1. Excavation
Use a boring machine to drill to the target depth.

2. Ground resistance check
Fill the borehole with water and measure the ground resistance of the boring rod. Confirm that the target ground resistance has been achieved.

3. Adjustment of Boring Rods
When two rods are used, pull out the inner rod, leaving only the outer rod in the borehole.

4. Preparation of Ground Electrode
Connect the IV wire to the bare copper wire of the ground electrode using a T-connector or equivalent.

5. Insertion of Ground Electrode
Insert the ground electrode to the bottom of the borehole.
Attaching a weight, such as a ground rod, to the end of the ground electrode will make insertion easier.

6. Mixing BIO SAN-EARTH
Add water to the mixing container first, then add BIO SAN-EARTH and mix thoroughly with a hand mixer until uniform.
The recommended amount of water is 25-30 L per bag (approximately the same amount as for SAN-EARTH M5C).
One bag can fill approximately 4 m of a borehole; however, the actual length may vary depending on the borehole diameter, soil porosity, amount of water added, and other conditions.

When mixing multiple bags, mix no more than two bags at a time to ensure thorough mixing.
Example: When preparing three bags, thoroughly mix the first two bags, then add the remaining bag and mix thoroughly again.
If noticeable lumps remain after mixing, remove them using a wire-mesh strainer or similar tool.

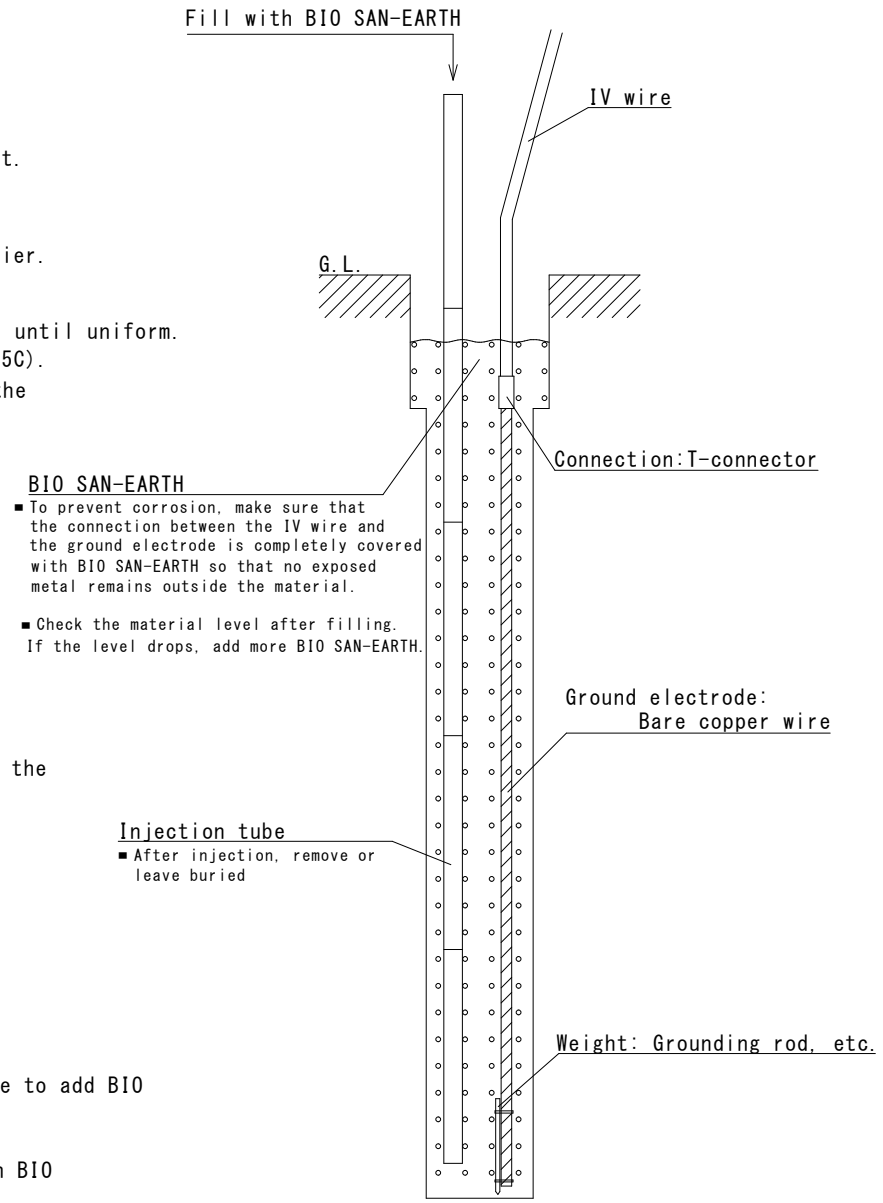
7. Filling the borehole
Fill the borehole with mixed BIO SAN-EARTH either by pouring it from the ground surface or by using an injection tube.
When using an injection tube, insert it into the borehole and pump the mixed BIO SAN-EARTH using a submersible pump.
The pump suction opening should be at least 5 mm to prevent clogging.
Do not use equipment that transfers the material through a wire-mesh filter located at the bottom of the container (e.g., a two-tank grout mixer), as biochar particles may clog the wire mesh.

8. Procedure After Filling
Once BIO SAN-EARTH reaches the ground surface, gradually pull out the outer rod.
As the outer rod is pulled out, the material level may drop. Add more BIO SAN-EARTH as necessary to compensate for the drop.
When removing the injection tube, pull it out together with the outer rod.
When filling is carried out over several days, the previously filled BIO SAN-EARTH will harden.
Therefore, pull out the outer rod to the depth filled on that day.

9. Backfill
The material level will gradually drop after filling. Before backfilling, check the level and be sure to add BIO SAN-EARTH to compensate for any drop.
Backfilling on the day after filling is recommended.
Make sure that the connection between the IV wire and the ground electrode is completely covered with BIO SAN-EARTH so that no exposed metal remains outside the material.

10. Final Ground Resistance Measurement
After backfilling, measure the ground resistance and confirm that the target value has been achieved.

Example of Installation Using an Injection Tube



DSN	Product Development Department	'24.08.21	UNIT mm			TITLE
DWG	S.Kurano	'26.10.05	SCALE – / –	DWG No. G-240030E12	REV. c	BIO SAN-EARTH Boring Method Construction Procedure
CHK	K.kobayashi	'26.10.05				

SANKOSHA