

Attachment 1: Stack emissions monitoring

Note: This relates to emissions from point sources, not ambient air monitoring.

Parameter monitored (e.g. NO_x, SO₂, dust)	Standard methodology used (EN or ISO standards preferred)	Emission point (e.g. scrubber, boiler)	Detection limit (include units)	Is this company accredited for this test?
Determination of Oxygen	EN 14789:2006	All type chimneys	0.1%	Yes
Determination of water vapour	EN 14790:2006	All type chimneys	/	Yes
Determination of flow, velocity, temperature, pressure, humidity vapour	UNI 10169:2001	All type chimneys	T: 01 °C P:1 mBar V: 1 m/s RH: 0.5 g/Nm ³	Yes
Determination of flow and velocity	EN ISO 16911-1:2013	All type chimneys	V: 1 m/s	Yes
Determination of the mass concentration of carbon monoxide (CO). Reference method: non-dispersive infrared spectrometry	UNI EN 15058:2006	All type chimneys	1 mg/Nm ³	Yes
Determination of mass concentration of nitrogen oxides (NO _x). Reference method: Chemiluminescence	UNI EN 14792:2006	All type chimneys	1mg/Nm ³	Yes
Determination of mass concentration of sulphur dioxide (SO ₂)	UNI EN 14791:2006	All type chimneys	1mg/Nm ³	Yes
*Quality Assurance of automated measuring system: AST, QAL2, Linearity"	UNI CEN/TS 14181:2015	All type chimneys	N.A.	Yes
Sampling for the determination of dioxins and furans	UNI EN 1948-1:2006	All type chimneys	/	Yes
*Determination of dioxins and furans	UNI EN 1948-1:2006	/	0.01ng/Nm ³	Yes
Sampling for the determination of polycyclic aromatic hydrocarbons (PAHs)	ISO 11338-1:2003	All type chimneys	/	Yes
*Determination of polycyclic aromatic hydrocarbons (PAHs)	ISO 11338-1:2003	/	0.00001 mg/Nm ³	Yes
Sampling for the	UNI EN 1911:2010	All type		Yes

determination of hydrochloric acid (HCl)		chimneys		
*Determination of hydrochloric acid (HCl) and hydrofluoric acid (HF)	DM 25/8/2000 All. 2	All type chimneys	0.1mg/Nm ³	Yes
*Determination of hydrochloric acid (HCl) and hydrofluoric acid (HF)	UNI EN 1911:2010 and DM 25/8/2000 All. 2	/	0.01mg/Nm ³	Yes
Sampling for the determination of Chromium VI (Cr ⁺⁶)	EPA 306:2014	All type chimneys	0.002 mg/Nm ³	Yes
*Determination of Chromium VI (Cr ⁺⁶)	EPA 306:2014	/		
Sampling for the determination of volatile organic compounds: acetone, toluene, hexane, pentane, o-xylene, m-p-xylene, trichloroethylene, 1,1,1-trichloroethane, 4-metil-2-pentane, tetrachloroethylene, ethylacetate, 1-butanol, 2-butanone, dichloromethane, styrene, 2-Butanol	UNI CEN / TS 13649:2015 (sampling)	All type chimneys		Yes
* Determination of volatile organic compounds: acetone, toluene, hexane, pentane, o-xylene, m-p-xylene, trichloroethylene, 1,1,1-trichloroethane, 4-metil-2-pentane, tetrachloroethylene, ethylacetate, 1-butanol, 2-butanone, dichloromethane, styrene, 2-Butanol	UNI CEN / TS 13649:2015	/	0.03 mg/Nm ³	Yes
Sampling for the determination of mass concentration of dust	EN 13284-1:2003	All type chimneys		Yes
*Determination of	EN 13284-1:2003	/	0.1 mg/Nm ³	Yes

mass concentration of dust				
TOC (Gaseous and vaporous organic substances expressed as TOC)	UNI – EN 12619:2002	All type chimneys	0.1 mg/Nm ³	Yes
Sampling for determination of hydrogen sulphide (H ₂ S)	Unichim Method No. 634:1984	All type chimneys		Yes
*Determination of hydrogen sulphide	Unichim Method No. 634:1984	/	0.1 mg/Nm ³	Yes
Determination of carbon oxide (CO), carbon dioxide (CO ₂), nitrogen monoxide (NO), nitrogen oxides (NO _x), nitrogen dioxide (NO ₂), sulfur dioxide (SO ₂)	ISO 11042-1:1996	All type chimneys	1mg/Nm ³	Yes
Sampling of ammonia (NH ₃)	Unichim Method n°632:1984 (sampling)	All type chimneys	/	Yes
*Determination of ammonia (NH ₃)	Unichim Method n°632:1984 (sampling)	/	0,1 mg/Nm ³	Yes
Sampling for determination of Pd, Cd, As, Ni, Cu, Mn, Ti, Sb, V, Co and Cr	EN 14902:2005 + EC 1-2008	All type chimneys		Yes
*Determination of Pd, As, Ni, Cu, Mn, Sb, V, Co and Cr	UNI EN 14385-1:2004	/	0,0005 mg/Nm ³	Yes
*Determination of Cd and Tl	UNI EN 14385-1:2004	/	0,00005 mg/Nm ³	Yes
Sampling for determination of Hg	UNI EN 13211:2003	All type chimneys		No
*Determination of Hg	UNI EN 13211:2003		0,0001mg/Nm ³	No
Sampling for determination of HF	ISO 15713	All type chimneys		Yes
*Determination of HF	ISO 15713		0.01 mg/Nm ³	Yes