# GENERAL

## Summary

### Provide all services, labor, materials, tools, and equipment required for the complete and proper installation of telecommunications grounding and bonding for the Structured Cabling System as called for in these specifications and related drawings.

## System Description

### Each Telecommunications Room (TR) in a building shall have a Telecommunications Grounding Busbar (TGB) properly connected per ANSI/TIA/EIA-607.

### Relevant bonding and grounding infrastructure acronyms.

#### EK (Equipment Bonding Conductor): An insulated copper conductor that bonds metallic items and equipment to the TMGB and TGB.

#### IC (Interconnecting Bonding Conductor) (referred to in TIA/EIA-607 as the Bonding Conductor for Telecommunications): The copper conductor that bonds the TMGB to the service equipment (power) ground.

#### TBB (Telecommunications Bonding Backbone): An insulated copper conductor extending from the TMGB to each TGB.

#### TGB (Telecommunications Grounding Busbar): A copper ground reference busbar, typically installed in telecommunication rooms (TR) that is bonded to the TMGB by the TBB. The TGB references metallic entities in the TR space to ground.

#### TMGB (Telecommunications Main Grounding Busbar): A copper ground reference busbar, typically installed in the entrance facility or entrance room that is bonded to the service equipment (power) ground by the IC.

## Submittals

### Submit product data for the following:

#### TGB busbar.

#### Equipment rack busbars.

#### Two-hole and one-hole (with backstop) lugs.

#### No. 3/0 AWG and No. 6 AWG conductors.

### Submit details of grounding elements for equipment rack applications.

## Quality Assurance

### Comply with section 270000.

### All work will conform to Article 250-Grounding and Article 800-Communications of the National Electrical Code (NEC) for grounding, bonding, and protecting electrical and communications circuits.

### Materials and work specified herein shall comply with the applicable requirements of ANSI/TIA/EIA-607 Commercial Building Grounding and Bonding Requirements for Telecommunications.

### Materials and work specified herein shall comply with the applicable requirements of IEEE-426.

### If there is a conflict between the grounding standards, follow IEEE-426 as the primary standard.

### Delivery, Storage, and Handling

### Comply with section 270000.

# PRODUCTS

## Manufacturers

### All material must be UL listed.

### A single manufacturer will be used for all grounding material.

## Materials and Fabrication

### Telecommunication Main Grounding Busbar (TMGB) shall be 1/4" x 4" x 20" insulated copper ground bar in size.

### Telecommunication Grounding Busbar (TGB) shall be 1/4” x 4” x 10” insulated copper ground bar in size.

### Equipment Rack Busbars shall be 1/4” x 1” x 19” rack ground bar in size.

### Bonding Conductors

#### All bonding conductors shall be insulated copper. The exception is the use of flat, braided, aluminum ground straps utilized for bonding sections of aluminum cable trays.

#### Unless otherwise specified, size the conductors as required by NEC.

#### Unless otherwise specified, the IC (Interconnecting Bonding Conductor) (referred to in TIA/EIA-607 at the Bonding Conductor for Telecommunications) shall be insulated, copper, No. 3/0 AWG.

#### Unless otherwise specified, the TBB (Telecommunications Bonding Backbone) shall be green-colored (or identified as a grounding wire every 10 feet) insulated, copper, No. 3/0 AWG.

#### Unless otherwise specified, the EK (Equipment Bonding Conductor) shall be green-colored insulated, copper, No. 6 AWG.

### Bonding conductor terminations acceptable materials

#### Two-hole compression lugs: Color coded to appropriate cable, high conductivity wrought copper, electro tin plated, or approved equal.

#### One-hole compression lugs: Color coded to appropriate cable, high conductivity wrought copper, electro tin plated, or approved equal.

# EXECUTION

## Examination

### Comply with section 270000.

## Installation

### Provide all local bonding as specified on the drawings and in the specifications.

### Bonding conductors shall be continuous and routed in as direct a route as possible to the point of termination.

### All insulated ground bars must be isolated from the structural support by a 2-inch minimum separation, using manufacturer’s recommended insulating stand-offs and hardware.

### Clean ground bars prior to terminating conductors.

### Label all telecommunications bonding conductors as close as possible to their termination point.

### Confirm that the electrical contractor bonded the TMGB to the service equipment (power) ground, typically located in the electrical entrance facility, utilizing the most direct route possible to minimize conductor length.

### Bond the following when present.

#### Metallic equipment racks.

#### Cable shields.

#### All metal raceways and cable trays.

### Adjustments

#### Comply with section 270000.

END OF SECTION 270526