE 12. Example of the placement of multiple lots on marking boards.

4.7.6 Bar coding shipments to Naval activities (see figure 13). For Navy-, Marine Corps-, and Coast Guard-owned ammunition and explosives that are consigned to a CONUS or OCONUS Naval activity or to a Navy ship, the NIIN label (see 4.7.3a) shall be replaced by a label containing the NIIN, the ownership code, and the supply condition code (see table I). Each entry shall be separated by a space (encoded). The label shall be placed on the outermost package being shipped or, if unitized, shall be placed on the unit load. If there is a NIIN label already present, the new label shall be placed over the existing NIIN label. This requirement does not apply to Army, Air Force, or Marine Corps ammunition and explosives consigned through a port for further transfer to a non-Navy activity. The ownership code shall be Coast Guard (7), Marine Corps (4), Navy (5), and Special Operations Forces (Q).

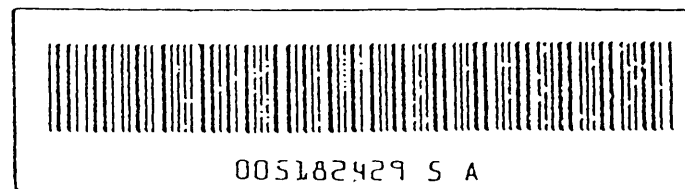


FIGURE 13. NIIN bar code label for Navy shipments.

MIL-STD-129-1

TABLE I. Application of supply condition codes to shelf-life items

<u>CODE</u>	<u>TITLE</u>	<u>DEFINITION</u>
A	SERVICEABLE (ISSUABLE WITHOUT QUALIFICATION)	Shelf-life remaining is more than 6 months.
B	SERVICEABLE (ISSUABLE WITH QUALIFICATION)	Shelf-life remaining is from 3 to 6 months.
C	SERVICEABLE (CUSTOMER CONCURRENCE REQUIRED PRIOR TO ISSUE)	Shelf-life remaining is less than 3 months.
E	UNSERVICEABLE (LIMITED RESTORATION)	Materiel which involves limited expense or effort to restore to a serviceable condition and which is accomplished in the Storage Activity (SA) where the stock is located.
G	UNSERVICEABLE (INCOMPLETE)	Materiel requiring additional parts or components to complete the end item prior to issue.
H	UNSERVICEABLE (CONDEMNED)	Type I shelf-life materiel that has passed the expiration date and Type II shelf-life materiel that has passed its inspection or test date and cannot be extended.
J	SUSPENDED (IN STOCK)	Type II shelf-life materiel that has reached the inspection or test date and is awaiting inspection, test, or restoration.

MIL-STD-129-1

TABLE I. Application of supply condition codes to shelf-life items - Continued.

<u>CODE</u>	<u>TITLE</u>	<u>DEFINITION</u>
K	SUSPENDED (RETURNS)	Materiel returned from customers or users and awaiting condition classification.
L	SUSPENDED (LITIGATION)	Materiel held pending litigation or negotiation with contractors or common carriers.
R	SUSPENDED (RECLAIMED ITEMS, AWAITING CONDITION DETERMINATION)	Assets turned in by reclamation activities which do not have the capability (e.g., skills, manpower, or test equipment) to determine the materiel condition. The actual condition will be determined prior to induction into maintenance activities for repair/modification.

MIL-STD-129-1

5. DETAILED REQUIREMENTS

5.1 Markings and marking materials.

5.1.1 Marking materials. Marking materials to be used shall be those materials specified in this standard or alternate choices approved by the cognizant activity. Contractors may obtain the DOD-unique tags and labels discussed herein from commercial sources after obtaining samples from either the procuring activity of the local Defense Contract Management Area Operations (DCMAO).

5.1.1.1 Waterproofing materials used as protective coatings for labels. Transparent, waterproofing materials such as spar varnish, acrylic coating compound, sealing compound, label adhesive, and pressure-sensitive tape shall be used as protective coatings on container markings.

5.1.1.2 Stencil-marking material. Unless otherwise specified by the cognizant activity, any opaque, nonfading, fast drying, weather resistant stencil ink, lacquer, paint, or enamel shall be used for stencil marking. However, applicable packaging drawings that specify other finishes shall take precedence over the above requirements.

5.1.1.3 Obliterating lacquer, enamel, or paint. Unless otherwise specified by the cognizant activity, any quick-drying, opaque lacquer, ink, enamel, or paint that approximates the color of the container shall be used for the obliteration of markings.

5.1.1.4 Lithographing, embossing, roller coating, or stamping. When lithographing, embossing, or roller coating of markings is authorized, commercial enamels, lacquers, or inks in the color specified shall be used. When stamping is specified, commercial waterproof and petroleum-resistant inks, in the color specified, must offer the greatest durability on exposure to field service.

5.1.2 Labels, paper, pressure-sensitive, water-resistant. Unless otherwise authorized by the cognizant activity, paper labels shall be made of sized white paper stock having a smooth finish and a minimum base weight of 20 pounds. Labels shall be of a water-resistant grade of paper, film, fabric, or plastic and shall be coated on the unprinted side with a water-insoluble, homogeneous, pressure-sensitive, permanent type adhesive. The adhesive shall adhere to metal, plastic, or fiberboard surfaces under high and low temperatures. The labels shall have a finish capable of withstanding normal handling during both shipment and storage. They shall be suitable for printing and writing on with ink without feathering or spreading. The applied label must remain securely in position under anticipated conditions of handling, shipment, and storage.

MIL-STD-129-1

5.1.2.1 Protective coating of labels. If labels for exterior containers are not inherently waterproof, they shall be waterproofed by coating the entire outer surface of the label with a transparent, waterproofing material (see 5.1.1.1). Labels on metal or plastic drums, pails, or cans used as exterior containers shall also be waterproofed.

5.1.3 Tags. Unless otherwise specified by the cognizant activity, paper shipping tags conforming to A-A-900 shall be used. A metal, cloth, plastic, or paper shipping tag such as UU-T-81, bearing the required markings, shall be used when specified in this standard or when it is impractical to stencil mark or apply a label on the container or unpacked item. Tags shall be attached to the container or item with a corrosion-resistant wire. Tags shall not damage the item and shall be capable of withstanding repeated handling. Markings on cloth or paper tags shall be machine printed or typed with waterproof ink, while markings on metal tags shall be with dies or punches. Markings on plastic tags shall be by stamping, stenciling, embossing, machine printing (not hand printing), perforating, or, when specified, by other processes such as silkscreening, lithographing, photo marking, or by applying transfers or decals. In addition to using wire, tags may also be attached by staples or nails.

5.1.4 Water-resistant envelopes. Water-resistant envelopes for packing lists and materiel release/receipt documents shall conform to PPP-E-540. A water-resistant, pressure-sensitive, tape such as PPP-T-60 or PPP-T-76 shall be used to attach the envelope to the package or container.

5.1.5 Packing list protectors. Packing list protectors shall conform to A-A-1907.

5.1.6 Conditions of surfaces to be marked. All surfaces to be marked shall be clean, dry, and free of contaminants. All marks not applicable to the shipment shall be covered with obliterating lacquer, ink, enamel, or paint. When shipping containers are consolidated into container vans for shipment to an ultimate consignee, obliteration of current address markings is not required.

5.1.7 Legibility, durability, and color of markings. All markings shall be clear, legible, durable, and nonfading and shall be not less than the size specified. Unless otherwise specified by the cognizant activity, the color of all markings shall be black except when applied to a surface on which black is not legible. In this case, the marking color used shall be one that provides a definite contrast with the surface being marked. For container markings, for example, yellow or white lettering shall be applied over forest-green coloring.

MIL-STD-129-1

5.1.8 Methods of marking unit packs, intermediate and exterior containers, and loose or unpacked items. Unless otherwise authorized, identification markings shall be accomplished by stamping, stenciling, machine printing, silk-screening, or embossing. Hand printing of identification markings is not authorized.

5.1.8.1 Stenciling. Stenciling may be accomplished by rolling, brushing, or spraying with the materials specified in 5.1.1.2.

5.1.8.2 Machine Printing. The required markings may be machine printed directly on all interior and exterior containers at the time of manufacture (see 5.1.8). Self-linked, porous stencils impressed by a data processing machine or typewriter may also be used.

5.1.8.3 Labels.

5.1.8.3.1 Use of labels. Unless otherwise specified in the procurement contract or order, bar code labels and address labels are required on all levels of military packaging. Without any special surface preparation, pressure-sensitive labels that meet the requirements of 5.1.2 may be used on containers other than wood. Pressure-sensitive labels may be used on wood containers after the labeling area has been given either a smooth coat of spar varnish or an acrylic, polyurethane, or epoxy coating. Bar code labels shall be stapled to wood containers as specified in 4.7.2.1. Unless it is specifically authorized by the procuring activity, labels shall not be used to apply identification markings or hazardous materials PSNs and identification numbers to packages. The lettering on labels must not smear, fade, or blur under anticipated conditions of handling, shipment, and storage.

5.1.9 Marking board or marking panel. Unless authorized by the responsible command or when necessitated by the conditions described in 4.6.3, marking boards or marking panels shall not be used. However, when marking boards or marking panels are authorized by the responsible command, the marking board or marking panel shall be constructed of weather-resistant fiberboard, plywood, or wood-based panel (1/4-inch minimum thickness).

5.1.10 Size of markings. Unless otherwise specified on the applicable packaging documentation, the letter size on packages shall be in capital letters of equal height and shall be clearly legible and proportionate to the available marking space. Also, unless otherwise specified on the packaging documents, all identification markings shall be not less than one-fourth of an inch nor more than one inch in height. The lot marking shall be in the largest practical size lettering, and it shall be underlined.

MIL-STD-129-1

5.2 Special markings. The special markings discussed in this standard are not all inclusive and are examples of the types of special markings that may be required to be placed on a container. Special markings such as "FRAGILE," "CENTER OF BALANCE," arrows, shelf-life, project codes, or Method II shall be specifically identified in the procurement document as being required markings. Supply-type optional form (OF) labels listed in table II shall be applied, as required. Unless otherwise specified in the contract or order or by the cognizant activity, special markings shall be placed in a conspicuous location on the identification-marked side of the container. If sufficient space is not available on the identification-marked side of the container, the special markings shall be placed on the side of the container that is opposite the identification-marked side or on the end of the container that is to the left of the identification-marked side. No markings shall be placed on the bottom of the container. When MIL-STD-1168 lot numbering is used, the date manufactured, date cured, or date assembled is not required as part of the shelf-life markings.

5.2.1 Special orientation marking. Packages which require a special orientation under certain conditions shall be marked in a manner which will alert the shipper/storer to the applicable restrictions. An example would be marking "nose end" on packaged rockets or WP-filled ammunition.

5.2.2 Light box/light load markings. The light box/light load markings on the exterior shipping containers for light boxes/containers (less than a full box) and empty boxes/containers shall be as follows:

- a. A light box/container less than 3 cubic feet in size shall be painted orange, except for the bottom, similar to color chip 32246 of FED-STD-595, and shall be marked with the words "LIGHT BOX" in a contrasting color on the top and on the identification-marked side, if there is sufficient space. If sufficient space is not available, "LIGHT BOX" markings shall be placed on the adjacent end panel. When the bottom surface of a light box is visible within a unit load, the bottom must also be painted orange and marked with the words "LIGHT BOX."
- b. A light box/container, 3 cubic feet or larger, shall be marked with the words "LIGHT BOX" in orange paint similar to color chip 32246 of FED-STD-595, on the top, sides, and ends of the box in the largest practical letters. When the bottom surface of a light box is visible within a unit load, the bottom must also be marked in orange with the words "LIGHT BOX." On loose box shipments, the words "LIGHT BOX"

MIL-STD-129-1

must be applied in one visible location only, preferably on the top or the available space on the front (identification-marked) side or on the back (POP-marked) side.

- c. Empty boxes in unit loads of ammunition shall be identified by painting the entire box orange, except for the bottom, similar to color chip 32246 of FED-STD-595, and marking the word "EMPTY" in a contrasting color on the top, both ends, and at least one side of the box. When the bottom of an empty box is visible in the unit load, the bottom must also be painted orange and must be marked with the word "EMPTY."
- d. It is permissible to neatly mask existing markings when painting containers in order to avoid remarking.
- e. Unit loads containing empty or light boxes shall be identified by quantity per box and/or number of empty boxes and shall be added with other pallet data to the pallet data card attached to two adjacent sides of each pallet.
- f. Less than full unit loads of unpackaged ammunition such as separate loading projectiles shall be identified by an orange tag, similar to color chip 32246 of FED-STD-595, placed on two diagonal corners of the load, with the tag marked as "LIGHT LOAD." Such loads must be constructed so that the longitudinal center of gravity is the same as for a full load.
- g. Light box identification of ammunition that is known to be scheduled for demilitarization may be linked to the application of orange tags or placards marked "LIGHT BOX" or "LIGHT LOAD." All other markings required by 4.1, 4.2, and 5.2.1 are required.
- h. Identification markings for light boxes/containers (less than a full box) and empty boxes/containers for use in the shipment and storage of retail materiel/ammunition are the responsibility of the using service or command and may be identified by any method/color that meets their needs.

5.2.3 Temperatures. When temperature control is required for storage or when firing temperature limits apply, the temperature limits shall be enclosed in a square(s) with the words, "STORAGE TEMPERATURE LIMITS" or "FIRING TEMPERATURE LIMITS," or both, when applicable. The temperature shall be indicated by a specific temperature number represented by either degrees Fahrenheit (F) or degrees Celsius (C).

MIL-STD-129-1

5.2.4 Method II marking. Method II packs shall bear a Method II cautionary marking on the identification-marked side. On unit packs and intermediate containers, the Method II marking may be applied by stamping or by labeling (OF 73 or OF 74). On exterior containers, the Method II marking may be applied by labeling, machine printing, or stenciling. When the Method II marking is machine printed or stenciled on the container, red marking ink that is waterproof, bleed-resistant, and resistant to ultraviolet ray degradation shall be used. When space is not available for a Method II label, the words "METHOD II PACKAGE - DO NOT OPEN UNTIL READY FOR USE" shall be machine printed, stamped, or stenciled on the container adjacent to the identification markings.

5.2.5 Foreign country requirements. All OCONUS shipments (except those in intermodal containers) require that at least one UN hazard label be affixed to each unit load of palletized cargo or to each exterior package of loose cargo in accordance with Title 49 CFR and the applicable international modal document requirements. The marking and labeling requirements imposed by foreign governments shall be observed as prescribed by the service directing the shipment. Shipments to the United Kingdom must have labels or labeled tags applied to all four exterior sides of the unit load. Labels shall not be applied directly to the end item.

5.2.6 Materiel condition markings. As prescribed in DOD 4145.19-R-1, materiel condition tags or labels shall be used whenever materiel may become mixed during storage or shipment within or between installations or where physical evidence is necessary for materiel control to prevent duplicate inspections, or both. Federal supply condition codes are defined in appendix B of DOD 4000.25-2-M, which is the official source for Federal supply condition codes, and in various departmental implementing documents. Organizations that use computer automation to produce materiel condition tags and labels may centrally or locally procure or manufacture tags and labels suitable for handling by a computer printer, as long as the tags and labels conform to the color, design, and material (to include the strength of the paperboard) of the government produced item. Computer-generated, adhesive-backed labels may be used in conjunction with materiel condition tags. Required information for the applicable DD Form 1570-series tag should be printed on a computer-generated label. The label should then be permanently affixed to the face of the appropriate color-coded tag, ensuring that the label does not obstruct or cover the colored-coded border of the tag. When a computer-generated label is used to cover a color-coded tag, the letters on the face of the tag shall be black rather than the same color as the border of the tag. The size of the lettering on materiel condition tags and labels shall be as specified by

MIL-STD-129-1

the respective departments and agencies. The following forms are authorized for use to indicate the condition(s) of the materiel and to identify the individual article or contents of the package, bundle, or container to which they are securely attached. These forms are not for indiscriminate use on serviceable materiel that presents no problem in storage and transfer.

- a. DD Form 1574 (Serviceable Tag - Materiel) and DD Form 1574-1 (Serviceable Label - Materiel). Materiel that is serviceable (e.g., issuable without qualification, issuable with qualification, or priority issue) shall be conspicuously marked with a serviceable materiel condition tag or label. The tag and label shall have yellow borders and letters. While it is preferable to have the letters be the same color as the border, there may be cases when preprinted letters are not legible, especially in poorly lighted warehouses. In these cases, black lettering may be used. To assist in identification, a 1- by 5-inch yellow stripe may also be printed on the back of each tag.
- b. DD Form 1577-2 (Unserviceable (Reparable) Tag - Materiel) and DD Form 1577-3 (Unserviceable (Reparable) Label - Materiel). Materiel that is unserviceable (e.g., limited restoration, reclamation, reparable, or incomplete) shall be conspicuously marked with an unserviceable (reparable) materiel condition tag or label. The tag and label shall have green borders and letters. To assist in identification, a 1- by 5-inch green stripe may also be printed on the back of each tag.
- c. DD Form 1577 (Unserviceable (Condemned) Tag - Materiel) and DD Form 1577-1 (Unserviceable (Condemned) Label - Materiel). Materiel that is unserviceable (e.g., condemned or scrap) shall be conspicuously marked with an unserviceable (condemned) materiel condition tag or label. The tag and label shall have red borders and letters. To assist in identification, a 1- by 5-inch red stripe may also be printed on the back of each tag.
- d. DD Form 1575 (Suspended Tag - Materiel) and DD Form 1575-1 (Suspended Label - Materiel). Materiel that is suspended (e.g., stocks awaiting classification, returns awaiting classification, ammunition suitable for emergency combat use only, reclaimed items awaiting condition determination quality deficiency exhibits, or stocks that are being held pending negotiation or litigation) shall be conspicuously marked with a suspended materiel condition tag or label. The tag and label shall have brown borders and letters. To assist in identification, a 1- by 5-inch brown stripe may also be printed on the back of each tag.

MIL-STD-129-1

- e. DD Form 1576 (Test/Modification Tag - Materiel) and DD Form 1576-1 (Test/Modification Label - Materiel). Serviceable materiel that requires technical data markings, testing, alteration, modification, conversion, disassembly, etc., prior to issue, shall be conspicuously marked with a test modification materiel condition tag or label. The tag and label shall have blue borders and letters. To assist in identification, a 1- by 5-inch blue stripe may also be printed on the back of each tag.

5.2.6.1 Materiel condition tags. When the requirements of 4.7.6 are met, materiel condition tags must be applied to the materiel. Individual services retain the prerogative of applying materiel condition tags to any stock in their custody.

5.3 Packing lists. When a packing list is required for a shipment, the packing list shall be placed inside the shipping container. A DD Form 250 (Materiel Inspection and Receiving Report) should be used as a packing list for contractor shipments. Any locally prepared or procured packing list may be used for shipments generated by DOD activities. Contents of the listing shall be organized so that they can be readily understood and shall not include information that has no bearing on the items or to the receiving activity. A packing list is not required on a unit load of an ammunition end item such as bomb fins, which are otherwise shipped unpackaged but with associated hardware packaged separately and included on the unit load. The contents of such hardware packages shall be individually identified. Packing lists are also not required on palletized loads of explosives.

5.4 DD Form 1348-1 (DOD Single Line Item Release/Receipt Document) and DD Form 1348-1A (Issue Release/Receipt Document). Two copies of a DD Form 1348-1 or DD Form 1348-1A shall be sealed in a water-resistant envelope conforming to PPP-E-540, class 4, style 1, 2, 3, or 4, that shall be attached in a protected location on the exterior of the shipping container or unit load. When a shipment involves multiple containers or unit loads, the water-resistant envelope shall be placed on the container or unit load nearest the door, when loading. This will assist in identification when off-loading. Unless otherwise specified, overseas shipments shall be further protected by placing the envelope in a packing list protector conforming to A-A-1907. The words "MATERIAL RELEASE/RECEIPT DOCUMENTS" shall be marked on the outside of the packing list protector. When requested by the consignee or at the shippers' discretion, additional copies of the DD Form 1348-1 or DD Form 1348-1A may be provided.

5.5 Previous marking requirements. When remarking is required for maintenance or renovation purposes, marking of new production

MIL-STD-129-1

and existing stocks shall be in accordance with applicable packing and marking drawings. These drawings shall incorporate the marking requirements of this standard. Remarkings of current stocks merely to comply with this standard is not required. If a marking drawing does not exist for an item, then this standard shall be used. Bar coding shall be applied to exterior containers when unit loads are broken down. Otherwise, bar codes shall be applied to unit loads only.

5.5.1 Government-owned dangerous goods packaged prior to 1 January 1988. Government-owned dangerous goods that were packaged prior to 1 January 1988 and destined for international surface shipment or domestic or international military air shipment may be marked in accordance with Title 49 CFR (dated prior to 1 October 1991). In this case, the shipping papers shall be annotated with the following clause: "Government-owned goods packaged prior to 1 January 1988." All shipping containers that are identified for international air shipment and those packaged after 1 January 1988 shall be marked and documented in accordance with the appropriate modal regulations.

5.6 Military-owned demountable container (MILVAN)/International Standards Organization (ISO) container marking. A 14- by 14-inch square placard or marking board or panel, with a white background, shall be affixed to a container loaded with ammunition or explosives. The white square shall contain the following information:

- a. Identification NO.
- b. Net Explosive Weight (NEW).
- c. Hazard Class/Division (HC/D).
- d. Storage Compatibility Group (SCG).

The information presented on the white square shall be in black or dark letters 3 inches high. The white square shall be removed when the container becomes empty. Since the white square placard or marking board/panel is for temporary use only, it should be constructed of a light weight material such as plastic or fiberboard. If the container holds multiple UN identification numbers or hazard classes/divisions, the identification number of the highest class/division shall be placed on the white square. If the container holds multiple identification numbers or hazard classes/divisions, the "NEW" shall be a total of all the classes which have been loaded. This white square shall not substitute for any markings or placards required by Title 49 CFR and the IMDG regulations.

MIL-STD-129-1

5.7 Order of precedence. In the event of a conflict between the requirements of this standard and the requirements of product specifications, item technical publications, or drawings, the order of precedence shall be:

- a. The requirements of the drawings.
- b. The requirements of item technical publications.
- c. The requirements of product specifications.
- d. The requirements of this standard.

5.8 Marking for North Atlantic Treaty Organization countries. The marking of ammunition for shipment to NATO countries shall be as specified in this standard, in the current edition of MIL-STD-129, and in the following QSTAG and STANAGs: QSTAG 481 for color coding and marking of ammunition, STANAG 2316 (AMMO) for marking of ammunition of a caliber below 20mm, and STANAG 2322 (AMMO) for marking of ammunition of a caliber of 20mm and above.

5.9 English-metric conversion. In order to accommodate the requirements of DOD 4120.18, tables III and IV which describe the English-metric conversion applicable to this standard are provided at the end of this section. For convenience in calculation, the metric equivalents are expressed to two decimal places (nearest hundredth), wherever practical.

MIL-STD-129-1

TABLE II. Supply-type labels

NOTE: Use existing supplies of OF's 87, 87A, and 88 until they are exhausted or until 31 December 1993, whichever comes first. The OF numbers and NSNs for the new Electrostatic Discharge (ESD) Sensitive Devices labels discussed in MIL-STD-129M will be requested upon implementation of MIL-STD-129M. At that time, OF's 87, 87A, and 88 will be canceled.

<u>Optional Form</u>	<u>Title</u>	<u>Size (in inches)</u>	<u>NSN</u>
70A	Fragile (gummed)	2 1/2 by 2 1/2	7540-00-559-2335
71A	Fragile (gummed)	4 by 4	7540-00-559-2337
73	Method II Package	2 1/2 by 1	7540-00-139-4738
74	Method II Package	6 by 2 1/2	7540-00-139-4752
80	999	2 by 2	7540-00-139-4831
81	999	4 by 4	7540-00-139-4832
83	NMCS	3 by 1 1/2	7540-00-139-4834
84	NMCS	3 by 5	7540-00-139-4835
87	Caution-Sensitive Electronic Devices	2 by 2	7540-01-109-8815
87A	Caution-Sensitive Electronic Devices	4 by 4	7540-01-110-4906
88	Caution-Sensitive Electronic Devices	2 by 5/8	7540-01-317-7371
274	Equipment Warranty	3 by 2	7540-01-044-7185

MIL-STD-129-1

TABLE III. Standard English-metric equivalentsVolume:

1 fluid ounce	= 29.57 milliliters	1 quart	= 0.95 liter
1 pint	= 0.47 liter	1 gallon	= 3.79 liters

Weight:

1 ounce (avoirdupois)	= 28.35 grams
1 pound (avoirdupois)	= 453.59 grams or 0.454 kilogram

Length:

1 inch	= 2.54 centimeters
1 foot	= 30.48 centimeters or 0.305 meter
39.37 inches	= 1 meter (3.28 feet = 1 meter)

MIL-STD-129-1

TABLE IV. MIL-STD-129-1 English-metric conversionsVolume (Liquids):

<u>Gallons</u>	=	<u>Liters</u>
1		3.79
5		18.95
50		189.50
55		208.45

Weight:

<u>Ounces</u>	=	<u>Grams</u>
1		28.35
10		283.50
(1000 grams = 1 kilogram)		

Volume (Solids):

<u>Cubic feet</u>	=	<u>Cubic meter</u>
1.0		0.030
1.2		0.036
1.3		0.039
2.0		0.060
2.5		0.075
3.0		0.090
4.1		0.123
4.7		0.141
5.3		0.160

<u>Cubic feet</u>	=	<u>Cubic meters</u>
6.0		0.18
6.5		0.195
8.4		0.25
9.0		0.27
10.0		0.30
12.0		0.36
30.0		0.90
60.0		1.80
66.5		1.995

Pounds = Kilograms

1.	0.45
2.2	1.0
10.	4.54
11.	4.99
50.	22.7
52.	23.61
65.	29.51
75.	34.05

Pounds = Kilograms

100	45.4
125	56.75
144	65.37
150	68.10
200	90.80
500	227.0
1000	454.0
1700	771.8

Inches = Centimeters

0.0258	0.07
0.03	0.08
0.0625	0.16
0.095 (3/32)	0.24

Inches = Centimeters

0.50	1.27
0.875 (7/8)	2.22
0.90	2.29
1.0	2.56

MIL-STD-129-1

TABLE IV. MIL-STD-129-1 English-metric conversions - Continued.

<u>Inches</u>	=	<u>Centimeters</u>	<u>Inches</u>	=	<u>Centimeters</u>
0.10		0.25	1.5		3.81
0.125 (1/8)		0.32	2.0		5.08
0.188 (3/16)		0.48	2.5		6.35
0.375 (3/8)		0.95	3.0		7.62
4.0		10.16	50.0		127.0
5.0		12.70	100.0		254.0
10.0		25.40	144.0		365.76

NOTE: 10 millimeters equals 1 centimeter.

<u>Feet</u>	=	<u>Meters</u>
1		0.305
3.28		1.0
25		7.62
50		15.24
150		45.73

Temperature conversion:

To change degrees Celsius (C) to degrees Fahrenheit (F), multiply temperature by 1.8 and add 32 degrees F.

To change degrees Fahrenheit (F) to degrees Celsius (C), subtract 32 from the temperature and divide by 1.8.

<u>Degrees Fahrenheit</u>	=	<u>Degrees Celsius</u>
0		-18
32		0
35		2
46		8
100		38
212		100

MIL-STD-129-1

6. NOTES

THIS SECTION IS NOT APPLICABLE TO THIS STANDARD.

MIL-STD-129-1

INDEX

<u>SUBJECT</u>	<u>PARAGRAPH(S)</u>	<u>PAGE(S)</u>
Abbreviations and acronyms	3.1	5
Address markings	4.6-4.6.6	18-22
Ammunition	3.2	6
Applicability	1.2	1
Arrows	5.2	36
Bar coded identification data	4.7.3	24
Bar code labels	4.7.2-4.7.2.2	23-24
Bar code markings (including labeling)	3.3, 4.7-4.7.6	5, 23-30
Bar code restrictions	4.7.2.2	24
Center of balance	5.2	36
Cognizant activity	3.4	6
Color of markings	5.1.7	34
Commercial air shipments	4.2.3	11
Condition of surfaces to be marked	5.1.6	34
Consignee (receiver)	3.5, 4.6.1.1a(9)	6, 20
Consignor (shipper)	3.6, 4.6.1.1a(3)	6, 20
Containers manufactured to a Government drawing, packaging drawing, or specification	4.3.3	14
Contractor- or vendor- originated address markings	4.6.2, 4.6.3	21, 22

MIL-STD-129-1

INDEX

<u>SUBJECT</u>	<u>PARAGRAPH(S)</u>	<u>PAGE(S)</u>
Contractor's responsibilities	4.3.2	14
Cube	4.6.1.1a(12)	20
Cylindrical containers	4.5.1c, 4.7.4.2	17, 26
Data bar coded on the DD Form 1387	4.6.7	22
Date packed	3.7, 5.5.1	6, 41
Defense Transportation System	3.8, 4.6.2	7, 21
Definitions	3.1-3.35	5-9
Documentation that accompanies shipments	5.3, 5.4	40
DOD Identification Code	3.9, 4.1b, 4.2d	7, 10, 11
DOD Single Line Item Release/Receipt Document (DD Form 1348-1)	5.4	40
Durability of markings	5.1.7	34
Embossing	4.5.1b(2), 5.1.1.4, 5.1.3, 5.1.8	17, 33, 34, 35
Empty ammunition containers	4.2.2	11
English-metric conversion	5.9, Tables III & IV	42, 44-46
Exceptions, exemptions, and additions	1.2.1	1
Explosive	3.10	7
Exterior container markings	3.11, 4.2-4.2.3	7, 10-11
Foreign country requirements	5.2.5	38

MIL-STD-129-1

INDEX--Continued

<u>SUBJECT</u>	<u>PARAGRAPH(S)</u>	<u>PAGE(S)</u>
Format of DD Form 1387	4.6.1.1	20
Fragile markings	5.2	36
Full carload/full truckload shipments	4.5.1e, 4.6.4	18, 22
Government-owned dangerous goods packaged prior to 1 January 1988	5.5.1	41
Gross weight	4.2a, 4.6.1.1a(10)	10, 20
Hand printing	4.6.1, 5.1.3, 5.1.8	18, 34, 35
Hazardous materials	3.12, 4.4.1, 5.6c	7, 15, 41
Human-readable interpretation	3.13, 4.6.7.1	7, 23
Identification markings on unit packs, inter- mediate containers, and unpacked items	3.14, 3.35, 4.1	7, 9, 10
Identification number for hazardous materials	4.2b, 4.2.1	10, 11
In-line bar code messages	4.7.4.6	27
Intermediate container	3.14	7
ISO container markings	5.6	41
Issue Release/Receipt Document (DD Form 1348-1A)	5.4	40
Item description (nomenclature)	3.15	7
Kit	3.16	7
Label adhesive	5.1.1.1	33

MIL-STD-129-1

INDEX--Continued

<u>SUBJECT</u>	<u>PARAGRAPH(S)</u>	<u>PAGE(S)</u>
Labels	5.1.2, 5.1.2.1, 5.1.8.3.1	33, 34, 35
Legibility of markings	5.1.7	34
Light box/light load markings	5.2.2	36
Lithographing	5.1.1.4, 5.1.3	33, 34
Lot number	4.1e, 4.2d, 4.2e, 4.7.3b, 4.7.5.1	10, 11, 24, 28
Machine printing	4.5.1b(2), 5.1.3, 5.1.8, 5.1.8.2	17, 34, 35
Maintenance due date	4.7.3c	25
Marking board/panel	5.1.9	35
Marking materials	5.1.1-5.1.5	33-34
Markings	5.1-5.1.10	33-35
Materiel condition markings	5.2.6	38
Materiel condition tags	5.2.6.1	40
Method II markings	5.2, 5.2.4	36, 38
Methods of marking	5.1.8-5.1.9	35
Military shipment label (DD Form 1387)	4.6.1-4.6.1.1, 4.6.3	18-20, 22
MILVAN container markings	5.6	41
Multipacks	4.3.4	14
Multiple lots	4.5.1d	18
National Item Identification Number	3.17, 4.7.3a, 4.7.6	7, 24, 30

MIL-STD-129-1

INDEX--Continued

<u>SUBJECT</u>	<u>PARAGRAPH(S)</u>	<u>PAGE(S)</u>
National/NATO Stock Number	3.17, 4.1a, 4.5a	7, 10, 15
Navy Ammunition Logistic Code	3.9, 4.1.6, 4.2d	7, 10, 11
Net Explosive Weight	4.2.3, 5.6b	11, 41
North Atlantic Treaty Organization shipments	5.8	42
Obliterating lacquer, enamel, or paint	5.1.1.3, 5.1.6	33, 34
Order of precedence	2.3, 5.7	4, 42
Overpacks	4.3.4	14
Packaging	3.18	8
Packing	3.19	8
Packing list	5.3, 5.4	40
Packing list protector	5.1.5, 5.4	34, 40
Palletized unit loads	3.20, 4.5-4.5.1, 4.6.6	8, 15-16, 22
Performance-oriented packaging markings	4.3-4.3.4	11-14
Port of debarkation	3.21, 4.6.1.1a(7)	8, 20
Port of embarkation	3.22, 4.6.1.1a(5)	8, 20
Precautionary markings and labelings	4.2c	10
Pressure-sensitive tape	5.1.1.1	33
Previous marking requirements	5.5	40
Proper shipping name	3.23, 4.2b, 4.2.1	8, 10, 11

MIL-STD-129-1

INDEX--Continued

<u>SUBJECT</u>	<u>PARAGRAPH(S)</u>	<u>PAGE(S)</u>
Protected cargo	3.24	8
Protective coatings	5.1.1.1, 5.1.2.1, 5.1.8.3.1	33, 34, 35
Quantity and quantity per unit pack	3.25, 3.26, 4.1c, 4.5d	8, 10, 15
Referenced documents	2.1-2.3	2-4
Required delivery date	3.27, 4.6.1.1a(11)	8, 20
Sealing compound	5.1.1.1	33
Securing labels	5.1.2, 5.1.2.1, 5.1.8.3.1	33, 34, 35
Serial number	3.28, 4.1e, 4.7.3d, 4.7.4.4	8, 10, 25, 27
Shelf-life markings	3.29, 4.7.3c	9, 25
Shipment address	4.6.5	22
Shipping container	3.30	9
Silk-screening	5.1.8	35
Size of DD Form 1387	4.6.8	23
Size of markings	4.3.1, 4.5.1d(2), 5.1.10	14, 18, 35
Spar varnish	5.1.1.1	33
Special Handling Data/ Certification (DD Form 1387-2)	4.4	15
Special markings	5.2-5.2.6.1	36-40
Special orientation markings	5.2.1	36
Stacking bar code labels	4.7.4.5	27

MIL-STD-129-1

INDEX--Continued

<u>SUBJECT</u>	<u>PARAGRAPH(S)</u>	<u>PAGE(S)</u>
Stamping	3.31, 4.5.1b(2), 5.1.1.4, 5.1.3, 5.1.8	9, 17, 33, 34, 35
Stenciling	4.5.1b(2), 5.1.1.2, 5.1.3, 5.1.8, 5.1.8.1	17, 33, 34, 35
Stencil ink	5.1.1.2	33
Supply condition code	4.7.6, Table I	30, 31
Supply-type labels	5.2, Table II	36, 43
Tags	4.5.1b(2), 5.1.3, 5.2.6.1	17, 34, 40
Temperature markings	5.2.3	37
Transportation Control Number	3.32, 4.6.1.1a(1), 4.6.2a, 4.6.7a	9, 20, 21, 22
Transportation Priority	4.6.1, 4.6.1.1a(6)	18, 20
Unitization	3.33	9
Unit loads	4.5.1a	16
Unit of issue	3.34, 3.34.1, 3.34.2, 4.1c	9, 10
Unit pack markings	3.35, 4.1, 4.5-4.5.1	9, 10, 15-16
Unpackaged ammunition	4.1, 4.5.1b	10, 17
UN symbol	4.3.1	14
Use of labels	5.1.8.3.1	35
Waterproofing materials	5.1.1.1	33
Water-resistant envelopes	5.1.4, 5.4	34, 40
Wood containers	4.7.2.1, 5.1.8.3.1	24, 35

MIL-STD-129-1

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