

| NOTICE |  
| OF VALIDATION |

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MIL-M-29241  
NOTICE 1  
1 April 1991

MILITARY SPECIFICATION

PERFORMANCE SPECIFICATIONS FOR  
MATERIAL HANDLING UNITS FOR MEDICAL FACILITIES

MIL-M-29241, dated 10 May 1985, has been reviewed and determined to be valid for use in acquisition

Custodians

Army - MD  
Navy - YD  
Air Force - 03

Preparing Activity  
Navy - YD

AMSC N/A

FSC 6530

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unlimited

Approved for public release, distribution is

MIL-M-29241

10 MAY 1985

MILITARY SPECIFICATION

MATERIAL HANDLING UNITS  
FOR MEDICAL FACILITIES,  
PERFORMANCE SPECIFICATIONS FOR

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This performance specification covers modular wall hung material handling units for medical facilities.

1.2 Classification. The material handling units specified here include storage units, distribution carts, and rail support systems.

1.2.1 Type I, storage and distribution units. Units shall have the following usage.

- a. Clean linen storage and distribution unit, including four shelves and one deep drawer.
- b. Medical and surgical supplies storage and distribution unit including three shelves, three deep drawers and five shallow drawers.
- c. Pharmaceutical and biologicals storage and distribution units, including 80 cassettes.
- d. Non-medical supplies storage and distribution unit including three shelves, three deep drawers and five shallow drawers.

1.2.1.1 Dimensions. The Type I storage units shall have the following external limiting dimensions.

Width: Minimum of 22 inches and a maximum of 24 inches.  
Depth: Minimum of 19 inches and a maximum of 24 inches.  
Height: Minimum of 60 inches and a maximum of 66 inches.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commanding Officer (Code 156), Naval Construction Battalion Center, Port Hueneme, CA 93043, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

FSC 6530

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1.2.2 Type II, distribution carts. Will be used to move and hang wall hung storage and distribution units.

1.2.2.1 Capability. Carts shall be capable of raising fully loaded units onto and lowering them from rails and transporting them to and from point of use.

1.2.3 Type III, support system. Shall include:

- a. Rails
- b. Rail hangers or fasteners

1.2.3.1 Rails and rail hangers or fasteners. Storage and distribution unit support rails shall be capable of being installed at any height above the floor and shall be shaped to securely engage the support hooks on the back of Type I storage and distribution units.

## 2. APPLICABLE DOCUMENTS

### 2.1 Government documents.

2.1.1 Specification and standards. Unless otherwise specified, the following specifications and standards of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS) specified in the solicitation form a part of this specification to the extent specified herein.

#### STANDARDS

##### MILITARY

MIL-STD-129 - Marking for Shipment and Storage.

2.2 Other publications. The following documents form a part of this specification to the extent specified herein.

#### AMERICAN NATIONAL STANDARDS INSTITUTE, INC. (ANSI)

A156.11 - Auxiliary Locks.

(Application for copies should be addressed to the American National Standards Institute, Inc., 1430 Broadway, New York, NY 10018.)

#### NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

LD3-1980 - High Pressure Decorative Laminates.

(Application for copies should be addressed to the National Electrical Manufacturers Association, 2101 L Street, N.W., Washington, DC 20037.)

NATIONAL SANITATION FOUNDATION (NSF)

No. 30 - Cabinetry and Laboratory Furniture, 1980.

(Application for copies should be addressed to National Sanitary Foundation, 3475 Plymouth Road, P. O. Box 1468, Ann Arbor, MI 48106.)

(Industry association specifications and standards are generally available from reference libraries. They are also distributed among technical groups and Federal agencies.)

2.3 Order of precedence. If there is a conflict between the text of this specification and the references cited, the text of this specification shall take precedence.

### 3. REQUIREMENTS

3.1 Description. The modular material handling and storage units and the distribution carts, and rail support system to be provided under this performance specification shall be so designed and constructed as to meet the requirements of this section of the specification. Units shall be sized as shown in paragraph 1.2.1.1.

3.2 Manufacturers' performance requirements. The manufacturer shall provide units that are standard commercial products conforming to the design and installation requirements.

3.2.1 Standard commercial product. The material handling units shall be in accordance with the requirements of this specification and shall be the manufacturer's standard commercial product. Additional or better features that are not prohibited by this specification but are a part of the manufacturer's standard commercial product shall be included in the units. A standard commercial product is a product that has been sold or is being offered for sale on the commercial market through advertisements, manufacturer's catalogs, or brochures and represents the latest production model.

3.2.2 Design. Minor deviations from the specified dimensions will not be considered cause for rejection provided the item is suitable for the purpose intended and is the manufacturer's cataloged stock product substantially equivalent to the item described. The manufacturer shall have no design prerogatives or deviations differing from the requirements and options specified unless such deviations are numbered, notated, and described by the manufacturer and approved by the contracting officer.

3.2.3 Installation. The manufacturer shall provide the Type I storage units and the Type II distribution carts. The rails and rail hangers or fasteners of the Type III support system shall be provided and installed in the specific locations indicated by the contracting officer or his representative.

3.3 Modularity. The Type I storage units shall be modular in that they shall be interchangeable in position on the support rails and shall occupy a linear space along the support rails of no more than 24 inches. Shelves shall be interchangeable with drawers. The support rails shall be of modular 12 foot lengths that can be cut or spliced with simple hand tools.

3.4 Movability. Wall hung Type I units shall be moveable from one area to another on distribution carts that are designed to position units on the rails or remove them from the rails. Type I units shall be designed to be moved, placed, and secured by no more than one unskilled person without tools.

3.5 Adjustability. Rail mounting shall be at any height above the floor so that Type I storage units may be adjustable vertically. Type I storage units shall have vertical adjustability of shelves, drawers, or trays throughout the height of the unit in increments no greater than 3 inches.

3.6 Materials. Materials used shall be free from defects that would adversely affect performance or maintainability. Exterior and interior surfaces of Type I units shall be free of crevices, cracks, pits, or inclusions, and shall have rounded corners and rounded or beveled edges. There shall be no protrusions that could cause bodily harm upon contact.

3.6.1 Cleanability. The finish surfaces shall have a cleanability at least equal to a No. 4 finish (150 grit) on 300 series stainless steel, which once clean, can demonstrate a residual soil of no more than 70 micro-grams per square inch. (NSF No. 30, paragraph 3.2.1)

3.6.2 Resistance to chemicals. When exposed to the chemicals or gases listed in NSF No. 30, Table III, Hospital Cabinetry, the surface of Type I units shall show no signs of deterioration other than a slight change of gloss, slight discoloration, or a temporary slight softening of the finish with no loss of adhesion or film protection.

3.6.3 Resistance to heat. Type I units shall show no blisters, cracks, or breakdown of the surface and no perceivable change in color or surface texture when exposed to temperatures up to 356 degrees Fahrenheit (°F) for 20 minutes. (NEMA LD3-1980, Sect. LD3-3.06).

3.6.4 Fire resistance. Type I units shall be composed of materials that are non-combustible at temperatures of 356°F or less.

3.7 Color. Color shall be as selected by the contracting officer or his representative from the complete range of the manufacturer's standard colors.

3.8 Load capacity. The load capacity of Type I units shall not be less than 20 pounds per cubic foot. The lifting and load capacity of Type II, distribution carts, shall not be less than 300 pounds. The load capacity of Type III rail support system shall not be less than 200 pounds per linear foot.

3.9 Closure and security. Type I storage and distribution units shall be provided with a roll front, lift front, hinge front, or other such closure that has no opening of more than 1/32 inch in width when closed (NSF No. 30,

Sect. 1, paragraph 2.3). Closures shall be designed so they may be fitted with locks that comply with ANSI A156.11. Locks and keying instructions shall be specified (see 6.2.1).

#### 4. QUALITY ASSURANCE PROVISIONS.

4.1 Responsibility for inspection and testing. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection and testing requirements as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection and testing requirements unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where inspections are deemed necessary to assure conformance to requirements.

4.1.1 Component and material inspection. Types I, II, and III units will be inspected and shall be tested in accordance with all the requirements specified herein and in applicable referenced documents.

4.2 First article inspection. The first article inspection and testing will be performed by the Government on each Type of unit to be acquired. The item to be inspected and tested shall be an installed standard production item from the contractor's current inventory. Unless otherwise specified, the first article shall consist of one unit of each of the items to be acquired (see 6.2.1).

4.3 Inspection. Each Type of material handling unit will be inspected by the Government on delivery. The inspection will encompass all visual and tactile aspects and dimensions that apply to the units and final assembly of the units. Failure of a unit to meet any requirement shall constitute cause for nullification of all acquisition documents or purchase orders for that item.

4.4 Tests. The following test shall apply to all Type I units in the acquisition documents.

4.4.1 Materials. There shall be a certificate of compliance for Type I storage and distribution units from the manufacturer stating that the materials fulfill the requirements of paragraphs 3.6, 3.6.2, 3.6.3, and 3.6.4 and the cleanability requirements of paragraph 3.6.1.

4.5 Security tests. Type I storage and distribution units provided with locks shall be able, upon delivery, to show compliance with specifications and tests of ANSI A156.11 and with paragraph 3.9.

4.6 Packaging inspection. The preservation, packaging, and marking of material handling units shall be inspected by the contractor to verify conformance with the requirements of section 5 of this specification.

## 5. PACKAGING

5.1 Preservation and packaging. Unless otherwise specified, material handling units, Types I, II, and III shall be preserved and packaged in an assembled condition in a manner that will insure protection against deterioration and damage during shipment from the supply source to the first receiving activity. Drawers and doors shall be closed and secured with tape or by other means. Surfaces shall be protected to prevent damage. Loose components and small attachments, such as screws, nuts and bolts, and brackets, shall be packaged in commercial cartons or bags and secured to the module in a protected location. Containers and packaging shall comply with applicable carrier rules and regulations. (see 6.2.1)

5.2 Marking. Unless otherwise specified, marking shall be in accordance with MIL-STD-129 (see 6.2.1).

## 6. NOTES

6.1 Intended use. The material handling units are intended for use in medical facilities.

6.2 Ordering data.

6.2.1 Acquisition requirements. Acquisition documents should specify:

- a. Title, number, and date of this specification.
- b. Number of Type I, II, and III units (see Appendix A).
- c. Locks required and keying instructions (see 3.9).
- d. First articles required for inspection and approval (see 4.2).
- e. Level of preservation and level of packing required (see 5.1).
- f. Marking other than as specified (see 5.2).

6.2.2 Specifying material handling units. It shall be the responsibility of the specifier to determine the requirements for material handling units for the medical facility.

6.2.3 Guidelines. The specifier should use the guidelines and the matrix that follows to determine number and size of units required.

6.2.3.1 Assumptions.

- a. Point-of-use managed system.
- b. Occupancy of 100 percent or full clinic schedules, where applicable.
- c. Quantities are for 24-hour point-of-use.
- d. Average distribution of commodities (for specialty units, add 15 percent to volumetric requirements).
- e. The unit of volume used in the following tables in calculating the number of material handling units required for each designated space is 9 cubic feet. For space/room designations marked with an asterisk in Appendix A, the number of units provided may vary as long as the total capacity is met based on 9 cubic feet per unit.

6.2.3.2 Units by space designation. Appendix A shows number of Type I units required for each space designation. There should be one Type II unit for every six Type I units.

Custodians:

Army - MD

Navy - YD

Air Force - 03

Preparing Acticity:

Navy - YD

(Project 6530-1709)



## APPENDIX A

NUMBER OF MATERIAL HANDLING AND STORAGE UNITS  
BY SPACE OR ROOM DESIGNATION

		NUMBER OF STORAGE AND DISTRIBUTION UNITS (9 Cu. Ft. Capacity)				
AREA	SPACE/ROOM DESIGNATION BY ZONE	IA	IB	IC	ID	COMMENTS
	INPATIENT					
1	Isolation Room/Toilet Nursing Unit	1	1			
2	Medi-Prep Station Nursing Unit			1		
3	Exam/Treatment Room Nursing Unit		2			
4	ICU Bed Room ICU-CCU Nursing Unit		1			
5*	Clean Storage Nursing Unit	3	4		2	
6*	Soiled Utility Nursing Unit				4	
7	CCU Bed Room ICU-CCU Nursing Unit		1			
	INTENSIVE TREATMENT					
8*	General Operating Room Surgical Suite		4			
9*	Orthopedic Operating Rm Surgical Suite		5			
10*	Cystoscopy Room Surgical Suite		2			

\*See Assumption e., paragraph 6.2.3.1.

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NUMBER OF MATERIAL HANDLING AND STORAGE UNITS  
BY SPACE OR ROOM DESIGNATIONNUMBER OF STORAGE AND  
DISTRIBUTION UNITS  
(9 Cu. Ft. Capacity)

AREA	SPACE/ROOM DESIGNATION BY ZONE	IA	IB	IC	ID	COMMENTS
INTENSIVE TREATMENT						
11	Anesthesia Workroom Surgical Suite		1			Per anesthesia gas machine.
12	OR Recovery Room Surgical Suite	1	1			Per bed.
13	Patient Prep Room Obstetrical Suite		2			
14	Labor Room Obstetrical Suite		1			
15	Delivery Room Obstetrical Suite		4			Per room.
16	Recovery Room Obstetrical Suite	1	1			Per bed.
17	Normal Newborn Nursery		1			Per 2 bassinets.
18	Intensive Care Nursery		1			Per 1 bassinett.
19	Procedure Room Nursery		1			
20*	Clean Storage Area Surgical Suite	1	2		1	Per OR (for full suite multiply 36 cubic feet by number of ORs for total cubic feet. Multiply total by 1.25 and divide by 9 cubic feet for total number of units.)

\*See Assumption e., paragraph 6.2.3.1.

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NUMBER OF MATERIAL HANDLING AND STORAGE UNITS  
BY SPACE OR ROOM DESIGNATIONNUMBER OF STORAGE AND  
DISTRIBUTION UNITS  
(9 Cu. Ft. Capacity)

AREA	SPACE/ROOM DESIGNATION BY ZONE	IA	IB	IC	ID	COMMENTS
ANCILLARY						
21	Diagnostic X-ray Room Radiology	1				Per room.
22	Fluoroscopic X-ray Rm Radiology	1				
23	Mammography Room Radiology	1				
24	Ultrasound Room Radiology	1				
25	Venipuncture Laboratory				1	
26*	Pharmacy			20		
OUTPATIENT						
27	Exam/Treatment Room		1			
28	Immunization Room				1	
29*	Soiled Utility Room				5	
30	Fracture Room				1	
31	Physical Exam Room		1			
32	Recovery Room	1	1			Per bed.
33	Cast Room/Plaster Prep				1	Per 2 tables.
34	Appliance Fit/Adjust				1	

\*See Assumption e., paragraph 6.2.3.1.

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BY SPACE OR ROOM DESIGNATIONNUMBER OF STORAGE AND  
DISTRIBUTION UNITS  
(9 Cu. Ft. Capacity)

AREA	SPACE/ROOM DESIGNATION BY ZONE	IA	IB	IC	ID	COMMENTS
OUTPATIENT (CON'T)						
35	Weights/Measures Room Pediatrics		1			
36	Isolation Exam	1	1			
37	ECG Test Room				1	
38	Treadmill/Resuscitation				1	
39	Echocardiography				1	
40	EEG Test Room				1	
41	Inhalation Therapy Rm				3	
42	Allergy Injection Room				1	
43	Skin Testing Room				1	
44	Derm Procedure Room				1	
45	Eye Treatment Room		1			
46	Cryotherapy Room		1			
47	ENT Exam Room		1			
48	Hydrotherapy Area	1				Per table or tank.
49	Physical Therapy Special Treatment Room		1			Per room.
50	Physical Therapy Treatment Cubicle Area		1			Per table.
51	Electromyography				1	

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NUMBER OF MATERIAL HANDLING AND STORAGE UNITS  
BY SPACE OR ROOM DESIGNATIONNUMBER OF STORAGE AND  
DISTRIBUTION UNITS  
(9 Cu. Ft. Capacity)

AREA	SPACE/ROOM DESIGNATION BY ZONE	IA	IB	IC	ID	COMMENTS
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## OUTPATIENT (CON'T)

52	Urology Workroom				2	
53	Cystoscopy Room Urology Clinic				1	
54	Uptake Room				1	
55	Imaging Room				1	
56*	Clean Storage Room	3	4		3	
57	Emergency Room	1	1		1	Per table.
58	Treatment Cubicle	1	1		1	Per cubicle.
59	Proctoscopic Room		2			

## MISCELLANEOUS

60	Autopsy Room				2	
61	Dialysis Suite (5 Stations)				1	Per station.

TOTAL STORAGE UNITS  
CENTRAL STERILE SUPPLY  
(25% of Total Storage Units)

GRAND TOTAL STORAGE UNITS

TOTAL DISTRIBUTION CARTS

TOTAL LINEAR FEET OF RAIL

Normally one cart for  
six storage units.  
Normally three feet per  
storage unit.

\*See Assumption e., paragraph 6.2.3.1.