

**ASAE EP381.1 JUL1988 (R2019)  
Specifications for Lightning Protection**



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## ASAE EP381.1 JUL1988 (R2019)

# Specifications for Lightning Protection

*Developed by a subcommittee of the ASAE Structures and Environment Division Standards Committee; approved by the Structures and Environment Division Standards Committee; adopted by ASAE March 1976; reconfirmed by the Electrical and Electronic Systems Division Standards Committee December 1981, December 1982, December 1987; revised July 1988; reaffirmed December 1993, December 1998; December 1999, February 2005; revised editorially February 2005; reaffirmed December 2009, December 2014, December 2019.*

**Keywords:** Grounding, Lightning, Safety, Silos, Structures

## 1 Purpose and Scope

**1.1** This Engineering Practice is intended as a guide for specifying farm lightning protection systems, and to check existing, new or proposed lightning protection systems against accepted standards of design, materials, and installation.

**1.2** This Engineering Practice is applicable to protection of farm homes, barns, sheds, silos, slatted floors, fences, trees, barn equipment and other sizable bodies of conductance or inductance. Included are ordinary structures up to 23 m (75 ft) high.

**1.3** Common assemblies on typical buildings are detailed to show current practices under normal conditions. Examples cannot cover the wide range of structural variations existing on farms. It is recommended that when a condition is not covered herein, the owner or his agent obtain engineering consultation by an engineer experienced in lightning protection principles, theories, and installation requirements, or from an established and recommended manufacturer or distributor of lightning protection materials and equipment.

**1.4** In areas not covered by this Engineering Practice, refer to the National Fire Protection Association Standard No. 78, Lightning Protection Code; Underwriters' Laboratories' Standard, Requirements for Master Label Lightning Protection; or Lightning Protection Institute Standard LPI-175, Installation Code.

## 2 Materials

**2.1** Materials for lightning protection shall be inherently resistant to corrosion or properly protected against corrosion. No materials shall be combined which form an electrolytic coupling that accelerates corrosion.

**2.2** Copper commonly required for commercial electrical work, with 98% conductivity when annealed, is the preferred material for farm lightning protection. Other acceptable materials are listed in paragraphs 2.3, 2.4 and 2.5. Material such as galvanized steel is not acceptable except as specified elsewhere in this Engineering Practice.

**2.3** Alloyed metals used shall be substantially as resistant to corrosion and have the same conductivity as copper under similar conditions.

**2.4** Copper-clad steel shall have a copper covering permanently and effectively welded to the steel core, in such proportions that conductance is not less than 30% of the conductance of an equivalent cross section of solid copper.