VOLCANO

UNITIZATION PROCEDURES FOR VOLCANO MINE SYSTEM HARDWARE, LAUNCHER ASSEMBLY, PACKED IN FIBERGLASS REINFORCED PLASTIC CONTAINERS

DISTRIBUTION STATEMENT A.

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U.S. ARMY MATERIEL COMMAND DRAWING DRAFTSMAN BETTY J. KUNDERT APPROVED, U.S. ARMY INDUSTRIAL OPERAT SANDRA M. SCHULTZ ENGINEER VALIDATION ENGINEERING DIVISION SUPPLY ENGINEERING TRANSPORTATION NOISIVIO ENGINEERING _ NOISIVID u), Grerick AMSTA-AR-ESK APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND SEPTEMBER 1988 CLASS NOIZIVIO DRAWING FILE U.S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL MARCH 1996 REVISION NO. 3 **20PM** 4240/1 19 48 1009 SEE THE REVISION LISTING ON PAGE 2

DO NOT SCALE

GENERAL NOTES

- THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1, AND AUGMENTS TM 743-200-1 (CHAPTER 5) AND CONFORMS TO MIL-STD-1660.
- DIMENSIONAL LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF A NOMINAL SIZE, UNLESS OTHERWISE SPECIFIED. FOR EXAMPLE, I" X B' MATERIAL IS ACTUALLY 3/4" THICK BY 5-1/2" WIDE AND 2" X 6" MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE.
- C. DETAILS OF THE FIBERGLASS REINFORCED PLASTIC CONTAINER.

CONTAINER DIMENSIONS - - LENGTH - - 93-3/8* WIDTH - 31-3/8" HEIGHT - 14-1/2"

GROSS WEIGHT (LAUNCHER) - - - - - 512 LBS (APPROX)

- A PLUS OR MINUS 1/4" IS ALLOWED ON OVERALL DIMENSIONS OF ANY DUNNAGE ASSEMBLY; HOWEVER, SIMILAR PIECES IN AN ASSEMBLY MUST BE WITHIN 1/8" OF THE SAME DIMENSION.
- WHEN ASSEMBLING A UNIT LOAD, CARE SHALL BE TAKEN TO WHEN ASSEMBLING A UNIT LUAD, LAME STALL BE TAKEN IN INSURE THAT THE CONTAINER AND/OR DUNNAGE ASSEMBLIES ARE EVENLY ALIGNED HORIZONTALLY AND VERTICALLY SO THAT THE SIDES AND ENDS OF THE UNIT LOAD DO NOT EXCEED A 1/2" TOLERANCE.
- IN ORDER TO OBTAIN COMPACT (SOUND) UNITS, STRAPS SHALL BE LOCATED IN PROPER ALIGNMENT AND PROPERLY TENSIONED SO AS TO NOT CAUSE CONTAINER DISTORTION. AFTER TENSIONING, EACH STRAP WILL BE SECURED USING ONE SEAL AND TWO PAIR OF NOTCHES PER SEAL. ALL STRAPPING MUST BE STRAIGHT WITHIN 2" ON ANY SURFACE OF THE UNITIZED LOAD, I.E., TOP, BOTTOM, SIDES, OR ENDS THAT IT ENCOUNTERS.
- WHEN APPLYING ANY STRAP, CARE MUST BE EXERCISED TO ASSURE THAT THE END OF THE STRAP ON THE UNDERSIDE OF THE JOINT EXTENDS AT LEAST 6" BEYOND THE SEAL. THIS EXTRA MINIMUM LENGTH OF STRAP IS REQUIRED TO PERMIT SUBSEQUENT TIGHTENING OF LOOSENED STRAPPING. RETENSIONING CAN BE ACCOMPLISHED WITHOUT REPLACING STRAPPING OR SPLICING STRAPPING THROUGH THE USE OF A MANUAL OR PNEUMATIC FEEDWHEEL TYPE TENSIONING TOOL AND THE APPLICATION OF ONE ADDITIONAL SEAL.
- ANTI-CHAFING (NEUTRAL BARRIER) MATERIAL MUST BE PLACED BETWEEN TOP LAYER CONTAINER AND STRAPPING
- INSTALL THE UNITIZATION STRAPS TO ENCIRCLE THE CONTAINERS AS SHOWN. INSTALL THE TIEDOWN STRAPS AFTER THE UNITIZATION STRAPS. STAPLE STRAPS TO THE BLOCKING ASSEMBLIES.
- CONVERSION TO METRIC EQUIVALENTS: DIMENSIONS WITHIN THIS DOCUMENT ARE EXPRESSED IN INCHES, AND WEIGHTS ARE EXPRESSED IN POUNDS. WHEN NECESSARY, THE METRIC EQUIVALENTS MAY BE COMPUTED ON THE BASIS OF ONE INCH EQUALS 25.4 MM AND ONE POUND EQUALS 0.454 KG.
- POWER DRIVEN STAPLES MAY BE USED AS ALTERNATIVE FASTENERS FOR NAILS WHEN CONSTRUCTING THE DUNNAGE ASSEMBLIES WHICH ARE SPECIFIED WITHIN THIS DRAWING. THE STAPLES TO BE USED MUST BE EQUAL IN LENGTH TO THE SPECIFIC NAIL SIZE AND MUST BE SUBSTITUTED ON A ONE STAPLE FOR ONE NAIL BASIS.
- DIMENSIONS GIVEN FOR DUNNAGE PIECES OR DUNNAGE ASSEMBLIES WILL BE FIELD CHECKED PRIOR TO THEIR ASSEMBLY AND INSTALLATION. DUNNAGE ASSEMBLIES MUST BE CONSTRUCTED SUCH THAT THE VERTICAL PIECES WILL BE LOCATED IN LINE WITH THE STRAPPING AND/OR THE HANDLES, AND THE HORIZONTAL PIECES WILL CONTACT THE CONTAINER.
- ALL WOODEN DUNNAGE SHALL BE PRESERVATIVE TREATED IN ACCORDANCE WITH THE PROCEDURES SPECIFIED IN MIL-B-2427 FOR CLEATED WOODEN BOXES. IF THE DUNNAGE CONSISTS OF MORE THAN ONE COMPONENT, IT MUST BE ASSEMBLED PRIOR TO TREATMENT. THE LETTERS PA DENOTING POS6 (COPPER OUINOLINOLATE), PB DENOTING M-GARD W550 (ZINC NAPHTHENATE EMULSIFIABLE) OR PC DENOTING M-GARD W510 OR CUNAPSOL (COPPER NAPHTHENATE) MUST BE APPLIED TO THE WOOD DUNNAGE IN LETTERS AT LEAST ONE INCH HIGH IN LETTERS AT LEAST ONE INCH HIGH.

REVISIONS

REVISION NO. 1, DATED FEBRUARY 1989, CONSISTS OF:

1. CHANGING THE CONTAINER TYPE.

REVISION NO. 2, DATED MARCH 1992, CONSISTS OF:

ADDING SKID BASE AND END GATES.

REVISION NO. 3, DATED MARCH 1996, CONSISTS OF:

- ADDING GENERAL NOTE.
- 2. DELETING "WIRE" FROM THE MATERIAL SPECIFICATIONS.

MATERIAL SPECIFICATIONS

SEE TM 743-200-1 (DUNNAGE LUMBER) AND LUMBER - - - - - -:

FED SPEC MM-L-751.

NAILS ----: FED SPEC FF-N-105; COMMON.

PLYWOOD - - - - - : COMMERCIAL ITEM DESCRIPTION
A-A-55057, TYPE A, CONSTRUCTION AND
INDUSTRIAL PLYWOOD, INTERIOR WITH
EXTERIOR GLUE, GRADE C-D. IF
SPECIFIED GRADE IS NOT AVAILABLE, A
BETTER INTERIOR OR AN EXTERIOR GRADE

MAY BE SUBSTITUTED.

STRAPPING, STEEL - -: ASTM-D-3953; FLAT STRAPPING, TYPE 1
OR 2, HEAVY DUTY, ZINC-COATED (GRADE 2), SIZE 3/4" X .035" OR .031".

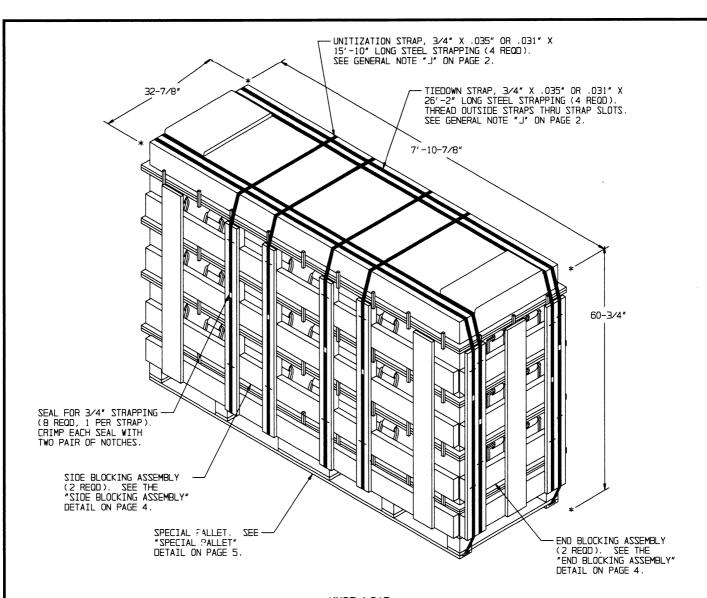
ASTM-D-3953; CLASS H, FINISH B (GRADE 2), TYPE D, STYLE I, II, OR IV. SEAL, STRAP ---:

FED SPEC FF-N-105; 15/16" OR 1"
CROWN WIDTH X 3/4" LEG LENGTH FOR
3/4" STRAPPING AND 1-17/32" CROWN
WIDTH X 3/4" LEG LENGTH FOR 1-1/4"
STRAPPING, TYPE III, STYLE 3. STAPLE - - - - - -:

ANTI-CHAFING

MATERIAL - - - - -: MIL-B-121 (OR EQUAL); NEUTRAL BARRIER

MATERIAL .



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4 CONTAINERS OF LAUNCHER RACK @ 512 LBS DUNNAGE	
	2,370 LBS 109.7 CU FT

BILL OF MATERIAL						
LUMBER	LINEAR FEET	BOARD FEET / LBS				
1" X 4" 1" X 6" 2" X 4" 2" X 6" 4" X 4"	83.57 15.73 14.00 79.42 4.83	27.85 / 55.70 7.87 / 15.74 9.33 / 18.66 79.42 / 158.84 6.44 / 12.88				
NAILS	NO. REQD	POUNDS				
6d (2") 8d (2-1/2") 10d (3")	312 34 34	1 · 84 0 · 36 0 · 52				
PLYWOOD, 3/4" 20.34 SQ FT REOD - 41.96 LBS STEEL STRAPPING, 3/4" - 168.00' REOD - 15.00 LBS SEAL FOR 3/4" STRAPPING 8 REOD NIL STAPLE, 15/16" X 3/4" 32 REOD NIL ANTI-CHAFING MATERIAL AS REOD NIL						

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