

REFERENCE LIST

Date	Customer Characteristics of the facility	Scope of work
AL NASR Co. for Coke and Chemicals Helwan, Egypt		
2013	Coke oven batteries No.1,2. (100 (50x2) chambers, height 4,3 m). Coke Oven Batteries No.3,4 (130 (65x2) chambers, height 4,7 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling to the depth of 2 vertical flues along the whole height of coking chambers. Ceramic welding of charging holes of coking chambers.
2015	Coke oven battery No.4. (65 chambers, height 4,7 m).	Hot repair of heating walls of coking chambers. Scope of work: Dismantling and re-lining of heating walls of coking chambers to the depth of 4 to 6 vertical flues on pusher and coke sides. 105 vertical flues in total. Welding of joints of old and new brickwork. Start-up works.
2018	Coke oven battery No.4 (65 chambers, height 5,0 m).	Hot repair of heating walls of coking chambers. Scope of work: Hot repair by dismantling and re-bricking of 42 ovens / 43 heating walls of COB No. 4 to the depth of 4 - 6 vertical flues on pusher and coke sides. Total - 516 vertical flues. Ceramic welding of joints of old and new brickwork. Start-up works. Supervision over installation works; supervision over the whole dismantling, re-bricking, heating-up of re-bricked vertical flues and commissioning. Supply of 70 tons of mixture for ceramic welding, 150 tons of silica mortar.
ALCHEVSKKOKS Alchevsk, Ukraine		
1994	Coke oven batteries No.5,6 (130 (65x2) chambers, height 4,3 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling to the depth of 6 vertical flues along the whole height of coking chambers, welding of charging holes.

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2003	Coke oven batteries No.5,6 (130 (65x2) chambers, height 4,3 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling to the depth of 6 vertical flues along the whole height of coking chambers, welding of charging holes.
2005	Coke oven batteries No.5,6 (130 (65x2) chambers, height 4,3 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling to the depth of 6 vertical flues along the whole height of coking chambers, welding of charging holes.
2007	Coke oven batteries No.5,6 (130 (65x2) chambers, height 4,3 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling to the depth of 6 vertical flues along the whole height of coking chambers, welding of charging holes.
2014	Coke department No.2. Coke oven batteries No.5,6,7,8 (260 (65x4) chambers, height 4,3 m).	Hot repair of heating walls of coking chambers using abrasive blast cleaning method and then ceramic welding method. Scope of work: Elimination of moving-out of brickwork to the depth of 2 vertical flues on coke side, removal of restrictions and build-ups without shock and vibrational impact on brickwork. Restoration of geometrical parameters of coking chambers to design values.
ArcelorMittal ITALY (ILVA) Taranto, Italy		
in progress	Coke oven battery No.10. (43 chambers, height 6,0 m).	Reconstruction of COB No.10. Scope of work: General contractor for reconstruction of coke oven batteries on turn-key basis.
ArcelorMittal Kryvyi Rih Kryvyi Rih, Ukraine		
2005	Coke oven battery No.3 (56 chambers, height 6,085 m).	Construction on turn-key basis Scope of work: Bricklaying of refractory massif of COB No.3.

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2011		Overhaul of autoweight of by-product coke plant No.01081. Scope of work: Replacement of steel structures of autoweight 1.808 t.
2011	Coke department No.1. Coke oven batteries No.1,2. (59 chambers, height 6,0 m). Coke oven batteries No.5,6. (65 chambers, height 4,3 m).	Overhaul of doors, platforms of gas collecting main, platforms of flying bridge, inter-battery benches, gas-supplying accessories, gas-offtake accessories and restoration of refractory brickwork of coke oven batteries. Scope of work: Repair of doors (120 sets), bench (52 t), gas-supplying accessories - 80 sets, gas-offtake accessories - 100 sets, single-side repair of refractory brickwork of heating walls to the depth of up to 2 vertical flues (10 heating walls) of COB 5,6.
2011	Coke department No.1. Coke oven batteries No.3,4 (56 chambers, height 6,0 m).	Hydraulic reversing system of COB No.3,4. Scope of work: Upgrading of hydraulic reversing device with installation works, electric installation works and start-up and adjustment works.
2012	Coke department No.1. Coke oven battery No.2. (59 chambers, height 6,0 m). Coke oven batteries No.5,6. (65 chambers, height 4,3 m).	Restoration of refractory lining and brickwork of coke ovens No.2,5,6 of coke production department. Scope of work: Hot repair using method of re-lining of chambers to the depth of 2 to 4 vertical flues (65 chambers).
2012	Coke department No.1. Coke oven batteries No.1,2 (59 chambers, height 6,0 m). Coke oven batterie No.5,6 (65 chambers, height 4,3 m).	Maintenance, restoration and replacement of gas-supplying and gas-offtake accessories of coke oven batteries No.1,2,5,6. Scope of work: Repair with dismantling into units and replacement of components of gas-offtake (36 sets) and gas-supplying (144 sets) accessories.
2012	Coke department No.1. Coke oven battery No.1 (59 chambers, height 6 m).	Replacement of interchangeable equipment of gas-offtake accessories of COB No.1. Scope of work: Repair with replacement of components of gas-offtake accessories (35 sets).
2013	Coke department No.1. Coke wharf.	Overhaul of working area of lining of coke wharf L-86 t. Scope of work: Dismantling with further laying of cast iron plates of coke wharf during the period of suspension of work (642 m2).
2013	Coke department No.1. Coke oven battery No.2 (59 chambers, height 6,0 m).	Overhaul of COB No.2. Restoration of refractory brickwork and lining with replacement of flash plates. Scope of work: Repair of refractory brickwork of 8 heating walls (32 vertical flues) with replacement of 8 flash plates, gas-supplying (16 sets) and gas-offtake (11 sets) accessories.

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2013	Coke department No.1. Coke oven battery No.2. (59 chambers, height 6,0 m).	Current repair of nonoperating coking chambers of COB No.2. Scope of work: Repair of refractory brickwork of 12 heating walls (54 vertical flues) with replacement of 17 door frames and 3 flash plates, gas-supplying (17 sets) and gas-offtake (17 sets) accessories.
2014	Coke department No.1. Coke oven batteries No.1,2 (59 chambers, height 6,0 m).	Prolongation of term of operation of COB No.1,2. Restoration of refractory lining and brickwork with replacement of flash plates of coke ovens. Replacement of service benches. Scope of work: At COB No. 1: repair of 7 heating walls (28 vertical flues) with replacement of 8 frames and 3 flash plates . At COB No. 2: repair of 17 heating walls (68 vertical flues) with replacement of 20 frames and 14 flash plates.
2014	Coke department No.1.	Liquidation of COB No.5,6. Program of improvement of technical condition of COB No.5,6. Scope of work: Dismantling of steel structures (4370 t), reinforced concrete structures, constructions and foundations (10800 m3), refractory brickwork of coke oven batteries (23000 t) No. 5,6.
2014	Coke department No.1. Coke oven battery No.1 (59 chambers, height 6,0 m).	Experimental restoration of refractory brickwork to the depth of 12 vertical flues. Scope of work: Experimental repair for restoration of brickwork of the operating battery to the depth of 12 vertical flues.
2014	Coke department No.1. Coke oven batteries No.5,6.	Liquidation of COB No.5,6. Program of improvement of technical condition of COB No.5,6. Scope of work: Dismantling of equipment and steel structures of coke department No. 1, communication networks and pipelines. Total amount: 2500 t.
2015	Coke department No.1. Coke oven battery No.2 (59 chambers, height 6 m).	Prolongation of term of operation of COB No.1,2. Restoration of refractory lining and brickwork with replacement of flash plates of coke ovens of COB No.1,2. Scope of work: At COB No.2: repair of 4 heating walls (36 vertical flues) with replacement of 5 frames and 4 flash plates. Gas-supplying accessories - 5 pcs., Gas-offtake accessories - 5 pcs., gas-and-air valves - 3 pcs.
2015	Coke department No.1. Coke oven batteries No.5,6.	Liquidation of COB No.5,6. Program of improvement of technical condition of COB No.5,6. Scope of work: Dismantling works at transfer unit - 5a; gallery U-17a (727 t).
2015	Coke department No.1. Warehouse for refractory bricks.	Project of reconstruction of coke oven batteries No.5,6. Unloading and stacking of refractory products for COB No.6. Scope of work: Acceptance of railroad train, unloading of containers, unloading of refractory products with stacking (17700 t).

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2015	Coke department No.1. Coke oven batteries No.1,2 (59 chambers, height 6,0 m).	Prolongation of term of operation of COB No.1,2. Restoration of refractory lining and brickwork with replacement of flash plates of coke ovens Scope of work: Repair of 34 heating walls (110 vertical flues) with replacement of frames, flash plates, gas-supplying accessories, heating-up and commissioning of repaired chambers.
2015	Coke oven batteries No.1,2.	Extension of service life of COB No.1, 2. Restoration of refractory lining and brickwork with replacement of flash plates of coke ovens of COB No.1, 2. Scope of work: Start-up and adjustment works, construction and installation works, refractory works.
2015	Coke oven battery No.6.	Reconstruction of complex of COB No.5,6. Package No.7A: construction and installation works of battery proper. Scope of work: Pavement made of red ceramic bricks at the facility "Reconstruction of coke oven batteries 5, 6. Package 7A."
2015	Coke department No.1. Coke oven batteries No.5,6 (57 chambers, height 5,0 m).	Program of improvement of technical condition of coke oven batteries No.5,6. Scope of work: Bricklaying of refractory massif of COB No.6.
2015	Coke ovens No.1,2.	Refractory lining and bricklaying of coke ovens of COB No.1, 2. Replacement of regenerators checkerwork on coke side.
2015	Coke oven batteries No.5,6. Refractory bricks warehouse.	Construction and installation works at the facility "Reconstruction of coke oven batteries 5, 6". Scope of work: Reconstruction of refractory bricks warehouse.
2016	Coke oven battery No.6.	Reconstruction of complex of COB No.5, 6. Package No. 7A. Scope of work: Construction and installation works of battery proper.
2016	Coke oven battery No.6.	AMKR. By-product Coke Plant. Complex of Reconstruction of COB No.5 ,6. Package No.10B1. Scope of work: Bricklaying of COB No. 6.
2016	Coke department No.1. Coke oven battery No.6.	Reconstruction of complex of COB No.5,6. Package No.10B1: Brickwork of COB No.6. Scope of work: Bricklaying of ceramic massif of coke oven battery (60 heating walls).
2016	By-product coke plant Coke oven batteries No.1,2 (122 (61x2) chambers, height 7,0 m). Coke oven batteries No.3,4 (130 (65x2) chambers, height 4,3 m).	Supply of commodities and materials for repair of COB No.1,2. Scope of work: Iron casting with further mechanical treatment of standpipe goosenecks - 5 pcs.Purchase of steel structures, mechanical treatment and assembly of standpipe pipes - 24 pcs.

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2016	Coke oven battery No.6.	Project "Reconstruction of coke oven batteries 5 and 6. Package No.1D.1." Scope of work: Dismantling of foundations of COB No. 6.
2016	Coke oven battery No.6 (57 chambers, height 6,0 m).	Reconstruction of complex of COB No.5,6. Scope of work: Construction of COB NO. 6, coal tower, coke-screening plant and chimney. Underground communication units.
2017	By-product coke plant, coke department No.1 Coke oven battery No.6 (57 chambers, height 5,0 m).	Sealing of brickwork joints of coking chambers of COB No.6 by injection of special refractory mixture Scope of work: Sealing of brickwork joints of 57 coking chambers by injection of special refractory mixture through the upper access hole.
2017	Coke department. Recovery plant.	Package No.10B: Assembly and installation of equipment. Scope of work: Construction and installation works, start-up and adjustment works at the facility 10B "Coke Department, Recovery Plant
2017	Coke oven batteries No.1,2.	Extension of service life of COB No.1, 2. Restoration of refractory lining and brickwork with replacement of flash plates of coke ovens of COB No.1, 2. Scope of work: Start-up and adjustment works, construction and installation works, repair of end platform No. 1 and inter-battery platform of COB No. 1-2.
2017	Coke oven battery No.5.	Project of reconstruction of coke oven batteries No.5,6. Unloading of refractory products for COB No.5. Scope of work: Acceptance of railroad train, unloading of containers, unloading of refractory products with stacking (19772 t).
2017	Coke oven battery No.6.	Package No.7A: construction and installation works of battery proper. Installation of steel structures. Scope of work: Installation of steel structures.
ArcelorMittal Poland Zdieszowice Zdieszowice, Poland		
2015	Coke oven batteries No.3,4,5,6. (224 (56x4) chambers, height 3.8 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling to the whole depth of coking chambers on coke and pusher sides.

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ArcelorMittal South Africa Newcastle Works Newcastle, South Africa		
2012	Coke oven battery No.4. (50 chambers, height 6,5 m).	Hot repair. Scope of work: Hot through-wall repair of two heating walls, including supply of materials and equipment.
DONETSKKOKS Donetsk, Ukraine		
2015	Coke oven batteries No.1,2 (86 (43x2) chambers, height 4,0 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling to the depth of 2 vertical flues along the whole height of coking chambers
EVRAZ BAGLIKOKS Dniprodzerzhinsk, Ukraine		
1992	Coke oven battery No.5 (65 chambers, height 4,3 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling at end vertical flues along the whole height of coking chambers
2003	Coke oven battery No.5 (65 chambers, height 4,3 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling at end vertical flues along the whole height of coking chambers.
EVRAZ DMZ Dnipropetrovsk, Ukraine		
2006	Coke oven battery No.3 (65 chambers, height 4,3 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling at end vertical flues along the whole height of coking chambers

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<p>EVRAZ Dniprodzerzhinsk By-product Coke Plant Dniprodzerzhinsk, Ukraine</p>		
2001	Coke oven battery No.1-BIS (57 chambers, height 7,0 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling to the depth of 4 vertical flues along the whole height of coking chambers
2013	Coke oven battery No.1-BIS (57 chambers, height 5 m).	Overhaul of coke oven battery No.1-BIS. Scope of work: Re-lining of coking chambers with replacement of flash plates (194 vertical flues).
2015	Coal and coke department, Area of production of coke products, Heat and power department, Coal preparation department.	Cutting of secondary ferrous metal. Scope of work: Cleaning, sorting, cutting of scrap metal with loading into railway cars. 1240.46 t in total.
2016	Coal and coke departmentm Coke oven battery No.5 (45 chambers, height 4,3	Hot repair using one side re-bricking method. Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: One-side dismantling and re-bricking of heating walls of coking chambers on coke and pusher sides up to 3. Total - 96 columns. Welding of joints of old and new brickwork.
<p>ISD DUNAFERR Metallurgical Plant Dunaújváros, Hungary</p>		
2003	Coke oven battery No.3. (65 chambers, height 7,0 m).	1-st stage of reconstruction. Scope of work: Subcontractor for reconstruction of coke oven battery.
2006	Coke oven battery No.3. (65 chambers, height 7,0 m).	2-nd stage of reconstruction. Scope of work: Subcontractor for reconstruction of coke oven battery.
2010	Coke dry-quenching plant.	Reconstruction on turn-key basis Scope of work: General contractor for reconstruction of coke dry-quenching plant on turn-key basis.

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<p>ISDEMIR Iron and Steel Plant Iskenderun, Turkey</p>		
2012	<p>Coke oven battery No.4. (69 chambers, height 5,0 m).</p>	<p>Reconstruction from the slab on turn-key basis, including works for heating-up, commission and putting into operation of COB No.4 with a complex of associated facilities. Scope of work: Basic and detailed engineering. Supply of main and auxiliary technological equipment, supply of set of movable machines. Supply of refractory materials. Supervision over execution of general construction works. Bricklaying of massif. Installation of technological equipment of coke oven battery. Replacement of end, intermediate and service benches, installation of manifold for dust-free coke pushing unit with ventilation plant. Arrangement of pump house of hydraulic injection and interplant pipelines. Replacement of electrical engineering systems and Instrumentation, complete upgrading of automatic process control system. Drying, heating-up and commissioning.</p>
<p>JSW Koks S.A. PRZYJAZN Coke Plant Dąbrowa Górnicza, Poland</p>		
2005	<p>Coke oven batteries No.3,4. (height 5,0 m).</p>	<p>Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling to the depth of 13 vertical flues along the whole height of coking chambers.</p>
2009	<p>Coke oven battery No.2. (80 chambers, height 5,0 m).</p>	<p>Engineering. Elaboration of technological concepts for COB No.2. Customer "ZARMEN". Scope of work: Information about possibility of changing of technology for operating COB No. 2 from the existing traditional scheme of supply of coal charge from the top to the technology of stamped coal charge.</p>
2015	<p>Coke oven batteries No.3,4. (height 5,0 m).</p>	<p>Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling to the depth of 13 vertical flues along the whole height of coking chambers.</p>

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JSW Koks S.A. RADLIN Coke Plant Radlin, Poland		
2005	Coke oven battery No.1-BIS. (86 chambers, height 5,0 m). Coke oven battery No.2 (height 4,0 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling to the whole depth and along the whole height of coking chambers . Welding of bosh. Welding of 1-3 courses of brickwork of inclined flues area to the whole depth of coking chambers
2008	Coke oven battery No.1-BIS. (88 chambers, height 5,0 m).	Construction of coke oven battery. Scope of work: Bricklaying of ceramic massif of coke oven battery No. 1-BIS block "B". Installation of backstays and technological equipment, bricklaying of regenerators walls, vertical flues area and vertical flues roofing area, bricklaying of inclined flues area, lining of flash plates. Start-up works. Heating-up.
2015	Coke oven battery No.1-BIS. (86 chambers, height 5,0 m). Coke oven battery No.2 (height 4,0 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling to the whole depth and along the whole height of coking chambers . Welding of bosh. Welding of 1-3 courses of brickwork of inclined flues area to the whole depth of coking chambers
Kharkiv By-product Coke Plant Kharkiv, Ukraine		
1992	Coke oven batteries No.1,2,3 (height 4,0 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling at end vertical flues along the whole height of coking chambers.
2002	Coke oven batteries No.1,2,3 (height 4,0 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling at end vertical flues along the whole height of coking chambers.
2003	Coke oven batteries No.1,2,3 (height 4,0 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling at end vertical flues along the whole height of coking chambers.
2005	Coke oven batteries No.1,2,3 (height 4,0 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling at end vertical flues along the whole height of coking chambers.

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<p>KREMIKOV TZI AD Metallurgical Plant Kremikovtzi, Bulgaria</p>		
2005	Coke oven batteries No.4,3. (130 chambers (65x2), height 5,5 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Works for adjustment of temperature and hydraulic modes of heating-up of COB No. 3. Hot repair of heating walls of COB No. 4 to the depth of 6 vertical flues on both sides of the battery. Elimination of cracks, cavities, spalling to the depth of 6 vertical flues along the whole height of coking chambers. Welding of joints of old and new brickwork to the depth of 6 vertical flues. Consulting works.
2005	Coke oven batteries No.4,3. (130 (65x2) chambers, height 5,5 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling to the depth of 6 vertical flues along the whole height of coking chambers. Welding of joints of old and new brickwork to the depth of 6 vertical flues.
2007	Coke oven batteries No.4,3. (130 (65x2) chambers, height 5,5 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling to the depth of 6 vertical flues along the whole height of coking chambers. Welding of joints of old and new brickwork to the depth of 6 vertical flues.
<p>MAKEEVKOKS Makiivka, Ukraine</p>		
2016	Coke oven batteries No.2,3 (78 (39x2) chambers, height 6,0 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of moving-out of brickwork with the help of a milling unit to the depth of 2 vertical flues on coke side, elimination of restrictions and build-ups without shock and vibrational impact on brickwork. Elimination of cracks, cavities, spalling to the depth of 2 vertical flues along the whole height of coking chambers. Restoration of geometrical parameters of coking chambers to design values.
<p>MECHEL Chelyabinsk Metallurgical Plant Chelyabinsk, Russian Federation</p>		
1991	Coke oven batteries No.1,2,3 (height 4,0 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling to the depth of 4 vertical flues along the whole height of coking chambers

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<p>METINVEST Avdiivka By-product Coke Plant Avdeevka, Ukraine</p>		
2015	Coke department.	<p>Overhauls and current repairs of coke oven batteries. Scope of work: Dismantling, repair, installation of steel structures and main processing equipment.</p>
2015	<p>Coke department No.2. ☒ Coke oven batteries No.5,6 (130 (65x2) chambers, height 5,5 m). Coke department No.3. Coke oven batterie No.7,8 (130 (65x2) chambers, height 7,0 m). Coke department No.4. Coke oven battery No.9 (65 chambers, height 7,</p>	<p>Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling to the depth of 2 to 6 vertical flues along the whole height of coking chambers, welding of charging holes. Elimination of restrictions and build-ups without shock and vibrational impact on brickwork. Restoration of geometrical parameters of coking chambers to design values.</p>
2015	<p>Coke department No.3. Coke oven battery No.7 (65 chambers, height 7,0 m).</p>	<p>Hot repair of heating walls of coking chambers. Scope of work: Dismantling and re-lining of heating walls of coking chambers to the depth of 2 to 4 vertical flues. 100 vertical flues in total. Adjustment of main anchorage and intermediate units. Dismantling and installation of coke doors frames. Welding of joints of old and new brickwork, sealing of joints of brickwork of coking chambers. Start-up works.</p>
2015	<p>Coke department No.3. Coke oven battery No.8 (65 chambers, height 7,0 m).</p>	<p>Hot repair of heating walls of coking chambers. Scope of work: Dismantling and re-lining of heating walls of coking chambers to the depth of 2 to 4 vertical flues. 32 vertical flues in total. Adjustment of main anchorage and intermediate units. dismantling and installation of coke doors frames. Replacement of reinforcing flash plate of heating wall No. 863. Welding of joints of old and new brickwork, sealing of joints of brickwork of coking chambers. Start-up works.</p>

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2015	Coke department No.2. Coke oven batteries No.5,6 (130 (65x2) chambers, height 5,5 m).	Overhaul. Hot repair of heating walls of coking chambers. Scope of work: Restoration of geometry (elimination of reverse taper) of brickwork of coking chambers to the depth of up to 2 vertical flues on coke side using method of abrasive blast cleaning. Cleaning of end and pre-end vertical flues. Bricklaying of heating walls with silica bricks and zero-expansion bricks. Repair of bosh on pusher and coke sides. Restoration of refractory brickwork of coking chambers using ceramic welding method.
2015	Coke department No.2. Coke oven batteries No.5,6 (130 (65x2) chambers, height 5,5 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling to the depth of 2 vertical flues along the whole height of coking chambers, welding of charging holes.
2015	Coke department No.2. Coke oven battery No.5 (65 chambers, height 5,5 m).	Overhaul. Hot repair of heating walls of coking chambers. Scope of work: Dismantling and re-lining of heating walls of coking chambers on coke and pusher sides to the depth of 4 to 6 vertical flues. 52 vertical flues in total. Adjustment of main anchorage and intermediate units, dismantling and installation of coke doors frames. Welding of joints of old and new brickwork, sealing of joints of brickwork of coking chambers. Start-up works.
2016	Coke department No.1 Coke oven battery No.1 (45 charging holes) Coke department No.2. Coke oven batteries No.5,6 (130 (65x2) chambers, height 5,5 m) Coke department No.3. Coke oven battery No.7 (65 chambers, height 7,0 m). Coke department No.4	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling to the depth of 2 to 6 vertical flues along the whole height of coking chambers, welding of charging holes. Elimination of restrictions and build-ups without shock and vibrational impact on brickwork. Restoration of geometric parameters of chambers.
2017	Coke department No.2. Coke oven batteries No.5,6 (130 (65x2) chambers, height 5,5 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling to the depth of 2 to 6 vertical flues along the whole height of coking chambers, welding of charging holes. Elimination of restrictions and build-ups without shock and vibrational impact on brickwork. Restoration of geometric parameters of chambers.

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METINVEST AZOVSTAL Iron & Steel Works Mariupol, Ukraine		
2007	Coke oven battery No.1-BIS (65 chambers, height 7,0 m). Coke oven battery No.5.	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling to the depth of 2 vertical flues along the whole height of coking chambers, welding of charging holes and repair of soles of chambers.
2013	Coke oven battery No.1-BIS (65 chambers, height 7,0 m). Coke oven battery No.5.	Hot repair of heating walls of coking chambers using abrasive blast cleaning method and then ceramic welding method. Scope of work: Removal of slagging along the whole height and length of chambers from the surface of brickwork of heating walls and soles of chambers, thickness up to 100 mm, elimination of restrictions and build-ups without shock and vibrational impact on brickwork. Partial replacement of sole plates. Welding of cracks, cavities, spalling along the whole height of chambers at end vertical flues and pre-end vertical flues.
2014	Blooming shop. Annealing pits.	Hot repair of refractory brickwork of annealing pits of plate mill department: heat-treating, roller-hearth, continuous furnaces. Scope of work: Dismantling and re-bricking of walls of annealing pits, necks, horizontal air flues, recuperator checkerwork, cleaning and repair of waste-gas flues.
2014	Coke oven battery No.1-BIS (65 chambers, height 7,0 m). Coke oven batteries No.3,4 (130 (65x2) chambers, height 4,3 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling to the depth of 2 vertical flues along the whole height of coking chambers, welding of charging holes. Restoration of geometrical parameters of coking chambers to design values.
2016	By-product coke plant Coke oven battery No.BIS (65 chambers, height 7,0 m)	Hot repair of brickwork using ceramic welding method. Scope of work: Stripping of cavities using sandblasting method and pneumatic hammers to the depth of 2 to 14 vertical flues, treatment of chambers' walls with ceramic welding, sealing of cracks, cavities, spalling, restorations of chamber's geometry, repair of charging holes.
2016	Coke oven battery No.1-BIS (65 chambers, height 7,0 m). Coke oven batteries No.3,4 (130 (65x2) chambers, height 4,3 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling to the depth of 2 to 6 vertical flues along the whole height of coking chambers, welding of charging holes. Elimination of restrictions and build-ups without shock and vibrational impact on brickwork. Restoration of geometric parameters of chambers.

Date	Customer Characteristics of the facility	Scope of work
<p>NMDC Steel Plant India</p>		
2013	<p>Coke Oven Batteries No.1,2. (67 chambers, height 7,0 m).</p>	<p>Supply of materials Scope of work: Supply of refractory and auxiliary materials for greenfield construction.</p>
<p>PAKISTAN Steel Mills Karachi, Pakistan</p>		
2010	<p>Coke oven battery No.2. (49 chambers, height 5,5 m).</p>	<p>Reconstruction of the battery on turn-key basis within the existing overall dimensions with preservation of the lower foundation slab, upper reinforced concrete slab, buttress walls and horizontal flues. Scope of work: Basic and detailed engineering. Supply of main and auxiliary technological equipment, supply of refractory materials. Dismantling of the existing facility with complete replacement of upper structure of brickwork of the battery with partial preserving of inclined flues area (45%) and partition walls of regenerators (80%). Complete replacement of gas-offtake equipment (gas collecting mains and crossover gas main, hydraulic standpipes). Complete replacement of technological pipelines. Complete replacement of bracing of brickwork of ovens, flash plates, frames and doors. Replacement of accessories embedded into brickwork of ovens. Replacement of gas-and-air valves, accessories for heating of ovens with coke oven gas, reversing system, electrical systems. Upgrading of Instrumentation and automation with implementation of automatic process control system. Drying, heating-up of the battery and commissioning.</p>
2012	<p>Coke oven battery No.1. (49 chambers, height 5,5 m).</p>	<p>Reconstruction of the battery on turn-key basis within the existing overall dimensions with preservation of the lower foundation slab, upper reinforced concrete slab, buttress walls and horizontal flues. Scope of work: Basic and detailed engineering. Supply of main and auxiliary technological equipment, supply of refractory materials. Dismantling of the existing facility with complete replacement of upper structure of brickwork of the battery with partial preserving of inclined flues area (45%) and partition walls of regenerators (80%). Complete replacement of gas-offtake equipment (gas collecting mains and crossover gas main, hydraulic standpipes). Complete replacement of technological pipelines. Complete replacement of bracing of brickwork of ovens, flash plates, frames and doors. Replacement of accessories embedded into brickwork of ovens. Replacement of gas-and-air valves, accessories for heating of ovens with coke oven gas, reversing system, electrical systems. Upgrading of Instrumentation and automation with implementation of automatic process control system. Drying, heating-up of the battery and commissioning.</p>

Date	Customer Characteristics of the facility	Scope of work
<p>SAIL/IISCo Steel Plant India</p>		
2012	<p>Coke oven battery No11. (74 (2x37) chambers, height 7,0 m).</p>	<p>Supply of materials Scope of work: Supply of refractory and auxiliary materials for greenfield construction.</p>
<p>SEVERSTAL Cherepovets Integrated Iron & Steel Mill Cherepovets, Russian Federation</p>		
1988	<p>Coke oven batteries No.1,2,3 (height 4,0 m).</p>	<p>Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling to the depth of 4 vertical flues along the whole height of coking chambers</p>
1994	<p>Coke oven batteries No.1,2,3 (height 4,0 m).</p>	<p>Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling to the depth of 4 vertical flues along the whole height of coking chambers</p>
<p>Trinec Iron and Steel Works Trinec, Czech Republic</p>		
2010	<p>Coke oven batteries No.11,12. (72 chambers, height 3,64 m).</p>	<p>Engineering. Elaboration of design documents for electric locomotive. Customer "HPH". Scope of work: Detailed engineering of electric locomotive for COB No. 11,12.</p>
<p>USIMINAS Plant in Ipatinga Ipatinga, Brazil</p>		
2015	<p>Coke oven battery No.3. (55 chambers, height 6,0 m).</p>	<p>1-st stage. Reconstruction of coke oven battery No.3. Scope of work: Reconstruction of coke oven batteries with complete replacement of technological equipment, including basic and detailed engineering. Supply of materials, main and auxiliary technological equipment. Supervision over execution of general construction works. Drying, heating-up and commissioning.</p>

Date	Customer Characteristics of the facility	Scope of work
2015	Coke oven battery No.3. (55 chambers, height 6,0 m).	2-nd stage. Reconstruction of associated facilities of coke oven battery No.3. Scope of work: Automation system of filling of coal tower. Wet quenching complex of coke oven battery No.3. Movable machines. Unit of coke sampling during its unloading from the conveyor E1. Aspiration unit at coke feeding conveyors E1-E4, R1-R7. Main and stand-by coke wharfs. Recovery plant with a control room of recovery plant. Process water cooling tower. Interplant pipelines and cable networks. Transformer substations 3.3/0.46 kW of wet quenching units of COB No.3. Further equipping of electrical substations of COB No.3. Electrical substation of circulating process water. New electrical point of recovery plant. Outdoor lighting, grounding and protection against lighting. Underground networks of water supply and sewerage.
Yasinovsky By-product Coke Plant Makiivka, Ukraine		
2007	Coke oven battery No.3 (height 4,0 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling to the depth of 6 vertical flues along the whole height of coking chambers, welding of charging holes.
2008	Coke oven battery No.6 (height 5,5 m).	Hot repair of coking chambers Scope of work: Sealing of joints of brickwork of coking chambers.
2014	Coke oven battery No.6 (65 chambers, height 5,5 m).	Hot repair of heating walls of coking chambers using abrasive blast cleaning method and then ceramic welding method. Scope of work: Elimination of moving-out of brickwork to the depth of 2 vertical flues on coke side, removal of restrictions and build-ups without shock and vibrational impact on brickwork. Restoration of geometrical parameters of coking chambers to design values.
Yenakiieve By-product Coke Plant Yenakiievo, Ukraine		
2014	Coke department.	Current repairs and overhauls. Scope of work: Dismantling, repair, installation of steel structures main processing equipment.

Date	Customer Characteristics of the facility	Scope of work
2017	Coke oven batteries No.2,3,4 (138 chambers (46x3), height 5,0 m).	Hot repair of heating walls of coking chambers using abrasive blast cleaning method and then ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling to the depth of 2 vertical flues along the whole height of coking chambers, welding of charging holes and repair of chambers soles. Elimination of restrictions and build-ups without shock and vibrational impact on brickwork. Restoration of geometrical parameters of coking chambers to design values.
ZAPOROZHCOKE Zaporozhye, Ukraine		
2010	Coke screening plant No.1.	Repair works. Scope of work: Replacement of coke screening panels No. 1 of the 22-nd row. Replacement the ladder at coke screening facility No. 1.
ZAPOROZHOKS Zaporizhzhya, Ukraine		
2005	Coal pitch processing shop. Block No.1-4 (height 3,6 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling to the depth of up to 20 vertical flues along the whole height of coking chambers, using ceramic welding method.
2007	Coke oven battery No1 (65 chambers, height 7,0 m). Coke oven battery No.6 (65 chambers, height 4,3 m).	Hot repair of heating walls of coking chambers. Scope of work: Dismantling and re-lining of heating walls of coking chambers on coke side to the depth of 4 to 6 vertical flues. Welding of joints of old and new brickwork, sealing of joints of brickwork of coking chambers. Start-up works.
2008	Coke oven battery No.1 (65 chambers, height 7,0 m).	Hot repair of heating walls of coking chambers. Scope of work: Dismantling and re-lining of heating walls of coking chambers on coke side to the depth of 6 vertical flues. 102 vertical flues in total. Welding of joints of old and new brickwork, sealing of joints of brickwork of coking chambers. Start-up works.

Date	Customer Characteristics of the facility	Scope of work
2011	Coke oven battery No.1. (65 chambers, height 7,0 m). Coke oven batteries No.5,6. (130 (65x2) chambers, height 4,3 m).	Hot repair of coking chambers Scope of work: Sealing of joints of brickwork of coking chambers.
2012	Coke oven battery No.5 (65 chambers, height 4,3 m).	Repair of paving of oven top Scope of work: Repair of paving of ovens top, amount up to 25 m3.
2012	Coke oven batteries No.1,2 (130 (65x2) chambers, height 7,0 m). Coke oven batteries No.5,6. (130 (65x2) chambers, height 4,3 m).	Hot repair of heating walls of coking chambers using abrasive blast cleaning method and then ceramic welding method. Scope of work: Elimination of moving-out of brickwork to the depth of 2 vertical flues on coke side, removal of restrictions and build-ups without shock and vibrational impact on brickwork. Restoration of geometrical parameters of coking chambers to design values.
2012	Coke oven battery No.2 (65 chambers, height 7,0m).	Hot repair of heating walls of coking chambers. Scope of work: Dismantling and re-lining of heating walls of coking chambers on pusher side to the depth of 4 to 6 vertical flues, to the depth of 6 to 8 vertical flues on coke side. 238 vertical flues in total. Adjustment of main anchorage and intermediate units, dismantling and installation of coke doors frames. Installation and dismantling of 3 flash plates of heating walls. Welding of joints of old and new brickwork, Sealing of joints of brickwork of coking chambers. Start-up works. Welding of joints of old and new brickwork, sealing of joints of brickwork of coking chambers. Start-up works.
2014	Coke oven battery No.20 (65 chambers, height 7,0 m).	Hot repair of heating walls of coking chambers. Scope of work: Dismantling and re-lining of heating walls of coking chambers on pusher side to the depth of 4 to 6 vertical flues, to the depth of 6 to 8 vertical flues on coke side. 238 vertical flues in total. Adjustment of main anchorage and intermediate units, dismantling and installation of coke doors frames. Installation and dismantling of 3 flash plates of heating walls. Welding of joints of old and new brickwork, sealing of joints of brickwork of coking chambers. Start-up works. Welding of joints of old and new brickwork, sealing of joints of brickwork of coking chambers. Start-up works.
2014	Coke oven battery No.1 (65 chambers, height 7,0 m). Coke oven batteries No.5,6 (130 (65x2) chambers, height 4,3 m).	Hot repair of coking chambers Scope of work: Sealing of joints of brickwork of coking chambers.

Date	Customer Characteristics of the facility	Scope of work
2015	Coke oven battery No.2 (65 chambers, height 7,0 m). Coke oven batteries No.5,6 (130 (65x2) chambers, height 4,3 m).	Hot repair of heating walls of coking chambers using abrasive blast cleaning method and then ceramic welding method. Scope of work: Elimination of moving-out of brickwork with the help of a milling unit to the depth of 2 vertical flues on coke side, elimination of restrictions and build-ups without shock and vibrational impact on brickwork. Elimination of cracks, cavities, spalling to the depth of 2 vertical flues along the whole height of coking chambers. Restoration of geometrical parameters of coking chambers to design values.
ZARMEN Czystochowa Nowa Coke Plant Czystochowa, Poland		
2010	Coke oven battery No.1-BIS. (57 chambers, height 4,3 m). Coke oven battery No.2 (height 3,8 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling to the depth of 7 vertical flues along the whole height of coking chambers.
2010	Coke oven battery No.1. (57 chambers, height 4,3 m).	Engineering. Elaboration of documents for reconstruction of the existing coke oven battery No.1. Scope of work: Elaboration of documents for reconstruction of the existing COB No. 1, including construction project; detailed engineering of brickwork of coke oven battery.
2010	Coke oven battery No.1. (57 chambers, height 4,3 m).	Engineering. Elaboration of design documents for coal guide car for COB No.1. Customer "HPH". Scope of work: Detailed engineering of coal guide car of unique design.
2010	Coke oven battery No.1. (57 chambers, height 4,3 m).	Engineering. Elaboration of design documents. Customer HPH. Scope of work: Detailed engineering of coke quenching car with an alternative drive (without electric loco) for COB No. 1.
2011	Coke oven battery No.1-BIS. (57 chambers, height 4,3 m).	Construction of the new coke oven battery Scope of work: Bricklaying of ceramic massif of coke oven battery. Installation of backstays and technological equipment, bricklaying of regenerators walls, vertical flues area and vertical flues roofing area, bricklaying of inclined flues area, lining of flash plates. Customer "ZARMEN".

Date	Customer Characteristics of the facility	Scope of work
2015	Coke oven battery No.1-BIS. (57 chambers, height 4,3 m). Coke oven battery No.2 (height 3,8 m).	Hot repair of heating walls of coking chambers using ceramic welding method. Scope of work: Elimination of cracks, cavities, spalling to the depth of 7 vertical flues along the whole height of coking chambers.
2015	Coke oven battery No.4. (50 chambers, height 4,3 m).	Engineering. Elaboration of documents for reconstruction of the existing coke oven battery No.4. Customer "ZARMEN". Scope of work: Elaboration of documents for reconstruction of the existing COB No. 4, including initial requirements for technological equipment, construction project, installation drawings, detailed engineering of foundations, buttresses and brickwork of coke oven batteries.