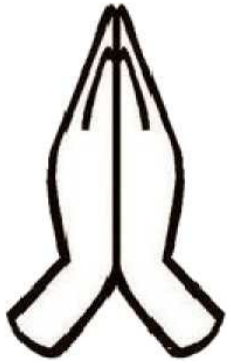
North East Sillimamte, INDIA.

(A unit of NES Refractories LLP)



WELCOME

What is Glass

- Glass is an inorganic material produced by melting of Sand, Soda Ash , Limestone and other oxides.
- Glass is used as an everyday item such as container , building material, Laboratory Wares and various other applications.
- The Egyptians and Mesopotanians were first to use glass before 3500 BC and Romans developed it further.
- Glass production in India dates back to 1700 BC.
- Glass industry in India is growing and glass plants are located all over the country like Assam, Firozabad , Gujarat , Hyderabad and many other locations.

Specialities of Glass:

- Glass can be endlessly recyclable. Recycling glass saves natural resources, energy and also reduces carbon emissions.
- Glass is inert and impermeable and is the most suitable packaging material.
- Glass helps to generate circular economy.
- With out glass there will be no lenses . no eye glass , no microscopes , no telescopes , no Lasers , no LCDs, no televisions and so on.
- Glass products can be reused again and again.
- Glass is used in many forms like
    1. As an optical material to correct vision
    2. As containers
    3. In Vehicles. Can we drive a car without wind screen !

4. For scientific work to observe the experiments.
5. As building materials such as windows because it is transparent.
6. For production of electricity by solar panels.
7. For communication purpose as fiber cables.
8. As Bulbs , Tubelights and other lighting materials.
9. For personal care items such as Mirrors etc.
10. For medical items like vials etc.

Refractory – For Glass Industry

- Refractory is a most critical item for production of glass.
- Refractories have specific impact on glass quality, energy consumption and cost of production.
- The life of the melter, regenerator, distributor and forehearth is fully dependent on the quality of refractories used.
- The most important properties of refractories are :

1. Chemical composition
2. Thermal Stability
3. Thermal shock resistance
4. Corrosion resistance
5. Low Creep Value.

NES : The most trusted partner of Glass Industry

- NES is the only refractory plant which produces refractories specifically for glass industry.
- NES manufactures full range of refractories other than Fused Cast and Silica bricks.

Our Strength

- Modern Production Facilities
    1. In house facilities for generating required fractions of ingredients as per formulations.
    2. High Energy Mixers for intimate grain to grain contact generation required for proper sintering.
    3. Heavy duty Presses for achieving proper densification during shaping.
    4. High Temperature Tunnel Kilns (up to 1850C) for optimum sintering of Products.

- Technical Team

1. The research wing of NES consist of Scientists and Engineers having long experience in Refractory Research and Development.
2. The production team also consist of Engineers with proven track record and a team of experienced work force.
3. NES also has an in process quality control group to test and maintain quality consistency at every stage of production.

- Our Raw Material Strength

1. Glass plant refractories are exposed to heavy chemical corrosion , thermal spalling and high temperature creep.
2. In view of the above Sillmanite group of mineral is required for the production of glass plant refractories.
3. The sillimanite group consist of Sillimanite, Kyanite and Andalusite.
4. However Sillimanite is the primadona of this group due to its Crystal structure and high temperature stability.
5. Presently KHASI SILLIMANITE is the only source for sillimanite mineral and NES is the only refractory plant having access to this mineral.
6. Synthetic Raw Materials: To overcome the future raw material crisis NES has already developed process for the production of synthetic range of minerals.

Range of Products

High Alumina

- 42% Dense Alumina Bricks
- 45% Dense Alumina Bricks & Regenerator Chimney Blocks
- 50% Dense Alumina Bricks
- Sillimanite Bricks, Blocks & Regenerator Chimney Blocks (54 - 56% Al2O3)
- 62% Dense Alumina Bricks, Blocks & Regenerator Chimney Blocks (Raw Material Base - Sillimanite)
- 70% Dense Alumina Bricks
- 80% Alumina Bricks
- 85% Alumina Bricks
- 90 -92% Dense Alumina Bricks
- 99% Dense Alumina Bricks.

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Basic Bricks

- Magnesite Bricks & Regenerator Chimney Blocks containing 94% MgO
- Magnesite Bricks & Regenerator Chimney Blocks containing 98% MgO
- Magnesite Bricks & Regenerator Chimney Blocks containing 87% MgO
- Magnesia - Zircon Regenerator Chimney Blocks
- Alumina Chrome Zirconia Bricks.
- Fused Silica Bricks.
- Bubble Alumina based Insulation Bricks

Contd

Monolithics

- Mortars for Various Applications
- Conventional Castables
- Low Cement Castables
- Ultra Low Cement Castables
- No Cement Castables
- Gel -Bonded Castables
- Ramming & Gunning Masses

Our Testing Facilities

- Total Facilities for Chemical Analysis for Raw Materials and Finished Products
- RUL Test Furnace
- PCE Test Furnace
- Creep Furnace
- PLC Test Furnace up to 1700^0C
- CCS Testing Machine
- Muffle Furnace
- Dryers
- Facilities for testing Apparent Porosity, Specific Gravity by Vacuum Method.
- Thermal Conductivity Testing Furnace.

Our Valued Glass Customers includes:

- HNGIL, Nashik, Maharashtra
- HNGIL, Naidupet, Andhra Pradesh
- Piramal Glass Ltd, Kosamba & Jambusa Gujarat
- Emerge Glass India Pvt Ltd, New Delhi
- Gujarat Borosil Limited, Bharuch, Gujarat
- Sunrise Glass Inds Pvt Ltd, Gujarat.
- Sunrise Silichem Industries Pvt Ltd, Surat, Gujarat.
- Spire Cerafrit, Gujarat
- Shreenath Ceramics, Gujarat

Our Overseas Customers includes:

- Saint-Gobain S.A., France
- Schott AG, Germany
- Allied Silica, Egypt
- V.G. Keshuwala, Uganda
- Egypt Global Silicates, Egypt
- DMI Exim Ltd, Canada
- DM International, Ethiopia
- Causmag International, Austraila
- Jay's Refractory Specialists Limited, U.K.

We are committed to supply:

- High performance refractory to glass industry.
- Zero -Defect Product.
- Customer Satisfaction
- On-Time Delivery

Our Future Plans

- To produce refractories for higher campaign life with improved high temperature properties.
- To introduce NEW products such as
  1. Superduty Silica Bricks
  2. Feeder Expandables in Chrome and Fused Silica qualities.
  3. Fused Cast Refractories.
  4. High Strength Insulation Bricks.
  5. Silica Insulation Bricks for Crown Cover.

Thank You!!!