

BUS BARS
TAPING AND CLEANING

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1. GENERAL

1.1 Scope

1.1.1 This section covers the methods for cleaning bus bars when necessary for appearance, and for taping bus bars and associated lugs, terminals and studs. Use this section with other sections in the 8 series.

1.2 Purpose

1.2.1 The purpose of taping is to prevent accidental contact by operating personnel with live bus bars and terminals, and to prevent short circuits of live parts by tools during maintenance.

1.2.2 General taping instructions contained herein supplement those on drawings and job papers.

2. INSTALLING EQUIPMENT

2.1 The required tools and supplies are shown in Section 8A.

3. TAPING

3.1 General

3.1.1 Apply all tape half-lapped. Half-lapped is considered one layer.

3.1.2 At terminals and lugs apply tape to extend at least 1/2" along the wire.

3.1.3 Tape to within 1/2" of panels.

3.1.4 Laminated bars may be taped collectively.

3.1.5 Terminal lugs in a row on a bus bar may be taped collectively up to three lugs in a group.

3.1.6 When it is necessary to supplement or replace the gray plastic tape applied by the shop, use plastic tape. If not available, use friction tape.

3.17 As an aid in applying friction tape in confined locations make small rolls by rolling directly against the original roll. Once started, this smaller roll (sticky side out) can be applied by the manipulation of the finger tips alone.

3.2 Ground Bars

3.2.1 Ground bars and associated ground lugs and terminals do not require taping except as follows:

3.2.1.1 Tape portions of the ground bar in close proximity to live untaped exposed terminal, studs etc. that must be worked on with maintenance tools, except in power rooms or in power board lineups (two or more bays containing power equipment exclusively).

3.2.1.2 Tape only that part of the bar so involved with two layers of friction tape and apply one coat of shellac. If plastic tape is used, omit the shellac.

3.2.2 Frequently ground bars are taped by the shop. For economical reasons all bars are bench taped rather than to distinguish between those that do and those that do not require taping. This does no harm and in no way obligates the installer to tape similar ground bars.

3.3 Communication Circuits - Bars, Details Etc. 150 Volts or Less to Ground

3.3.1 In determining the voltage of equipment connected to storage batteries, it may be considered as two volts per cell. For example, a 70 cell battery will be regarded as 140 volts even though it may be floated at 150 volts or slightly higher.

3.3.2 Taping shall be performed per Table A.

3.3.3 Tape where required with minimum of one layer of friction or plastic tape.

TABLE A

COMMUNICATION CIRCUITS - LIVE BUS BARS, 150 VOLTS OR LESS TO GROUND (PAR. 3.32)

EQUIPMENT	ITEM	TAPED	NOT TAPED	LINE NO.
Equipment within the power room (Protected Location) (See Note 1)	Bus bars and associated lugs, terminals and studs		X	1
Terminal room and switch room equipment within enclosures	Bus bars and associated lugs, terminals and studs		X	2
Equipment within Operating Room Switch boards	Bus bars and associated lugs, terminals and studs (See notes 3 and 4)	X		3
Shelves, panels, boards etc. in- cluding power panels and power boards located on open type frames, racks, boards and bays; except in power rooms. EXAMPLES: Battery Distributing Fuse Boards (open type or enclosed type not provided with rear covers) Panel and Step by Step fuse panels Relay rack mounted fuse panels Power bays located in Switch and Terminal rooms	Bus bar extensions, interbay bay and intrabay bars, lugs, details, studs and terminals (See notes 2, 3, 4 and 6)	X		4
	Bus bars used for strapping fuse studs other than alarm type (See note 5)		X	5
	Bars mounted against panels		X	6
	Fuse posts for alarm type fuses		X	7
	Unprotected terminals of resistors, lamp sockets and similar types of apparatus located at the rear of fuse panels		X	8
Notes apply where specified.				
<u>NOTE 1:</u> On some older power boards, bus bars, fuse studs and equipments operating at less than 150 volts (usually 130 volts) were taped. When additions are made it is desirable that taping be uniform. The additions, therefore, should be taped.				
<u>NOTE 2:</u> Lugs on studs and studs on the rear of Battery Distributing Fuse Boards do not require taping.				
<u>NOTE 3:</u> Tape lugs extending the tape 1/2" on to the wire. Tape studs and bars to within 1/2" of the panel.				
<u>NOTE 4:</u> Omit tape where insulators or insulating supports are provided.				
<u>NOTE 5:</u> Tape feeder extensions to the first fuse stud only.				
<u>NOTE 6:</u> Feeders and straps on mounting plates for 70-type fuses on Step-by-Step line finder, selector, and connector shelves do not require tape except as indicated on drawing where switchman's telephone jacks interfere.				
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3.34 Rubber tape may be used to fill in voids and pad corners and edges before applying friction tape.

3.35 Where fuse panels having bus bar extensions which should be taped are in inaccessible locations after assembly, they should be taped if feasible, prior to assembly. This would apply, for example, to the fuse panel assembly on 701A PBX LF units per J58801 which have bus bar extensions to which a piece part terminal and lead is attached.

3.36 Place one coat of shellac on the friction tape.

3.4 Communication Circuits - Bars
Details Etc. More Than 150 Volts to
Ground

3.41 Protection of personnel against voltages in excess of 150 is usually accomplished by enclosures or barriers. In the absence of such protection taping is required.

3.42 In determining the voltage of equipment connected to storage batteries, it may be considered as two volts per cell. For example, a 70 cell battery will be regarded as 140 volts even though it may be floated at approximately 150 volts or slightly higher.

3.43 Tape exposed bus bars, studs, nuts, details and associated lugs and punchings except for fuses and their associated mountings, to within one half inch or less of the panel with two layers of friction tape, or, if the shop has applied one layer of plastic or friction tape, the installer shall apply one additional layer of friction tape.

3.44 Rubber tape may be used to fill in voids and pad corners and edges before applying friction tape.

3.45 Place one coat of shellac on
the friction tape.

3.5 Power Service Circuits

3.51 With the general use of enclosed switch and fuse cabinets in present-day offices, there should be very little power service equipment requiring taping.

3.52 Tape all exposed live power service bus bars with two layers of varnished cambric tape and apply two coats of shellac.

3.521 Before taping junctions of bus bars, apply two or three layers of friction tape around sharp edges and corners. This will reduce the chance of cutting through the tape.

3.53 Tape all associated exposed live parts including studs, nuts, lugs, punchings, terminals, etc., at the rear of power boards or similar panels, except

fuses and their associated mountings. Also tape live parts under can covers, or in other enclosures if the enclosure contains both power service circuits and other circuits.

3.531 Use either one layer each of rubber tape and friction tape or two layers of varnished cambric tape. Apply two coats of shellac.

4. CLEANING

4.1 Remove paint, grease and similar foreign deposits by wiping with a cloth moistened with RM-645076 petroleum spirits, or by sanding with a fine abrasive cloth or paper.

4.2 Tarnish need not be cleaned from bus bars for the sake of appearance.

4.3 Identification numbers (except steel stamped) such as drawing numbers or detail numbers may be removed when they stand out conspicuously.

➔ Arrowed lines indicate new or changed information.

[Vertical line at side of paragraphs indicates requirements.

R. W. HILLEGAS
Engineer of Installation

Reason for Reissue:

- (1) To distinguish between items requiring tape and items that do not require tape as shown in Table A.
- (2) To include SXS selector and connector shelves in Note 6 of Table A.

Replaces Section 8C 7-20-61.