

ARTICLE 250

GROUNDING AND BONDING

Introduction to Article 250—Grounding and Bonding

Article 250 covers the general requirements for bonding and grounding electrical installations. The terminology used in this article has been a source of much confusion over the years so pay careful attention to the definitions pertaining to Article 250. Understanding the difference between bonding and grounding will help you correctly apply the provisions of this article. Because of the massive size and scope of Article 250, Figure 250.1 in the *NEC* is provided as a reference for the locations of the different types of rules. Of the ten parts contained in this article only parts one through seven are covered in this material. *Topics* covered in this material for Article 250 include:

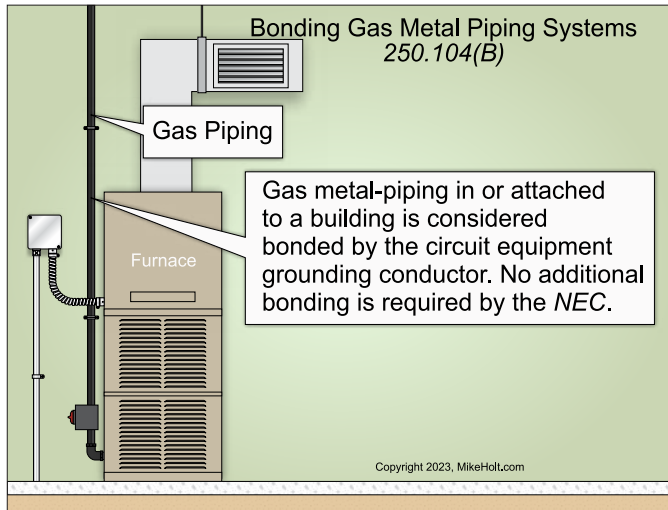
- ▶ General Requirements for Grounding and Bonding
- ▶ Objectionable Current
- ▶ Protection of Clamps and Fittings
- ▶ System Grounding Requirements
- ▶ Bonding Jumpers
- ▶ Generator Bonding
- ▶ Grounding Electrode System
- ▶ Service Equipment Bonding
- ▶ Piping System and Structural Steel Bonding
- ▶ Equipment Grounding conductors (EGCs)

Article 250 consists of ten parts:

- ▶ Part I. General
- ▶ Part II. System Grounding
- ▶ Part III. Grounding Electrode System and Grounding Electrode Conductor (GEC)
- ▶ Part IV. Enclosure, Raceway, and Service Cable Connections
- ▶ Part V. Bonding
- ▶ Part VI. Equipment Grounding Conductors (EGC)
- ▶ Part VII. Methods of EGC Connections
- ▶ Part VIII. Direct-Current Systems
- ▶ Part IX. Instruments, Meters, and Relays
- ▶ Part X. Grounding of Systems and Circuits of over 1000 Volts

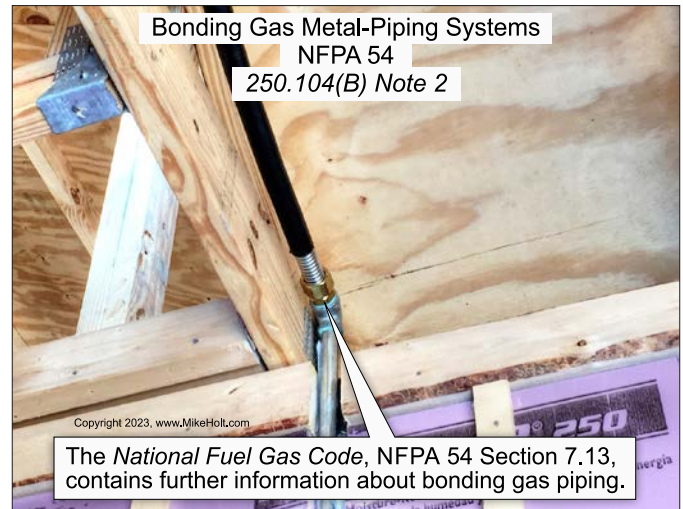
250.104 Bonding of Piping Systems and Exposed Structural Metal

(B) Bonding Other Metal-Piping Systems. Metal-piping systems in or attached to a building must be bonded. The piping is considered bonded when it is connected to an appliance that is connected to the circuit equipment grounding conductor. ▶Figure 250–204



▶Figure 250–204

Note 2: Additional information for gas piping systems can be found in NFPA 54, *National Fuel Gas Code* and NFPA 780, *Standard for the Installation of Lightning Protection Systems*. ▶Figure 250–205



▶Figure 250–205

Author's Comment:

- ▶ According to the *National Fuel Gas Code*, NFPA 54, section 7.12, you only need to bond CSST tubing if it is not of the "arc-resistant jacket type." See https://www.gastite.com/us/products/flashshield/flashshieldplus_csst/