On approval of the list of measurements related to state regulation

Unofficial translation

Joint order of the Minister of Justice of the Republic of Kazakhstan dated March 14, 2019 № 122 and the Minister of Industry and Infrastructure Development of the Republic of Kazakhstan dated March 18, 2019 № 150. Registered in the Ministry of Justice of the Republic of Kazakhstan on March 20, 2019 № 18403.

Unofficial translation

In accordance with subparagraph 2) of article 6-3 of the Law of the Republic of Kazakhstan dated June 7, 2000 "On ensuring the uniformity of measurements", **WE HEREBY ORDER**:

1. To approve the attached list of measurements related to state regulation.

2. The Department for organization of expert activities of the Ministry of Justice of the Republic of Kazakhstan, in the manner prescribed by the legislation of the Republic of Kazakhstan, to ensure:

1) state registration of this joint order;

2) within ten calendar days from the date of registration of this order, its sending in the Kazakh and Russian languages to the Republican state enterprise on the basis of the right of economic management “Republican Legal Information Center” for official publication and inclusion in the Reference Control Bank of regulatory legal acts of the Republic of Kazakhstan;

3) placement of this joint order on the Internet resource of the Ministry of Justice of the Republic of Kazakhstan.

3. The supervising deputy minister of justice of the Republic of Kazakhstan shall be authorized to oversee the execution of this joint order.

4. This joint order shall come into force on April 11, 2019 and shall be subject to official publication.

Minister of justice of the Republic of Kazakhstan _____ *M. Beketayev*

Minister of industry and infrastructure development of the Republic of Kazakhstan _____ *R. Sklyar*

Approved
by the joint order of the
Minister of justice of the Republic
of Kazakhstan dated
March 14, 2019 № 122
and Minister of industry and
infrastructure development of the

Republic of Kazakhstan dated
March 18, 2019 № 150

List of measurements related to state regulation

Footnote The list is in the wording of the joint order of the Minister of Justice of the Republic of Kazakhstan dated 17.02.2023 № 130 and Deputy Prime Minister - Minister of Trade and Integration of the Republic of Kazakhstan dated 20.02.2023 № 80-NK (effective ten calendar days after the date of its first official publication).

№	Name of measurements with indication of object and scope of application	Metrological requirements		Note
		Measurement range	Maximum permissible error or accuracy class	
1	2	3	4	5
1	Measurement of ambient equivalent dose of gamma and X-ray radiation during forensic examination of substances and materials	from 0,001 to 9999 mSv	± 15 %	
2	EDM of gamma and X-ray radiation during forensic examination of substances and materials	from 0,1 to 9999 μSv ·h^{-1}	± (15+2/N) %	
3	Measurement of betta particles flux density during forensic examination of substances and materials	from 1×10 to 1×10^5 particles. ·cm-1·min^{-1}	± (20+200/B) %	
4	Measurement of accumulation time of ambient equivalent dose of gamma and X-ray radiation during forensic examination of substances and materials	from 1 min to 100 h	± 1 min	
5	Measurement of distances between the investigated objects during forensic construction expertise	from 0,05 to 100 m	from 5 m: ±1,5 mm; over 5 м: ± (1,5+0,15 × (d·10^{-3} – 10)) mm;	

	and forensic fire-technical expertise		± (3,0+0,2 × (d·10^{-3} – 30)) mm	
6	Measurement of the size of defects of the investigated object during the forensic construction examination, forensic examination of substances and materials	from 0 to 6000 m	± (0,1+0,005 H) mm	
7	Measurement of the thickness of the investigated object during forensic transological examination, forensic ballistic examination, forensic commodity examination, forensic examination of documents, forensic fire and technical examination, forensic explosive and technical examination, forensic biological examination, forensic examination of substances and materials	from 0 to 25 mm	class of accuracy 2	
8	Measurement of the thickness of the protective layer of concrete during the forensic construction examination	from 5 to 90 mm	± (0,05 h_{pl} + 0,5) mm	
9	Measurement of the thickness of the investigated object during forensic examination of substances and materials	from 0,7 to 300,0 mm	under thickness from 0,7 to 3,0 mm ±(0,01X+0,1); under thickness from 3,01 to 99,99 mm ±(0,01X +0,05); under thickness from 100,0 to 300,0 mm ±(0,01X +0,1)	
	Measurement of dimensional characteristics of the investigated object during forensic examination of			

10	documents, forensic transological examination, forensic ballistic examination, forensic construction examination, forensic fire and technical examination, forensic explosive and technical examination, forensic examination of substances and materials and forensic medical examinations	from 0 to 1000 mm	± 0,1 mm	
11	Measurement of dimensional characteristics of the investigated object in the course of forensic construction expertise, forensic transological expertise, forensic ballistic expertise, forensic fire and technical expertise, forensic explosive and technical expertise, forensic examination of the circumstances of road accidents and vehicles, forensic environmental expertise	from 0 to 50000 mm	millimeter intervals - ± 0.2 mm; centimeter intervals - ± 0.3 mm; decimeter intervals - ± 0.4 mm; scale segment not less than 1 m - ± (0.4 + 0.2 · (L-1))	
12	Measurement of the number of organic substances in mixtures during forensic examination of narcotic drugs, psychotropic substances, their analogues and precursors, forensic examination of substances and materials	from 0,001 % to 100 %	RSD of output signal ± (0.2-10) %	
	Measurement of the number of organic substances in			

13	mixtures during forensic examination of narcotic drugs, psychotropic substances, their analogues and precursors, forensic examination of substances and materials	from $5 \cdot 10^{-12}$ to $1 \cdot 10^{-5}$ g	RSD of output signal ± (0,2-10) %	
14	Measurement of the number of microcomponents in alcohol-containing liquids, as well as in identification and quantitative studies of narcotic drugs	from 0,001 % to 100 %	± 1,5%	
15	Measurement of the number of high molecular weight organic substances in mixtures during forensic examination of substances and materials, chemical-toxic examination, forensic examination of narcotic drugs, psychotropic substances, their analogues and precursors	from 0,001 % to 100 %	RSD of output signal ± (0,2-10) %	
16	Measurement of the volume fraction of ethyl alcohol in the production of forensic commodity expertise, forensic examination of substances and materials	from 0 % to 100 %	± 0,5 %	
17	Measurement of density of liquids and solutions during forensic examination of substances and materials	from 700 to 1840 kg/m^3	± 1 kg/m^3	
	Determination of elemental composition of aqueous solutions			

18	and materials during forensic examination of substances and materials	from 165 to 900 nm	CKO ± 2 %	
19	Measurement of the amount of fluid in the production of forensic examinations and specialized studies	from 1 to 5 ml	± 1%	
20	Measurement of the amount of fluid in the production of forensic examinations and specialized studies	from 20 to 200 ml	± 1 %	
21	Measurement of the amount of fluid in the production of forensic examinations and specialized studies	from 0,5 to 10 µL	± (1-8) %	
22	Measurement of the mass of the investigated object during the forensic examination of substances and materials, forensic examination of narcotic drugs, psychotropic substances, their analogues and precursors, forensic transological examination, forensic commodity examination, forensic fire and technical examination, forensic explosive and technical examination	from 0,01 to 1500 g	high accuracy class	
	Measurement of the mass of the investigated object during forensic examination of substances and materials, forensic examination of narcotic drugs, psychotropic			

23	substances, their analogues and precursors, forensic transological examination, forensic ballistic examination, forensic biological examination, forensic explosive and technical examination, forensic environmental examination	from 0,0001 to 210 g	special accuracy class	
24	Measurement of the mass of the investigated object during forensic examination of narcotic drugs, psychotropic substances, their analogues and precursors, forensic commodity expertise, forensic examination of substances and materials, forensic biological expertise, forensic explosive-technical expertise, forensic fire-technical expertise	from 0,02 to 30 kg	average accuracy class	
25	Measurement of the mass of the investigated object during medical and forensic examination	from 0,1 to 5000 g	high accuracy class	
26	Measurement of the mass of the investigated object during the forensic medical examination based on the materials of criminal, civil and administrative cases, corpses, victims, accused and other individuals	from 0,001 to 1000 g	high accuracy class	
	Measurement of the mass of the investigated object			

27	during the forensic explosion-technical examination	from 0,1 to 100 kg	average accuracy class	
28	Measurement of the quantitative content of sugars in liquids during the forensic examination of materials and substances	from below 60 to 140 °S	± 0,05 °S	
29	Measurement of liquid volume during forensic examination of narcotic drugs, psychotropic substances, their analogues and precursors, forensic molecular genetic examination, medical-forensic and chemical-toxicological examinations	from 0.5 to 10 µL	± (1-8) %	
30	Measurement of liquid volume during forensic examination of narcotic drugs, psychotropic substances, their analogues and precursors, forensic molecular genetic examination, medical-forensic and chemical-toxicological examinations	from 10 to 100 µL	± (0,5-2,5) %	
31	Measurement of liquid volume during forensic examination of narcotic drugs, psychotropic substances, their analogues and precursors, forensic molecular genetic examination, medical-forensic and chemical-toxicological examinations	from 20 to 200 µL; from 30 to 300 µL	± (0,5-2,0) %	
	Measurement of the volume of liquid during the forensic examination of			

32	substances and materials and specialized studies, forensic examination of narcotic drugs, psychotropic substances, their analogues and precursors, forensic molecular genetic examination, forensic commodity examination, medical-forensic and chemical toxicological examinations	(100 - 1000) µL (500-5000) µL	± (0,5- 1,5) %	
33	Measurement of the melting point of pure substances during forensic examination of substances and materials	from 0 °C to 400 °C	± 1,0 °C	
34	Measurement of temperature of objects and liquids during forensic examination of substances and materials	From below 20 ºC to 120 ºC	accuracy class 1	
35	Measurement of steady-state deceleration during forensic examination of the circumstances of road accidents and vehicles	from 0 to 9,81 m/s^2	± 4 %	
36	Measurement of pedal pressure during forensic examination of the circumstances of road accidents and vehicles	from 98 to 980 H	± 5 %	
37	Measurement of time interval during forensic video phonographic examination	from 0 s to 30 min	accuracy class 3	
38	Measurement of cellular concrete	from 0,1 to 2,0 kN	± 2 %	

	strength during construction forensic examination	from 0,5 to 8,0 MPa		
39	Measurement of concrete strength during construction forensic examination	from 3 to 100 MPa	± 8 %	
40	Measurement of amplitude and frequency of variable electrical signals for personal identification and identification of signs of recording installation during forensic video-phonographic examination	from 20 to 20000 Hz	± 0,0005 %	
41	Measurement of the pH value of the investigated object during forensic biological, forensic and chemical-toxicological examinations	from 0 to 14 pH	± 0,03 pH	
42	Measurement of cloud and solidification temperature of substances during forensic examination of substances and materials	From below 80 °C to 50 °C	± 3 °C	
43	Measurement of the limit temperature of filterability of substances during forensic examination of substances and materials	From below 70 °C to 50 °C	± (0,5-1) °C	
44	Determination of elemental composition of analysed objects during forensic examination of substances and materials	from Na (11) to U (92)	RSD ± 5 %	
	Measurement of optical transmission			

45	spectra, reflections of test samples in the infrared range during analysis of organic and inorganic substances during forensic examination of substances and materials	from 370 to 9000 cm^{-1}	± (0,01-0,25) cm^{-1}	
46	Measurement of the transmittance and absorbance of the test samples in the ultraviolet and visible regions during the analysis of organic and inorganic substances during the forensic examination of substances and materials	from 198 to 1000 nm; (0-99,9) % T	±8 nm; ±2 % T	
47	Measurement of ethanol concentration in the production of forensic biological, medical-forensic and chemical-toxicological expertise	from 0,1 to 0,5 mg/l; from 0,5 to 5 mg/l	± 0,05 mg/l; 10 %	
48	Determination of the content of oil and petroleum products in soil samples during forensic examination of substances and materials	from 0 to 100 mg/ dm^3	± 10 %	
49	Measurement of dynamic and kinematic viscosity of oil and petroleum products during forensic examination of substances and materials	from 6·10-7 to 3·10-2 m^2/s	± (0,5-1) %	
50	Measurement of the total acid, base, iodine number in oil and petroleum products during forensic examination of substances and materials	From below 20 to 20 pH from 0 to 14 pH	± 0,05 pH	

51	Measurement of water content in oil and petroleum products during forensic examination of substances and materials	from 0 to 100 %	± 3 %	
52	Measurement of the mass fraction of sulphur in petroleum products during forensic examination of substances and materials	from 0 to 5.0% limit of detection 0.0001%	RSD of output signal 1 %	
53	Measurement of the mass fraction of chlorine in petroleum products during forensic examination of substances and materials	from 0 to 1.0% detection limit 0.5 mg/kg	RSD of output signal 2 %	
54	Measurement of refractive index of anti-icing fluids during forensic examination of substances and materials	(1,30 – 1,72) N_d	± 0,00005 N_d	
55	Measurement of humidity of the investigated object in the course of construction forensic examination, forensic examination of substances and materials	from 4 % to 35 %	± (1,5-3,0) %	
56	Measurement of detonation resistance of petroleum products during forensic examination of substances and materials	from 70 to 98 ед. uON	± 1,5 uON	
	Measurement of ambient temperature during forensic examination of substances and materials, forensic examination of narcotic drugs,			

57	psychotropic substances, their analogues and precursors, forensic molecular genetic examination, forensic biological, medical-forensic and chemical-toxicological examinations	from below 40 °C to 85 °C	± 0,5 °C	
58	Measurement of the relative humidity of the ambient air during the forensic examination of substances and materials, forensic examination of narcotic drugs, psychotropic substances, their analogues and precursors, forensic molecular genetic examination, forensic biological, medical-forensic and chemical-toxicological examinations	from 5 % to 90 %	± 3,0 %	
59	Measurement of atmospheric pressure during forensic examination of substances and materials, forensic examination of narcotic drugs, psychotropic substances, their analogues and precursors, forensic molecular genetic examination, forensic biological, medical-forensic and chemical-toxicological examinations	(80 – 110) kPa	± 1 kPa	

Note:

mSv - millisievert;

EDR - ambient equivalent dose rate of gamma and X-ray radiation;

μSv· h-1 - micro-Sievert per hour;

N is a dimensionless value numerically equal to the measured EDR value in m3v/h-1;

B - dimensionless value numerically equal to the measured density value

betta particle flow in cm-1·min-1;

d - measured distance, mm;

part cm-1· min-1 - particle per centimetre minus the first degree per minute minus the first degree;

h - hour;

min - minute;

s - second;

m - meter;

mm - millimetre;

mm - micrometre;

nm - nanometre;

m/s2 - meter per second squared;

m2/s - meter squared per second;

kg - kilogram;

high accuracy class - Interstate standard (hereinafter referred to as the State standard) 24104-2001

"Laboratory scales. General technical requirements ";

special accuracy class - State standard 24104-2001 "Laboratory scales.

General technical requirements ";

average accuracy class - State standard 24104-2001 "Laboratory scales. General technical requirements ";

accuracy class 1 - State standard 16920-93 "Thermometers and temperature transducers manometric. General technical requirements and test methods ";

accuracy class 2 - State standard 166-89 "Calipers. Specifications ";

accuracy class 3 - second scale capacity - 60 s, division value - 0.2 s;

capacity of minute scale - 30 min, division value - 1 min;

g - gram;

mg - milligram;

mg/kg - milligram per kilogram;

kg/m3 - kilogram per meter in cubic meters;

ml - millilitre;

µL - microliter;

mg/l - milligram per litre;

h_{pl} - measured thickness of the protective concrete layer;

X - thickness of the test object;

L - the number of full and incomplete meters in the segment;

° S - sugar degree;
° C - degree Celsius;
N - numerical value of measured depth of defect occurrence (item 6);
N - Newton (p. 13);
kN - kiloNewton;
MPa - megapascal;
kPa - kilopascal;
Hz - hertz;
Nd is the refractive index value measured on the yellow sodium line;
T - transmittance;
pX (pH) - index of activity of ions (hydrogen) in the solution;
RSD - relative mean-square deviation;
uON – unit of octane number