

INDIA

CHEMICALS ENGINEERING & PETROCHEMICALS



 calderys

CALDERYS



160+ years of combined experience

4,500 employees in over 30 countries

50+ plants on the 5 continents

One of the world's largest suppliers in high temperature solutions



Enlarged portfolio of solutions from refractory bricks and monolithics to steel casting fluxes and green molding sand solutions

Calderys is a leading global provider for industries operating in high temperature conditions. We specialize in thermal protection for industrial equipment with a wide range of refractory products, and advanced solutions to enhance steel casting, metallurgical fluxes and molding processes.

In 2023, Calderys joined forces with HarbisonWalker International, (now HWI, a member of Calderys), one of the largest suppliers of refractory products and services in the United States.

Together, we form a high-growth, customer-centric provider with a comprehensive offering and a truly global reach. Drawing on over 160 years of combined experience, we support our customers in their energy transition needs. We count 4,500 employees in over 30 countries.

Our international network of experts ensures an end-to-end offer with tailored services. We are constantly developing innovative products and techniques in order to **optimize costs and performance**, combining world-class Research & Development and technical experts, as well as responsive supply chain and sales departments.

Our global structure allows us to design the customized solutions of today while **anticipating the industries' needs of tomorrow**. Calderys pays particular attention to the industry's impact on the environment and has a sustainability program articulated around three pillars: supporting our customers in their energy transition needs, improving our environmental footprint and being committed to people and local communities.

Health and safety is an integral part of how we do business. The same attention to detail that helps us provide personalized products and solutions is also applied to our rigorous health and safety criteria. Our activities require the highest level of professionalism to carry out our projects. To guarantee the strictest standards, Calderys employs a number of safety, occupational health and environmental protocols across all its entities worldwide – applicable to both our own employees as well as subcontractors and temporary workers.



WHAT WE BRING TO THERMAL INDUSTRIES

Thermal industries have entered an era of transition: many companies are striving to increase the productivity of their operations in the face of supply chain volatility, stiff competition and mounting climate demands. To Caldersys, this is an opportunity to innovate and adapt refractory solutions to the new industrial processes.

What our customers benefit from:

- A complete portfolio of eco-designed refractory solutions for each served application in aluminum and non-ferrous processes, cement production, energy and environment operations, chemicals engineering and petrochemicals and industrial minerals
- Specialized products for fast dry-out and optimal thermal insulation of the furnaces
- Project Engineering teams focused on reducing total cost of ownership of furnaces, covering both operational and maintenance needs
- Process knowledge on emerging industry trends: a close monitoring of global process insights together with our customers, helping them transition to a low carbon era
- Full service package: from merchandise procurement to deliveries on site, project and site management
- Tailor-made design and engineering based on project needs
- Installation services including low porosity gunning, and spraycast services
- Dry-out services for refractory lining
- Inspection and after-sales service



AT THE SERVICE OF THE CHEMICALS ENGINEERING & PETROCHEMICALS

CALDERYS is proud to partner with major global players in the hydrocarbon processing industry to provide high quality refractory products combined with customized end-to-end project services.



The company provides refractory solutions for complete plants: Turnkey refractory projects from engineering to refractory installation. Our experts design tailor-made concepts for your needs, whether you are a licensor, EPC, OEM, or End User. Our services are focused on delivering results, both in optimizing your plant performance and shortening downtime.

Project References

Calderys is a reliable choice for all your refractory needs. Ask us about our **project references** around the world in:

- Oil Refineries (from FCC units to tail gas incinerators)
- Natural Gas / LNG plants (including SRU and fired heaters)
- Petrochemical / Olefin plants (including ethylene / naphtha crackers)
- Fertilizer / Syngas plants (including primary & secondary reformers)

OUR SERVICES



Safety

To ensure safe execution of production, supply and installation, Calderys can provide you with all required documents and personal safety equipment, to execute a project in the safest possible way.



Product Selection

By carefully examining your equipment and processes, we will offer you a complete refractory solution from monolithic to insulating materials to anchors to customized precast pieces, and more.



Engineering

Using top-notch design and calculation processes, our global network of engineers works with you to determine the exact refractory lining specifications for your equipment.



Project Management

Whether you are building a completely new plant, adding a new equipment, or performing Turnaround maintenance, Calderys has experience and skills to manage your full refractory project end-to-end.



Installation

To ensure optimal performance for your refractory, Calderys provides full installation services through our certified installation teams, including safety officers and supervisors.



Site Management

To ensure optimal installed lining by your sub-contractor, Calderys can provide you with additional site advisory, site supervision or site management services.



HIGH PERFORMING REFRACTORY SOLUTIONS



Full Refractory Range

Calderys has a **complete range of refractory products** based on technological needs and customer preferences: from monolithics and insulating fire bricks (IFB) to insulating fibres and blankets, we have it all.

Light Weight Insulating Products

CALDE® CAST XL and CALDE® GUN XL product lines are extra light weight products with very good insulating properties for **energy saving**.

Licensors - Approved Materials

New monolithic refractory materials which comply to licensors' heater specifications:

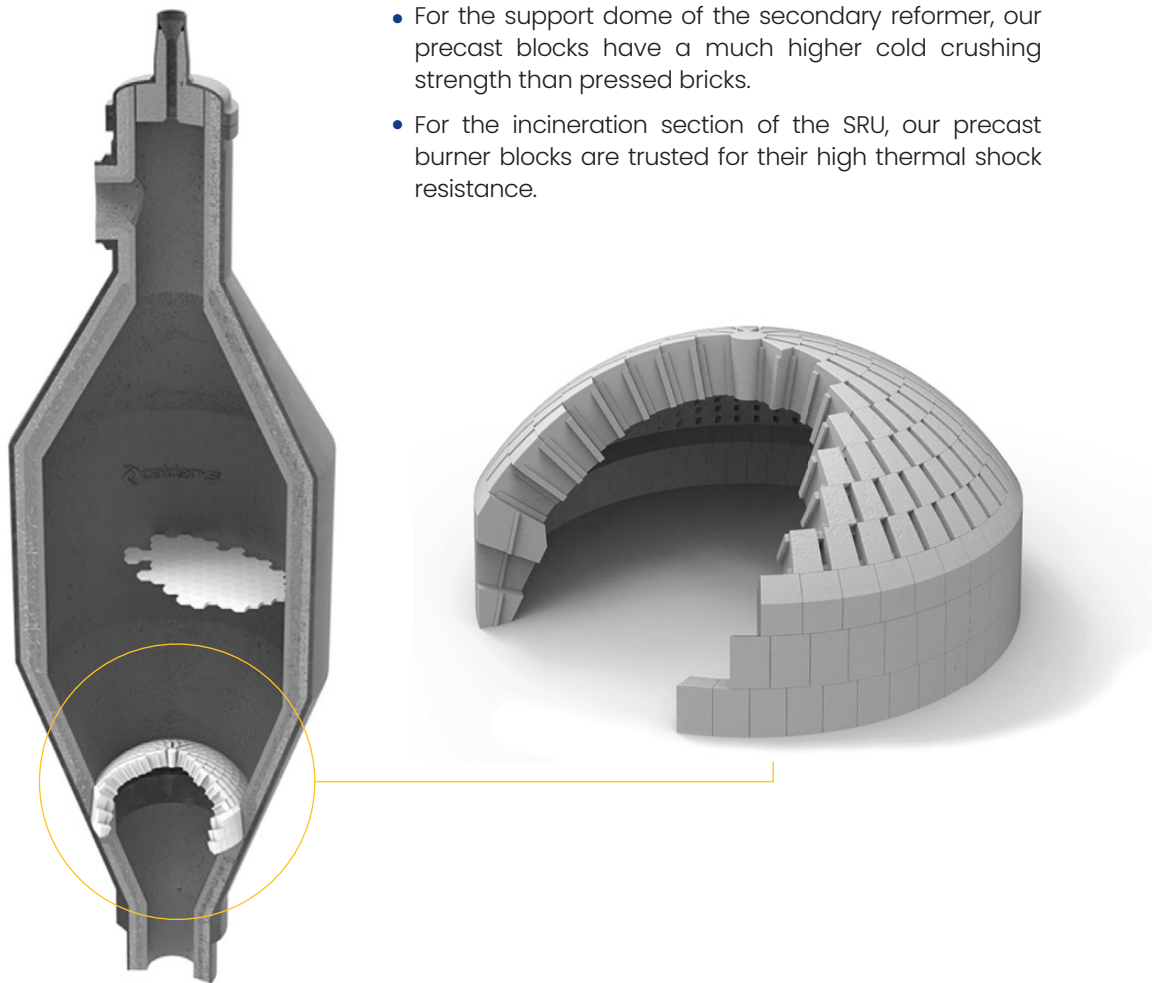
- CALDE® CAST XL 114 C/G
- CALDE® CAST LW 133 C/G
- CALDE® CAST LW 135 LI C/G
- CALDE® CAST LW 146 LI

Precast Solutions

At Calderys, we are proud of our expertise in offering prefabricated shapes. We take our high-performing monolithic refractories and, following strictly the requirements of your equipment and processes, cast for you at our or your facilities in prefabricated pieces **the exact refractory shapes you need.**

Some Examples From Our Global Projects

- For the support dome of the secondary reformer, our precast blocks have a much higher cold crushing strength than pressed bricks.
- For the incineration section of the SRU, our precast burner blocks are trusted for their high thermal shock resistance.

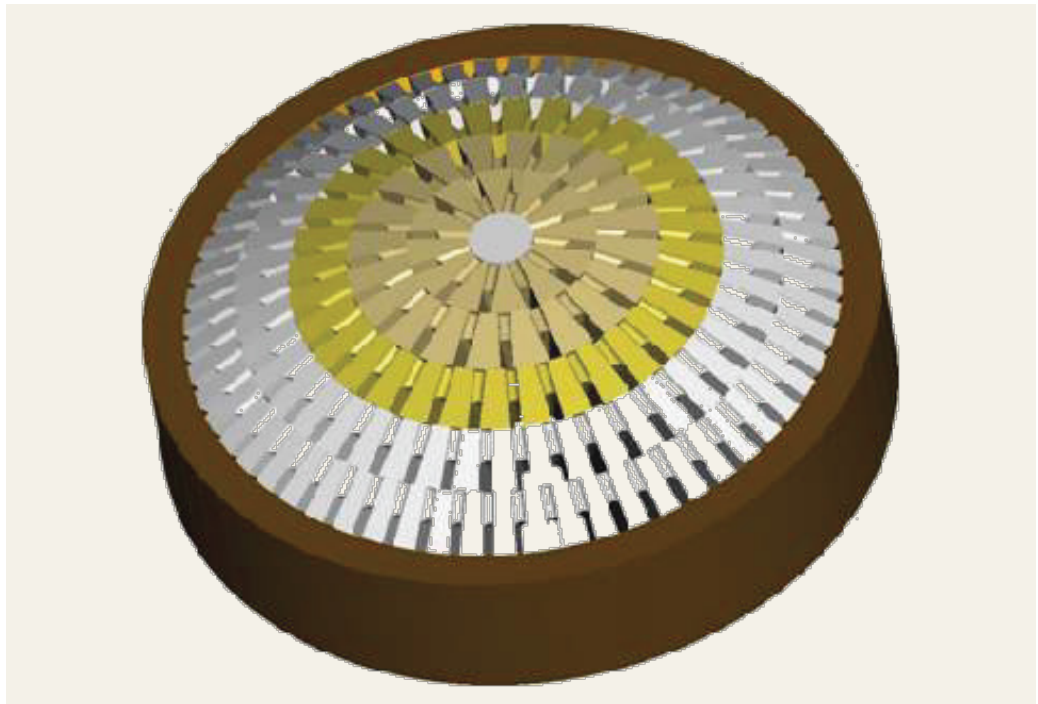


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INNOVATIVE REFRACTORY SOLUTIONS FOR THE HYDROCARBON PROCESSING INDUSTRY

Our Strategy & Commitment

We bring exceptional value to customers through continuous product improvements, focusing on enhanced performance, optimal placement, and superior drying properties. Based on this strategy, we've maintained long-term research and development programs that advance not only product performance but also facilitate installation techniques.



Our Global Expertise:

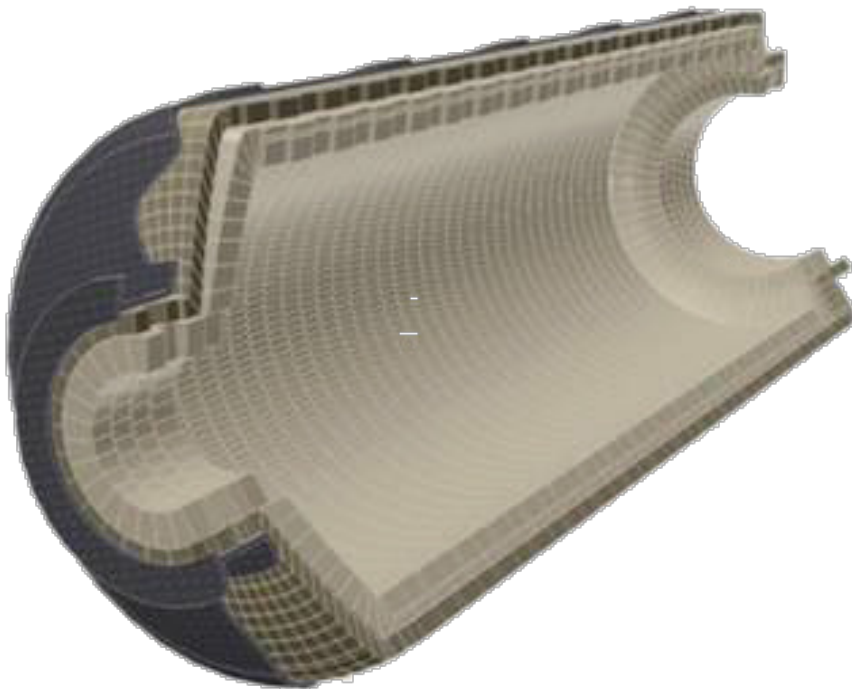
With over 160 years of successful worldwide activity, Calderys offers a comprehensive range of solutions:

- Full range of monolithic refractories for all applications requiring alumina and silica products
- Complete selection of commodity and special materials for equipment maintenance
- Wide range of prefabricated shapes for diverse applications
- International reputation for skilled engineering, quality products, and competent installers
- Worldwide network contributing new formulations, efficient installation techniques, and innovative solutions

Our Partnership with the Industry:

The introduction of industrial process units created a unique demand for dependable refractory products to contain high-temperature process gases. Calderys responded with monolithic refractory technology that has prevailed for decades.

As world pioneers in developing high-quality plastic and castable monolithics for emerging refinery and petrochemical applications, we've sustained a long-lasting relationship with the Hydrocarbon Processing Industry, growing together as partners in advancing monolithic refractory state-of-the-art.



Today, Calderys continues to provide a fully-integrated refractory partnership supplying materials, technology, and installation services throughout the world.

EFFICIENCY & QUALITY

Fast, Economic Installation Without Compromise

Calderys understands today's demands for rapid, cost-effective installation while maintaining superior refractory quality. Our diverse product range supports various installation methods to meet your specific needs.

Installation Methods We Support:

- Plastic mouldables
- Ramming
- Casting (hand packing, rodding)
- Vibration casting
- Self-flow casting
- Gunning
- Pumping
- Spraycasting (shotcreting)
- Injection
- Troweling

Complete Technical Support:

Each Calderys product is carefully formulated and manufactured with advanced technology and quality assurance controlled by ISO 9001.

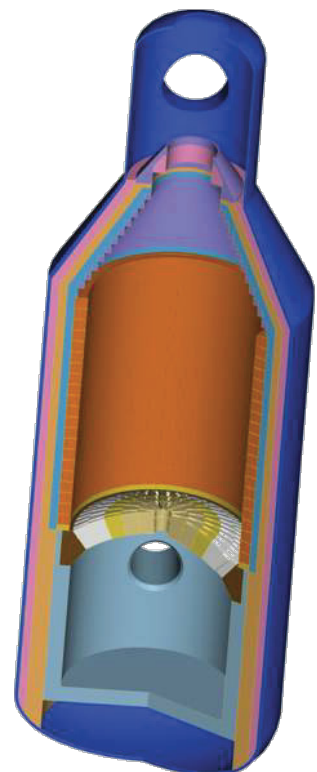
- Critical installation, dry-out, and start-up operations support
- Detailed product information and installation procedures
- Material safety data sheets supplied with every product
- Engineering and service personnel with years of refractory experience
- Expert services from development through installation
- Solutions designed for long service life with reduced costs

Continuous Improvement:

The Calderys team constantly improves refractory products to meet Hydrocarbon Processing Industry needs. We've earned an international reputation for:

- Leading refractory technology
- High-quality materials
- Competent installation teams
- Maximum service performance
- Reduced maintenance costs
- Economical installation

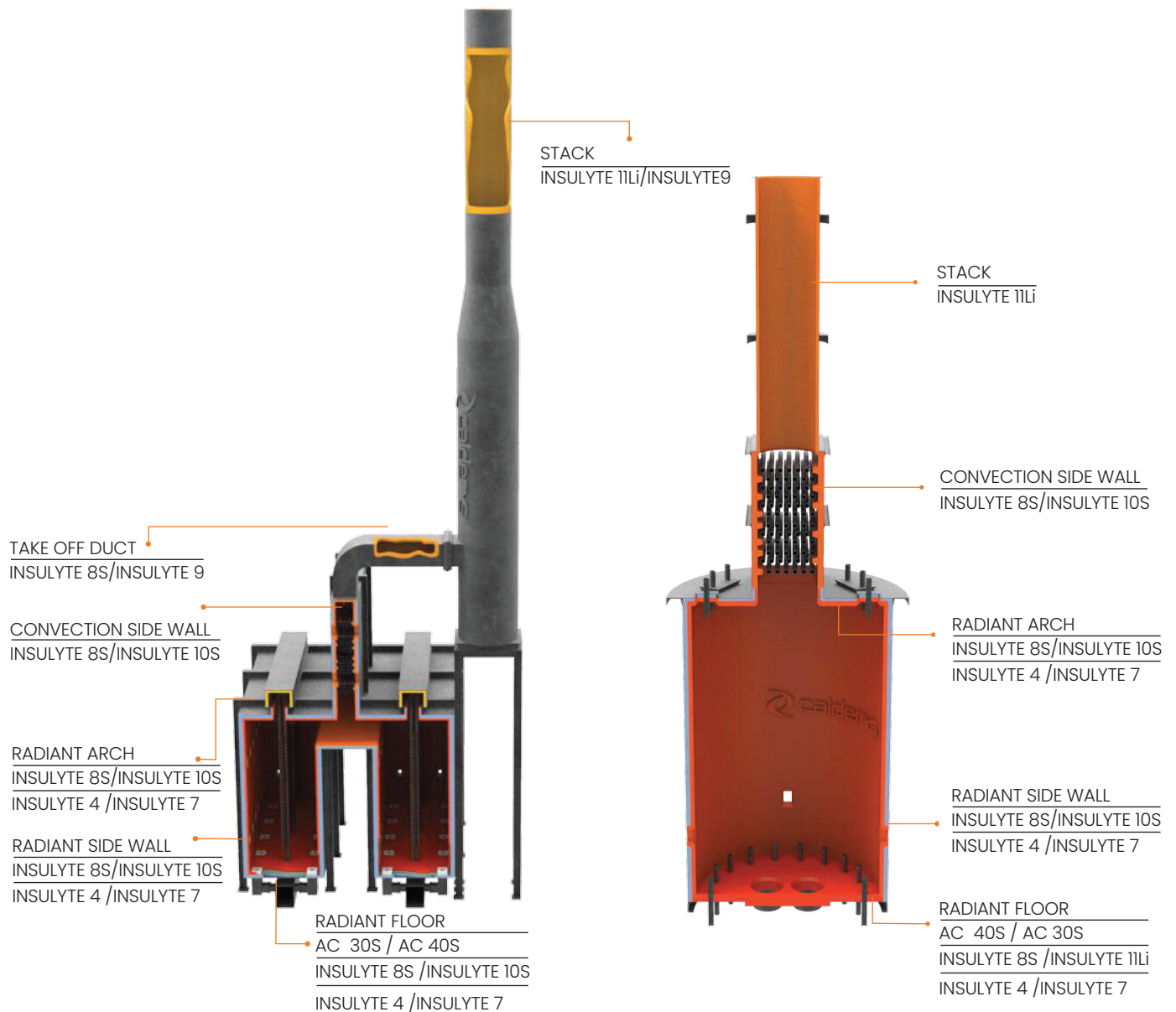
All products meet appropriate HCP standard Engineering specifications, ensuring the Hydrocarbon Processing Industry can depend on Calderys refractory products.



CRUDE & VACUUM DISTILLATION UNITS

These units are used for heating up crude oil for the refining process. After heating, the oil is transported to the distillation column for further processing.

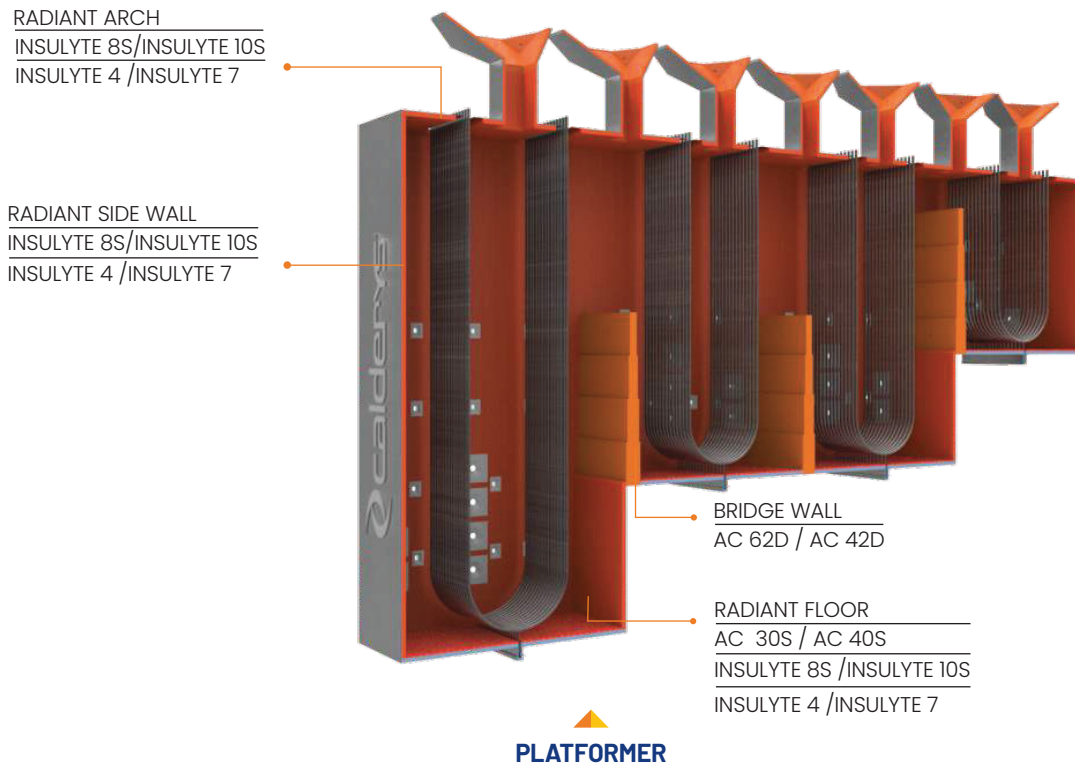
The oil is transported through tubing inside the furnace. Typical temperatures inside the furnace range from 800° C to 1000° C. The unit can be equipped with floor and/or side-wall burners. The main function of the lining is to have good insulating properties in order to limit energy loss.



CRUDE, VACUUM, COKER FURNACE

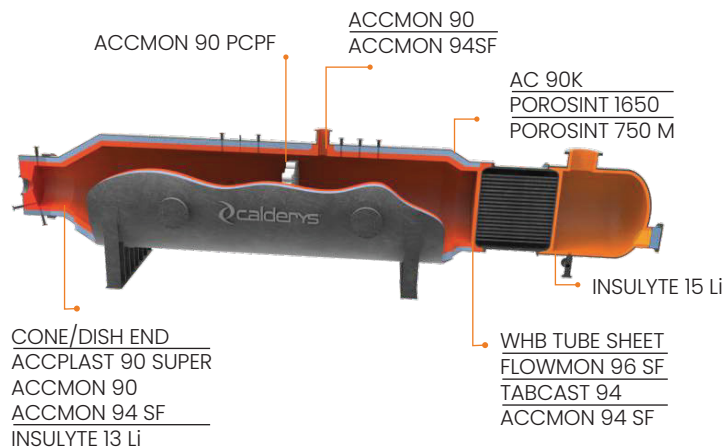
VERTICAL CYLINDER HEATER

DELAYED COKER UNITS

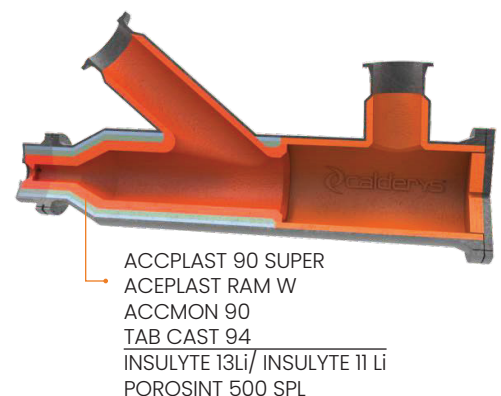


Sulphur recovery Units/Claus Combustion Chambers

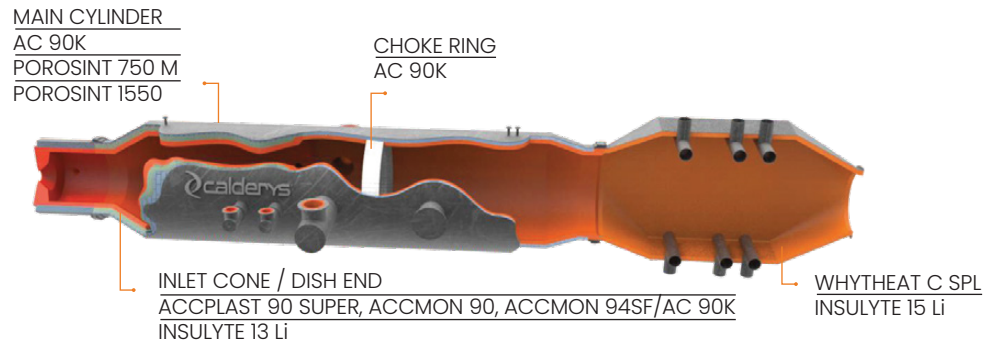
Due to the environmental issues, the need to reduce sulphur in fuels as well as in flue gasses has become necessary. Most refineries are equipped with a so-called sulphur recovery unit. In this type of installation, the acid gas is burned off in a furnace. Except hydrogen sulphide, the flue gas contains carbon dioxide, light hydrocarbons, nitrogen, etc. For each part of the equipment in this process such as burners, main chambers, mixing chambers, incinerator chambers, waste heat boilers reactors and sulphur condensers, Calderys has a proven monolithic lining concept.



SRU-MAIN COMBUSTION CHAMBER/CLAUSE REACTION CHAMBER



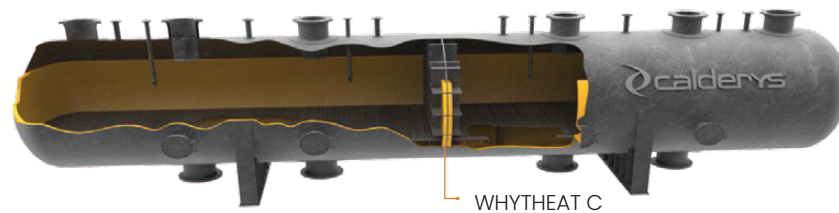
SRU-BURNER MIXING CHAMBER



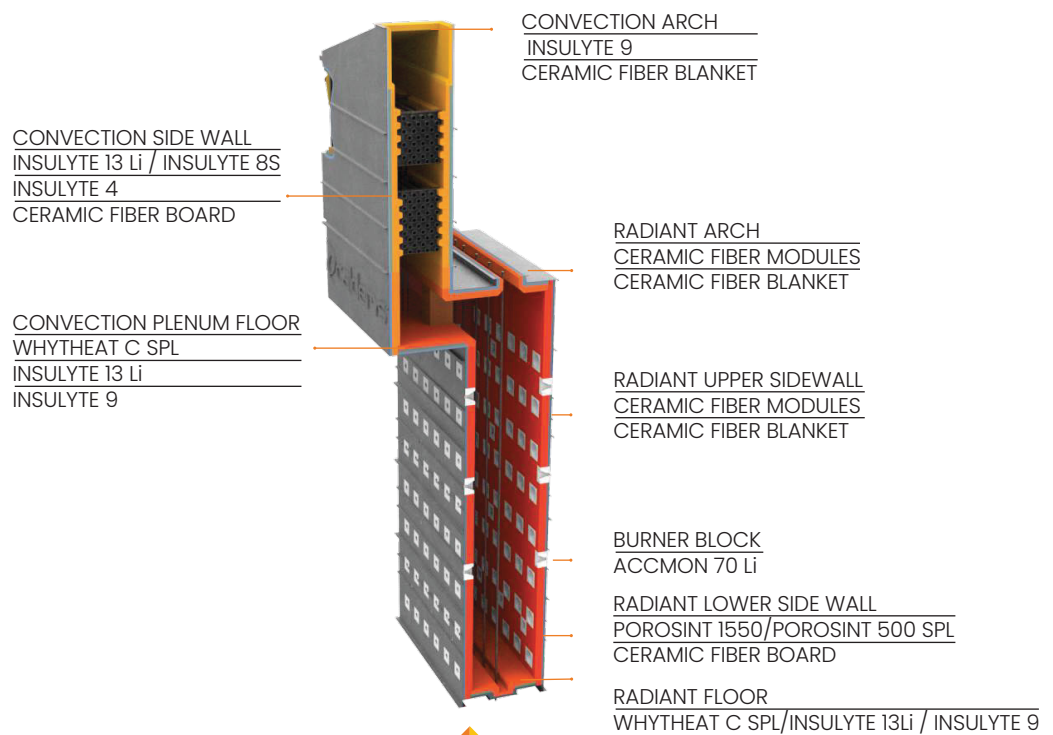
SRU-MAIN COMBUSTION CHAMBER



SRU CONDENSOR



SRU-REACTOR



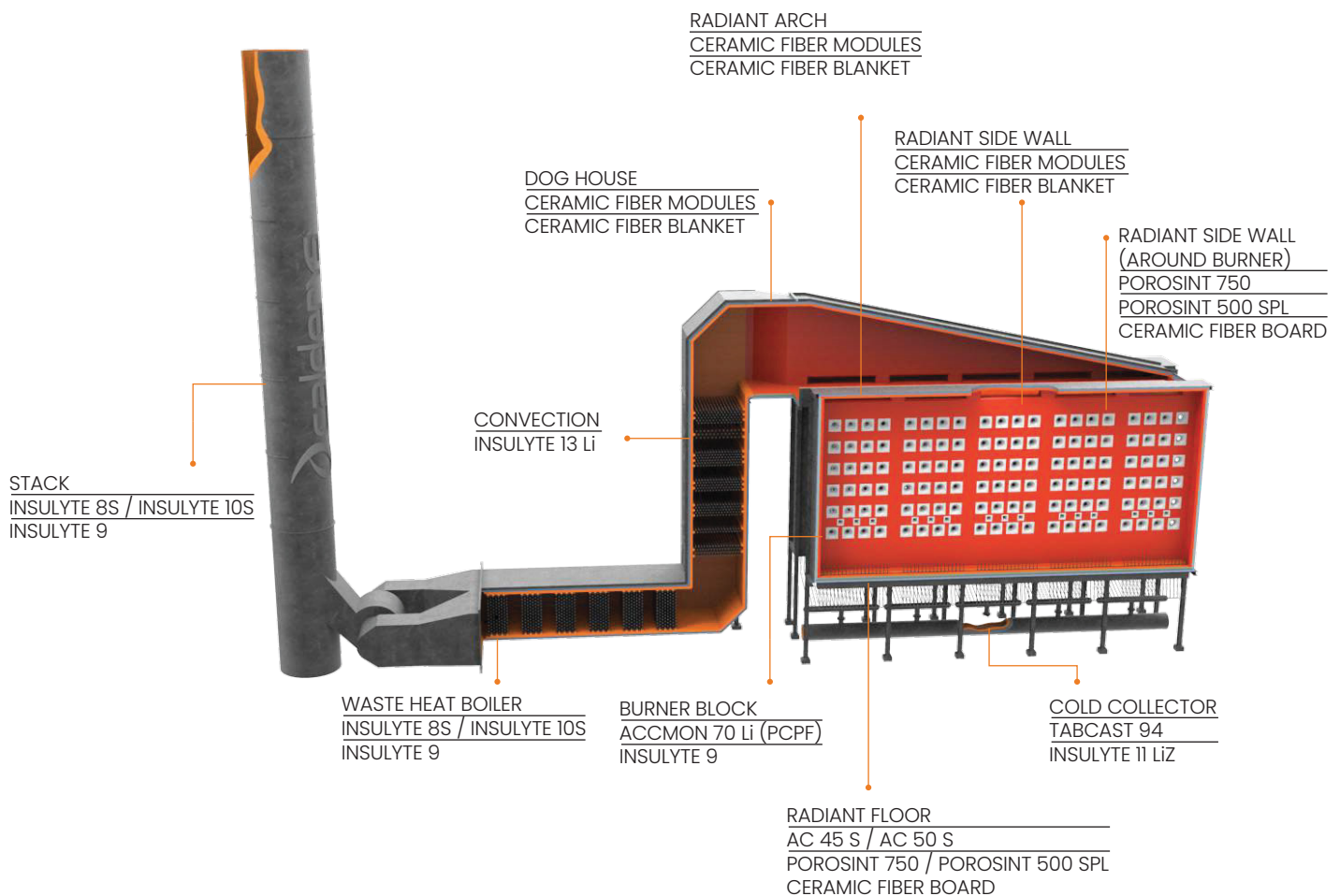
ETHELENE CRACKER

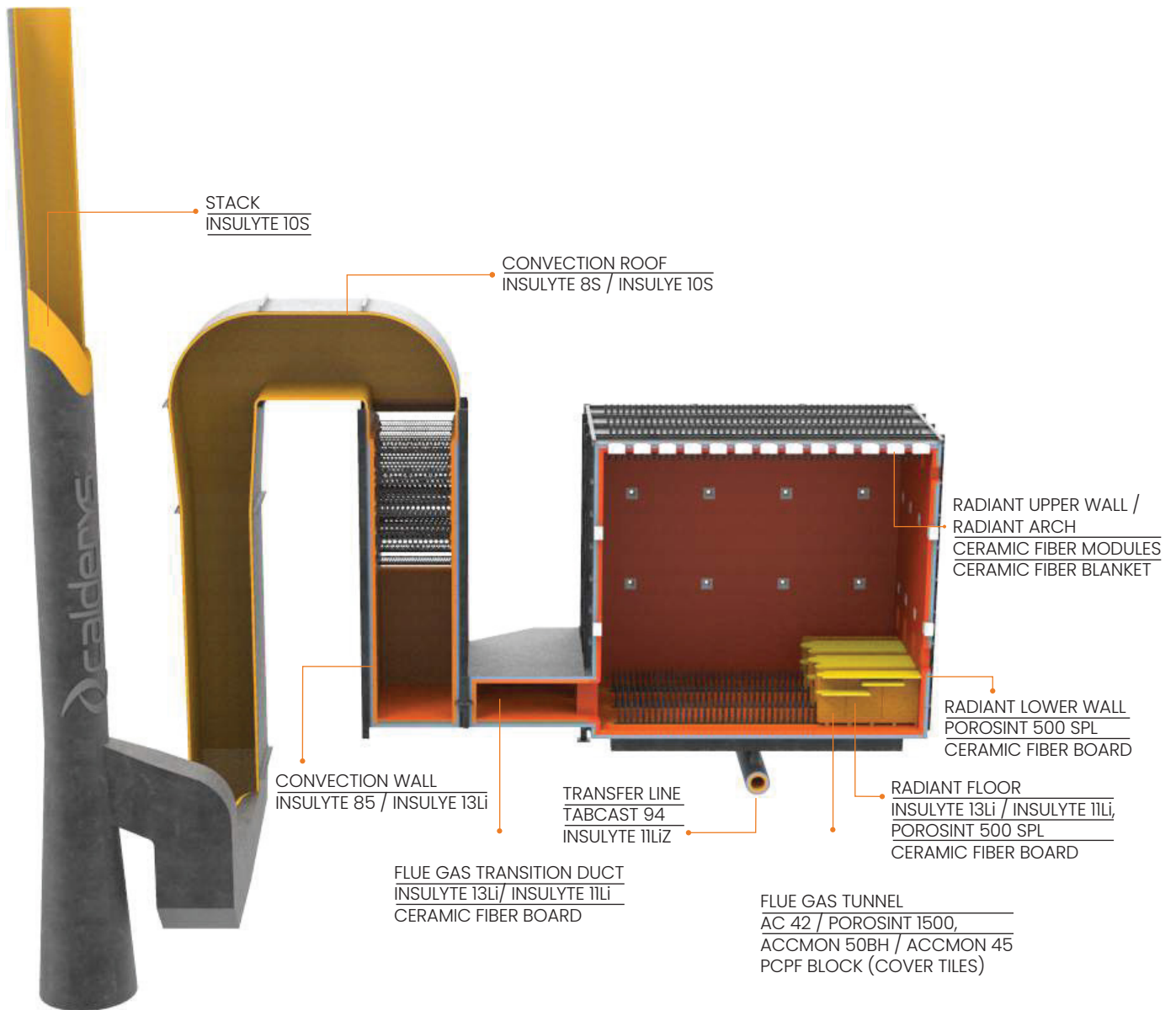
AMMONIA PLANTS OR HYDROGEN PLANTS

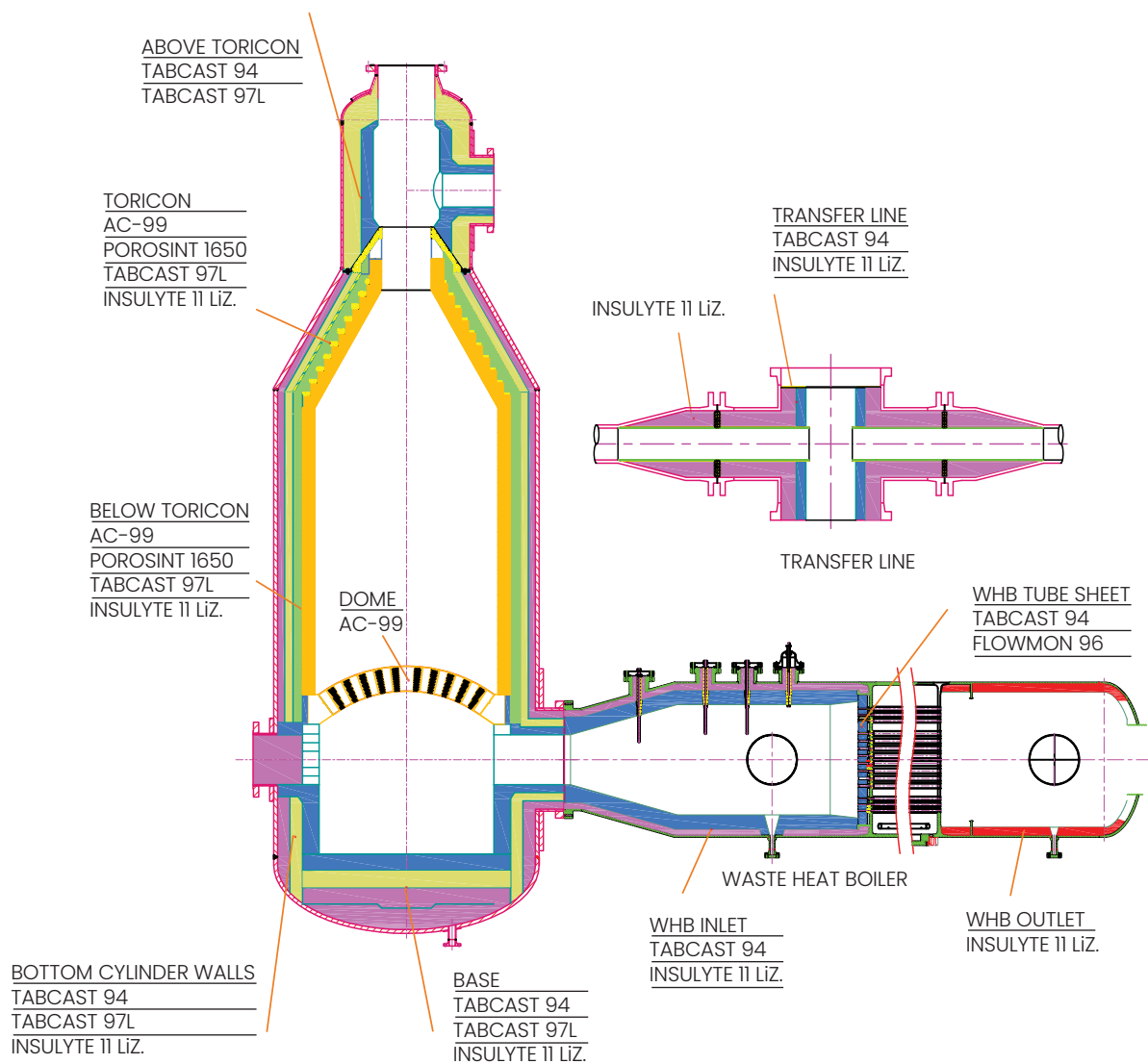
Ammonia is an important raw material for producing fertilizer. A similar process is also used to produce Hydrogen for the Petro-chemical industry. For example, in an FCC unit - H₂ is used to improve the cracking process.

The Ammonia or Hydrogen plants have two main units: primary reformer and secondary reformer which are connected by transfer lines. In primary reformer, the main process is heating of the feedstock. After heating up the feedstock, it is transported through the transfer lines to the secondary reformer.

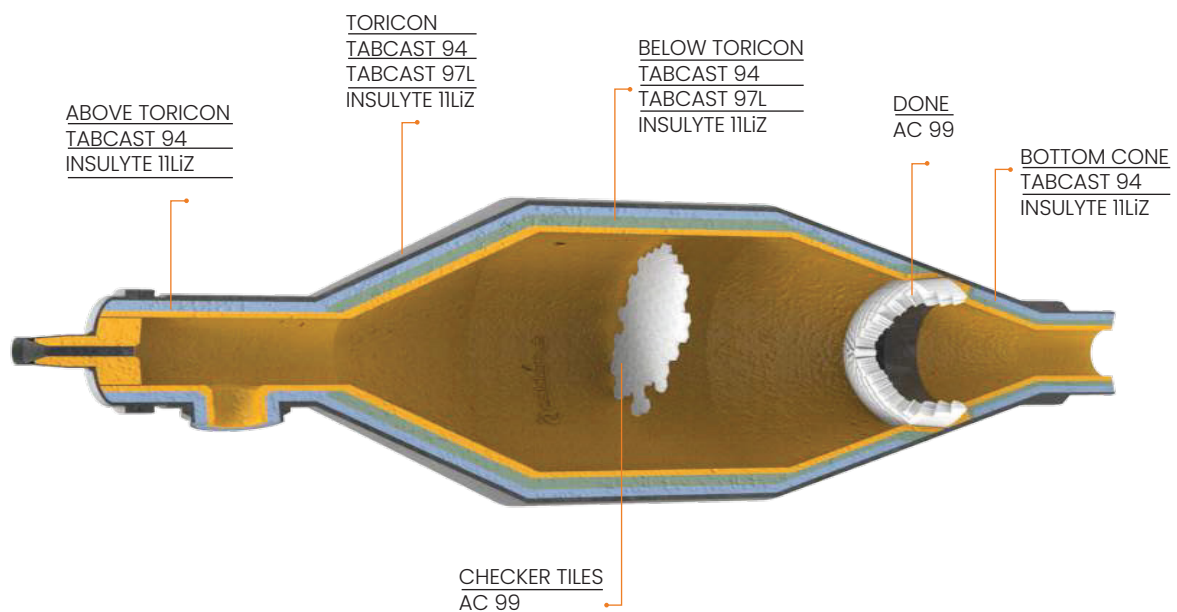
The process gas in this reformer is in direct contact with the lining. Due to the composition of the process gas, the lining needs to consist of very high purity material. Both low iron and low silica refractory materials are therefore used.







SECONDARY REFORMER



SECONDARY REFORMER

ALUMINA BALLS/ CERAMICS BALLS/ REFRACTORY BED SUPPORT

Refractory bed support (RBS) is widely used in petrochemical, fertilizer, refinery, chemical industries, etc. for catalytic bed support and column support.



- High purity 10% apparent porosity large spheres 19-, 25-, 37- & 50-mm dia.
- High purity 10% apparent porosity small spheres 3-, 6-, 10- & 13-mm dia.
- High purity 20% apparent porosity large spheres 19-, 25-, 37- & 50-mm dia.
- Medium purity 20% apparent porosity large spheres 3-, 6-, 13-, 19- & 25-mm dia.
- Low purity all range sphere

We have manufacturing facility in Katni, MP. We are supplying more than 2000MT of Refractory Bed Support to Indian and Overseas Customers each year.

PREVIOUS TRACK RECORD

Sr. No.	Type of Project	Material
1	CDU HEATERS	INSULYTE 7, INSULYTE 11 LI, INSULYTE 13LI, INSULYTE 8S
2	CDU HEATER REVAMP	INSULYTE 7, INSULYTE 8S, INSULYTE 11, MODULE
3	VDU & HDS HEATER	INSULYTE 8S, INSULYTE 11LI, INSULYTE 7, CERAMIC MODULE
4	SRU UNIT	AC 90 K, POROSINT 750, TABCAST 94, INSULYTE 15 LIS, WHYTHEAT A
5	SRU UNIT	INSULYTE 15 LIS, WHYTHEAT A, WHYTHEAT C, Mulsint- 60 & POROSINT- 750
6	SRU UNIT	AC 90 K, POROSINT 750, TABCAST 94, INSULYTE 15 LIS, WHYTHEAT A
7	SRU UNIT	AC 90 K, POROSINT 750, TABCAST 94, INSULYTE 15 LIS, WHYTHEAT A
8	SRU UNIT	AC 90 K, POROSINT 750, TABCAST 94, INSULYTE 15 LIS, WHYTHEAT A
9	SRU UNIT	AC 90 K, POROSINT 750, TABCAST 94, INSULYTE 15 LIS, WHYTHEAT A
10	SRU UNIT	AC 90 K, POROSINT 750, TABCAST 94, INSULYTE 15 LIS, WHYTHEAT A
11	SRU UNIT	ACCMON 95, AC 60M, POROSINT 750, WHYTHEAT C SPL, INSULYTE 15 LIS, TABCAST 97, AC-99, POROSINT 1800, ACCMON 95 PCPF, TABCAST 97L
12	SRU UNIT	ACCMON 95, AC 60M, POROSINT 750, WHYTHEAT C SPL, INSULYTE 15 LIS, TABCAST 97, AC-90K, POROSINT 1550,
13	SRU UNIT	AC 90K, ACCMON 90, POROSINT 750, INSULYTE 15LI, WHYTHEAT C, TABCAST 94
14	LAB HEATER	AC-30, INSULYTE 8S, INSULYTE 7, INSULYTE 11
15	FIRED HEATER	AC-30, INSULYTE 8S, INSULYTE 7, INSULYTE 11
16	HEATER	AC-30, INSULYTE 8S, INSULYTE 7, INSULYTE 11
17	HDT & SDU HEATER	AC-30, INSULYTE 8S, INSULYTE 7, INSULYTE 11
18	COKER UNIT HEATER	AC-30, INSULYTE 8S, INSULYTE 7, INSULYTE 11
19	OIL FIRED HEATER	INSULYTE 10S, INSULYTE 7, INSULYTE 11
20	HEATER	INSULYTE 8S, INSULYTE 7, INSULYTE 11
21	SDU UNIT	AC-30, INSULYTE 10S, INSULYTE 7, INSULYTE 11
22	HDT UNIT	AC-30, INSULYTE 8S, INSULYTE 7, INSULYTE 11
23	DHDT UNIT	AC-30, INSULYTE 8S, INSULYTE 7, INSULYTE 11
24	HGU UNIT	AC-30, INSULYTE 8S, INSULYTE 7, INSULYTE 11
25	NSU UNIT	AC-30, INSULYTE 8S, INSULYTE 7, INSULYTE 11
26	SECONDARY & PRIMARY REFORMER	TABCAST 94, TABCAST 97L, INSULYTE 11 LIZ, POROSINT 750, INSULYTE 11, WHYTHEATC, AC 42D
27	FIRED HEATER	AC-30, INSULYTE 11 Li, INSULYTE 8S, INSULYTE 7, INSULYTE 11
28	FIRED HEATER	INSULYTE 11 Li, INSULYTE 8S, INSULYTE 7, AC40-S
29	DCU HEATER	INSULYTE 8S, INSULYTE 4, INSULYTE 11, WHYTHEAT CS, ACCGUN INS 8S, ACCGUN INS 4, AC 62D, P 1550
30	DCU HEATER	INSULYTE 9 HS, INSULYTE 7, INSULYTE 11 LI, P 750, AC 30,

Sr. No.	Type of Project	Material
31	VGO HEATER	INSULYTE 8S, INSULYTE PI SPL, ACCGUN INS 8S, ACCGUN INS 8 SPL, WHYTHER K SPL, INSULYTE 9, AC 45S
32	HGU REFORMER	Calde Cast 40TR, CALDE CAST LW 154 CO, CALDE CAST LW 138, CALDE CAST STRONGLITE, CALDE CAST LW 124, CALDE CAST HYMOR 2800 LB, POROSINT 500 SPL, POROSINT 700, AC 45, Mortars
33	DCU HEATER	AC-40S, INSULYTE 7, INSULYTE 9 HS, INSULYTE 13Li, POROSINT 750
34	SRU AND COLD OUTLET HEADER	ACCMON 90, INSULYTE 13Li, AC 90K, AC 85P, ACCMON 90 PCPF, ACCMON 45, WHYTHER C, AC 90K, POROSINT 1550
35	SRU TAILGAS UNIT	WHYTHER C
36	SRU TAILGAS UNIT	WHYTHER C
37	DCU HEATER	INSULYTE 8S, INSULYTE 7, AC 40S, P-750, MODULES
38	PRIMARY & SECONDARY REFORMER	P 750, AC 42D, INSULYTE 11 LIZ, INSULYTE 11Li, TABCAST 94, TABCAST97L, AC INS140, 99% BRICKS, 94% INSULATION BRICKS, WHYTHER C
39	HEATER	INSULYTE 7, INSULYTE 11
40	STEAM SUPERHEATER- 5NOS	INSULYTE 8S, INSULYTE 4, AC 40S, P-500, MODULES
41	ROG CRACKER	INSULYTE 10S, INSULYTE 4, BLANKET
42	HGG BURNER DUCT	TABCAST 94, INSULYTE 11 LIZ
43	ISOMERIZATION HEATER	INSULYTE 7, INSULYTE 11Li, INSULYTE 8S, INSULYTE 13 LI WHYTHERC, POROSINT 750, AC 30S
44	ANNUAL SHUTDOWN SRU	AC 96, AC 70M, AC 60M, POROSINT 700, TABCAST 94
45	HYDROGENATION REACTOR	WHYTHER C
46	HYDROGENATION REACTOR	WHYTHER C
47	DHT HEATER	INSULYTE 7, INSULYTE 11 LI, INSULYTE 8S, AC 30S, MODULE
48	HGU REVAMP JOB-TRANSFER LINE, CONVECTION	CALDE CAST T 95, CALDE CAST LW 134 CG CO, CALDE CAST LW 134 C/G, CALDE CAST LW 116
49	IOCL HALDIA SRU FULL PACKAGE	AC 75 AD, AC 65 AD, ACCMON 95, WHYTHER C, INSULYTE 13Li. ACCGUN 45
50	HGU REVAMP JOB	CALDE CAST T 95, CALDE CAST MW 154 CO, CALDE CAST LW134, CALDE CAST XL 140 CO, INSULYTE 13
51	DHT HEATER	INSULYTE 7, INSULYTE 11 LI, INSULYTE 8S, AC 30S, MODULE
52	STACK	INSULYTE 11 LI
53	SRU - FULL PACKAGE	AC 90K, AC 96, TABCAST 94, ACCGUN 94 SUPER, INSULYTE 8S, ACCGUN INS 8S, TABCAST 97L C/G, POROSINT 1650, POROSINT 750, POROSINT 600
54	HEATERS	INSULYTE 8S, INSULYTE 11 LI, INSULYTE 7
55	HEATER	INSULYTE 7, INSULYTE 8S, INSULYTE 11, ACMON 60
56	NHT CCR HEATER	INSULYTE 8S, INSULYTE 11 LI, WHYTHER K SPL
57	HGU REFORMER	POROSINT 500, POROSINT 750M, AC 42D, PCPF, INSULYTE 13, INSULYTE 9, INSULYTE 4, MODULES
58	KHDS HEATER	INSULYTE 8S, INSULYTE 11 LI, INSULYTE 7, CERAMIC MODULES
59	TRANSFER LINE	TABCAST 94
60	COLD COLLECTOR	CALDE CAST 40 TR, CALDE CAST XL 140 CO, CALDE TROWEL HC 90 U

Sr. No.	Type of Project	Material
61	FRACTIONATOR, VACUUM TOWER FEED, HOT HEATERS	INSULYTE 13HQ, INSULYTE LW KB
62	SRU PACKAGE	AC 90K, ACCMON 94 SF, INSULYTE 8S, POROSINT 1550
63	MS BLOCK HEATER	INSULYTE 7, INSULYTE 8S, INSULYTE 11LI, WHYTEAT C, AC 30, CERAMIC MODULES
64	CDU HEATER COMPLETE REVAMP	ACC GUN INS 8S, INSULYTE 8S, INSULYTE 7
65	HGU REFORMER	POROSINT 750, AC 42D, INSULYTE 13, CERAMIC MODULE HYSIL
66	SUB X INCINRATOR	SPECIAL MATERIALS
67	SRU	AC 90K, TABCAST 94, INSULYTE 8S, POROSINT 750
68	APH	ACCMON 60, INSULYTE 8S AND SPECIAL CASTABLES
69	TRANSFER LINE	CALDE CAST MW 180 CO, CALDE CAST T 97
70	CONDENSER TGTU	HWI MATERIALS -KS 4 PLUS, GREENLITE 45 LPLUS
71	CRACKERS	DESIGN & SUPPLY OF MATERIALS
72	HGU REFORMER REVAMP	MODULES, BRICKS, CASTABLES, INSTALLATION
73	HEATERS	INSULYTE 7, INSULYTE 8S, INSULYTE 11 LI
74	DUCT BETWEEN WHE & SR	TABCAST 97 L

INSTALLATION PICTURES



ELECTRICAL DRYOUT



NHT ISOM Heater HRRL, Barmer 1



NHT ISOM Heater HRRL, Barmer 2



Flue Gas Ducts 1



Flue Gas Ducts 2



Flue Gas Duct 1



Flue Gas Duct 2



www.calderys.com

