



**Savar Refractories Ltd. (SRL)**



## Introduction

The development of refractory Industry in Bangladesh is linked with one name Savar Refractories Limited (SRL) was established in 1983 at Nayerhat Savar 40 Km from Dhaka, with a promise to introduce Refractories. SRL is dedicated to total quality, committed to meet customer's requirements on quality.

Refractories, fundamental to all high temperature industries, are essential materials for kilns & furnaces of both heavy & light industries, such as Metallurgical, Chemical, Cement & Power Industries, Ceramic, Textile etc.

The refractories we make are made from quality raw materials & with fine workmanship. All products features are in superior physical & chemical performance, correct size and long service life.

Thus continuous improvement, teamwork, commitment and credibility are the SRL's guiding values.



## Manufacturing Process

At the Nayerhat works, attention to quality is devoted at every stage of manufacturing process-from raw materials to finished product.

## Raw Materials

To ensure consistent quality of refractories, SRL procures raw materials from selected sources.

## Preparation of Raw Materials and Mixture

Modern grinding machine are employed to crush and grind the raw materials to desired levels & as per quality. Ground raw materials are thoroughly mixed with various additives under control conditions.

## Moulding and Shaping

Depending upon the intricacy moulding is done by high capacity press, Screw press or newmatic temping. Dry pressing is the principal process at SRL.

## Drying and Firing

With intensive care the green products are dried and then fired in a latest tunnel kiln, & shuttle kiln depending on their quality.

## Inspection and delivery

Strict process control measures at each stage of manufacturing to ensure every consignment of SRL meets required quality standards as required by the valued customers.

## Quality Assurance

Great stress is laid on in process of quality control at every stage of manufacturing process, from raw material to finished products. The statistical quality control methods are effectively utilized for quality assurance. After unloading from kilns, the finished products are subject to strict sorting for dimensional tolerance and visual defects. This is followed by physical and chemical tests, ensuring the desired quality parameters.

So the philosophy of quality does not end with the QUALITY ASSURANCE GROUP, but permits right down to the lowest worker label through systematic on going programme.





### Marketing & Technical Services partner of TRL Krosaki Refractories Ltd. India ( India Japan JV)

Under the direct guidance of TRL Krosaki Refractories Ltd. India a Indo Japan joint venture company a marketing and technical services department has been created to market their product & to provide technical service & one stop solution under one umbrella. Under this a senior personnel from us supported by a pool of refractories expert having experience in product, equipment & process of customer industries to render more focused customer service.

#### TRL Krosaki Product Range

•Basic Bricks •Magnesia Carbon Bricks •Fire Clay & High Alumina Bricks, up to 99% •Alumina Silicon Carbide Carbon Bricks •Silica Bricks •Dolomite Bricks •Flow control Refractories, Slide Gate, Gas purging, Continuous casting like zircon / zirconia nozzles ( 65- 95%) •All types of monolithics & mortars up to 98 % Like Fire clay, Silica mortar, Ramming mass, Low cement castable, Dense castable., Insulation Castable, Basic gunning material, Basic spraying / Dry vibrating mass for tundish working lining.



#### Foreign Consultants

The following foreign consultants have contributed to their knowledge and experience to develop the products and to achieve self-reliance:

1. Dr. D.N Nondi from India
2. Roger Shand from Canada
3. J. DE. Vast from The Netherlands

### Savar Refractories Ltd (SRL), Product Range

#### Fire Group

9"x4.5 series Fire Bricks, Burner Tiles, Burner Blocks, Fire Tiles Furniture Tiles, Flue cover, Suspended Arch Bricks, Ladle Brick, Checker Brick, Sleeve Bricks, Burner Brick, Heat insulating Bricks, Protective cup for wire making, Acid Proof Bricks, Tiles & all other desired shaped bricks within the range of our Specifications.

#### High Alumina Bricks

We make high alumina Bricks from high quality calcined bauxite, Kyonite, fine bonding clay, High alumina fire clay, Plastic Clay and other refractory materials, depending upon the customers demand.

The bricks are suitable for use in Electric Arc Furnace, Steel Mills, Cement Factory, Chemical Industries, Rotary Kiln, Glass Furnaces and for other high temperature Kilns.

#### Insulation Bricks

This is a normal hot and cold face insulating brick manufactured by selected raw materials through careful mechanical and chemical process. These type of insulating Bricks are suitable for all type of insulating purposes to save at least 5% energy & weight of the kiln.



## **Buble Insulation Bricks**

This is a special type of Insulation Bricks produced by finest materials through chemical process due to its high Insulating efficiency the insulating bricks decreases accumulative radiate heat of brick work and energy consumption. This type of insulation Brick is suitable both for hot and cold face.

## **Fire Clay Refractory**

The fire clay Bricks are manufactured by superior quality of Mymensing clay, Plastic clay Bauxite and special quality refractory materials, with excellent workmanship, they are suitable for use in various kilns and Furnaces such as; Cement kilns glass furnaces Enamel kilns, In Re-rolling mills, Ceramic Kiln both for Glaze Firing & Biscuit Firing, Forging furnaces, Coke Ovens, Chemical Industries kilns and Furnaces, Combustion chambers, Chimneys and for other different kind of kilns.

## **Glass Tiles Bricks**

We manufacture glass tiles bricks for glass furnace where high temperature & slag resistance is required. We manufacture these bricks from specially selected raw materials through mechanical & Chemical process.

Common size are:

24 X 24 X 12,6,3

24 X 18 X 6,3

12 X 12 X 4,3

## **Acid Resistant Bricks**

We use various ceramic materials & clay for acid resisting bricks. The quality of the bricks is ensured through chemical & mechanical process. The Acid resisting Bricks are ideal for acids making plants. Fertilizer, Synthetic Fiber making plant, Organic Synthetic and Galvanizing plant.

## **Non-Fired Group**

- I. Bonding & Jointing  
Fire Clay, Fire Cement, Fire Moter, Acid Resisting Cement
- II. Monolithic  
Ramming Mixture, Quick Setting Castable Heat setting castable.





## Typical & Average Data of Production

### Fire Clay & High Alumina Bricks

Brand Name	P.C.E Min SK	Al <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	A.P Volume%	B.D gm/cc	C.C.S. kg/cc	R.U.L Max	P.L.C
SRL SUPER-65	37	62-65	1.5	22	+ 2.45	450	1700	1575 for 2 hrs. 1.50
SRL SHA-I	36	55- 60	1.5	+ 20	+ 2.30	400	1670	1550 for 2 hrs. 1.50
SRL SHA-II	34	46-50	- 2	± 20	± 2.25	+ 350	1650	1500 for 2 hrs. 0.05
SRL SHA	33	43-45	2	± 18	2.20	350	1550	1450 for 2 hrs. .65
SRL HA	32	38-42	+ 2	+ 18	2.10	+ 300	1450	1400 for 2 hrs. .75
SRL SHD	30	32-35	3	26	1.90	275	1350	1350 for 2 hrs. 1.0
SRL SD	29	29-33	4	+ 26	1.80	+ 250	1250	1200 for 2 hrs. 1.0
SRL MHD	27	28	± 4	27	1.75	2.25	1200	1100 for 2 hrs. 1.0
SRL MD.	26	27	+ 4	27	1.75	200	1150	100 for 2 hrs. 1.5
SRL RD.	24	26	+ 4	27	1.75	225	1150	950 for 2 hrs. 1.5

### Insulating Bricks

Brand Name	P.C.E Min SK	Al <sub>2</sub> O <sub>3</sub> %	S <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	A.P Valume	B.D gm/cc	C.C.S kg/cm	R.U.L Max.	Thermal Conductivity kal/M/hr/°C at 600 °C
SRL Ins C.F	27	25-30	± 65	1.50	+ 60	0.80	15	1000	300-0.4 700-0.5
SRL Ins H.F	28	35	± 60	1.50	60	0.85	15-20	1250	600-0.4
Bubble Ins	32	35-38	± 50	.8	+ 65				600-0.4

### Acid Resisting Bricks

Brand Name	P.C.E Min	SiO <sub>2</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	A.P Volume%	C.C.S. kg/cc	Absorp-tion	Flexural strength kg/cm	Resistance to Acid (loss in water)
SRL AR	15	75	± .5	2	700 Min	2	100	1.5%

**Fire Clay/Mortar**

Brand Name	P.C.E Min	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	Centering Temp°C	Service Temp°C	Stetting
SRL F. CLAY SUPER-65	37	62-65	1.5	1200	1600	Air
SRL F. CLAY SHA-1	36	60	1.5	1150	1550	Air
SRL F. CLAY SHA-2	34	46-50	± 2	1100	1450	Air
SRL F. CLAY SHA	33	43-45	± 2	1100	1450	Air
SRL F. CLAY HA	32	38-42	2.5	1100	1350	Air
SRL F. CLAY SHD	30	32	3	1100	1300	Air
SRL F. CLAY MHD	28	± 30	+ 3	1100	1250	Air
SRL F. Clay MD	27	28	+ 3	700	1200	Air
SRL F. Clay RD	24	26	4	650	1050	Air

**Castable**

Brand Name	P.C.E Min	Al <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	CCS kg/cm	Service Temperature	Grain Grade
SUPER CAST-65	37	62-65	1.5	450 At 1400°C	1700	0-5mm
SUPER CAST-1	36	60	1.5	400 At 1350°C	1670	0-5mm
SUPER CAST-2	34	46-50	1.5	± 350 At 1300°C	1650	0-5mm
SRL CAST SHA	33	43-45	2	± 350 At 1300°C	1550	0-5mm
SRL CAST HA	32	38-42	2	± 300 At 1100°C	1450	0-5mm
SRL CAST SHD	30	32	+2	+ 250 At 900°C	1350	0-5mm
SRL CAST HD	28	30	3	250 At 900°C	1175	0-5mm
SRL CAST MHD	27	28	3	200 At 900°C	1100	0-5mm
SRL CAST MD	26	26	4	175 At 850°C	950	0-5mm
SRL CAST RD	24	25	4	150 At 800°C	950	0-5mm

**Note** P.C.E = Pyrometric Cone Equelent Sk  
R.U.L = Refractoriness Under Load  
B.D = Bulk Density

C.C.S = Cold Crushing Strenth  
A.P = Aperant Porosiy  
P.L.C = Permanent Liner Change

C.F = Cold Face  
H.F = Hot Face



### **Homogeneous Wall Tiles**

SRL's Research & Development Division is engaged to develop the products; recently SRL has developed a HOMOGENIOUS NATURAL WALL TILES, under the direct supervision of Dutch consultant Mr. J.D.Vest. these tiles are unique of its quality, color of pigments, which gives a variety of eye catching. due to its compactness and high density this tiles are suitable to use outside of the whole building as a facing bricks instead of cement sand plaster, it also can be used at boundary wall & garage. it is fungous, damp and salinity proof.

These tiles are produced with fine grade of quartz, feldspar and high grade of ball clay.



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