
SOCIALIST REPUBLIC OF VIETNAM

# QCVN 19: 2009/BTNMT

## *National Technical Regulation on Industrial Emission of Inorganic Substances and Dusts*

**HÀ NỘI - 2009**

## Foreword

QCVN 19: 2009/BTNMT was complied by Drafting Committee of national technical regulations on water quality, submitted by Vietnam Environment Administration and Department of Legislation and promulgated in line with Circular No. 25/2009/TT-BTNMT dated November 16, 2009 issued by Ministry of Natural Resource and Environment.

*National Technical Regulation on Industrial Emission of Inorganic Substances and Dusts*

# 1. GENERAL PROVISIONS

## 1.1. Scope of regulation

This technical regulation stipulates max allowable concentration of dusts and inorganic substances entered into ambient air

## 1.2. Subject of application

This regulation applies to individuals and organizations carrying out activities related to the sending of the industrial emission containing dusts and inorganic substance into ambient air

Emission of some industries and field of particular activities shall be regulated separately

## 1.3. Interpretation of terms

In this regulation, the terms below are construed as follows:

1.3.1. Industrial emission means combination of matter components discharged into atmosphere from chimney, smoke stack of industrial manufacturing, processing, trading and servicing premises.

1.3.2. Dust means small solid particles, conventionally taken as those particles below 75$\mu$m in diameter, which settle out under their own weight but which may remain suspended for sometime [according to TCVN 5966:2009 (ISO 4225-1994)].

1.3.3. Standard emission cubic meter ($Nm^3$) means cubic meter of emission at temperature of $25^0C$ and absolute pressure of 760 mm of the mercury.

1.3.4. Kp means flow rate coefficient of emission source corresponding to total emission flow rate of industrial manufacturing, processing, trading and servicing premises

1.3.5. Kv means coefficient of region or area corresponding to location where industrial manufacturing, processing, trading and servicing premises discharges into ambient air

1.3.6. P ($m^3$/h) means total emission flow rate of chimney, smock stacke of industrial manufacturing, processing, trading and servicing premises

## 2. TECHNICAL REGULATION

**2.1.** Max allowable concentration of dust and inorganic substances in industrial emission is calculated by the fomula below:

$$Cmax = C \times Kp \times Kv$$

where:

- Cmax is max allowable concentration of dust and inorganic substance in industrial emission, calculated in miligram per standard emission cubic meter (mg/$Nm^3$);

- C is concentration of dust and inorganic substance stipulated at section 2.2

- Kp is flow rate coefficient of emission source situplated at section 2.3;

- Kv is coefficient of region or area stipulated at section 2.4.

**2.2.** Concentration C of dust and inorganic substance being the basis for calulcation of max allowable concentration of dust and inorganic substances in industrial emision is stipulated at the table No. Below:

**Table 1 - Concentration C of dust and inorganic substance being the basis for calulcation of max allowable concentration in industrial emision**

| TT | Thông số | **Nồng độ C** (mg/$Nm^3$) | |
|---|---|---|---|
| | | A | B |
| 1 | Fume and dust | 400 | 200 |
| 2 | Dust containing silic | 50 | 50 |
| 3 | Ammoniac and its compounds | 76 | 50 |
| 4 | Antimon and its compounds, as Sb | 20 | 10 |
| 5 | Arsenic and its compounds, as As | 20 | 10 |
| 6 | Cadmium and its compounds, as Cd | 20 | 5 |
| 7 | Lead and its compounds, as Pb | 10 | 5 |
| 8 | CO | 1000 | 1000 |
| 9 | Chloride | 32 | 10 |
| 10 | Copper and its compounds, as Cu | 20 | 10 |
| 11 | Zinc and its compounds, as Zn | 30 | 30 |
| 12 | HCl | 200 | 50 |

| | | | |
|---|---|---|---|
| 13 | Flo, HF, or inorganic compounds of Flo, as HF | 50 | 20 |
| 14 | $H_2S$ | 7,5 | 7,5 |
| 15 | $SO_2$ | 1500 | 500 |
| 16 | $NO_x$, as $NO_2$ | 1000 | 850 |
| 17 | $NO_x$ (acid manufacturers), as $NO_2$ | 2000 | 1000 |
| 18 | Vapor of $H_2SO_4$ or $SO_3$, as $SO_3$ | 100 | 50 |
| 19 | Vapor of $HNO_3$ (other sources), as $NO_2$ | 1000 | 500 |

Where:

- Column A stipulates concentration C of dust and inorganic substance being the basis for calculation of max allowable concentration in industrial emission of industrial manufacturing, processing, trading and servicing premises having operated before January 16, 2007 with period of application being up to December 31, 2014

- Column B stipulates concentration C of dust and inorganic substance being the basis for calculation of max allowable concentration in industrial emission of:

+ Industrial manufacturing, processing, trading and servicing premises having operated since January 16, 2007

+ All Industrial manufacturing, processing, trading and servicing premises operating as of January 01, 2015

**2.3.** Flow rate coefficient of emission source Kp is stipulated at table No. 12 below:

**Table No. 2:** Flow rate coefficient of emission source Kp

| Flow rate of emission source ($m^3$/h) | coefficient **Kp** |
|---|---|
| P ≤ 20.000 | 1 |
| 20.000 < P ≤ 100.000 | 0,9 |
| P>100.000 | 0,8 |

**2.4.** Coefficient of region and area Kv is stipulated at the table No. 3 below:

**Table No. 3:** Coefficient of region and area Kv

| **Classification of area and region** | **Coefficient Kv** |
|---|---|

| | | |
|---|---|---|
| Class 1 | Interior of special class city [(1)] and class I city [(1)]; special-use forest [(2)]; ranked natural heritage and cultural and historical vestige[(3)]; industrial manufacturing, processing, trading, servicing premises and other industrial activities less than 2 km far from the boundary of these areas | 0,6 |
| Class 2 | Interior of city and town at class II, III, IV [(1)]; suburb of special class and class I city which equal to or above 02 km far from the interior thereof; industrial manufacturing, processing, trading, servicing premises and other industrial activities less than 2 km far from the boundary of these areas | 0,8 |
| Class 3 | Industrial park, city at class V [(1)];; suburb of city and town at class II, III, IV which equal to or above 02 km far from the interior thereof; industrial manufacturing, processing, trading, servicing premises and other industrial activities less than 2 km far from the boundary of these areas[(4)] . | 1,0 |
| Class 4 | Rural area | 1,2 |
| Class 5 | Mountainous rural area | 1,4 |

***Remark:***

[(1)] City defined according to stipulations of the Goverment's Decree No. 42/2009/NĐ-CP dated May 07, 2009 on the grading of urban centers;

[(2)] Special-use forest defined according to Law on forest protection and development dated December 14, 2004 including: National park, Nature conservation zones; lanscape protection areas; specific research and experiment forest;

[(3)] Natural heritage and cultural and historical vestige established and ranked according to decision of UNESCO or the prime Minister or Ministries which take prime responsibility for management

[(4)] In the case that emission source less than 02 km far from at least 02

areas or regions upward the smallest coefficient Kv binding to the region and area shall be applied

(5) The distance stipulated at the table No. 3 is calculated from the emission source.

## 3. METHOD OF DETERMINATION

**3.1.** Method for determination of concentration of dust and inorganic substances in industrial emission of industrial manufacturing, processing, trading and servicing primeses and other industrial activities is carried out in accordance with national standards below:

- TCVN 5977:2005 Stationary source emission - Determination of concentration and flow rate of dust in gas carrying ducts - Manual weighing method
- TCVN 6750:2005 Stationary source emission - Determination of the mass concentration of sulfur dioxide - Performance characteristics of automated measuring methods
- TCVN 7172:2002 Stationary source emission - Determination of the mass concentration of nitrogen oxides - Naphthylethylenediamine photometric method.
- TCVN 7242:2003 Health care solid waste incinerator. Determination method of carbon monoxide concentration (CO) in fluegas;
- TCVN 7243:2003 Health care solid waste incinerator. Determination method of Hydrofluoric acid concentration (HF) in fluegas
- TCVN 7244:2003 Health care solid waste incinerator. Determination method of Hydrochloric acid concentration (HCl) in fluegas

**3.2**. When standards for determination of concentration of dust inorganic substance in industrial emission stipulated in this regulation is not available , international standard with accuracy being corespondent or higher shall be applied

## 4. ORGANIZATION OF IMPLEMENTATION

**4.1.** This techinical regulation supersedes the application of Vietnamese standard TCVN 5940:2005 on Air quality – Idnustrial emission standard for dust and inorganic substances enclosed with Decision No. 22/2006/QĐ-

BTNMT of Minister of Natural Resource and Environment dated December 18, 2006 on compulsory application of Vietnamese environmental standards

**4.2.** State environemnt management agencies take responsibility for guiding, inspecting and supervising the implementation of this technical regulation.

**4.3.** In the case that national standard on method of determination referred to in the section 3.1 are amended, supplemented or replaced, the new standard shall be applied