CLASS I LOCATIONS: Cable Sealing Requirements

NEC 2023, 501.15

This table is a summary of the cable sealing requirements in Article 501, Class I Locations, of the *National Electrical Code*, 2023 edition. For the complete requirements, refer to section 501.15.

Classification	Application	Location of Seal
Class I, Division 1	Enclosure with integral seal	Conduit seal fitting not required.
	Multiconductor Type MC-HL cables with a gastight/vaportight continuous corrugated metallic sheath and an overall jacket of suitable polymeric material	Seal at all terminations with a listed fitting after removing the jacket and any other covering, so that the sealing compound surrounds each individual insulated conductor.
	Cables in conduit with a gastight/vaportight continuous sheath capable of transmitting gases or vapors through the cable core	Seal in the Division 1 location after removing the jacket and any other coverings, so that the sealing compound surrounds each individual insulated conductor and the outer jacket.
	Multiconductor cables with a gastight/vaportight continuous sheath capable of transmitting gases or vapors through the cable core	Permitted to be considered a single conductor by sealing the cable in the conduit within 18 in. of the enclosure and the cable end within the enclosure by an approved means, to minimize the entrance of gases or vapors and prevent the propagation of flame into the cable core, or by other approved methods.
	For shielded cables and twisted pair cables	Removal of the shielding material or separation of the twisted pair is not required. Sealing the cable in the conduit and the cable end within the enclosure by an approved means to minimize the entrance of gases or vapors and prevent the propagation of flame into the cable core, or by other approved methods.
	Each multiconductor cable in conduit if the cable is incapable of transmitting gases or vapors through the cable core	Considered a single conductor. These cables are sealed in accordance with 501.15(A).
Class I, Division 2	Cables entering enclosures that are required to be explosionproof for Class I locations	Sealed at the point of entrance. These cables are sealed in accordance with the requirements of Division 1 locations.
	Multiconductor cables with a gastight/vaportight continuous sheath capable of transmitting gases or vapors through the cable core	Sealed in a listed fitting in the Division 2 location after removing the jacket and any other coverings, so that the sealing compound surrounds each individual insulated conductor.
	Multiconductor cables in conduit	Sealed in accordance with the requirements for Division 1 locations.
	Cables with a gastight/vaportight continuous sheath that will not transmit gases or vapors through the cable core in excess of the quantity permitted for seal fittings. The minimum length of such cable run is not less than that length that limits gas or vapor flow through the cable core to the rate permitted for seal fittings (0.007 ft^3 per hour of air at a pressure of 6 in. of water).	Not required to be sealed unless entering an enclosure that is required to be explosionproof.
	Cables with a gastight/vaportight continuous sheath capable of transmitting gases or vapors through the cable core	Not required to be sealed unless entering an enclosure that is required to be explosionproof or unless the cable is attached to process equipment or devices that may cause a pressure in excess of 6 in. of water to be exerted at a cable end, in which case a seal, barrier, or other means is provided to prevent migration of flammables into an unclassified area.
	Cables with an unbroken gastight/vaportight continuous sheath that pass through a Class I, Division 2 location	No seal required.
	Cables that do not have a gastight/vaportight continuous sheath	Sealed at the boundary of the Division 2 and unclassified location in such a manner as to minimize the passage of gases or vapors into an unclassified location.