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## Effective Grounding Systems

Effective grounding, one of the most important and least understood aspects of an electrical power system, is often overlooked during installation. Unfortunately, this oversight has led to equipment failures, higher operating costs, electrical noise, fire, personnel injury and even death. Conversely, a properly designed and well maintained wiring and grounding system will help ensure optimum equipment operation and personnel safety. To that end we must clearly understand what the differences are between an earth-grounding system and an equipment-grounding system. People often confuse these two. Such confusion can result in the misapplication of earth- and equipment-grounding practices and lead to a system that is expensive, inefficient, unsafe and/or fatal.

### EARTH-GROUNDING SYSTEM

The earth-grounding system, consisting of an

electrical connection(s) to earth by way of an earth-electrode(s) provides:

- Protection from lightning, line surges, and/or higher voltage systems
- Protection from static-charge build up
- Zero-voltage reference point needed for proper system performance

The quality of the earth-ground connection determines its resistance and can be improved by:

- Increasing the surface area of the electrode(s)
- Increasing moisture or conductive mineral content of the soil
- Increasing the land area covered by the grounding system

The National Electrical Code (NEC) specifies a maximum earth-ground resistance of 25 ohms or less. A value of 1 ohm or less is desirable for sensor circuit operation.

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## New EPG Landfill Design Catalog

Our new, 285-page Landfill Design Catalog is now available for all those involved in the designing and specifying of leachate, liquid, gas handling or process control systems. Topics covered include:

- Sec. 1 SurePump™ Sump Drainers
- Sec. 2 Pump Discharge Disconnects
- Sec. 3 Miscellaneous Accessories
- Sec. 4 PumpMaster™ Control Panels
- Sec. 5 Level Monitoring & Control
- Sec. 6 Flow Metering & Control
- Sec. 7 Data Acq., SCADA & Telemetry
- Sec. 8 Breakout Junction Boxes
- Sec. 9 Design Guides
- Sec. 10 Technical Information

The catalog may be obtained by submitting a request form at [www.epgco.com](http://www.epgco.com) or by calling EPG at 800-443-7426.



If you would like more information about EPG products, services and/or capabilities, please call us at 1-800-443-7426, visit our web site at [www.epgco.com](http://www.epgco.com) or e-mail us at [info1@epgco.com](mailto:info1@epgco.com).