

Exception No. 1 to (1): For motor-mounted anticondensation space heaters, see 501.125.

Exception No. 2 to (1): Where a current-limiting device is applied to the circuit serving the heater to limit the current in the heater to a value less than that required to raise the heater surface temperature to 80 percent of the autoignition temperature.

- (2) The heater shall be identified for Class I, Division 1 locations.

Exception to (2): Electrical resistance and skin effect heat tracing identified for Class I, Division 2 locations shall be permitted.

Informational Note No. 1: See ANSI/UL 60079-30-1, *Explosive Atmospheres — Part 30-1: Electrical Resistance Trace Heating — General and Testing Requirements*, for information on electric resistance heat tracing.

Informational Note No. 2: See IEEE 844.1/CSA C22.2 No. 293.1, *IEEE/CSA Standard for Skin Effect Trace Heating of Pipelines, Vessels, Equipment, and Structures — General, Testing, Marking, and Documentation Requirements*, for information on electric skin effect heat tracing.

Informational Note No. 3: See IEEE 844.3/CSA C22.2 No. 293.3, *IEEE/CSA Standard for Impedance Heating of Pipelines and Equipment — General, Testing, Marking, and Documentation Requirements*, for information on electric impedance heating.

- (2) **Motors.** Motors of motor-driven utilization equipment shall comply with 501.125(B).

- (3) **Switches, Circuit Breakers, and Fuses.** Switches, circuit breakers, and fuses shall comply with 501.115(B).

- N (4) Luminaires.** Luminaires shall comply with 501.130(B).

501.140 Flexible Cords, Class I, Divisions 1 and 2.

- (A) **Permitted Uses.** Flexible cord shall be permitted as follows:

- (1) For connection between portable lighting equipment or other portable utilization equipment and the fixed portion of their supply circuit. The flexible cord shall be attached to the utilization equipment with a cord connector listed for the protection technique of the equipment wiring compartment. An attachment plug in accordance with 501.140(B)(4) shall be employed.
- (2) For that portion of the circuit where the fixed wiring methods of 501.10(A) cannot provide the necessary degree of movement for fixed and mobile electrical utilization equipment, and the flexible cord is protected by location or by a suitable guard from damage and only in a restricted industrial establishment.
- (3) For electric submersible pumps with means for removal without entering the wet-pit. The extension of the flexible cord within a suitable raceway between the wet-pit and the power source shall be permitted.



EXHIBIT 501.13 A temporary portable assembly. (Courtesy of Killark, a division of Hubbell Incorporated)

- (4) For electric mixers intended for travel into and out of open-type mixing tanks or vats.
- (5) For temporary portable assemblies consisting of receptacles, switches, and other devices that are not considered portable utilization equipment but are individually listed for the location.

An example of a portable assembly that is not considered utilization equipment is a power cart (see Exhibit 501.13) that provides power during servicing or maintenance. The flexible cord is required to be continuous from the power source to the assembly and from the assembly to the utilization equipment.

- (B) **Installation.** Where flexible cords are used, the cords shall comply with all of the following:

- (1) Be of a type listed for extra-hard usage
- (2) Contain, in addition to the conductors of the circuit, an equipment grounding conductor complying with 400.23
- (3) Be supported by clamps or by other suitable means in such a manner that there is no tension on the terminal connections
- (4) In Division 1 locations or in Division 2 locations where the boxes, fittings, or enclosures are required to be explosionproof, the cord shall be terminated with a cord connector or attachment plug listed for the location or a listed cord connector installed with a seal listed for the location. In Division 2 locations where explosionproof equipment is not required, the cord shall be terminated with a listed cord connector or listed attachment plug.
- (5) Be of continuous length. Where 501.140(A)(5) is applied, cords shall be of continuous length from the power source to the temporary portable assembly and from the temporary portable assembly to the utilization equipment.

Informational Note: See 501.20 for flexible cords exposed to liquids having a deleterious effect on the conductor insulation.