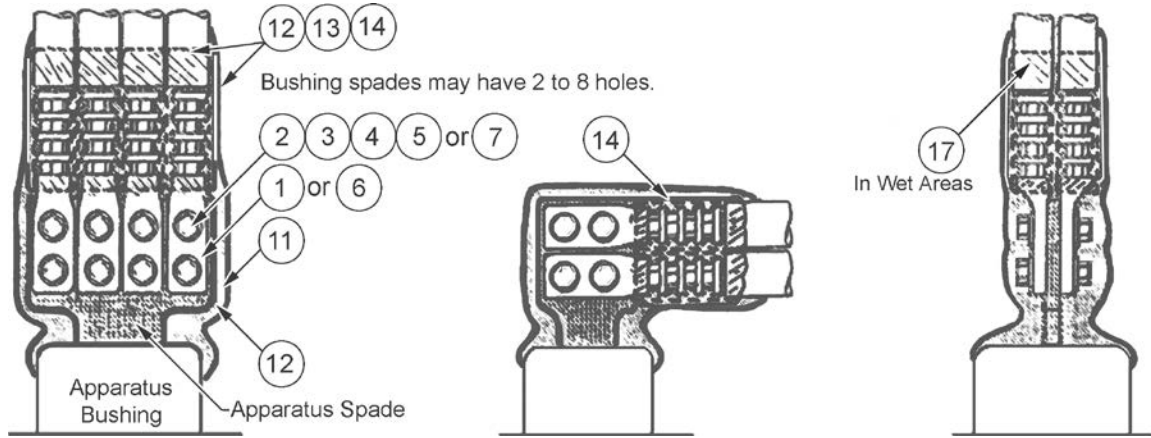


CONSTRUCTION GUIDELINE

**TRANSFORMER AND NETWORK PROTECTOR
 SECONDARY BOLTING AND TAPING**



**Front View for Network
 Protectors / Side View
 Transformer**

**Alternate Side View
 for Transformers**

**Side View for Network
 Protectors / End View
 for Transformers**

Notes:

1. **Train the conductors** into the final locations, cut to length, and install lugs. Be sure to use the correct size lugs and compression tool.
2. **On all joints** the mating surfaces must conform to each other. The shapes must be brought to flat with the use of a file to remove any burrs, deformations, irregularities, or weld spatter.
3. **For copper to copper joints:** Use silicon-bronze bolts, nuts washers, and lock washers (items 2 thru 6). Refer to Construction Guideline D14-4/NSV-20 and DU5-1/NSV-30.
4. **For copper to aluminum joints:** Use aluminum kits Stock No. 782050, 782051, and 782052. Refer to Material Standard 7820.0.
5. **For aluminum to aluminum joints:** Use aluminum kits Stock No. 782050, 782051, and 782052. Refer to Material Standard 7820.0.
6. **Taping in rain or drip:** Use item 17, network protector breakout boot, if available. The five steps which follow can be used if the boot is not available.
 - 6a. Thoroughly clean the surface over which the tapes are to be applied. Heat shrinks (6") should be applied over connector barrel, heat shrinking until glue flows.
 - 6b. Apply one half lapped layer of plastic electrical tape, adhesive side exposed over all metallic parts (spade, terminal, exposed bare conductor). Do not apply over porcelain or epoxy portions of the bushing, nor over the heat shrinks.
 - 6c. Mold insulation and waterproofing compound around adhesive exposed tape, and over cable and bushing one inch to make a smooth surface for plastic taping and water sealing.
 - 6d. Apply two half-lap layers of plastic tape to cover the entire bolted connection and a portion of the bushing and the heat shrink as shown.
 - 6e. Cover plastic tape with friction tape and paint with insulating varnish.

STANDARDS COORDINATOR

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CONSTRUCTION GUIDELINETransformer and Network Protector
Secondary Bolting and TapingSTANDARD NUMBER: **U11-9/NTP-110**

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SUPERSEDING: October 29, 2014

EFFECTIVE DATE: October 26, 2016

- 7. Taping in dry vaults or out of the rain or drip:** Apply three layers of the varnish cambric over exposed conductor and overlapping bushing and cable insulation at least one inch. Pull down with 3/4" plastic to conform then cover with friction tape (3/4" and 2" as necessary) one-half lapped. Paint with insulating varnish.
- 8. Network Protector Grounding:** Bond the network protector grounding boss to the network transformer grounding boss using the wire sizes in NTP-80.

Material List: Quantities of items to be determined by the engineer and/or the installer.

Item	Description		Stock No.
1	TERMINAL, copper compression, use 1/2" diameter bolts	2/0	677077
		3/0	677079
		4/0	677081
		250 kcmil	677083
		300 kcmil	677085
		350 kcmil	677087
		500 kcmil	677091
		600 kcmil	677096
		750 kcmil	677100
		1000 kcmil	677110
2	CAP SCREW, silicon bronze, reg. hex. 1/2" x 1-1/2" NC		784587
3	NUT, silicon bronze reg. hex. 1/2"		783325
4	WASHER, flat, silicon bronze 1/2"		788026
5	WASHER, split lock, silicon bronze 1/2"		788125
6	TERMINAL, aluminum compression	2/0	651257
		3/0	651258
		4/0	651265
		350 kcmil	651268
		500 kcmil	651270
		750 kcmil	651272
		750 kcmil compressed	651275*
7	ALUMINUM ASSEMBLY KITS: belleville washer, aluminum bolt, spring washer assembly	1-3/4"	782050
		2-1/2"	782051
		3-1/4"	782052
8	VARNISHED CAMBRIC		735283
9	TAPE, friction, 2"		736415
11	TAPE, insulating and waterproofing "Aqua Seal"		736470
12	TAPE, electrical, low temperature		736655
13	TAPE, friction, 3/4"		736400
14	HEAT SHRINK TUBING		010414
			737622
			737623
15	OXIDE INHIBITING COMPOUND NO-OX-ID "A"		725696
16	VARNISH, insulating, clear, quart		725471
17	CABLE BOOT, network protector breakout, 4 legs		012479

* For use with Excelloy 750 kcmil Al compressed round