ABOUT US

CJSC “OGNEUPORKOKSSERVIS” (CJSC “OKOS”) is an engineering company providing a complex of technical services in by-product-coking industry. Technical assistance in construction, commissioning and adjustment of new coke oven batteries, as well as in operation, modernization / reconstruction and repair of existing coke oven batteries and other units of by-product-coking industry is a cross-section of our work.

Origins and development of CJSC “OKOS” is indissolubly related to partnerships with design institutes, manufacturer’s works of refractory materials and equipment as well as specialized construction, installation organizations and organizations responsible for facility commissioning.

The business vision of CJSC “OKOS” is guided by the unique combination of Qualified Specialists who based on their expertise in the coke ovens & by-products domain for over 40 years have developed the ability to understand and identify strategic priorities and targets through thorough self assessment, monitoring, reviewing and reporting. To add to it the Customer’s Personnel (Specialists) who possess the knowledge of local needs and peculiarities along with the occupational and operational regulations of plant machinery guarantee the Implementation of timely and successful projects. More importantly there is steady flow of communication which ensures consistent quality improvements.

Engineering expertise, high quality of works and timely execution of incurred liabilities created a universally recognized brand name – OKOS, known not only in Russia and CIS but also in India, China, Egypt, Czech Republic, Iran, Algeria, Bosnia and Herzegovina as well as in other countries of the world. One of the company’s strategic goals is to achieve results of the executed works completely meeting the requirements and expectations of our Customers.

CJSC “OKOS” employs a team of highly skilled professionals, who have already implemented many projects on construction and reconstruction of coke oven batteries, hot and cold repairs, reanimation (after a long-term preservation), recovery, heating and commissioning of coke oven batteries, chemical recovery shops and other units of BPCP.

In 2004 CJSC “OKOS” implemented quality management system in accordance with the requirements of ISO 9001 and renews it annually.

In the XXI century company secures competitive position in rendered services at the global market of by-product-coking industry and is optimistic about the future.

Our motto: “You set out tasks – we solve them!”
TECHNICAL ASSISTANCE IN CONSTRUCTION, MODERNIZATION AND RECONSTRUCTION OF BY-PRODUCT-COKING INDUSTRY UNITS

- Participation in development of design documentation.
- Complete delivery of refractory materials and equipment.
- Control of the size and quality of delivered refractory products, shape wise sorting of delivered refractories.
- Control of equipment consistency with the design requirements.
- Execution of construction and installation works in accordance with the process engineering of refractories and construction works.
- Technical supervision over the quality of ovens brickwork laying, installation of process equipment and steel structures.
- Drying, warming and start up of coke oven batteries.

Reconstruction of Coke Oven Battery No.1 at West Siberian Iron and Steel Plant (General Contractor). Authorial supervision over construction

Study of the project of reconstruction of Coke Oven Battery No.2 at West Siberian Iron and Steel Plant with implementation of stamp charging technology
RESTORATION OF TECHNICAL CONDITION OF COKE OVEN BATTERIES AFTER A LONG COLD SHUTDOWN

- Technical diagnostics of coke oven battery, chemical recovery shops and coke products processing plants and other units.
- Cold repair of refractory brickwork of coke ovens.
- Replacement, audit and restoration of equipment of coke oven battery, coke machines and chemical recovery shop and coke products processing plants.
- Equipment test, technological pipelines and units.
- Drying, warming up and start-up of coke oven battery.
- Hot repair of coke ovens refractory brickwork by methods of ceramic welding and gunting.
- Adjustment of coke ovens heating mode.

Warming up and heating with liquefied petroleum gas and commissioning of Coke Oven Battery No.5 after a cold shutdown at Lukavac by-product coke plant Plant (Bosnia and Herzegovina) including chemical recovery shop.

ENHANCEMENT OF SERVICE LIFE

COMPLETE AND PARTIAL REBRICKING OF HEATING WALLS OF COKE OVEN BATTERIES

Technology of repair allows:

- to keep safe refractory brickwork of heating walls adjacent to the repaired ones due to maintenance of 750–850 °C temperature during the repair preventing structural transformations of crystalline silica in silica bricks;
- to accelerate warming up and commissioning of repaired heating walls minimizing losses of production capacity.

Main advantages:

- enhancement of service life of coke oven batteries up to 7–12 years;
- prompt commissioning of repaired heating walls;
- ordinary silica refractory brick is used;
- achievement of a high economic impact as a result of minimum losses of coke production.

Engineering solutions on thermal insulation and ventilation of the working zone allow carrying out repair all-year-round in any climatic conditions.

*Hot repairs of coke oven batteries at Integrated Iron and Steel Works of China*
OF COKE OVEN BATTERIES

REPAIR OF INCLINED FLUE’s ZONE AND REGENERATOR’s ZONE WITH REPLACEMENT / CLEANING OF CHECKER BRICKWORK

Repair of inclined flue’s zone and regenerator’s zone with replacement / cleaning of checker brickwork allows:

- To restore normal temperature regime of coke oven battery operation, that is to achieve uniformity of temperature distribution throughout the heating system of heating walls to the full length of coke oven battery;

- To restore normal hydraulic regime of coke oven battery operation that is to maintain values of gas pressure in the oven’s sole and suction in different parts of the heating system prescribed by the production procedures.
PREVENTIVE REPAIR OF REFRACTORY BRICKWORK

REPAIR OF HEATING WALLS BY METHODS OF CERAMIC WELDING AND GUNITING

Main advantages:

- Durability of the repaired parts of brickwork due to the affinity of chemical, mechanical-and-physical properties of the applied powder to the characteristics of restored refractory brickwork;

- Live elimination of defects such as cracks, cavities, minor through wall burnings and undercuts of refractory brickwork, joints between the reinforcing frames and end parts of the heating walls, cracks and leakages in regenerators’ walls;

- Efficiency, simplicity and ease of repair due to minimum cost of materials, labor and financial resources, as well as the execution of works within the production cycle of the industrial ovens;

- Minimization of disruption of the industrial ovens production cycle and exclusion of negative impact of deep cooling and decarbonization of refractory brickwork.

RESTORATION OF THE OVENS’ SOLE BY METHOD OF GROUTING AND/OR REBRICKING

Restoration of the ovens’ sole by method of grouting is made by using ceramic mixture «NIKA» intended for this purpose, which represents a carefully dosed blend of refractory materials and fine particles of metal fuel and oxidizer.

Replacement of sole plates is executed in case of their strong abrasion or destruction by the ram of coke pusher beam or coke, causing difficulties in coke pushing or ovens sticking (carbonization). Ovens’ sole is replaced from the door sill up to the site where the old and new sole plates are the same level to ensure proper coke pushing.
Reinforcing equipment — is an important structural element and operating reliability and service life of coke oven batteries depends on its condition. Reinforcement provides solidity and density of coke oven battery brickwork, reduces the impact of mechanical stress on the brickwork at ovens charging and coke pushing while in operation.

Regular inspection and maintenance of the reinforcement equipment, timely adjustment and maintenance are essential for keeping of coke oven battery in working condition.
DRYING AND WARMING OF COKE OVEN BATTERIES
WITH ANY GAS HEATING AGENCY, INCLUDING LPG

The main parameters to be controlled in the process of drying and heating of coke ovens are:

- fuel consumption;
- excess-air coefficient;
- temperature in discrete spots of oven’s brickwork;
- pressure in discrete spots of heating system.

Main advantages of heating of coke ovens brickwork with liquefied petroleum gas (LPG):

- Safety of heating process, where gas combustion (mixture of propane-butane) arise from the optimum distribution of air and gas flows in the ovens’ stove, without its prior mixing;
- Self-containment of gas supply system, allowing safe and precise adjustment of heating process in its entirety;
- Environmentally friendly process due to minimal emissions of combustion products into the air medium;
- High calorific value of gas combustion (propane-butane mixture) and relatively low cost compared to the alternative fuel.
ADJUSTMENT OF COKE OVENS HEATING MODE

Adjustment of coke ovens heating mode includes:

- adjustment of coking temperature range, i.e., achieving uniform temperature distribution in the heating system throughout the entire length of coke oven battery;
- adjustment of hydraulic regime of coke ovens, i.e. maintenance of gas pressure in the sole of the coking chamber and suction in different parts of the heating system as per the production procedure.

Quality adjustment of coke ovens heating regime ensures:

- the highest yield of large-size metallurgical coke by equalizing the battery coking period, simultaneous and complete coke readiness throughout the whole length and height of coking chambers;
- high yield of chemical products and natural gas with high calorific value;
- high thermotechnical efficiency of the ovens (useful efficiency).
TECHNICAL ASSISTANCE AND CONSULTING IN COKE PRODUCTION

Technical assistance in operation of by-product-coking industry units is aimed at:

- achievement of maximum production capacities;
- improvement of the products’ quality;
- reduction of polluting emissions into the community air and water basins of the external environment;
- enhancement of service life of plant and equipment;
- reduction of energy costs on coke production by means of improvement of ovens heating systems, introduction of advanced exploitation level including modernization and adjustment of work of units and mechanisms.

Consulting – thoughtful solutions, development of new technologies related to improving the quality and production efficiency:

- Examination of design documentation;
- Technical diagnostics of coke production facilities with issuance of an expert report;
- Optimization of business processes relating to operation and maintenance of by-product-coking industry units;
- Training of operating personnel in terms of rules and regulations of by-product-coking industry enterprises.
CERTIFICATE

for the management system
according to ISO 9001:2008

The proof of the conforming application with the regulation was furnished and in accordance with certification procedure it will be certified for the company

Closed Joint-Stock Company
"OGNEUPORKOKSSERVIS"
119017, Moscow, Maly Tolmachevsky Lane, 8 bldg. 2
Russia

Scope

Technical assistance and supervision activities for construction, repair and operation works of coke ovens and other industrial ovens

Certificate Registration No. TIC 15·100·42150 Valid until 2013·05·21
Audit Report No. 3330 247E G0 Initial certification 2004

This certification was conducted in accordance with the TIC auditing and certification procedures and is subject to regular surveillance audits.

Jena, 2010·06·29

TUv Thuringen e.U.
Certification body for
systems and personnel

TIC

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Jena, 2010·06·29

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TIC

Jena, 2010·06·29
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Integrated Iron & Steel Plant, Kalinganagar industrial complex, Orissa
- Warming up of coke oven battery №1 with liquefied gas, 2004
- Rashtriya Ispat Nigam Ltd.
Integrated Iron & Steel Plant at Vishakhapatnam, Andhra Pradesh
- Technical assistance in construction of coke oven battery № 4 and coke dry quenching plant (CDCP), 2005–2006
- Mecon Ltd.
Integrated Iron-and-Steel Plant at Vishakhapatnam, Andhra Pradesh
- Technical assistance in construction of coke oven batteries №№ 1–3 by method of rebaking throughout the whole length, 1998–2005
- Steel Authority of India Limited (SAIL)
Bhilai Steel Plant, Chhattisgarh
- Technical assistance in operation of coke oven batteries №№ 6, 10 of by-product coke plant, 2002–2004
- Bhusan Steel Ltd.
Integrated Steel Plant at Jamshedpur, Jharkhand
- Warming up of stamp charging coke oven batteries №№ 1, 2 with liquefied gas, 2010–2011
- Jindal Stainless Ltd.
Kalinganagar industrial complex, Orissa
- Warming up of stamp charging coke oven battery №1 with liquefied gas, 2006–2011

CHINA

“Zhong Hong Xin”
Integrated Iron-and-Steel Works, Juquan Iron and Steel (Group) Co. Ltd., Jiaoyugan City, Gansu Province
- “Zhong Hong Xin”
Integrated Iron-and-Steel Works, Hangzhou Iron and Steel Group Company, Hangzhou, Zhejiang province
- Hot repair of coke oven battery №2 of by-product coke plant, 2006–2010
- “Zhong Hong Xin”
Integrated Iron-and-Steel Works, Tianshan, Hebei province
- Hot repair of coke oven batteries №№ 1, 2 of by-product coke plant, 2009–2012
- “Zhong Hong Xin”
Integrated Iron-and-Steel Works, Sanming, Fujian province

CHINA

BOŚNIA AND HERZEGOVINA
Global Ispat Koksnia Industrija d.o.o. Lukavac
By-product coke plant. Lukavac, Va-levo, Kolubarsk district
- Restoration work of coke oven battery №5 of by-product coke-plant and chemical recovery shops after a long shut down, 2004–2006
- ArcelorMittal Zenica
Integrated Iron-and-Steel Works in Zenica
- Development of engineering documentation on reconstruction, warming and start up of coke oven battery №6 of by-product coke plant, 1999–2000
- Restoration of work of coke oven battery №6 of by-product coke-plant and chemical recovery shops after a long shut down, 2007–2008

CZECH REPUBLIC

Integrated Iron-and-Steel Works, Ostrava
- Hot repair of coke oven battery №11 by method of rebaking of heating walls to the depth of 4-6 vertical flues, 2001–2004
- Delivery of refractories for repair of coke oven battery №11 of by-product coke-plant, 2001
- Presentation hot repair of one heating wall of coke oven battery №11 by method of partial rebaking, 1998–1999

EGYPT

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ALGERIA

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- Delivery of refractories and auxiliary materials for repair of coke oven batteries №№ 1, 2 of by-product coke-plant, 1996

RUSSIA

OJSC “EVRAZ ZSMK” (OJSC “ZSMK”)
West Siberian Integrated Iron-and-Steel Plant, Novokuznetsk, Kemerovo region
- Master contract on reconstruction of complex of coke oven batteries №1, 2, 1996–2006
- Appraisal of industrial safety of coke oven batteries №№ 3, 4, 5, 6, 7, shop and intershop gas mains of by-product coke-plant, 2000

OJSC “LNLMK”
Novolipetsk integrated iron-and-Steel Works, Lipetsk
- appraisal of industrial safety of coke oven batteries №№ 2, 3, 4, 7 of by-product coke-plant, 2002
- Appraisal of industrial safety of coke oven batteries №№ 1–4, 2000
- Complete delivery of refractories for reconstruction of coke oven battery №5, 1995–1996

OJSC “Gubahinsky Koks”
Gubaha Coke & By-Product Plant, Gubaha, Perm Region
- Delivery of refractories for construction of coke oven battery №2, 1994

OJSC “KOKS”
Kemerovo By-Product Coke Plant, Kemerovo
- Appraisal of industrial safety of coke oven batteries №№ 4, 5, of by-product-coke-plant, 2004
- Complete delivery of refractories for reconstruction of coke oven battery №4, 1994

OJSC “NLMK”
Magnitogorsk Iron-and-Steel Works, Magnitogorsk, Chelyabinsk region
- Appraisal of industrial safety of coke oven battery №2 of by-product coke-plant, 2000

OJSC “SeverStal”
Cherepovets Integrated Iron-and-Steel Works, Cherepovets, Vologda region
- Hot repair of two heating walls of coke oven battery №10 by method of complete rebaking throughout the whole length, 2005
- Appraisal of industrial safety of coke oven batteries №№ 9, 10 of by-product coke-plant, 2004

OJSC “Altay-Koks”
Altai By-Product Coke Plant, Zainsk, Altay Region
- Appraisal of industrial safety of coke dry quenching plant (CDCP) of coke oven batteries №№ 3, 4 (cokе part), 2003
- Appraisal of industrial safety of equipment design: “Tar processing plant”, 1999

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Novotroitsk Integrated Iron-and-Steel Works, Novotroitsk, Orenburg region
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- Preventive repair of refractory brickwork laying of coke oven batteries №№ 4, 5 by method of ceramic welding, 2004–2005
- Inspection of technical condition of coke oven batteries №№ 5, 6, 9 of by-product coke-plant, 2002

KAZAKHSTAN

ArcelorMittal Temirtau (OJSC “Ispat-Karmet”)
Integrated Iron-and-Steel Works, Temirtau, Karaganda region
- Repair of refractory brickwork laying of coke oven battery №5 by method of ceramic welding and semidry gunning, 2001
- Delivery of refractory mixture for preventive repair of silica brickwork laying of coke ovens by method of ceramic welding, 2000
- Reconstruction of coke oven batteries №№ 1, 2, 1993–1995
Closed Joint-Stock Company
OGNEUPORKOKSSERVIS

20 years in Engineering...

Speaker: Andrey Melnik
Head of FER Department

Iskenderun, Turkey, 2013
ABOUT COMPANY

- Foundation – April, 1993

- Purpose: Consolidation of efforts and coordination of work of professional players of the market

- KOKSOKHIMMONTAZH – our parent Company

- Wide range of engineering & consulting services for Coke and Chemical Industry
OKOS tie-up with the Design Institutes, Refractories’ Manufacturing Plants and equipment, Specialized Construction & Installation Companies all over the world allow us to provide our customers with wide range of professional services at coke & chemical industry.

OUR PARTNERS:

- CJSC "Koksokhimmontazh", Russia
- Design Institute "Koksoprojekt", Zabrze, Poland (Biuro Projektów KOKSOPROJEKT Sp. z o.o), Poland
- OJSC "Dinur", Pervouralsk Silica Plant, Pervouralsk, Russia
- OJSC "Bogdanovichy Silica Plant”, Bogdanovichy, Russia
- OJSC "Borovichy Refractories Plant”, Borovichy, Russia
- "NPO Megatek" Ltd., Russia
- Equipment and Machinery Plant GOŠA FOM A.D., Serbia
- LiaoNing HuaChen Metallurgy Engineering technology Consulting Co.,Ltd., China
QUALITY POLICY

- Management Quality System complies with **ISO 9001:2008**.

- Certificate issued by **TÜV Thüringen e.V.**

- **OKOS’s strategic goal** is to provide stable development of the company and ensure high-quality professional services to our Customers.
TECHNICAL ASSISTANCE IN CONSTRUCTION

- Designing of coke ovens, coke-pitch ovens and CDCPs
- Supplying of refractories and technological equipment
- Construction and installation works
- Technical supervision
- Drying, heating and commissioning of coke oven batteries
ENHANCEMENT OF SERVICE LIFE OF COKE OVEN BATTERIES

- Through-wall repair; Partial rebricking of heating walls to the various depth
- Repair of inclined flue zone and regenerator zone with replacement / cleaning of regenerator’s checker bricks
- Preventive repair of refractory brickwork of coke oven battery
- Repair of reinforcing equipment of coke oven battery
- Operation of coke oven batteries and coke dry cooling plants
DRYING AND HEATING OF COKE OVEN BATTERIES

- Development of Engineering Documentation for drying and heating of coke oven battery;
- Drying and heating of coke oven battery on various fuel including LPG;
- Switching on permanent heating of the coke oven battery;
- Coke oven battery commissioning and first coke pushing;
- Supplying of coke oven gas in the pipeline system of the plant for starting operation of technological equipment;
- Stabilizing, achieving the project capacity and adjustment of coke ovens’ heating regime.
ADJUSTMENT OF COKE OVENS HEATING REGIME

- Adjustment of coking temperature range, i.e. achieving optimal & proper temperature distribution in the heating system throughout the entire length of coke oven battery

- Adjustment of hydraulic mode of coke ovens, i.e. maintenance of gas pressure in the sole of the coking chamber and suction in different parts of the heating system as per the production procedure
RESTORATION OF TECHNICAL CONDITION OF COKE OVEN BATTERIES

- Technical survey of coke oven battery
- Cold repair of refractory brickwork of ovens and equipment of coke oven battery
- Drying, heating and putting into operation
- Hot repair of coke ovens refractory brickwork by ceramic welding and gunniting
- Adjustment of coke ovens heating mode

Enhancement of service life of by-product-coking industry units

Technical assistance in construction

Drying and heating of coke oven batteries

Technical expert examination and consulting

Adjustment of coke ovens heating regime

Restoration of technical condition of coke oven batteries
TECHNICAL EXPERT EXAMINATION AND CONSULTING

- Expert review of design documentation
- Technical survey / inspection of coke production facilities with the issuance of an expert report
- Expert appraisal of industrial safety of by-product-coking industry units
- Optimization of business processes of operation and maintenance of by-product-coking industry units
- Development of the documents of the enterprise: production procedures, duty regulations and working instruction of operating personnel, emergency response plan (ERP), etc.
- Training of operating personnel.
OKOS’s employees are the great asset to the Company.
## COMPANY’S PERFORMANCE

### FACTS & FIGURES:

<table>
<thead>
<tr>
<th>Service Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplying of Refractories and Mortars</td>
<td>95,627 MT.</td>
</tr>
<tr>
<td>Repairs: Cold and Hot, including Ceramic Welding</td>
<td>24 Coke Oven Batteries</td>
</tr>
<tr>
<td>Heating-Up &amp; Commissioning</td>
<td>10 Coke Oven Batteries</td>
</tr>
<tr>
<td>Rebuilding and Reheating of Coke Oven Batteries, as well as after a Long-Term Shutdown</td>
<td>3 Coke Oven Batteries</td>
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<tr>
<td>Technical Assistance in Operation &amp; Maintenance</td>
<td>6 Coke Oven Batteries</td>
</tr>
<tr>
<td>Industrial Safety Expert Review</td>
<td>23 Objects</td>
</tr>
</tbody>
</table>
REPAIRS OF COKE OVEN BATTERIES

- India: 4,3 m.
- Czech: 5 - 5,5 m.
- Russia: 6 m.
- B & H: 7 m.

HEATING UP AND COMMISSIONING OF COKE OVEN BATTERIES

- India: - 5 COBs
- Bosnia & Herzegovina: - 2 COBs
- Russia: - 3 COBs
COMPANY’S PERFORMANCE

TECHNICAL ASSISTANCE IN OPERATION & MAINTENANCE OF COBs.

- GIKIL, Lucavac - COB №5
- VSP, Vishakhapatnam - COBs №№1-3
- BSP, Bhilai - COBs №№9-10

PURCHASING OF REFRACTORY MATERIALS – 95 627 MT.

- Kazakhstan - 45 957 MT
- Algeria - 7 458 MT
- Egypt - 6 351 MT
- Czech - 616 MT
- Russia - 35 245 MT
EGYPT
• Al-Nasr Co. for Coke & Chemical, Helwan

CZECH REPUBLIC
• Iron & Steel Works in Ostrava

ALGERIA
• ArcelorMittal Annaba

EGYPT
• Al-Nasr Co. for Coke & Chemical, Helwan

KAZAKHSTAN
• ArcelorMittal Temirtau, Karagandy region

EGYPT
• Al-Nasr Co. for Coke & Chemical, Helwan

Bosnia and Herzegovina
• ArcelorMittal Zenica,
• GIKIL, By-product coke plant, Lukavac

INDIA
• Rashtriya Ispat Nigam Ltd., Vishakhapatnam Steel Plant, Vishakhapatnam, Andhra Pradesh
• Integrated Steel Plant at Meramandali, Orissa (Bhushan Steel Ltd.)
• Kalinga Nagar industrial complex, Orissa (Jindal Stainless Ltd.)
• Nilachal Ispat Nigam Ltd.
• Bhilai Steel Plant, Orissa

RUSSIA
• OJSC "EVRAZ ZSMK", Novokuznetsk
• OJSC "SeverStal", Cherepovets
• OJSC "MMK", Magnitogorsk
• OJSC "NLMK", Lipetsk
• OJSC "Ural Steel", Novotroitsk
• OJSC "Altay - Koks", Zarinsk
• OJSC "NTMK", Nizhny Tagil
• OJSC "KOKS", Kemerovo
• OJSC "Gubahinskiy Koks", Gubaha

CHINA
• Integrated Iron & Steel Plant of HBIS at Xuanhua
• Integrated Iron & Steel Plant of HBIS at Tangshan
• Integrated Iron & Steel Plant of HBIS at Handan
• Hangzhou Iron and Steel Group Company, Hangzhou, Zhejiang province
• Integrated Iron-and-Steel Plant, Sanming
• Integrated Iron-and-Steel Plant, Xiangtan
• Integrated Iron-and-Steel Works, Jiuquan Iron and Steel (Group) Co, Ltd., Jiayuguan City, Gansu Province

JAPAN
• Integrated Iron & Steel Plant of JFE at Chiba
• Integrated Iron & Steel Plant of JFE at Kurashiki

RUSSIA
• OJSC "EVRAZ ZSMK", Novokuznetsk
• OJSC "SeverStal", Cherepovets
• OJSC "MMK", Magnitogorsk
• OJSC "NLMK", Lipetsk
• OJSC "Ural Steel", Novotroitsk
• OJSC "Altay - Koks", Zarinsk
• OJSC "NTMK", Nizhny Tagil
• OJSC "KOKS", Kemerovo
• OJSC "Gubahinskiy Koks", Gubaha

JAPAN
• Integrated Iron & Steel Plant of JFE at Chiba
• Integrated Iron & Steel Plant of JFE at Kurashiki

CHINA
• Integrated Iron & Steel Plant of HBIS at Xuanhua
• Integrated Iron & Steel Plant of HBIS at Tangshan
• Integrated Iron & Steel Plant of HBIS at Handan
• Hangzhou Iron and Steel Group Company, Hangzhou, Zhejiang province
• Integrated Iron-and-Steel Plant, Sanming
• Integrated Iron-and-Steel Plant, Xiangtan
• Integrated Iron-and-Steel Works, Jiuquan Iron and Steel (Group) Co, Ltd., Jiayuguan City, Gansu Province
OUR CUSTOMERS

- El Nasr Co
- ArcelorMittal
- EVRAZ
- Severstal
- Hisuc
- Vizag Steel
- BHUSHAN
- SAIL
- HBIS
- JSL
- Gorkhalskaya Stal
- Altai-Koks
- Global Ispat
- Magnitogorsk Iron & Steel Works
- Mechele
**Customer:** EVRAZ ZSMK (West-Siberian Iron & Steel Plant).

**Object:** Coke & Chemical Plant, included in Integrated Iron & Steel Plant, Novokuznetsk, the Russian Federation.

**Name of project:** Rebuilding of complex of coke oven batteries No. 1 & 2, on turnkey basis.

**Commissioning:** 2005.

**List of works:**
- Detailed report of the project feasibility;
- Project engineering documentation developed;
- Purchasing of refractories;
- Construction & installation works;
- Construction supervision;
- Commissioning.
Customer: ArcelorMittal Zenica.

Object: Integrated Iron & Steel Plant at Zenica, Bosnia & Herzegovina.

Name of project: Re-commissioning of coke oven battery No. 6 after a long-term ‘cold’ conservation.


List of works:
- Developing of engineering documentation;
- Repair of coke oven battery’s refractory brickwork, as well as coke oven equipment;
- Heating-up & Commissioning of coke oven battery & by-product plant;
- Ceramic welding
- Training of Customer’s personnel.
Customer: Bhushan Steel Limited.

Object: Integrated Iron & Steel Plant at Narendra Pur P.O. Shibapur, Village Meramandali, Odisha State, India.

Name of project: Heating-up of coke oven batteries No. 1&2 (stamp charging, Chinese design, coke oven chamber height = 4.3 m).


List of works:
• Developing of engineering documentation & Instructions;
• Supervision of Heating-up & Commissioning of coke oven batteries & by-product plant;
• Supervision of starting and commissioning of coke oven machines;
• Adjustment of coke oven heating mode;
• Training of Customer’s personnel.
Customer: Hebei Iron & Steel Group.

Object: Integrated Iron & Steel Plant at Tangshan, China.

Name of project: Hot repair of coke oven batteries No. 1&2.


List of works:
• Developing of engineering documentation;
• Repair of coke oven battery’s heating walls:
  a) To the depth of 4-6 vertical flues;
  b) Through wall repair (52 heating walls).
• Repair and replacement of coke oven reinforcing equipment;
• Ceramic welding;
• Adjustment of coke oven battery heating mode.
### CJSC «OKOS» MAIN OFFICE

8 bld. 2, Maly Tolmachevsky lane, 119017, Moscow, Russia

- Tel./Fax: +7 (495) 953-5083
- Tel.: +7 (495) 951-4013
- E-mail: okos@okos.ru
- Website: www.okos.ru

### Representative of CJSC «OKOS» in India – Mr. Daljeet Singh

- Mob.: +91 8527661177
- E-mail: daljeet@yandex.ru
- Website: www.okos.ru

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**THANK YOU FOR YOUR ATTENTION**
Closed Joint-Stock Company
OGNEUPORKOKSSERVIS

20 years in Engineering ...

Speaker: Andrey Melnik
Head of FER Department

Russia, Moscow, 2013
ABOUT US

- Foundation - in 1993

- KOKSOKHIMMONTAZH – our parent Company

- Wide range of engineering & consulting services for Coke and Chemical Industry

- 20 years in business …
Technologies of coke oven repairs
End-flues repair
✓ Through wall repair
Repair of inclined flue zone & replacement of regenerators’ checkers
Ceramic welding

Charging holes
BEFORE

AFTER

Hole in the brickwork
BEFORE

AFTER
✓ Ceramic welding

MAIN ADVANTAGES:

- Minimal loss of coke production;
- Cost saving & highly efficient method;
- Labor Efficiency;
- Durable life-span;
✓ Restoration of the coke oven sole
Proper and regular maintenance of coke oven equipment is a very important and compulsory measure affects significantly on smooth operation of coke oven battery!
Main advantages of hot repairs:

- Extension of operation period of coke oven battery up to 8-10 years;
- Fast commissioning of repaired heating walls;
- Cost efficient measure in comparison with re-building of coke oven battery.
Facts & figures

COKE OVEN REPAIRS

REPAIRS OF COKE OVEN BATTERIES

- India
- Czech
- Russia
- B & H
- China
- Egypt

- 4.3 m.
- 5 - 5.5 m.
- 6 m.
- 7 m.
Our Customers
Quality Policy

- Certificate issued by TÜV Thüringen e.V.
- OKOS’s strategic goal is to provide sustainable development of the company and high-quality professional services to our Customers
OKOS’s role in the project for re-construction / repair of coke & chemical plant

- Expertise of the designing / project documentation;
- Quality control of the supplying materials, equipment, steel structures and etc.;
- Supervision of construction and erection works
- Prestart-up testing control;
- Supervision of preheating-up and after heating-up installation works;
- Supervision of the works for coke & chemical plant start-up and commissioning;
- Supervision of works under achieving the project capacity and stabilization of the coke & chemical plant operation;
- Local staff training / hands-on experience for proper operation of coke & chemical pants;
- Developing of the documentation: operating procedure manuals, employees manuals / job description, the emergency response plan and etc.
Our Contact details:

Main office:

Post address: 1 bld.1, 3-d Khoroshevsky proezd, 123007, Moscow, Russia

Tel./Fax: +7 (495) 978-64-61
Tel: +7 (495) 971-22-81, 978-96-24

E-mail: okos@okos.ru

Web: www.okos.ru

Our motto: You set us the tasks – we solve them!