

The Annex to the decision No. 026/9646/2021/1 and to the Certificate of accreditation No. S-024 dated 24.11.2021.

The Annex is an integral part of  
the Certificate of Accreditation

## Accreditation Scope

The name of the accredited body:

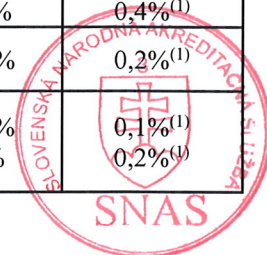
**U. S. Steel Košice – Labortest, Ltd**

**Department of Cokery Laboratory**

Vstupný areál U. S. Steel, 044 54 Košice

Laboratory with fixed scope of accreditation

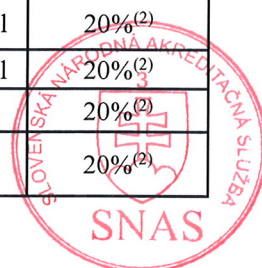
Item	Subject of test		Applied method		Other specifications	
	Subject	Property/ Parameter	Kind/Type	Indication	Range	Extended uncertainty
1.	Solid fuels - coal	Total water	gravimetry	STN 44 1377 ISO 589 (PP1/ZT21-1)	(1-10)% (11-40)%	0,3% <sup>(1)</sup> 3% <sup>(2)</sup>
		Analytical water	gravimetry	PP1/ZT21-3 (ASTM D 7582) (manual LECO)	(0,2-2)% (3-10)%	0,2% <sup>(1)</sup> 0,4% <sup>(1)</sup>
			gravimetry	STN 44 1377 (PP1/ZT21-1)	(0,2-2)% (3-10)%	0,2% <sup>(1)</sup> 0,4% <sup>(1)</sup>
	Solid fuels - coke	Total water	gravimetry	STN ISO 579 (PP1/ZT21-2)	(1-20)%	0,5% <sup>(1)</sup>
		Analytical water	gravimetry	PP1/ZT21-3 (ASTM D 7582) (manual LECO)	(0,2-2)% (3-10)%	0,2% <sup>(1)</sup> 0,4% <sup>(1)</sup>
			gravimetry	STN 44 1384-2 (PP1/ZT21-2)	(0,2-2)% (3-10)%	0,2% <sup>(1)</sup> 0,4% <sup>(1)</sup>
2.	Solid fuels - coal	Ash	gravimetry	PP1/ZT21-3 (ASTM D 7582) (STN ISO 1171) (manual LECO)	(2-10)% (11-50)%	0,3% <sup>(1)</sup> 3% <sup>(2)</sup>
			gravimetry	STN ISO 1171 (PP1/ZT21-4)	(2-10)% (11-50)%	0,3% <sup>(1)</sup> 3% <sup>(2)</sup>
	Solid fuels - coke	Ash	gravimetry	PP1/ZT21-3 (ASTM D 7582) (STN ISO 1171) (manual LECO)	(1-10)% (11-20)%	0,3% <sup>(1)</sup> 3% <sup>(2)</sup>
			gravimetry	STN ISO 1171 (PP1/ZT21-4)	(1-10)% (11-20)%	0,3% <sup>(1)</sup> 3% <sup>(2)</sup>
3.	Solid fuels - coal	Volatile matter	gravimetry	STN ISO 562 (PP1/ZT21-7)	(1-10)% (11-40)%	0,4% <sup>(1)</sup> 4% <sup>(1)</sup>
	Solid fuels - coke	Volatile matter	gravimetry	STN ISO 562 (PP1/ZT21-7)	(0,2-3)%	0,3% <sup>(1)</sup>
4.	Solid fuels - coal - coke	Carbon	IR absorbance after the burn	PP1/ZT21-11 (ASTM D 5373) (manual LECO)	(10-100)%	2% <sup>(1)</sup>
		Hydrogen	IR absorbance after the burn		(0,2-2)% (3-10)%	0,2% <sup>(1)</sup> 0,4% <sup>(1)</sup>
		Nitrogen	TCD detection after the burn		(0,2-5)%	0,2% <sup>(1)</sup>
5.		Sulfur	IR absorbance after the burn	PP1/ZT21-14 (ASTM D 4239) (manual LECO)	(0,1-1)% (2-3)%	0,1% <sup>(1)</sup> 0,2% <sup>(1)</sup>



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6.	Solid fuels - coal - coke	Gross heating value	calorimetry	STN ISO 1928 (PP1/ZT21-16)	(5-40)MJ/kg	0,3MJ/kg <sup>(1)</sup>
		Net calorific value	calculation		(5-35)MJ/kg	0,4MJ/kg <sup>(1)</sup>
7.	Gases	Methane (CH <sub>4</sub> )	GC-TCD	PP1/ZT21-44 (ASTM D 1946)	(0,01-1)%	10% <sup>(2)</sup>
			GC-FID		(2-30)%	5% <sup>(2)</sup>
		Hydrogen (H <sub>2</sub> )	GC-TCD		(0,05-1)%	10% <sup>(2)</sup>
					(2-10)%	5% <sup>(2)</sup>
		Oxygen (O <sub>2</sub> )	GC-TCD		(11-100)%	2% <sup>(2)</sup>
					(0,3-1)%	10% <sup>(2)</sup>
		Nitrogen (N <sub>2</sub> )	GC-TCD		(2-10)%	5% <sup>(2)</sup>
					(11-100)%	2% <sup>(2)</sup>
		Carbon dioxide (CO <sub>2</sub> )	GC-TCD		(0,3-1)%	10% <sup>(2)</sup>
					(2-10)%	5% <sup>(2)</sup>
Carbon monoxide (CO)	GC-TCD	(11-30)%	2% <sup>(2)</sup>			
		(0,3-1)%	10% <sup>(2)</sup>			
Ethen (C <sub>2</sub> H <sub>4</sub> )	GC-FID	(2-10)%	5% <sup>(2)</sup>			
		(11-30)%	2% <sup>(2)</sup>			
Ethane (C <sub>2</sub> H <sub>6</sub> )	GC-FID	(0,01-1)%	10% <sup>(2)</sup>			
		(2-5)%	5% <sup>(2)</sup>			
Acetylene (C <sub>2</sub> H <sub>2</sub> )	GC-FID	(0,01-1)%	10% <sup>(2)</sup>			
		(2-5)%	5% <sup>(2)</sup>			
8.	Waste water	pH	potentiometry	STN EN ISO 10523 (PP1/ZT21-27)	(4-10)	0,2 <sup>(1)</sup>
9.		Cyanide	spectrophotometry	STN ISO 6703-1 (PP1/ZT21-36)	(0,05-50)mg/l	15% <sup>(2)</sup>
10.		Chemical oxygen demand	spectrophotometry	PP1/ZT21-31 (STN ISO 15705) (cuvette test -manual Hach)	(20-150)mg/l (160-1000)mg/l	20% <sup>(2)</sup> 10% <sup>(2)</sup>
11.	Empty					
12.	Waste and under- ground water	Ammonium	spectrophotometry	PP1/ZT21-29 (STN ISO 7150-1) (cuvette test -manual Hach)	(0,05-1000)mg/l	20% <sup>(2)</sup>
13.	Waste and under- ground water	Chlorides	IC/ Electro-chemical detector IC/UV VIS	STN EN ISO 10304-1 (PP1/ZT21-30)	(0,2- 7500)mg/l	20% <sup>(2)</sup>
		Fluorides			(0,10-50)mg/l	20% <sup>(2)</sup>
		Nitrates			(0,1-250)mg/l	20% <sup>(2)</sup>
		Nitrites			(0,1-100)mg/l	20% <sup>(2)</sup>
		Phosphates			(0,1-50)mg/l	20% <sup>(2)</sup>
		Sulphates			(0,1- 5000)mg/l	20% <sup>(2)</sup>



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14.	<b>Underground water</b>	Permanganate Index	potentiometric titration	PP1/ZT21-32 (STN EN ISO 8467)	(0,5-50)mg/l	20% <sup>(2)</sup>

**Note:**

<sup>(1)</sup> - Extended uncertainty U, k = 2.

<sup>(2)</sup> - Uncertainty is percent of measured value.

IR - Infrared Spectrophotometry  
GC - Gas Chromatography  
TCD - Thermal Conductivity Detector  
FID - Flame Ionization Detector  
IC - Ion Chromatography  
MS - Mass Spectroscopy  
UV VIS - Ultra Violet and Visible Detector

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