Iranian Ceramic Industry at a glance

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Introduction

Established: Sept. 1994
Activity field: Ceramic Science
Licensed by: Ministry of Science, Research & Technology
Society Ranking: A
Membership: Student, Associate, Full, Corporate
Introduction

Ceramic Manpower in IRAN

<table>
<thead>
<tr>
<th>Other</th>
<th>Companies</th>
<th>Industry</th>
<th>University</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>400</td>
<td>200</td>
<td>1000</td>
<td>300</td>
<td>2500</td>
</tr>
</tbody>
</table>
Introduction

Iranian Ceramic Society Members
Introduction

ICerS Divisions

• Refractory
• Tile & Porcelain
• Glass & Glaze
• Electroceramic
Introduction

Conferences

Year

Number
Introduction

- First International Conference on Tile, Ceramic & Sanitary Ware
- 10th Biennial Congress of the Iranian Ceramic Society and 1st International Conference on Advanced Ceramics
- 2nd Iranian Refractory Symposium
Refractory Industry

Establishment: 1940 in Tehran

Production sites in 2014: 51 sites

Largest producer: Azar Refractory in Isfahan (> 70’000 ton)

<table>
<thead>
<tr>
<th>Year</th>
<th>Production capacity (ton)</th>
<th>Real Production (ton)</th>
<th>Consumption</th>
<th>Export</th>
<th>Import</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>570’000</td>
<td>340’000</td>
<td>420’000</td>
<td>1’000</td>
<td>80’000</td>
</tr>
</tbody>
</table>
Refractory Industry

Import from:
- Austria
- India
- China
- Turkey

Export to:
- Iraq
- Azerbaijan
Refractory Industry

Manpower:
- Approximately 5000

Raw materials:
- ~35% of raw materials are imported (120’000 ton)
  - Available:
    - Dolomite
    - Fireclay
    - Magnesite
    - Chromite
  - Shortage:
    - Bauxite
    - Graphite
    - Alumina
    - Spinel
Refractory Industry

Technology:

- ~ 65 milling devices
- ~ 55 mixers
- ~ 65 pressing apparatus (400-2000 ton)
- Sintering furnaces
  - ~ 10 shuttle kilns
  - ~ 22 tunnel kilns
Refractory Industry

• **Type of products:**
  (Shaped and Unshaped)
  - Magnesia
  - Magnesia-Carbon
  - Alumina-Magnesia-Carbon
  - Dolomite
  - Magnesia-Chrome / Magnesia-Spinel
  - Aluminosilicates (high alumina, schamotte)
  - ... 

• **Lack of:**
  - Silica
  - AZS
  - Mullite
  - Advanced castable

• **In progress:**
  - SiC
  - Special Shaped
## Refractory Industry

### Opportunities
- High production capacity
- Large market in the region
- Experienced manpower

### Threats
- Raw materials shortage
- Old technologies
- Economic instability
Establishment: 1960 in Tehran

Production sites in 2014: 134 sites

Largest producer: ApadanaCeram in Qazvin (30 mil. m²)

<table>
<thead>
<tr>
<th>Year</th>
<th>Production capacity (mil. m²)</th>
<th>Real Production (mil. m²)</th>
<th>Consumption (mil. m²)</th>
<th>Export (mil. m²)</th>
<th>Import (mil. m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>700</td>
<td>500</td>
<td>390</td>
<td>115</td>
<td>5</td>
</tr>
</tbody>
</table>

Ranked 4th in the world
Tile and Glaze Industry

- Export to
  - Iraq
  - Turkmenistan
  - Afghanistan
  - Pakistan

- Import from
  - Italy
  - Spain
  - Turkey
  - China

Import from China

Export to Iraq, Turkmenistan, Afghanistan, Pakistan
Manpower:
- Directly: ~45'000
- Indirectly: ~380’000

Raw materials:
- >90% of raw materials are available in Iran.
- Imported items:
  - Special glazes
  - Additives
  - Pigments

Technology:
- Mainly imported from Europe and China
Tile and Glaze Industry

• **Type of products:** Various sizes of all types of products including:
  - Floor
  - Wall
  - Porcelain
  - Granite
  - ....
Tile and Glaze Industry

Opportunities

- High production capacity
- Large market in the region
- Experienced manpower

Threats

- Recession in domestic construction industry
- Old technologies
- Economic instability
Establishment: 1940
**Iran Float** in Tehran

Production sites in 2014:
- Large-scale: 60 sites
- Medium/low scale: >100 sites

Largest producer: **Ardakan Glass** in Yazd (220’000 ton)

<table>
<thead>
<tr>
<th>Year</th>
<th>Production capacity (mil. ton)</th>
<th>Real Production (mil. ton)</th>
<th>Consumption (mil. ton)</th>
<th>Export (mil. ton)</th>
<th>Import (mil. ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>2.35</td>
<td>2</td>
<td>2</td>
<td>0.4</td>
<td>0.4</td>
</tr>
</tbody>
</table>
Glass Industry

2% of global production

Production (mil. Tons)

Year

Glass Industry

Manpower:

• Approximately 40’000

Raw materials:

• Almost all are available in Iran.

Technology:

• Mainly imported from Europe and China.
Glass Industry

Type of products:

• **Flat Glass:**
  - Float and Sheet (clear & colored)
  - Figured glass (clear & colored & wired)
  - Coated Glass (reflective, Low E)

• **Tableware:**
  - Soda – Lime
  - Cristal
  - Opal

• **Container glass:**
  - Medical industries
  - Food industries
Comparing the glass consumption between Iran & Europe
## Glass Industry

### Opportunities
- Raw material availability
- High export potentials
- Downstream industries

### Threats
- Traditional technologies
- Low transportation capability
- Low investment interest
**Tableware Industry**

Establishment: 1975 **Natanz China** in Isfahan

Production sites in 2014: **11** sites

Largest producer: **Zarin** in Isfahan (8’500 ton)

<table>
<thead>
<tr>
<th>Year</th>
<th>Production capacity (ton)</th>
<th>Real Production (ton)</th>
<th>Consumption (ton)</th>
<th>Export (mil. ton)</th>
<th>Import (ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>60’000</td>
<td>50’000</td>
<td>50’000</td>
<td>5’000</td>
<td>5’000</td>
</tr>
</tbody>
</table>

**Ranked 2nd in the world**
Tableware Industry

**Import from**
- China
- Thailand
- Germany

**Export to**
- Turkey
- Central Asia
- Middle East
- Spain

27
Tableware Industry

Manpower:
• Approximately 10’000

Raw materials:
• 30% of raw materials (Kaolin, Feldspar, …) are imported.

Technology:
• Mainly are imported from Europe and China.
Tableware Industry

All types of products:

Zarin Iran Co.
Tableware Industry

Opportunities

- Low energy cost
- Experienced manpower
- Raw material availability

Threats

- Imports from China
- Rival products (Opal, Polymeric, …)
- Economic instability
Sanitaryware Industry

Establishment: 1965 ParsCeram in Tehran

Production sites in 2014: 52 sites

Largest producer: Cord China in Kermanshah (28’000 ton)

<table>
<thead>
<tr>
<th>Year</th>
<th>Production capacity (ton)</th>
<th>Real Production (ton)</th>
<th>Consumption (ton)</th>
<th>Export (ton)</th>
<th>Import (ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>160’000</td>
<td>90’000</td>
<td>65’000</td>
<td>30’000</td>
<td>5’000</td>
</tr>
</tbody>
</table>
Sanitaryware Industry

**Import from:**
- China
- Germany
- Turkey
- Italy

**Export to:**
- Iraq
- Azerbaijan
- Afghanistan

The image illustrates the countries involved in the sanitaryware industry, highlighting the countries where products are imported from and exported to.
Sanitaryware Industry

Manpower:
• Approximately 6’000

Raw material:
• 10-15% of raw materials including zirconium silicate, kaolin, barium carbonate, … are imported.
• Main drawback: low quality of minerals and raw materials.

Technology:
• Used to be imported from Europe
• Nowadays; mainly from China and Turkey
Sanitaryware Industry

All types of products:

Morvarid Co.

Pars Ceram Co.

Golsar Fars Co.
Sanitaryware Industry

Opportunities
- Low energy cost
- Raw materials availability
- Experienced manpower

Threats
- Inflation
- Recession in domestic construction
- Economic instability
Brick/Heavy Clay Industry

Production sites in 2014: ~500 sites

Mainly in Isfahan & Yazd (Mainly < 150’000 ton)

<table>
<thead>
<tr>
<th>Year</th>
<th>Production capacity (mil. ton)</th>
<th>Real Production (mil. ton)</th>
<th>Consumption (mil. ton)</th>
<th>Export (mil. ton)</th>
<th>Import (mil. ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>37.5</td>
<td>18.7</td>
<td>17.7</td>
<td>1</td>
<td>--</td>
</tr>
</tbody>
</table>
Brick/Heavy Clay Industry

Manpower:
- Approximately ~150,000

Raw materials:
- All available in Iran

Technology:
- Mainly are made in Iran, and some are imported from Europe.
Brick/Heavy Clay Industry

Technology:

- Iranian devices
- Old machinery

Shaping

Drying

- Mainly shuttle
- The rest: tunnel

Firing

- Mainly Hoffman furnace
- Old machinery

High interest in European equipment
Brick/Heavy Clay Industry

- All types of products:
Brick/Heavy Clay Industry

Opportunities

- Raw material availability
- Availability of infrastructures
- Experienced manpower

Threats

- Traditional production lines
- Recession in domestic construction
- Rival products (Knauf, …)
Conclusions

1. Traditional ceramic sectors has been developed in Iran during last 30 years rather rapidly.

2. Large market, low cost energy, raw materials availability, and trained manpower are main opportunities.

3. Some old technologies and economical instabilities may be considered as main threats.

4. We believe under new political and economical conditions as well as removal of sanctions Iranian Ceramic Industry will enjoy a new booming era.
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5. Mr. Vakili, Sanitaryware Syndicate
6. Mr. Ghasaie, Zarrin Co.
Thanks for your attention on behalf of Iranian Ceramic Society