AXIS™

TESTED PRODUCTS
EFFICIENT SERVICE
TRUSTED BRAND

The **Solution** You Can Trust

Axifill
Earth Enhancing Compound

AXIS ELECTRICAL COMPONENTS (INDIA) PVT. LTD. is an ISO 9001:2015 company engaged in manufacturing and exporting a wide range of electrical components and parts to over 80 countries worldwide over a period of 30+ years.

Why Axifill Earth Enhancing Compound?

Soil resistivity is the prime factor contributing to the earth resistance value. Therefore, the optimal solution to maintain an ideal earth resistance value involves maintaining soil resistivity at the desired level.

The use of Axifill Earth Enhancing Compounds can assist you in identifying and achieving a recommended earth resistance for your earthing system.

Our Axifill Earth Enhancing Compounds comprise a blend of minerals used to decrease soil resistivity. These compounds absorb and retain moisture in the soil for extended periods, helping to maintain the soil's resistivity at the desired level. They are primarily used as a backfilling material, covering the ground electrode to reduce earth resistivity.

Axifill Earth Enhancing Compound is a sophisticated, high-tech variant that utilizes a unique blend of natural minerals and special grade materials to deliver superior performance. Upon application, the compound hardens, forming a solid structure that enhances its effectiveness and longevity.

All these meticulous formulations ensures that Axifill provides a consistently high level of performance, making it a reliable choice for your earthing system needs.

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FEATURES

(1) Exceptional Electrical Resistivity

The Axifill Earth Enhancing Compound boasts an impressive electrical resistivity of 0.12 Ωm. This superior resistivity ensures your earthing systems operate optimally, providing a secure pathway for electrical fault currents. Rigorously tested under stringent conditions, the compound complies with the standard IEC 62561-7.

Benefit: Trust in the consistent performance of your earthing system, even under challenging conditions.

(2) Environmentally Friendly

Our Earth Enhancing Compound is not only effective but also environmentally friendly. We understand the importance of environmental preservation, which is why we've ensured our compound is safe and non-toxic.

Benefit: Use Axifill with peace of mind, knowing you've chosen a product that respects and safeguards the environment.

(3) Tested to IEC 62561-7 Standards

The Axifill Earth Enhancing Compound has been thoroughly tested and complies with the IEC 62561-7 standards. This international standard attests to the quality and reliability of our compound, ensuring the product you're using is safe, dependable, and of the highest quality.

Benefit: You're selecting a product that meets international standards for safety and performance.

(4) TCLP - Toxicity Characteristic Leaching Procedure Compliance

Our Earth Enhancing Compound has been tested for Toxicity Characteristic Leaching Properties and complies, ensuring it does not contribute to soil pollution or environmental harm.

Benefit: You're choosing a product that performs exceptionally well, respects the environment, and contributes to a healthier planet.

(5) User-Friendly

Designed with the user in mind, the Axifill Earth Enhancing Compound is easy to apply and available in convenient bag options of 11.5 and 25 kgs. It's suitable for projects of all sizes and can be poured or backfilled around grounding electrodes or conductors, simplifying the installation process.

Benefit: Save time and effort during installation, and select the quantity that best suits your project's needs.

(6) Additional Features

With excellent water solubility, it blends seamlessly with the soil to provide superior conductivity. The advantage? You're choosing a product designed to work harmoniously with the soil, delivering optimal performance without disrupting the soil's natural balance.

Choose Axifill Earth Enhancing Compound for a safe, effective, and environmentally-friendly earthing solution that prioritizes user needs.

TESTING AND CERTIFICATION

The Axifill compound is tested as per the standard IEC 62561-7 and is also RoHS compliant. The following tests are performed on the Axifill compound:

(1) Leaching Test

Leaching tests are conducted to evaluate the potential for various substances to move through the soil and possibly contaminate groundwater or surface water. These tests are crucial for several reasons such as assessing environmental impact, protecting groundwater, preventing pollution, and maintaining soil health.

(2) Sulphur Determination

The presence of sulphur in the soil can potentially leach into groundwater or runoff into surface water, causing soil and water pollution. To minimize environmental impacts and for safety and quality assurance, specific regulations or guidelines must be adhered to to limit the sulphur content in the soil.

(3) Determination of Resistivity

The resistivity test on earthing enhancement compounds is necessary to evaluate their effectiveness in reducing the electrical resistance of the grounding system. The resistivity of the compound plays a pivotal role in enhancing the overall performance of the earthing system, which is crucial for electrical safety and equipment protection.

(4) Corrosion Test

Corrosion testing on earthing enhancement compounds is essential to ensure their safety, efficacy, and long-term performance when used in earthing systems.

(5) Restriction of Hazardous Substances (RoHS)

RoHS (Restriction of Hazardous Substances) testing is conducted on earthing enhancement compounds to ensure compliance with environmental regulations and to verify that these compounds do not contain hazardous substances above specified limits.

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SPECTRO Analytical Labs Pvt. Ltd.
(formerly known as Spectro Analytical Labs Limited)
CIN:U74220DL1998PTC092698

Format No: SALLGN/TRF/GEN
Page 1 of 2

TEST REPORT

Test Report Issued To:
AXIS ELECTRICAL COMPONENTS INDIA PRIVATE LIMITED
AXIS HOUSE,PLOT NO.- 146BCD,KANDIVALI INDUSTRIAL ESATE,
KANDIVALI (W),
MUMBAI, MAHARASHTRA - 400067,
INDIA

Test Report No: A1022070103 4/D220701034-10
Date of Issue: 12-Jul-2022
Sample Booking/Receipt Date: 01-Jul-2022
Date of Start of Testing: 04-Jul-2022
Date of Completion of Test: 11-Jul-2022

Customer Relationship Number: 69758

Sample Description :
EARTH ENHANCEMENT COMPOUND - AXIFILL

Customer Reference No :
AECIPL/SALL/22-23/02 DATE 28.06.2022

Amendment Report to Test Report No:D220701034,D220701034-10 Dated: 11-07-2022

Kind Attention : MR. GAVIN L GONSALVES
E-Mail: gavin.g@axis-india.com Contact No: 9082264250

Sample Condition : Good
Sample Quantity (Approx) : 1 - PKT Sample Size (Approx) : 1 - kg

SAMPLE NOT DRAWN BY OUR LABORATORY. THE RESULTS RELATE ONLY TO THE ITEMS TESTED

Digitally signed by ARCHANA DUBEY
Date: 2022.07.12 12:20:46 +05:30
Report Issued by

Authenticity of report can be verified by mail at verification@spectrolab.in
This is a Digitally Signed Report and hence doesn't require Physical Signature.

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intertek
Total Quality Assured

ULR - TC663224220116 94F

TEST REPORT

NUMBER : DELH22011004
DATE : 15TH SEPT, 2022

APPLICANT: AXIS ELECTRICAL COMPONENTS (i) PVT. LTD.
"AXIS HOUSE", PLOT 140 BCD, KANDIVALI INDUSTRIAL ESTATE KANDIVALI (W), MUMBAI – 400067, INDIA.

ATTN: Mr. GAVIN GONSALVES

SAMPLE DESCRIPTION : THE SUBMITTED SAMPLE SAID TO BE – EARTH ENHANCING COMPOUND-AXIFILL

TESTED COMPONENT:
[1] EARTH ENHANCING COMPOUND)-AXIFILL

DATE RECEIVED : 06TH SEPT, 2022
TEST PERFORMANCE DATE : 06TH SEPT 2022 TO 12TH SEPT 2022
BUYER'S NAME : –
BUYING AGENT/ CONTACT : –
ARTICLE NO : –
GRADE : AXIFILL
COLOR : –
REMARK : –
MANUFACTURERS NAME : –
RAW MATERIAL SUPPLIER : –

TESTS CONDUCTED: AS PER THE REQUEST BY THE APPLICANT
RoHS-1O
FOR FURTHER DETAILS PLEASE REFER TO THE ENCLOSED PAGE (S).

STANDARD	RESULT
(1) (a) ROHS DIRECTIVE (2011/65/EU) RESTRICTION OF THE USE OF CERTAIN HAZARDOUS SUBSTANCES IN ELECTRICAL AND ELECTRONIC EQUIPMENT	PASS
(2) ROHS DIRECTIVE (2011/65/EU) AND AMENDMENT COMMISSION DELEGATED DIRECTIVE (EU) 2015/863 WITH EFFECTIVE FROM 22 JULY 2019 - PHTHALATE CONTENT	PASS

AUTHORIZED BY
FOR INTERTEK INDIA PVT. LTD.

KAMAL SARDHANA
ASST. MANAGER - HARDLINE

KAMAL SARDHANA

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SPECTRO Analytical Labs Pvt. Ltd.
(formerly known as Spectro Analytical Labs Limited)
CIN: U74220DL1998PTC092698

Format No: SALL/GN/TRF/GEN
Issue No: 01 Issue Date: 01.04.17
Page 2 of 2

TEST REPORT

Report No. D2267296 10/D229729016-11

Discipline Name: Electrical
Group Name: Environmental test facility

EARTH ENHANCING COMPOUND

CORROSION TEST REPORT

1. **Test Name: -** Determination of polarization resistance for determining the corrosiveness of material uses as earthing enhancement compounds.
2. **Test Specification: -** IEC 62561-7: 2018
3. **Test Procedure: -**
   a) The sample of earth enhancement compound was tested with a Ratio of 1:1. Three electrodes were placed into the material inside the cell for the determination of parameters.
   b) Obtained the open circuit potential of the working electrode immersed in the sample and started the anodic potential scan at a rate of 0.6 V/h.
   c) Record the polarization resistance (R_p) values after the stabilization.
4. **Testing apparatus: -**
   - Distilled water, glassware, mixer and balance with an accuracy of ± 0.0001 g
   - 3-Terminal Potentiostat:- (Make: Gamry Instrument & Model: Interface 1010 B) Calibration due date:- 24/01/2023
   - 1 Lit Test cell, saturated calomel electrode (Ref. electrode), platinum electrode (Aux. electrode) & working electrode (Copper having area of 5.95 cm2) as per ASTM G5-14.
5. **Pre-Test observations:** Resistivity (ρ)- 0.16 Ω.m & pH- 12.6 which makes it High corrosion load as per Annex A of IEC 62561-7: 2018

Test Results: -

TEST PARAMETERS	REQUIREMENT AS PER IEC 62561-7:2018		RESULTS
(i) Polarization resistance:	For Copper earth electrodes	8 Ω.m² (min)	8.4 Ω.m²
Copper-plated earth electrodes	For Gi earth electrodes	7.6 Ω.m² (min)	

6. **Statement pass/fail: - PASS**

– End of Test Report –

ULR-TC631422900096 67F

Digitally signed by ISHANI GOSWAMI
Date: 2022.08.12 15:22:07 +05:30

Analyst Signature
Authorised Signatory

SPECTRO Analytical Labs Pvt. Ltd.
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CIN:U74220DL1998PTC092698

Format No: SALLGN/TRF/GEN
Issue No:01, Issue Date: 01.04.2017
Page 1 of 2

TEST REPORT

Test Report Issued To:
AXIS ELECTRICAL COMPONENTS INDIA PRIVATE LIMITED
AXIS HOUSE,PLOT NO.- 146BCD,KANDIVALI INDUSTRIAL ESATE,
KANDIVALI (W),
MUMBAI, MAHARASHTRA - 400067,
INDIA

Test Report No: D220701034/D220701034-20
Date of Issue: 11-Jul-2022
Sample Booking/Receipt Date: 01-Jul-2022
Date of Start of Testing: 04-Jul-2022
Date of Completion of Test: 11-Jul-2022

Customer Relationship Number: 69758

Sample Description :
EARTH ENHANCEMENT COMPOUND - AXIFILL

Customer Reference No :
AECIPL/SALL/22-23/02 DATE 28.06.2022

Kind Attention : MR. GAVIN L GONSALVES
E-Mail: gavin.g@axis-india.com Contact No: 9082264250

Sample Condition : Good
Sample Quantity (Approx) : 1 - PKT Sample Size (Approx) : 1 - kg

SAMPLE NOT DRAWN BY OUR LABORATORY. THE RESULTS RELATE ONLY TO THE ITEMS TESTED

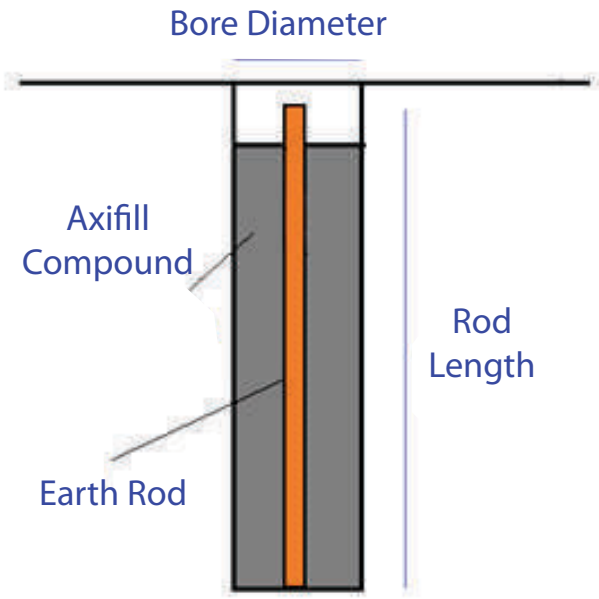
Digitally signed by ARCHANA DUBEY
Date: 2022.07.11 15:47:36 +05:30
Report Issued by

Authenticity of report can be verified by mail at verification@spectrolab.in
This is a Digitally Signed Report and hence doesn't require Physical Signature.

Estimated quantity of Axifill for the required size of Earth Excavation

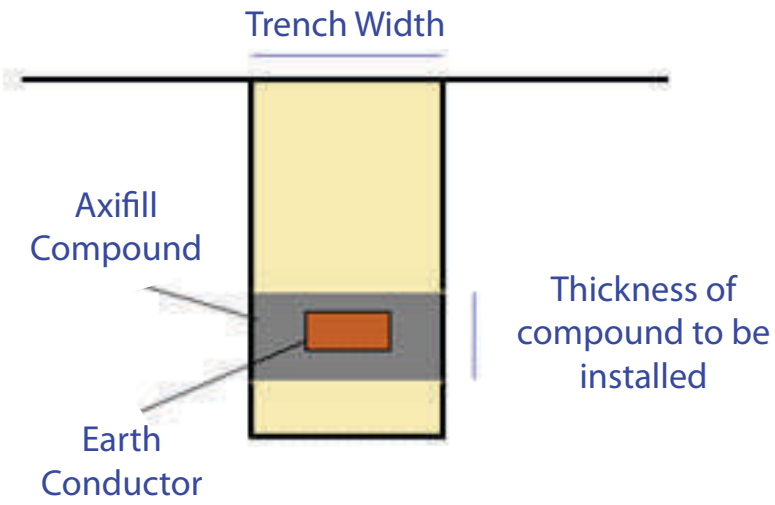
For Earth Rod Installation

Installation of Earth Rod		
Diameter of Bore (mm)	Rod Length (meter)	Weight in kg (kg)
100	3	25
120	2	25
120	3	38
150	2	39
150	3	59
175	2	53
175	3	80
200	2	70
200	3	105



For Conductor Installation in Trench

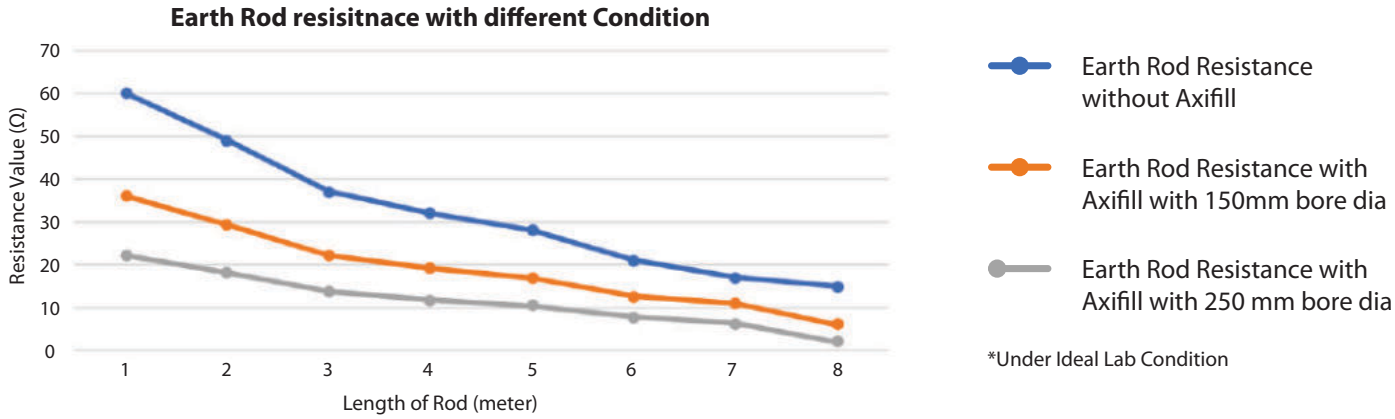
Installation of an Earthing Conductor in the Trench			
Trench Width (mm)	Thickness (mm)	Length (meter)	Weight (kg)
100	100	10	111
150	80	10	133
200	50	10	111
250	50	10	139
300	50	10	167



Earth Rod Resistance with Axifill Earthing Compound

One of the principal advantages of Axifill earthing enhancement compounds is their capability to diminish the electrical resistance of the grounding system. By reducing resistance, Axifill compounds help forge a more efficient conduit for fault currents, static charges, and lightning surges to dissipate safely into the ground.

Axifill Earthing enhancement compounds can enhance the consistency of the grounding system's performance across diverse soil types and environmental conditions. They offer a stable and reliable ground connection, regardless of variability in soil resistivity.



*Under Ideal Lab Condition

In regions with naturally high-resistivity soils, attaining low grounding resistance can be challenging. Axifill Earthing Enhancement Compounds help overcome this constraint by augmenting the conductivity of the soil surrounding the grounding system.

The above figure illustrates the graph of earth rod resistance comparing a standard earth rod without an Axifill an earth rod with an Axifill with a 150mm bore diameter, and an earth rod with an Axifill with a 250mm bore diameter. It shows that as the bore diameter increases with the quantity of Axifill surrounding the earth rod, the resistance of the earthing system reduces. Moreover, this reduction is proportional to the length of the earth rod.

Specification

Parameters	Recommended Values	Test Method
Standard Compliance	IEC 62561-7	Compliance as per IEC 62561-7
Leaching	All leachable elements within limits	IEC 62561-7 EN 12457-2
Sulphur Content	< 2 %	IEC 62561-7 ISO 14869-1
Resistivity	≤ 0.2 Ωm	IEC 62561-7 ASTM G57-06
Corrosion Performance	For Copper plated earth electrodes- The polarization resistance shall be greater than 8 Ωm2 for aggressive environments For galvanized earth electrodes- The polarization resistance shall be greater than 7.6 Ωm2 for aggressive environments	IEC 62561-7 ASTM G57-06
RoHS Compliance	All elements shall be within the limits	RoHS Directive (2011/65/EU)

Installation Instruction of Axifill Compound

(1) Premix the Axifill earth enhancing compound into a slurry form using clean, potable water.

(2) To mix the earth enhancing compound into a slurry form, use a standard cement mixer, a mixing box, a container, a wheelbarrow, etc. Use 0.7 to 0.8 litres of clean, potable water per kilogram of compound.

(3) Bore a hole of the required size and depth into the ground as per the earthing design. Place a handful of the earthing compound slurry at the bottom of the hole.

(4) Remove any label or plastic packaging from the electrode.

(5) Gently place the earthing electrode in the center of the borehole. Backfill with the earthing compound slurry, agitating the earthing electrode regularly while backfilling to ensure no voids are formed.

(6) Fill the earthing hole up to the ground level, ensuring that only the lead connection terminal remains on top.

(7) To ensure the earthing compound fills the hole, tamp around the ground rod with a pole. Only the lead connection terminals should remain on top. If any space is left in the earth hole after backfilling, use the excavated soil to fill up the rest of the earth hole.

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MAKE IN INDIA

25 YEARS

EXCELLENCE | TRUST | SERVICE

AXIS ELECTRICAL COMPONENTS (I) P. LTD.

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