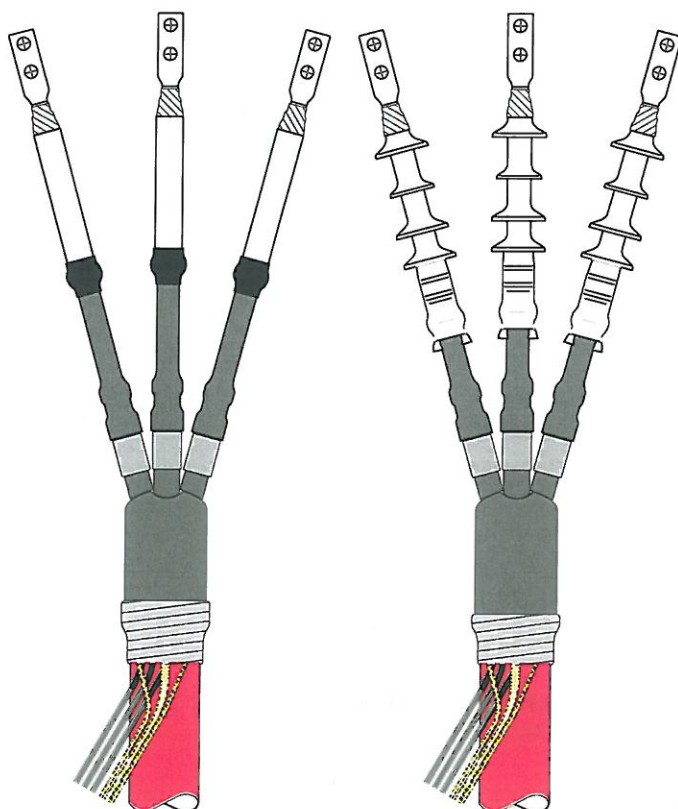


elaspeed™

Assembly Instructions AIRGUARD™ SERIES

GENERAL INSTRUCTION FOR THREE CORE AIRGUARD™ CABLE WITH COPPER TAPE SCREENS INDOOR & OUTDOOR TERMINATIONS UP TO 15 kV

NOTE: FOR 5kV TERMINATIONS, YOU MUST USE A 15kV
TERMINATION AND ADJUST CONDUCTOR SIZE
ACCORDING TO TABLE 1, BELOW.



15kV
INDOOR

15kV
OUTDOOR

Product Description

IEEE STANDARDS NO. 48-1996
CLASS 1 TERMINATION

15kV CLASS
110kV BIL

Table 1. Termination Selection Chart.

PRYSMIAN CATALOG NUMBER	RATING kV	GROUND CONDUCTOR AWG	CONDUCTOR SIZE AWG	DIAMETER OVER INSULATION INCHES (MM)
AGT3CA5	5	#8 - #6	1/0 TO 350	0.64-1.12 (16-28)
AGT3CB5	5	#5 - #4	350 TO 750	0.84-1.38 (21-35)
AGT3CC5	5	#3	1000	1.30-2.10 (33-53)
AGT3CA15	15	#10 - #8	2 TO 2/0	0.64-1.12 (16-28)
AGT3CB15	15	#7 - #5	4/0 TO 500	0.84-1.38 (21-35)
AGT3CC15	15	#4	750 TO 1000	1.30-2.10 (33-53)

Prysmian Power Cable & Systems
5 Hollywood Ct. So. Plainfield N.J. 07080
Tel: 908-791-2828 Fax: 908-791-0048

ASSEMBLY INSTRUCTIONS FOR THREE CORE AIRGUARD PRYSMIAN INSTRUCTIONS

REV.10	T.T.	B.W.	01-23-2012
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GENERAL INSTRUCTION

**READ THE INSTALLATION INSTRUCTIONS IN THEIR ENTIRETY
BEFORE STARTING**

BEFORE SHRINKING ONE TUBE ONTO ANOTHER OR ONTO POLYMERIC INSULATION OR BEFORE APPLYING ANY MASTIC, CLEAN AND DEGREASE THE UNDERLYING SURFACES. WHERE ANY OF THESE SURFACES ARE SEMI-CONDUCTING OR STRESS CONTROLLING TAKE CARE NOT TO DRAG ANY CARBON PARTICLES ONTO ANY INSULATING COMPONENTS. METAL SHEATHS/CABLES ARMOURS SHOULD ALWAYS BE SCRAPPED/ABRADED AND DEGREASED BEFORE APPLYING ANY EARTH BONDS OR MASTIC. PLASTIC CABLE SHEATHS SHOULD BE ABRADED AND DEGREASED FOR AT LEAST 4" BEYOND SHEATH CUT AS THIS AREA FORMS THE PRIMARY WATER SEAL.

**THE RELIABILITY OF THE PRYSMIAN SPLICING OR
TERMINATION SYSTEM RELIES ON CLEANLINESS
AND DIMENSIONAL ACCURACY, ALWAYS CHECK THE
STRIPPING DIMENSIONS AND KEEP THE JOINT
ASSEMBLY AS CLEAN AS POSSIBLE.**

AFTER APPLICATION, TAP ALL SPRINGS CLAMPS WITH A LIGHT HAMMER OR SIMILAR INSTRUMENT AND " HAND TIGHTEN" BY MANUALLY PUSHING ON THE SPRING.

PROTECT ALL SPRINGS WITH A FEW TURNS OF EPR OR PVC TAPE, APPLIED IN THE DIRECTION OF THE ROLL.

ALWAYS UNWIND THE SPIRAL SUPPORT CORE BY PASSING THE FREE END FROM HAND TO HAND AROUND THE CABLE CORE; ATTEMPTING TO PULL THE FREE END STRAIGHT OUT WILL CAUSE THE SUPPORT TO LOCK ONTO THE CABLE CORE AND CAUSE DAMAGE. DURING REMOVAL OF THE SPIRAL CORE, DO NOT RELEASE THE TENSION ON THE FREE END AS THIS WILL ALLOW THE SPIRAL SUPPORT TO BECOME WRAPPED AROUND THE CABLE CORE AND COULD CAUSE DIFFICULTY RESTARTING.

NOTES ON INSTALLATION OF TERMINATIONS.

REMEMBER TO FIT ANY GLAND OR NON-SPITABLE GLAND PLATES OVER THE CABLE BEFORE STARTING THE TERMINATION. IF POSSIBLE LOWER THE GLAND TO EASE INSTALLATION.

TO EASE INSTALLATION OF THE TRIFURCATING BOOT PARTIALLY UNWIND THE SUPPORT SPIRALS UNTIL THEY ARE LEVEL WITH THE BOTTOM OF THE FINGERS AND BOOT BASE. THIS MAKES IT EASIER TO LOCATE AND SEAT THE BOOT CORRECTLY.

1. ADD 2" TO FINAL CABLE LENGTH.

2. STRIPPING THE CABLE.

ON EACH CONDUCTOR:

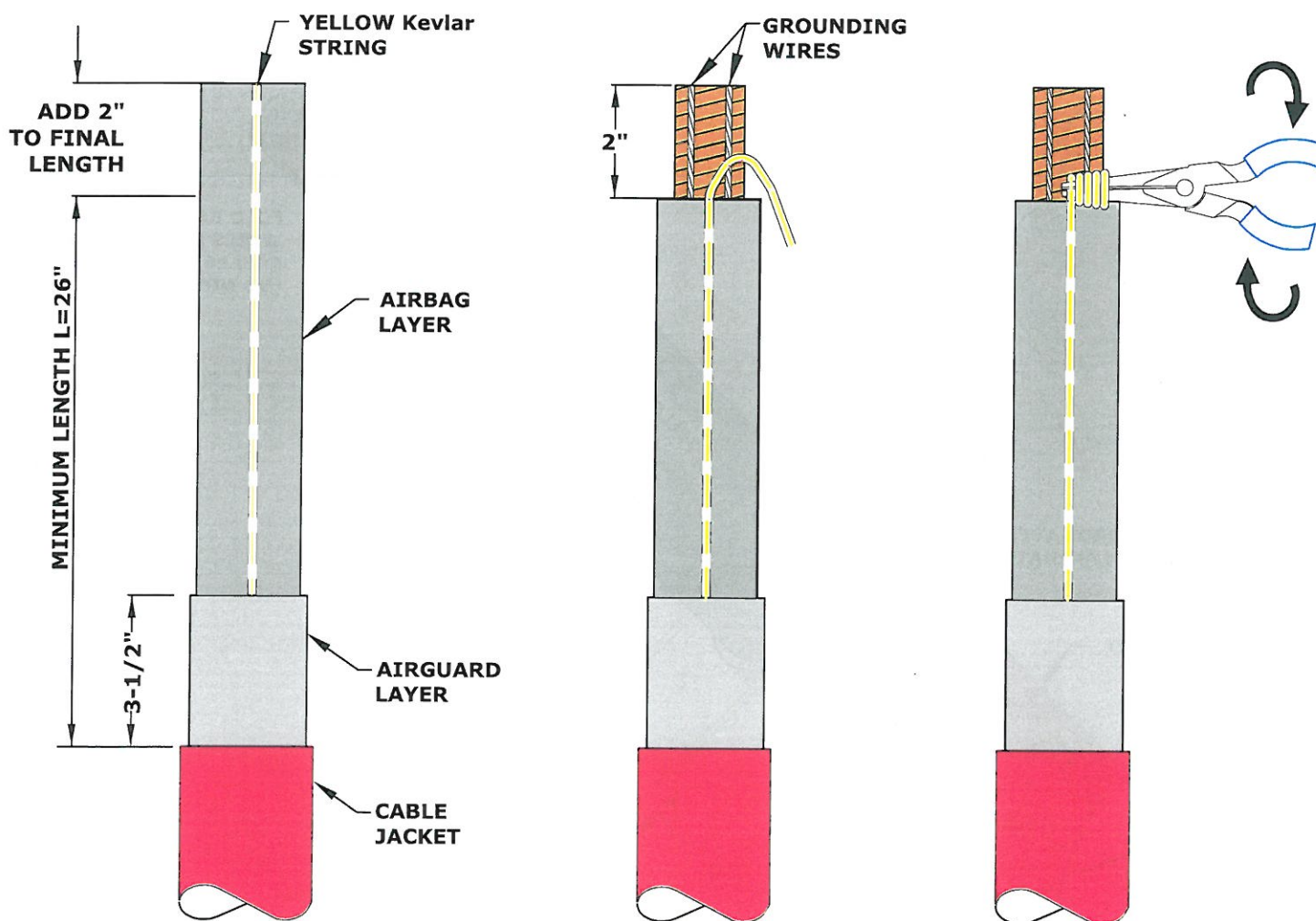
2.1. REMOVE THE CABLE JACKET USING CUTBACK DIMENSION AS SHOWN.

2.2. REMOVE AIRGUARD ALUMINUM LAMINATED LAYER UP TO 3-1/2" FROM JACKET CUTBACK.

2.3. REMOVE 2" OF THE AIRBAG LAYER TO EXPOSE THE LONGITUDINAL CUTTING STRING (YELLOW Kevlar). DO NOT DAMAGE THE Kevlar STRING. SEE PROPOSED METHOD FOR REMOVING CABLE AIRBAG LAYER BELOW AND ON THE NEXT PAGE.

PROPOSED METHOD FOR REMOVING CABLE AIRBAG LAYER.

- USING NEEDLE NOSE PLIERS WRAP THE YELLOW Kevlar STRING AROUND THE PLIERS AND TWIST TO START THE CUT AND THEN PULL THE STRING, CUTTING THE AIRBAG LAYER UNTIL IT REACH THE AIRGUARD ALUMINUM LAMINATE LAYER CUTBACK.

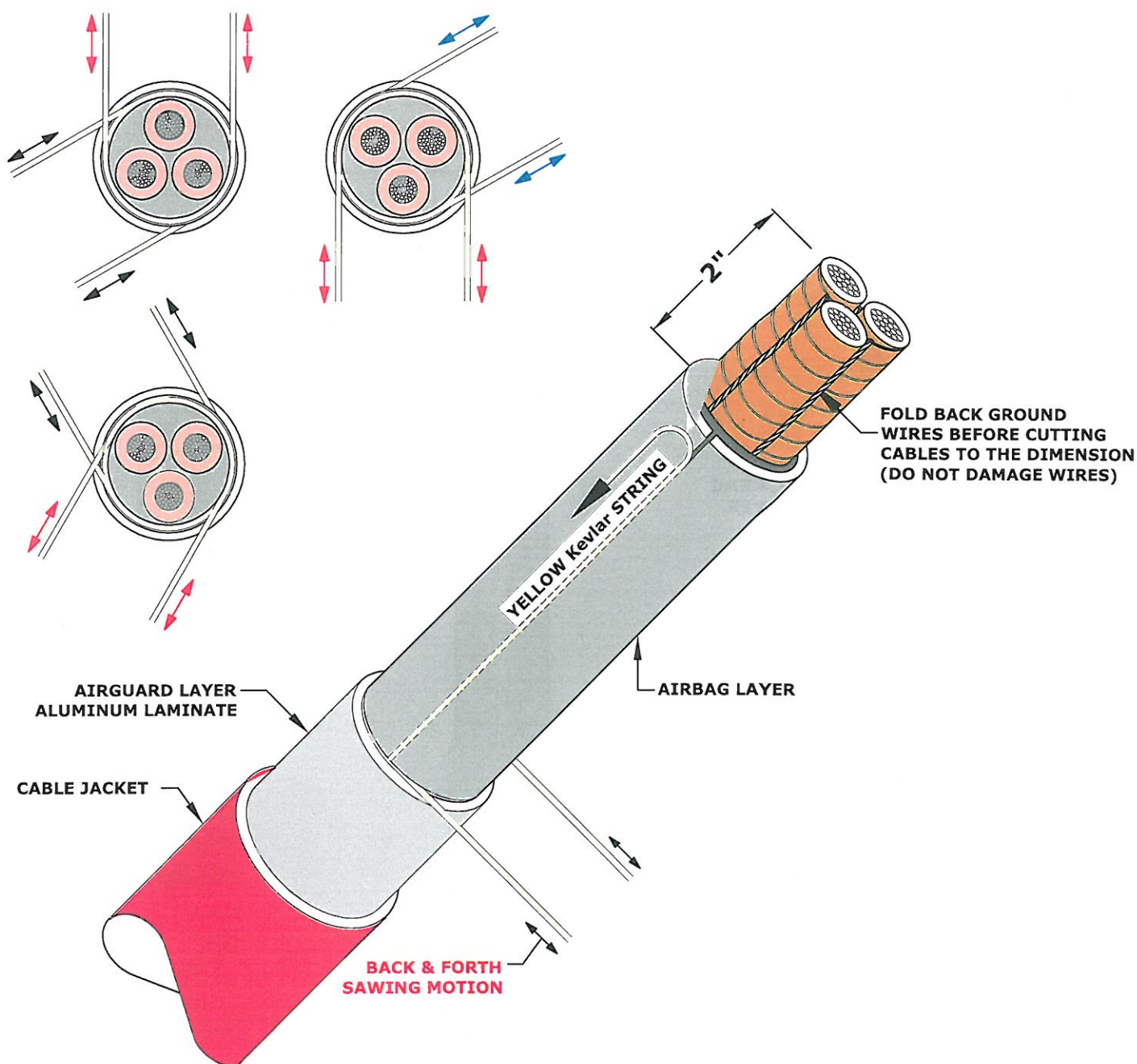


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PROPOSED METHOD FOR REMOVING CABLE AIRBAG LAYER (CONT.)

- USING THE AIRGUARD CUTBACK AS A GUIDE TAKE THE YELLOW Kevlar STRING (SUPPLIED WITH THE KIT) AND WRAP IT PARTIALLY AROUND THE AIRBAG LAYER. USING A BACK & FORTH SAWING MOTION, CUT THRU THE AIRBAG LAYER CHANGING POSITION UNTIL THE COMPLETE CIRCUMFERENCE OF THE AIRBAG LAYER IS CUT.

NOTE: GLOVES SHOULD BE WORN FOR THIS OPERATION OR THE ENDS OF THE STRING SHOULD BE WRAPPED AROUND SCREW DRIVER HANDLES OR SOMETHING SIMILAR.

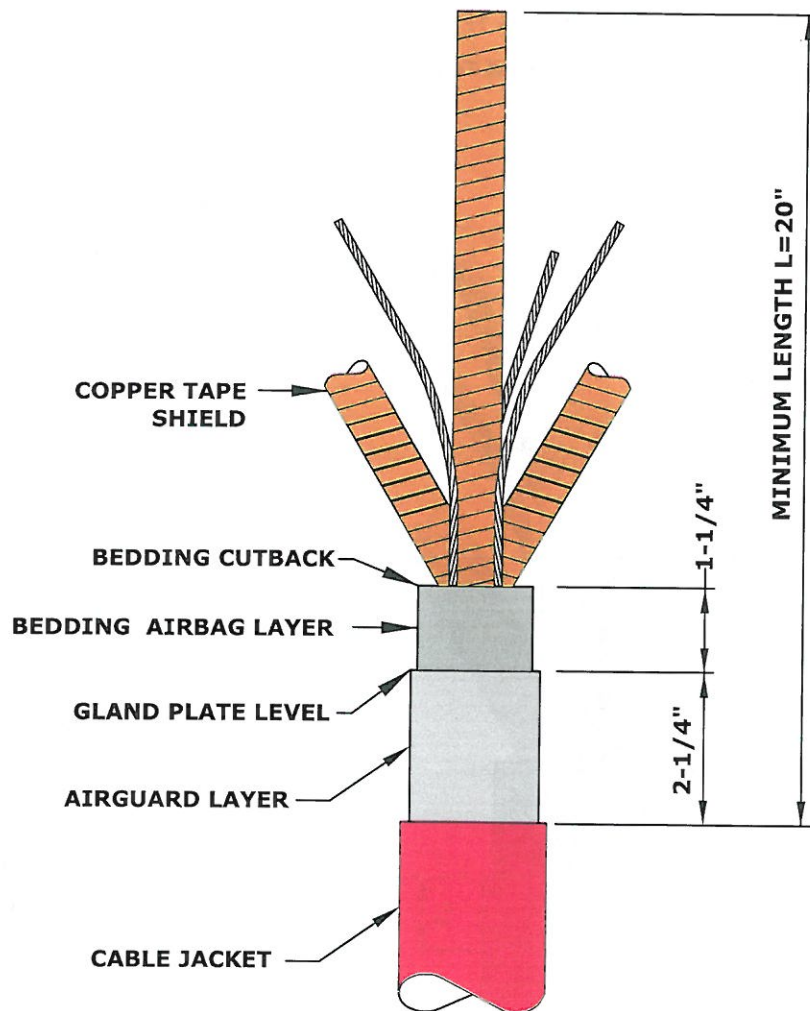


2. STRIPPING THE CABLES (CONT.).

ON EACH CONDUCTOR:

2.4. STRIP THE CABLES USING CUTBACK DIMENSIONS AS SHOWN.

2.5. REMOVE ANY FILLERS TO THE LEVEL OF THE BEDDING CUTBACK.



IMPORTANT NOTES: 1. BEFORE CUTTING THE CABLE TO LENGTH, REMOVE THE OUTER LAYERS AND CHECK THAT THE GROUND WIRES WILL REACH THE GROUNDING DEVICE.

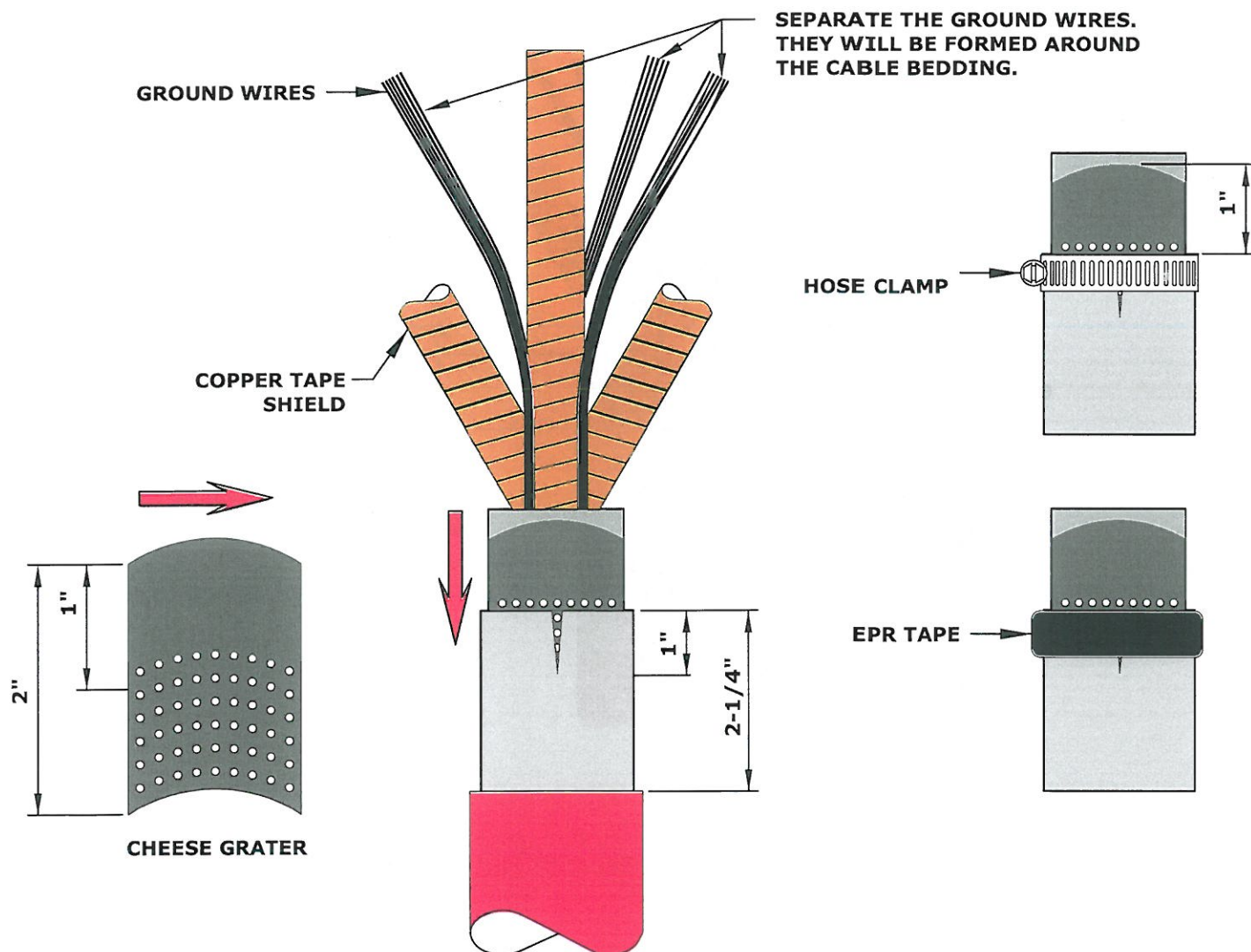
2. THE LENGTH OF INDOOR TERMINATION IS DETERMINED BY THE DISTANCE FROM THE BUSHING STUD TO THE GLAND PLATE.

3. THE LENGTH OF OUTDOOR TERMINATION IS DETERMINED BY THE STRUCTURE OR MOUNTING ARRANGEMENT BEING USED.

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3. GROUNDING THE ALUMINUM LAMINATE.

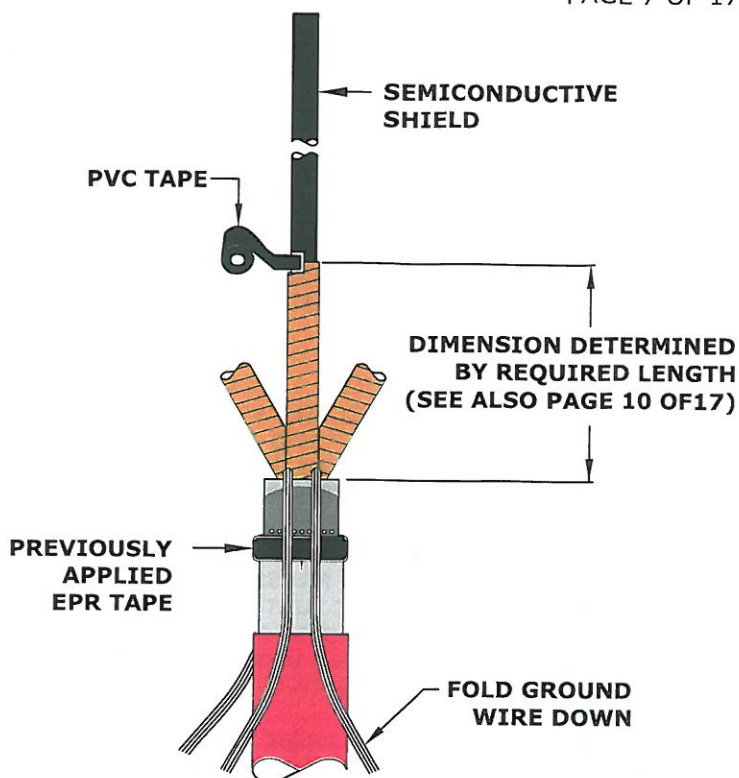
- 3.1. MAKE TWO CUTS IN THE AirGuard ALUMINUM LAMINATE LAYER 1" LONG. MAKE SURE THE ALUMINUM LAYER IS ALSO CUT. THE CUTS SHOULD BE MADE ON OPPOSITE SIDES FOR AT LEAST THE WITH OF THE CHEESE GRATER.
- 3.2. CAREFULLY LIFT THE AirGuard ALUMINUM LAMINATE LAYER TO ALLOW THE CHEESE GRATER TO BE SLID UNDER.
- 3.3. SLIDE THE CHEESE GRATER UNDER THE ALUMINUM LAMINATE LAYER LEAVING 1" OF THE SMOOTH SURFACE EXPOSED.
- 3.4. PLACE A HOSE CLAMP AT THE EDGE OF THE ALUMINUM LAMINATE LAYER AND TIGHTEN.
- 3.5. APPLY TWO LAYERS OF EPR TAPE OVER THE HOSE CLAMP.



4. PREPARE CABLES USING CUTBACK DIMENSIONS AS SHOWN.

ON EACH CONDUCTOR:

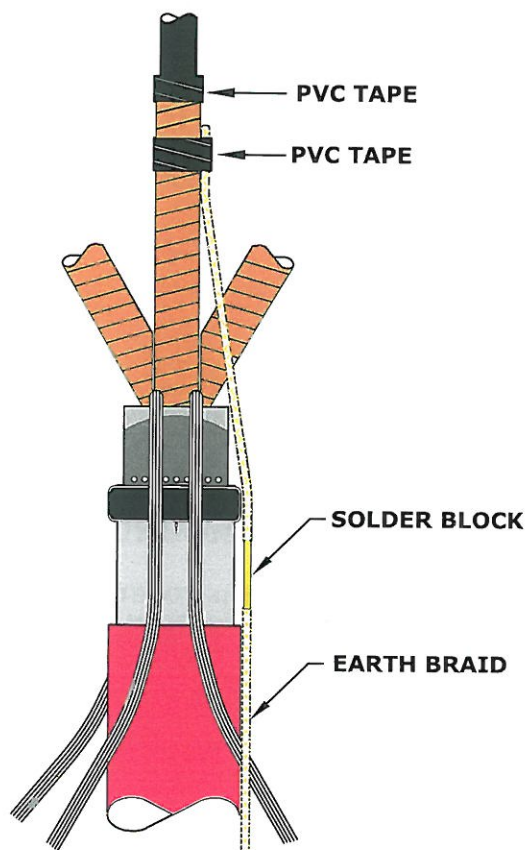
- 4.1. FOLD THE GROUND WIRES DOWN.
- 4.2. REMOVE THE COPPER TAPE SHIELD.
- 4.3. APPLY A FEW TURNS OF PVC TAPE TO
THE END OF COPPER TAPE SHIELD.



5. INSTALL THE GROUND BRAID.

ON EACH CONDUCTOR:

- 5.1. ALIGN THE SOLDER BLOCK ON THE
GROUND BRAIDS BETWEEN THE CABLE
JACKET CUTBACK AND EPR COVERED
HOSE CLAMP AND SECURE IN PLACE WITH
TWO TURNS OF PVC TAPE ON THE COPPER
TAPE SHIELD. MAKE SURE THE LONG SIDE
OF THE BRAID IS DOWN IN ORDER TO EXIT
THE BOTTOM OF THE TERMINATION.



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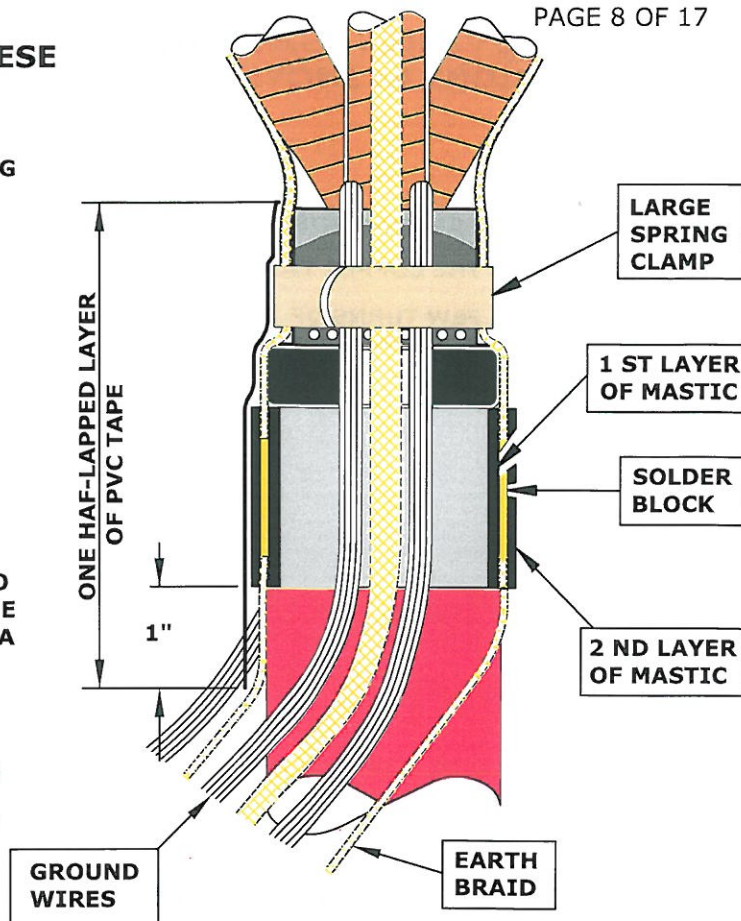
6. SECURING GROUND WIRES TO CHEESE GRATER.

6.1. USING THE LARGE CONSTANT FORCE SPRING SECURE THE GROUND WIRES AND GROUND BRAIDS IN PLACE AT THE AREA OF THE CHEESE GRATER. MAKE SURE AT LEAST ONE OF THE GROUND BRAIDS IS IN CONTACT WITH THE SURFACE OF THE EXPOSED CHEESE GRATER.

6.2. LIFT THE GROUND WIRES AND GROUND BRAIDS AND APPLY ONE LAYER OF UNSTRETCHED MASTIC BETWEEN THE EPR COVERED HOSE CLAMP AND THE CABLE OUTER JACKET. BUTT THE MASTIC AGAINST THE CABLE JACKET AS SHOWN.

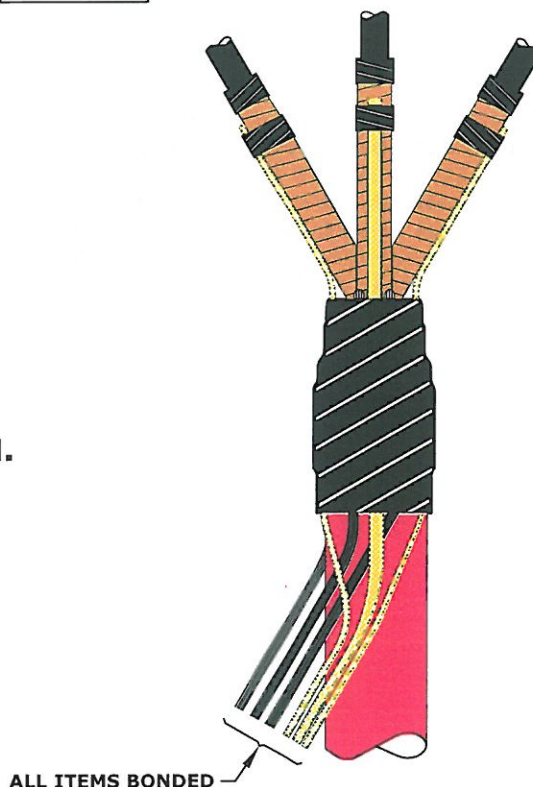
6.3. FOLD DOWN THE GROUND WIRES AND GROUND BRAIDS AND PRESS OR TAP THEM INTO THE LAYER OF MASTIC JUST APPLIED. APPLY THE SECOND LAYER OF MASTIC OVER THE SAME AREA TRAPPING THE GROUND WIRES AND GROUND BRAIDS BETWEEN THE TWO LAYERS.

6.4. COVER THE AREA FROM 1" BELOW THE CABLE JACKET TO THE CUTBACK OF THE AIRBAG BEDDING LAYER WITH ONE HAF-LAPPED LAYER OF PVC TAPE. START THIS PROCEDURE FROM 1" BELOW THE CABLE JACKET.



7. MAKING THE GROUND CONNECTION.

7.1. BOND ALL ITEMS TOGETHER TO MAKE GROUND CONNECTION.



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8. INSTALLATION OF THE TRIFURCATING BOOT.

8.1. SLIDE THE TRIFURCATING BOOT INTO THE CROTCH AS FAR AS POSSIBLE.

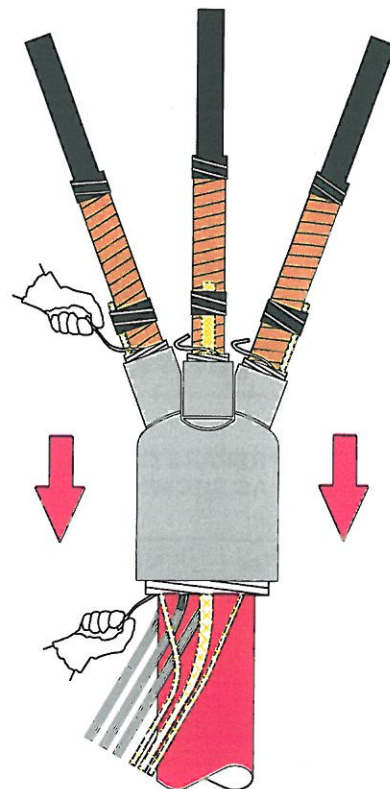
NOTE: TO ENSURE THE BOOT "SITS" CORRECTLY AT THE CROTCH POSITION, IT MAY BE NECESSARY TO PARTIALLY UNWIND SOME OF THE SPIRALS FROM THE 3 FINGERS UNTIL LEVEL WITH THE BOTTOM OF THE FINGERS.

8.2. MAKE SURE THE TRIFURCATING BOOT IS SEATED IN THE CROTCH OF THE CABLE.

8.3. HOLD TRIFURCATING BOOT IN PLACE WHILE SHRINKING THE BASE OF THE BOOT, TAKING CARE NOT TO SNAG THE BRAIDS AND MASTIC SEAL.

8.4. HOLD TRIFURCATING BOOT IN PLACE WHILE SHRINKING THE FIRST BOOT FINGER BY STEADILY PULLING THE PLASTIC CORD, UNWINDING IT AROUND CONDUCTOR, AS SHOWN.

8.5. CONTINUE THE SAME WAY FOR THE OTHER TWO BOOTS FINGERS, ONE AT A TIME.



8.6. REMOVE PVC TAPE HOLDING THE COPPER BRAID AND APPLY SPRING CLAMPS OVER THE COPPER BRAIDS NEAR THE TOP OF THE FINGERS OF THE BOOT BODY.

8.7. OVER-TAPE THE SPRING CLAMPS WITH PVC TAPE.

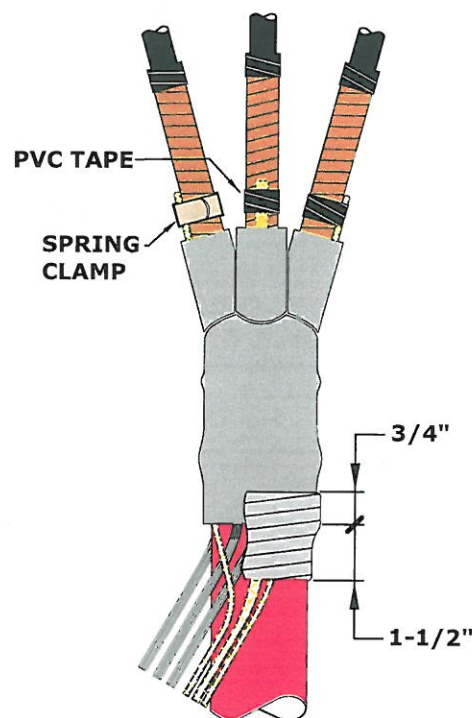
8.8. CUT OFF ANY EXCESS OF COPPER BRAID AND REMOVE PREVIOUSLY APPLIED PVC TAPE.

ON INDOOR TERMINATIONS ONLY: CUT THE BASE OF THE BOOT FLUSH WITH THE TOP OF THE GLAND PLATE.

8.9. APPLY TWO HALF-LAPPED LAYERS OF PVC TAPE OVER THE EDGE OF THE BOOT WITH 50% STRETCH FOR 3/4" ONTO THE BOOT AND 1-1/2" ONTO THE BEDDING OR JACKET.

ON OUTDOOR TERMINATIONS ONLY:

8.10. APPLY TWO HALF-LAPPED LAYERS OF PVC TAPE OVER THE EDGE OF THE BOOT WITH 50% STRETCH FOR 1-1/2" ONTO THE JACKET.



9. FINAL CABLE PREPARATION.

NOTE: CLEAN CABLES AND PREPARE WORK AREA. INSPECT TERMINATION KIT AND CONFIRM ALL COMPONENTS ARE INCLUDED AND PROPER LUG CONNECTOR IS ON HAND.

9.1. SET THE CABLES INTO THE FINAL POSITION FOR FITTING THE LUGS AND CUT THEM TO LENGTHS.

ON EACH CONDUCTOR:

9.2. PREPARE CABLES USING CUTBACK DIMENSIONS AS SHOWN.

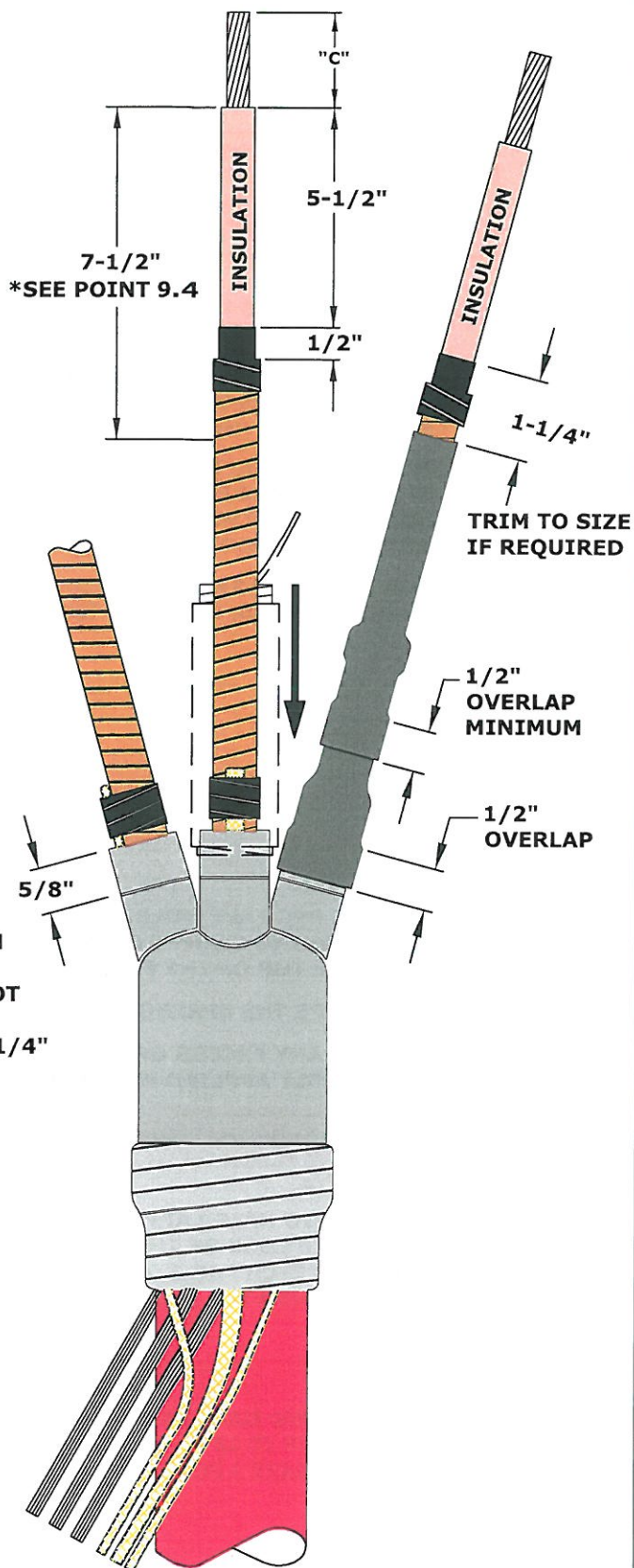
"C" = CONNECTOR BORE LENGTH + 1/4"

9.3. MEASURE AND MARK 5/8" ONTO THE FINGER.

*9.4. MEASURE AND MARK 7-1/2" FROM THE INSULATION CUT; IF IT IS 5/8" OVER THE BOOT FINGERS DO NOT USE ANY EXTENSION TUBES. IF IT DOES NOT REACH THE BOOT FINGERS, ADD ONE OR MORE EXTENSION TUBES UNTIL THERE IS A DISTANCE 1-1/4" FROM THE SEMICONDUCTIVE CUTBACK.

NOTE: THERE ARE 2 EXTENSION TUBES SHOWN ON THIS DRAWING.

IMPORTANT NOTE: CHECK IF THE PAD OF THE LUG WILL PASS THROUGH THE TERMINATION AND PHASE CONDUCTORS EXTENSIONS TUBES. IF THEY DO FIT THE LUG. IF THEY DO NOT, INSTALL THE EXTENSION TUBES FIRST AND SLIDE TERMINATION BODY OVER THE CABLES BEFORE CRIMPING THE LUG.



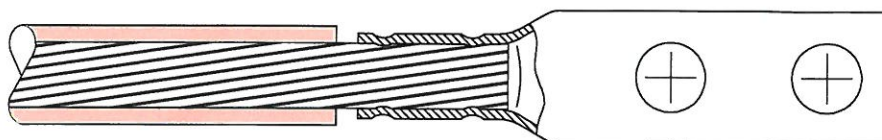
10. INSTALLATION OF LUG.

10.1. FOR CRIMPING FOLLOW MANUFACTURER'S CRIMPING INSTRUCTIONS.

FOR CRIMPING OF ALUMINUM CONNECTORS ONLY.

10.2. WIRE BRUSH CONDUCTOR.

10.3. REMOVE EXCESS OXIDE INHIBITOR.



11. CABLE CLEANING.

11.1. REMOVE ALL TRACES OF INSULATION SHIELD FROM
CABLE INSULATION.

11.2. ABRADE INSULATION (IF NECESSARY).

- DO NOT USE ABRASIVE ON INSULATION SHIELD. USE ONLY ON INSULATION.
- USE ONLY ALUMINUM OXIDE ABRASIVE-GRIT 120 OR FINER.
- DO NOT REDUCE DIAMETER OF CABLE INSULATION LESS THEN ALLOWED (See page 1, table 1).

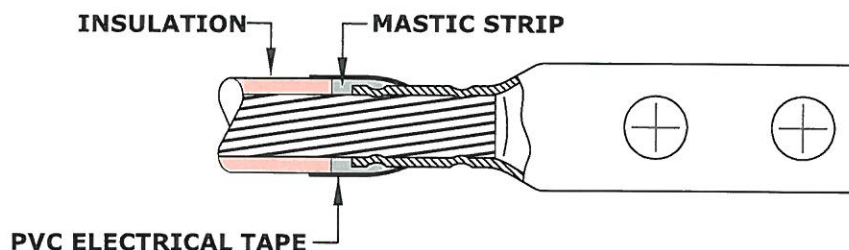
11.3. WIPE CABLE INSULATION WITH APPROVED SOLVENT.

- DO NOT ALLOW SOLVENT TO COME IN CONTACT THE INSULATION SHIELD.
- ALLOW SOLVENT TO EVAPORATE.

12. FINAL CABLE PREPARATION & MOISTURE SEAL.

**NOTE: IF THE DIAMETER OF THE CONNECTOR IS SMALLER THAN THE
DIAMETER OF THE INSULATION, A MOISTURE SEAL NEEDS TO BE MADE.**

- FILL ANY AREA BETWEEN THE BARREL AND INSULATION WITH MASTIC STRIP.
- COVER THE MASTIC STRIP WITH TWO LAYERS OF PVC ELECTRICAL TAPE.
- THE BASE OF THE CONNECTOR SHOULD BE BUILT UP TO THE SAME DIAMETER AS THE INSULATION.



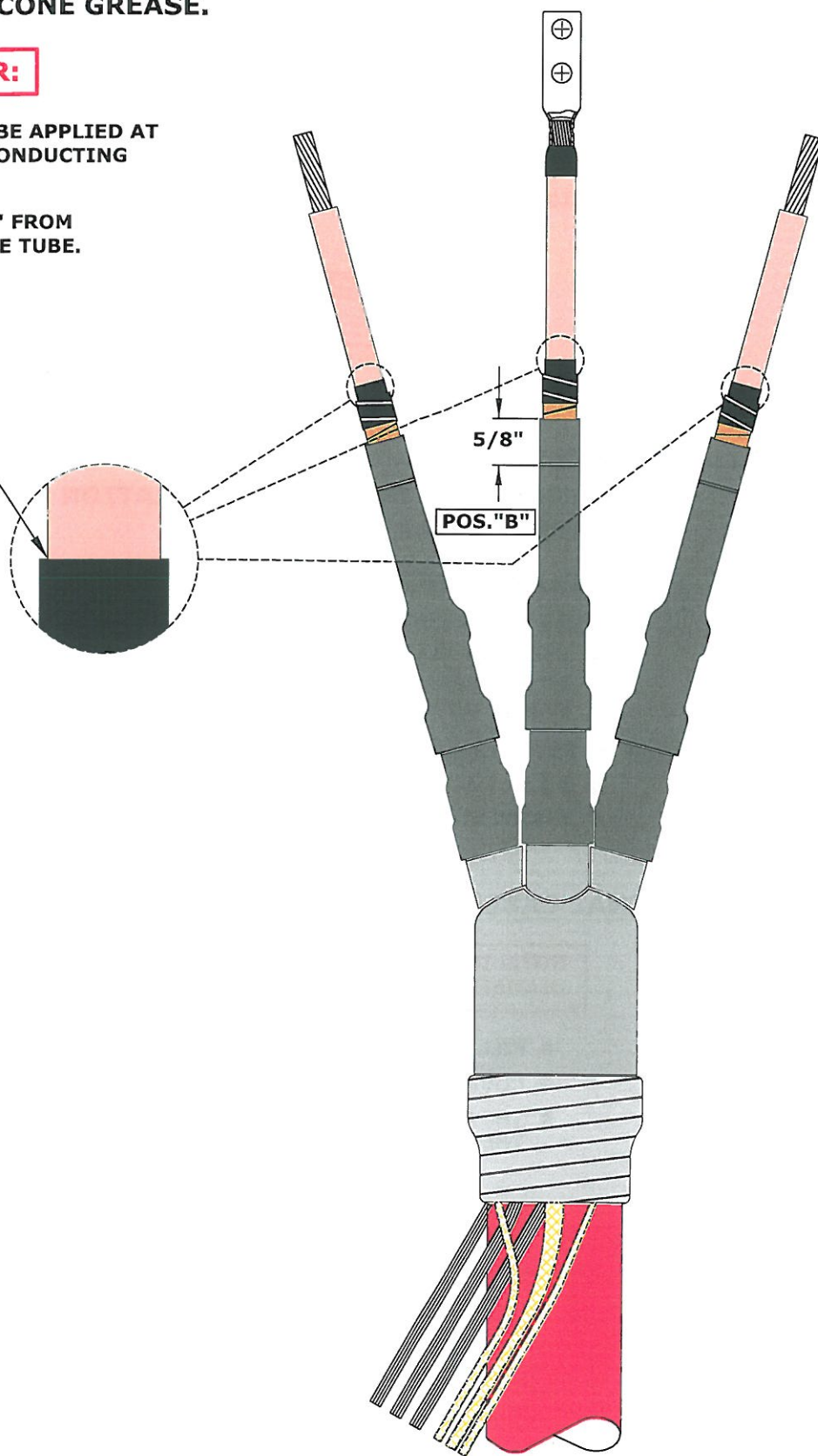
13. APPLICATION OF SILICONE GREASE.

ON EACH CONDUCTOR:

13.1. SILICONE GREASE MUST BE APPLIED AT
THE STEP OF THE SEMI-CONDUCTING
INSULATION SHIELD.

13.2. MARK POSITION "B" 5/8" FROM
THE TOP OF THE SILICONE TUBE.

FILL THE STEP WITH
SILICONE GREASE

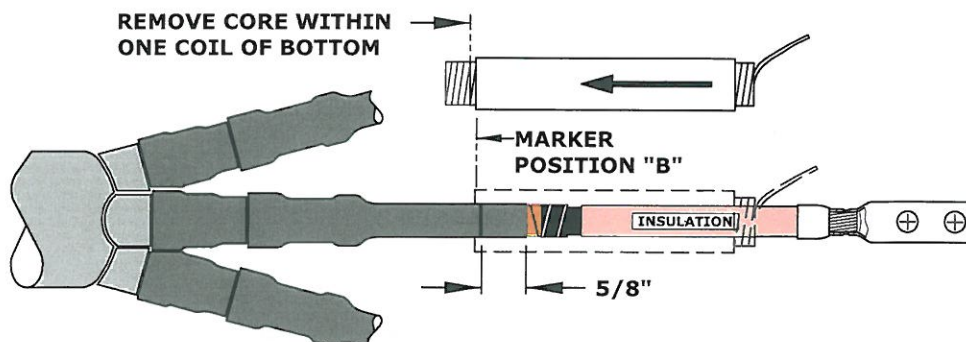


14. INSTALLING INDOOR TERMINATION.

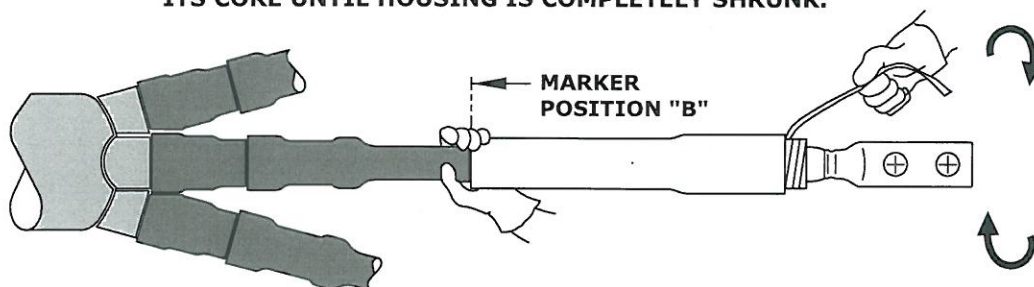
ON EACH CONDUCTOR:

14.1. PULL LOOSE END OF REMOVABLE CORE THROUGH TOP OF TERMINATION TO WITHIN ONE COIL OF BOTTOM.

14.2. SLIDE HOUSING OF TERMINATION BODY OVER CABLE AND ALIGN BOTTOM EDGE OF TERMINATION WITH MARKER POSITION "B".



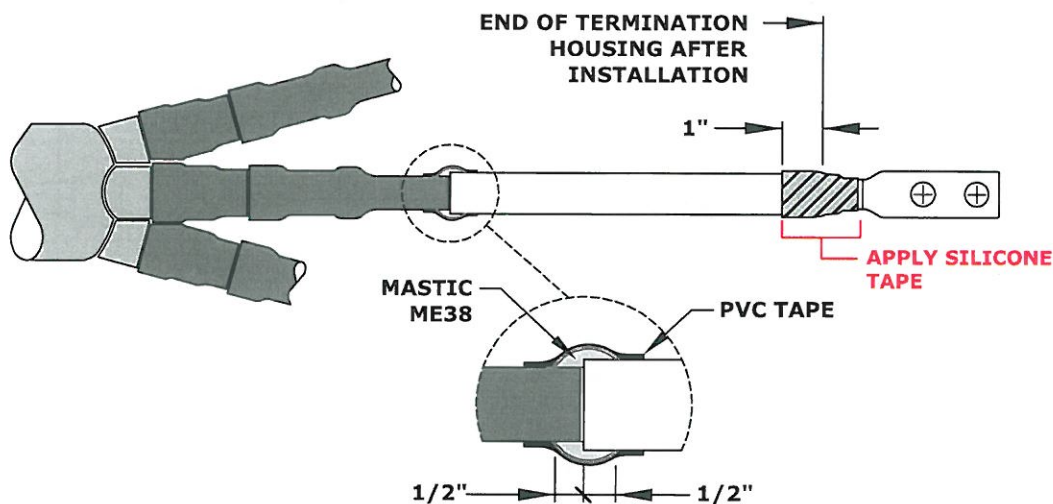
14.3. HOLD THE BOTTOM OF THE HOUSING AND PULL THE TAB TO UNWIND ITS CORE UNTIL HOUSING IS COMPLETELY SHRUNK.



14.4. COMPLETE CONNECTOR SEAL BY STRETCH WRAPPING THE SILICONE TAPE AT THE TOP OF THE TERMINATION. OVERLAP 1" OF TERMINATION HOUSING AND OVER THE CONNECTOR BARREL AS SHOWN BELOW.

14.5. APPLY ONE LAYER OF MASTIC (ME 38) 1/2" ONTO EXTENSION TUBE & 1/2" ON TERMINATION HOUSING.

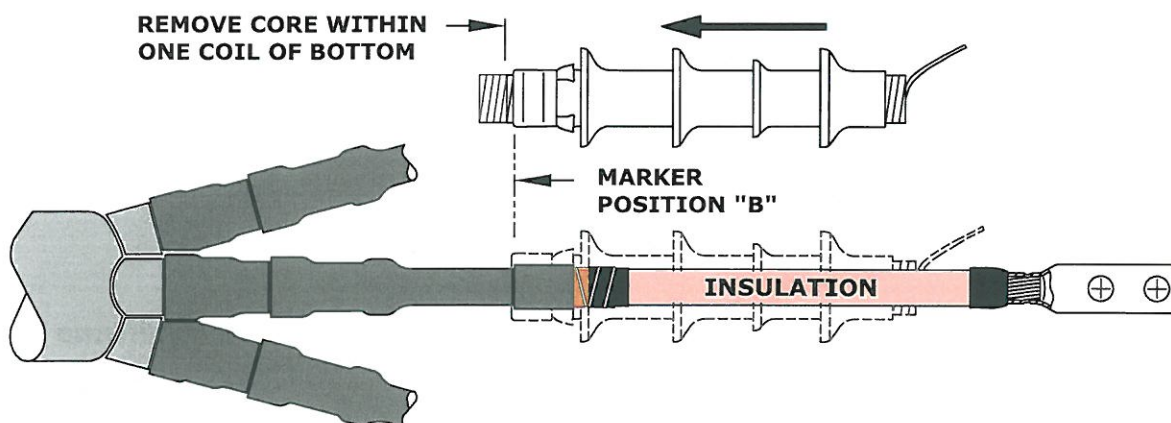
14.6. COVER THE MASTIC ME38 WITH ONE HALF-LAPPED LAYER OF PVC TAPE.



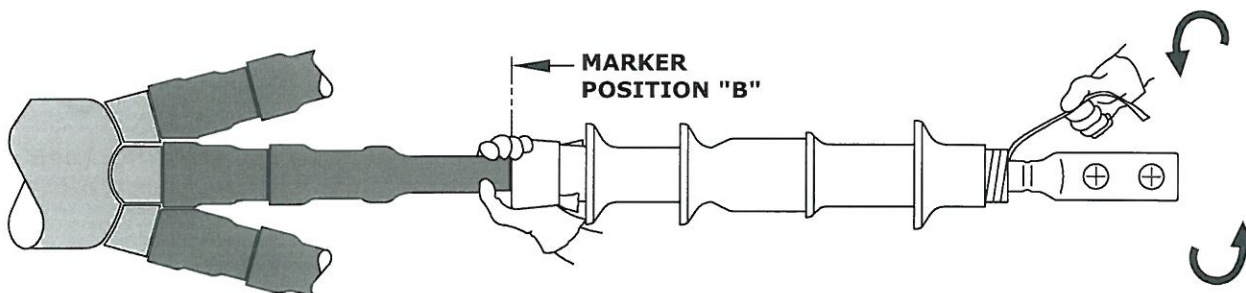
15. INSTALLING OUTDOOR TERMINATION.

ON EACH CONDUCTOR:

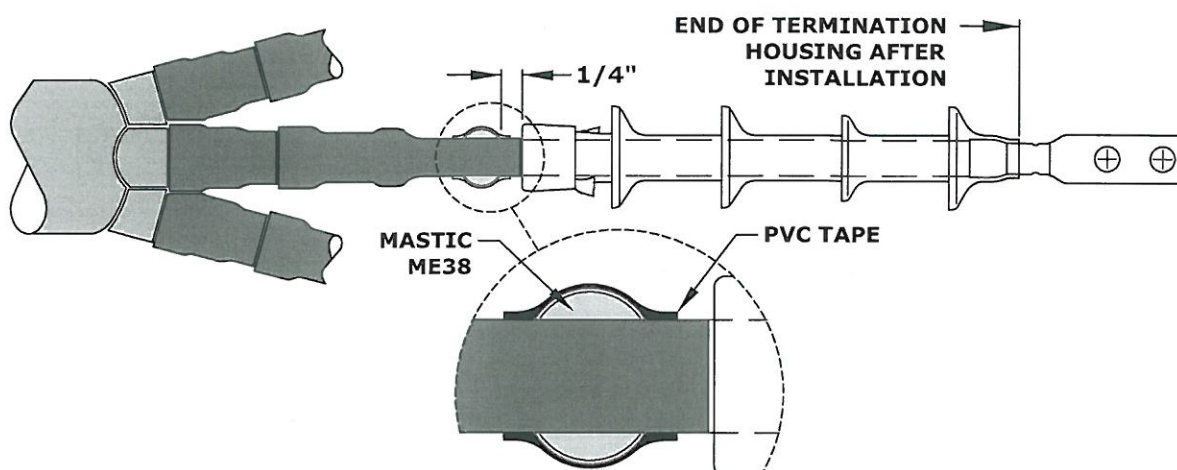
- 15.1. PULL LOOSE END OF REMOVABLE CORE THROUGH TOP OF TERMINATION WITHIN ONE COIL OF BOTTOM.
- 15.2. SLIDE HOUSING OF TERMINATION BODY OVER CABLE AND ALIGN BOTTOM EDGE OF TERMINATION WITH MARKER POSITION "B".



- 15.3. HOLD THE BOTTOM OF THE HOUSING ON MARKER "B". PULL THE TAB TO UNWIND ITS CORE UNTIL HOUSING IS COMPLETELY SHRUNK.



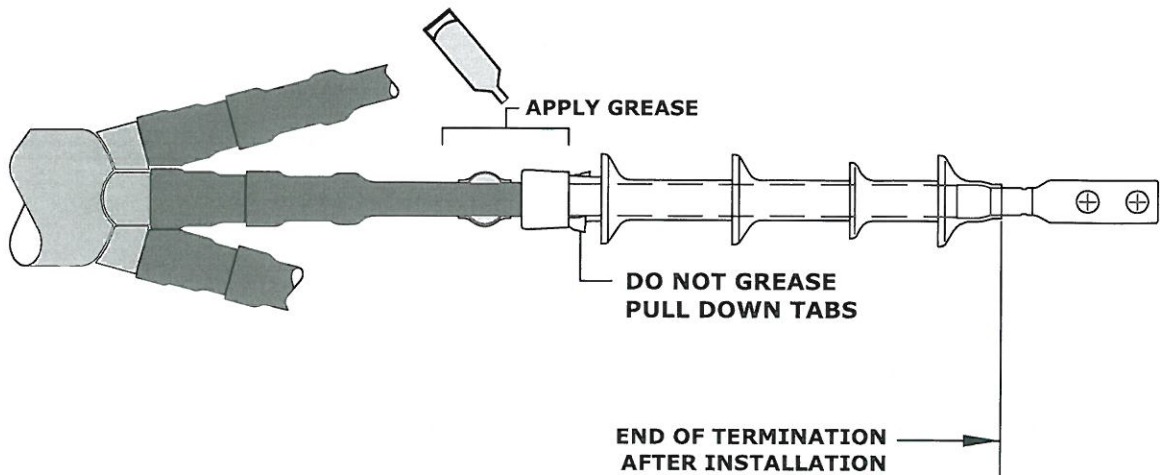
- 15.4. APPLY ONE LAYER OF MASTIC ME 38 ABOUT 1/4 " BELOW THE FOLDED SECTION OF THE SILICONE HOUSING AND COVER WITH ONE LAYER OF PVC TAPE.



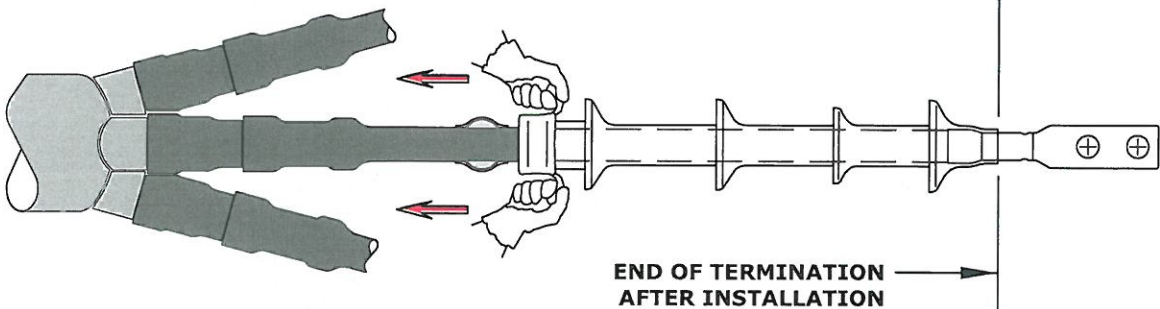
15. INSTALLING TERMINATION (CONT.)

ON EACH CONDUCTOR:

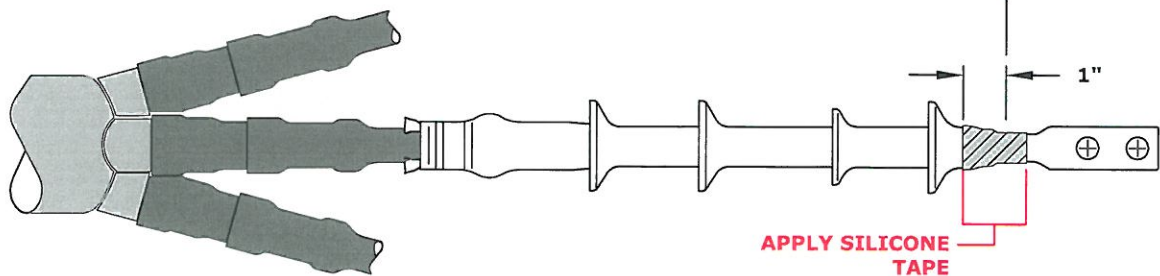
15.5. APPLY GREASE OVER THE FOLDED SECTION OF THE HOUSING AND PVC TAPE PREVIOUSLY APPLIED, AS SHOWN.



15.6. TO EXTEND THE HOUSING, FIRMLY HOLD THE BOOT TABS AND PULL COMPLETELY DOWN OVER THE PVC COVERED MASTIC.



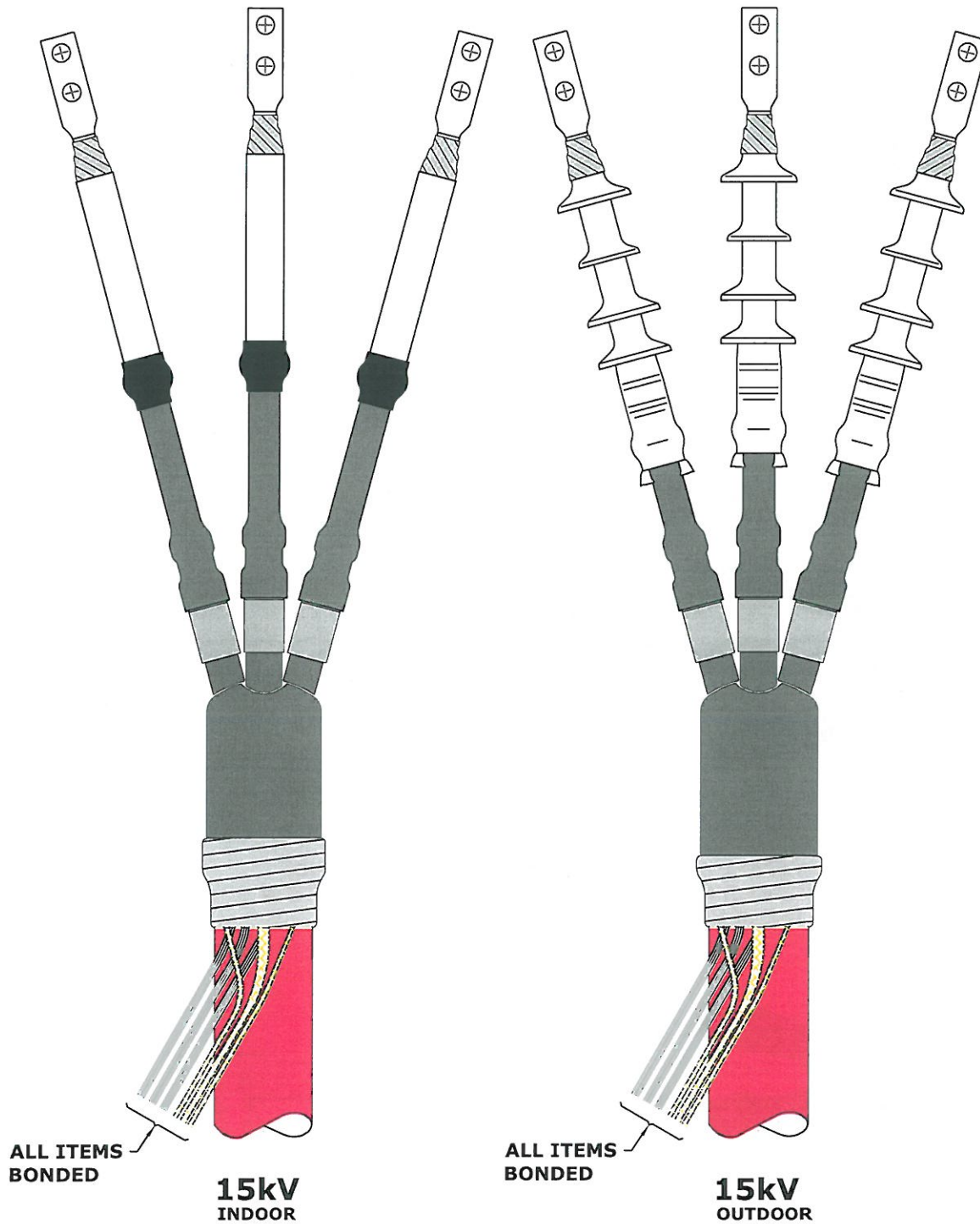
15.7. COMPLETE CONNECTOR SEAL BY STRETCH WRAPPING THE SILICONE TAPE AT THE TOP OF THE TERMINATION. OVERLAP 1" OF TERMINATION HOUSING AND OVER THE CONNECTOR BARREL AS SHOWN BELOW.



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15. INSTALLING TERMINATION (CONT.)

**THE DRAWING BELOW SHOWS Terminations AFTER
INSTALLATION PROCEDURE IS COMPLETED.**



16. LIMITED WARRANTY.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED OR ARISING OTHERWISE, INCLUDING WARRANTIES OF FITNESS FOR USE AND MERCHANTABILITY.

THE RESPONSIBILITY OF SELLER SHALL BE STRICTLY LIMITED TO REPAIR OR REPLENISHMENT, AT SELLER'S SOLE OPTION, OF ANY PRODUCTS WHICH ARE DEFECTIVE.

A DEFECTIVE PRODUCT SHALL BE A PRODUCT WHICH DOES NOT MEET THE SPECIFICATIONS SET FORTH IN THE ACCOMPANYING LITERATURE OR THE SPECIFICATION SUPPLIED BY SELLER.

THIS EXPRESSLY LIMITED WARRANTY SHALL BE NULL AND VOID IF THE PRODUCT IS IMPROPERLY USED, HANDLED OR INSTALLED.

SHOULD A REPAIR OR REPLACEMENT UNDER THIS WARRANTY OCCUR AND IT IS DETERMINED BY SELLER THAT THE PRODUCT WAS IMPROPERLY USED, HANDLED OR INSTALLED, PURCHASER SHALL PROMPTLY REIMBURSE SELLER FOR COSTS AND EXPENSES OF REPAIR OR REPLENISHMENT.

UNDER NO CIRCUMSTANCES SHALL SELLER BE RESPONSIBLE FOR DAMAGES TO PERSONS OR PROPERTY ARISING FROM THE PURCHASE, USE OR MISUSE OF THE PRODUCT INCLUDING ALL OR ANY CONSEQUENTIAL, EXEMPLARY, DIRECT OR INDIRECT, OR OTHER DAMAGES OF ANY KIND OR TYPE WHATSOEVER.

PURCHASER EXPRESSLY ACCEPTS THESE TERMS AND CONDITIONS AND RESTRICTIONS OF LIABILITY.

SELLER EXPRESSLY REJECTS ALL OTHER STATEMENTS REGARDING WARRANTY OR LIABILITY FROM ANY SOURCE WHATSOEVER.

PURCHASER ACKNOWLEDGES THAT THIS PRODUCT OR ITS USE OR INSTALLATION, OR ITS MISUSE OR MISAPPLICATION, MAY CAUSE PHYSICAL INJURY INCLUDING DEATH, AND MAY ALSO CAUSE PROPERTY DAMAGE.

THE PROPER USE OR INSTALLATION OF THIS PRODUCT REQUIRES THE SKILLS AND EXPERTISE OF A LICENSED ELECTRICIAN.

ANY ATTEMPT TO USE OR INSTALL THIS PRODUCT BY A PERSON OR PERSONS NOT QUALIFIED TO USE OR INSTALL THIS PRODUCT, OR ANY MISAPPLICATION, USE OR IMPROPER INSTALLATION BY ANY PERSON, SHALL STRICTLY AND ABSOLUTELY BE THE RESPONSIBILITY OF THE USER AND THE USER UNCONDITIONALLY ACCEPTS ALL RISK ATTENDANT THERETO.

