GOUDA *refractories*

Fluidized Catalyst Cracking Unit

Energy & Chemicals

Energy and Chemical industries demand high performance refractory products. Gouda Refractories is acquainted with the processes and licensed specifications.

Gouda Refractories has a full range of products to match these strict demands and specifications for all critical equipment. By continuously improving and developing innovative refractory materials, Gouda Refractories can help its customers to achieve longer and more reliable service lifetime of a functional refractory lining.

LRQA CERTIFIED ISO 9001 : 2015

Scope **A-Z**

Years of experience **> 40**

Dedicated product range

Fluidized Catalytic Cracking is an extremely complex process and as a result, operators encounter numerous costly and difficult problems.

Gouda Refractories successfully designs, manufactures and supplies high grade refractory products for all equipment in FCC units.

With its knowledge and experience gained from its long history in the hydrocarbon processing industry, Gouda Refractories has been able to develop and expand its product range specifically for this high reliability and high lifetime demanding, crucial process: a range of products combining high strength, high abrasion resistance and excellent thermal properties.

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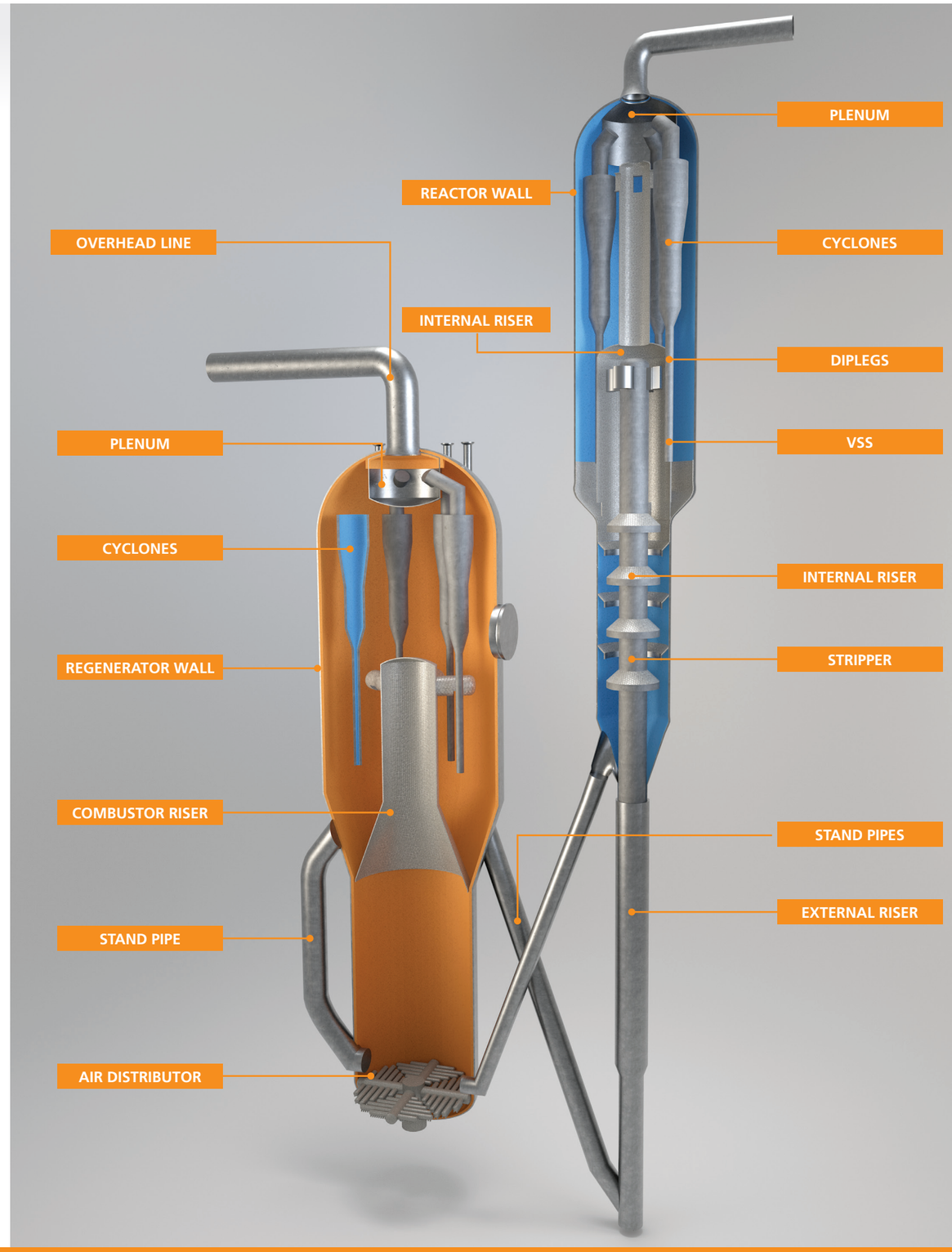
References

Axens	JGC	Tecnicas Reunidas
BP	Saudi Aramco	TOTAL
ExxonMobil	Shell	Valero Energy
Honeywell UOP	Technip FMC	Wood

Materials

		Cyclones	Regenerator / Reactor	Stripper / Steam Rings	Transfer Lines	Flue Gas Lines	Riser Transitions Risers	External Riser	Air Distributor	Stand Pipes	Plenum	Internal Riser	Overhead Line	Catalyst Cooler
Erosion resistant mouldables														
Curas 90 PF	Erosion resistant mouldable	●	●	●					●		●	●	●	
Curas 90 S PF	Ultra-low erosion resistant mouldable	●	●	●					●		●	●	●	
Insulating Castables														
Golite 125 HS (**)	Combined strength, insulating castable		●		●									
Golite 135 HS (**)	Combined strength, insulating castable		●		●						●			
Castables (Cast Vibration)														
Curon 140 L HS (*/**)	Low density erosion resistant castable					●		●		●	●		●	
Curon 140 XLHS (*/**)	Low density erosion resistant castable				●									
Curon 140 HS (*/**)	Erosion resistant castable	●	●			●		●		●	●		●	●
Vibron 50 R (*)	Erosion resistant castable						●							
Vibron 150 S (*)	Extreme erosion resistant castable						●							

(*) also in a Self-flowing grade available. (**) also in a Gunning grade available



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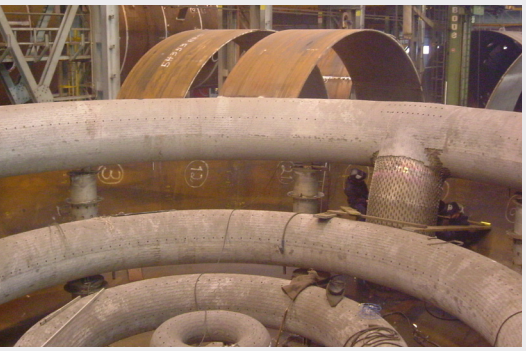

Technical Background

Gouda Refractories has the technical know-how to provide engineering, materials, installation and dry-out and R&D of refractory linings for FCC / MSCC / (HO)RFCC Units.

The strength of its FCC material series is achieved by combining over 40 years of field installation experiences and extensive research and product development. The input from field experiences by working under severe and extreme conditions in combination with a high-quality control standard ensures that the materials belong to the top segment in the industry.

Ultra-low erosion Hand packing materials (mouldables)
CURAS 90 PF is a first-generation erosion resistant material which is used for over 30 years in the industry. With its unique 2-component system this material has an erosion loss of 2 - 4 CC (Cubic Centimetres). This material is typically used in Reactor (and Regenerator) Cyclones, steam rings, etc.

Gouda Refractories has developed the CURAS 90 S PF as an ultra-low erosion resistant material. This single component material has an erosion loss of <3 CC and is especially designed for equipment where extreme erosion conditions occurs. With an excellent workability, this material is easy to install in hex mesh and single point anchor systems.

Erosion resistant castable materials
For External Risers, Wye piece, Standpipes, Catalyst Withdrawal Wells, Transfer lines, Cyclones etc. Gouda Refractories developed a series of cast vibration, self-flowing and gunning materials.

The CURON 140 L HS is a mid-weight material (low density, max. 1.800 kg/m³), so called "110" type material (110 lbs/ft³), the CURON 140 HS is a dense material. Both are cast / vibration erosion resistant refractory materials, developed especially for FCCU related equipment such as Regenerator, Reactors, Risers etc. where low thermal conductivity values, and an good erosion resistance, are a requirement. Erosion Loss for CURON 140 L HS <14 CC and for CURON 140 HS <10 CC.

A gunning grade, CURON 140 L HS GM / CURON 140 HS GM, and a self-flowing grade, FLUCON 140 L HS (140 HS), are also available. All gunning grade materials have low rebound losses, are low in dust and have excellent gunning characteristics. Erosion Loss for CURON 140 L HS GM <16 CC, for CURON 140 HS GM this is <14 CC and for FLUCON 140 HS <10 CC.

A special grade, low erosion resistant cast vibration castable is VIBRON 50 R with a erosion loss <7 CC. This material is typically used in high erosion zones such as Riser transitions and is also available in a self-flowing type, FLUCON 50 R.

A new developed material VIBRON 150 S and FLUCON 150 S are both new materials with an extreme low erosion loss figures, <4 CC. Specifically designed for special area's where extreme erosion occurs.

Insulating castable materials
GOLITE 125 S and GOLITE 135 HS combines the characteristics of an insulating and high strength material and have an good protection against heat loss which makes this product an ideal choice for the casting of critical FCCU applications like Regenerator and Reactor walls. Self-flowing versions FLUCON 125 S and FLUCON 135 HS and gunning grades, GOLITE 125 S GM and GOLITE 135 HS GM, are also available. These materials can be used in all other applications where high strength and insulating capabilities are requested as well. All gunning grade materials have low rebound losses, are low in dust and have excellent gunning characteristics.

Special low density castable materials
The new developed CURON 140 XL HS combines the characteristics of an low density (max. 1.600 kg/m³), so called "100" type material (100 lbs/ft³) and erosion resistance and has an low heat loss which makes this product an ideal choice for casting of critical FCCU applications especially for Transfer Lines, and others. A gunning grade of the CURON 140 XL HS GM and a and a self-flowing grade, FLUCON 140 XL HS, are also available. With these materials designers and engineers are able to reduce the casing temperatures and therefore the amount of metal stress and limit expansions. All gunning grade materials have low rebound losses, are low in dust and have excellent gunning characteristics. Erosion Loss for CURON 140 XL HS GM <20 CC, for CURON 140 XL HS this is <20 CC and for FLUCON 140 XL HS <16 CC.

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