

18^e
édition



JOURNÉE TECHNIQUE 2024

**Les matériaux alternatifs
dans les infrastructures
de demain**

AVEC LE SOUTIEN D'INFRA 2050

Pôle de compétitivité de la filière des Travaux Publics



Recycler la réussite : notre aventure internationale



Bruno DORIER
Directeur général

About Us

- **A 37-years experience**
Since 1987, we have built up extensive experience in the management of refractory and technical ceramics waste
- **International**
We have 4 subsidiaries all around the world (France, Germany, India, China)
- **European leader in refractory recycling from glass industry and technical ceramics**
- **+ 30,000t of waste collected / year***

**in 2023, with a recycling rate between 85% and 98% depending on locations.*

Valoref is leading in the management, treatment and recycling of refractory waste from glass furnaces and technical ceramics.

Valoref offers a comprehensive waste management service. From the customer's site when the furnace is repaired or demolished to the manufacture of secondary raw materials.



A bit of history...

1st crushing unit installation



New process for recycling chromium oxides



1987

2001

2023

1996

2015



Founding of Valoref

Opening of a new facility and takeover by Saint-Gobain

Expansion with the takeover of Alfaref Germany and the opening of Valoref China and Valoref India

Building a sustainable future with Valoref

Our R&D team is dedicated to finding new applications for recycled materials, enhancing their value and future use.



Waste Collection

We collect refractory waste from glass furnaces and technical ceramics



Processing & Recycling

The materials are sorted in our sorting facility, they are retransformed and recycled



Re-use in the industry

Our recycled grains are reintroduced into the production of materials or finished products.



Secondary Raw Materials

We produced a wide range of secondary raw materials from the waste we are collecting

© Valoref

Understanding Valoref

[Video](#)

1 We collect used refractories & technical ceramics

2 We recycle

3 We produce and we sell secondary raw materials & second hand products

From **glass furnaces repair or demolition directly on-site**

From a **regular flow of waste sent to us**

From **old and unused stock directly on-site or send to us**

> 85% recycled

- Waste analysis
- Sorting
- Crushing
- Administrative documentation

AZS, High Zirconia, Zircon, High Alumina, Sillimanite-Mullite, Chrome, Magnesia, Silicon carbide

Different formats are available

Second-hand shaped & unshaped refractories

< 15% Elimination

Specialized Landfills

Valoref WMS
WASTE MANAGEMENT SERVICES

Valoref SRM
SECONDARY RAW MATERIALS

VALOREF parts of SG Sustainability Objectives



Which goal?

2050
NET ZERO CARBON

How?

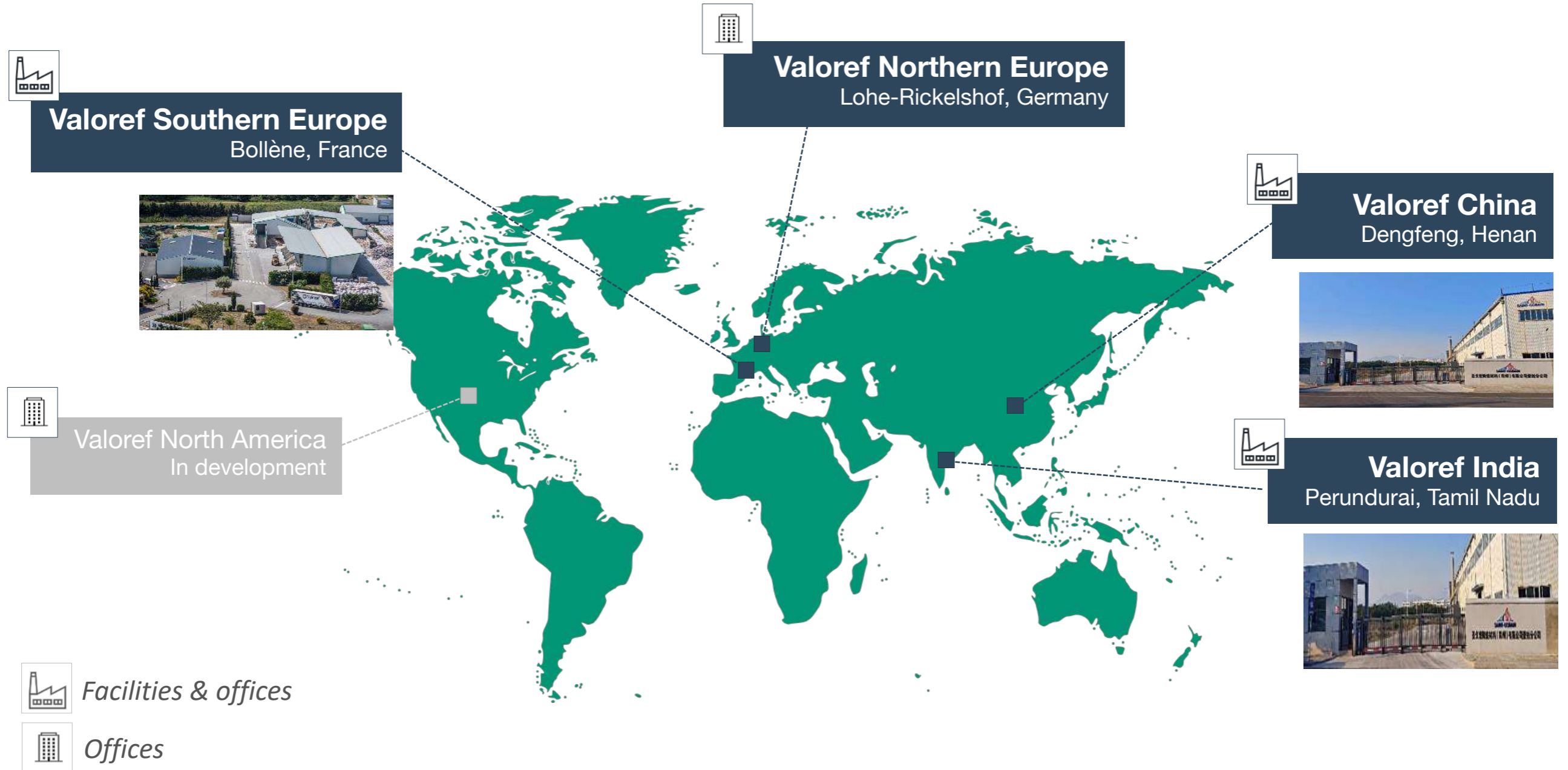
100 M€ / y



World of Valoref



World of Valoref

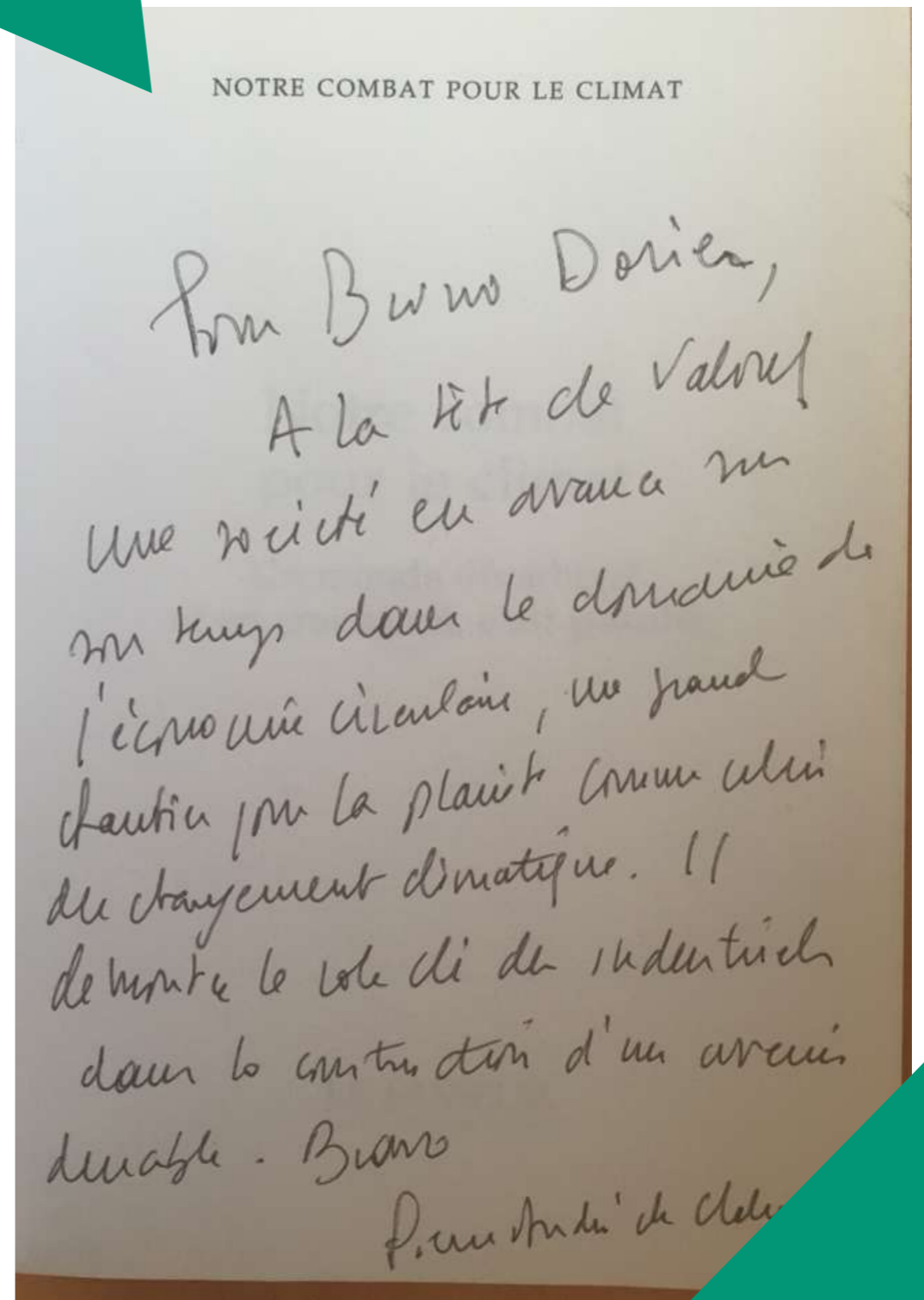


International Development of Valoref



Starting Point

- ✓ Visit at Bollene of Saint-Gobain President, Pierre-André de Chalendar 2018
- ✓ Focus of the all of Saint-Gobain on Valoref, the only waste management company of the Group
- ✓ Creation of a Specific Business Unit : VALOREF BU to open independence of strategy and Investments



Internationalization



Market Study

Exploration of potential clients for our products. Focus on the biggest client per area.
Determination of the collect zone.



Building the Transversal Team

Challenge : International support whilst operational in Europe.
Hiring of key positions :
Diversity/
International/
Multicultural



Determination of our core values

Work group including 100% of the employees.

SOLIDARITY
MUTUAL ASSISTANCE
COLLABORATION
COMMUNICATION
AGILITY



Site Implementation

Definition of installations based on Valoref Europe
Adaptation to local specificity
Use of St-Gobain existing site/
Acquisition/
Greenfield
Agility versus local constraints



Building local Teams

Training at Valoref Europe : Creation of a specific 2 weeks intensive training session.
Training of a specific facilitator.

Internationalization



Local Legislation

Difficulty of finding triple competence :
Legal /
Environmental /
International
Local work instead



Kick-Off Leaning by doing

Priority : Serving the main target client.
Tests of collect
Set-up of a network of local partners
Discovery of local practices.



International Coordination

Implementation of Steering Comitees
Management teams
Cross visits
Extended communication



Implementation of production

Quality Control standards
Homogeneisation of product range
Implementation of specific ERP
developped internally



Celebration !



Our Waste Management Services

ValorWaste



On-site evacuation of your refractory waste resulting from a **demolition or maintenance operation** of your glass production unit.

Punctual waste, high volume

ValorBox



Refractory waste collection container rental service. Flexible solution to meet occasional needs for small quantities throughout the year.

Regular waste, low volume

ValorStock



Stock recovery resulting from the repairs of your production units or your current stock.

Unused stock

Valorbox



A tailor-made solution to manage your waste through the year

We take care of your regular waste volumes generated by your production and from the regular maintenance work performed on your production facilities.

There is a Valorbox for every type of situation.



Valorbox Small

- ▶ Small quantities
- ▶ Small size of waste
- ▶ Removable bigbag
- ▶ One type of waste = One Box

1.5 tons / 1m3

Where? e.g., at the end of a production line



Valorbox Medium

- ▶ Small quantities
- ▶ Medium size of waste
- ▶ Year-round rotation
- ▶ Space-saving

1.2 tons / 1.5m3

When? Storage space limited, several boxes needed for on-site sorting



Valorbox Large

- ▶ Large quantities
- ▶ Large size of waste
- ▶ Year-round rotation
- ▶ Replace it when it reaches 80% of filling rate

10 tons / 10m3

When? For everyday operations and reparations

Valoref Europe: what we offer

- ✓ **Dedicated team of experts** (50 employees – 2 sites Southern and Northern Europe)
- ✓ **End-to-end waste management everywhere in Europe, including legal documentations**
- ✓ **Maximised recycling rate** with > 30,000 tons of ceramic waste collected/ year
- ✓ **Recycling and crushing sites complying with ISO 9001 and 14001**
- ✓ **Full confidentiality & IP protection**
- ✓ **High quality Secondary Raw Materials and carbon footprint reduction**



Valoref China: what we offer



Establishing a circular economy business model with customers



- Stable, reliable products
- Solution- and service-oriented
- Open and involved in diversified industrial ceramics



Reliable partner for suppliers and customers with high skills in recycling and knowledge of technical ceramics materials



Valoref **China** is specialized in the recycling of **technical ceramic materials** and the selling of internationally renowned brands of **secondary raw materials**

Valoref China: what we offer

- ✓ A solution- and service-oriented **dedicated team of experts**
- ✓ **Specialist in technical ceramics recycling**
- ✓ **Stable and reliable range** of secondary raw ceramic materials
- ✓ Key secondary raw materials made of **high zirconia and/or high alumina**
- ✓ **Full confidentiality & IP protection**
- ✓ **Carbon footprint reduction** thanks to our circular model



Valoref China production line

Crushing and screening



Granulation and drying



Production capacity

- Crushing and screening: 15000 T/Y
- Fine powder Micro powder: 600T/Y (construction)
- Granulation: 2800T/Y

Product solution

- Accept customization
- Providing technical support services
- Provide cost reduction support

Strict quality control throughout the production process



EQUIPMENT



XRF



XRD



Laser particle sizer



Test sieves and screening machines



Microscopy



True density testeur

Valoref India: what we offer

- ✓ **Dedicated team of international experts**
- ✓ **Comprehensive waste management services including legal documentations**
- ✓ **Full confidentiality & IP protection**
- ✓ **High quality Secondary Raw Materials and carbon footprint reduction**
- ✓ **Maximized recycling rate**



Waste management service



Which kind of waste are we recycling ?

Refractory Waste

Mainly from glass industry furnaces:

- Container glass
- Flat glass
- Insulation glass
- Reinforcement fiberglass
- Specialty glass

And from other industries like:

- Steel
- Lime and cement



Which materials?

The types of materials we can recycle:

- **High Zirconia** (electrofused)
- **AZS** (electrofused)
- **Zircon** (dense or sintered)
- **High Alumina** (electrofused, calcined or sintered)
- **Silico-aluminous**
- **Chrome-based** (dense, chrome corundum...)
- **Magnesia**

Magnesia ?

Which kind of ceramic waste are we recycling ?

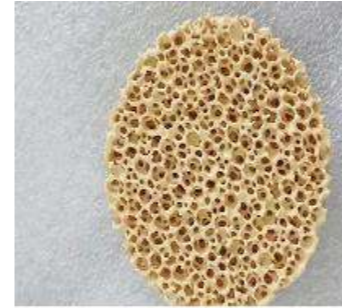
Technical Ceramics

Mainly from surface treatment and pickling:

- Sand blasting
- Airgumming / Hydrogumming
- Shot blasting

And from other industries like:

- Medical industry
- Kitchenware
- Aerospace
- Incineration
- Electronic ceramics
- Functional ceramics



Which materials?

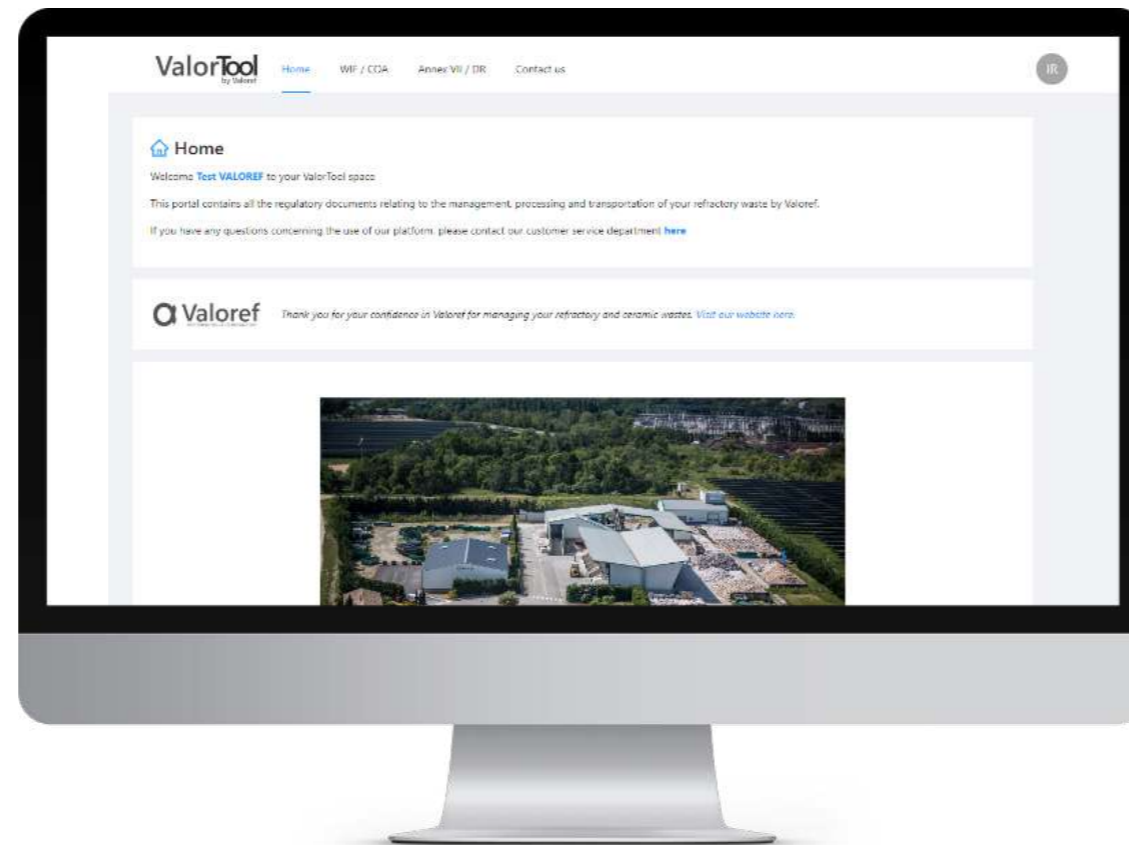
The types of materials we can recycle:

- **Stabilized high zirconia**
- **High Alumina**
- **Silicon carbide (?)**

ValorTool: our **easy-to-use** waste management portal

Track the recycling process of your waste

Our "Valortool" portal gives you **easy access** to all the documents related to the transport and recycling of your waste. **The process is entirely transparent for you**



Managing waste has never been so easy!

We'll take care of all the paperwork for you :

- Waste Identification form
- Certificate of acceptance
- Annex VII
- Delivery Receipt

Thank you !

