

UNITIZATION PROCEDURES FOR ARMOR TILE, M4A2, PACKED 2 PER WOODEN BOX, UNITIZED 4 BOXES PER 35" X 45-1/2" PALLET; APPROX BOX SIZE 21-3/16" L X 16-11/16" W X 16-3/16" H

DISTRIBUTION STATEMENT A:

**APPROVED FOR PUBLIC RELEASE;
DISTRIBUTION IS UNLIMITED.**

U.S. ARMY MATERIEL COMMAND DRAWING

<p style="font-size: small;">APPROVED, U.S. ARMY FIELD SUPPORT COMMAND</p> <p style="font-size: x-small;">AMSRS-AAR-AIL-TP</p> <p style="font-size: x-small;">AMSFS-ST</p> <p style="font-size: x-small;">APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND</p> <p style="font-size: x-small;">U.S. ARMY DEFENSE AMMUNITION CENTER</p>	<p style="text-align: center;">CAUTION: VERIFY PRIOR TO USE AT WWW.DAC.ARMY.MIL/DET THAT THIS IS THE MOST CURRENT VERSION OF THIS DOCUMENT. THIS IS PAGE 1 OF 6.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center;">DO NOT SCALE</td> <td colspan="2" style="text-align: center;">JULY 2003</td> </tr> <tr> <td style="font-size: x-small;">ENGINEER OR TECHNICIAN</td> <td style="font-size: x-small;">BASIC REV.</td> <td colspan="2">PATRICK DOUGHERTY</td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">REVISION NO. 1</td> <td style="text-align: center;">APRIL 2004</td> </tr> <tr> <td colspan="4" style="text-align: center; font-size: x-small;">SEE THE REVISION LISTING ON PAGE 2</td> </tr> <tr> <td style="font-size: x-small;">TRANSPORTATION ENGINEERING DIVISION</td> <td style="font-size: x-small;">VALIDATION ENGINEERING DIVISION</td> <td style="font-size: x-small;">CLASS</td> <td style="font-size: x-small;">DIVISION</td> </tr> <tr> <td style="font-size: x-small;">ENGINEERING DIRECTORATE</td> <td style="font-size: x-small;">TESTED</td> <td style="font-size: x-small;">DRAWING</td> <td style="font-size: x-small;">FILE</td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">19</td> <td style="text-align: center;">48</td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">4221/10</td> <td style="text-align: center;">20PA1009</td> </tr> </table>	DO NOT SCALE		JULY 2003		ENGINEER OR TECHNICIAN	BASIC REV.	PATRICK DOUGHERTY				REVISION NO. 1	APRIL 2004	SEE THE REVISION LISTING ON PAGE 2				TRANSPORTATION ENGINEERING DIVISION	VALIDATION ENGINEERING DIVISION	CLASS	DIVISION	ENGINEERING DIRECTORATE	TESTED	DRAWING	FILE			19	48			4221/10	20PA1009
DO NOT SCALE		JULY 2003																															
ENGINEER OR TECHNICIAN	BASIC REV.	PATRICK DOUGHERTY																															
		REVISION NO. 1	APRIL 2004																														
SEE THE REVISION LISTING ON PAGE 2																																	
TRANSPORTATION ENGINEERING DIVISION	VALIDATION ENGINEERING DIVISION	CLASS	DIVISION																														
ENGINEERING DIRECTORATE	TESTED	DRAWING	FILE																														
		19	48																														
		4221/10	20PA1009																														

PROJECT CA 234/10-86

PALLET UNIT DATA				
ITEMS INCLUDED		●HAZARD CLASS AND DIVISION	●COMPAT-IBILITY GROUP	APPROX WEIGHT LBS
NSN	DODIC			
* 1375-01-516-1623	MN93	- -	-	722

● HAZARD CLASSIFICATION DATA CONTAINED IN THE ABOVE CHART IS FOR GUIDANCE AND INFORMATIONAL PURPOSES ONLY. VERIFICATION OF THE SPECIFIED DATA SHOULD BE MADE BY CONSULTING THE MOST RECENT JOINT HAZARD CLASSIFICATION SYSTEM LISTING OR OTHER APPROVED LISTING(S).

* THIS UNIT IS PART OF A SET, FOR NSN INFORMATION PLEASE CONSULT COMBINATION OF ADOPTED ITEMS DRAWING 13004403.

REVISION

REVISION NO. 1, DATED APRIL 2004, CONSISTS OF:

1. CHANGE MODEL NUMBER FROM M4A1E1 TO M4A2 ON PAGES 1 AND 4.
2. ADD NSN AND DODIC, REMOVE HAZARD CLASS, AND CHANGE WEIGHT ON PAGES 2 AND 4.

Q. ALL NON-MANUFACTURED WOOD USED IN THE PALLETIZED LOAD SHALL BE HEAT TREATED TO A CORE TEMPERATURE OF 56 DEGREES CELSIUS FOR A MINIMUM OF 30 MINUTES. THE PALLET MANUFACTURER AND THE MANUFACTURER OF WOOD USED TO BUILD SPACER ASSEMBLIES SHALL BE AFFILIATED WITH AN INSPECTION AGENCY ACCREDITED BY THE AMERICAN LUMBER STANDARDS COMMITTEE. THE PALLET MANUFACTURER AND THE MANUFACTURER OF WOOD USED TO BUILD SPACER ASSEMBLIES SHALL ENSURE TRACEABILITY TO THE ORIGINAL SOURCE OF HEAT TREATMENT. EACH PALLET AND SPACER ASSEMBLY SHALL BE MARKED TO SHOW THE CONFORMANCE TO THE INTERNATIONAL PLANT PROTECTION CONVENTION STANDARD. PALLET AND SPACER ASSEMBLIES MADE OF NON-MANUFACTURED WOOD SHALL BE HEAT TREATED AND MARKED APPROPRIATELY. THE QUALITY MARK FOR THE PALLET SHALL BE PLACED ON TWO OPPOSITE END POSTS ON THE SAME SIDE AS THE AS THE PRESERVATIVE MARKING. THE QUALITY MARK FOR THE SPACER ASSEMBLIES SHALL BE PLACED ON TWO OPPOSITE SIDES. FOREIGN MANUFACTURERS SHALL HAVE THE HEAT TREATMENT OF NON-MANUFACTURED WOOD PRODUCTS VERIFIED IN ACCORDANCE WITH THEIR NATIONAL PLANT ORGANIZATION'S COMPLIANCE PROGRAM.

- A. 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.
- B. DIMENSIONS, CUBE AND WEIGHT OF A PALLET UNIT WILL VARY SLIGHTLY DEPENDING UPON THE ACTUAL DIMENSIONS OF THE BOXES AND THE WEIGHT OF THE SPECIFIC ITEM BEING UNITIZED.
- C. 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 25.4MM AND ONE POUND EQUALS 0.454 KG.
- D. INSTALL EACH TIEDOWN STRAP TO PASS UNDER THE TOP DECK BOARDS OF THE PALLET AND WILL BE LOCATED AS SHOWN. THE TIEDOWN STRAPS MUST BE TENSIONED AND SEALED PRIOR TO APPLICATION OF LOAD OR HORIZONTAL STRAPS.
- E. THE LOAD STRAPS WILL NOT BE THREADED THROUGH THE STRAP SLOTS OF A PALLET. THE LOAD STRAPS SHALL BE PRE-POSITIONED ON THE PALLET DECK AND PRIOR TO PLACING THE BOXES ON THE PALLET. THE LOAD STRAPS MUST NOT BE TENSIONED OR SEALED PRIOR TO APPLICATION OF TIEDOWN STRAPS.
- F. INSTALL THE HORIZONTAL STRAP TO BE LOCATED AS SHOWN. HORIZONTAL STRAP MUST BE TENSIONED AND SEALED AFTER THE APPLICATION OF TIEDOWN AND LOAD STRAPS.
- G. THE FOLLOWING AMC DRAWINGS ARE APPLICABLE FOR OUTLOADING AND STORAGE OF THE ITEMS COVERED BY THIS DRAWING.

- CARLOADING - - - - 19-48-4115-5PA1002
- TRUCKLOADING - - - - 19-48-4117-11PA1003
- STORAGE - - - - 19-48-4118-1-2-3-4-14-22PA1002
- END OPENING ISO
- CONTAINER - - - - 19-48-4153-15PA1002
- MILVAN - - - - 19-48-4166-15PA1003
- SIDE OPENING ISO
- CONTAINER - - - - 19-48-4267-15PA1009

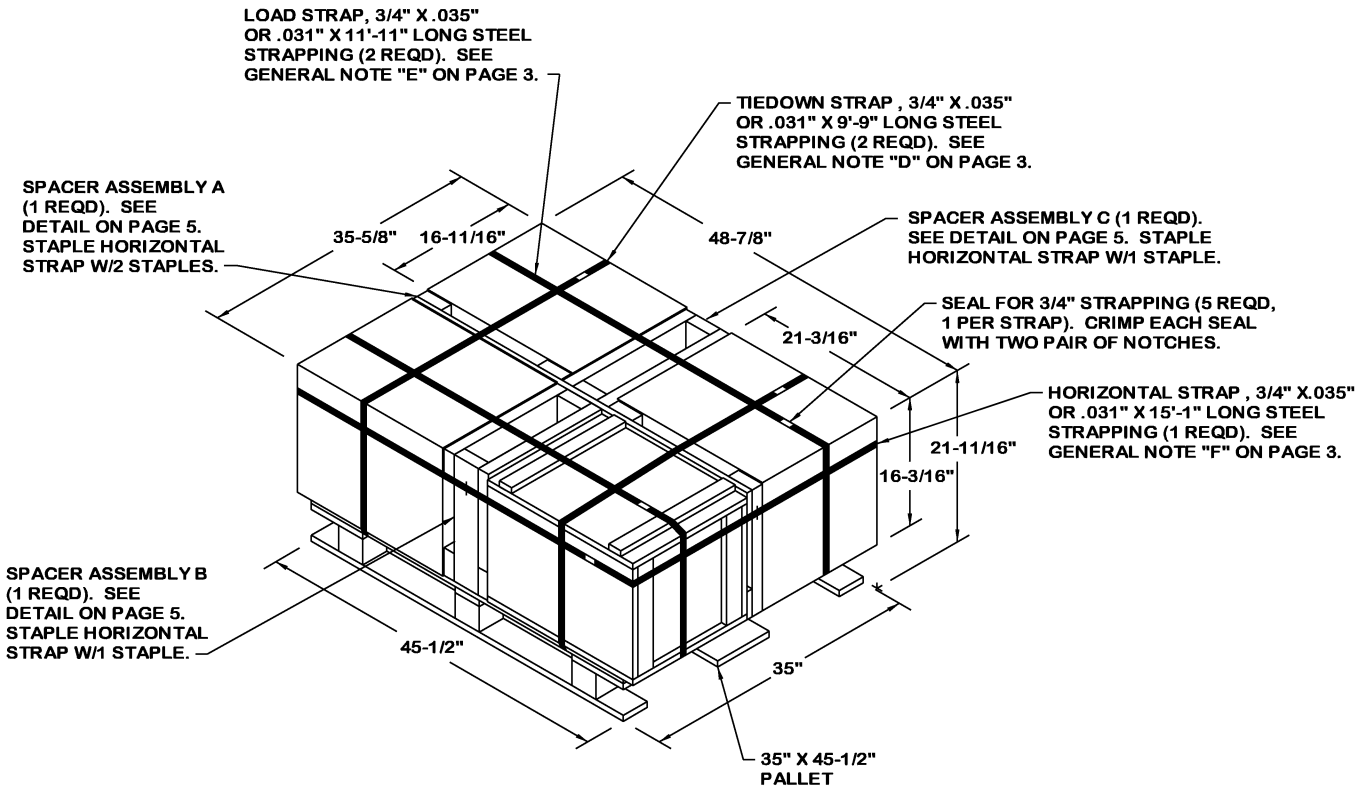
- H. IF ITEMS COVERED HEREIN ARE UNITIZED PRIOR TO ISSUANCE OF THIS DRAWING, THE BOXES NEED NOT BE REUNITIZED SOLELY TO CONFORM TO THIS DRAWING.
- J. THE UNITIZATION PROCEDURES DEPICTED HEREIN MAY ALSO BE USED FOR UNITIZING ARMOR TILE WHEN IDENTIFIED BY DIFFERENT NATIONAL STOCK NUMBERS (NSN) THAN WHAT IS SHOWN ON PAGE 2, PROVIDED THE BOX PACK DOES NOT VARY FROM WHAT IS DELINEATED HEREIN. THE EXPLOSIVE CLASSIFICATION OF OTHER ITEMS MAY BE DIFFERENT THAN WHAT IS SHOWN.

MATERIAL SPECIFICATIONS

- PALLET - - - - -: MIL SPEC MIL-P-15011; 4-WAY ENTRY, STYLE 1, TYPE 1, CLASS 1, PRESERVATIVE AND HEAT TREATED. SEE GENERAL NOTE "Q".
- LUMBER - - - - -: SEE TM 743-200-1 (DUNNAGE LUMBER) AND VOLUNTARY PRODUCT STANDARD PS 20. PRESERVATIVE AND HEAT TREATMENT REQUIRED. SEE GENERAL NOTE "L" AND "Q".
- NAILS - - - - -: ASTM F1667; COMMON STEEL NAIL (NLCMS OR NLCMS). ALT: UNDERLAYMENT NAIL (NLUL), PALLET NAIL (NLPL), OR COOLER NAIL (NLCL) OF SAME SIZE. SEE GENERAL NOTE "Q"
- PLYWOOD - - - - -: COMMERCIAL ITEM DESCRIPTION A-A-55057, 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 D3953; FLAT STRAPPING, TYPE 1, HEAVY DUTY, FINISH B (GRADE 2), SIZE 3/4" X .035" OR .031", NOTE: BRITE OR SLIT EDGES SHALL HAVE FINISH A OVERLAY.
- SEAL, STRAP - - - -: ASTM D3953; CLASS H, FINISH B (GRADE 2), DOUBLE NOTCH TYPE, STYLE I, II, III, OR IV. ALTERNATIVE SEAL FINISH: SIGNODE OR DELTA PAINTED SEALS MAY BE USED AS AN ALTERNATIVE IF ALL SURFACES ARE PAINTED. GRITTED BACKING IS NOT PERMITTED.
- STAPLE - - - - -: ASTM F1667; STFC-189 OR STFC-207, 15/16" OR 1" CROWN WIDTH X 3/4" LEG.

- K. THE STYLE 1A PALLET DELINEATED IN THE DETAIL ON PAGE 4 NEED NOT HAVE CHAMFERS OR STRAP SLOTS AS SPECIFIED WITHIN MILITARY SPECIFICATION MIL-P-15011 WHEN USED FOR THE UNITIZATION OF ITEMS COVERED BY THIS APPENDIX.
- L. ALL DUNNAGE SHALL BE PRESERVATIVE TREATED IN ACCORDANCE WITH GENERAL NOTE "AA" IN AMC DRAWING 19-48-4116-20PA1002.
- M. FOR DETAIL OF THE MIL-STD-2427 BOX SEE ARDEC DRAWING: 13004393.
- N. DIMENSIONS GIVEN FOR DUNNAGE (SPACER ASSEMBLIES) WILL BE FIELD CHECKED PRIOR TO THEIR ASSEMBLY. THIS GUIDANCE MUST BE APPLIED PRIOR TO BEGINNING A PALLETIZING OPERATION BECAUSE DIMENSIONS OF WOODEN BOXES WILL VARY. DUE TO VARIATIONS OF PACKAGE DIMENSIONS, ADJUSTMENTS MAY BE REQUIRED AS TO THE LOCATION AND/OR SIZE OF CERTAIN PIECES ON DUNNAGE ASSEMBLIES. THIS DRAWING USES ADVISORY OUTSIDE DIMENSIONS PROVIDED IN THE BOX DRAWING LISTED IN GENERAL NOTE "M".
- O. UNIT LOAD MARKINGS WILL BE ACCOMPLISHED IN ACCORDANCE WITH DAC DRAWING ACV00561, UNIT LOAD MARKING FOR SHIPMENT AND STORAGE, AMMUNITION AND EXPLOSIVES.
- P. COOLER NAILS MAY BE SUBSTITUTED FOR THE COMMON NAILS AS SPECIFIED BY APPLYING THE FOLLOWING GUIDANCE: THE NUMBER OF COOLER NAILS TO BE USED WILL BE THE NUMBER OF COMMON NAILS MULTIPLIED BY 1.2 AND ROUNDED UP TO THE NEXT WHOLE NUMBER. THE SIZE OF THE COOLER NAILS TO BE USED WILL BE THE SAME AS SPECIFIED FOR THE COMMON NAILS (4d, 6d, 10d, ETC.) BUT WILL CONFORM TO THE SIZE AND WEIGHT TOLERANCES SPECIFIED WITHIN ASTM F1667 FOR COOLER NAILS.

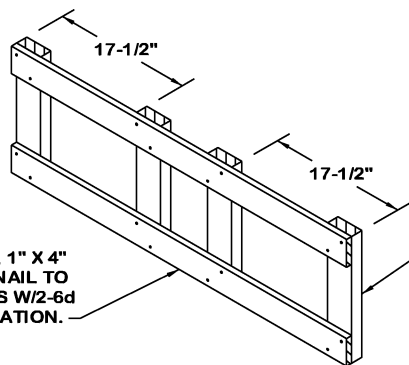
(CONTINUED AT LEFT)



PALLET UNIT

4 BOXES OF ARMOR TILES (2 PER BOX) @ 154 LBS	---	616 LBS (APPROX)
DUNNAGE	-----	41 LBS
PALLET	-----	65 LBS
<hr/>		
TOTAL WEIGHT	-----	722 LBS (APPROX)
CUBE	-----	21.9 CU FT (APPROX)

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	8.15	2.72
2" X 4"	22.17	14.78
NAILS	NO. REQD	POUNDS
6d (2")	16	0.09
10d (3")	32	0.48
PALLET, 35" X 45-1/2" - - - - - 1 REQD - - - 65 LBS		
STEEL STRAPPING, 3/4" - - 58.42' REQD - - - 5.22 LBS		
SEAL FOR 3/4" STRAPPING - - - 5 REQD - - - NIL		
STAPLE, 15/16" X 3/4" - - - - 4 REQD - - - - NIL		

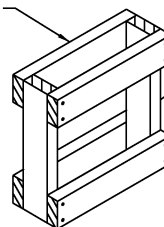


HORIZONTAL PIECE, 1" X 4" X 48-7/8" (2 REQD). NAIL TO THE VERTICAL PICES W/2-6d NAILS AT EACH LOCATION.

VERTICAL PIECE, 2" X 4" X 16" (4 REQD).

SPACER ASSEMBLY A

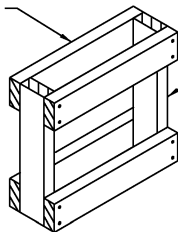
LATERAL PIECE, 2" X 4" X 16-1/2" (4 REQD). NAIL TO THE VERTICAL PIECES W/2-10d NAILS AT EACH END.



VERTICAL PIECE, 2" X 4" X 16" (2 REQD).

SPACER ASSEMBLY B

LATERAL PIECE, 2" X 4" X 18" (4 REQD). NAIL TO THE VERTICAL PIECES W/2-10d NAILS AT EACH END.



VERTICAL PIECE, 2" X 4" X 16" (2 REQD).

SPACER ASSEMBLY C

