

INSTRUCTION SHEET

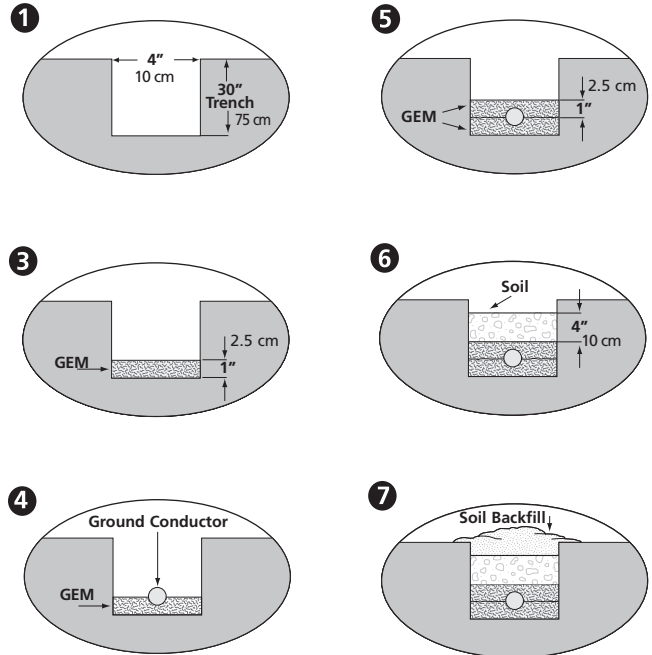
GROUND ENHANCEMENT MATERIAL (GEM)

TRENCH INSTALLATION

1. Premix GEM into a slurry form. Use 1-1/2 to 2 gallons (5.7 to 7.6 liters) of clean potable water per pail of GEM.
2. To mix GEM into a slurry form, use a standard cement mixer or mix in the GEM pail, a mixing box, wheelbarrow, etc. Use 1-1/2 to 2 gallons (5.7 to 7.6 liters) of clean-potable water per pail of GEM. Do not mix GEM with salt water.
3. Spread out enough GEM to uniformly cover bottom of trench—about 1 inch (2.5 cm) deep. (See table)
4. Place conductor on top of GEM. (See Note 1)
5. Spread more GEM on top of conductor to completely cover conductor—about 1 inch (2.5 cm) deep. Allow GEM to harden.
6. Carefully cover the GEM with soil to a depth of about 4 inches (10 cm), making sure not to expose the conductor.
7. Tamp down the soil, then fill in the trench.

Note 1: 4" (10 cm) of insulation should be applied to the conductors and ground rods exiting the GEM, starting 2" (5 cm) inside the GEM.

Note 2: Excess standing water must be removed from trench.



Estimated linear feet of ground conductor covering with each pail of GEM.

| Trench Width (inches / cm) | Total Thickness of GEM (inches / cm) | | | | | | | |
|-------------------------------|--------------------------------------|--------|------|--------|------|--------|------|---------|
| | 1" | 2.5 cm | 2" | 5.0 cm | 3" | 7.5 cm | 4" | 10.0 cm |
| 4" 10.0 cm | 14.0' | 4.27 m | 7.0' | 2.13 m | 4.7' | 1.43 m | 3.5' | 1.06 m |
| 6" 15.2 cm | 9.3' | 2.83 m | 4.7' | 1.43 m | 3.1' | 0.94 m | 2.3' | 0.70 m |
| 8" 20.3 cm | 7.0' | 2.13 m | 3.5' | 1.06 m | 2.3' | 0.70 m | 1.8' | 0.55 m |
| 10" 25.4 cm | 5.6' | 1.70 m | 2.8' | 0.85 m | 1.9' | 0.57 m | 1.4' | 0.42 m |
| 12" 30.5 cm | 4.7' | 1.43 m | 2.3' | 0.70 m | 1.6' | 0.48 m | 1.2' | 0.37 m |

A 25-pound pail of GEM will cover 7 linear feet (2.1 m) of conductor length for a 4-inch-wide (10 cm), 2-inch-thick (5 cm) covering (1 inch (2.5 cm) below and 1 inch (2.5 cm) above conductor), based on a density of 63.5 lb/cu.ft.

WARNING

1. ERICO products shall be installed and used only as indicated in ERICO product instruction sheets and training materials. Instruction sheets are available at www.erico.com and from your ERICO customer service representative.
2. ERICO products must never be used for a purpose other than the purpose for which they were designed or in a manner that exceeds specified load ratings.
3. All instructions must be completely followed to ensure proper and safe installation and performance.
4. Improper installation, misuse, misapplication or other failure to completely follow ERICO's instructions and warnings may cause product malfunction, property damage, serious bodily injury and death.

SAFETY INSTRUCTIONS: All governing codes and regulations and those required by the job site must be observed. Always use appropriate safety equipment such as eye protection, hard hat, and gloves as appropriate to the application.

Ground Enhancement Material (GEM) contains hydraulic cements and should be handled with the same precautions as used with portland cement.

PLEASE OBSERVE THESE SAFETY PRECAUTIONS KEEP OUT OF REACH OF CHILDREN

CAUTION

Contact with GEM may irritate skin and tissues. Avoid contact, ingestion or breathing the product.

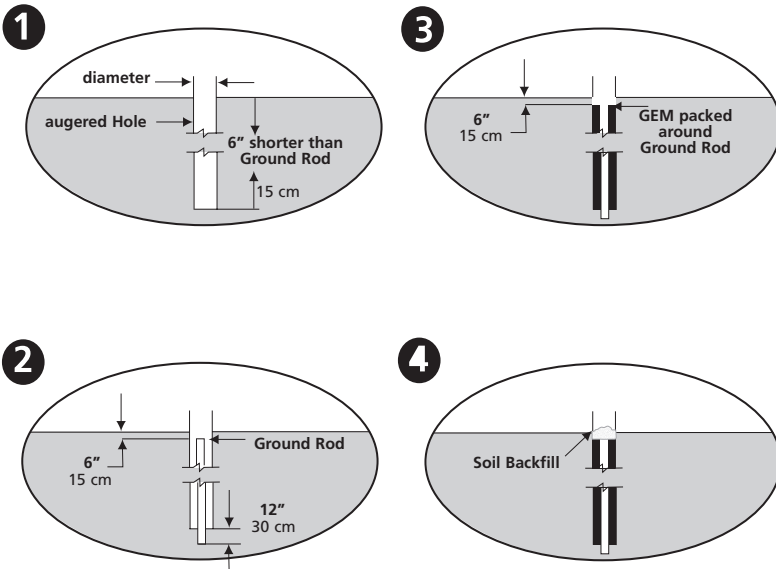
1. Wear eye protection. If GEM gets into the eye, rinse immediately and repeatedly with water and get prompt medical attention.
2. Wear respiratory protection when exposed to GEM dust.
3. Protect skin with boots, gloves and clothing.
4. Avoid prolonged contact of GEM with skin. Wash skin promptly after any contact with GEM.
5. If GEM is ingested, drink large quantities of water immediately and then induce vomiting. Get medical attention immediately.
6. Do not smoke when using GEM.
7. Do not expose GEM to open flame.



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GROUND ROD BACKFILL INSTALLATION



1. Auger a 3-inch (7.5 cm) or larger diameter hole to a depth of 6 inches (15 cm) less than the length of the ground rod.
2. Place ground rod into augered hole and drive one foot (if possible) into bottom of the hole. The top of the ground rod will be approximately 6 inches (15 cm) below grade. At this time, make any connections to ground rod using CADWELD® connections. (See Note 1)
3. Premix GEM into a slurry form. Use 1-1/2 to 2 gallons (5.7 to 7.6 liters) of clean-potable water per pail of GEM.
4. Pour the appropriate amount of GEM (see table) around the ground rod. To ensure the GEM material completely fills the hole, tamp around the ground rod with a pole.
5. Fill remainder of augered hole with soil removed during augering. For various augered-hole diameters and depths, see the table below.

Note 1: 4" (10 cm) of insulation should be applied to the conductors and ground rods exiting the GEM, starting 2" (5 cm) inside the GEM.

Note 2: Excess standing water must be removed from the hole.

Estimated pail of GEM for backfilling around ground rods to a density of 63.5 lb/cu ft³

| Dia. Of hole (inches/cm) | Depth of hole (feet)* | | | | | | | | | |
|--------------------------|-----------------------|----------|----------|----------|-----------|-----------|-----------|--|--|--|
| | 6' 1.8 m | 7' 2.1 m | 8' 2.4 m | 9' 2.8 m | 17' 5.2 m | 19' 5.8 m | 20' 6.1 m | | | |
| 3 7.5 | 2 | 2 | 2 | 2 | 4 | 4 | 4 | | | |
| 4 10.0 | 2 | 3 | 3 | 3 | 6 | 7 | 7 | | | |
| 5 12.7 | 3 | 4 | 4 | 5 | 9 | 10 | 10 | | | |
| 6 15.2 | 5 | 5 | 6 | 7 | 13 | 14 | 15 | | | |
| 7 17.8 | 6 | 7 | 8 | 9 | 17 | 19 | 20 | | | |
| 8 20.3 | 8 | 9 | 11 | 12 | 22 | 25 | 26 | | | |
| 9 22.9 | 10 | 12 | 13 | 15 | 28 | 31 | 32 | | | |
| 10 25.4 | 12 | 14 | 16 | 18 | 34 | 38 | 40 | | | |

* 8-foot (2.4 m) minimum rod length required to be in contact with the soil (or GEM), per NEC® 250-83-C.

Note: To mix GEM into a slurry form, use a standard cement mixer or mix in the GEM pail, a mixing box, wheelbarrow, etc. Use 1-1/2 to 2 gallons (5.7 to 7.6 liters) of clean-potable water per pail of GEM. Do not mix GEM with salt water.

