

APPENDIX 48A

UNITIZATION PROCEDURES FOR AMMUNITION AND COMPONENTS PACKED IN CYLINDRICAL METAL CONTAINERS ON 4-WAY ENTRY METAL OR RESIN-TREATED PALLET

**CARTRIDGE, 120MM, HEMP-T, M1147 PACKED 1 PER
PA171 CYLINDRICAL METAL CONTAINER, UNITIZED
25 PER 44" X 40" PALLET; APPROX CONTAINER
SIZE 44-1/2" L X 7-3/4" W X 7-3/4" H**

**NOTICE: THIS APPENDIX CANNOT STAND ALONE BUT MUST BE USED IN CONJUNCTION WITH THE BASIC UNITIZATION
PROCEDURES DRAWING 19-48-4231-20PM1006.**

DISTRIBUTION STATEMENT A:

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

U.S. ARMY MATERIEL COMMAND DRAWING

<p>APPROVED, COMBAT CAPABILITIES DEVELOPMENT COMMAND ARMAMENTS CENTER</p> <p>HANSSSEN.JO SEPH.W.1376 495538</p> <p><small>Digitally signed by HANSSSEN.JOSEPH.W.1 376495538 Date: 2022.04.07 12:30:06 -05'00'</small></p> <p style="text-align: right;">FCDD-ACE-LTP</p>	<p>CAUTION: VERIFY PRIOR TO USE AT https://www.dau.edu/cop/ammo/pages/default.aspx THAT THIS IS THE MOST CURRENT VERSION OF THIS DOCUMENT. THIS IS PAGE 1 OF 4.</p>																						
<p>APPROVED, U.S. ARMY JOINT MUNITIONS COMMAND</p> <p>WARD.GINA. M.1369379808</p> <p><small>Digitally signed by WARD.GINA.M.1369379808 Date: 2022.04.07 15:58:15 -05'00'</small></p> <p style="text-align: right;">AMSJM-MLT</p>	<p>DO NOT SCALE</p>	<p>MARCH 2006</p>																					
<p>APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND</p> <p>BRAILSFORD.KEIT H.ANTHONY.10286 55661</p> <p><small>Digitally signed by BRAILSFORD.KEITH.ANTHONY. 1028655661 Date: 2022.04.07 16:39:01 -05'00'</small></p> <p style="text-align: right;">DEFENSE AMMUNITION CENTER</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">DESIGN ENGINEER</td> <td style="width: 10%;">BASIC</td> <td style="width: 70%;">ADIN FELICIANO</td> </tr> <tr> <td></td> <td>REV.</td> <td>RICHARD GARSIDE</td> </tr> </table>	DESIGN ENGINEER	BASIC	ADIN FELICIANO		REV.	RICHARD GARSIDE	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">REVISION NO. 1</td> <td style="width: 50%;">MARCH 2022</td> </tr> </table>	REVISION NO. 1	MARCH 2022	<p>SEE THE REVISION LISTING ON PAGE 2</p>												
DESIGN ENGINEER	BASIC	ADIN FELICIANO																					
	REV.	RICHARD GARSIDE																					
REVISION NO. 1	MARCH 2022																						
<p>TEST ENGINEER</p> <p>TEST REPORT</p> <p>EXPLOSIVE SAFETY DIRECTORATE</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">ENGINEERING DIVISON</td> <td style="width: 50%;">FIEFFER.LAUR A.A.1230375727</td> </tr> <tr> <td></td> <td><small>Digitally signed by FIEFFER.LAURA.A.1230375727 Date: 2022.03.17 14:36:16 -05'00'</small></td> </tr> <tr> <td></td> <td>FELICIANO.AD IN.1259200373</td> </tr> <tr> <td></td> <td><small>Digitally signed by FELICIANO.ADIN.1259200373 Date: 2022.03.22 13:56:11 -05'00'</small></td> </tr> <tr> <td></td> <td>CUMMINS.PAU L.A.1231883122</td> </tr> <tr> <td></td> <td><small>Digitally signed by CUMMINS.PAUL.A.1231883122 Date: 2022.03.23 11:12:11 -05'00'</small></td> </tr> </table>	ENGINEERING DIVISON	FIEFFER.LAUR A.A.1230375727		<small>Digitally signed by FIEFFER.LAURA.A.1230375727 Date: 2022.03.17 14:36:16 -05'00'</small>		FELICIANO.AD IN.1259200373		<small>Digitally signed by FELICIANO.ADIN.1259200373 Date: 2022.03.22 13:56:11 -05'00'</small>		CUMMINS.PAU L.A.1231883122		<small>Digitally signed by CUMMINS.PAUL.A.1231883122 Date: 2022.03.23 11:12:11 -05'00'</small>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">CLASS</td> <td style="width: 25%;">DIVISION</td> <td style="width: 25%;">DRAWING</td> <td style="width: 25%;">FILE</td> </tr> <tr> <td style="text-align: center;">19</td> <td style="text-align: center;">48</td> <td style="text-align: center;">4231/ 48A</td> <td style="text-align: center;">20PM1006</td> </tr> </table>	CLASS	DIVISION	DRAWING	FILE	19	48	4231/ 48A	20PM1006	
ENGINEERING DIVISON	FIEFFER.LAUR A.A.1230375727																						
	<small>Digitally signed by FIEFFER.LAURA.A.1230375727 Date: 2022.03.17 14:36:16 -05'00'</small>																						
	FELICIANO.AD IN.1259200373																						
	<small>Digitally signed by FELICIANO.ADIN.1259200373 Date: 2022.03.22 13:56:11 -05'00'</small>																						
	CUMMINS.PAU L.A.1231883122																						
	<small>Digitally signed by CUMMINS.PAUL.A.1231883122 Date: 2022.03.23 11:12:11 -05'00'</small>																						
CLASS	DIVISION	DRAWING	FILE																				
19	48	4231/ 48A	20PM1006																				

PALLET UNIT DATA					
ITEMS INCLUDED		*HAZARD CLASS AND DIVISION	*COMPATIBILITY GROUP	APPROX WEIGHT (LBS) (METAL PALLET)	APPROX WEIGHT (LBS) (RESIN PALLET)
NSN	DODIC				
1315-01-686-5398	CA71	1.1	F	2,361	2,338

*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).

REVISION

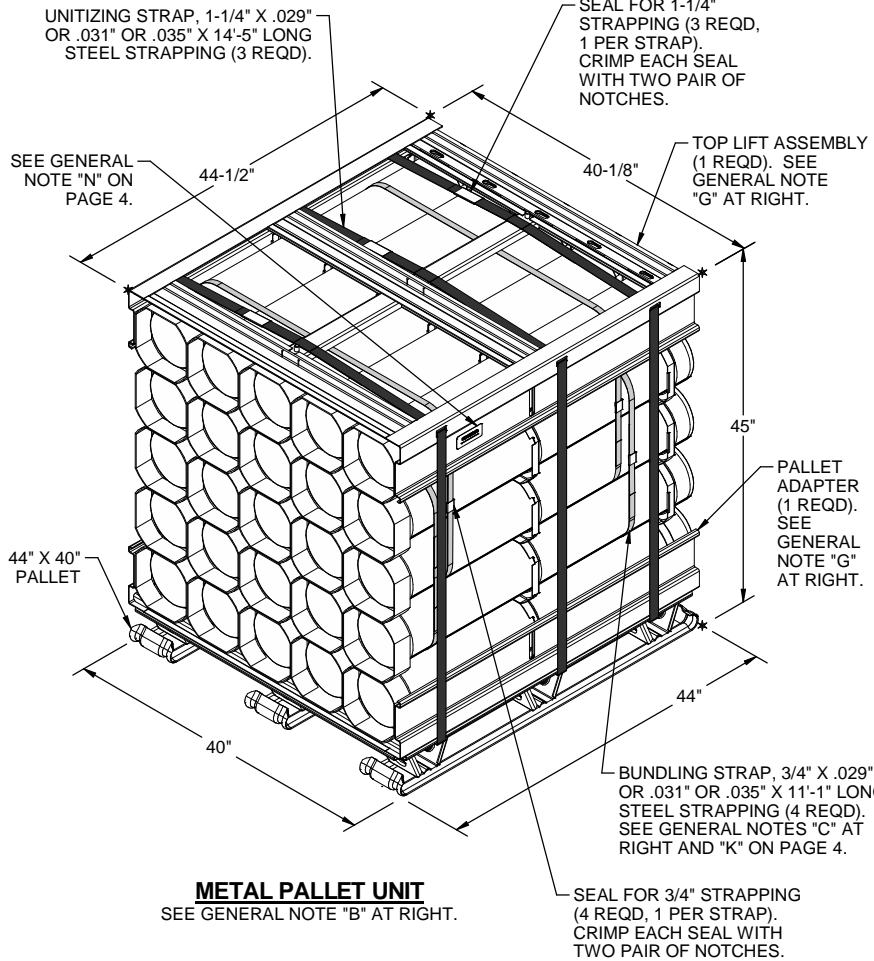
REVISION NO. 1, DATED MARCH 2022, CONSISTS OF:

1. ADDING NSN 1315-01-686-5398 TO PALLET UNIT DATA.
2. ADDING MODEL AND NOMENCLATURE IN TITLE.
3. ADDING .029" STRAPPING TO THE UNIT LOAD ISOMETRIC.
4. UPDATING GENERAL NOTE "L" (PACKAGING DRAWING).
5. UPDATING DRAWING FORMAT.

GENERAL NOTES

- A. THIS APPENDIX CANNOT STAND ALONE BUT MUST BE USED IN CONJUNCTION WITH THE BASIC UNITIZATION PROCEDURES DRAWING 19-48-4231-20PM1006. 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. BUNDLING STRAPS MUST BE TENSIONED AND SEALED PRIOR TO THE APPLICATION OF THE UNITIZING STRAPS. INSTALL BUNDLING STRAPS AS CLOSE TO THE OUTER CONTAINER RINGS AS POSSIBLE, TO AVOID DAMAGING THE CONTAINERS. CAUTION: STRAPS MUST NOT BE ALLOWED TO OVERLAP.
- D. ALTHOUGH THE CONTAINERS DEPICTED IN THE UNIT LOAD AT LEFT ARE CONSTRUCTED WITH INTERLOCKING DEVICES, THE INTERLOCKS WILL NOT FUNCTION PROPERLY UNLESS THE CONTAINERS ARE POSITIONED SO THAT THE "PINS" OF THE INTERLOCKS ARE FACING UPWARD. THIS ORIENTATION WILL AID IN THE PREVENTION OF CONTAINER MOVEMENT, BOTH Laterally AND LONGITUDINALLY, DURING THE SHIPMENT OF THE LOAD.
- E. THE FOLLOWING AMC DRAWINGS ARE APPLICABLE FOR OUTLOADING AND STORAGE OF THE ITEMS COVERED BY THIS APPENDIX.

CARLOADING - - - -	19-48-4242/48A-5PM1004
TRUCKLOADING - - - -	19-48-4243/48A-11PM1004
STORAGE - - - -	19-48-4250/48A-1-2-3-4-14-22PM1004
END OPENING ISO CONTAINER - - - -	19-48-4245/48A-15PM1009
MILVAN - - - -	19-48-4244/48A-15PM1008
SIDE OPENING ISO CONTAINER - - - -	19-48-4272/48A-15PA1016
- F. IF ITEMS COVERED HEREIN ARE UNITIZED PRIOR TO ISSUANCE OF THIS APPENDIX, THE CONTAINERS NEED NOT BE REUNITIZED SOLELY TO CONFORM TO THIS APPENDIX.
- G. FOR DETAILS OF PALLET AND PALLET ADAPTERS, SEE DAC DRAWING ACV000811, MIL-A-70788 AND MIL-P-70786. FOR AN ALTERNATIVE PALLET AND ADAPTER, SEE GENERAL NOTE "N" ON PAGE 4. FOR PA171 CONTAINER, ONLY REVISION F OR LATER OF DRAWING AC200000470 SHALL BE USED.
- H. THE UNITIZATION PROCEDURES DEPICTED HEREIN MAY ALSO BE USED FOR UNITIZING 120MM CARTRIDGES WHEN IDENTIFIED BY DIFFERENT NATIONAL STOCK NUMBERS (NSN) THAN WHAT IS SHOWN ON PAGE 2, PROVIDED THE CONTAINER DOES NOT VARY FROM WHAT IS DELINEATED HEREIN. THE EXPLOSIVE CLASSIFICATION OF OTHER ITEMS MAY BE DIFFERENT THAN WHAT IS SHOWN.
- J. EMPTY OR REJECTED PA171 CONTAINERS WILL BE USED AS FILLER CONTAINERS AS NECESSARY. FILLER CONTAINERS MUST BE INSTALLED IN THE MIDDLE OF THE TOP LAYER(S) OF CONTAINERS. IF FIVE FULL CONTAINERS ARE TO BE OMITTED, ONE FULL LAYER OF CONTAINERS WILL BE OMITTED. WHEN (EMPTY) FILLER CONTAINERS ARE USED IN PLACE OF OMITTED CONTAINERS TO COMPLETELY FILL OUT A LAYER ON A PALLET, THEY WILL BE MARKED AS SPECIFIED IN ARDEC DRAWING 12982865.

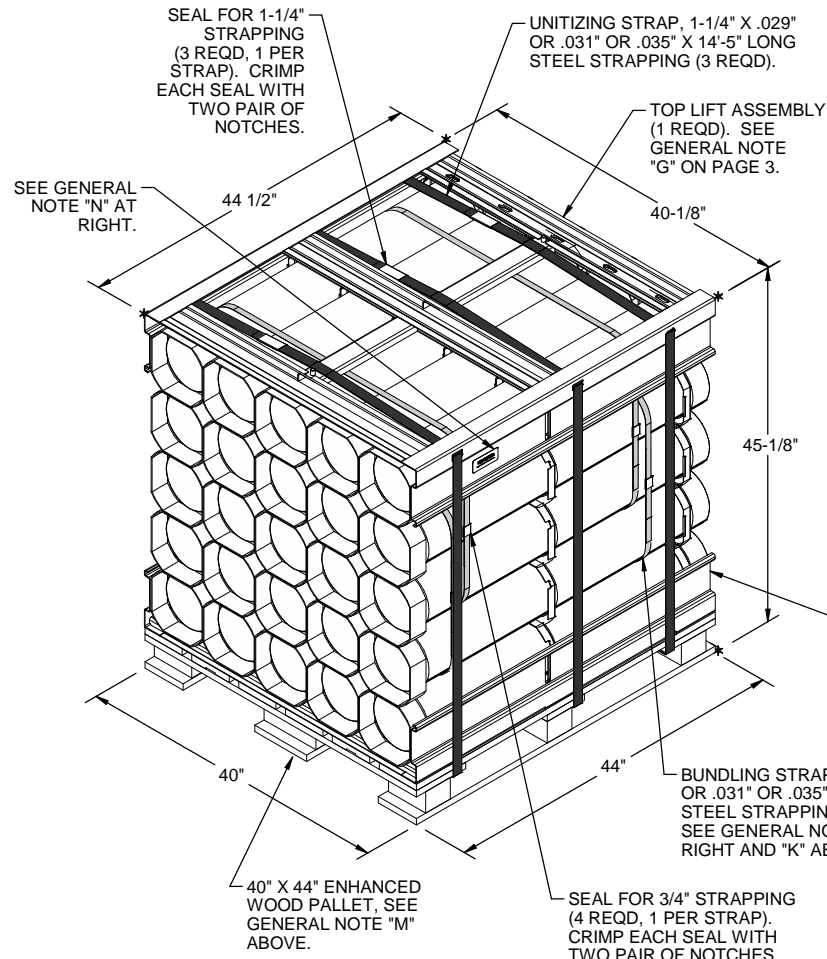


METAL PALLET UNIT
SEE GENERAL NOTE "B" AT RIGHT.

25 CONTAINERS OF 120MM CARTRIDGES (1 PER CONTAINER) @ 86 LBS	-----	2,150 LBS
DUNNAGE	-----	106 LBS
PALLET	-----	105 LBS
TOTAL WEIGHT	-----	2,361 LBS (APPROX)
CUBE	-----	46.5 CU FT (APPROX)

BILL OF MATERIAL			
METAL PALLET, 44" X 40"	- - - - -	1 REQD	- - - - - 105 LBS
PALLET ADAPTER	- - - - -	1 REQD	- - - - - 41 LBS
TOP LIFT ADAPTER	- - - - -	1 REQD	- - - - - 54 LBS
STEEL STRAPPING, 3/4"	- 44.33'	REQD	- - - - - 3.96 LBS
STEEL STRAPPING, 1-1/4"	- 43.06'	REQD	- - - - - 6.16 LBS
SEAL FOR 3/4" STRAPPING	- - - - -	4 REQD	- - - - - NIL
SEAL FOR 1-3/4" STRAPPING	- - - - -	3 REQD	- - - - - NIL

(CONTINUED ON PAGE 4)



(GENERAL NOTES CONTINUED FROM PAGE 3)

- K. WHEN ONE OR MORE LAYERS ARE OMITTED, THE BUNDLING STRAPS REQUIREMENT WILL CHANGE. A FOUR LAYER UNIT WILL HAVE THE TWO BUNDLING STRAPS OMITTED THAT WERE AROUND THE THIRD, FOURTH, AND FIFTH LAYERS. THE REMAINING BUNDLING STRAPS WILL SURROUND THE SECOND THROUGH FOURTH LAYERS. A UNIT WITH THREE OR LESS LAYERS DOES NOT REQUIRE BUNDLING STRAPS.
- L. FOR DETAILS OF THE PA171 CONTAINER, SEE ARDEC DRAWING 13069011.
- M. FOR THE ALTERNATIVE PALLET AND ASSOCIATED ADAPTER, SEE QAT1420 AND DAC DRAWINGS ACV00248 AND ACV00409. ALSO SEE THE "RESIN-TREATED PALLET UNIT" DETAIL AT LEFT. THIS ALTERNATIVE ENHANCED WOOD PALLET AND METAL BOTTOM ADAPTER MAY BE USED IN LIEU OF THE METAL PALLET AND ADAPTER ON PAGE 3 IF AUTHORIZED BY THE PROCURING ACTIVITY.
- N. IF THE LOT NUMBER IS MARKED ON THE BOTTOM END OF THE CONTAINER, ALSO MARK THE LOT NUMBER ON THE TOP ADAPTER. UNDERLINE THE AMMUNITION LOT NUMBER MARKING ON THE TOP ADAPTER IN 1/2" HIGH LETTERS AS SHOWN ON PAGE 3.

MODIFIED PALLET ADAPTER (1 REQD). SEE GENERAL NOTE "M" ABOVE.

RESIN-TREATED PALLET UNIT
SEE GENERAL NOTE "B" ON PAGE 2.

25 CONTAINERS OF 120MM CARTRIDGES (1 PER CONTAINER) @ 86 LBS	-----	2,150 LBS
DUNNAGE	-----	106 LBS
PALLET	-----	82 LBS
TOTAL WEIGHT	-----	2,338 LBS (APPROX)
CUBE	-----	46.6 CU FT (APPROX)

BILL OF MATERIAL		
RESIN PALLET, 44" X 40"	1 REQD	82 LBS
PALLET ADAPTER	1 REQD	41 LBS
TOP LIFT ADAPTER	1 REQD	54 LBS
STEEL STRAPPING, 3/4"	44.33' REQD	3.96 LBS
STEEL STRAPPING, 1-1/4"	43.13' REQD	6.16 LBS
SEAL FOR 3/4" STRAPPING	4 REQD	NIL
SEAL FOR 1-3/4" STRAPPING	3 REQD	NIL