



VIETNAM NATIONAL STANDARD

TCVN 5502: 2003

First Revision

DOMESTIC SUPPLY WATER. QUALITY REQUIREMENTS

(This translation is for reference only)

HA NOI - 2008

Foreword

TCVN 5502:2003 replaces TCVN 5502:1991.

TCVN 5502:2003 was prepared by Technical Committee TCVN/TC 47/SC 1 Chemical products, proposed by Directorate for Standards, Metrology and Quality and promulgated by Ministry of Science and Technology.

TCVN 5502:2003 was converted from Vietnam Standard under the same number into Vietnam National Standard with the regulation specified in Clause 1, Article 69 of the Law on Standards and Technical Regulations and Clause 1, Article 6 of Decree No. 127/2007/ND-CP dated 1/8/2007 of the Government detailing the implementation of a number of articles of the Law on Standards and Technical Regulations.

DOMESTIC SUPPLY WATER. QUALITY REQUIREMENTS**1. Scope**

This standard gives quality requirements for treated water, after distribution systems, for domestic use. Hereafter called domestic supply water.

2. Normative references

TCVN 5499:1995 Water quality. Winkler method for determination of dissolved oxygen

TCVN 5991:1995 (ISO 566-3:1984) Water quality. Determination of total mercury by flameless atomic absorption spectrometry. Method after digestion with bromine

TCVN 6002:1995 (ISO 6333:1986) Water quality. Determination of manganese. Formaldoxime spectrometric method

TCVN 6177:1996 (ISO 6332:1988) Water quality. Determination of iron. Spectrometric method using 1,10-phenantroline

TCVN 6178:1996 (ISO 6777:1984) Water quality. Determination of nitrite. Molecular absorption spectrometric method

TCVN 6180:1996 (ISO 7890-3:1988) Water quality. Determination of nitrate. Spectrometric method using sulfosalicylic acid

TCVN 6181:1996 (ISO 6703-1:1984) Water quality. Determination of total cyanide

TCVN 6185:1996 (ISO 7887:1985) Water quality. Examination and determination of colour

TCVN 6187-1:1996 (ISO 9308/1:1990) Water quality. Detection and enumeration of coliform organisms thermotolerant coliform organisms and presumptive *Escherichia coli*. Part 1: Membrane filtration method

TCVN 6193:1996 (ISO 8288:1986) Water quality. Determination of cobalt nickel, copper, zinc, cadmium, and lead. Flame atomic absorption spectrometric methods

TCVN 6194:1996 (ISO 9297:1989) Water quality. Determination of chloride. Silver nitrate titration with chromate indicator (Mohr's method)

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TCVN 6195:1996 (ISO 10359-1:1992) Water quality. Determination of fluoride. Part 1: Electrochemical probe method for potable and lightly polluted water

TCVN 6222:1996 (ISO 9174:1990) Water quality. Determination of total chromium. Atomic absorption spectrometric methods

TCVN 6224:1996 (ISO 6059:1984) Water quality. Determination of the sum of calcium and magnesium. EDTA titrimetric method

TCVN 6336:1998 (ASTM D 2330:1988) Standard test method for methylene blue active substances

TCVN 6492:1999 (ISO 10523:1994) Water quality. Determination of pH

TCVN 6626:2000 (ISO 11969:1996) Water quality. Determination arsenic. Atomic absorption spectrometric method (hydride technique)

SMEWW Standard Methods for the examination of water and wastewater 20th Edition, Version 1, 2, 3 - American Public Health Association.

United States- Environmental Protection Agency Method 507.

3. Quality requirements

Quality criteria of domestic supply water and corresponding test methods are given in Table 1.

Table 1- Quality criteria and corresponding test methods

No.	Criteria	Unit	Level, not exceed	Test methods
1.	Colour	mg/l Pt	15	TCVN 6185:1996 (ISO 7887-1985) or SMEWW 2120
2.	Smell, taste	-	Without foreign smell and taste	Sensory, or SMEWW 2150B and 2160 B
3.	Turbidity	NTU ¹⁾	5	SMEWW 2130 B
4.	pH	-	6 ÷ 8.5	TCVN 6492:1999 or SMEWW 4500-H*
5.	Hardness, by CaCO ₃	mg/l	300	TCVN 6224:1996 or SMEWW 2340 C
6.	Dissolved oxygen content, by oxygen	mg/l	6	TCVN 5499:1995 or SMEWW 4500-O C
7.	Total dissolved solids	mg/l	1000	SMEWW 2540 B
8.	Ammoniac content, by nitrogen	mg/l	3	SMEWW 4500 -NH ₃ D
9.	Arsenic content	mg/l	0,01	TCVN 6626:2000 or SMEWW 3500-As B
10.	Antimony content	mg/l	0,005	SMEWW 3113 B
11.	Chloride content	mg/l	250	TCVN 6194: 1996 (ISO 9297-1989) or SMEWW 4500-ClD
12.	Lead content	mg/l	0,01	TCVN 6193:1996 (ISO 8286 -1986) or SMEWW 3500-Pb
13.	Chrome content	mg/l	0,05	TCVN 6222:1996 (ISO 9174-1990) or SMEWW 3500 -Cr

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No.	Criteria	Unit	Level, not exceed	Test methods
14.	Copper content	mg/l	1,0	TCVN 6193:1996 (ISO 8288 -1986) or SMEWW 3500-Cu
15.	Chloride content	mg/l	0,7 ÷ 1,5	TCVN 6195:1996 (ISO 10359-1-1992) or SMEWW 4500-F ⁻
16.	Zinc content	mg/l	3,0	TCVN 6193:1996 (ISO 8288-1989) or SMEWW 3500-Zn
17.	Hydrosulphur content	mg/l	0,05	SMEWW 4500-S ⁻²
18.	Manganese content	mg/l	0,5	TCVN 6002:1995 (ISO 6333-1986) or SMEWW 3500- Mn
19.	Aluminum content	mg/l	0,5	SMEWW 3500-Al
20.	Nitrate content, by nitrogen	mg/l	10,0	TCVN 6180:1996 (ISO 7890-1998) or SMEWW 4500-NO ₃ ⁻
21.	Nitrite content, by nitrogen	mg/l	1,0	TCVN 6118:1996 (ISO 6777-1984) or SMEWW 4500-NO ₂ ⁻
22.	Total iron content (Fe ²⁺ + Fe ³⁺)	mg/l	0,5	TCVN 6177:1996 (ISO 6332-1988) or SMEWW 3500 -Fe
23.	Mercury content	mg/l	0,001	TCVN 5991:1995 (ISO 566-1-1983 ÷ ISO 5666-3-1983) or SMEWW 3500-Hg
24.	Cyanide content	mg/l	0,07	TCVN 6181:1996 (ISO

No.	Criteria	Unit	Level, not exceed	Test methods
				6703-1-1984) or SMEWW 4500- CN ¹
25.	Surfactants, by Linear Alkylbenzene Sulfonate (LAS)	mg/l	0,5	TCVN 6336: 1998
26.	Benzene	mg/l	0,01	SMEWW 6200 B
27.	Phenol and its derivatives	mg/l	0,01	SMEWW 6420 B
28.	Petroleum and its compounds	mg/l	0,1	SMEWW 5520 C
29.	Organic fertilizer pesticides content	mg/l	0,01	US EPA method 507
30.	Organochlorine insecticides content	mg/l	0,1	SMEWW 6630
31.	Total coliforms	MPN/100ml ²⁾	2,2	TCVN 6187-1:1996 (ISO 9308-1-1990) or SMEWW 9222
32.	E. Coli and thermotolerant coliforms	MPN/100ml	0	TCVN 6187-1:1996 (ISO 9309-1-1990) or SMEWW 9222
33.	Gross alpha activity α	pCi/l ³⁾	3	SMEWW 7110B
34.	Gross beta activity β	pCi/l	30	SMEWW 7110B
<p>Note:</p> <p>1) NTU: Nephelometric Turbidity Unit.</p> <p>2) MPN/100 ml: Most Probable Number per 100 liters.</p> <p>3) pCi/l: picocuries per liter.</p>				

Bibliography

1. Drinking water standards of the Ministry of Health (enclosed with Decision No. 1329/2002/BYT-QD dated April 18th, 2002 by the Ministry of Health).
 2. Current Drinking water standard was up dated May 13th 2002 (National Primary Drinking Water Regulations- Drinking Water Standard of the United State Environment Protection Agency).
 3. Guides on drinking water standards (of the World Health Organization)- Set 1: Proposals.
 4. Guide of level of domestic water by the German 1980.
 5. Law and standard on pollution control in Thailand 4th edition- Pollution Control Department- Ministry of Science, Technology and Environment.
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