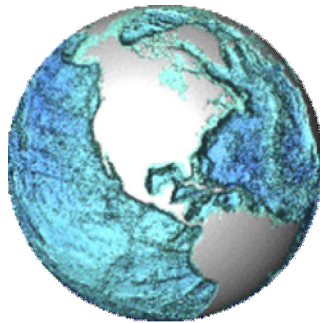


SHREE

ISI

SHREE GROUP OF COMPANIES  
YOUR PARTNER IN SUCCESS



Global Leader in Energy Power and Infrastructure

### Message from MD:

Balaji Metacast Industries will continue to invest in equipment, R&D, manpower and systems, to continuously improve and upgrade the level of its service to its customers satisfaction, and will endeavor to enhance its overall capabilities in order to effectively compete and succeed in the Global Market place.



Energy



Power



Infrastructure

## About Us:

Balaji Metacast Industries, is a leading manufacturer of various products in Power, Energy and Infrastructure Sectors. Since its inception, it has become one of the fastest growing organizations in South India. Today, our clientele is limited not only to India but also International markets.

Backed by 33 years of experience, our company has carved a niche in manufacturing various Engineering Products that are known for their high performance and reliability. These are widely used in Power, Cement, Sugar, Paper, Iron, Steel, Infrastructure, Construction and Telecom industries. The entire range of our Engineering products and construction products is manufactured using latest technology with quality iron, pig iron, steel and zinc that are sourced from reliable vendors.

Balaji Metacast Industries is a leading supplier to major global corporates. Our organization is approved not only in multinational companies in private sector but also in various government departments. With vast range of products, we cater to requirements of various sectors of the industry.

Balaji Metacast Industries manufactures Valves (ISI Certified), Fittings, Castings for drinking water and Sewerage Pipelines. It is also into manufacturing of Electrical Materials like Earthing Pipe, Chemical Earthing Pipes, Wires, Cables, Earthing Products, Pipes, Steel Fabrication, etc used in Power transmission and distribution lines thereby contributing the Power sector. Apart from these it also supplies various materials like Binding Wires, Steel, Galvanized Pipes, Stainless Steel Products, etc for Construction sector.

Our dedicated team of engineers and highly professional staff play a vital role in manufacturing and sales of high quality products as well as in research and development, keeping our quality consistent.

Balaji Metacast Industries is a ISO 9001-2008 Certified Company and approved vendor in various Electricity Boards, Government Water Boards, Private Sector Institutions and established Multinational Companies.

### Objective:

The core objective of Balaji Metacast Industries is to provide its customers in Power, Water and Infrastructure sectors with products of globally acceptable quality at competitive prices and provide the best possible service right from the stage of enquiry till after sales of materials.

# BMI ADVANCED EARTHING MATERIALS

The field of electrical engineering has seen tremendous advancements over the years. Unfortunately Earthing System still remains neglected as well as very important part of electrical distribution systems. More often than never its importance is realized only after suffering serious damages to expensive equipments connected across the supplies. Keeping in mind, the rapidly increasing magnitude of fault currents in today's growing power systems, conventional methods of earthing are no longer sufficient. To overcome the shortcomings of the conventional earthing techniques, BALAJI METACAST INDUSTRIES has developed the BMI Advanced Earthing Electrodes.

## **Requirements of a Good Earthing System:**

The function of the earthing system is MULTI FOLD -

To provide a low enough impedance path, via the earth conductors, back to the supply source so that in the event of a failure to earth of a live conductor, sufficient current will flow safely along a predetermined route to enable the circuit's protective device to operate.

To limit the potential rise on all metalwork to which humans and animals access, to a safe value under normal and abnormal circuit conditions. The bonding together of all normally exposed metalwork (like gas, water, central heating, pipe work, etc.), And the connection of that bond to the earth terminal, will prevent the possibility of a dangerous potential difference arising between adjoining pipe work under both normal and abnormal conditions.

Conductors of sufficient dimensions capable of withstanding high fault currents with no evidence of fusing or mechanical deterioration.

Lower earth resistance ensures that energy is dissipated into the ground in the safest possible manner.

Lower the earth circuit impedance, the more likely that high frequency lightning impulses will flow through the ground electrode path, in preference to any other path.

High Corrosion Resistant – The choice of the material for grounding conductors, electrodes and connections is vital as most of the grounding system will be buried in the earth mass for many years. Copper is by far the most common material used. In addition to its inherent high conductivity, copper is usually cathodic with respect to other metals in association with grounding sites, which means that it is less likely to corrode in most environments. Mechanically robust and reliable.

## **Conventional Earthing System:**

The general pipe earthing practice followed most of the world over is that, a perforated GI/CI pipe with a copper wire is placed vertically inside the earth and layers or mixture of sand, salt, charcoal etc. is put around this pipe used as an electrode. On top of this pipe electrode, a funnel is provided for watering purposes, so that enough moisture is maintained around the electrode periodically in order to conduct, since moisture is very much essential for any type of earthing to work and function properly.

When water is poured from top of the electrode through the funnel, the water spreads out through the hole, and the surrounding salts, charcoals, etc. comes in through the hole and the hole is clogged, the use of coal salt mixture also helps in fast corrosion of the old system pipe electrode. The result is that the corrosion of the wire and the pipe starts inside and outside simultaneously and the copper wire with the pipe is eaten up within one or two years and the purpose of maintenance free earthing is diminished.

The use of water, salt etc. is required for lowering the soil resistivity, as low resistive soil is good for earthing purposes. However, it is equally true that “lower the soil resistivity, better the earthing BUT lowering the soil resistivity by using coal/salt mixture also increases the higher rate of corrosion.”

Considering all the above facts and requirements, Balaji Metacast Industries after a consistent research and development with gaining experience in the field of safe Earthing, has developed a new safe and maintenance free chemical earthing system design and technology, under the make name “BMI“, which takes care of all the above parameters. Unlike the conventional earthing system, these systems do not require to dig large pits for placing big plating systems and use salts, charcoal etc, and relative to this they have a very long corrosion free life and are nearly maintenance free for years to come.

## **Products:**

### **1) BMI Advanced Earthing Electrodes:**

BMI Advance Earthing Electrodes are engineered to endure the most enviously corrosive environments. These electrodes are robust enough to withstand the fault currents of high magnitude. Fabricated from excellent quality galvanized iron pipes and hot dip galvanized primary conductor. BMI electrodes are virtually indestructible. The super conductive crystalline compound filled inside the pipe completely encloses the primary conductor increasing it's overall conducting surface area and protecting it from corrosion. Crafted to perfection BMI advanced earthing electrodes are built to last really long and protect your expensive equipment from dangerous fault currents. Think twice before you opt for conventional earthing techniques. After all your expensive equipments deserve nothing less than the best !!!

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## **Features:**

1. Primary Electrode made of Hot Dip Galvanized Iron Strip.
2. Secondary Electrode made of High Quality GI Pipe.
3. Pipe filled with Super Conductive Crystalline Compound (sccc).
4. Super Conductive Crystalline Compound protects the primary electrode from corrosion and also increases the surface area for enhanced conductivity.
5. Three level protection from corrosion:
  - a. Outer Pipe
  - b. Layer of super conductive crystalline compound.
  - c. Primary Conductor (strip)

## **Directions of Use:**

1. Drill or auger a hole in the ground
2. Place The Electrode In the center of the hole
3. Use BMI ADVANCED EARTHING COMPOUND to backfill the area around the electrode.

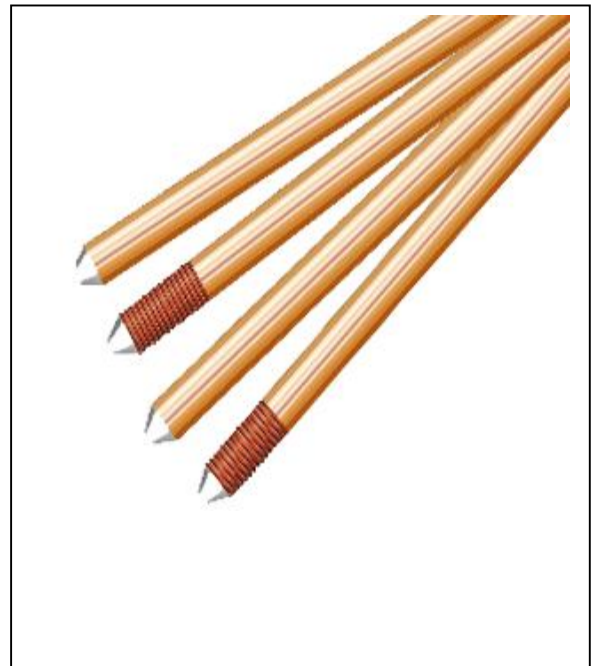
## **Specifications:**

MODEL NO	DIAMETER	LENGTH	PRIMARY CONDUCTOR	PRIMARY CONDUCTOR TYPE
BMI-524 HDG	50 mm	2000 mm	40 x 6 mm	HDGI
BMI-534 HDG	50 mm	3000 mm	40 x 6 mm	HDGI
BMI-824 HDG	80 mm	2000 mm	40 x 6 mm	HDGI
BMI-834 HDG	80 mm	3000 mm	40 x 6 mm	HDGI
BMI-524 COP	50 mm	2000 mm	40 x 6 mm	COPPER
BMI-534 COP	50 mm	3000 mm	40 x 6 mm	COPPER
BMI-824 COP	80 mm	2000 mm	40 x 6 mm	COPPER
BMI-834 COP	80 mm	3000 mm	40 x 6 mm	COPPER

## **2) BMI Advanced Earthing Copper Bonded Rods Electrodes:**

BMI Advanced Earthing Copper Bonded Rods Electrodes manufactured from 99.9 % pure electrolytic copper molecularly bonded onto a steel core in accordance with national and international standards. There is no metal interface, so dissimilar metal reaction cannot occur and the copper cannot be separated from the steel. The core is of low carbon steel of grade 080A20 of BS 970 and has high tensile strength of 600 N/mm<sup>2</sup>.

The copper covering is maintained at the root of the thread as, the thread are rolled onto the rod which ensures that an even copper covering is maintained. Rolled threads also give strength greater than cut threads.



## **Features:**

1. Electrode made of low carbon steel of grade 080A20 of BS 970 and has high tensile strength of 600 N/mm<sup>2</sup>.
2. Copper Used is of Electrolytic Grade of Purity 99.9%.
3. Copper Coating Thickness - 250 Mils or as per Customers requirement
4. Backfill Compound protects the electrode from corrosion and also increases the surface area for enhanced conductivity.
5. Three level protection from corrosion:
  - a. Electrolytic Copper Bonding Layer
  - b Backfill Compound surrounding the Electrode

## **Directions of Use:**

1. Drill or auger a hole in the ground
2. Place The Electrode In the center of the hole
3. Use BMI ADVANCED EARTHING COMPOUND to backfill the area around the electrode.

## **Specifications:**

MODEL NO	DIAMETER	LENGTH	CONDUCTOR	Copper Bonding Thickness
BMI-143 CBE	14.2 mm	3000 mm	Mild Steel Rod	250 Mils
BMI-142 CBE	14.2 mm	2000 mm	Mild Steel Rod	250 Mils
BMI-173 CBE	17.2 mm	3000 mm	Mild Steel Rod	250 Mils
BMI-172 CBE	17.2 mm	2000 mm	Mild Steel Rod	250 Mils
BMI-163 CBE	16 mm	3000 mm	Mild Steel Rod	250 Mils
BMI-162 CBE	16 mm	2000 mm	Mild Steel Rod	250 Mils
BMI-123 CBE	12 mm	3000 mm	Mild Steel Rod	250 Mils
BMI-122 CBE	12 mm	2000 mm	Mild Steel Rod	250 Mils

### **3) BMI Advanced Earthing Compound:**

An efficient backfill material should have high electrical conductivity, which should be constant and unaffected by changes in temperature and moisture. It should permanently remain embedded and should not dissolve in and swept away by water. It should have the ability to absorb large amount of water and retain the same over a long period of time. Finally, it should not cause or accelerate the corrosion of the earth electrode metal. Keeping in mind the above requirements, Balaji Metacast Industries has formulated BMI Advanced Earthing Compound. BMI advanced earthing compound is a result of extensive field studies and research by our engineers.





## Features:

1. It is highly conductive earth-pit backfill. It therefore reduces number of parallel electrode required to be installed to achieve a low earth resistance value even in areas of very high soil resistivity.
2. It has the ability to hold moisture for very long periods. Hence it is maintenance free. Watering of the earth-pit is not required.
3. It does not corrode the electrode metal thereby increasing the life of the earth-pit.
4. Compatible with all types of earthing electrodes.

## Quality and Certifications:

- 1) The Company has been recognized in Quality Management Systems Standards ISO 9001-2008
- 2) Is Approved in Electricity Boards of various states, NNC's, Private Sectors.

**CENTRAL POWER RESEARCH INSTITUTE**  
(MEMBER OF STL)

**TEST REPORT**

**CPRI**

Test Report Number: S2131061      Date: 2 DEC 2013

Name & address of the customer: M/s Balaji Metacast Industries, Bowenpally, Reliance villas, Secunderabad-500 003

Name & address of the manufacturer: M/s Balaji Metacast Industries, Bowenpally, Reliance villas, Secunderabad-500 003

Particulars of sample tested: Earthing Electrode

Condition of sample on Receipt: New

Type: Nil

Designation: Nil

Serial number: Nil

Number of samples tested: One

Date(s) of Test(s): 14<sup>th</sup> November 2013

CPRI sample code no.: STDSST213S1656

Particulars of tests conducted: Short time current test

Test in accordance with Standard/specification: As per customer's requirement

Sampling plan: Not applicable

Customer's requirement: Nil

Deviations if any: Nil

Name of the Witnessing persons: Shri M.Hari Babu

Customer's representative: Nil

Other than customer's representatives: Nil

Test subcontracted with address of the laboratory: None

Documents constituting this report (in words): Five

Number of sheets: One

Number of oscillograms: Nil

Number of graphs: One

Number of photos: One

Number of Test circuit diagrams: One

Number of drawings: One

TEST ENGINEER

(ANUPAM AWASTHI)  
JOINT DIRECTOR

SWITCHGEAR TESTING & DEVELOPMENT STATION  
GOVINDPURA, BHOPAL-462025, INDIA  
Phone: +91(0)755 2586682 Fax: + 91(0)755 2587774

Sheet 1 of 5

**CENTRAL POWER RESEARCH INSTITUTE**  
(MEMBER OF STL)

**TEST REPORT**

**CPRI**

Test Report Number: S2131061      Date: 2 DEC 2013

**Short-time current test**

Test conditions:

Condition of the sample before test: New

No. of poles: Single

Source frequency: 50Hz

Transformer neutral & short circuit point: See test circuit diagram no. OLTs/TC-D-STC-06

Test results:

Oscillogram Number	Peak in kA	Short time current in kArms	Duration (second)	Equivalent current in kArms for 1.0 second
S2131061.S02	63.21	25.28	1.0	25.28

Observations:

During test: No abnormality

After test: No abnormality. Earthing Electrode found intact.

Conclusion: The test results indicate that the sample tested complies with the requirement of the customer.

TEST ENGINEER

SWITCHGEAR TESTING & DEVELOPMENT STATION  
GOVINDPURA, BHOPAL-462025, INDIA  
Phone: +91(0)755 2586682 Fax: + 91(0)755 2587774

Sheet 4 of 5

**PURVANCHAL VIDYUT VITARAN NIGAM LTD.**  
PURVANCHAL VIDYUT BHAVAN,  
VIDYUT NAGAR, P.O.-D.L.W.,  
VARANASI-221004  
E-mail ID: mdpurvanchalvnl@gmail.com/gmccscp@gmail.com  
Fax No. 0542-2319152, 0542-2300102

NO. 7054 PUVVNL/VP-2/RGGVY/      Date 16/12/2013

M/s NCC Ltd.  
Electrical Division Madhapur  
Hyderabad - 500081

Sub. GUARANTEED TECHNICAL PARTICULARS (GTP) of Earthing system (Encapsulated pipe in strip technology)

Dear Sir,

Please refer to your letter no. NCCL/AGM-Varanasi/PuVNL/RGGVY-II/ALD-DL/2013-14/023 Dated 04-12-2013. As desired by you vide these letters list of vendors are given below to procure GTP of GUARANTEED TECHNICAL PARTICULARS (GTP) of Earthing system (Encapsulated pipe in strip technology) for RGGVY-II work in Ballia & Allahabad districts. Earthing System materials must be as per G.T.P. enclosed. Other terms and condition will be same as per LOA.

1- M/s Balaji Metacast industries, Secunderabad.

Encl: Approved G.T.P.

(A. K. Gupta)  
Chief Engineer (RGGVY)

**UKAS CERTIFICATION**

**Certificate of Registration**

This certificate has been awarded to

**Balaji Metacast Industries**

Villa No. 1, Reliance Villas, Near Anuradha Timber Depot, Bowenpally, Secunderabad, Andhra Pradesh, 500011, India

in recognition of the organization's Quality Management System which complies with

**ISO 9001:2008**

The scope of activities covered by this certificate is defined below

**Manufacture and Supply of Cast Iron Earthing Pipe, GI Earthing Pipe, Copper Pipe, Earthing Plate, GI And MS Flats, Galvanized Wires, Sared Wire, SS Pipe, Fittings, Sheets, Coils, Bolts and Nuts**

Certificate Number: 06375A/0001/UKEN      Date of issue: (Original) 23 April 2013      Date of issue: 23 April 2013

Issue No: 1      Expiry Date: 22 April 2016

Issued by: On behalf of the Schemes Manager

UKAS CERTIFICATION  
U.K.A.S.  
REGISTERED COMPANY  
943

TABLE DI MULTIVULNER  
U.K.A.S.  
REGISTERED COMPANY  
943

IAF  
INDIAN ASSOCIATION OF  
REGISTERED PROFESSIONALS

**LIST OF PLANT & MACHINERY as on 01.01.2014**

SL No	Details of Machinery	Make	Size	Capacity	Qnty.
1	Cupola Furnace	Fabricated	36" OD/ 28" ID	3.5 Tons / hour	1 No.
2	Induction Furnace with Power pack panels	Electrotherm	350KW 500Kg and 300 Kg	0.6 Tons/Hr	1 No.
3	Electrical Main Distribution Panel	Fabricated			1 No.
4	Electrical Main Capacitor Panel	Fabricated			1 No.
5	Wet Laboratory				1 Set.
6	Cooling Tower	SEPP			1 No.
7	Pollution Control Equipment	Fabricated	Suitable for Existing Cupola.		1 No.
8	Pollution Control Equipment	Fabricated	Suitable for Induction Furnace.		1 No.
9	Sand Muller	Wesman	300 Kgs		1 No.
10	Match Plate Moulding	Texone	20" x 20"		1 No.
11	Transformer	HINT	500 KVA	500 KVA	1 No.
12	Lathe Machine	BIJLI	10' - 0"		1 No.
13	Lathe Machine	Kirloskar	8' - 10"		1 No.
14	Lathe Machine	ECE	6' - 0"		1 No.
15	Lathe Machine	ROSHANI	7' - 0"		1 No.
16	Lathe Machine	RAJKOT	7' - 0"		1 No.
17	Lathe Machine	GEW	5' - 0"		1 No.
18	Lathe Machine	ECE	6' - 6"		1 No.
19	Tool Grinder	Ahmedabad	1 HP		1 No.
20	Angle Grinder	BOSCH	7"		1 No.
21	Angle Grinder	Ralliwolf	7"		1 No.
22	Flexible Grinders	Suguna	8-May		1 No.
23	Flexible Grinders	Rayond	8-May		1 No.
24	Pedestrial Grinder	Jay	2 HP		1 No.
25	Drill Machine	Kolkatta	1 ½"		1 No.
26	Radial Drill Machine		1 ½"		1 No.
27	Hand Drill	Ralliwolf	½"		1 No.
28	Compressor	PSG	2 HP		1 No.
29	Welding Machine	PARAS	Single Phase		1 No.
30	Air Impact Wrenches kit	RY-213B	½"		1 No.
31	Welding Machine	Deepak			3 No.
32	Grinding Machines	Pioneer			4 No.
33	Power Press	Suguna	100 Tonne		1 No.
34	Power Press	Suguna	50 Tonne		1 No.
35	Chaser	Deepak			1 No.
36	Drilling Machine	Pioneer			2 No.
37	Mixer	Pioneer	500 Kgs		2 Nos



# **Contact US:**

## **Corporate Office:**

1-10-317, Survey No.130, Bata Building,  
2<sup>nd</sup> Floor, Bapujinagar,  
Bowenpally, Secunderabad – 500011

Andhra Pradesh, India

Ph: +91-40-65225131, Telefax: +91-40-40140757

Email: [balajimetacast@gmail.com](mailto:balajimetacast@gmail.com), [info@balajimetacast.com](mailto:info@balajimetacast.com), [sales@balajimetacast.com](mailto:sales@balajimetacast.com)

Website: [www.balajimetacast.com](http://www.balajimetacast.com)

## **Plant Address:**

Plot No.42, Road No,6,  
Industrial Development Area(I.D.A) Mallapur,  
Hyderabad – 500076  
Telefax: +91-40-27172484