Prefabricated Ground Mesh Mats

Prefabricated wire mesh is a simple cost-effective method of enhancing grounding electrode systems. Applications include improving the ground plane at telecommunications and radio transmitting/receiving facilities and reducing step and touch potentials at power plants and substations. Mesh is also used where ground rods are impossible to drive or are ineffective because of soil conditions.

Wire mesh is manufactured from solid copper or copper clad steel wire, ranging from #10 AWG to #4 AWG. Standard spacing between conductors is 4”, 5”, 6”, 12”, 24” and 48”. All joints are silver brazed ensuring excellent electrical continuity, corrosion resistance and superior strength.

There are two hazards which can be present to personnel during a fault condition. The first being step potential and the second touch potential. Step potential is the difference in potential experienced by a person bridging a distance of 1m with their feet while not touching any other surfaces. The far more dangerous hazard is touch potential. Touch potential is the difference in potential experienced by a person standing while at the same time having hand contact with a grounded structure.

Substations not only require a properly designed grounding electrode system for clearing of any ground faults but also personnel protection from those faults. Prefabricated Ground Mesh Mats are ideal additions to a substation grounding electrode system.

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**Solid Copper & Stainless Steel Ground Rods**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Size</th>
<th>Type</th>
<th>Approx. Each Wt. (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GP10C</td>
<td>5/8” x 10’</td>
<td>Solid Copper</td>
<td>12</td>
</tr>
<tr>
<td>GP10SS</td>
<td>5/8” x 10’</td>
<td>Stainless Steel</td>
<td>11</td>
</tr>
<tr>
<td>GP12C</td>
<td>3/4” x 10’</td>
<td>Solid Copper</td>
<td>18</td>
</tr>
<tr>
<td>GP12SS</td>
<td>3/4” x 10’</td>
<td>Stainless Steel</td>
<td>15</td>
</tr>
</tbody>
</table>

- All rods are full diameter.
- Solid copper ground rods are manufactured from alloy 110 electrolytic tough pitch hard temper copper bar.
- Stainless steel ground rods are manufactured from 304 Series Stainless.
- Solid copper ground rods meet ASTM A 132 & B 187.

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**NEC Compliant Copper Ground Plates**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Ground Plate Size</th>
<th>Conductor (AWG)</th>
<th>Approx. Each Wt. (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GP142424JDP</td>
<td>24” x 24”</td>
<td>4/0</td>
<td>52.5</td>
</tr>
</tbody>
</table>

- Copper Ground Plates feature a 12” x 24” (depending on the size of the ground plate) conductor exothermically welded to the plate.
- FAA-STD-019f Compliant.

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**Copper Ground Plates are used in areas having little or no top soil**

- Used to enhance ground grid systems.
- Used in conjunction with Ultranil, ground enhancement material.

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**Line Card**

**Specialized Ground Electrodes**

- Solid copper or stainless steel ground electrodes are used when increased conductivity and corrosion resistance is preferred.
- Due to softness of solid copper, care must be taken when driving electrodes.

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**Listed 467**

**Listed 96**

**Listed 47**

**Listed 47**

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**Specialized Ground Electrodes**

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**Listed 467**

**Listed 47**

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**Listed 467**

**Listed 47**

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**Listed 467**

**Listed 47**

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**Specialized Ground Electrodes**

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- Due to softness of solid copper, care must be taken when driving electrodes.
Ultrafill is a low resistance carbon based backfill material, which dramatically lowers ground system resistance in difficult soil situations. Ultrafill does not contain bentonite or concrete components, which, in very dry conditions causes shrinkage around the grounding electrode, thus rendering it ineffective.

Ultrafill is ideal for use in rocky soil, sand, gravel, or any other high resistance soil condition. It is also the ideal backfill material for use around enhanced grounds and grid systems.

Ultrafill is easy to use, safe and effective. Unlike other backfill products, Ultrafill is relatively dust free and does not require mixing with water prior to installation.

Ultrafill may be either used in a horizontal trench or grid, or in vertical applications. Ultrafill is available in 25 and 50 pound coated woven polypropylene bags.

**Installation Instructions**

**Vertical Applications:**

Auger hole to required depth. Pour in enough Ultrafill to center of hole. Pour Ultrafill to proper depth. The chart located to the right will help determine how much Ultrafill will be required.

**Horizontal Applications:**

Pour enough Ultrafill to contact the ground grid. Place the ground electrode into trench. Pour additional Ultrafill to cover electrode to the desired depth.

**Liquid Mixing Instructions:**

To mix Ultrafill into a slurry for pumping applications, use the following formula: 2 parts water

1 part bentonite

1 part Ultrafill.