

# ULTRAFILL®

Ground Enhancement Material

## ULTRAFILL

Is a low resistance carbon based backfill material, which dramatically lowers ground system resistance in difficult soil situations. Ultrafill contains no bentonite or concrete components, which, in very dry conditions, can cause shrinkage around the ground electrode, thus rendering it ineffective.

## ULTRAFILL

Is ideal for use in rocky soil, sand, gravel or any other high resistance soil conditions. It is also the ideal backfill material for use around enhanced ground rods and ground grid systems.

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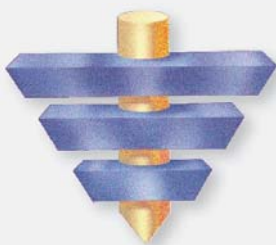
Is easy to use, safe and effective. Unlike other backfill products, Ultrafill is dust free and does not require mixing in water prior to installation.

## ULTRAFILL

May be used in a horizontal trench or grid, and in vertical applications. Ultrafill is packaged in durable, tear-resistant, polypropylene bags. 25 and 50 pound sizes are available.

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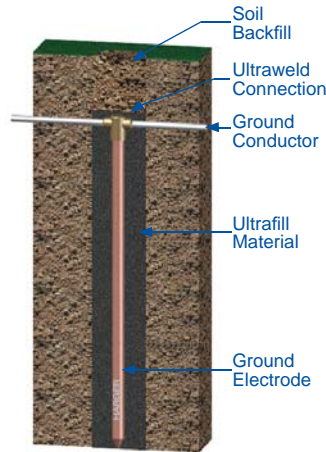
Meets the requirements of FAA-STD-19E.



# Installation Instructions

## Vertical Applications

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

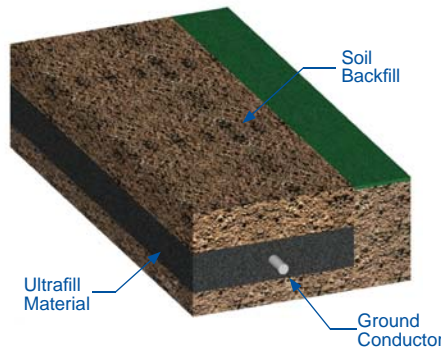


Pounds of Ultrafill Required Per Foot		
Hole Size	5/8" Ground Rod	2" EGR
4"	3.5	2.7
6"	8.1	7.3
8"	14.5	13.6
10"	22.6	21.8
12"	32.6	31.8

For example, placing a 5/8" x 10' ground rod in a 4" hole would require 35 pounds of Ultrafill. (3.5 x 10 = 35 pounds)

## Horizontal Applications

Pour enough Ultrafill to cover bottom of trench. Place the ground electrode into the trench. Pour in additional Ultrafill to cover electrode to the desired depth.



Pounds of Ultrafill Required Per Foot				
Trench Width	Thickness of Ultrafill (Inches)			
	1"	2"	3"	4"
4"	1.2	2.3	3.5	4.6
6"	1.7	3.5	5.2	6.9
8"	2.3	4.6	6.9	9.3
10"	2.5	5.8	8.7	11.6
12"	3.5	6.9	10.4	13.9

For example, using 2" of material in a 6" wide by 10' long trench would require 35 pounds of Ultrafill. (3.5 x 10 = 35 pounds)

## Mixing Instructions

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

- 6 parts water
- 1 part bentonite
- 1 part Ultrafill



Part #	Approx. Wt.
ULTRAFILL25	25 lbs.
ULTRAFILL	50 lbs.



# HARGER®

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