



ORDER

№ A 138

Sofia, 29.03.2023

Pursuant to Art. 10, para. 1, items 3 and 4, Art. 30, para. 1 of the Law on National Accreditation of Conformity Assessment Bodies, in connection with amendment of an element of the certificate content, according to item 4.3.8 of the BAS QR 2 Accreditation Procedure, and EA BAS order reg. № A 137/29.03.2023, I hereby

AMEND

EA BAS order reg. № A 395/01.07.2021, an integral part of certificate of accreditation reg. № 5 ЛИК/01.07.2021, valid until 01.07.2025, as follows:

Pehlivanov-Engineering Ltd.

Testing and calibration laboratory

Laboratory for Testing of Dust and Gas Emissions and Imissions

Management address: 1505 Sofia, Oborishte District, 16 Murphy Str.

Laboratory address: 1505 Sofia, Oborishte District, 11 Murphy Str.

To perform testing of:

Type of the scope: *flexible for a part of the scope*

№	Tested products	Type of test / characteristic	Testing methods (standard / validated method)
1	2	3	4
I	Atmospheric air:		
1	Waste gases - emissions	1.1 Velocity of gas streams, flow rate	ISO 10780 * БДС EN ISO 16911-1*
		1.2. Dust	БДС ISO 9096* БДС EN 13284-1*
		1.3. Temperature, pressure / vacuum, barometric pressure	ISO 10780* БДС EN ISO 16911-1*
		1.4. Dew point, relative humidity, humidity	БДС EN 14790* ФМ 03/14:2016
		1.5. Nitrogen oxide / NO	ФМ 03/14:2016 БДС EN 14792*
		1.6. Sulphur dioxide / SO ₂	БДС 17.2.4.04* ФМ 03/14:2016 БДС EN 14791 (Thorin method)*
		1.7. Sulphur trioxide/ SO ₃	БДС 17.2.4.09*

Type of the scope: *flexible for a part of the scope*

№	Tested products	Type of test / characteristic	Testing methods (standard / validated method)
1	2	3	4
		1.8. Hydrogen fluoride/ HF	БДС 17.2.4.12 * ISO 15713*
		1.9. Hydrogen chloride/ HCl	БДС EN 1911* ФМ 03/14:2016
		1.10. Sulfuric acid aerosol/ Aerosol H ₂ SO ₄	ФМ 01/13:2013
		1.11. Total hydrocarbons, volatile organic compounds, polycyclic aromatic hydrocarbons, total hydrocarbons expressed as total carbon, volatile organic compounds expressed as organic carbon	ФМ 02/14:2014 БДС EN ISO 13199* ISO 11338-2*
		1.12. Methane /CH ₄	ФМ 03/14:2016
		1.13. Oxygen /O ₂	ФМ 03/14:2016 БДС EN 14789*
		1.14. Carbon monoxide /CO	ФМ 03/14:2016 БДС EN 15058*
		1.15. Carbon dioxide /CO ₂	ФМ 03/14:2016
		1.16. Nitrogen dioxide /NO ₂	ФМ 03/14:2016 БДС EN 14792*
		1.17. Hydrogen /H ₂	ФМ 03/14:2016
		1.18. Hydrogen sulphide / H ₂ S	ФМ 03/14:2016
		1.19. Nitrogen oxides /NO _x / (NO + NO ₂)	ФМ 03/14:2016 БДС EN 14792*
		1.20. Ammonia / NH ₃	ФМ 03/14:2016
		1.21. Chlorine / Cl ₂	ФМ 03/14:2016
		1.22. Carbon disulphide /CS ₂	БДС 17.2.4.10*
		1.23. Soot	БДС 17.2.4.08*
		1.24. Determination of total emissions of As, Cd, Cr, Co, Cu, Mn, Ni, Pb, Sb, Ti, V, Zn, Hg, Se, Sn and Ti Cr(VI)	БДС EN 14385* /As, Cd, Cr, Co, Cu, Mn, Ni, Pb, Sb, Ti and V ФМ 04/14:2016 /As, Cd, Cr, Co, Cu, Mn, Ni, Pb, Sb, Ti, V, Zn, Hg, Se, Sn и Ti ФМ 11/17:2017
		1.25. Determining the concentration of total mercury /Hg	БДС EN 13211 (AC)*
		1.26. Determination of the mass concentration of PM ₁₀ and PM _{2.5} in flue gases - measurement of low concentrations by use of impactors	БДС EN ISO 23210*
		1.27. Determining mass concentration of polychlorinated dibenzodioxins / polychlorinated dibenzofurans (PCDDs / PCDF) and polychlorinated biphenyls (PCBs).	БДС EN 1948-2** БДС EN 1948-3** БДС EN 1948-4 + A1**

Type of the scope: *flexible for a part of the scope*

№	Tested products	Type of test / characteristic	Testing methods (standard / validated method)
1	2	3	4
		1.28. Determination of cyanides	ФМ 07/15:2015
		1.29. Volatile organic compounds / VOC/ ¹⁾ and formaldehyde ²⁾	СД CEN /TS 13649 ⁽¹⁾ ** ФМ 08/16:2016 ⁽²⁾ ; EPA 323 ^{(2)*}
		1.30. Dinitrogen oxide /N ₂ O	БДС EN ISO 21258*
		1.31 Amines and mercaptans	ФМ 12/17:2017**
		1.32 Pesticides	ФМ 13/17:2017**
2	Emissions from stationary sources - parallel measurements to ensure the quality of own continuous measurements	Quality level- 2 (QAL 2) and Annual Surveillance Test (AST)	БДС EN 14181(for applicable characteristics under cl. I.1)* (according requirements of БДС EN 15259*)
3	Atmospheric air - immissions	3.1. Dust: a) Total b) PM _{2,5} c) PM ₁₀	БДС 17.2.4.20 (a)* БДС EN 12341 (b, c) *
		3.2. Determination of: Lead/ Pb, Cadmium/Cd, Arsenic /As, Nickel/Ni in PM 10	ФМ 04/14:2016
		3.3. Determination of total polycyclic aromatic hydrocarbons / PAHs (gas and aerosol phase)	БДС ISO 12884**
		3.4 Pesticides	ФМ 13/17:2017**
II	Water:		
	(1) underground; (2) surface;	1. Active reaction / pH	БДС EN ISO 10523(1÷8)* БДС 17.1.4.27 (1, 2, 5)*
		2. Electroconductivity	БДС EN 27888 (1÷8)*
		3. Dissolved oxygen	БДС EN 25813 (1÷4,8)* БДС EN ISO 5814 (1÷8) *
	(3) potable water - for drinking purposes	4. Dissolved solids	БДС 17.1.4.04 (1,2,5) *
		5. Undissolved / suspended solids, loss at ignition of solids	БДС 17.1.4.04 (1,2,5) * БДС EN 872 (1÷8)*
		6. Dry residue	БДС 17.1.4.04 (1,2,5)* БДС 3546 (3)*
	(5) waste water/ recycled;	7. Colour	БДС EN ISO 7887 (1÷4) *
		8. Temperature	БДС 8451 (1÷8), Modification 1*
	(6) for construction/ building purposes; (7) for industrial purposes;	9. Contents of metals and nonmetals: Silver/Ag; Aluminium/ Al; Arsenic/ As; Boron / B; Barium/ Ba; Beryllium/ Be; Bismuth/ Bi; Calcium/ Ca; Cadmium/ Cd; Cobalt/ Co; Chromium/ Cr; Copper/ Cu; Iron/Fe; Potassium /	БДС EN ISO 11885 (1÷8)* EPA 6010D (1÷8)* EPA 7473 (1÷8)*

Type of the scope: *flexible for a part of the scope*

№	Tested products	Type of test / characteristic	Testing methods (standard / validated method)
1	2	3	4
	(8) for irrigation; (9) sea water	K; Lithium / Li; Magnesium/ Mg; Manganese/ Mn; Molybdenum/ Mo; Sodium/ Na; Nickel/ Ni; Phosphorus/ P; Lead/ Pb; Sulphur/ S; Antimony/ Sb; Selenium/ Se; Silicon/Si; Tin/ Sn; Strontium/ Sr; Titanium / Ti; Vanadium / V; Tungsten/ W; Zinc / Zn; Zirconium / Zr; Thallium / Tl ¹ ; Mercury / Hg ²	
		10. Alkalinity - total, composite, carbonate	БДС EN ISO 9963-1 (1÷5)* БДС EN ISO 9963-2 (1÷5)*
		11. Carbonate / Carbonate ions (CO ₃ ²⁻)	БДС EN ISO 9963-1 (1÷5)*
		12. Hydrogen carbonate / hydrogen carbonate ions (HCO ₃ ⁻)	БДС EN ISO 9963-1 (1÷5)*
		13. Chloride ions (Cl ⁻) / Chlorides	ФМ 05/14:2017 (1÷8) БДС 17.1.4.24 (1,2,5)* БДС EN ISO 15682 (1÷8)*
		14. Fluoride ions (F ⁻) / Fluorides	ФМ 05/14:2017 (1÷8)
		15. Ortho-phosphates / Phosphates (PO ₄ ³⁻) Phosphates (as P) – (P –PO ₄ ³⁻)	БДС EN ISO 6878 (1÷8)* ФМ 05/14:2017 (1÷8) БДС EN ISO 15681-1 (1÷8)*
		16. Nitrite ions (NO ₂ ⁻) / Nitrite / Nitrite-Nitrogen	БДС EN 26777 (1÷8)* ФМ 05/14:2017 (1÷8) БДС EN ISO 13395 (1÷8)*
		17. Nitrate ions (NO ₃ ⁻) / Nitrate / Nitrate-Nitrogen	БДС ISO 7890-3 (1÷8)*; ФМ 05/14:2017 (1÷8) БДС EN ISO 13395 (1÷8) *
		18. Ammonia / Ammonium ions (NH ₄ ⁺) / Nitrogen ammonium	ФМ 05/14:2017 (1÷8) БДС EN ISO 11732 (1÷8)*
		19. Total nitrogen (N)	ФМ 05/14:2017 (1÷8)
		20. Total phosphorus (P)	ФМ 05/14:2017 (1÷8) БДС EN ISO 6878 (1÷8)* БДС EN ISO 15681 – 1 (1÷8)*
		21. Total hardness (Ca) Total hardness (sum of calcium and magnesium)	ФМ 05/14:2017 (1÷8) ФМ 09/16:2016 (1÷8)
		22. Turbidity	ФМ 05/14:2017 (1÷4)
		23. Permanganate oxidisability	БДС 17.1.4.16 (1,2,5)*
		24. Chemical oxygen demand/COD	ФМ 05/14:2017 (1÷8) БДС ISO 15705* (Spectrophotometrically) (1÷8) БДС ISO 6060 (1÷8)*
		25. Biochemical oxygen demand / BOD _n	ФМ 05/14:2017 (2,5,7)
		26. Total organic carbon / TOC;	ФМ 05/14:2017 (1÷8)

Type of the scope: flexible for a part of the scope

№	Tested products	Type of test / characteristic	Testing methods (standard / validated method)
1	2	3	4
		Dissolved organic carbon / DOC	
		27. Cyanides (free, volatile, easily degradable, total)	ФМ 05/14:2017 (1÷8) БДС EN ISO 14403 – 1 (1÷8) *
		28. Free /residual/, total and linked or bonded chlorine (Cl ₂)	ФМ 05/14:2017 (1÷8)
		29. Anionic surfactants	ФМ 05/14:2017 (1÷8) БДС EN 903(2,3,5)*
		30. Petroleum products / hydrocarbons C10÷C40/	БДС EN ISO 9377-2 (1÷8)*
		31. Cr(III); Chromium /total/	БДС 17.1.4.17 (1,2,5)*
		32. Hexavalent chromium / Cr(VI)	БДС 17.1.4.17 (1,2,5)*
		33. Dissolved hydrogen sulphide / Sulfides	ФМ 05/14:2017 (1÷8)
		34. Sulphates / SO ₄ ²⁻	ФМ 05/14:2017 (1÷8) ФМ 10/16:2016 (1÷8)
		35. Phenols(volatile) / Phenolic index	ФМ 05/14:2017 (1÷8) БДС EN ISO 14402 (1÷8)*
		36. Fats and oils/Hexane extractables and silica gel treated products	EPA 1664A - RB (1÷5)*
		37. Polycyclic aromatic hydrocarbons /PAH/	EPA 8270 D- R5 (1÷8)** EPA 525.2 – R2 (1÷8) **
		38. Pesticides / organochlorine /OCP/; organophosphorus /phosphorus containing /OPP/; nitrogen containing /ONP/	БДС EN ISO 6468 (1,2,3,5)** БДС EN ISO 10695 (1,2,3,5)** БДС EN 12918 (1,2,3,5)** EPA 525.2 – R2(1÷8)**
		39. Polychlorinated biphenyls /PCB/	БДС EN ISO 6468 (1,2,3,5) ** EPA 525.2 – R2 (1÷8)**
		40. Polychlorinated dibenzo-p-dioxins /PCDD/, polychlorinated dibenzofurans /PCDF/	EPA 8280 B – R2 (1÷8)**
		41.Volatile organic compounds /VOC/	БДС EN ISO 10301 (1,2,3) **
		42. Salinity	EPA 842B-06-003.14 (2,9)*
		43. Adsorbable organically bound halogens /AOX/	ФМ 05/14:2017 (1÷8)
		44. Kjeldahl nitrogen	БДС EN 25663 (1,2,3,5,8)*
		45. Extractable substances	ФМ 14/18:2018 (5)
III	Soils:		
		1. Active reaction / pH	БДС ISO 10390* БДС 11301*
		2. Water content / Moisture; Dry matter	ISO 11465*
		3. Total content of the water soluble salts	БДС 11301*
		4. Chloride ions (Cl) ⁻ / Chlorides	ФМ 05/14:2017

Type of the scope: *flexible for a part of the scope*

№	Tested products	Type of test / characteristic	Testing methods (standard / validated method)
1	2	3	4
		5. Nitrate ions (NO_3^-) / Nitrate / Nitrate-Nitrogen (N-NO_3^-)	ФМ 05/14:2017
		6. Ammonium ions (NH_4^+) / Nitrogen ammonium (N-NH_4^+)	ФМ 05/14:2017
		7. Sulphate ions/Sulphates/ (SO_4^{2-})	ФМ 05/14:2017
		8. Carbonates (CO_3^{2-})	БДС EN ISO 10693*
		9. Hexavalent chromium/Cr(VI)	EPA 7196A – R1*
		10. Contents of metals and nonmetals: Aluminium/ Al; Antimony/ Sb; Arsenic/ As; Boron/ B; Barium/ Ba; Beryllium/ Be; Bismuth/ Bi; Calcium/ Ca; Cadmium/ Cd; Cobalt/ Co; Chromium / Cr; Copper/ Cu; Iron/Fe; Potassium/ K; Lithium / Li; Lead/ Pb; Magnesium/ Mg; Manganese/ Mn; Molybdenum/ Mo; Sodium/ Na; Nickel/ Ni; Phosphorus/ P; Sulphur/ S; Selenium/ Se; Silicon/Si; Tin/ Sn; Strontium/ Sr; Titanium/Ti; Vanadium / V; Zinc / Zn; Mercury / Hg	ISO 22036* БДС EN 16170*
		11. Petroleum products / hydrocarbons C10÷C40/	БДС EN ISO 16703*
		12. Polycyclic aromatic hydrocarbons /PAH/	EPA 8275A – R1** БДС EN 16181**
		13. Polychlorinated biphenyls /PCB/	БДС ISO 10382**
		14. Pesticides / organochlorine /OCP/	БДС ISO 10382**
		15. Total phosphorus	ФМ 05/14:2017
		16. Total nitrogen	ФМ 05/14:2017
		17. Orthophosphates/Phosphates Phosphorus as phosphates	ФМ 05/14:2017
		18. Polychlorinated dibenzo-p-dioxins /PCDD/, polychlorinated dibenzofurans /PCDF/	ISO 13914**
		19. Kjeldahl nitrogen	БДС EN 16169*
		20. Organic carbon content / Organic matter	БДС ISO 14235*
		21. Determination of exchange forms of metals	БДС EN ISO 11260*
IV	Waste (liquid and solid), eluates, sludges, sediments and treated biowaste (compost):		
	(1) liquid waste	1. Active reaction / pH	БДС 17.1.4.27 (1,3)*
	(2) solid waste		БДС EN ISO 10523 (1,3)* БДС EN 15933 (2,4,5,6) *

Type of the scope: *flexible for a part of the scope*

№	Tested products	Type of test / characteristic	Testing methods (standard / validated method)
1	2	3	4
	(3) eluates	2. Electroconductivity	БДС EN 27888 (1,3)* БДС EN 13038 (2,4,5,6)*
	(4) sludges	3. Water content/ Moisture; Dry matter	ISO 11465 (2,4) * БДС EN 15934 (method A) (2,4,5,6)*
	(5) sediments	4. Total dissolved solids / TDS	БДС EN 15216 (1,3) *
	(6) treated biowaste (compost)	5. Total organic carbon/ TOC; Dissolved organic carbon/ DOC	ФМ 05/14:2017 (1 ÷ 5)
		6. Nitrite ions (NO ₂ ⁻) / Nitrite / Nitrite-Nitrogen	БДС EN 26777 (1,3)* ФМ 05/14:2017 (1 ÷ 5) БДС EN ISO 13395 (1,3) *
		7. Nitrate ions (NO ₃ ⁻) / Nitrate / Nitrate-Nitrogen	БДС ISO 7890-3 (1,3)* ФМ 05/14:2017 (1 ÷ 5) БДС EN ISO 13395 (1,3) *
		8. Ammonium ions (NH ₄ ⁺) / Nitrogen ammonium	БДС ISO 7150 – 1 (1,3)* ФМ 05/14:2017 (1 ÷ 5) БДС EN ISO 11732 (1,3)*
		9. Chloride ions (Cl) ⁻ / Chlorides	БДС 17.1.4.24 (1,3) * ФМ 05/14:2017 (1 ÷ 5) БДС EN ISO 15682 (1,3)*
		10. Fluoride ions (F ⁻) / Fluorides	ФМ 05/14:2017 (1 ÷ 5)
		11. Ortho-phosphates /Phosphates (PO ₄ ³⁻) Phosphates (as P) – (P –PO ₄ ³⁻) Total phosphorus	БДС EN ISO 6878 (1,3)* ФМ 05/14:2017 (1 ÷ 5) БДС EN ISO 15681-1 (1,3) *
		12. Sulphate ions (SO ₄ ²⁻) / Sulphates/	ФМ 05/14:2017 (1 ÷ 5)
		13. Cyanides (volatile, total)	ФМ 05/14:2017 (1 ÷ 5) БДС EN ISO 14403-1 (1,3)*
		14. Loss of ignition	БДС EN 15935 (2,4) *
		15. Petroleum products / Hydrocarbons C10÷C40	БДС EN ISO 16703 (2,4) * БДС EN 14039 (2,4) * БДС EN ISO 9377-2 (1,3) *
		16. Contents of metals and nonmetals: Silver/Ag; Aluminium/ Al; Arsenic/ As; Boron / B; Barium/ Ba; Beryllium/ Be; Bismuth/ Bi; Calcium/ Ca; Cadmium/ Cd; Cobalt/ Co; Chromium/ Cr; Copper/ Cu; Iron/Fe; Potassium/K; Lithium/ Li; Magnesium/Mg; Manganese/Mn; Molybdenum/ Mo; Sodium/ Na; Nickel/ Ni; Phosphorus/ P; Lead/ Pb; Sulphur/ S; Antimony/ Sb; Selenium/ Se; Silicon/Si; Tin/ Sn; Strontium/ Sr; Titanium / Ti; Vanadium / V; Tungsten/ W; Zinc / Zn; Mercury / Hg ¹	БДС EN ISO 11885 (1,3) * EPA 6010C – R3 ¹ (1,3)*

Type of the scope: *flexible for a part of the scope*

№	Tested products	Type of test / characteristic	Testing methods (standard / validated method)
1	2	3	4
		17. Silver/Ag; Aluminium/ Al; Arsenic/ As; Boron / B; Barium/ Ba; Beryllium/ Be; Calcium/ Ca; Cadmium/ Cd; Cobalt/ Co; Chromium/ Cr; Copper/ Cu; Iron/Fe; Potassium / K; Lithium / Li; Magnesium/Mg; Manganese/ Mn; Molybdenum/Mo; Sodium/ Na; Nickel/ Ni; Phosphorus/P; Lead/Pb; Antimony/Sb; Selenium/ Se; Silicon/Si/SiO ₂ ; Tin/Sn; Strontium/Sr; Titanium/Ti; Vanadium/V; Zinc/Zn; Thallium/Tl; Mercury/Hg	EPA 6010C – R3 (2,5)*
		18. Aluminium/Al; Antimony/ Sb; Arsenic/As; Boron / B; Barium/ Ba; Beryllium/Be; Bismuth/ Bi; Calcium/ Ca; Cadmium/Cd; Cobalt/Co; Chromium/Cr; Copper/Cu; Iron/Fe; Potassium/K; Lithium/Li; Magnesium/Mg; Manganese/Mn; Molybdenum/ Mo; Sodium/Na; Nickel/Ni; Phosphorus/P; Lead/Pb; Sulphur/S; Selenium/Se; Silicon/Si; Tin/Sn; Strontium/ Sr; Titanium / Ti; Vanadium/V; Zinc /Zn; Mercury/Hg	БДС EN 16170 (4,6) *
		19. Hexavalent chromium / Cr(VI)	EPA 7196A –R1 (1 ÷ 4) *
		20. Polycyclic aromatic hydrocarbons /PAH/	БДС EN 17503 (2,4,6)**
		21. Polychlorinated biphenyls /PCB/	БДС EN 17322 (2, 4, 5, 6)**
		22. Pesticides / organochlorine /OCP/; organophosphorus /phosphorus containing /OPP/; nitrogen containing /ONP/	БДС EN ISO 6468 (1,3)** БДС EN ISO 10695 (1,3)**
		23. Polychlorinated dibenzo-p- dioxins /PCDD/, polychlorinated dibenzofurans /PCDF/	ISO 13914 (2,4)**
		24. Phenols (volatile) / phenolic index	БДС EN ISO 14402 (1,3)*
		25. Acid and base neutralization capacity test	СД CEN/TS 15364 (2,4)*
		26. Volatile organic compounds /VOC/	БДС EN ISO 22155 (2,4,5)**
		27. Fats and oils/Hexane extractable and silica gel treated products	EPA 1664A - RB (1,3)* EPA 9071B – R2 (2,4,5)*
		28. Adsorbable organically bound halogens /AOX/	ФМ 05/14:2017 (1 ÷ 5)

Type of the scope: <i>flexible for a part of the scope</i>			
№	Tested products	Type of test / characteristic	Testing methods (standard / validated method)
1	2	3	4
		29. Kjeldahl nitrogen	БДС EN 16169 (2,4,6)* БДС EN 25663 (1,3)*
V	Noise:		
		1 Equivalent noise level	БДС ISO 8297* ФМ 06/14:2014
		2 Total sound power level	БДС ISO 8297* ФМ 06/14:2014
VI	Sludge from sewage treatment plants (for agriculture)		
		1. Active reaction / pH	БДС EN 15933*
		2. Electroconductivity	БДС EN 13038*
		3. Polycyclic aromatic hydrocarbons /PAH/	БДС EN 16181**
		4. Polychlorinated biphenyls /PCB/	БДС EN 17322**
		5. Water content/ Moisture; Dry matter	БДС EN 15934 (method A)*
		6. Kjeldahl nitrogen	БДС EN 16169*
		7. Nitrogen ammonium	ФМ 05/14:2017
		8. Nitrate-Nitrogen	ФМ 05/14:2017
		9. Sulphates; Sulphates such as sulphur	ФМ 05/14:2017
		10. Calcium, magnesium, potassium, phosphorus - exchange forms	ФМ 15/18:2018
		11. Organic carbon content / Organic matter	БДС ISO 14235*
		12. Determination of metals and non-metals - extractable form - arsenic /As/, cadmium /Cd/, copper /Cu/, nickel /Ni/, lead /Pb/, zinc /Zn/, mercury /Hg /, chromium /Cr/, phosphorus /P/ phosphorus calculated as P ₂ O ₅ , potassium /K/ potassium /calculated as K ₂ O/, magnesium /Mg/, calcium /Ca/	БДС EN 16170*

Flexible scope:

* Implementing a new version of standards/documents or standards/ documents replacing them is allowed. An updated list of standards/documents and their dated versions is provided by CAB.

** Within its competence, the laboratory is authorized to determine all the characteristics (column 3) according to the marked test methods (column 4) belonging to the product group (column 2) after verification / validation, provision with CRM / RM and calibrated technical equipment's. The laboratory maintains a detailed, dated list of products and characteristics, belonging to the products and characteristics mentioned in the scope of accreditation products and characteristics.

Fixed scope references:

- ΦM 01/03 Method for determining the content of aerosol sulfuric acid in gases from sulfuric acid production and other production sources from 2013.
- ΦM 02/14 Stationary emission sources. Method for sampling and automatic determination of concentrations of total hydrocarbons, volatile organic compounds, total hydrocarbons expressed as total carbon, volatile organic compounds expressed as organic carbon from 2014.
- ΦM 03/14 Stationary emission sources. Method for sampling and automatic determination of concentrations of: O₂, NO, NO₂, NO_x, SO₂, CO, CO₂, HC, CH₄, H₂S, H₂, HCl, Cl₂, NH₃ and H₂O (humidity) in gases from 2016.
- ΦM 04/14 Method for determining the content of metals in emissions from stationary sources and immissions from 2016.
- ΦM 05/14 Spectrophotometric method for determining the content of components in water, soil, waste (liquid and solid), sludge, sediment and sludge from treatment plants (for agriculture) from 2017.
- ΦM 06/14 Methodology for determining the total acoustic power emitted into the environment by an industrial plant and determining the noise level at the point of impact from 2014.
- ΦM 07/15 Determination of cyanide content in waste gases from 2015.
- ΦM 08/16 Determination of formaldehyde content in emissions from stationary sources from 2016.
- ΦM 09/16 Determination of total hardness as the sum of calcium and magnesium by ICP-OES from 2016.
- ΦM 10/16 Determination of sulphates in water by FIA from 2016.
- ΦM 11/17 Determination of hexavalent chromium / Cr(VI) content in emissions from stationary sources from 2017.
- ΦM 12/17 Method for determining the content of amines and mercaptans in emissions from stationary sources from 2017.
- ΦM 13/17 Method for determination of pesticide content in emissions from stationary sources and emissions from 2017.
- ΦM 14/18 Method for determination of extractable substances in waters of 2018.
- ΦM 15/18 Determination of exchange / mobile / forms of metals in sludge from sewage treatment plants (for agriculture) from 2018.

To perform sampling of:

Type of the scope: <i>flexible for a part of the scope</i>		
№	Product	Sampling method (standardized / validated)
1	2	3
I.	Atmospheric air	
1	Atmospheric air – emissions	БДС 17.2.4.04*
2	Atmospheric air – emissions	БДС EN 13284-1 *
3	Atmospheric air – emissions	БДС ISO 9096 *
4	Atmospheric air – emissions	БДС EN 1911 *
5	Atmospheric air – emissions	БДС EN 14790*
6	Atmospheric air – emissions	ΦM 01/13:2013
7	Atmospheric air – emissions	ΦM 02/14:2014
8	Atmospheric air – emissions	ΦM 03/14:2016
9	Atmospheric air – emissions	ISO 10780*
10	Atmospheric air – emissions	БДС 17.2.4.09*
11	Atmospheric air – emissions	БДС 17.2.4.10 *
12	Atmospheric air – emissions	БДС 17.2.4.12 *
13	Atmospheric air – emissions	БДС EN ISO 23210*
14	Atmospheric air – emissions	БДС EN ISO 16911-1 *
15	Atmospheric air – emissions	БДС EN ISO 13199*

Type of the scope: *flexible for a part of the scope*

№	Product	Sampling method (standardized / validated)
1	2	3
16	Atmospheric air – emissions	БДС EN 15058*
17	Atmospheric air – emissions	БДС EN 1948-1*
18	Atmospheric air – emissions	БДС EN 1948-4+A1*
19	Atmospheric air – emissions	БДС EN 13211-(AC)*
20	Atmospheric air – emissions	БДС EN 14385*
21	Atmospheric air – emissions	ФМ 07/15:2015
22	Atmospheric air – emissions	СД CEN/TS 13649*
23	Atmospheric air – emissions	БДС EN ISO 21258*
24	Atmospheric air – emissions	ISO 11338-1*
25	Atmospheric air – emissions	ISO 15713*
26	Atmospheric air – emissions	БДС EN 14792*
27	Atmospheric air – emissions	БДС EN 14789 *
28	Atmospheric air – emissions	БДС EN 14791*
29	Atmospheric air – emissions	EPA 323*
30	Atmospheric air - immissions	БДС 17.2.5.01*
31	Atmospheric air - immissions	БДС 17.2.4.20*
32	Atmospheric air - immissions	БДС EN 12341*
33	Atmospheric air - immissions	БДС ISO 12884*
II.	Water:	
	Water - surface - Lakes and dams - Rivers and streams	БДС ISO 5667-4* БДС EN ISO 5667-6*
	Drinking water -for drinking purposes	БДС ISO 5667-5*
	Water - waste - Waste / Recycled - Boiler installations - Wet deposition	БДС ISO 5667-10* БДС ISO 5667-7* БДС ISO 5667-8*
	Marine water	БДС ISO 5667-9 *
	Groundwater	БДС ISO 5667-11*
	Water for industrial purposes	БДС EN 1008*
III.	Soils:	
1		БДС 17.4.5.01*
2		БДС ISO 18400 – 102*
3		БДС ISO 18400 – 104*
IV.	Waste (liquid and solid), eluates, sludges, sediments and treated biowaste (compost):	
1		СД CEN/TR 15310-2*
2		СД CEN/TR 15310-3*
3		СД CEN/TR 15310-4*
4		СД CEN/TR 15310-5*
5		БДС ISO 5667-12 *
6		БДС EN ISO 5667-13*
7		БДС ISO 5667-17*
8		БДС ISO 8213*

Type of the scope: <i>flexible for a part of the scope</i>		
№	Product	Sampling method (standardized / validated)
1	2	3
V	Sludge from sewage treatment plants (for agriculture)	
1		БДC EN 12579*
2		БДC EN ISO 5667-13*

Flexible scope: *Implementing a new version of standards/documents or standards/documents replacing them is allowed. An updated list of standards/documents and their dated versions is provided by CAB.*

Fixed scope references:

ФМ 01/03 Method for determining the content of aerosol sulfuric acid in gases from sulfuric acid production and other production sources from 2013.

ФМ 02/14 Stationary emission sources. Method for sampling and automatic determination of concentrations of total hydrocarbons, volatile organic compounds, total hydrocarbons expressed as total carbon, volatile organic compounds expressed as organic carbon from 2014.

ФМ 03/14 Stationary emission sources. Method for sampling and automatic determination of concentrations of: O₂, NO, NO₂, NO_x, SO₂, CO, CO₂, HC, CH₄, H₂S, H₂, HCl, Cl₂, NH₃ and H₂O (humidity) in gases from 2016.

ФМ 07/15 Determination of cyanide content in waste gases from 2015.

ФМ 08/16 Determination of formaldehyde content in emissions from stationary sources from 2016.

To perform calibrating of:

Type of the scope: <i>fixed</i>					
№	Measuring instrument	Measured value, unit of measure	Measurement range	Measurement uncertainty	Calibration method
1	2	3	4	5	6
1	Gas analyzers	Oxygen (O ₂) %	from 0 % to 25 %	2 %	КГ-PI-01-08 (2016)
		Carbon dioxide (CO ₂) %/ppm/ mg/Nm ³	from 0 % to 51 % from 0 ppm to 510000 ppm from 0 mg/Nm ³ to 1002150 mg/Nm ³	2 %	
		Hydrogen (H ₂) % / ppm / mg/Nm ³	from 0 % to 5 % from 0 ppm to 50 000 ppm from 0 mg/Nm ³ to 4450 mg/Nm ³	2 %	
		Nitrogen oxide (NO) ppm / mg/Nm ³	from 0 ppm to 5000 ppm from 0 mg/Nm ³ to 6695 mg/Nm ³	2 %	
		Nitrogen dioxide (NO ₂)	from 0 ppm to 2000 ppm	3 %	

Type of the scope: fixed

Nº	Measuring instrument	Measured value, unit of measure	Measurement range	Measurement uncertainty	Calibration method
1	2	3	4	5	6
		ppm / mg/Nm ³	from 0 mg/Nm ³ to 4100 mg/Nm ³		
		Sulphur dioxide (SO ₂) ppm / mg/Nm ³	from 0 ppm to 10000 ppm from 0 mg/Nm ³ to 28570 mg/Nm ³	2 %	
		Hydrogen sulphide (H ₂ S) ppm / mg/Nm ³	from 0 ppm to 2000 ppm from 0 mg/Nm ³ to 3042 mg/Nm ³	3 %	
		Ammonia (NH ₃) ppm / mg/Nm ³	from 0 ppm to 1000 ppm from 0 mg/Nm ³ to 760 mg/Nm ³	2 %	
		Carbon monoxide (CO) % / ppm / mg/Nm ³	from 0 % to 15 % from 0 ppm to 150000 ppm from 0 mg/Nm ³ to 187500 mg/Nm ³	2 %	
		Total hydrocarbons (HC) C _x H _y % / ppm / mg/Nm ³	from 0 % to 50 % from 0 ppm to 500000 ppm from 0 mg/Nm ³ to 980000 mg/Nm ³	2 %	
		Nitric oxide (N ₂ O) ppm mg/Nm ³	from 0 ppm to 1000 ppm from 0 mg/Nm ³ to 1960 mg/Nm ³	2 %	
2	Dust meters and flow meters for continuous measurement of gases	Dust: µg/Nm ³ mg/Nm ³	from 1 µg/m ³ to 2000 µg/m ³ from 0,3 mg/Nm ³ to 2000 mg/Nm ³	3,5 % 3,5 % (to 10 mg/Nm ³) 2,5 % (above 10 mg/Nm ³)	КПД-PI-01-15 (2015)
	Dust meters: Immissions(a) Emissions(b)				
	Flow meters:	Flow rate: Nm ³ /h	from 2 Nm ³ /h to 4000000 Nm ³ /h	2,0 %	
3	Hygrometers	Relative	from 11,0 % RH		KB-PI-01-13

Type of the scope: <i>fixed</i>					
Nº	Measuring instrument	Measured value, unit of measure	Measurement range	Measurement uncertainty	Calibration method
1	2	3	4	5	6
		humidity, % RH	to 12,0 % RH from 12,0 % RH to 99,0 % RH	1,2 % RH from 1,2 % RH to 2,4 % RH	(2015)
		Absolute humidity, %	from 0,3 % to 0,5 % from 0,5 to 40 %	from 0,03 % to 0,96 %	
4	Temperature measuring instruments				
4.1	Digital thermometers	Temperature °C	from 0 °C to 200 °C from 200 °C to 660 °C	from 0,2 °C to 0,6 °C from 0,6 °C to 2,5 °C	KT-PI-01-2016 (2016)
4.2	Resistance temperature transducers	Temperature °C	from 0 °C to 200 °C from 200 °C to 660 °C	from 0,1 °C to 0,4 °C from 0,3 °C to 2,5 °C	
4.3	Thermoelectric temperature converters (thermocouple)	Temperature °C	from 0 °C to 650 °C from 650 °C to 1200 °C	from 0,4 °C to 3 °C from 2 °C to 5 °C	

References:

КГ-PI-01-08 Method for calibration of gas analyzers from 2016.

КПД-PI-01-15 Method for calibration of dust meters and flow meters for continuous measurement of gases from 2015.

KB-PI-01-13 Method for calibration of humidity meters from 2015.

KT-PI-01-16 Methodology for calibration of temperature measuring instruments (digital thermometers, resistance temperature transducers, thermoelectric temperature transducers (thermocouples)) from 2016.

Notes:

1. The calibration of gas analyzers, dust meters at continuous measurement of gases and humidity meters can be carried out at the premises of the laboratory or on site at the client.
2. The calibration of flow meters at continuous measurement of gases is done only on site at the client.
3. The calibration of Digital thermometers, Resistance thermometers and thermocouples to 650 °C can be carried out at the premises of the laboratory or on site at the client, the calibration of thermocouples from 650°C to 1200°C is done only on site at the client.

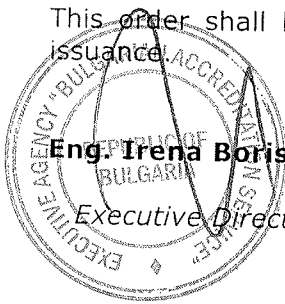
I ORDER

To issue the certificate of accreditation reg. № 5 ЛИК/29.03.2023, valid until 01.07.2025, and this order as an integral part of it.

The certificate of accreditation with the enclosure to be received at the office of EA BAS by the Manager/representative of Pehlivanov-Engineering Ltd, the head of Testing and calibration laboratory, Laboratory for Testing of Dust and Gas Emissions and Imissions, or other authorized person in the office of EA BAS.

Upon receipt of the certificate and the enclosure issued, the accredited person is obliged to return to EA BAS the originals of accreditation certificate № 5 ЛИК/01.07.2021, valid until 01.07.2025 and its enclosure – EA BAS order reg. № A 395/01.07.2021.

This order shall be notified to Pehlivanov-Engineering Ltd, within 3 (three) days from its issuance.



Eng. Irena Borislavova

Executive Director of EA BAS