

When the specification calls for a hard setting grounding material, PowerSet™ is the product of choice. PowerSet™ is compatible with all standard copper grounding systems and standard field applications. It is an economical permanent solution to difficult grounding problems in hard to deal with areas. PowerSet™ is manufactured from environmentally safe materials and is extremely stable. When mixed with water or exposed to moisture, PowerSet™ attains the hardening characteristics of cement while retaining its highly conductive properties. PowerSet™ will remain highly conductive during a drought or when exposed to arctic temperatures. Because it does not have any shrinkage or expansion properties it will remain in constant contact with the earth.

PowerSet™ can be poured in dry or pumped in slurry form. No tamping is required. It is very worker friendly. No special tools are required.

To calculate the amount of material required to fill a trench. **First**, determine your desired thickness of PowerSet™. **Second**, move to the right until you are under the known width of the trench. This number will be the weight of the material lbs / linear ft. Take this number and multiply by the length of the trench in feet. Your answer will be the amount of PowerSet™ material required to fill the trench to the desired level in lbs.

EXAMPLE:

Thickness = 6 inches Width = 12 inches Answer = 32.3 lbs / linear ft

AMOUNT OF POWERSET REQUIRED:

32.3 lbs /linear ft x 50 ft of trench = 1615 lbs of PowerSet™

ADVANTAGES

- Positive low resistance, electrical connection to the earth.
- Compatible with all copper grounding systems.
- Does not contain any hazardous chemicals.
- Will attain a hardened state.
- Will not leech into the ground or wash away.
- Never needs recharging.
- Electronically conductive.
- Environmentally friendly.
- Contains a corrosion inhibitor to protect copper.
- Stable permanent ground for the life of the grounding system.
- Will not expand or experience any shrinkage.
- Not affected by freezing.
- Simple to install.
- Excellent shelf life with no performance effects.

MATERIAL REQUIRED PER LINEAR FOOT OF TRENCH

| | | WIDTH OF TRENCH (INCHES) | | | | | | | | | | |
|---------------------------------|----|--------------------------|------|------|------|------|------|------|------|------|------|-------|
| | | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
| THICKNESS OF POWERSET™ (INCHES) | 2 | 3.6 | 5.4 | 7.2 | 9.0 | 10.8 | 12.6 | 14.4 | 16.2 | 18.0 | 19.7 | 21.5 |
| | 3 | 5.4 | 8.1 | 10.8 | 13.5 | 16.2 | 18.8 | 21.5 | 24.2 | 26.9 | 29.6 | 32.3 |
| | 4 | 7.2 | 10.8 | 14.4 | 18.0 | 21.5 | 25.1 | 28.7 | 32.3 | 35.9 | 39.5 | 43.1 |
| | 5 | 9.0 | 13.5 | 18.0 | 22.4 | 26.9 | 31.4 | 35.9 | 40.4 | 44.9 | 49.4 | 53.9 |
| | 6 | 10.8 | 16.3 | 21.5 | 26.9 | 32.3 | 37.7 | 43.1 | 48.5 | 53.9 | 59.2 | 64.6 |
| | 7 | 12.6 | 19.0 | 25.1 | 31.4 | 37.7 | 44.0 | 50.3 | 56.5 | 62.8 | 69.1 | 75.4 |
| | 8 | 14.4 | 21.7 | 28.7 | 35.9 | 43.1 | 50.3 | 57.4 | 64.6 | 71.8 | 79.0 | 86.2 |
| | 9 | 16.3 | 24.4 | 32.3 | 40.4 | 48.5 | 56.5 | 64.6 | 72.7 | 80.8 | 88.9 | 96.9 |
| | 10 | 18.1 | 27.1 | 35.9 | 44.9 | 53.9 | 62.8 | 71.8 | 80.8 | 89.8 | 98.7 | 107.7 |

VERTICAL INSTALLATION

Drill or dig the earth hole to the desired diameter and depth. Suspend groundrod in center of hole. Pour PowerSet™ to desired level. Remove excess water prior to pouring. If necessary, PowerSet™ may be premixed and pumped under water.

| DRY VOLUME OF POWERSSET VS. HOLE SIZE | | GROUND RESISTANCE COMPARISON OF BARE ROD VS. | |
|---------------------------------------|---------------------------|---|--|
| HOLE SIZE | LBS. OF POWERSSET PER FT. | HOLE DIAMETER WITH 5/8 BY 10' ROD IN CENTER OF 15' HOLE | PERCENT RESISTANCE COMPARED TO ROD ONLY (100%) |
| 4" | 5.7 | 4" | 52% |
| 6" | 12.8 | 6" | 47% |
| 8" | 22.7 | 8" | 44% |
| 10" | 35.5 | 10" | 42% |
| 12" | 51.1 | 12" | 40% |

HORIZONTAL OR GRID CONSTRUCTION*

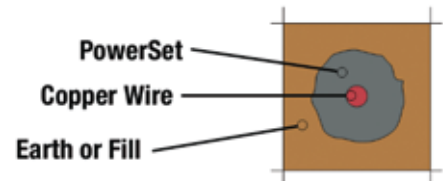
Pour into horizontal trench until level with ground wire. Place ground wire. Pour additional PowerSet™ to desired level. Cover with fill. No tamping is necessary. Remove excess water prior to application.

For grid construction, pour PowerSet™ and spread over ground. Cover with fill. Use ground staples to maintain ground wire in center of fill.

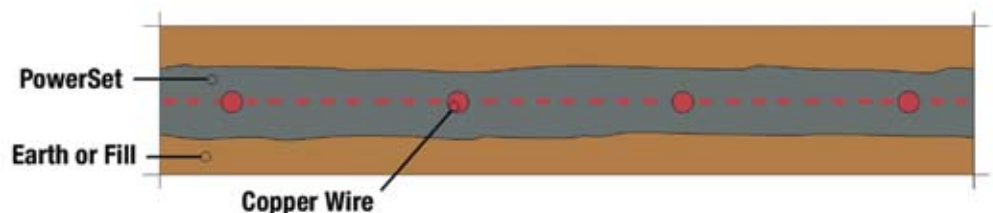
| STEADY STATE LEAKAGE RESISTANCE** USING 4/0 COPPER WIRE VS. POWERSSET | | | | | |
|--|--------------------------|---|-----|-----|-----|
| LENGTH | .475" DIAMETER WIRE ONLY | PERCENTAGE OF RESISTANCE WITH .475" WIRE PLUS POWERSSET IN VARIOUS DIAMETERS COMPARED TO WIRE ONLY (100%) | | | |
| | | 2" | 3" | 4" | 6" |
| 25' | 100% | 83% | 78% | 74% | 69% |
| 50' | 100% | 85% | 81% | 77% | 73% |
| 75' | 100% | 86% | 82% | 79% | 75% |
| 100' | 100% | 87% | 83% | 80% | 77% |
| 150' | 100% | 88% | 84% | 82% | 78% |
| 200' | 100% | 88% | 85% | 83% | 79% |
| 250' | 100% | 89% | 85% | 83% | 80% |
| 300' | 100% | 89% | 86% | 84% | 80% |

*Entire grounding system should be surrounded by PowerSet™. Conductors should be insulated as they exit the PowerSet™ column. PowerSet™ should be used as a ground enhancement material when a setting fill is specified.

**The use of PowerSet™ around the grounding system will also reduce surge impedance by increasing the effective contact area of the electrode to soil.



HORIZONTAL CONSTRUCTION



GRID CONSTRUCTION