



# TECHNICAL CERAMICS

*Sonya*  
INSULATORS

[Manufacturer and Exporter of Ceramic Products]



Now Exporting to more than **45** Countries

# *Sonya* INSULATOR



**PLANT - 1 AHMEDABAD**



**PLANT - 2 KADI**



**PLANT - 3 KADI**



**PLANT - 4 KADI**

## *About us...*

Since 1960 Sonya has been a progressive leader in the ceramic industry earning a reputation for quality, service & dependability. Sonya group employ's more than 400 long term experienced people at two different sites i.e. at Kadi & Ahmedabad.

Sonya Insulators manufactures L.T. Insulators & Technical Ceramics, which are related to Electrical Industries & Heater Industries, whereas their other products are Wall, Roof & Paving Tiles, which are used in niche market & by high end builders. Our latest addition is manufacturing Peanut Butter & Blanched Peanut for Food Industry.

Our ceramics are made from Normal Porcelain, Steatite, Cordierite, Cordierite Porcelain, High Alumina Refractory, Cordierite Refractory, Cordio-Sillimanite, Hard Porcelain and Alumina Ceramics.

We also make Ceramic products as per the design/drawing of the customer. Who specifies all kind of requirements in details & we deliver the finished parts in accordance with customer's exact specifications.

In the past 5 decades we have put in our best efforts & have made a remarkable contribution to Ceramic Industry. Currently we export our Industrial Ceramics to more than 45 countries including fortune 500 companies of the world. We were first in this industry to obtain ISO certification in 2000.

We have achieved national awards for Quality and General Performance from ex-president Dr. A.P.J. Abdul Kalam.

Best performance in Technical Ceramics award from Ex-Prime Minister Dr. Manmohan Singh.

Consistent High Quality Performance award from, Ex-chief Minister of Gujarat and Current Prime-Minister Mr. Narendra Modi.

We have also achieved export awards for 5 consecutive years from Government of Gujarat and product excellence award from Indian Ceramic Society.



## Awards & Achievements



We have been Awarded "NATIONAL AWARD" for Quality and General Performance, and the same was handed over to us by Ex-Honorable Prime Minister of India  
**Dr. MANMOHAN SINGH**



We have been awarded 'NATIONAL AWARD' for the best performance in 'TECHNICAL CERAMICS' from the hands of his Excellency Ex-President of INDIA  
**Dr.A.P.J. ABDUL KALAM**



Receiving award for 'CONSISTENCE HIGH QUALITY PERFORMANCE' from the Ex-Honorable Chief Minister of Gujarat State & Current Prime-Minister  
**MR.NARENDRA MODI**

**Mr. Rupesh C. Shah, C.M.D. of M/s. Sonya Insulators, Served as President of Gujarat Chamber of Commerce & Industries for consecutively 2 years and had opportunity to host Honorable. Prime Minister of India Shri Narendrabhai Modi.**



## Production Processes :



Hydraulic pressing



Injection moulding



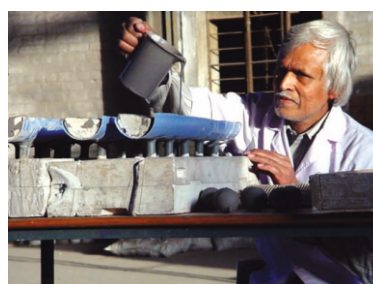
Automatic Press



Manual Press



Lapping & Polishing



Slip Casting



Extrusion

## *More than a half century of Experience*



*Chariman*

### **Rupesh C. Shah**

He is a Gold Medalist from Gujarat University and has done Ceramic Engineering from U.S.A. & is handling the entire group since 1975. Under his leadership the Company is Manufacturing & Exporting Ceramic Products to more than 45 countries & few of them are Fortune 500 Companies. Over & above he is also holding number of valuable positions in Ceramic's and at Social front too.

- He is the President of Ahmedabad Pottery Manufacturing Association.
- He is Chairman of Indian Ceramic Society. (Gujarat Chapter)
- He has served as Secretary as well as President of Gujarat Chamber of Commerce & Industry.
- He is also an Honorary Member of Advisory Committee of Central Glass Ceramic Research Institute
- He also renders his services as Secretary of Kadi Industrial Association & is actively engaged in Gujarat Ceramic Industrial Board.



*Managing Director*

### **Rutuja Shah Patel**

She graduated as an Honors student with her MBA from L.I.U. (USA) with specialization in Marketing & International Business. She joined Sonya Group in August 1999 to assist her family business to grow in different fields of business.

Under her leadership company is manufacturing L.T. Insulators & exporting Sanitary-wares worldwide. In 2011 she started tiles in Anaya brand to manufacture (Wall, Paving, Cladding and Roofing tiles), These hand made and customized tiles are used by renowned Architects of India.

Today, she is actively involved with all activities of Sonya Group and is the key person for Sonya Foods.



*Director*

### **Abhishek R. Shah**

He completed his BBA and recently joined Sonya Group in 2013 and aims at spreading the business to new heights.

He has taken charge of Sonya Insulators manufacturing Technical Ceramics from shop floor to dispatch. He is actively involved in production, planning and marketing.



## *Type of Industries We Cater*



### **Aeronautics And Defense**

Rocket Tip and Customized parts



### **Electrical Industries**

Insulators, Lamp Holders, Fuses



### **Electronic Industries**

Boats, Wire-wound Resistors etc



### **Resistor Industries**

Formers, Wire Wound Resistors, Bushes & Special Shapes



### **Heat Engineering**

Cordierite multiple hole tubes and Bobbins



### **Paint industries**

Steatite Balls and bricks go into Paint and ceramic industries as grinding media & lining Bricks



### **Plastic Industries**

Band Heaters.



### **Building Industries**

Roofing, Paving, Wall Tiles are sold to builders.

### **Cement Industries**

Abrasion Resistant Tiles and Chutes.

### **Chemical industries**

Acid Resistance Bricks and Catalyst.

### **Switch Gear Industries**

MCB Plates and Fuses.



### **Food Industry :**

Peanut Butter and Blanched Peanut.



## Company History



*Sonya Group has been Manufacturing  
and Exporting their Products for more than 2 Decades*

**Late Shree Chandrakant C. Shah**

from 17<sup>th</sup> June, 1924 to 25<sup>th</sup> Nov, 1985

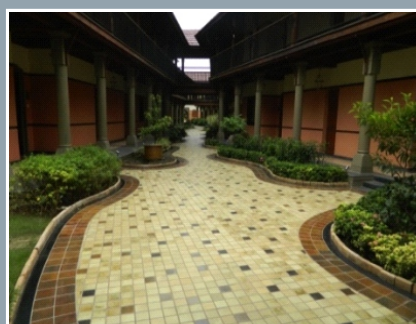


Founder of Sonya Ceramics in the year 1960

Sonya is Proud to have Successfully Supplied  
Rocket Nose Tips to ISRO (Indian Space Research Organization)

- 
- 1960** Mr. Chandrakant C. Shah, after completing his MS in Ceramic Engineering from USA, started a partnership firm in the name of M/s. Ahmedabad Ceramic Industry. The Company was started to manufacture SW Pipes & Fittings & in a very short span of time, it had established his name as a quality manufacturer of SW pipes & fittings, not only in Gujarat but also in India as well outside India.
- 
- 1969-1975** One more manufacturing unit was started by Mr. Chandrakant C. Shah in the name of Sonya Ceramics to manufacture crockery ware. These were very struggling days because of beaurocray & quota system. The most important cost in both the industries was fuel i.e. coal & the same remained in extreme shortages, which forced him to discontinue manufacturing of crockery wares in the year 1975.
- 
- 1975** Mr. Rupesh C. Shah, Son of Mr. Chandrakant C. Shah joined Sonya Ceramics after completion of Ceramic Engineering From University of Missouri USA.
- 
- 1976-1980** In the mean time, Mr. Chandrakant Shah was very active in the social front particularly in the field of ceramics & he became the founder member of Gujarat Ceramic Association in Ahmedabad. He was also President of Gujarat Ceramic Association for quite some time & during his tenure All India Ceramics Convention was held in Ahmedabad. He was instumental in bringing prestigious CGCRI to Ahmedabad.
- 
- 1981** For the first time in India Sonya Ceramics-Kadi Unit was commissioned to manufacture Low Tension Insulators with the help of Natural Gas Fired Tunnel Kiln.
-

1985	Sonya Keramos Pvt. Ltd was established to manufacture Sodium Silicate.
1992	Sparkling Ceramics was established to manufacture Sanitary wares.
2000	Second Furnace of Sodium Silicate was Commissioned. Sonya acquired ISO certificate for Sonya Insulators.
2001	Due to low realization & competitions Sparkling Ceramics was converted from manufacturing Sanitary wares to L.T. insulators.
2002	Sonya Ceramics Kadi Unit acquired ISO certification for L.T. Insulators. Complete Quality Department with SQC facility commissioned.
2003	First Gas Fired Spray Drier was installed in Sonya Insulators.
2005	Another Spray Drier of capacity of 10 tons per day was installed in Kadi.
2006	Modernization of work shop completed by introducing CNG operated wire cut machine & spark erosion machines in Sonya Insulators. Started E.O.U. unit with a Spanish company to manufacture lamp holders.
2008	Recuperators were introduced in all the tunnel kilns of Ahmedabad & Kadi to save the most precious fuel.
2009	Total computerization of Ahmedabad tunnel kiln completed. Through installation of CCTV cameras monitoring of Ahmedabad & Kadi plant is now possible from anywhere in the world.
2010	Tool room upgraded with latest computer Aided V. M.C. machine imported from Haas Co. of U.S.A.
2011	Anaya Tiles Pvt. Ltd. was established to manufacture wall, mosaic, Paving and Roofing Tiles. To improve productivity E.R.P. System was introduced.
2012	New furnace installed in Kadi for firing grinding balls & Media.
2013	Sonya Foods Pvt. Ltd. was established to Manufacture Blanched Peanuts & Peanut Butter. For better control & productivity number of units were consolidated. Special emphasis was given to export front and value additions.
2014	Exports of peanut Butter started & Sonya foods got its ISO 22000:2005 Certification. Sonya Insulators will have new kiln with 50% more work capacity & latest firing system.





## Quality Control

We, at Sonya Insulators believe in stringent Quality Control, And that is why we have full fledged Q.C. Department with Capability for Visual, Chemical & Physical Analysis.

### Quality Policy

We, at Sonya Insulators are dedicated to satisfy customer requirement of quality ceramics as per customer's specification & within the committed time limit. This will be achieved through continual development, training of manpower & quality assurance of the product at all stages of manufacturing.

### Quality Control Procedure

To ensure the quality of final products, inspection is carried out right from the incoming of raw materials to final outgoing products.

- (1) Incoming Raw Material Inspection
- (2) In process Inspection
- (3) Out going Inspection/S.P.C. (Statistical Process Control)

In process, inspection is carried out on shop floor at regular intervals by floor Supervisors and Quality Control Inspectors. The statistical process control is introduced at this level.

Out going inspection is carried out by sampling method. The samples are drawn from a lot as per IS-2500 Part-I "Sampling Inspection Procedure" devised by Bureau of Indian Standard. The inspection level and AQL is mutually decided between us and the customer as per the requirement.

We follow general inspection level No. 1 single sampling plan for normal inspection at AQL 1.5 to 4. The test certificate is sent to customer for every lot dispatched.

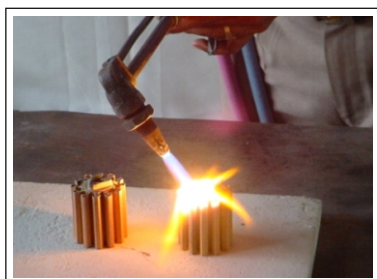
### Types of In-House Quality Test

#### Raw Material Tests

Acid Test, Plasticity Check, Residue test, Firing Test, Free Iron Content, Shrinkage Check, Green Strength Test (M.O.R.) Moisture Test, Grain Size analysis.

#### Product Tests

Water Absorption, Bulk Density Check, Bursting Strength, Compressive Strength, Thermal Shock Test/Thermal Resistance, Flame test, Crazeing Test for Glaze Items, Crushing Strength Test, Chemical Resistance Test.



## *Sonya Ceramics Participation in Different type's of Exhibitions.*



“Nothing great in the world has ever been accomplished without passion” - Georg H. Hegel

We regularly participate in various ceramics and food Industry Exhibitions to increase our marketing network, global presence and to accomplish our passion for manufacturing & Marketing.

## *Company's Social Responsibility*



We run a Trust under the name of Budhabhai Trust at Usmanpura - Ahmedabad. We have tied up with Adarsh Ahmedabad to carry out below services free of cost on our premises.

### **Dispensary :**

Ophthalmologist, Orthopedic and Physicians visit on different days of the week and offer their free consultations. And we provide free generic medicines.

### **Yoga Classes :**

Free Yoga Classes for peace of mind, body and soul are conducted Monday through Friday.

### **Stitching / Crookery Classes :**

They are conducted to help ladies earn their own livelihood, in order to be independent and self reliant.

### **Computer Classes :**

Similarly Free Computer Classes help to educate people of all ages with current basic requirement of modern age. Regularly as per interest of people, other culture activities are also conducted.

The Sole idea is to make people independent & self sufficient by training them for useful services to the society by doing so they make their own living.



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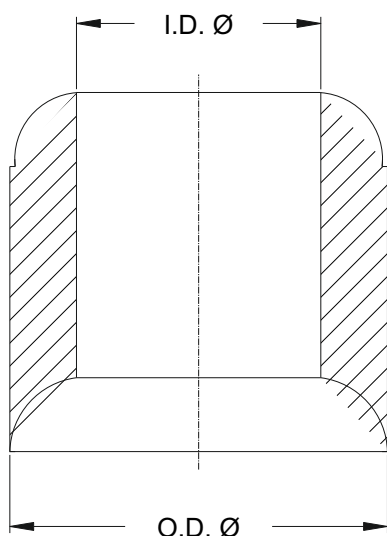


# STEATITE INTERLOCKING BEADS



MATERIAL : C220

UCOMMON DIMENSIONS



CODE NO.		DIAMETER IN M.M.		QUANTITY (APR.)		TO TAKE	
		I.D. Ø	O.D. Ø	PER FOOT	PER KG.	WIRE GAUGE	WIRE SIZE IN M.M.
BIDL30001	SCS/1	1.4	3.3	90	18000	18	1.22
BIDL30002	SCS/2	1.8	4.2	70	9500	16	1.63
BIDL30003	SCS/3	2.3	5.3	60	5000	14	2.03
BIDL30004	SCS/4	3.2	7.0	50	2500	12	2.64
BIDL30005	SCS/5	3.2	8.5	40	1200	11	2.95
BIDL30006	SCS/6	4.0	10.0	35	800	9	3.66
BIDL30007	SCS/7	4.5	11.2	30	500	8	4.06
BIDL30008	SCS/8	5.5	12.7	25	400	6	4.88
BIDL30009	SCS/9	6.0	13.0	20	350	4	5.89
BIDL30010	SCS/10	4.5	7.5	50	2500	9	3.66
BIDL30011	SCS/11	5.5	8.6	40	1500	6	4.88
BIDL30012	SCS/ $\frac{12}{13}$	6.6	10.2	40	1200	3	6.04

## NOTE :

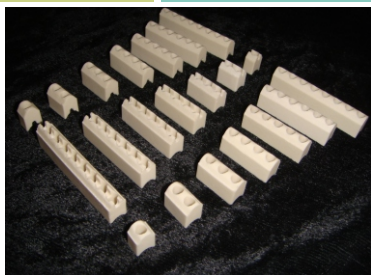
DIMENSION FOR HEIGHT OF BEADS

CODE NO. BIDL30001 TO BIDL30009 HEIGHT OF BEADS IS O.D.+0.5mm.

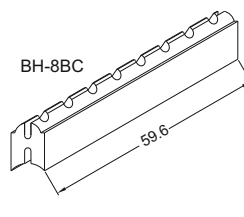
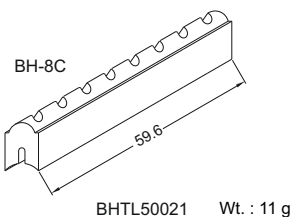
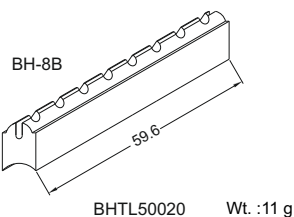
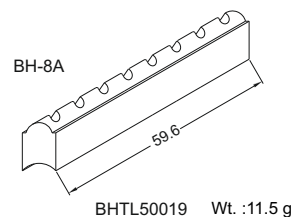
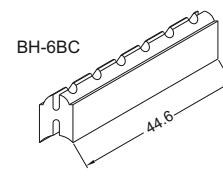
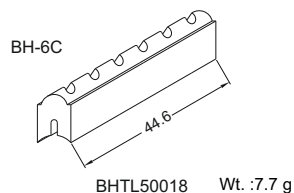
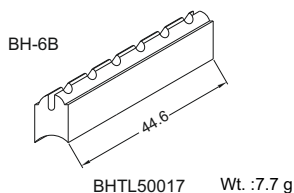
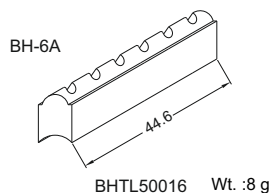
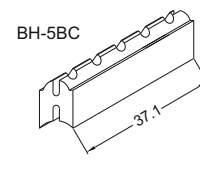
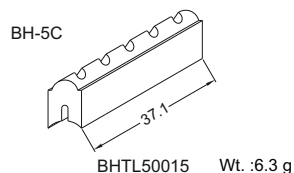
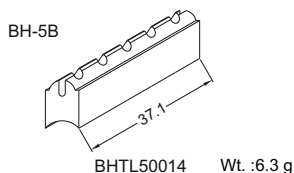
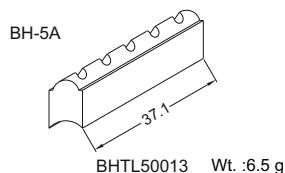
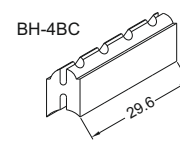
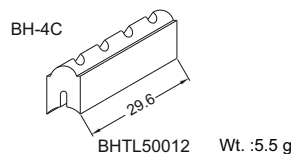
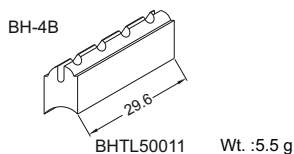
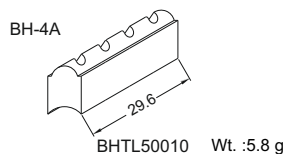
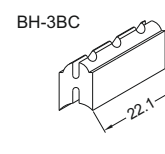
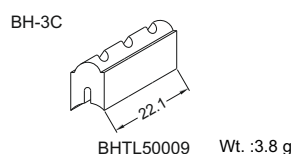
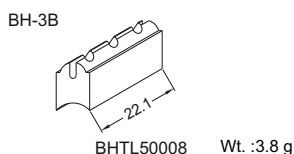
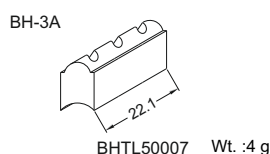
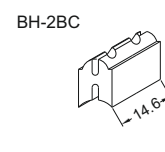
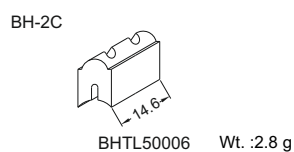
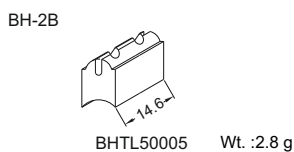
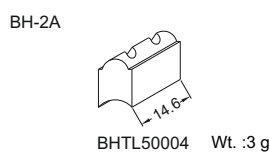
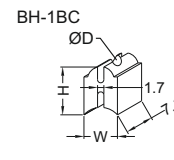
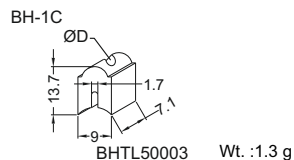
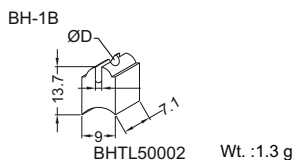
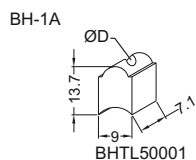
CODE NO. BIDL30010 TO BIDL30012 HEIGHT OF BEADS IS O.D.-0.5mm.

# STEATITE CERAMIC BAND HEATER (REGULAR)

MATERIAL : C221



ALL DIMENSIONS ARE IN M.M.  
TOLERANCES FOR WIDTH AND HEIGHT  $\pm 0.3$  MM, OR  
2% WHICHEVER IS GREATER  
TOLERANCES FOR LENGTH  $\pm 0.30$  MM FOR ALL  
TOLERANCES FOR HOLES AND SLOTS  $\pm 0.15$ MM  
BOW ALLOWANCES 0.15MM OR 0.5% OF THE LENGTH



DIMENSION	SIZE
H	13.7
W	9.0
ØD	4.75
S	1.7

UCOMMON DIMENSIONS

# STEATITE CERAMIC BAND HEATER (SMALL)



ALL DIMENSIONS ARE IN M.M.  
TOLERANCES FOR WIDTH  $\pm 0.3$  MM AND HEIGHT  $\pm 0.2$  MM, OR  
2% WHICHEVER IS GREATER  
TOLERANCES FOR LENGTH  $\pm 0.50$  MM FOR ALL  
TOLERANCES FOR HOLES AND SLOTS  $\pm 0.15$ MM  
BOW ALLOWANCES 0.15MM OR 0.5% OF THE LENGTH



MATERIAL : C220

<p>BH-1A</p> <p>BHTL30036 Wt. :0.3 g</p>	<p>BH-1B</p> <p>BHTL30037 Wt. :0.3 g</p>	<p>BH-1C</p> <p>BHTL30038 Wt. :0.3 g</p>	<p>BH-1BC</p> <p>BHTL30038 Wt. :0.3 g</p>
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<p>BH-3A</p> <p>BHTL30042 Wt. :1.1 g</p>	<p>BH-3B</p> <p>BHTL30043 Wt. :1.1 g</p>	<p>BH-3C</p> <p>BHTL30044 Wt. :1.1 g</p>	<p>BH-3BC</p> <p>BHTL30044 Wt. :1.1 g</p>
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<p>BH-6A</p> <p>BHTL30051 Wt. :2.2 g</p>	<p>BH-6B</p> <p>BHTL30052 Wt. :2 g</p>	<p>BH-6C</p> <p>BHTL30053 Wt. :2 g</p>	<p>BH-6BC</p> <p>BHTL30053 Wt. :2 g</p>
<p>BH-8A</p> <p>BHTL30054 Wt. : 3 g</p>	<p>BH-8B</p> <p>BHTL30055 Wt. : 2.8 g</p>	<p>BH-8C</p> <p>BHTL30056 Wt. : 2.8 g</p>	<p>BH-8BC</p> <p>BHTL30056 Wt. : 2.8 g</p>

DIMENSION	SIZE
H	6.7
W	6.3
ØD	2.75
S	1.2

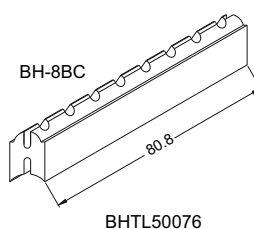
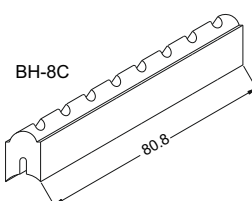
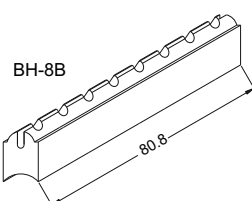
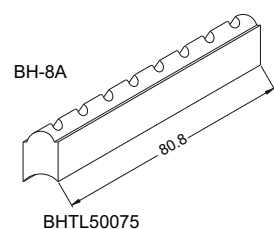
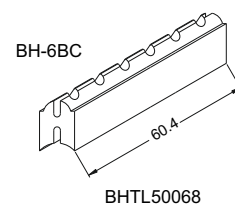
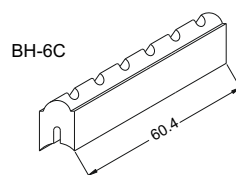
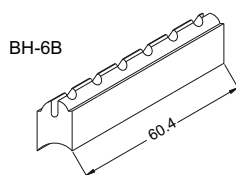
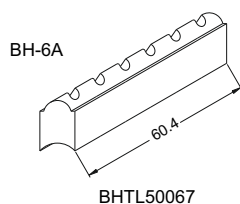
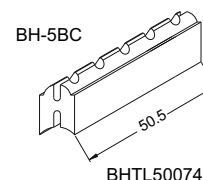
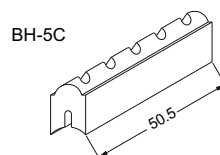
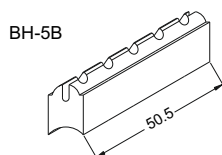
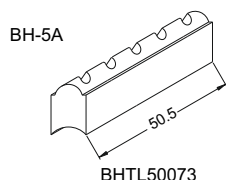
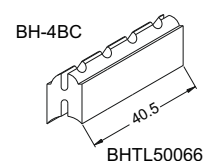
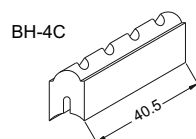
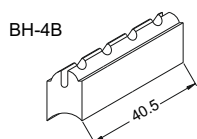
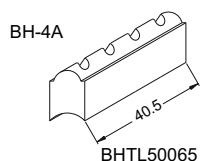
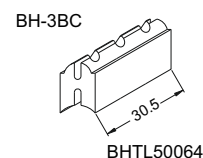
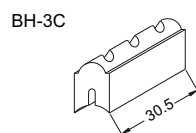
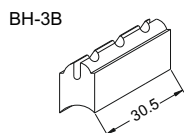
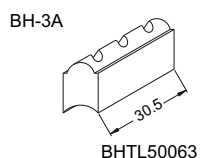
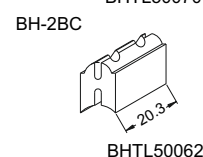
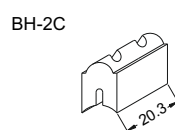
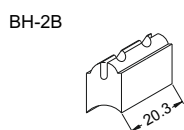
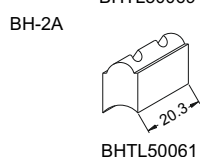
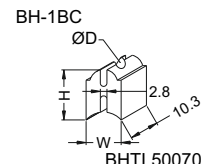
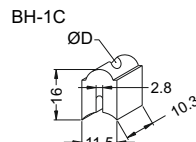
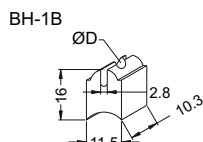
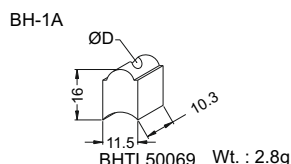


# STEATITE CERAMIC BAND HEATER (LARGE)

MATERIAL : C221



ALL DIMENSIONS ARE IN M.M.  
TOLERANCES FOR WIDTH AND HEIGHT  $\pm 0.3$  MM, OR  
2% WHICHEVER IS GREATER  
TOLERANCES FOR LENGTH  $\pm 0.40$  MM FOR ALL  
TOLERANCES FOR HOLES AND SLOTS  $\pm 0.15$  MM  
BOW ALLOWANCES 0.15 MM OR 0.5% OF THE LENGTH



UCOMMON DIMENSIONS

DIMENSION	SIZE
H	16.00
W	11.50
ØD	8.10
S	2.8

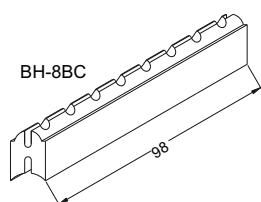
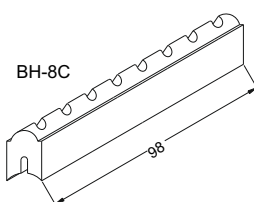
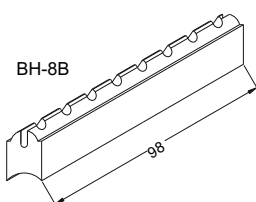
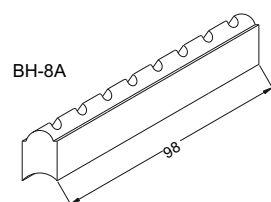
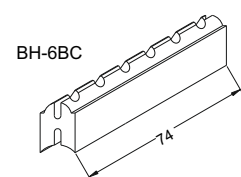
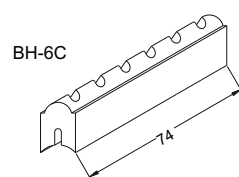
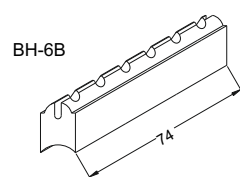
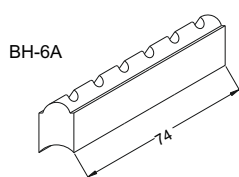
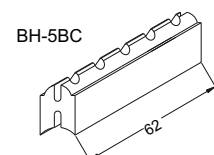
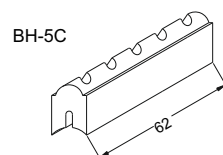
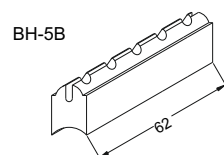
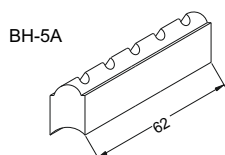
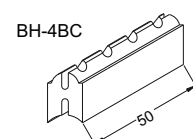
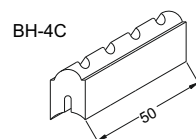
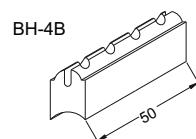
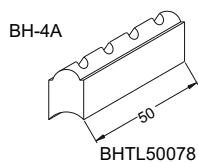
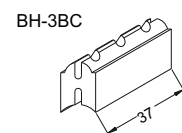
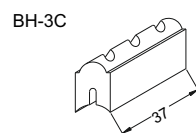
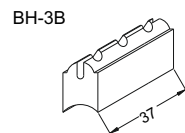
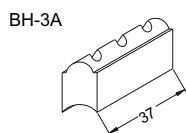
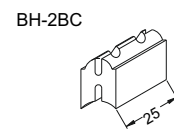
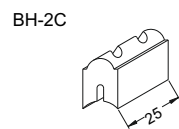
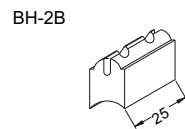
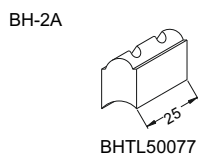
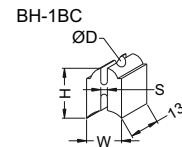
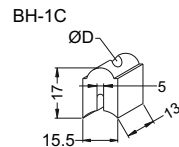
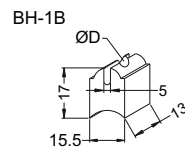
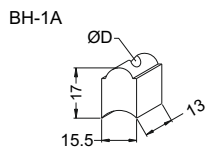
# STEATITE CERAMIC BAND HEATER (EXTRA LARGE)



MATERIAL : C221

COMMON DIMENSIONS

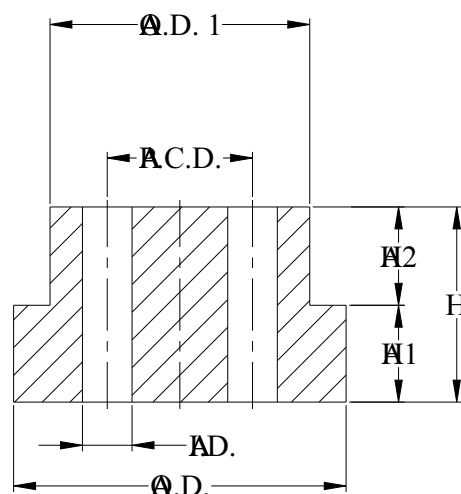
ALL DIMENSIONS ARE IN M.M.  
TOLERANCES FOR WIDTH AND HEIGHT  $\pm 0.3$  MM, OR  
2% WHICHEVER IS GREATER  
TOLERANCES FOR LENGTH  $\pm 0.40$  MM FOR ALL  
TOLERANCES FOR HOLES AND SLOTS  $\pm 0.15$  MM  
BOW ALLOWANCES 0.15 MM OR 0.5% OF THE LENGTH



DIMENSION	SIZE
H	17.00
W	15.50
ØD	8.00
S	5.00

# STEATITE CARTRIDGE HEATERS

MATERIAL : C221



CODE NO.	CH. NO.	O.D.	I.D.	H	H1	H2	O.D.1	P.C.D.
CHTL50001	8	8.00	1.60	4.00	2.00	2.00	6.50	2.80
CHTL50002	10	10.00	2.50	6.00	3.00	3.00	8.00	3.70
CHTL50003	12	13.00	3.00	7.00	4.00	3.00	11.00	5.60
CHTL50004	8B	8.00	1.60	8.00	4.00	4.00	6.50	2.80
CHTL50005	10B	10.00	2.50	12.00	6.00	6.00	8.00	3.70
CHTL50006	12B	13.00	3.00	12.00	6.00	6.00	11.00	5.60
CHTL50007	14	14.00	3.60	12.00	6.00	6.00	12.00	5.00
CHTL50008	16	16.00	4.20	10.00	5.00	5.00	14.50	7.00
CHTL50016	P9	10.00	2.50	9.00	5.00	4.00	8.00	3.50
CHTL50017	P8	12.50	2.50	9.00	5.00	4.00	10.40	4.50
CHTL50029	P13	17.00	3.50	12.00	5.00	7.00	14.00	8.00
CHTL50030	P101	19.90	4.20	12.00	5.00	7.00	17.90	9.80
CHTL50048	P28	25.80	4.30	12.00	5.00	7.00	22.50	11.50

## NOTE :

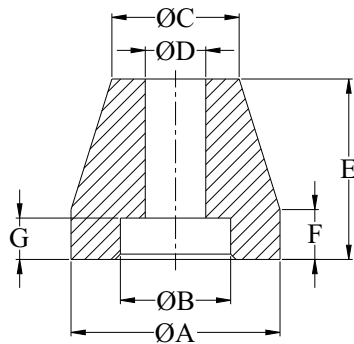
- 1) ALL DIMENSIONS ARE IN M.M.
- 2) DIMENSIONAL TOLERANCE: UP TO 5MM :  $\pm 0.15$   
FROM 5 TO 10MM :  $\pm 0.20$   
OVER 10 MM :  $\pm 2\%$

\*\* DETAILED DRAWING AVAILABLE ON REQUEST.

COMMON DIMENSIONS



# STEATITE CAPACITOR BUSH & GROMET

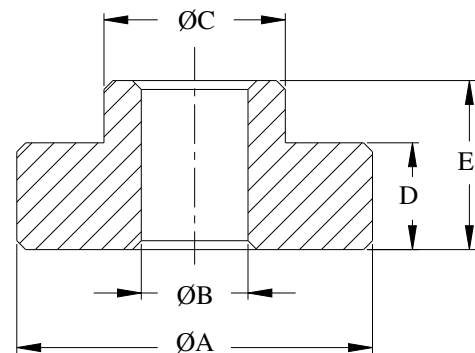


CAPACITOR BUSH TOP

CODE NO	A	B	C	D	E	F	G	WEIGHT IN GRM
CAPL50002	19.7	10.4	12.0	5.7	17.0	4.7	3.9	7.7
CAPL50004	28.0	16.4	15.8	6.5	18.5	3.0	4.0	15.7
CAPL50006	31.3	21.2	13.8	8.2	28.7	8.5	4.8	28.6
CAPL50008	39.8	23.5	18.0	10.5	27.0	2.7	8.0	49.5

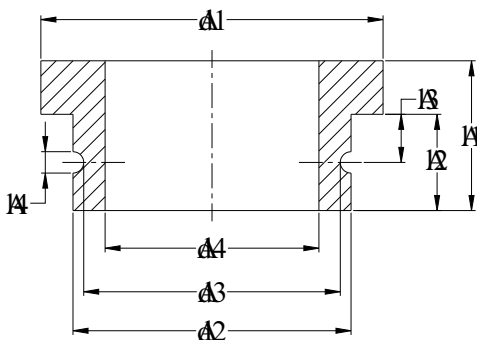


MATERIAL : C220



CAPACITOR BUSH BOTTOM























CAPACITOR BUSH BOTTOM						
CODE NO	A	B	C	D	E	WEIGHT IN GRM
CAPL50001	20.0	6.0	10.2	6.0	9.5	5
CAPL50003	27.0	6.7	15.1	7.5	11.0	13
CAPL50005	32.2	8.3	20.0	8.5	13.5	20.5
CAPL50007	38.7	10.5	19.2	8.3	14.8	29



COMMON DIMENSIONS

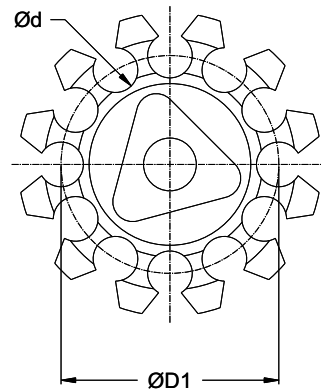
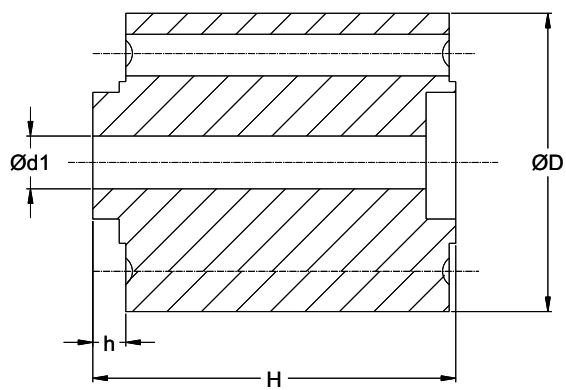
CODE NO.	d1	d2	d3	d4	l1	l2	l3	l4	WEIGHT IN GRM
BUSL51001	15.00	12.00	10.00	7.00	8.00	5.50	3.00	2.00	2
BUSL51042	23.00	15.60	14.50	9.50	12.00	8.00	3.00	2.00	6
BUSL51043	25.00	18.00	16.50	13.00	12.00	8.00	2.25	2.00	6
BUSL51070	32.00	26.00	24.00	20.00	14.00	9.00	4.50	2.00	11
BUSL51137	44.00	35.00	32.00	28.00	8.50	6.00	3.00	1.00	11.6



ITEM	BOBBIN	TOP	BOTTOM	ITEM	ØD	ØD1	Ød	Ød1	H	h	Weight in gm.
Ø25 MM BOBBIN 6 HOLES				BOBBIN	25.60	16.50	5.50	4.50	53.00	3.00	31
				TOP	25.00	15.00	4.00	4.00	14.50	2.50	8.3
				BOTTOM	25.00	---	---	4.00	10.00	---	8.6
Ø31 MM BOBBIN 8 HOLES				BOBBIN	31.00	20.40	5.00	5.15	51.00	1.10	46
				TOP	29.20	18.60	4.65	4.50	22.60	5.00	31
				BOTTOM	31.00	20.40	5.00	5.50	14.20	---	11.2
Ø36 MM BOBBIN 8 HOLES				BOBBIN	36.00	25.00	6.50	6.80	58.00	3.00	65
				TOP	34.00	25.00	6.50	5.50	27.00	6.00	58
				BOTTOM	34.00	25.00	---	6.50	15.00	---	17.6
Ø38.5 MM BOBBIN 12 HOLES				BOBBIN	38.50	28.00	4.20	5.80	53.50	2.50	---
				TOP	---	---	---	---	---	---	---
				BOTTOM	---	---	---	---	---	---	---
Ø44 MM BOBBIN 12 HOLES				BOBBIN	44.00	35.30	6.30	7.50	55.00	4.00	93.5
				TOP	---	---	---	---	---	---	---
				BOTTOM	44.00	35.30	3.00	7.50	12.00	---	26.8
Ø45 MM BOBBIN 12 HOLES				BOBBIN	45.00	34.00	6.00	4.00	55.00	---	112
				TOP	---	---	---	---	---	---	---
				BOTTOM	---	---	---	---	---	---	---
Ø46 MM BOBBIN 12 HOLES				BOBBIN	46.00	33.00	6.00	8.00	55.00	4.00	94
				TOP	46.00	35.00	4.50	7.00	26.50	6.50	93.5
				BOTTOM	46.00	35.00	3.50	7.00	14.00	---	26.6
Ø47 MM BOBBIN 12 HOLES				BOBBIN	46.50	34.60	6.20	12.20	52.30	3.60	89.5
				TOP	46.50	31.00	3.50	4.80	27.00	8.60	102
				BOTTOM	---	---	---	---	---	---	---
Ø52 MM BOBBIN 12 HOLES				BOBBIN	50.50	38.00	7.00	13.00	53.50	3.50	107
				TOP	50.00	36.00	4.00	5.00	27.30	9.30	---
				BOTTOM	---	---	---	---	---	---	---
Ø57 MM BOBBIN 12 HOLES				BOBBIN	57.00	44.20	7.30	7.80	51.50	2.70	127
				TOP	---	---	---	---	---	---	---
				BOTTOM	57.00	44.00	4.00	6.20	12.50	---	43.5

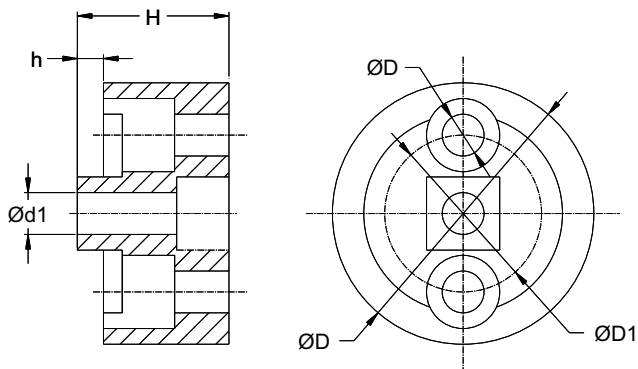
[ANY OTHER SHAPE CAN BE MADE IN OUR OWN - MOST MORDERN TOOL ROOM]

# BOBBIN

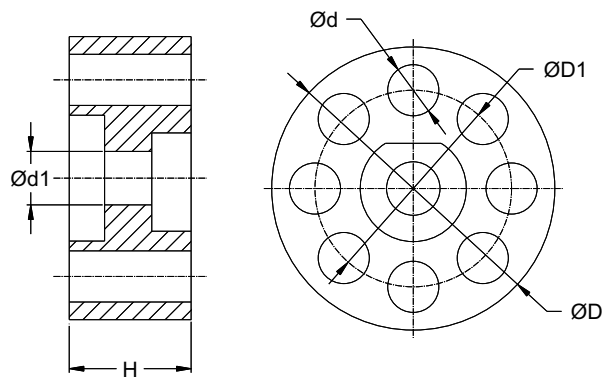


**BOBBIN**

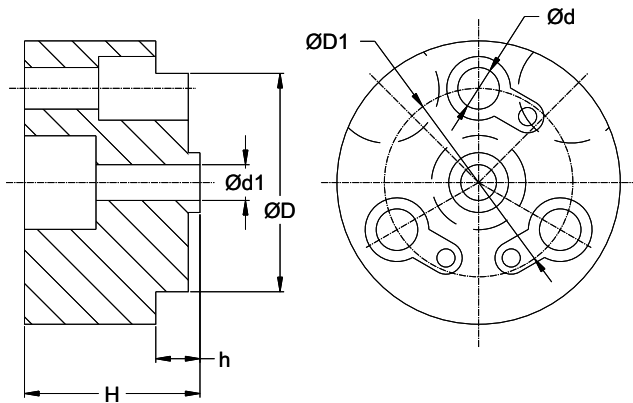
THIS DRAWINGS ARE ONLY MODEL. PLEASE REQUEST FOR DETAIL DRAWINGS.



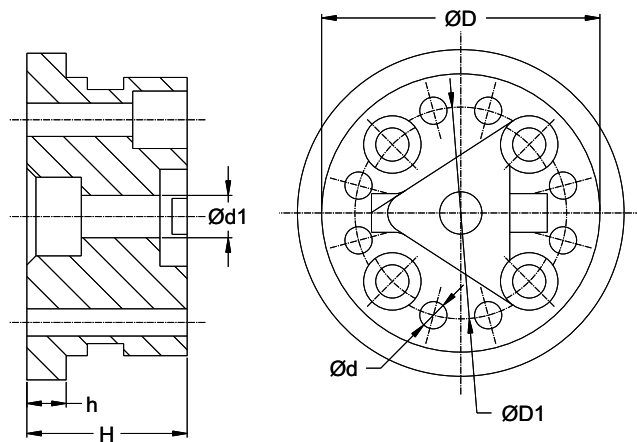
**BOBIN TOP-TYPE:A**



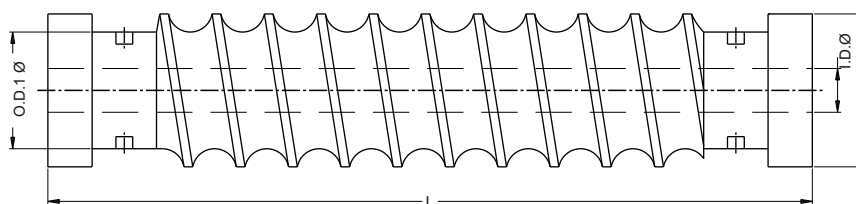
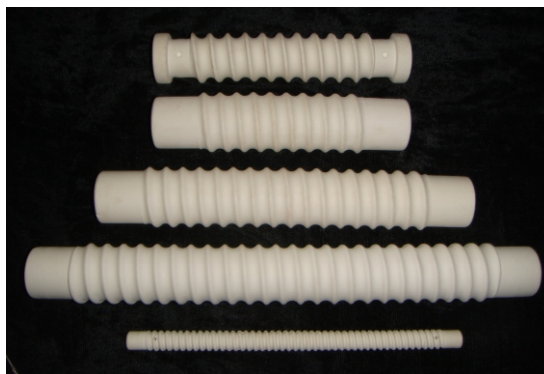
**BOBIN BOTTOM**



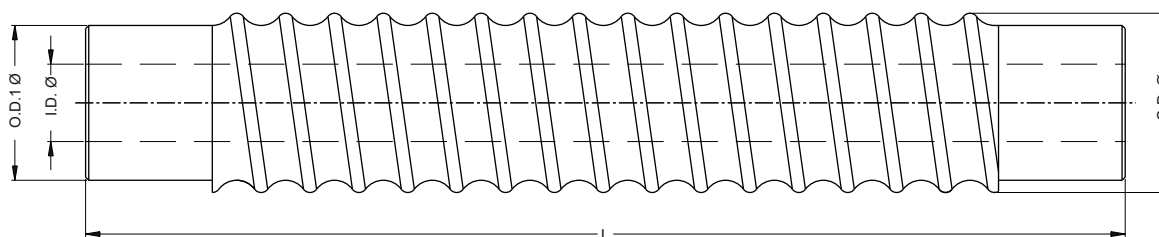
**BOBIN TOP - TYPE : B**



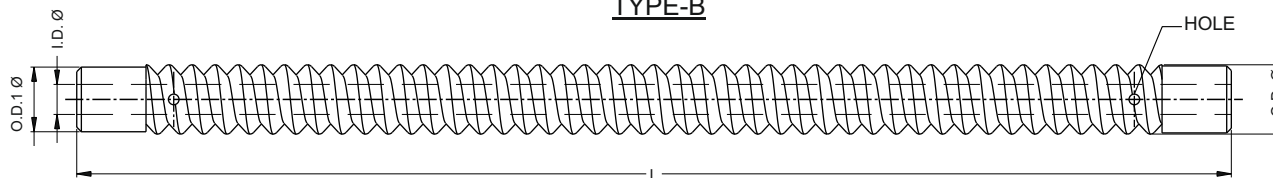
**BOBIN TOP - TYPE:C**



**TYPE-A**



**TYPE-B**



**TYPE-C**

TYPE	L	O.D. Ø	O.D.1 Ø	I.D. Ø	WEIGHT IN GRM
A	190.00	38.00	28.00	10.00	300
B	186.00	44.00	38.00	9.50	422
B	271.00	44.00	38.00	22.00	450
B	365.00	44.00	38.00	22.00	615
C	250.00	15.00	14.50	6.50	54

## SPECIFICATION :

MATERIAL :-CORDIO-SILLIMANITE (REFRACTORY) C - 510

COLOUR :-OFF WHITE

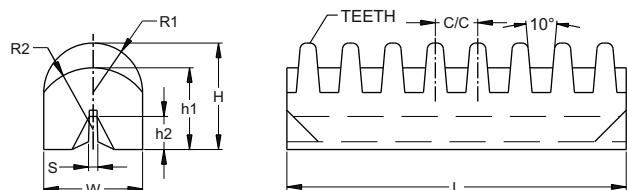
## NOTE :

- 1) ALL DIMENSIONS ARE IN M.M.
- 2) DIMENSIONAL TOLERANCE:UP TO 5MM :  $\pm 0.2$   
FROM 5 TO 10MM :  $\pm 0.3$   
OVER 10 MM :  $\pm 2\%$

\* \*DETAILED DRAWING AVAILABLE ON REQUEST.



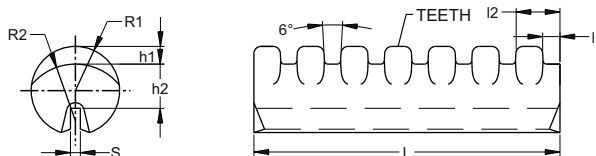
# FORMER (RESISTANCE)



**CERAMIC FORMERS**

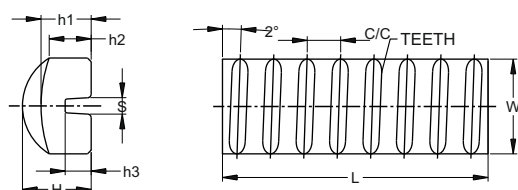


CODE	L	W	H	h1	h2	S	R1	R2	C/C	TEETH	WEIGHT IN GRM.
GENCP0172	86.50	25.40	27.36	21.00	8.50	2.39	12.70	15.87	6.20	14 NOS.	105
GENCP0173	86.50	25.40	27.36	21.00	8.50	2.39	12.70	15.87	10.90	08 NOS.	110



**GLAZE FORMERS**

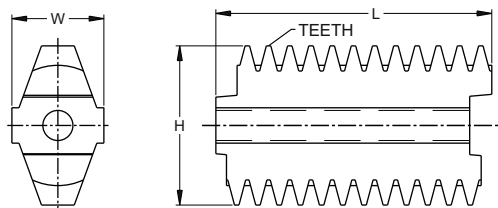
CODE	L	I1	I2	h1	h2	S	R1	R2	TEETH	WEIGHT IN GRM.
GENCP1262	86.50	2.50	6.17	5.00	12.50	2.80	12.50	16.00	14 NOS.	92
GENCP1263	86.50	5.00	12.36	5.00	12.50	2.80	12.50	16.00	07 NOS.	89.5
GENCP1271	86.50	2.80	7.27	5.00	12.50	2.80	12.50	16.00	12 NOS.	91



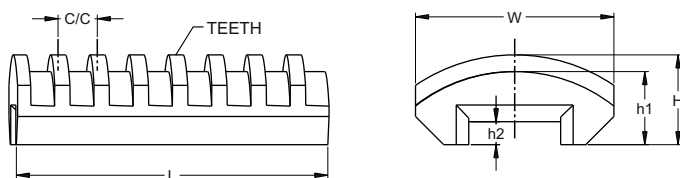
**GLAZE FORMERS**



CODE	L	W	H	h1	h2	h3	S	C/C	TEETH	WEIGHT IN GRM.
GENCP1267	71.50	25.50	18.50	13.50	11.30	7.00	4.40	12.00	06 NOS.	55
GENCP1268	71.50	25.50	18.50	13.50	11.30	7.00	4.40	9.00	08 NOS.	55.5
GENCP1269	71.50	25.50	18.50	13.50	11.30	7.00	4.40	6.60	11 NOS.	54



ITEM	CODE	L	W	H	TEETH	WEIGHT IN GRM.
DOUBLE FORMER	GENCP0282	78.00	26.00	45.00	12 NOS.	101.6



ITEM	CODE	L	W	H	h1	h2	C/C	TEETH	WEIGHT IN GRM.
RECTANGLE FORMER	GENCP0344	74.50	47.50	21.50	17.50	5.50	9.40	8 NOS.	110
RECTANGLE FORMER	GENCP0345	74.50	47.50	21.50	17.50	5.50	7.45	10 NOS.	111
RECTANGLE FORMER	GENCP0346	74.50	47.50	21.50	17.50	5.50	6.80	11 NOS.	113.5



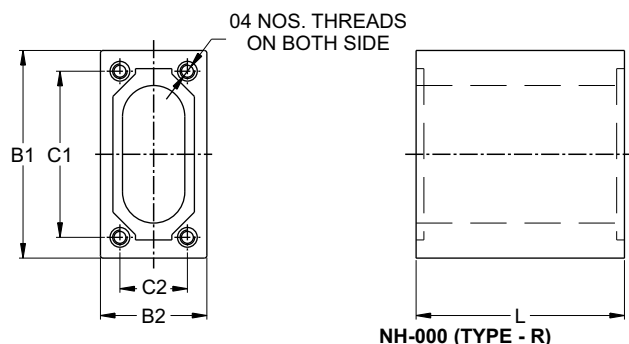
[ANY OTHER DESIGNS IN THE ABOVE TYPE CAN BE MANUFACTURED.]

**MATERIAL : C410**

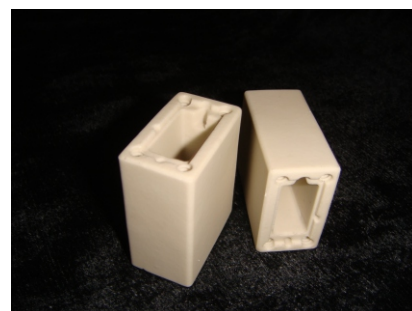
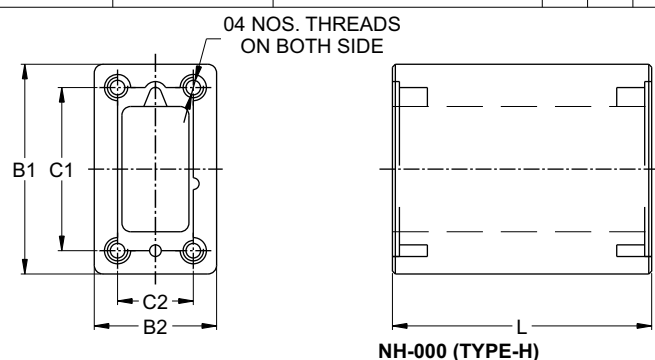
**MATERIAL : C410**

# DIN TYPE STEATITE CERAMIC HRC FUSE BODY

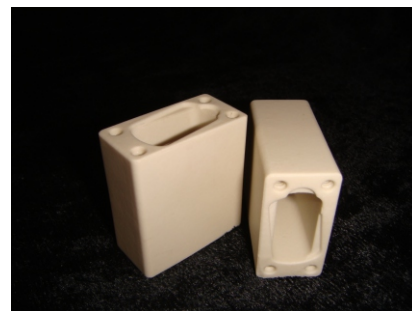
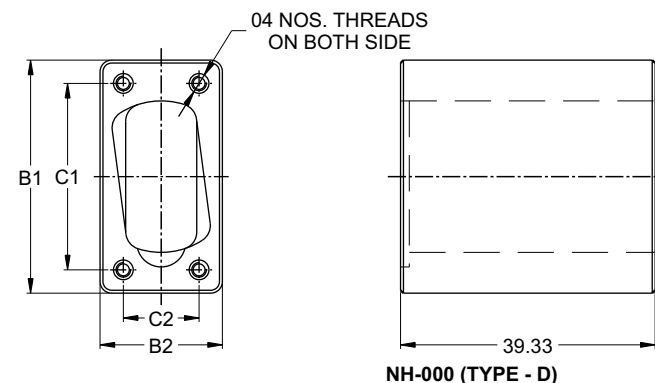
MATERIAL : C221



CODE NO.	PATTERN NO.	CURRENT RATING	PRESSURE BURSTING STRENGTH	L	B1	B2	C1	C2	THREADS	WEIGHT
SQBL51015	NH-000	60-100 A, 500 V	400 PSI [28 kg/cm <sup>2</sup> ]	44	40	20.5	32	13	B2.8 X 13 DIN 7970	58.5 gm



CODE NO.	PATTERN NO.	CURRENT RATING	PRESSURE BURSTING STRENGTH	L	B1	B2	C1	C2	THREADS	WEIGHT
SQBL51061	NH-000	60-100 A, 500 V	400 PSI [28 kg/cm <sup>2</sup> ]	44.5	36	21	28	13	B3.5 X 15 DIN 7970	58 gm



CODE NO.	PATTERN NO.	CURRENT RATING	PRESSURE BURSTING STRENGTH	L	B1	B2	C1	C2	THREADS	WEIGHT
SQBL51089	NH-000	60-100 A, 500 V	400 PSI [28 kg/cm <sup>2</sup> ]	43.7	40	21	32	13	B2.9 X 13 DIN 7970	58.6 gm

## **SPECIFICATION :**

MATERIAL :-STEATITE CERAMIC HF GRADE 82 CONFORMING TO KER 221/IEC CLASS C-221

SURFACE FINISH :-SATIN SMOOTH

COLOUR :-OFF WHITE

## **NOTE :**

1) ALL DIMENSIONS ARE IN M.M.

2) DIMENSIONAL TOLERANCE:UP TO 5MM : ±0.2

FROM 5 TO 10MM : ±0.3

OVER 10 MM : ±0.35 OR ±2% WHICH EVER IS GREATER.

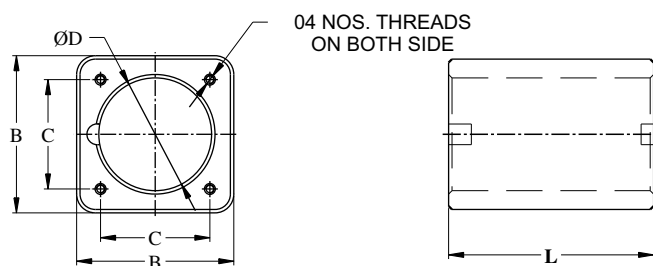
\* NO. 2,3 & 4 SPECIFIES NOS. OF HOLES.

\*\* DETAILED DRAWING AVAILABLE ON REQUEST.

# DIN TYPE STEATITE CERAMIC HRC FUSE BODY



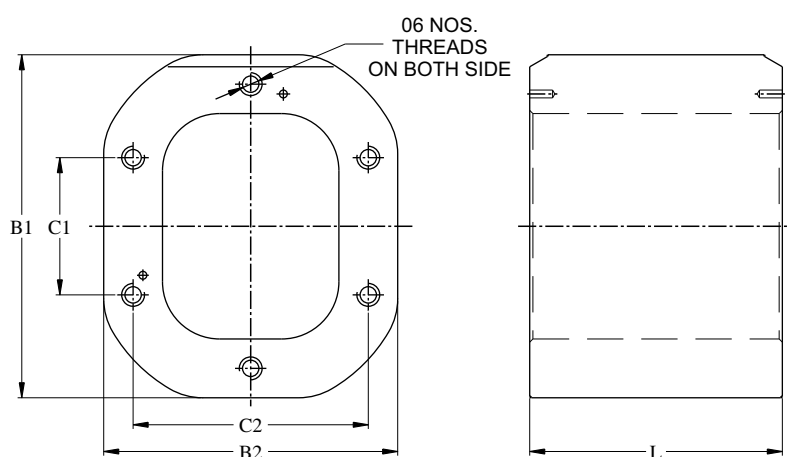
MATERIAL : C221



NH-01, NH-02, NH-03



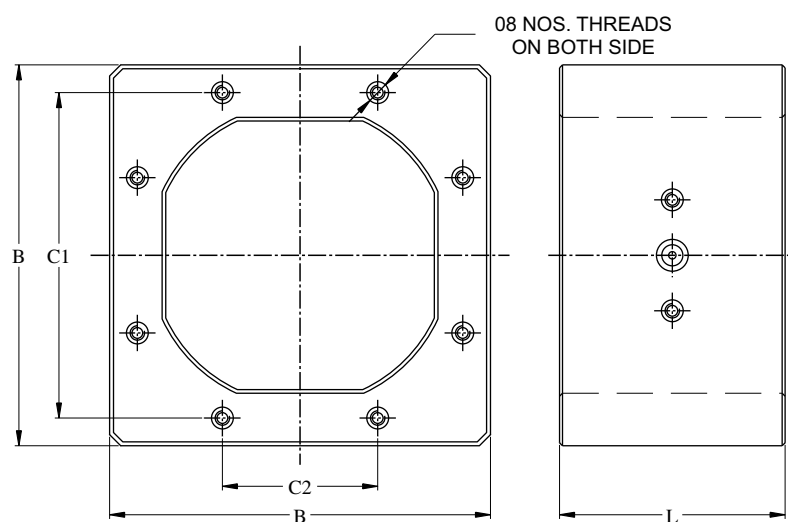
CODE NO.	PATTERN NO.	CURRENT RATING	PRESSURE BURSTING STRENGTH	L	B	C	D	THREADS	WEIGHT
SQBL51007	NH-01	250 A, 500 V	630 PSI [44 kg/cm <sup>2</sup> ]	60	46	32	33	B3.5 X 16 DIN 7970	192.6 grm
SQBL51008	NH-02	400 A, 500 V	630 PSI [44 kg/cm <sup>2</sup> ]	60	57	40	42	B4.2 X 19 DIN 7970	279.4 grm
SQBL51009	NH-03	600 A, 600 V	630 PSI [44 kg/cm <sup>2</sup> ]	60	72	52	50	B4.2 X 19 DIN 7970	493.2 grm



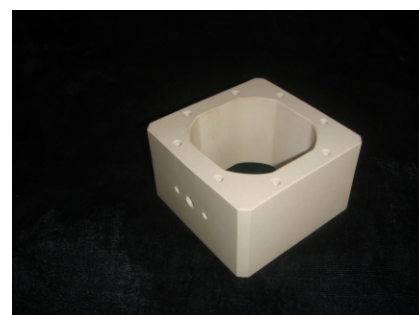
NH-04



PATTERN NO.	CURRENT RATING	PRESSURE BURSTING STRENGTH	L	B1	B2	C1	C2	THREADS	WEIGHT
NH-04	250 A, 500 V	630 PSI [44 kg/cm <sup>2</sup> ]	71	105	90	42	72	B5.5 X 20 DIN 7970	924 grm



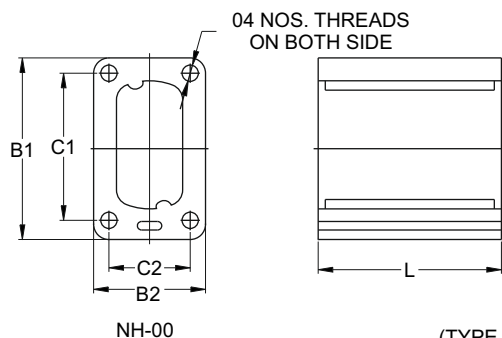
NH-04 [BIG]



PATTERN NO.	CURRENT RATING	PRESSURE BURSTING STRENGTH	L	B	C1	C2	THREADS	WEIGHT
NH-04 [BIG]	250 A, 500 V	630 PSI [44 kg/cm <sup>2</sup> ]	61	103	88	42	B4.2 X 15 DIN 7970	850 grm

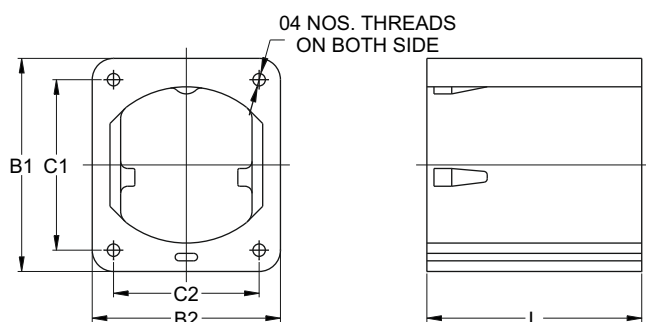
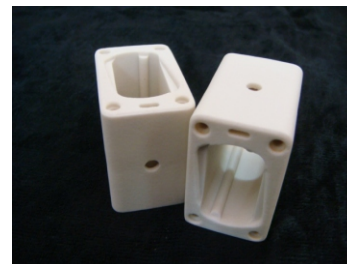
# DIN TYPE STEATITE CERAMIC HRC FUSE BODY

MATERIAL : C221



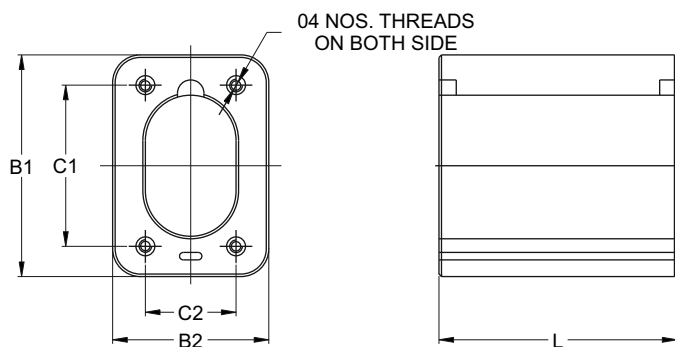
(TYPE - WITH INDICATOR HOLE)

PATTERN NO.	CURRENT RATING	PRESSURE BURSTING STRENGTH	L	B1	B2	C1	C2	THREADS	WEIGHT
NH-00	60-100 A, 500 V	400 PSI [28 kg/cm <sup>2</sup> ]	42.7	47	29	38	17	B2.8 X 8 DIN 7970	92 grm
NH-01	60-100 A, 500 V	630 PSI [44 kg/cm <sup>2</sup> ]	60.5	52	39	41	29	B3.5 X 8 DIN 7970	172 grm



(TYPE - WITH INDICATOR HOLE)

PATTERN NO.	CURRENT RATING	PRESSURE BURSTING STRENGTH	L	B1	B2	C1	C2	THREADS	WEIGHT
NH-03	60-100 A, 500 V	630 PSI [44 kg/cm <sup>2</sup> ]	60	60	63	48	41	B3.5 X 8 DIN 7970	257 grm



NH-00/4 WITH INDICATOR HOLE

PATTERN NO.	CURRENT RATING	PRESSURE BURSTING STRENGTH	L	B1	B2	C1	C2	THREADS	WEIGHT
NH-00/4	60-100 A, 500 V	400 PSI [28 kg/cm <sup>2</sup> ]	45	43	29.5	32	18	B3.5 X 16 DIN 7970	94 grm



## SPECIFICATION :

MATERIAL :-STEATITE CERAMIC HF GRADE 82 CONFORMING TO KER 221/IEC CLASS C-221

SURFACE FINISH :-SATIN SMOOTH

COLOUR :-OFF WHITE

## NOTE :

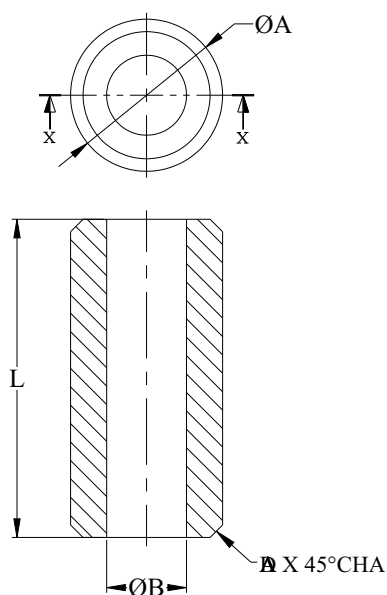
- 1) ALL DIMENSIONS ARE IN M.M.
- 2) DIMENSIONAL TOLERANCE:UP TO 5MM :  $\pm 0.2$   
FROM 5 TO 10MM :  $\pm 0.3$   
OVER 10 MM :  $\pm 0.35$  OR  $\pm 2\%$  WHICH EVER IS GREATER.

\* NO. 2,3 & 4 SPECIFIES NOS. OF HOLES.

\*\* DETAILED DRAWING AVAILABLE ON REQUEST.



# ROUND BARRELS



**MATERIAL : C410**

ROUND BARREL						
CODE NO.	ITEM	ØA ±0.05	ØB ±0.50	L ±0.50	D x 45° CHA.	WEIGHT IN GRM.
BRLCP0040	15 AMP	12.17	6.40	28.50	1.00	5.4
BRLCP0041	30 AMP	20.04	10.70	48.00	1.00	25.3
BRLCP0096	60 AMP	24.00	14.00	49.00	1.00	34.2
BRLCP0042	100 AMP	22.00	12.30	48.00	1.00	29
BRLCP0043	200 AMP	30.04	17.40	54.00	2.00	60
BRLCP0134	T1	13.40	8.00	49.70	1.50	10.5
BRLCP0135	T2	21.10	14.00	55.80	1.50	27
BRLCP0032	14 x 51	12.70	6.50	48.00	1.00	11
BRLCP0092	22 x 58	20.40	12.80	53.50	2.00	24.7
BRLL50159	10 x 38	9.60	5.00	37.00	1.00	5
BRLLMI0189	14 x 51 SPECIAL	12.70	8.50	48.70	1.50	8.5

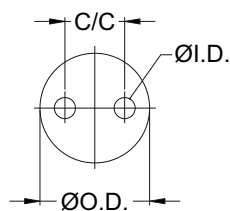
## NOTE :

- 1) ALL DIMENSIONS ARE IN M.M.
- 2) BURSTING STRENGTH: 60 KG / CM<sup>2</sup>
- 3) BREAKING STRENGTH: 100 KG / CM<sup>2</sup>
- 4) DETAILED DRAWING AVAILABLE ON REQUEST.

MATERIAL : C410 / ZIRCOR OR ALUMINIA 70%

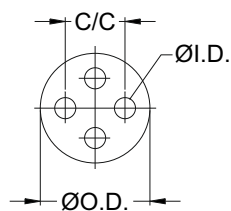
# CORDIERITE TUBE (MULTI HOLE TUBE)

MATERIAL : C511



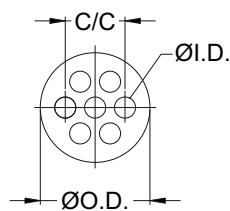
C-2

C-2	
O.D.	I.D.
6.0	1.5
6.5	2.0
8.0	2.5
8.0	2.6
9.5	3.0
11.5	3.5
12.0	3.0
12.0	4.0
13.0	3.0
14.0	4.0
15.0	4.0
16.0	4.0
18.0	4.5



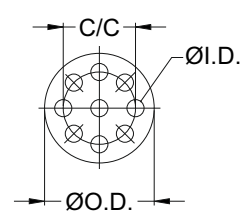
C-4

C-4	
O.D.	I.D.
6.0	1.5
7.0	1.9
8.0	2.0
8.0	2.4
8.5	1.5
8.5	2.0
9.0	2.0
9.5	2.7
10.0	3.0
11.0	2.2
11.5	2.2
12.0	3.0
12.0	3.3
12.0	3.5
13.0	4.0
14.0	3.5
14.0	4.0
15.0	3.5
17.0	3.0
17.0	5.0
19.0	3.5



C-7

C-7	
O.D.	I.D.
8.0	1.5
8.0	1.6
9.0	1.8
10.0	2.2
11.0	2.2
11.0	2.4
11.5	2.2
12.0	2.7
13.0	3.0
14.0	3.0
14.0	3.3
14.5	2.0
15.0	3.5
16.0	3.5
17.0	3.5
17.0	4.0
17.0	3.8
17.5	4.2
18.0	3.3
19.0	3.5
19.5	4.5
20.0	4.5
21.5	5.0
22.0	5.0
22.6	5.0
23.0	5.0
25.0	5.3



C-9

C-9	
O.D.	I.D.
17.0	3.0
18.0	3.0
18.5	3.3
18.5	3.5
23.0	4.0
24.0	4.0
25.5	5.0
26.5	5.3
28.5	6.0
33.7	5.8
36.0	6.5

## NOTE :

1) ALL DIMENSIONS ARE IN M.M.

2) DIMENSIONAL TOLERANCE:

Ø O.D. : + 0.00 / - 0.50

Ø I.D. : + 0.1 / - 0.20

LENGHT : ±2%

3) MAX. LENGTH AVAILABLE

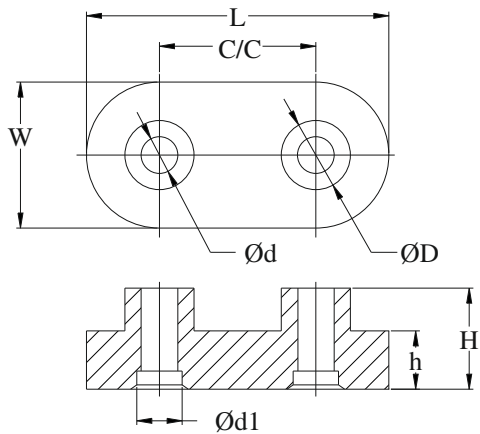
UP TO 5.9MM : 50MM

FROM 6 TO 11.9 : 150MM

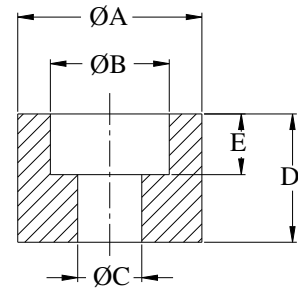
FROM 12 TO 20MM & ABOVE : 300MM



# IRON CONNECTORS



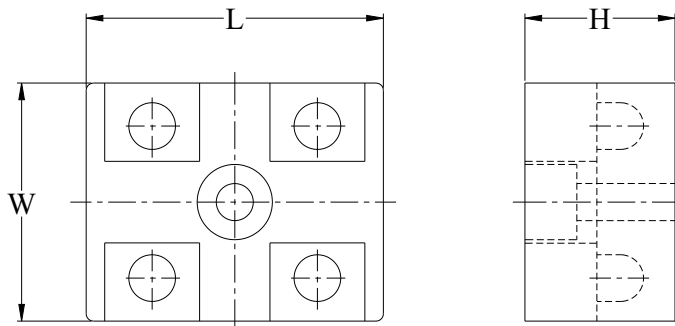
UMALE



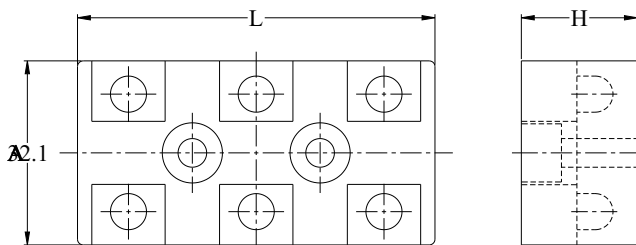
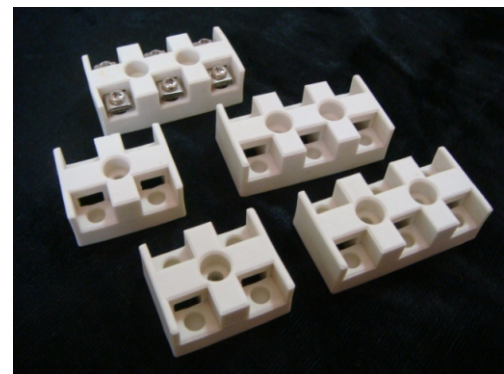
FEMALE

	CODE NO.	L	W	C/C	ØD	Ød	Ød1	H	h	WT. Grm.
	BUSL30039	35.00	17.00	19.00	9.00	4.50	10.00	11.50	5.50	7.8
	BUSL30040	35.00	17.70	19.00	8.50	4.80	9.50	11.40	4.50	7.5
	BUSL30069	35.00	17.40	19.00	10.00	5.00	8.50	11.50	4.50	8
	BUSL30097	35.00	17.00	18.90	8.00	4.25	8.70	11.70	6.75	8.2
	BUSL50106	35.00	16.00	19.00	9.00	5.30	7.50	11.00	7.00	9

CODE NO.	ØA	ØB	ØC	D	E	WT. Grm.
BUSL30028	15.80	10.20	5.50	11.00	5.20	-
BUSL30030	17.25	10.20	5.50	11.00	5.20	-
BUSL30038	17.00	12.20	4.90	7.80	5.90	2.7
BUSL30041	16.00	9.90	4.80	8.00	5.90	-
BUSL50057	14.80	11.65	6.50	8.15	4.80	2
BUSL50059	9.00	6.80	3.30	5.15	3.30	-
BUSL50061	13.10	9.90	5.50	7.10	4.00	1.5
BUSL30098	16.00	9.75	4.75	7.50	5.00	2.7
BUSL50107	15.00	9.50	5.10	6.00	3.00	2.2



CODE NO.	L	W	H	MATERIAL	WT. IN GRM.
GENL50047	40.10	32.10	20.25	C-221	41

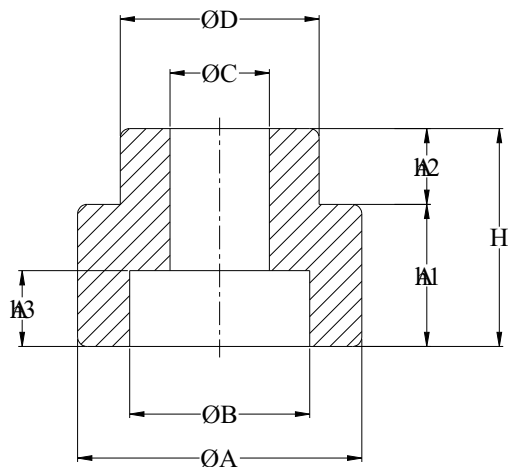


CODE NO.	L	W	H	MATERIAL	WT. IN GRM.
GENL50320	62.40	32.10	20.25	C-221	65

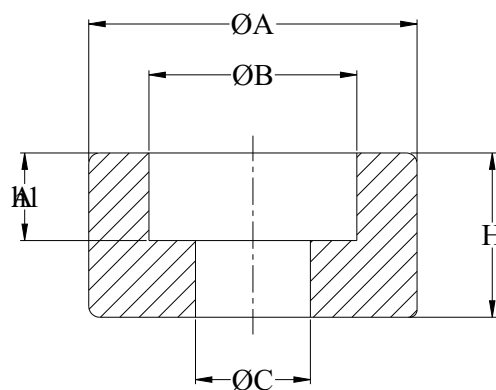
MATERIAL : C220 / C221

# STEATITE CERAMIC BUSH MALE & FEMALE

MATERIAL : C221



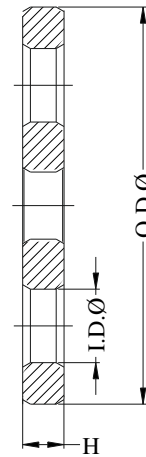
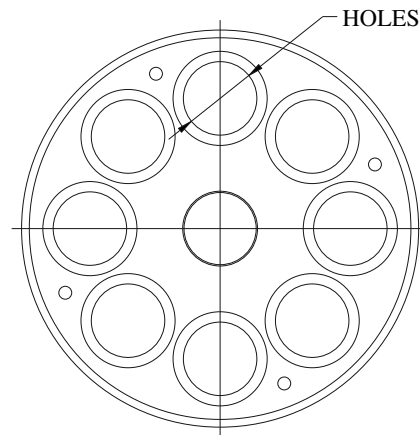
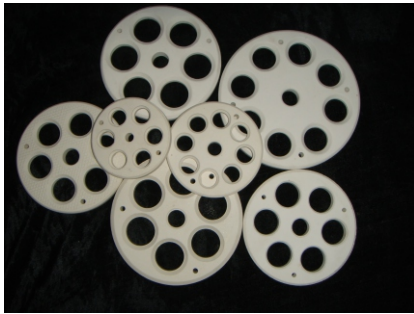
CERAMIC BUSH MALE									
CODE NO	A	B	C	D	H	h1	h2	h3	WEIGHT IN GRM
BUSL50136	30.00	22.00	13.00	21.00	23.00	15.00	8.00	7.00	24
BUSL50146	33.00	19.00	10.50	18.50	23.80	16.00	7.80	8.00	30
BUSL50135	40.00	27.50	16.90	25.80	33.00	21.00	12.00	12.00	55
BUSL50134	41.00	24.50	12.80	23.00	29.00	20.00	9.00	10.00	61
BUSL50150	36.00	19.00	10.50	18.50	23.80	16.00	7.80	8.00	38.5



CERAMIC BUSH FEMALE						
CODE NO	A	B	C	H	h1	WEIGHT IN GRM
BUSL50147	33.00	19.00	10.50	16.00	8.00	33
BUSL50144	41.00	24.50	12.80	20.00	10.00	56
BUSL50151	36.00	19.00	10.50	16.00	8.00	36



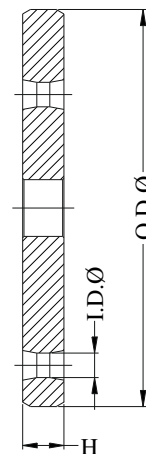
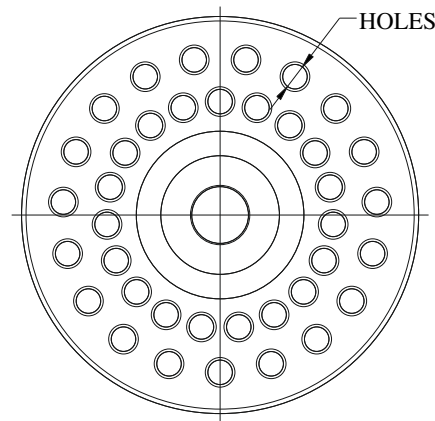
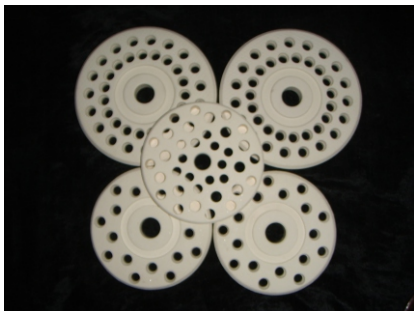
# DISC



TYPE-A

CODE NO.	O.D. Ø	I.D. Ø	H	NOS.OF HOLES	WEIGHT IN GRM.
GENCS0358	93.00	18.50	12.00	06	108.6
GENCS0122	110.00	19.00	12.00	08	152.8
GENCS0107	132.00	29.00	14.00	06	239.4
GENCS0150	145.00	34.00	16.00	06	303.7
GENCS0119	152.00	34.00	16.00	06	322.5

CODE NO.	O.D. Ø	I.D. Ø	H	NOS.OF HOLES	WEIGHT IN GRM.
GENCS0254	154.00	29.00	16.00	08	376.8
GENCS0176	162.00	29.00	16.00	08	449.6
GENCS0166	170.00	29.00	16.00	08	459.3
GENCS0259	180.00	34.00	16.00	08	468.1



TYPE-B

CODE NO.	O.D. Ø	I.D. Ø	H	NOS. OF HOLES	WEIGHT IN GRM.
GENCS0144	130.00	9.50	16.00	18	288
GENCS0149	152.00	9.50	16.00	30	432
GENCS0256	154.00	9.50	16.00	38	418.7
GENCS0115	158.00	9.50	16.00	38	430

## SPECIFICATION :

MATERIAL :-CORDIO-SILLIMANITE (REFRACTORY) C - 510

COLOUR :-OFF WHITE

## NOTE :

1) ALL DIMENSIONS ARE IN M.M.

2) DIMENSIONAL TOLERANCE:UP TO 5MM :  $\pm 0.2$

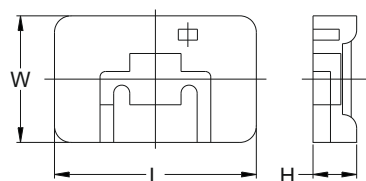
FROM 5 TO 10MM :  $\pm 0.3$

OVER 10 MM :  $\pm 2\%$

\*\* DETAILED DRAWING AVAILABLE ON REQUEST.

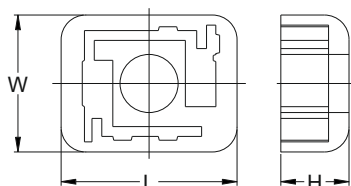
MATERIAL : C510

## M.H.B. [ MOSQUITO HOUSING BOATS]



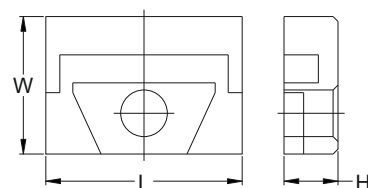
WEIGHT : 14 GRM.

CODE NO.	L	W	H	MATERIAL
MHBL50007	37.00	23.20	8.00	C-221



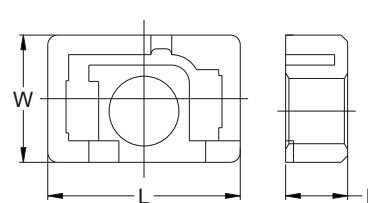
WEIGHT : 17 GRM.

CODE NO.	L	W	H	MATERIAL
MHBL50010	32.25	25.10	12.50	C-221



WEIGHT : 22 GRM.

CODE NO.	L	W	H	MATERIAL
MHBL30008	40.00	28.00	11.00	C-220

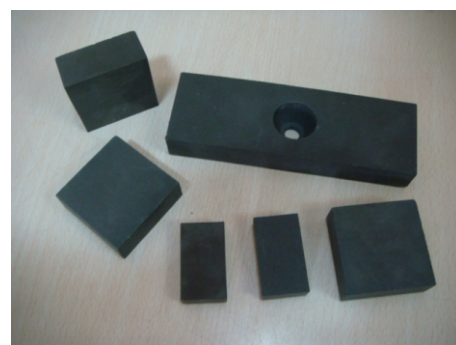


WEIGHT : 9 GRM.

CODE NO.	L	W	H	MATERIAL
MHBL30014	29.50	19.50	9.00	C-220

## ABRASION RESISTANCE TILES

CODE NO.	L	W	H	WT IN GRM.
GENBA0105	44.00	25.00	12.00	47
GENBA0275	50.00	50.00	15.00	153
GENBA0280	50.00	50.00	18.00	158
GENBA0258	50.00	50.00	19.00	162
GENBA0264	50.00	50.00	23.00	190
GENBA0362	150.00	50.00	20.00	462



ABRASION RESISTANCE TILES OF HIGH ALUMINA IN DARK BROWN COLOR ARE INTRODUCED.  
APPLICATION : CHUTES - WHERE COOL CLAY, GRAVELS ETC. ARE BEING USED IN  
**CEMENT PLANTS, POWER PLANTS ETC.**

## LAMP HOLDERS, BASES & TOWER PACKING

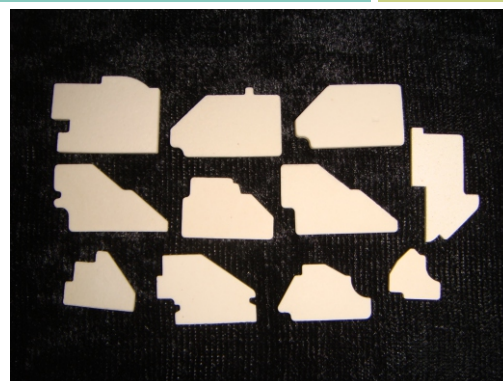
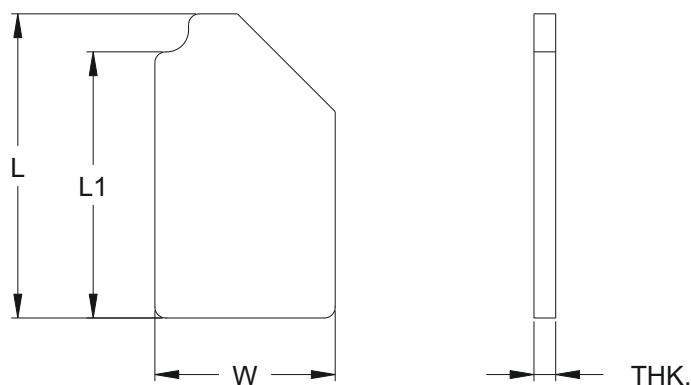


LAMP HOLDERS



ALUMINA CATALYST CARRIERS,  
BASES & TOWER PACKINGS

# CERAMIC PLATE (M.C.B.)



**MATERIAL : C220**

APPLICATION : CERAMIC PLATES USED IN M.C.B. [MINIATURE CIRCUIT BRAKERS]

ART	CODE NO.	L	W	THK.	L1	WT.
	MCBL30004	28.00	16.60	2.00	24.50	1.8
	MCBL30005	26.60	17.00	2.00	-	1.6
	MCBL30037	28.50	17.00	1.70	24.50	1.2
	MCBCS0011	28.00	17.80	1.60	-	1.2
	MCBL30012	28.30	17.00	2.00	24.50	1.8
	MCBL30017	17.50	14.00	1.90	7.00	0.8
	MCBL30018	25.00	18.70	2.00	-	-
	MCBL30022	27.90	18.00	2.00	25.70	2.2
	MCBL30029	23.00	13.80	2.00	-	1
	MCBL30033	12.90	12.40	2.00	-	0.5
	MCBL30034	28.00	16.00	2.00	24.50	1.8

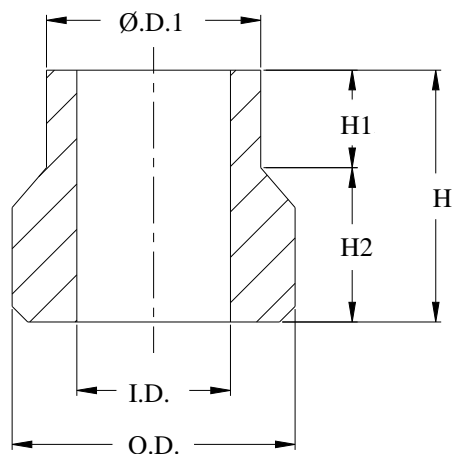
**MATERIAL : C220 / CORDIO-SILLIMANITE**

**UCOMMON DIMENSIONS**



# STEATITE ENDSEALING BUSH

MATERIAL : C221



CODE NO.	ARTICLE	O.D.	I.D.	H	H1	H2	O.D.1
ESBL50036	ESB:7	8.00	3.80	7.75	2.00	5.75	5.30
ESBL50003	ESB:9	8.60	4.30	8.00	2.00	6.00	6.00
ESBL50004	ESB:13(4)	8.25	4.20	10.60	4.50	6.10	6.40
ESBL500X2	ESB:14	6.90	3.60	10.00	4.50	5.50	5.30
ESBL50006	ESB:16(3)	8.30	3.20	11.00	4.50	6.50	6.40
ESBL500X3	ESB:17(3)	7.70	3.20	9.00	4.40	4.60	5.60
ESBL50014	ESB:20(3)	7.70	3.20	9.75	3.80	5.95	5.70
ESBL50005	ESB:21(4)	10.50	4.20	12.00	5.00	7.00	8.00
ESBL50008	ESB:21(5)	10.50	5.20	12.00	5.00	7.00	8.00
ESBL50009	ESB:22(6)	12.50	6.20	13.50	5.50	8.00	10.00
ESBL50010	ESB:24(6)	14.00	6.20	13.50	5.50	8.00	11.00
ESBL50011	ESB:26(6)	16.00	6.20	13.50	5.50	8.00	13.00
ESBL500X4	ESB:24(7)	14.00	7.20	13.50	5.50	8.00	11.00
ESBL50031	ESB:157	7.90	4.25	10.00	4.50	5.50	6.00
ESBL500X6	ESB:159	6.25	2.85	8.00	3.70	4.30	5.00
ESBL50022	ESB:SMALL	8.50	4.40	8.00	2.80	5.00	6.00
ESBL500X7	ESB:BIG	10.70	5.10	12.00	5.00	7.00	8.20

**NOTE :**

ALL DIMENSIONS ARE IN M.M.

FIGURE SHOWN IN BRACKET UNDER ARTICLE IS THE DIA Ø OF WIRE.

THAT CAN BE ACCOMMODATED IN THAT E.S.B.

REVISION NO.: -02

# CUSTOM MADE PRODUCTS & POROUS CAP



## CUSTOM MADE PRODUCTS



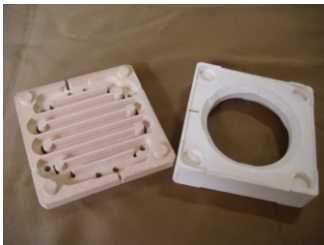
ELEPHANT TOOTH



SWITCH BASE



CERAMIC RING WITH HOLE



HEATING PLATE



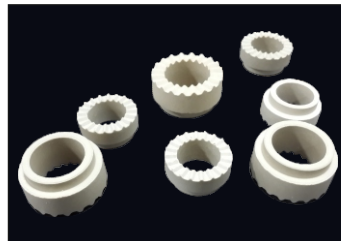
CERAMIC BLOCK



POROUS CAP FOR  
AERONAUTICAL USE



CUPLOCKS & OTHER ITEMS



FERRULES



FURNACE FUSE HOLDER



ITEM WITH METAL PARTS

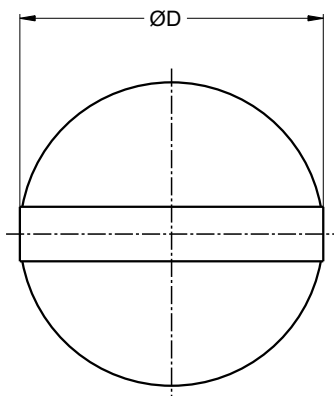


STAND OFFS



GLAZED & UNGLAZED BUSH

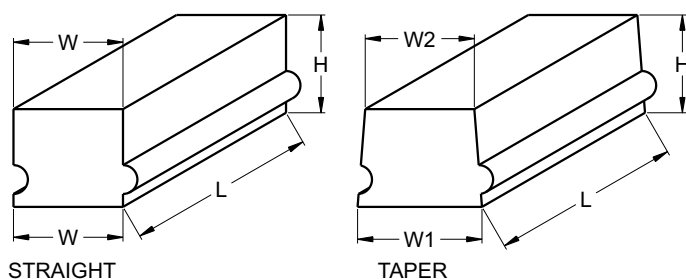
## GRINDING MEDIA



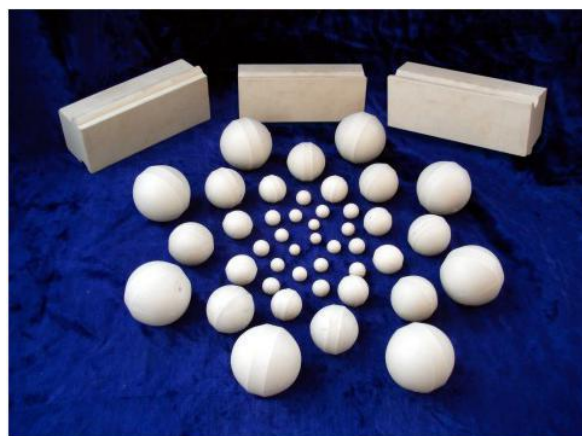
ITEM	CODE NO.	ØD	Weight in gm.
BALLØ10.00	MEDL50024	10.00	1.3
BALLØ12.00	MEDL50025	12.00	2.5
BALLØ15.00	MEDL50040	15.00	4
BALLØ19.00	MEDL50044	19.00	9
BALLØ20.00	MEDL50026	20.00	10
BALLØ24.00	MEDL50043	24.00	20
BALLØ25.00	MEDL50027	25.00	22
BALLØ37.00	MEDL50036	37.00	71
BALLØ40.00	MEDL50045	40.00	---
BALLØ50.00	MEDL50031	50.00	190
BALLØ60.00	MEDL50035	60.00	315

## LINING BRICK

(TOUNGE & GROOVE OR PLAIN) FOR BALL MILL LINING



LINING BRICKS				
STRAIGHT	W	W	H	L
150 - 50	50	50	50	150
115 - 50	50	50	50	115
75 - 50	50	50	50	75
35 - 50	50	50	50	35
TAPER	W1	W2	H	L
150 - 50	56	50	50	150
115 - 50	56	50	50	115
75 - 50	56	50	50	75
35 - 50	56	50	50	35



**ADVANCED STEATITE  
GRINDING MEDIA AND LINERS**

### NOTE :

- 1) ALL DIMENSIONS ARE IN M.M.
- 2) DIMENSIONAL TOLERANCE:  
UP TO 5MM : ±0.15  
FROM 5 TO 10MM : ±0.20  
OVER 10 MM : ±2%

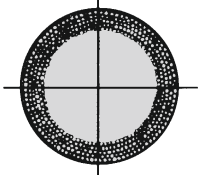
MATERIAL : C221 / C-112

# GRINDING MEDIA & LINING BRICKS

## 1 Ball Mill Rotation Speed :

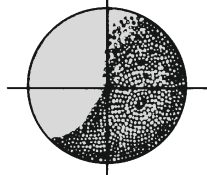
Grinding in Ball Mill is achieved by rolling of grinding media falling freely So Ball Mill must rotate at a speed at which the Grinding Media is carried up the side enough to roll down again over but not so great that it tends to be carried clear or the material to be ground and then tail.

**WRONG**



**Excessive speed**  
Causing media and material to rotate with the mill. No grinding.

**WRONG**



**Too Fast**  
Voids in Pebbles increased by centrifugal force thus reducing grinding contacts.

**RIGHT**



**Correct speed**  
Perfect fall of Pebbles always in contact ensures maximum grinding efficiency.

**Recommended Ball Mill Speed**

Ball Mill I.D.	Speed r.p.m.
36 (3')	28
42 (3.5')	26
48 (4')	24
56 (4.5')	22
60 (5')	20
72 (6')	18

## 2 Size of Balls :

It is surface of the Balls or Pebbles that do the grinding by their contact with others. It is observed that a mix of three sizes gives best result.

**Recommended size of Balls**

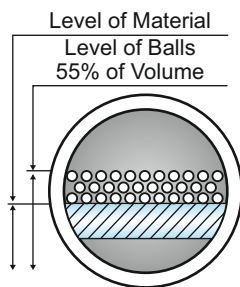
25% large size (50 - 60 mm)
50% medium size (30 - 40 mm)
25% Small size (30 mm)

## 3 Quantity of Balls :

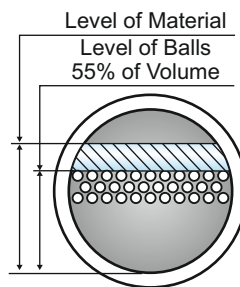
Ball charge should be 45% of their volume of the mill. However, higher the density better is the grinding.

## 4 Quantity of the material :

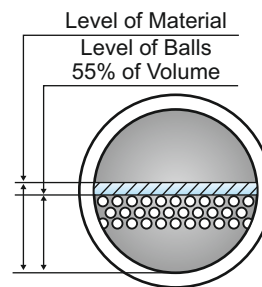
Theoretically the most efficient use of grinding ball is made when all the voids are filled with the material and the balls are just covered with it.



**Wrong**  
Excess quantity balls result into high wear rate of lining



**Wrong**  
Longer milling time



**RIGHT**

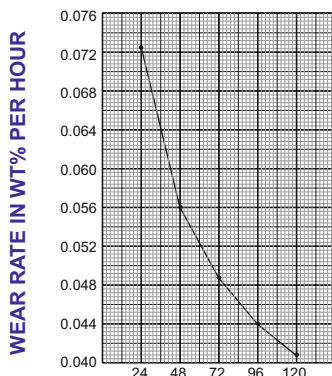
## 5 Consistency of Material :

The consistency of the mixture for wet grinding also effects the results. If the mixture is too thick balls will clog together. If the mixture is too thin then it will cause slipping. So the right amount of water is necessary.

## 6 Initial Size of material to be ground :

If the feed is fairly large it wears down the media and lining unnecessarily. A fine feed leads to efficient uniform and uncontaminated products. So it is always better to use finer material as far as possible.

**Wear rate versus milling time of Grinding Media**



**GRINDING MEDIA Technical Specifications**

Diameter Mm	App. No. Balls / Kg.
-	-
-	-
10	700
12.5	350
15	180
-	12.165
20	85
25	45
30	25
35-37	15
40	11
50	5.6
60	3 to 3.5

**Physical Properties**

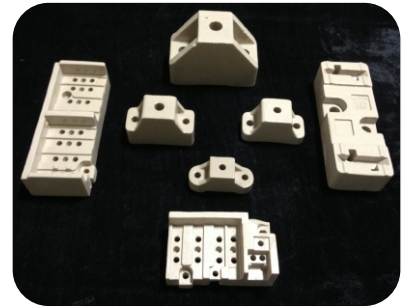
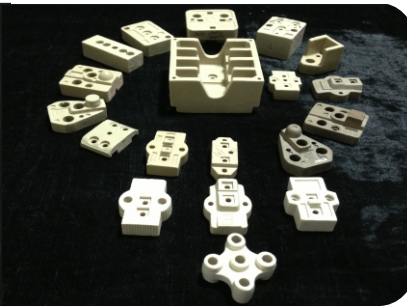
Color	White
Sp. Gravity	2.7
Water Absorption %	0
Flexural Strength Kg/Cm2	1400
Compressive Strength Kg/Cm2	5000
Hardness (Moh's Scale)	7.5

SiO <sub>2</sub>	60-62
MgO	27-30
Al <sub>2</sub> O <sub>3</sub>	7-8
Fe <sub>2</sub> O <sub>3</sub> + TiO <sub>2</sub>	0.2<
CaO	1.5<
BaO	2.5<





Accessories



Busbar & Starters



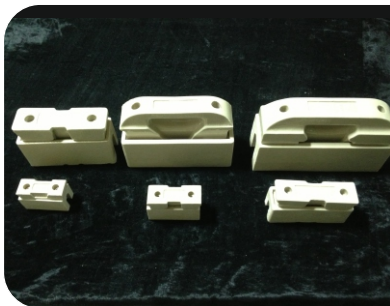
DP. TP Base



Endshields  
Terminal Base



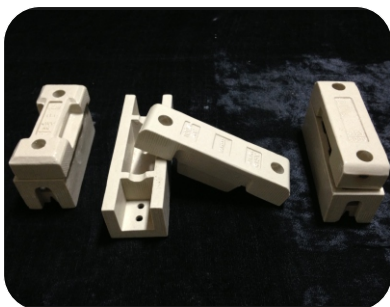
Busbars



Excel F.U.



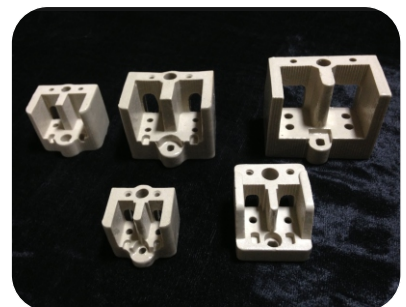
Iron Connector



H.C. Type F.U.



Handle Type F.U.

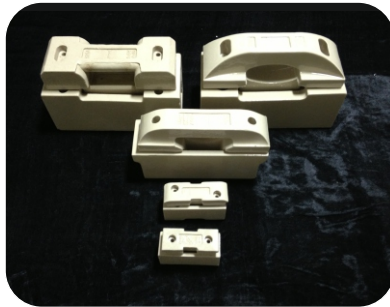


HC Tail High wall

# L.T. INSULATORS



HRC Type Fuses



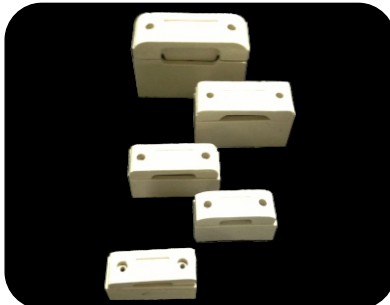
MEM Type F.U.



Splitter Units



Stanley Switch Base



K. Type F.U.



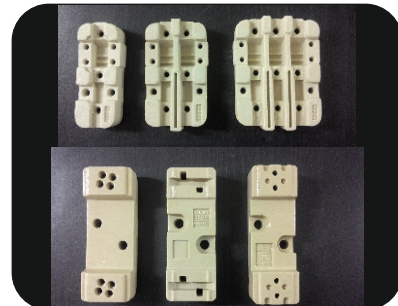
M. Type F.U.



T.P. Switch



TC Switch



busbar plate

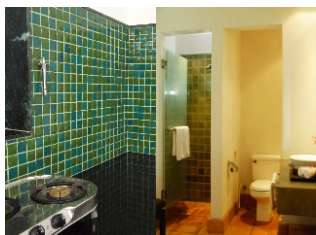
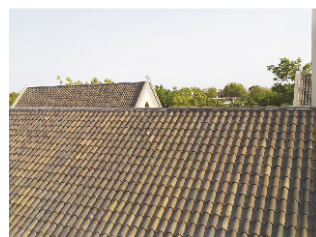


Switch Accessories



Grey Colour Fuse Units





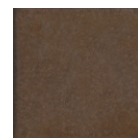
Product Range	Available Sizes in inch	Available Sizes in mm
Wall Tiles	2 X 2 (6 mm thickness) 2 X 2 (15 mm thickness)	48 X 48 (6 mm thickness) 48 X 48 (15 mm thickness)
Cladding	2 X 6 (15 mm thickness) 3 X 6 (15 mm thickness) 3.85 X 7.75 (15 mm thickness)	50 X 150 (15 mm thickness) 75 X 150 (15 mm thickness) 98 X 196 (15 mm thickness)
Flooring	2 X 2 (15 mm thickness) 3 X 3 (15 mm thickness) 4 X 4 (15 mm thickness) 6 X 2 (15 mm thickness) 6 X 3 (15 mm thickness) 6 X 6 (15 mm thickness) 8 x 8 (15 mm thickness)	48 X 48 (15 mm thickness) 75 X 75 (15 mm thickness) 100 X 100 (15 mm thickness) 150 X 50 (15 mm thickness) 150 X 75 (15 mm thickness) 150 X 150 (15 mm thickness) 200 X 200 (15mm thickness)
Roofing	3.25 X 2.5 Taylor 6.5 X 5 Taylor 12 X 8.25 Taylor	83 X 64 Taylor 165 X 127 Taylor 305 X 210 Taylor



Spanish Ocher



Natural Earth



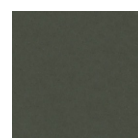
Woody Olive



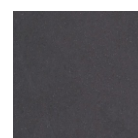
Canyon Brown



Terracotta



Grassy Green



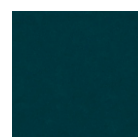
Steel Grey



Red Clay



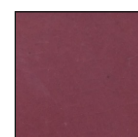
Cobalt Blue



Peacock Green



Aqua Marine



Magenta



Canyon Brown



Spanish Ocher



Woody Olive



Coffee Brown



Bottle Green



Peacock Green To Blue



Light To Dark Brown



French Blue

# Material Specification Chart

Material Properties	Unit	Normal Porcelain	Dense Cordierite	Steatite Grade L-3	Steatite Grade L-5	Cordierite Porcelain	Cordio-Sillmanite Refractory	Cordierite Refractory	High Alumina Porcelain	Alumina Ceramic
Equivalent to DIN EN 60672		C-112	C-210	C-220	C-221	C-410	C- 510	C-511	C-610	C-780
PHYSICAL PROPERTIES										
Colour		Cream/White/ Grey	Off-white	Off White	Off White Satin Smooth	White	White/Buf	Brown	Off.White	Brown
Specific Geavity		2.3	2-2	2.6	2.7	2.3	1.8-1.9	1.9	2.6	3.2
Water Absorption	%	Less than 1	Less than 2%	0.5	0.0	0.0	22-24	15-20	0	0
Flexural Strength	Kg /cm <sup>2</sup>	800	-	1200	1400	800	300	300	1200	2500
Compressive Strength	Kg /cm <sup>2</sup>	2500	2500	4000	5000	2500	800	2000	3500	16000
Young's Modulus	Kg /cm <sup>2</sup> X10 <sup>6</sup>	0.7	-	0.8	1.0	0.75	-	-	1.0	2.0
Hardness	Moh's Scale	6-6.5	-	6-7	6-7	6-6.5	7-8	-	7.0	8.0
THERMAL PROPERTIRS										
Coefficient of Thermal Expanption (30-600 degree Celsius)	x 10 <sup>-6</sup> /°C	6-7	4-5	6-7	6-7	6-7	4-5	4-5	5-6	6-8
Thermal Shock Resistance Down Shock	°C	200	500	250	300	400	500	750	300	250
Thermal Conductivity	W/M°K	1.4-2.5	-	2-3	2-3	1.2-2.5	1.3-1.8	1.3-1.8	2-6	10-16
Safe Operation Temp.	°C	600	1000	1000	1050	600	1300	1000	1000	1100
Max. Temp.Withstanding Capacity	°C	1200	1200	1200	1200	1200	1350	1200	1200	1200
ELECTRICAL PROPERTIES										
Dielectric Strength (20°C)	KV/mm	8	-	10	20	10	-	-	10	18
Dielectric Costant(20°C::1MHz)		5.0	-	5.5	6.5	6.0	-	-	7.0	8.0
Volume Resistivity (20°C)	Ohm-cm	10 <sup>11</sup>	-	10 <sup>11</sup>	10 <sup>11</sup>	10 <sup>10</sup>	-	-	10 <sup>11</sup>	10 <sup>12</sup>
CHEMICAL COMPOSITION N.P.										
SiO <sub>2</sub>	%	70	70-75	60-65	60-65	70-72	45-50	55-57	40-45	-
Al <sub>2</sub> O <sub>3</sub>	%	20	15-17	15-17	6-7	23-25	45-50	30-32	45-50	app. 80
Mg o	%	-	10-12	18-20	25-27	1-3	1-2	7-8	-	-
APPLICATION										
		LT Insulator, Lamp Holder Media Lining Block etc.	Ferrules High heat Shock Items.	MCB Plates Beads, Insulators, Lamp Holders.	HRC Sq. Bodies, Band Heaters, EndSealush, GrindingMedia, Liners.	HRC Round Bodies, Wire Wound, Resistor Tube, Different Special Shape Insulators, Media.	Kiln Furniture Hot plates, Heating Element Support.	Bobbins, Multi Hole, Tubes, Heating Element Support.	High /Low Voltage Electrical Application Resistance Formers	Coil Formers, Wear Resistant Parts.

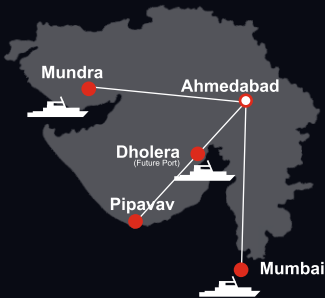


## Our Marketing Setup...

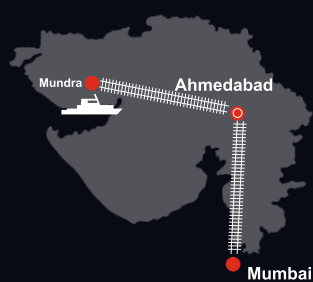


## We are ideally connected by Rail, Air, Road & Sea

Ahmedabad has Direct Road link  
with Ports



Ahmedabad has Direct Rail link  
with Ports



Ahmedabad has  
domestic and international airports.



Direct Road Connectivity

Ahmedabad is between  
Delhi - Mumbai national Highway corridor.



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