

Water quality —

Part 6: Sampling —

Section 6.7 Guidance on sampling of water and steam in boiler plants

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Environment and Pollution Standards Policy Committee (EPC/-) to Technical Committee EPC/44, upon which the following bodies were represented:

- Association of Consulting Scientists
- British Association for Chemical Specialities
- British Gas plc
- Chemical Industries' Association
- Convention of Scottish Local Authorities
- Department of the Environment (Water Directorate)
- Department of the Environment for Northern Ireland
- Department of Trade and Industry (Laboratory of the Government Chemist)
- Electricity Association
- Industrial Water Society
- Institution of Gas Engineers
- Institution of Water Officers
- Institution of Water and Environmental Management
- National Rivers Authority
- Royal Institute of Public Health and Hygiene
- Royal Society of Chemistry
- Scottish Association of Directors of Water and Sewerage Services
- Soap and Detergent Industry Association
- Water Companies Association
- Water Research Centre
- Water Services Association of England and Wales

The following bodies were also represented in the drafting of the standard through subcommittees and panels:

- Automatic Vending Association of Great Britain
- British Association for Chemical Specialities
- British Geological Survey
- Convention of Scottish Local Authorities
- Department of Trade and Industry (Warren Spring Laboratory)
- Electricity Association
- Institute of Oceanographic Sciences
- Power Generation Contractors' Association (BEAMA Ltd.)
- Society for General Microbiology
- Society of Chemical Industry
- University of Bradford

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National foreword

This Section of BS 6068 has been prepared under the direction of the Environment and Pollution Standards Policy Committee and is identical with ISO 5667-7:1993 *Water quality — Sampling — Part 7: Guidance on sampling of water and steam in boiler plants*, published by the International Organization for Standardization (ISO). It supersedes BS 1328:1969 and BS 3285:1960 which are withdrawn.

The international standard was prepared by Technical Committee 147, Water quality, of the International Organization for Standardization (ISO) with the active participation and approval of the UK.

BS 6068 is being published in a series of Parts subdivided into Sections that will generally correspond to particular international standards. Sections are being, or will be, published in Part 1 to Part 7 which, together with Part 0, are listed below.

- *Part 0: Introduction;*
- *Part 1: Glossary;*
- *Part 2: Physical, chemical and biochemical methods;*
- *Part 3: Radiological methods;*
- *Part 4: Microbiological methods;*
- *Part 5: Biological methods;*
- *Part 6: Sampling;*
- *Part 7: Precision and accuracy.*

This Section of BS 6068 is one of a group of standards dealing with the sampling of specific types of water. It should be read in conjunction with BS 6068-6.1, BS 6068-6.2 and BS 6068-6.3, which deal respectively with the design of sampling programmes, sampling techniques and the preservation and handling of samples. The general terminology is in accordance with BS 6068-1 and in particular Section 1.2.

Cross-references

International standard	Corresponding British Standard
	BS 6068 <i>Water quality</i>
ISO 5667-1:1980	Section 6.1:1981 <i>Guidance on the design of sampling programmes</i> (Identical)
ISO 5667-2:1991	BS EN 25667-2:1993 <i>Water quality. Sampling</i> Part 2: <i>Guidance on sampling techniques</i> (Identical) BS 6068 <i>Water quality</i>
ISO 5667-3:1985	Section 6.3:1986 <i>Guidance on the preservation and handling of samples</i> (Identical)
ISO 6107-1:1986	Section 1.1:1987 <i>Terms relating to types of water, and treatment and storage of waste water</i> (Identical)
ISO 6107-2:1989	Section 1.2:1990 <i>Additional terms relating to types of water, and treatment and storage of water and waste water, and terms used in sampling and analysis of water</i> (Identical)
ISO 8199:1988	Section 4.2:1989 <i>Guide to the enumeration of micro-organisms by culture</i> (Identical)

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Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 14, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This part of ISO 5667 recommends procedures and equipment for sampling water and steam in boiler plants including examples of sampling apparatus, to provide samples for physical and chemical analysis that are representative of the main body of water or steam from which they are taken.

The procedures for sampling water apply to

- raw water;
- make-up water;
- boiler feed water;
- condensate;
- boiler water;
- cooling water.

The procedures for sampling steam cover both saturated and superheated steam.

This part of ISO 5667 does not apply to the sampling of water and steam in nuclear power plants.

Figure 2 to Figure 6 are only given as examples of sampling apparatus.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 5667. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 5667 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 5667-1:1980, *Water quality — Sampling — Part 1: Guidance on the design of sampling programmes*.

ISO 5667-2:1991, *Water quality — Sampling — Part 2: Guidance on sampling techniques*.

ISO 5667-3:1985, *Water quality — Sampling — Part 3: Guidance on the preservation and handling of samples*.

ISO 6107-1:1986, *Water quality — Vocabulary — Part 1*.

ISO 6107-2:1989, *Water quality — Vocabulary — Part 2*.

ISO 8199:1988, *Water quality — General guide to the enumeration of micro-organisms by culture*.

3 Definitions

For the purposes of this part of ISO 5667, the following definitions apply.

3.1

isokinetic sampling

a technique in which the sample from a water or steam stream passes into the orifice of a sampling probe with a velocity equal to that of the stream in the immediate vicinity of the probe [ISO 6107-2]

3.2

sampler

a device used to obtain a sample of water or steam, either discretely or continuously, for the purpose of examination of various defined characteristic [ISO 6107-2]

3.3

sampling point

the precise position within a system from which samples are taken [ISO 6107-2]

3.4

sampling probe

that part of sampling equipment which is inserted into a body of steam or water and into which the sample initially passes [ISO 6107-2]

3.5

sampling line

the conduit which leads from the sampling probe to the sample delivery point or the analysing equipment [ISO 6107-2]

3.6

sample delivery point

the end of a sampling line, often remote from the sampling probe, from which a sample is removed, either discretely or continuously, for examination

3.7

raw water

water which has received no treatment whatsoever, or water entering a plant for further treatment [ISO 6107-1]

3.8

make-up water

water which has to be added to the system in order to make up for losses

3.9

condensate

condensed steam from power plants or processes, which is not mixed with any other water

3.10

boiler water

the water present in an operational boiler