INSTALLATION INSTRUCTIONS

LPI® SRIMPLUS-20

The following instructions are provided to enable the user to easily and correctly apply the LPI SRIMPLUS-20 earth enhancing compound, which is supplied in 20 kg bags.

TRENCH ("RADIAL ELECTRODE") INSTALLATION

The following steps should be followed in order to apply SRIMPLUS-20 to radial earth electrodes, such as copper tape or stranded conductor, in a trench:

1. Dig the trench to the approximate dimensions shown in Figure 1.
2. If availability of water is not problematic, dampen the trench with water (see Figure 1).
3. Pour the contents of the bag(s) of SRIMPLUS-20 into a mixing container and mix the ingredients thoroughly until an even consistency is achieved.

   NOTES:

   (a) Mixing is best done in a cement mixer, or a wheelbarrow or large bin with the aid of a mixing rod or mechanical agitator.

   (b) If a full bag of SRIMPLUS-20 is not emptied and mixed, then note the approximate proportion of the bag that has been emptied. This information is important for Step 4.
4. Add water to the well-mixed ingredients and mix thoroughly again. The exact amount of water is not critical, the most important thing is that the SRIMPLUS-20 becomes like a wet paste or slurry. Use the following guidelines for the amount of water to be added:
   a. Add about 14 L of water for each full bag of SRIMPLUS-20.
   b. Add about 7 L of water for each half bag of SRIMPLUS-20.
5. Pour a thin layer (approx. 25 mm) of the SRIMPLUS-20 slurry into the bottom of the trench (see Figure 1).
6. Place the earth electrode(s) in the trench as required (see Figure 1).
7. Pour the remaining mix directly into the trench on top of the electrode(s) as show in Figure 2.

   NOTE: The slurry should cover the electrode(s) completely, but the thickness of the top layer is not as critical as the bottom layer.
8. Repeat the above process until the entire length of the electrode(s) is embedded in SRIMPLUS-20 (per Figure 2). →

9. Backfill the trench with the original excavated soil (see Figure 3). However, if the excavated soil is of poor quality, e.g., rocky, gravel, shale etc., it should not be used. Instead, apply a good garden loam or clay soil if possible.

RECOMMENDED NUMBER OF BAGS OF SRIMPLUS-20 REQUIRED FOR BACKFILLING A TRENCH (RADIAL ELECTRODE) INSTALLATION (300 MM WIDTH*)

Radial Electrode Length (m)	No. of bags of SRIMPLUS-20
5	1
10	2

* For different trench dimensions, please contact LPI or an authorised distributor for further advice or interpolate / extrapolate from the quantities shown. Alternatively, the LPI Earthing Calculator can be used. Simply go to https://lpi.com.au/services/earthing-calculator/.

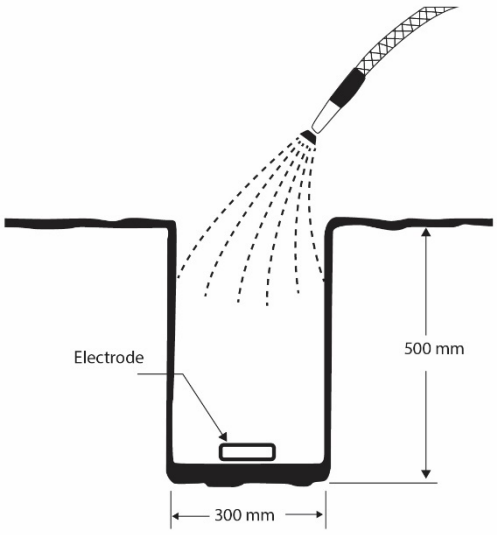

Figure 1: Steps 1, 2, 5 and 6.

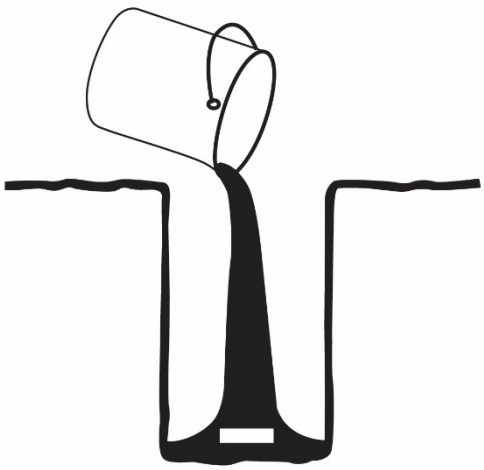

Figure 2: Steps 7 and 8.

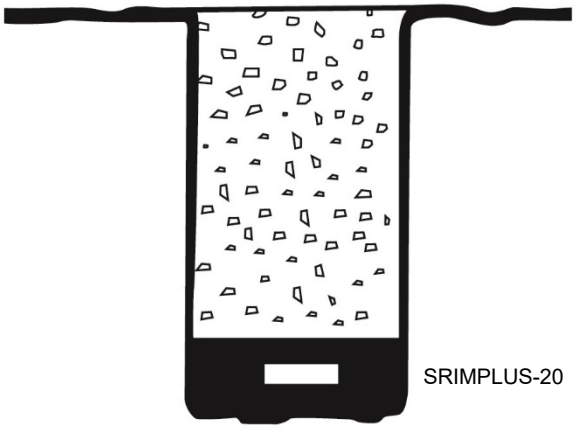

Figure 3: Step 9.

VERTICAL HOLE ("EARTH ROD") INSTALLATION

The following steps should be followed in order to apply SRIMPLUS-20 to earth rods, such as copper-bonded or stainless steel rods, into a drilled or augured hole. An augured hole is typically drilled to a diameter of between 75 mm and 125 mm. Note that other earth electrodes could be installed into augured holes, although for practical reasons this approach it is not common.

1. Drill or auger a hole of the desired diameter to a depth of 150 mm less than the total length of the rod to be installed.
2. If availability of water is not problematic, dampen the hole with water (see Figure 4).
3. Place the earth rod into a central position in the hole and drive the rod 300 mm (if possible) into the soil at the bottom of the hole. The top section of the earth rod should now be approximately 150 mm below the lip of the hole.
4. Pour the contents of the bag(s) of SRIMPLUS-20 into a mixing container and mix the ingredients thoroughly until an even consistency is achieved.

   NOTES:

   (a) Mixing is best done in a cement mixer, or a wheelbarrow or large bin with the aid of a mixing rod or mechanical agitator.

If a full bag of SRIMPLUS-20 is not emptied and mixed, then note the approximate proportion of the bag that has been emptied. This information is important for Step 5.

1. Add water to the well-mixed ingredients and mix thoroughly again. The exact amount of water is not critical, the most important thing is that the SRIMPLUS-20 becomes a slurry that can be poured down the hole. Use the following guidelines for the amount of water to be added:
    a. Add about 16 L of water for each full bag of SRIMPLUS-20.
    b. Add about 8 L of water for each half bag of SRIMPLUS-20.
2. Pour the well-mixed SRIMPLUS-20 slurry into the hole (see Figure 5).
3. Repeat Steps 5 and 6 in accordance with the recommended number of bags of SRIMPLUS-20 per the table below.
4. Backfill the top of the hole with the original excavated soil (see Figure 6).
   NOTE: It is strongly recommended that an earth pit is installed for each rod, making it easy for maintenance and testing at a later date. In this case, the top of the hole would not be backfilled.

RECOMMENDED NUMBER OF BAGS OF SRIMPLUS-20 REQUIRED FOR BACKFILLING A VERTICAL HOLE (EARTH ROD) INSTALLATION

Hole Diameter* (mm)	Depth = 1.8 m	Depth = 2.4 m	Depth = 3 m
75	0.5 bags	0.5 bags	0.5 bags
125	1 bag	1 bag	1.5 bags
175	1.5 bags	2 bags	2.5 bags

* For different hole dimensions, please contact LPI or an authorised distributor for further advice or interpolate / extrapolate from the quantities shown. Alternatively, the LPI Earthing Calculator can be used. Simply go to https://lpi.com.au/services/earthing-calculator/.

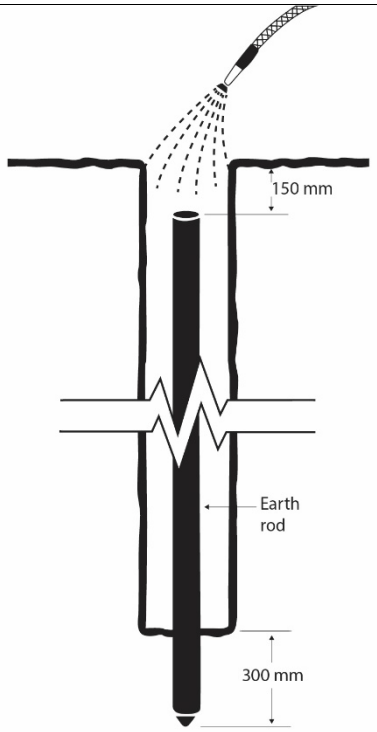

Figure 4: Steps 1 to 3.

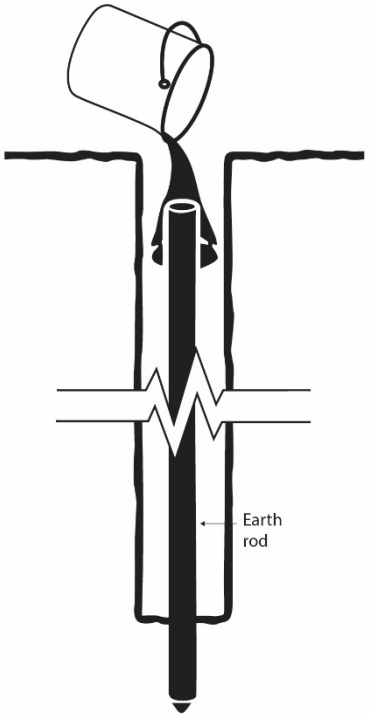

Figure 5: Step 6.

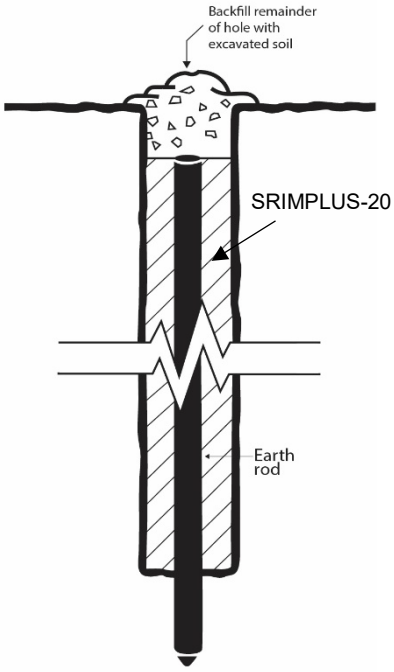

Figure 6: Step 8.

DISPOSAL

SRIMPLUS is classified as a “Hazardous Chemical” under “Non-dangerous Goods”, mainly due to the cement component. Whilst the contents are mostly environmentally friendly, the disposal of surplus contents should take place at an Authorized Chemical Landfill.

The packaging is recyclable. In disposing of the packaging, follow the safety precautions shown on the packaging and Safety Data Sheet (SDS).

In general, disposal and recycling should be in accordance with local regulations.

No additional safety measures are necessary.

PITFALLS

The following table highlights some of the pitfalls and mistakes that are made on occasions with the application of earth enhancing compounds (EEC).

Pitfall / Mistake	Correct Approach
EEC is applied dry, straight out of the bag.	The manufacturer’s instructions should always be followed. There is not enough ambient moisture in the soil to replace the normal installation water quantity, especially for cementitious EECs, where the normal hardening process would not occur.
EEC is “diluted” (mixed with the excavated soil) before application.	An EEC reduces resistance by replacing the high-resistivity soil in the immediate vicinity of electrodes. It should never be mixed with the excavated soil.
Using EECs that are corrosive to earth electrodes.	Always request to see corrosion performance test results (for example, in compliance with IEC 62561-7).
Choosing an EEC purely on cost.	“Cheap” EECs may not comply with environmental standards (e.g., per TCLP leaching tests such as EPA 1311), may have poor resistivity or poor corrosion performance. If in doubt, ask for this information.

Head Office | 49 Patriarch Drive, Huntingfield Tasmania, Australia 7055
Postal | PO Box 379 Kingston, Tasmania, Australia 7051
Web | www.lpi.com.au
Phone | + 61 3 6281 2475
Facsimile | + 61 3 6229 1900
Email | info@lpi.com.au