

UNITIZATION PROCEDURES FOR ABRAMS ARMOR TILES UNITIZED IN PALLET BOXES

ABRAMS REACTIVE ARMOR TILE (ARAT), XM19, UNITIZED 31 PER PALLET BOX

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U.S. ARMY MATERIEL COMMAND DRAWING

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		VALIDATION ENGINEERING DIVISION	BARICKMAN.P HILIP.W.1230202202 <small>Digitally signed by BARICKMAN.PHILIP.W, 1230202202 DN: cn=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=BARICKMAN.PHILIP.W, 1230202202 Date: 2010.01.22 11:50:29 -08'00'</small>	TESTED	CLASS
		ENGINEERING DIRECTORATE	BEAVER.JERRY .W.1230949952 <small>Digitally signed by BEAVER.JERRY.W, 1230949952 DN: cn=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=BEAVER.JERRY.W, 1230949952 Date: 2010.01.22 11:43:22 -08'00'</small>	DIVISION	DRAWING
				FILE	19
					48
					4221/27
					20PA1009

GENERAL NOTES

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. FOR DETAILS OF THE FIBERBOARD BOX, SEE ARDEC DRAWING 13009488.

BOX DIMENSIONS: 16-27/32" LONG X 14-1/32" WIDE X 8-7/16" HIGH
 BOX CUBE: 1.2 CUBIC FEET
 BOX WEIGHT: 68 POUNDS

C. THE FOLLOWING AMC DRAWINGS ARE APPLICABLE FOR UNLOADING AND STORAGE OF THE ITEMS COVERED BY THIS APPENDIX.

- 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
- MLVAN - - - - - 19-48-4166-15PA1003
- SIDE OPENING ISO
- CONTAINER - - - - - 19-48-4267-15PA1009

D. UNLESS OTHERWISE SPECIFIED, A MANUFACTURING TOLERANCE OF PLUS-OR-MINUS 1/4" IS ALLOWED ON ALL DIMENSIONS. HOWEVER, SIMILAR PIECES IN AN ASSEMBLY MUST BE WITHIN 1/8" OF THE SAME DIMENSION.

E. INSTALL EACH HORIZONTAL, LOAD OR TIEDOWN STRAP TO BE LOCATED AS SHOWN. HORIZONTAL STRAPS MUST BE TENSIONED AND SEALED PRIOR TO THE APPLICATION OF TIEDOWN AND LOAD STRAPS. LOAD STRAPS MUST BE TENSIONED AND SEALED AFTER THE HORIZONTAL STRAPS AND PRIOR TO THE TIEDOWN STRAPS.

F. 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.

G. IN ORDER TO OBTAIN COMPACT AND SOUND UNITS, ALL STRAPS SHALL BE LOCATED IN PROPER ALIGNMENT AND TENSIONED UNTIL THEY CUT INTO THE EDGE OF THE PALLET BOX AND THE PALLET DECK. AFTER TENSIONING, ALL STRAPS WILL BE SECURED USING ONE SEAL AND TWO PAIR OF NOTCHES PER SEAL.

H. CLIP-LOK™ AND G.F. LEAGUE PALLET BOXES, HARDBOARD, FIBERBOARD, AND PLYWOOD ARE MANUFACTURED WOOD AND THEREFORE DO NOT REQUIRE HEAT TREATMENT.

J. UNIT LOAD MARKING MUST BE APPLIED IN ACCORDANCE WITH ARDEC DRAWING 13021706.

K. ARMOR TILE BOXES MUST FIT SNUGLY WITHIN THE PALLET BOX. THE UNBLOCKED SPACE WITHIN THE PALLET BOX MUST NOT EXCEED 1/2" IN ANY DIRECTION. FILLERS SUCH AS PLYWOOD, FIBERBOARD, HONEYCOMB FILLER, FOAM CUSHIONING MATERIAL OR HARDBOARD SHALL BE ADDED AS REQUIRED TO OBTAIN A TIGHT PACK.

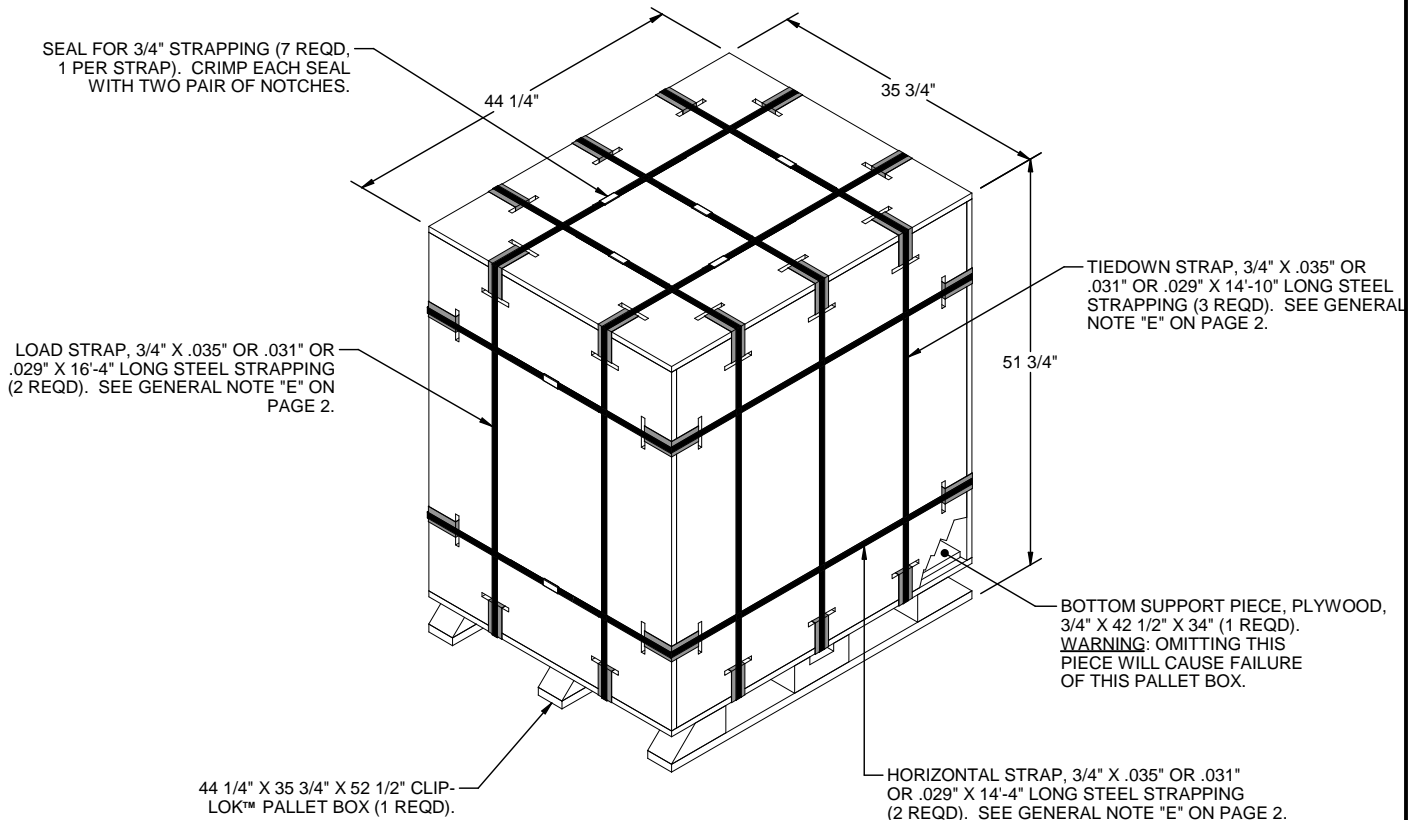
L. CONVERSION TO METRIC EQUIVALENTS: DIMENSIONS WITHIN THIS DOCUMENT ARE EXPRESSED IN INCHES, AND WEIGHTS ARE EXPRESSED IN POUNDS. WHEN NECESSARY, THE METRIC EQUIVALENTS MAY BE COMPUTED ON THE BASIS OF ONE INCH EQUALS 25.4MM AND ONE POUND EQUALS 0.454 KG.

PALLET UNIT DATA				
ITEMS INCLUDED		*HAZARD CLASS AND DIVISION	*COMPATIBILITY GROUP	APPROX WEIGHT (LBS)
NSN	DODIC			
1375-01-564-3373	MP15	1. 2. 3	D	2, 393

*HAZARD AND 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).

MATERIAL SPECIFICATIONS

- PALLET BOX - - - - -: CLIP-LOK™ PART NUMBER 13009490-1; CLIP-LOK™ SIMPAK USA, INC. ALTERNATIVE: G.F. LEAGUE CO. INC. PALLET BOX PART NUMBER PIC-1109-A.
- 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" OR .029", OR 1-1/4" X .035" OR .031". NOTE: BRITTE 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.
- HARDBOARD - - - -: ANSI/AHA A135.4, CLASS 1.
- FIBERBOARD - - - -: ASTM D4727.
- HONEYCOMB FILLER - - -: FIBERBOARD, FACING PAPER WEIGHT 69 POUNDS/1,000 SQUARE FEET, CORE PAPER WEIGHT 33 POUNDS/1,000 SQUARE FEET, 1/2" CORE CELL CENTERS, PACTIV CORPORATION (OR EQUAL).
- FOAM CUSHIONING MATERIAL - - - -: COMMERCIAL ITEM DESCRIPTION A-A-59136, CLASS 1, TYPE III, GRADE A, OR COMMERCIAL EQUIVALENT.



PALLET UNIT

31 BOXES OF ARMOR TILES @ 68 LBS	-----	2,108 LBS (APPROX)
DUNNAGE	-----	12 LBS
PALLET BOX	-----	273 LBS
<hr/>		
TOTAL WEIGHT	-----	2,393 LBS (APPROX)
CUBE	-----	47.4 CU FT (APPROX)

BILL OF MATERIAL				
PALLET BOX, CLIP-LOK™	-----	1 REQD	-----	273 LBS
STEEL STRAPPING, 3/4"	-----	105.83' REQD	-----	9.45 LBS
SEAL FOR 3/4" STRAPPING	-----	7 REQD	-----	NIL
HONEYCOMB, 4"	-----	3.26 SQ FT REQD	-----	2.17 LBS

SPECIAL NOTES:

- SOURCES OF SUPPLY: THE CLIP-LOK™ PALLET BOX, PART NUMBER 13009490-1, IS APPROVED FOR USE. THIS PALLET BOX CAN BE OBTAINED FROM CLIP-LOK SIMPAK™ USA, INC., 1-800-448-CLIP. THE G.F. LEAGUE CO. INC. PALLET BOX, PART NUMBER PIC-1109-A, IS ALSO APPROVED FOR USE AND CAN BE OBTAINED FROM G.F. LEAGUE CO. INC., PO BOX 3626, GREENVILLE, SC, 29608, 1-800-362-4569.
- OTHER VENDORS' PALLET BOXES MAY BE QUALIFIED FOR USE BY SUBMITTING SAMPLE BOXES TO THE DEFENSE AMMUNITION CENTER, 1 C TREE ROAD, MCALESTER, OK 74501-9053. CONTACT THE DAC TRANSPORTATION ENGINEERING DIVISION, JMAC-DET, TELEPHONE 918-420-8927, E-MAIL MCAL.DAC.SJMAC-DET@CONUS.ARMY.MIL.

FILL, FOAM CUSHIONING MATERIAL,
HONEYCOMB FILLER, PLYWOOD OR
FIBERBOARD, 16 3/4" X 14" X 8"
(1 REQD). FILL CAN CONSIST OF
ANY QUANTITY/THICKNESS
COMBINATION THAT EQUALS
THE TOTAL THICKNESS.

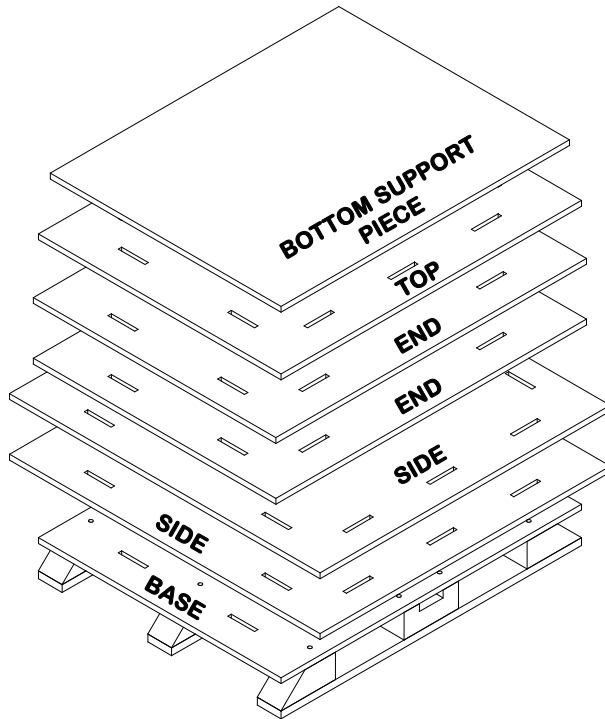
PALLET BOX SIDE WALL

PALLET BOX END WALL

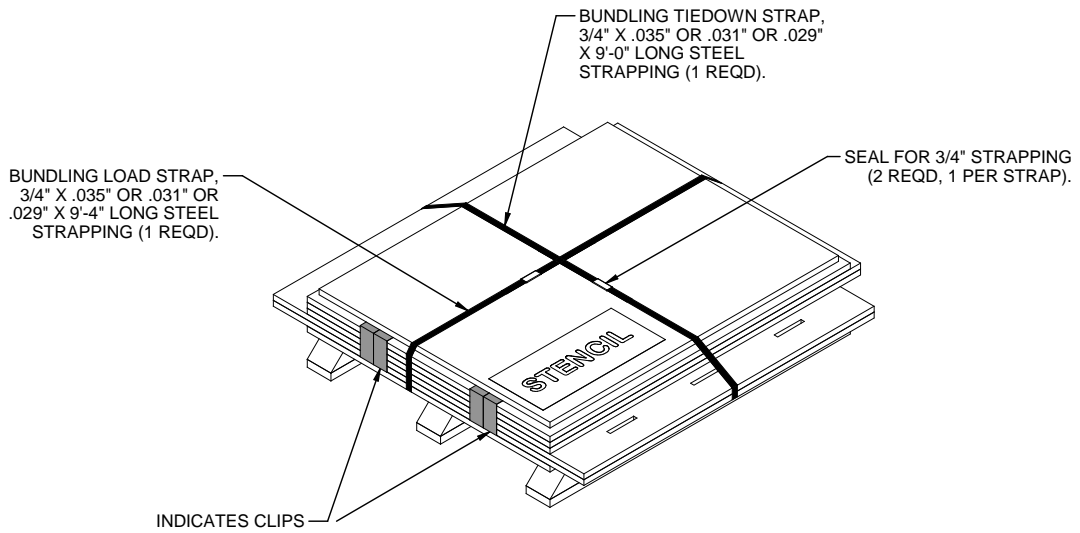
PALLET BOX BOTTOM

BOTTOM SUPPORT PIECE, PLYWOOD,
3/4" X 42 1/2" X 34" (1 REQD).
WARNING: OMITTING THIS PIECE
WILL CAUSE FAILURE OF THIS
PALLET BOX.

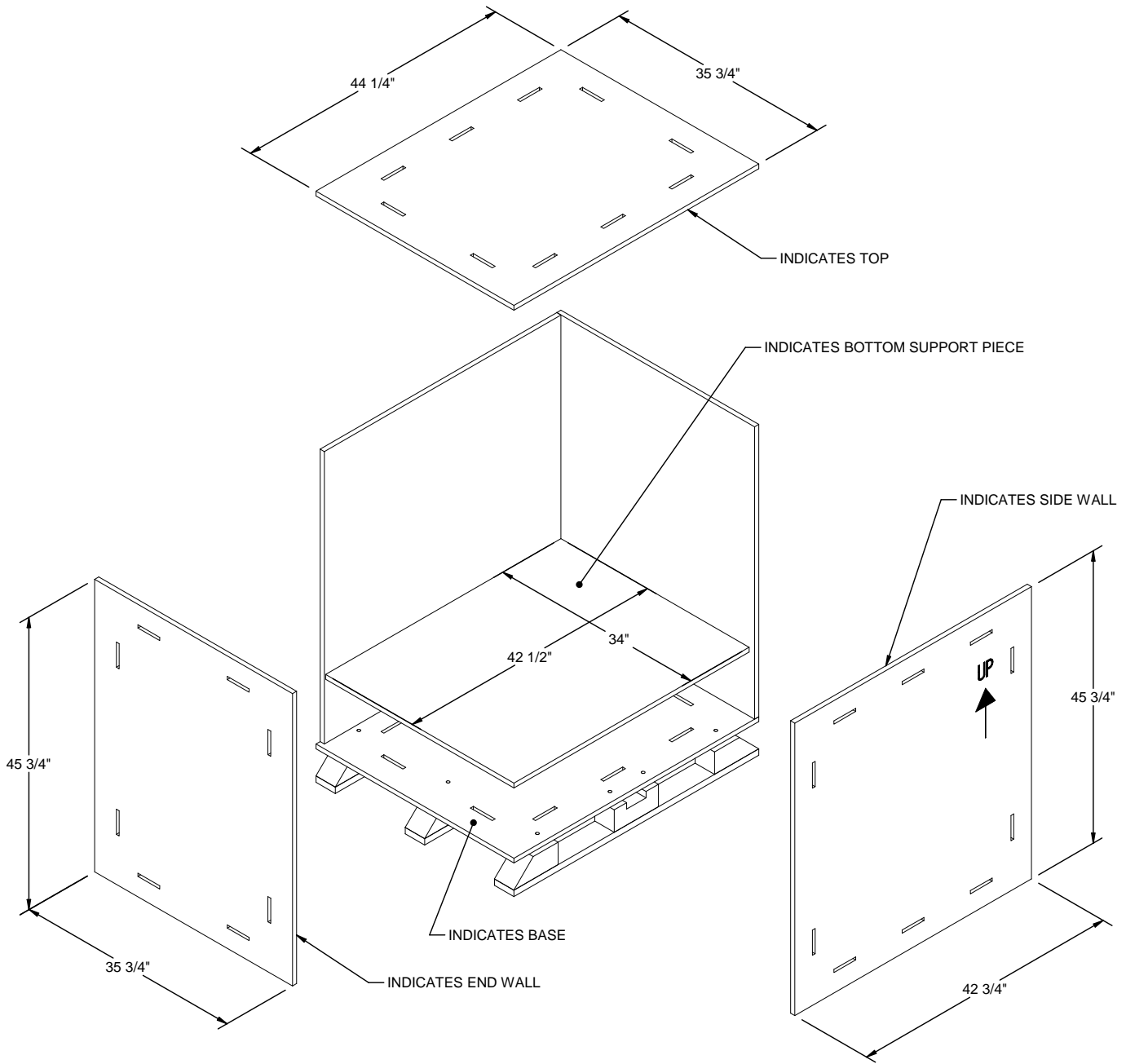
PALLET UNIT INTERNAL DUNNAGE
SEE GENERAL NOTE "K" ON PAGE 2.



STACKING FOR COLLAPSED CLIP-LOK™ BOX



COLLAPSED BOX
SEE THE STENCIL DETAIL ON PAGE 6.



STENCIL (FOR APPLICATION TO BOTTOM SUPPORT PIECE)

SPECIAL NOTES:

1. THE DETAIL DEPICTED ABOVE WILL BE STENCILED ON THE BOTTOM SUPPORT PIECE TO SHOW ASSEMBLY INSTRUCTIONS. SEE THE "COLLAPSED BOX" DETAIL ON PAGE 5.
2. AN ARROW WITH "UP" WILL BE STENCILED ON THE SIDE PIECES AS SHOWN TO ENSURE THE STACKING SLOTS ARE ON TOP.