附件 4

Integrate Emission Standard of Air Pollutants from Stationary Sources （DB31/933-2015 revised）

1. Background

The emission standard of air pollutants from stationary sources (DB31/933-2015) was issued by Shanghai Government in 2015. The regulation pushed the VOCs Treatment of manufacturers of stationary sources in Shanghai.

According the current environment policy and environmental management requirement, the regulation need to be revised for the air pollution control. The purpose of the revised regulation is to improve the effectiveness of air pollution control measure and promote the sustainable development of industries.

Now, the regulation document was drafted and listening to the comments from public, company, association and professional experts .

2. Scope of Application

This document specifies the requirements for the control, monitoring, and supervision of atmospheric pollutant emissions from stationary source in Shanghai.

It applies to the management of atmospheric pollutant emissions from existing stationary sources in Shanghai, as well as to the environmental impact assessments, environmental protection facility designs, completion environmental protection acceptance, issuance of emission permits, and post-production management of atmospheric pollutant emissions for construction projects.

3. Scope of Application

3.1 The emission limit from stacks is required to complied with the concentration and emission rate as shown in Table 1 and Table2. In order to control fugitive emission of VOCs (volatile organic compounds), the limit monitored within factory is upgraded based on the emission standards from China Ministry of Ecology and Environment as shown in Table 3.

3.2 Some requirement for operation , management and monitoring are also proposed and optimized. The basic requirements are same as the previous version in 2015.

Some details are added in this version like how to evaluate the compliance of operation and treatment. Please read the document as attached in the public comment documents.

Table 1 Maximum Allowable Emission Limits for Basic Air Pollutants

Serial Number	Pollutant Item		Maximum Allowable Emission Concentration mg/m^3	Maximum Allowable Emission Rate kg/h	Pollutant Emission Monitoring Location
1	Particulate Matter	Asbestos fibers and dust	1.0 or 1 fiber/cm^3	0.36	Exhaust pipes from workshops or production facilities
		Carbon black dust, dye dust, pigment dust, pharmaceutical dust, pesticide dust, wood dust	15	0.36 [a]	
		Silica dust, glass wool, slag wool, rock wool dust, resin dust (paint mist), rubber dust, organic fiber dust, welding fumes, ceramic fibers	20	0.80	
		Asphalt smoke	20	0.11	
		Other particulate matter	20	1.5	
2	Smoke Density (Ringelmann, Grade)		1	/	
3	Sulfur Dioxide	Combustion (incineration, oxidation) equipment, stationary internal combustion engines, engine manufacturing testing processes, etc.	100	//	
		Other sources	200	1.6	
4	Nitrogen Oxides	Combustion (incineration, oxidation) equipment, stationary internal combustion engines, engine manufacturing testing processes	150	/	
		Nitrogen fertilizers, explosives, and ammonia preparation	300	0.47	
		Other sources	100	0.47	
5	Carbon Monoxide		1000	/	
6	Hydrochloric Acid		10	0.18	
7	Benzene		1	0.1	
8	Toluene		10	0.2	
9	Xylene		20	0.8	
10	Aromatic Compounds		40	1.5 [b]	
11	Non-Methane Hydrocarbons（NMHC）		60	2.0 [b]	
12	TVOC [c]		80	3.0 [b]	

[a]：When the pollutant control facility for carbon black dust achieves a removal efficiency of ≥95%, it is considered equivalent to meeting the maximum allowable emission rate limit.

[b]：When the VOCs treatment facility achieves a removal efficiency of ≥90%, it is considered equivalent to meeting the maximum allowable emission rate limit.

[c]：To be implemented after the national pollutant monitoring method standards are published.

Table 2 Maximum Allowable Emission Limits for Characteristic Items of Air Pollutants

Serial Number	Pollutant Item	Maximum Allowable Emission Concentration (mg/m^3)	Maximum Allowable Emission Rate (kg/h)	Pollutant Emission Monitoring Location
1	Polychlorinated Dibenzo-p-Dioxins	0.1 ng-TEQ/m^3	/	
2	Polychlorinated Dibenzofurans	0.1 ng-TEQ/m^3	/	
3	Benzo[a]pyrene	0.0003	0.000036	
4	Beryllium and its compounds (as Be)	0.01	0.00073	
5	Mercury and its compounds (as Hg)	0.01	0.001	
6	Thallium and its compounds (as Tl)	0.2	0.001	
7	Lead and its compounds (as Pb)	0.5	0.0025	
8	Arsenic and its compounds (as As)	0.5	0.011	
9	Cadmium and its compounds (as Cd)	0.5	0.036	
10	Chromium and its compounds (as Cr)	1	0.025	
11	Tin and its compounds (as Sn)	5	0.22	
12	Nickel and its compounds (as Ni)	1	0.11	
13	Manganese and its compounds (as Mn)	5	0.22	
14	Chromium acid mist	0.05	0.005	
15	Arsine [a]	1.0	0.0036	
16	Phosphine [a]	1.0	0.022	
17	Phosgene	1.0	0.10	
18	Hydrogen cyanide [a]	1.0	0.073	
19	Hydrogen cyanide	1.0	0.11	
20	Fluorides	5.0	0.073	
21	Chlorine gas	3.0	0.36	
22	Hydrogen bromide	5.0	0.144	
23	Sulfuric acid mist	5.0	1.1	
24	Phosphoric acid mist [a]	5.0	0.55	
25	Nitric acid mist [a]	10	1.5	
26	Alkali mist	10	/	
27	Oil mist	5	/	
28	Formaldehyde	5	0.10	
29	Epichlorohydrin [a]	5	0.10	
30	1,3-Butadiene	5	0.36	
31	1,2-Dichloroethane	5	0.48	
32	Acrylonitrile	5	0.30	
33	Vinyl chloride	5	0.55	
34	Acrylamide	5	0.1	
35	Methyl bromide [a]	20	0.1	

36	Ethyl bromide [a]	1	0.025	
37	Epichlorohydrin [a]	5	0.1	
38	Trichloroethylene	20	0.5	
39	Epichlorohydrin [a]	5	0.6	
40	Acrolein	16	0.36	
41	Acetaldehyde	20	0.036	
42	Phenols	20	0.073	
43	Nitrobenzenes	10	0.036	
44	Anilines	20	0.36	
45	Chloromethanes	20	0.45	
46	Chlorobenzenes	20	0.36	
47	Methanol	50	3.0	
48	Acetonitrile [a]	20	2.0	
49	Toluene Diisocyanate (TDI) [b]	1	0.1	
50	Diphenylmethane diisocyanate (MDI) [b]	1	0.1	
51	Isophorone Diisocyanate (IPDI) [b]	1	0.1	
52	Vinyl Acetate	20	0.5	
53	Ethyl Acetate	40	0.8	
54	Butyl Acetate	40	0.8	
55	Acrylic Acid	20	0.5	
56	Acrylic Esters [a]	50	1.0	
57	Methyl Methacrylate	20	0.6	
58	Dichloromethane	20	0.45	
59	Trichloromethane	20	0.45	
60	Carbon Tetrachloride	20	0.45	
61	Tetrachloroethylene	80	2	
62	Other Pollutants	Appendix A	---	

[a]: To be implemented after the national pollutant monitoring method standards are published.

[b]: Temporary analysis shall be conducted in accordance with GBZ/T 160.67. Implementation shall follow national analysis method standards once they are issued for pollutant monitoring.

Table 3 Fugitive Emission Monitoring Limits for VOCs Inside the Factory Area

Pollutant Item	Monitoring Point Limit，mg/m^3	Limit Meaning	Fugitive Emission Monitoring Location
NMHC	6	1 hour average concentration value at the monitoring point	Monitoring points located outside the factory building
	20	Monitoring points located outside the factory building	