



Refractory Technology

References

Uhde Services



ThyssenKrupp

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Uhde Services GmbH
Annabergstrasse 43-51
45721 Haltern am See, Germany
Phone: +49 2364 9278-0
Fax: +49 2364 9278-911
E-mail: ush.info@thyssenkrupp.com
Internet: www.uhdeservices.com

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References Chemical and Petrochemical Industry

Completion	Client Location Plant Name	Plant Unit	Scope / Contract Project notes	Further Explanations
2010	Uhde GmbH, Dortmund Paradeep India IOCL	Praxair Steam Reformer	new construction	engineering procurement
2009	Uhde GmbH, Dortmund Port Said Egypt	EPPC PDH & PP Plant Oxy-Reactor Steam Reformer	new construction	supervision execution of work
2009	Uhde GmbH, Dortmund	SORFERT Product Gas Cooler	inspection of the refractory lining	inspection
2009	Uhde GmbH, Dortmund	SORFERT Steam Superheater	inspection of the refractory lining	inspection

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References Other Industrial Furnaces

Completion	Client Location Plant Name	Plant Unit	Scope / Contract Project notes	Further Explanations
2010	ThyssenKrupp Steel Duisburg Germany	Radiant tube furnacee	repair of the insulation	
2010	Outotec Shougang Jingtang China	Pellet plant refractory lining	Supervision	
2009/2010	ThyssenKrupp Steel Dortmund Germany	Continuous annealing Furnace Heating up zone	replacement/new installation of the insulation	engineering site establishment material supply supervision installation

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References Cokeoven Batteries

Rehabilitation and new construction

Completion	Client Location Plant Name	Plant Unit	Scope / Contract Project notes	Further Explanations
2008	ARCELOR MITTAL Liège Belgium	cokeoven battery system KOPPERS (4,0 m oven height)	replacement / repair of regenerator brickwork	repairengineering site establishment supply auxiliaries supervision execution of work heating / commissioning
2008	ARCELOR MITTAL Liège Belgium	cokeoven battery system KOPPERS (4,0 m oven height)	endflue repairs up to 8 flues deep with corbel area	repairengineering site establishment supply auxiliaries supervision execution of work heating / commissioning
2008	DSK PROSPER Bottrop Germany	cokeoven battery system STILL (7,1 m oven height)	tunnel-repair in the oven center to rebuild the corbel area	repairengineering site establishment supply auxiliaries supervision execution of work heating / commissioning
2008	ARCELOR MITTAL Newcastle South Africa	cokeoven battery system ACRE (6,2 m oven height)	replacement of 3 heating walls	repairengineering site establishment supply auxiliaries supervision execution of work heating / commissioning
2007	ARCELOR MITTAL Liège Belgium (COCKERILL SAMBRE)	cokeoven battery system KOPPERS (4.0 m oven height)	replacement of 3 heatingwalls with roof parts and 3 wall heads (6 flues breakline) including the corbel renewal	repairengineering site establishment supply auxiliaries supply refractory material supervision execution of work heating / commissioning
2006 / 2007	COKES DE CARLING Carling France	cokeoven battery system CEC (4.1 m oven height)	rehabilitation of battery top on cokeside 3 - 4 meter from outer edge including oven cover bricks; approx. 50 units	site establishment supply auxiliaries supervision execution of work

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Rehabilitation and new construction

Completion	Client Location Plant Name	Plant Unit	Scope / Contract Project notes	Further Explanations
2005 - 2007	CORUS Ijmuiden Netherland	cokeoven battery system STILL (6.4 m oven height)	replacement of 9 heatingwalls in 3 blocks with roof parts including the renewal of buckstays, armour plates, doorframes, tierods	repairengineering site establishment supply auxiliaries supply refractory material supervision execution of work heating / commissioning
2006	CARSID Marchienne Belgium	cokeoven battery system DIDIER (4.0 m oven height)	replacement of 9 heatingwalls in 3 blocks with roof parts including the renewal of buckstays, armour plates, doorframes, tierods	repairengineering site establishment supply auxiliaries supply refractory material supervision execution of work heating / commissioning
2006	CARSID Marchienne Belgium	cokeoven battery system COPPEE (4.0 m oven height)	renewal of buckstays, armour plates and doorframes on 12 ovens on cokeside and the battery top renewal including upper tierods	site establishment supply auxiliaries supervision execution of work crane
2005	CARSID Marchienne Belgium	cokeoven battery system DIDIER / COPPEE (4.0 m oven height)	replacement of 10 heatingwalls in 3 blocks with roof parts including the renewal of buckstays, armour plates, doorframes, tierods	repairengineering site establishment supply auxiliaries supply refractory material supervision execution of work heating / commissioning
2005	HKM Duisburg Germany	cokeoven battery system KOPPERS (7.0 m oven height)	replacement of the roof brickwork on coke side from the outer edge to the chargehole; removal of 70 mini standpipes	repairengineering site establishment supply auxiliaries supply refractory material supervision execution of work
2005	ARCELOR MITTAL Fos sur Mer France (ARCELOR)	cokeoven battery system KOPPERS (4.0 m oven height)	replacement of 2 heatingwalls with roof parts and endflue repairs on 6 wall heads; repair of corbel parts; replacement of checker bricks on 4 regenerators	repairengineering site establishment supply auxiliaries supply refractory material supervision execution of work heating / commissioning

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2005	COCKERILL SAMBRE Liège Belgium	cokeoven battery system KOPPERS (4.0 m oven height)	replacement of checker bricks on 55 regenerators	repairengineering site establishment supply auxiliaries supervision execution of work heating / commissioning
2005	COCKERILL SAMBRE Liège Belgium	cokeoven battery system KOPPERS (4.0 m oven height)	replacement of the bracing system above the bench level on all 4 batteries on cokeside and pusher side (buckstay, armour plate, doorframe, upper tierods)	repairengineering site establishment supply auxiliaries crane supervision execution of work
2004 / 2005	ITALIANA COKE Cairo Montenotte Italy	cokeoven battery system OTTO (4.0 m oven height)	refurbishment of the battery top on coke oven batteries 1, 2, 4 and 5A including replacement of the upper tierods; modification of chargingcar rail pedestals and upper tierod spring loading system	repairengineering site establishment supply auxiliaries supply refractory material supervision execution of work
2004	COCKERILL SAMBRE Liège Belgium	cokeoven battery system KOPPERS (4.0 m oven height)	replacement of 10 heatingwalls with roof parts in 3 blocks	repair engineering site establishment supply auxiliaries supply refractory material supervision execution of work heating / commissioning
2004 and 2007	ALGOMA STEEL COOP. Sault Saint Marie Canada	cokeoven battery system GIBBONS-WILLPUTTE (5.1 m oven height)	replacement of 7 heatingwalls with roof parts each year	repairengineering supervision supply auxiliaries Teamwork with Uhde Cooperation of America and the union!

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Completion	Client Location Plant Name	Plant Unit	Scope / Contract Project notes	Further Explanations
2002 - 2004	ARCELOR MITTAL Newcastle South Africa (ISCOR)	cokeoven battery system OTTO (6.2 m oven height)	rehabilitation of batteries N° 3 & 4; heatingwall head renewal (average breakline 6 flues) with roof and corbel parts; renewal of the battery top centre part including replacement of upper tierods; replacement of buckstays, flashplates, doorframes and installation of modified battery equipment; heating adjustment for cokeoven gas and blastfurnace gas	repairengineering supervision supply auxiliaries supply refractory material skilled bricklayers Teamwork with ISCOR / KUMBA; helpers and mechanicans from SA
2003/2004	CORUS Ijmuiden Netherland	cokeoven battery system STILL (6.4 m oven height)	heatingwall head repairs on batteries N° 21, 22, 23 and 24 including the replacement of upper tierod ends and buckstays	repairengineering site establishment supply auxiliaries supply refractory material supervision execution of work
2002 1999/2000	CORUS Ijmuiden Netherland	cokeoven battery system STILL (6.4 m oven height)	replacement of 3 heating walls with roof parts including the renewal of buckstays, armour plates, doorframes, tierods	repairengineering site establishment supply auxiliaries supply refractory material supervision execution of work heating / commissioning
2002	ARCELOR MITTAL Hamilton Ontario Canada (DOFASCO)	cokeoven battery system KOPPERS BECKER (4.0 m oven height)	renewal of 14 heatingwall heads on battery N°5 with different breaklines and delivery of refractory material including the development of the engineering	repairengineering supervision supply auxiliaries supply refractory material Teamwork with Uhde Cooperation of America

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Completion	Client Location Plant Name	Plant Unit	Scope / Contract Project notes	Further Explanations
2001	ARCELOR MITTAL Vanderbijlpark South Africa (ISCOR)	cokeoven battery system DIDIER (4.0 m oven height)	rehabilitation of battery N°9; wall heads (breakline 5 flues) with roof and corbel parts; ovenfloors; renewal of the battery top centre part including replacement of upper tierods; replacement of buckstays, armourplate, doorframes and the installation of modified battery equipment; heating ad- justment for cokeovengas and blastfurnace gas	repairengineering supervision supply auxiliaries supply refractory material engineering check skilled bricklayers training of ISCOR staff Teamwork with ISCOR
2001 / 2002	ARCELOR MITTAL Liège Belgium (COCKERILL SAMBRE)	cokeoven battery system KOPPERS (4.0 m oven height)	replacement of 2 heatingwalls with roof parts	repairengineering site establishment supply auxiliaries supply refractory material supervision execution of work heating / commissioning
1999	DSK Kaiserstuhl coke plant Dortmund Germany (RAG)	cokeoven battery (7.6 m oven height)	replacement of one out- burnt buckstay including armour plate	repairengineering site establishment crane supervision execution of work
1999	RUUKKI Raahe Finland (RAUTARUUKKI)	cokeoven battery system GIPROKOKS (7.0 m oven height)	battery N° 1 rehabilitation of outer roof parts coke and pusher side on 35 ovens; ceramic welding on 35 ovens	repairengineering site establishment supply refractory material supervision execution of work
1997/1998	STELCO HILTON WORKS Hamilton Ontario Canada	cokeoven battery system OTTO (5.0 m oven height)	battery N° 7 rehabilitation; wall heads with 6 flues breakline; oventop; modification and re- placement of the bracing above bench level; collectingmain replacement and standpipes; modification of the heating system	repairengineering supervision Teamwork with TSOA and Kvaerner Songer

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Rehabilitation and new construction

Completion	Client Location Plant Name	Plant Unit	Scope / Contract Project notes	Further Explanations
1996	ENSIDESA Gijion Spain	cokeoven battery system STILL (6.5 m oven height)	battery N° 1 & 2 rehabilitation; wall heads; oventop; modification and replacement of the bracing above bench level	repairengineering supervision Teamwork with TSOA and IMASA
1997 1999	RIVA Taranto Italy (ILVA S.p.A.)	cokeoven batteries system STILL (6.2 m oven height) system STILL (4.0 m oven height)	replacement of 3 heatingwalls with roof parts and one single wall with roof parts	repairengineering site establishment supply auxiliaries supply refractory material supervision execution of work heating / commissioning
1983 - 1998	THYSSENKRUPP STEEL Duisburg Germany (ATH)	cokeoven batteries system KOPPERS (4.0 m oven height) system STILL (6.0 m oven height)	replacement of more than 100 heatingwalls in several blocks with roof parts and bracing system; replace- ment of checkerbricks; heating adjustment; oventop repairs	repairengineering site establishment supply auxiliaries supervision execution of work heating / commissioning
1996 - 1995	THYSSENKRUPP STEEL Duisburg Germany (ATH)	cokeoven batteries system KOPPERS (4.0 m oven height) system STILL (6.0 m oven height)	manufacture and re- placement of more than 100 buckstays	repairengineering site establishment supply auxiliaries supervision execution of work
1995	ARCELOR MITTAL Lazaro Cardenas Mexico (SICARTSA)	cokeoven battery system OTTO (5.0 m oven height)	replacement of heating walls N° 13 and 42	repairengineering site establishment supply auxiliaries supervision execution of work heating / commissioning
1995 1997/1998	DSK Gelsenkirchen Hassel Germany (RAG)	cokeoven battery system OTTO (5.0 m oven height)	replacement of heating walls N° 82 and N° 102, 103,104	repairengineering site establishment supply auxiliaries supply refractory material supervision execution of work heating / commissioning

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Completion	Client Location Plant Name	Plant Unit	Scope / Contract Project notes	Further Explanations
1996/1997	ARCELOR MITTAL Dunkerque France (USINOR)	cokeoven battery system DIDIER (6.5 m oven height)	construction of the new battery N°7 with 63 ovens; refractory, steel/piping, partial procurement	site establishment logistics crane site management/supervision execution of work
1995/1996	AHMSA Monclova Mecixco	cokeoven battery system KOPPERS (4.0 m oven height)	battery rehabilitation; wall heads; oventop; corbel renewal; modifi- cation and replacement of the bracing above bench level; heating adjustment	repairengineering supervision Teamwork with TSOA
1994/1995	AK STEEL Ashland and Middletown USA	cokeoven battery system WILLPUTTE (4.0 m oven height)	renewal of heatingwall heads at several batteries with different breaklines and delivery of refractory material including development of the engineering	repairengineering supervision supply auxiliaries supply refractory material Teamwork with Edward Gray Cooperation
1994/1995	AdP Piombino Italy	cokeoven battery system OTTO/CEC (4.2 m oven height)	battery rehabilitation; wall heads; oventop; corbel renewal; replacement of the bracing above bench level; heating adjustment	site establishment supply auxiliaries supply refractory material supervision execution of work heating / commissioning
1994/1995	SIDERAR TERNIUM San Nicolas Argentina	cokeoven battery system OTTO (6.55 m oven height)	battery N°3 & 4 rehabilitation; wall heads; oventop; corbel renewal; modification and re- placement of the bracing above bench level; heating adjustment	repairengineering supervision training for SIDERAR staff Teamwork with TSOA
1991-1992	DSK Kaiserstuhl coke plant Dortmund Germany (RAG)	cokeoven battery (7.6 m oven height)	construction of 2 new batteries with 60 ovens each; refractory, steel/ piping, partial procure- ment	supervision site establishment logistics crane site management/supervision execution of work Teamwork STILL OTTO; DIDIER; KRUPP KOPPERS

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Completion	Client Location Plant Name	Plant Unit	Scope / Contract Project notes	Further Explanations
1992	DSK - COKEPLANT PROSPER Bottrop Germany (RAG)		construction of two large space coking reactors - test ovens -	site establishment supply auxiliaries supervision execution of work
1991/1992	ARCELOR MITTAL Fos sur Mer France (USINOR)	cokeoven battery system OTTO (6.2 m oven height)	batteries N° 1 & 2 (100 ovens); replacement of the bracing system above bench level and various refractory repair works on the wall heads	repairengineering site establishment supply auxiliaries supply refractory material supervision execution of work heating / commissioning

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References Byproduct Plant

Relining and New Construction

Completion	Client Location Plant Name	Plant Unit	Scope / Contract Project notes	Further Explanations
2009	Hyundai Steel Korea	byproduct plant	Claus Furnace	Supervision
2000	THYSSENKRUPP STEEL Duisburg Germany (ATH)	byproduct plant	relining of a NH ₃ - reactor; process gas line	site establishment supply auxiliaries supervision execution of work
1999	THYSSENKRUPP STEEL Duisburg Germany (ATH)	byproduct plant	new lining of a contact tower and a combustion furnace	site establishment supply auxiliaries supervision execution of work
1999	RIVA Taranto Italy (ILVAS.p.A.)	byproduct plant	new lining of a contact tower and a combustion furnace	site establishment supply auxiliaries supervision execution of work
1998	POHANG IRON & STEEL Posco / Kwangyang Korea	byproduct plant	relining of a NH ₃ - reactor	site establishment supply auxiliaries supervision execution of work
1998	KOKSOCHERICZNY Zabrze Poland	byproduct plant	relining of a NH ₃ - reactor	site establishment supply auxiliaries supervision execution of work
1996/1997	ARCELOR MITTAL Gent Belgium (SIDMAR N.V.)	byproduct plant	relining of a NH ₃ - reactor	site establishment supply auxiliaries supervision execution of work
1992	HKM Duisburg Germany	byproduct plant	relining of a NH ₃ - reactor	site establishment supply auxiliaries supervision execution of work

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Refractory and Bracing Maintenance

Completion	Client Location Plant Name	Plant Unit	Scope / Contract Project notes	Further Explanations
up to now	DSK PROSPER Bottrop Germany	cokeoven battery system STILL system OTTO	permanent maintenance work	gunniting spraying luting sealing
2008	ARCELOR MITTAL Vanderbig park South Africa	cokeoven battery	ceramic welding	repairengineering site establishment supply auxiliaries supply refractory material supervision execution of work heating / commissioning
2007	CORUS Ijmuiden Netherland	cokeoven battery system STILL	ceramic welding	supply of powder equipment cleaning work welding work
2007	CORUS Ijmuiden Netherland	cokeoven battery system STILL	check and readjustment of the spring loaded bracing system on batteries N° 21, 22, 23 and 24	site establishment equipment check / radjustment replacement of damaged springs
2005	HKM Duisburg Germany	cokeoven battery system KRUPP KOPPERS	removal of graphite on suction holes	site establishment equipment supervision execution of work
2004	KBS Duisburg Germany	cokeoven battery	removal of graphite on chargingholes	site establishment equipment supervision execution of work
up to 1999	DSK PROSPER Bottrop Germany (RAG)	cokeoven battery system STILL	check and readjustment of the spring loaded bracing system	site establishment equipment check / radjustment replacement of damaged springs
1995	THYSSENKRUPP STEEL Duisburg Germany (ATH)	cokeoven battery system STILL	permanent maintenance work according to catalogue	site establishment equipment supervision execution of work

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Refractory and Bracing Maintenance

Completion	Client Location Plant Name	Plant Unit	Scope / Contract Project notes	Further Explanations
1989 - 1992	PREUSSAG Ilsede Germany	cokeoven batteries system KOPPERS	repair of ovenwalls including ceramic welding, guniting, dusting and panell patching	site establishment supply auxiliaries supervision execution of work
1990/1991	RIVA Taranto Italy (ILVA)	cokeoven batteries system STILL	maintenance work on batteries N° 1 to 10 according to catalogue	site establishment supply auxiliaries supervision execution of work

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References Coke Plant

Inspection and Services

Completion	Client Location Plant Name	Plant Unit	Scope / Contract Project notes	Further Explanations
2009, 2006 2004, 2002	ARCELOR MITTAL Burns Harbor USA (ISG)	cokeoven battery	inspection of cokeoven batteries N° 1 and 2; condition of refractory and steel; battery operation; inspection report	inspection documentation archive works report presentation
2009	Arcelor Mittal Seraing Belgium	cokeoven battery	- adjustment of heating system - reducing of emissions - reducing of gas consumption - creation of maintenance plan	
2008	Companhia Siderúrgica Paulista (COSIPA) Cubatao Brasil	cokeoven battery	- inspection of refractories - bracing system - mechanical construction - inspection report	
2008	Gerdau Acominas Ouro Branco Brasil	cokeoven battery	- inspection of refractories - bracing system - inspection report	
2008	Serverstal Luccini Triest Italy	cokeoven battery	- inspection of heating system - bracing system - inspection report	
ongoing	UHDE GMBH Dortmund Germany		to lend specialists to UHDE or other clients for the performance of inspections, advisory and supervision for rehabilitations and new construction of cokeplant facilities	
2007	RUUKKI Raahe Finland	cokeoven battery system GIPROKOKS	inspection of cokeoven batteries N° 1 and 2; condition of refractory and steel; battery operation; inspection report and strategy paper for rehabilitation	inspection documentation archive works report presentation

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Inspection and Services

Completion	Client Location Plant Name	Plant Unit	Scope / Contract Project notes	Further Explanations
2005	ARCELOR MITTAL Newcastle South Africa (ISCOR)	cokeoven battery system OTTO	specialist to assist ISCOR to execute the proper adjustment of the bracing system, survey of door- frames	
2001	ARCELOR MITTAL Newcastle South Africa (ISCOR)	cokeoven battery system OTTO	2 month heating optimization for cokeoven gas and blastfurnace gas	monitoring actual setting tests evaluation report
2001	ARCELOR MITTAL Newcastle South Africa (ISCOR)	cokeoven battery system OTTO	training of ISCOR staff to handle the guniting machine and perform the gunituing procedure; manual	
1998	CORUS Llanwern Great Britain	cokeoven battery	assistance for heating up of battery N° 3	