



# Offered assortment of coal produced by OKD, a.s.

(General overview and characteristics of the individual commodities)

## Coking Coal (washed mixture)

### A) Hard Coking Coal (coking fat coal to coking coal)

Due to its high dilatation, FSI, and CSR value, this coal belongs to the HCC category (hard coking coal); the coal is produced by the coal plant ČSM Mine.

### B) Semi-Soft Coking Coal (coking fat coal to fat coal to gas coal)

Due to its dilatation value, FSI, and the CSR value, this coal belongs to the SSCC category (semi soft coking coal); this coal is produced by the coal plant Darkov Mine.

## Steam Coal

### Steam Coal – washed mixture

This coal, produced by the coal plants ČSM and Darkov Mine, has high NCV with low ash content, and it is used in large power plants, cement plants, and, in particular, in PCI technology.

### Dust

Dust is produced by the coal plants Darkov Mine and ČSM Mine by sorting out the fraction with grain size of 0-20(30) mm, used in power industry.

### Middlings

Produced by the coal plant Darkov Mine, this coal has lower NCV and higher ash content, and is used in power industry.

## Quality Inspection and Management

- Compliance with the contractual quality parameters is inspected by the Quality Inspection and Management in close cooperation with the Preparation plants by using control systems of the individual technological facilities, using real-time monitoring of ash, water, sulphur content, and NCV.
- Samples, taken from the respective fuel types, are measured and evaluated by the central laboratory of OKD, a.s. situated in the Lazy Mine. The laboratory is accredited according to the ČSN EN ISO / IEC 17025:2005 standards, and registered under No. 1503.
- State-of-the-art instruments allow determination of basic as well as specific parameters of coal and gas. All laboratory procedures meet the ČSN and ČSN ISO standards.
- Special parameters, also determined by the laboratory, in line with the trends of coking coal quality development, include the CRI and CSR parameters, based on the Nippon Steel Method, plasticity, and silicate analysis.

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## General Contacts

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# Quality parameters of coal

## Coking coal - washed mixture

mine (coal plant)	grain size mm	water content $W_t^r$ %	ash content $A^d$ %	volatile matter content $V^{daf}$ %	swelling index SI min.	dilatation b min. %	sulphur content $S_t^d$ %	phosphorus content $P^d$ %	plasticity $F_{max}$ ddpm
Darkov	0-50	10,0-11,5	7,5-8,5	23,0-30,0	5	25	0,5-0,7	0,02-0,04	500
ČSM	0-50	10,5-11,0	7,5-8,0	23,0-27,0	6	60	0,5-0,7	0,02-0,04	500

## Steam coal

mine (coal plant)	fuel type	grain size mm	water content $W_t^r$ %	ash content $A^d$ %	volatile matter content $V^{daf}$ %	sulphur content $S_t^d$ %	net calorific value $Q_i^r$ MJ/ kg
Darkov ČSM	Steam coal - washed mixture	0-50	8,5-11,0	7,0-8,5	22,0-29,0	0,5-0,6	28,5-29,5
Darkov ČSM	Dust	0-20 (30)	9,0-11,0	20,0-25,0	22,0-29,0	0,5-0,6	23,0-25,0
Darkov	Middlings	0-30	10,0-14,0	38,0-45,0	28,0-33,0	0,6-0,7	16,0-18,0

$W_t^r$	total water content of original sample (t - total; r - received)
$A^d$	ash content in a water-free state (d - dry)
$V^{daf}$	volatile matter content (daf - dry ash free; in combustibles)
b	dilatation
$F_{max}$	maximum fluidity (dial division per minute)
SI	swelling index (non-dimensional value)
$Q_i^r$	net calorific value (gross calorific value reduced by the evaporation heat of water)
$S_t^d$	total sulphur content (t - total; d - dry)
$P^d$	phosphorus content (d - dry)

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EA MLA Signatory  
Český institut pro akreditaci, o.p.s.  
Olšanská 54/3, 130 00 Praha 3

issues

according to section 16 of Act No. 22/1997 Coll., on technical requirements for products, as amended

## CERTIFICATE OF ACCREDITATION

No. 262/2018

**OKD, a.s.**  
with registered office Stonavská 2179, Doly, 735 06 Karviná, Company Registration  
No. 05979277

to the Testing Laboratory No. 1503  
Fuel Testing Laboratory

Scope of accreditation:

Laboratory analysis of solid fuels to the extent as specified in the appendix to this Certificate.

This Certificate of Accreditation is a proof of Accreditation issued on the basis of assessment of fulfillment of the accreditation criteria in accordance with

ČSN EN ISO/IEC 17025:2005

In its activities performed within the scope and for the period of validity of this Certificate, the Body is entitled to refer to this Certificate, provided that the accreditation is not suspended and the Body meets the specified accreditation requirements in accordance with the relevant regulations applicable to the activity of an accredited Conformity Assessment Body.

This Certificate of Accreditation replaces, to the full extent, Certificate No.: 572/2015 of 30. 7. 2015, or any administrative acts building upon it.

The Certificate of Accreditation is valid until: **30. 7. 2020**

Prague: 22. 5. 2018



*Jiří Růžička*  
**Jiří Růžička**  
Director  
Czech Accreditation Institute  
Public Service Company

### General Contacts

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The Appendix is an integral part of  
Certificate of Accreditation No. 262/2018 of 22/05/2018

Accredited entity according to ČSN EN ISO/IEC 17025:2005:

OKD, a.s.

Fuel Testing Laboratory

Stonavská 2179, Doly, 735 06 Karviná

Testing Laboratory Locations:

- |                            |                                      |
|----------------------------|--------------------------------------|
| 1. Chemical Laboratory CHL | Orlová – Lazy, č. p. 605             |
| 2. OTK Laboratory (Lazy)   | Orlová – Lazy, č. p. 605             |
| 3. OTK Laboratory (ČSM)    | č. p. 1077, Stonava, 735 34          |
| 4. OTK Laboratory (Darkov) | Stonavská 2179, Doly, 735 06 Karviná |

The Laboratory is qualified to update standards identifying the test procedures.

Tests:

Ordinal number <sup>*)</sup>	Test procedure/method name	Test procedure/method identification	Tested object
1. 2,3,4)	Determination of total water content / gravimetry.	SOP No.3 (ČSN 44 1377)	Black and brown coal
2. 1)	Determination of water content in analytical sample / gravimetry.	SOP No.4 (ČSN 44 1377, ČSN ISO 687)	Solid fuels
3. 1)	Determination of ash / gravimetry.	SOP No.5 (ČSN ISO 1171)	Solid fuels
4. 1)	Determination of volatile combustible matter / gravimetry.	SOP No.6 (ČSN ISO 562)	Black coal, coke
5. 1)	Determination of water content in analytical sample and ash on TGA analyzer / gravimetry.	SOP No.7 (ČSN ISO 11722, ČSN ISO 687, ČSN ISO 1171, LECO Manual)	Solid fuels
6. 1)	Determination of total sulphur content / analyzer with IR detection.	SOP No.8 (ČSN ISO 19579, LECO manual)	Solid fuels
7. 1)	Determination of gross calorific value / calorimetry and calculation of net calorific value.	SOP No.9 (ČSN ISO1928, ČSN 441310)	Solid fuels
8. 1)	Determination of total carbon, hydrogen and nitrogen/ combustion method on analyzer with IR and TC detection.	SOP No.10 (ČSN ISO 29541, LECO manual)	Solid fuels
9. 1)	Determination of the crucible swelling number / visual method.	SOP No.11 (ČSN ISO 501)	Black coal
10. 1)	Determination of the swelling properties using a dilatometer	SOP No.12 (ČSN ISO 8264)	Black coal

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**Explanations:**

*)	location number
TGA	Thermogravimetric Analyzer
Solid fuels	coke, black coal, brown coal
IR	Infrared Detection
TC	Thermal Conductivity Detection

