

Implementation of
ISO 8573-2:1996

Compressed air for general use —

Part 2: Test methods for aerosol oil
content

ICS 23.140

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee MCE/8, upon which the following bodies were represented:

- British Compressed Air Society
- Engineering Equipment and Materials Users' Association
- Institute of Marine Engineers
- Institution of Gas Engineers
- Institution of Plant Engineers
- South Wales Institute of Engineers

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National foreword

This British Standard reproduces verbatim ISO 8573-2:1996 and implements it as the UK national standard.

This British Standard is published under the direction of the Engineering Sector Board whose Technical Committee MCE/8 has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international committee any enquiries on interpretation, or proposals for change, and keep UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

NOTE International and European Standards, as well as overseas standards, are available from Customer Services, BSI, 389 Chiswick High Road, London W4 4AL.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the ISO title page, pages ii to iv, pages 1 to 20 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.

INTERNATIONAL STANDARD

ISO
8573-2

First edition
1996-06-01

Compressed air for general use — **Part 2:** Test methods for aerosol oil content

Air comprimé pour usage général —

Partie 2: Méthodes d'essai pour mesurer la teneur en huile présente sous forme d'aérosols



Reference number
ISO 8573-2:1996(E)

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75% of the member bodies casting a vote.

International Standard ISO 8573-2 was prepared by Technical Committee ISO/TC 118, *Compressors, pneumatic tools and pneumatic machines*, Subcommittee SC 4, *Quality of compressed air*.

ISO 8573 consists of the following parts, under the general title *Compressed air for general use*:

- *Part 1: Contaminants and quality classes;*
- *Part 2: Test methods for aerosol oil content;*
- *Part 3: Determination of humidity;*
- *Part 4: Determination of solid particles and microbiological contaminants;*
- *Part 6: Determination of gaseous contaminants.*

Users should note that the titles to future parts 3 to 6 are working titles only and that, while it is at present planned to publish all the parts listed above, one or more may nevertheless be deleted from the work programme before publication, which may, in turn, lead to renumbering of the remaining parts.

Annex A forms an integral part of this part of ISO 8573. Annex B is for information only.

1 Scope

This part of ISO 8573 specifies test methods for the sampling and quantitative analysis of aerosol oil and liquid oil (excluding oil vapour) typically present in the air discharged from compressors and compressed air systems.

Using the sampling and analysing equipment as described, the accuracy of each method is better than $\pm 10\%$ of the measured value of oil content ranging from $0,001 \text{ mg/m}^3$ to approximately 20 mg/m^3 under Reference Atmosphere conditions¹⁾ (ANR) with varying sampling times.

This part of ISO 8573 gives detailed instructions on the equipment to be used and the test methods to be employed for the measurement of aerosol oil content in a compressed air supply system.

It applies to compressed air systems up to 30 bar²⁾ working pressure and temperatures of the compressed air below 100 °C, but excluding systems intended to supply compressed air for medical use or for direct breathing.

Two different methods are described, Method A and Method B. Method B is subdivided into two parts to clearly distinguish between procedures for obtaining the quantity of oil for analysis.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 8573. 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 8573 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 65:1981, *Carbon steel tubes suitable for screwing in accordance with ISO 7-1*.

ISO 5167-1:1991, *Measurement of fluid flow by means of pressure differential devices — Part 1: Orifice plates, nozzles and Venturi tubes inserted in circular cross-section conduits running full*.

ISO 8573-1: 1991, *Compressed air for general use — Part 1: Contaminants and quality classes*.

3 Definitions

For the purposes of this part of ISO 8573, the definitions given in ISO 8573-1 and the following definition apply.

3.1 wall flow

that proportion of oil contamination no longer suspended within the air flow in the pipe

4 Units

General use of SI units as given throughout this part of ISO 8573 is recommended.

However, in agreement with accepted practice in the pneumatic field, some nonpreferred SI units accepted by ISO are also used; these are given in Table 1.

5 Typical sampling points

5.1 General

The test methods may be used at any point in the compressed air system. The choice between Methods A and B depends upon the actual level of oil contamination present in the compressed air system.

Typical conditions at four points in a compressed air system are indicated in 5.2 to 5.4, together with the recommended test method. Figure 1 indicates the positions of typical sampling points. Table 2 presents a guide for selection of the appropriate method.

5.2 Position 1 (see Figure 1)

Typical boundary conditions occurring after the compressor/separator at final compressor temperatures:

Oil-flooded rotary compressor:	70 °C to 100 °C, 7 bar to 10 bar
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¹⁾ The air flow is stated at Reference Atmosphere conditions (ANR) of 1 000 mbar, 20 °C and 65 % relative humidity

²⁾ 1 bar = 10^5 N/m^2 = 100 kPa