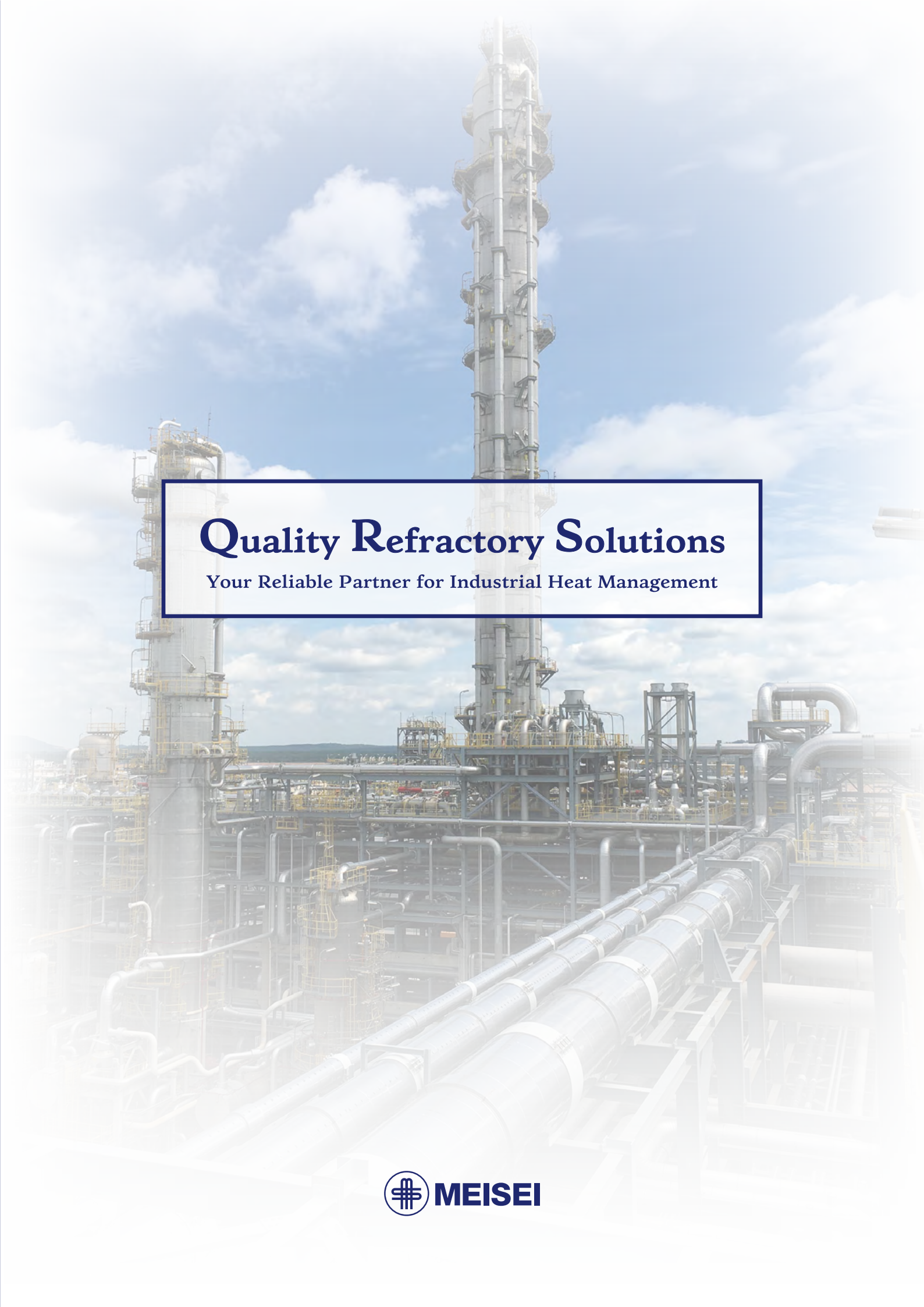


# Quality Refractory Solutions

Your Reliable Partner for Industrial Heat Management

MEISEI

## About meisei

Meisei is a worldwide company for thermal insulation and provides construction services related to thermal insulation, refractory, fireproofing, painting, scaffolding, and maintenance of the systems in industrial field, such as Power Generation, Petrochemical, Oil and Gas, LNG and LNG vessels, Steel, Glass, Pharmaceutical etc.
Meisei has the latest technology and a team of experienced engineers and technicians who are experts to provide high-quality service for industrial heat management.
Meisei offers solutions to assist customers reduce energy consumption, prevent condensation, increase productivity, improve efficiency, ensure safety operation and comfortable environment.

If you are looking for a company that specializes in thermal insulation, refractory, fireproofing, painting and scaffolding, Meisei can be a good option for you.

## About our refractory

We are a team of experienced refractory professionals committed to providing top-notch solutions for industrial heat management. With years of experience in the field, we have built a solid reputation for delivering reliable, efficient, and cost-effective solutions to our customers.

Our expertise covers a wide range of refractory services, including installation, repair, maintenance, and consultation. We work with various industries, such as Power Generation, Petrochemical, Oil and Gas, LNG, Steel, Glass, etc.

Our team is composed of highly skilled and trained technicians who use the latest technology and equipment to ensure the quality of our work. We also follow strict safety standards to minimize risks and ensure the safety of our workers and clients.

## Refractory classification

Refractory work can be classified based on several criteria, including the type of refractory material used, the method of installation, and the application or industry in which it is used. Here are some common ways to classify refractory work:

1. **Classification based on refractory materials:**
   **Refractory work can be classified based on the type of refractory material used, such as:**
   - Fireclay refractories
   - High-alumina refractories
   - Silica refractories
   - Magnesite refractories
   - Chrome-magnesite refractories
   - Dolomite refractories
   - Carbon-based refractories
   - Zirconia refractories

2. **Classification based on installation method:**
   **Refractory work can also be classified based on the method of installation, such as:**
   - Castable refractories
   - Ramming refractories
   - Gunite refractories
   - Ceramic fiber refractories
   - Brick refractories

These are some common ways to classify refractory work. However, the classification may vary based on specific applications and industries.





## Refractory material

Refractory materials are materials that can withstand high temperatures and are commonly used in industrial applications such as furnaces, kilns, and incinerators. They are classified based on their chemical composition, physical properties, and intended use.

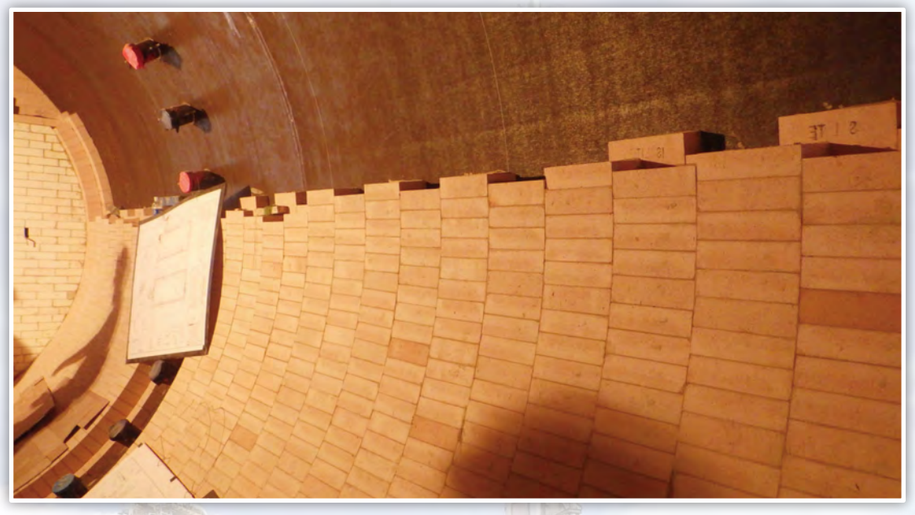
**There are several types of refractory materials, including:**

1. **Acidic refractories:**
   These are made from materials such as silica, alumina, and zirconia, and are used in industries that involve acidic environments.
2. **Basic refractories:**
   These are made from materials such as magnesia, dolomite, and chrome-magnesia, and are used in industries that involve basic environments.
3. **Neutral refractories:**
   These are made from materials such as carbon, graphite, and chromite, and are used in industries that involve neutral environments.
4. **Insulating refractories:**
   These are made from materials such as perlite, vermiculite, and diatomaceous earth, and are used to provide insulation in high-temperature environments.
5. **Special refractories:**
   These include materials such as silicon carbide and boron nitride, and are used in specialized applications such as cutting tools and semiconductors.

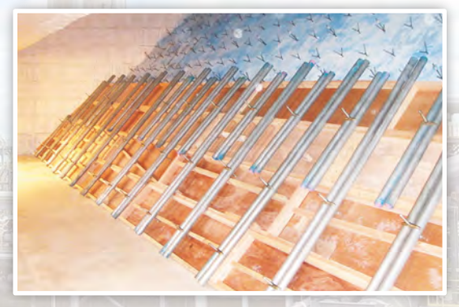
The classification of refractory materials is important because it helps to identify which materials are suitable for specific applications based on the properties and intended use. It also helps to ensure that the right materials are selected for specific environments, which can help to improve the performance and longevity of refractory linings in industrial settings.

**Some commonly used refractory materials include:**

1. **Fireclay bricks:**
   These are made from clay and other materials, and are used for lining furnaces, kilns, and fireplaces.
2. **Silica bricks:**
   These are made from silica and are used for lining glass melting furnaces and other high-temperature applications.
3. **High-alumina bricks:**
   These are made from a blend of alumina and other materials, and are used in applications that require high resistance to abrasion, such as in steel-making furnaces.
4. **Magnesia bricks:**
   These are made from magnesia and are used in applications that require high resistance to alkaline environments, such as in cement kilns.



5. **Refractory castables:**
   These are mixtures of refractory aggregates, binders, and additives, and can be cast into custom shapes. They are used in a wide range of applications, such as boiler linings and incinerator linings.



Ultimately, the choice of refractory material will depend on factors such as the temperature range, chemical composition of the materials being processed, and the specific application requirements. It is always best to consult with a qualified refractory engineer to determine the best material for your specific needs.



## QUALITY CONTROL

Quality control of refractory work is a crucial process that ensures the proper installation and maintenance of refractory materials used in high-temperature applications, such as in furnaces, boilers, and kilns. Here are some essential steps for quality control of refractory work:

1. **Inspection of Materials:**
   The quality control process should start with the inspection of the refractory materials that will be used for the project. The inspection should ensure that the materials are free from defects, cracks, or other flaws that could affect their performance.

2. **Preparation of the Surface:**
   The surface preparation is an essential step in the quality control process. The surface should be clean, dry, and free from any contaminants before applying the refractory material.

3. **Mixing and Application:**
   The mixing and application of the refractory material should be done according to the manufacturer's specifications. It is essential to ensure that the mixture is consistent and applied evenly to avoid weak spots or air pockets that could affect the performance of the refractory material.

4. **Curing and Drying:**
   After the application of the refractory material, it is essential to follow the manufacturer's recommendations for curing and drying time. This step is crucial to ensure that the refractory material has bonded correctly with the surface and has achieved the desired strength.

5. **Quality Control Checks:**
   The quality control process should include regular checks of the installed refractory material. These checks should be performed during and after the installation process to ensure that the refractory material is performing as expected.

6. **Maintenance:**
   Proper maintenance of the refractory material is crucial to ensure its long-term performance. The quality control process should include regular maintenance checks to identify any signs of wear or damage that could affect the refractory material's performance.

In summary, the quality control of refractory work is essential to ensure the proper installation and maintenance of refractory materials used in high-temperature applications. It involves inspecting materials, preparing the surface, mixing and applying the refractory material, curing and drying, quality control checks, and maintenance.



## OUR SERVICES

**Installation :** We provide installation services for various types of refractory materials, including bricks, castables, ceramic fibers, and more. We use advanced techniques and equipment to ensure the accuracy and efficiency of our work.

**Repair :** We offer repair services for damaged or worn-out refractory materials. Our technicians can diagnose the problem and provide the best solution to extend the lifespan of your refractory lining.

**Maintenance :** We provide regular maintenance services to ensure the optimum performance of your refractory lining. Our maintenance program includes inspection, cleaning, and repair of damaged or worn-out areas.

**Consultation :** We offer consultation services to help our customers choose the best refractory materials and solutions for their specific needs. Our experts can provide advice on design, installation, and maintenance to ensure the longevity and efficiency of your refractory lining.

## OUR ADVANTAGES

**Quality :** We use only high-quality refractory materials and follow strict standards to ensure the quality of our work.

**Efficiency :** We use advanced techniques and equipment to ensure the accuracy and efficiency of our work, minimizing downtime and maximizing productivity.

**Safety :** We follow strict safety standards to minimize risks and ensure the safety of our employees and our customers.

**Experience :** With years of experience in the field, we have built a solid reputation for delivering reliable, efficient, and cost-effective solutions to our customers.

**Customer Service :** We value our customers and strive to provide the best customer service possible. We listen to your needs and provide tailored solutions to meet your specific requirements.

## CONTACT US

If you have any questions or need more information about our services, please don't hesitate to contact us. We are always happy to help.

## MEISEI GROUP

**MEISEI INDUSTRIAL CO., LTD.** (**JAPAN**)
Meisei Bldg. 1-8-5, Kyomachibori, Nishi-ku, Osaka 550-0003, Japan
Phone: +81-(0)6-6447-0271

**MEISEI INTERNATIONAL PTE. LTD.** (**SINGAPORE**)
2 International Business Park, #10-05 in Tower 1 of The Strategy, Singapore 609930
Phone: +65-6861-2440

**SMI GLOBAL SDN. BHD.** (**MALAYSIA**)
No.72, 1st & 2nd Floor, Medan Jaya Commercial Centre, Jalan Tun Hussein Onn, 97000 Bintulu, Sarawak, Malaysia

**PT. MEISEI INDONESIA** (**INDONESIA**)
Wisma TTP, 2nd Floors, Jl. Sultan Iskandar Muda No.33, Arteri Pondok Indah, Jakarta Selatan 12240 Indonesia
Phone: +62-21-726-9985

**MEISEI INTERNATIONAL CO., LTD.** (**THAILAND**)
2 Jasmine Building, 12th Floor, Soi Sukhumvit 23 (Prasarnmitr), Sukhumvit Road, Klongtoey-nua, Wattana, Bangkok 10110

**MEISEI-KOGYO PHILIPPINES, INC.** (**PHILIPPINES**)
Unit 1204, One Park Drive Bldg.,
11th Drive, corner 9th Avenue,
Bonifacio Global City, Taguig City
1635, Philippines
Phone: +63 (0)2-7089-2009

**MEISEI NIGERIA** (**NIGERIA**)
No.2B Evo Road, G.R.A phase Ⅱ,
Port Harcourt, Rivers State,
Nigeria

Business Card

MEISEI