

# APPENDIX 28K

## UNITIZATION PROCEDURES FOR BOXED AMMUNITION AND COMPONENTS ON 4-WAY ENTRY PALLETS

60MM MORTAR SABOT, PACKED THREE PER WOODEN  
BOX, UNITIZED 56 BOXES PER 40" X 48" PALLET;  
APPROX BOX SIZE 20 $\frac{1}{2}$ " L X 14 $\frac{1}{16}$ " W X 6" H

PALLET UNIT DATA						
ITEMS INCLUDED		HAZARD CLASSIFICATION ①				WEIGHT
NSN	DODIC	DOT CLASS	CG CLASS	QD CLASS	COMP GROUP	( LBS )
1310-01-084-6953	B611	—	—	—	—	1,935

NOTICE: THIS APPENDIX CANNOT STAND ALONE BUT MUST  
BE USED IN CONJUNCTION WITH THE BASIC UNITIZATION  
PROCEDURES DRAWING 19-48-4116-20PA1002.

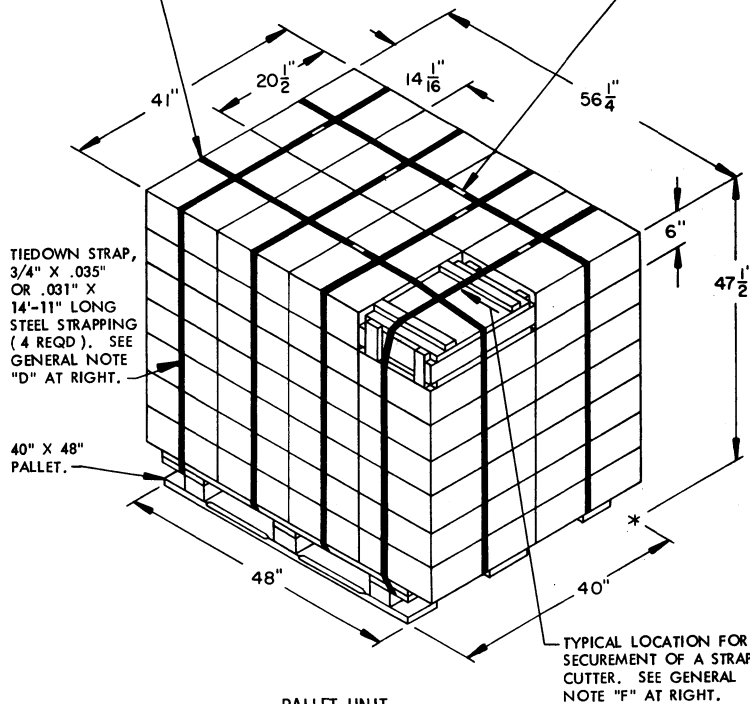
① HAZARD CLASSIFICATION DATA CONTAINED IN THE ABOVE CHART IS FOR GUIDANCE AND INFORMATIONAL PURPOSES ONLY. VERIFICATION OF THE SPECIFIED DATA SHOULD BE MADE BY CONSULTING THE MOST RECENT JOINT HAZARD CLASSIFICATION SYSTEM LISTING OR OTHER APPROVED LISTING(S).

**DO NOT SCALE**

REVISIONS			
			DESIGNED BY: <i>WRF/kuw</i> PROJ ENG: <i>WRF/kuw</i> CHECKED BY: <i>RS4</i> LIAISON ENGINEER: <i>WRF/kuw</i> APPROVED: U. S. ARMY ARMAMENT, MUNITIONS AND CHEMICAL COMMAND      DRWG-TRD
			APPROVED BY ORDER OF COMMANDING GENERAL, U. S. ARMY MATERIAL DEVELOPMENT AND READINESS COMMAND HANSON <i>John J. Boydell</i> U. S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL
<b>U. S. ARMY DARCOM DRAWING</b>			
<b>SEPTEMBER 1983</b>			
CLASS	DIVISION	DRAWING	FILE
<b>19</b>	<b>48</b>	<b>4116/ 28K</b>	<b>20PA 1002</b>

LOAD STRAP, 3/4" X .035" OR .031" X 17'-6" LONG STEEL STRAPPING (2 REQD.). SEE GENERAL NOTE "C" AT RIGHT.

SEAL FOR 3/4" STRAPPING (6 REQD., 1 PER STRAP). CRIMP EACH SEAL WITH TWO PAIR OF NOTCHES.



**PALLET UNIT**

SEE GENERAL NOTE "B" AT RIGHT.

56 BOXES OF 60MM MORTAR SABOT, (3 PER BOX) @ 33 LBS	-----	1,848 LBS (APPROX)
DUNNAGE	-----	7 LBS
PALLET	-----	20 LBS
<b>TOTAL WEIGHT</b>	-----	<b>1,935 LBS (APPROX)</b>
<b>CUBE</b>	-----	<b>63.4 CU FT (APPROX)</b>

**BILL OF MATERIAL**

PALLET, 40" X 48"	-----	1 REQD	-----	80 LBS
STEEL STRAPPING, 3/4"	-----	94.67 REQD	-----	6.76 LBS
SEAL FOR 3/4" STRAPPING	-----	6 REQD	-----	NIL

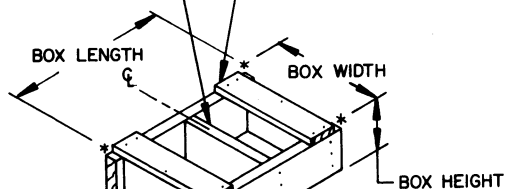
**GENERAL NOTES**

- A. THIS APPENDIX CANNOT STAND ALONE BUT MUST BE USED IN CONJUNCTION WITH THE BASIC UNITIZATION PROCEDURES DRAWING 19-48-4116-20PA1002. TO PRODUCE AN APPROVED UNIT LOAD, ALL PERTINENT PROCEDURES, SPECIFICATIONS AND CRITERIA SET FORTH WITHIN THE BASIC DRAWING WILL APPLY TO THE PROCEDURES DELINEATED IN THIS APPENDIX, ANY EXCEPTIONS TO THE BASIC PROCEDURES ARE SPECIFIED IN THIS APPENDIX.
- 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. THE LOAD STRAPS MAY BE THREADED THROUGH THE STRAP SLOTS OF A PALLET OR PRE-POSITIONED ON THE PALLET DECK PRIOR TO PLACING BOXES ON THE PALLET. LOAD STRAPS MUST BE TENSIONED AND SEALED PRIOR TO APPLICATION OF TIEDOWN STRAPS.
- D. INSTALL EACH TIEDOWN STRAP TO PASS UNDER THE TOP DECK BOARDS OF THE PALLET AND TO BE LOCATED AS SHOWN. TIEDOWN STRAPS WILL NOT BE APPLIED UNTIL THE LOAD STRAPS HAVE BEEN TENSIONED AND SEALED.
- E. THE FOLLOWING DARCOM DRAWINGS ARE APPLICABLE FOR OUT-LOADING AND STORAGE OF THE ITEMS COVERED BY THIS APPENDIX.
 

CARLOADING -----	DRAWING 19-48-4115-5PA1002
TRUCKLOADING -----	DRAWING 19-48-4117-11PA1003
STORAGE -----	DRAWING 19-48-4118-1-2-3-4-14-22PA1002.
- F. FOR METHOD OF SECURING A STRAP CUTTER TO THE PALLET UNIT, SEE DARCOM DRAWING 19-48-4127-20P1000.
- G. IF ITEMS COVERED HEREIN ARE UNITIZED PRIOR TO ISSUANCE OF THIS APPENDIX, THE BOXES NEED NOT BE REUNITIZED SOLELY TO CONFORM TO THIS APPENDIX.
- H. THE UNITIZATION PROCEDURES DEPICTED HEREIN MAY ALSO BE USED FOR 60MM MORTAR SABOTS WHEN IDENTIFIED BY DIFFERENT NATIONAL STOCK NUMBERS (NSN) THAN WHAT IS SHOWN ON THE TITLE PAGE, 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.
- J. WHEN THE UNIT LOAD DEPICTED AT LEFT IS TO BE USED FOR UNITIZING MARINE CORPS AMMUNITION, ONE LAYER OF BOXES MUST BE OMITTED, TIEDOWN STRAP LENGTHS MUST BE DECREASED TO 13'-11", AND LOAD STRAP LENGTHS MUST BE DECREASED TO 16'-6". THIS WILL RESULT IN AN OVERALL UNIT HEIGHT OF 41'-1/2", A GROSS UNIT WEIGHT OF 1,671 POUNDS, AND A UNIT CUBE OF 55.4 CUBIC FEET. ADDITIONALLY, THE UNIT LOAD MAY BE MODIFIED AS DESCRIBED WHEN BEING SHIPPED BY MILVAN OR COMMERCIAL INTERMODAL FREIGHT CONTAINER, CONVENTIONAL VAN TRAILER OR CONVENTIONAL OR HIGH-CAPACITY BOXCAR. THE DETERMINATION TO REDUCE THE LOAD BY A LAYER FOR TRANSPORTATION WILL BE MADE BY THE RESPONSIBLE COMMAND AND WILL BE BASED UPON ECONOMICS OF TRANSPORTATION AND HANDLING.

CENTER SUPPORT PIECE, 2" X 6" (RIPPED TO BOX HEIGHT MINUS 3/4") X BOX WIDTH MINUS 3" (1 REQD).

TIE PIECE, 1" X 4" X BOX WIDTH (2 REQD). NAIL TO LONGITUDINAL PIECES W/2-6d NAILS AT EACH END AND TO LATERAL PIECE W/1-6d NAIL.



LATERAL PIECE, 2" X 6" (RIPPED TO BOX HEIGHT MINUS 3/4") X BOX WIDTH MINUS 3" (2 REQD).

LONGITUDINAL PIECE, 2" X 6" (RIPPED TO BOX HEIGHT MINUS 3/4") X BOX LENGTH (2 REQD). NAIL TO LATERAL PIECES W/3-10d NAILS AT EACH END AND TO CENTER SUPPORT PIECE W/3-10d NAILS.

**FILLER ASSEMBLY**  
(FOR MINUS ONE BOX)