



SWEDISH
STANDARDS
INSTITUTE

SVENSK STANDARD SS-ISO 8573-8:2004

Fastställd 2004-02-20

Utgåva 1

Tryckluft –

Del 8: Metod att bestämma masskoncentration
av fasta partiklar (ISO 8573-8:2004, IDT)

Compressed air –

Part 8: Test methods for solid particle content by
mass concentration (ISO 8573-8:2004, IDT)

ICS 71.100.20

Språk: engelska

Publicerad: april 2004

Den internationella standarden ISO 8573-8:2004 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av ISO 8573-8:2004.

The International Standard ISO 8573-8:2004 has the status of a Swedish Standard. This document contains the official English version of ISO 8573-8:2004.

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SS-ISO 8573-8:2004

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 8573-8 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*:

- *Part 1: Contaminants and purity classes*
- *Part 2: Test methods for aerosol oil content*
- *Part 3: Test methods for measurement of humidity*
- *Part 4: Test methods for solid particle content*
- *Part 5: Test methods for oil vapour and organic solvent content*
- *Part 6: Test methods for gaseous contaminant content*
- *Part 7: Test methods for viable microbiological contaminant content*
- *Part 8: Test methods for solid particle content by mass concentration*
- *Part 9: Test methods for liquid water content*

Part 2 is under revision.

Compressed air —

Part 8:

Test methods for solid particle content by mass concentration

1 Scope

This part of ISO 8573 specifies test methods for determining the solid particle mass concentration in compressed air, expressed as the mass of solid particles with maximum particle size limits. The limitations of the methods are also given. One of a series of standards aimed at harmonizing air contamination measurements, it identifies sampling techniques and also gives requirements for evaluation, uncertainty considerations and reporting for the air purity parameter solid particles by mass concentration. The test methods are suitable for determining purity classes in accordance with ISO 8573-1. (Particle content based on counting particles is dealt with in ISO 8573-4.)

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1219-1, *Fluid power systems and components — Graphic symbols and circuit diagrams — Part 1: Graphic symbols*

ISO 3857-1, *Compressors, pneumatic tools and machines — Vocabulary — Part 1: General*

ISO 5598, *Fluid power systems and components — Vocabulary*

ISO 8573-1, *Compressed air — Part 1: Contaminants and purity classes*

ISO 8573-2, *Compressed air — Part 2: Test methods for aerosol oil content*

ISO 8573-4, *Compressed air — Part 4: Test methods for solid particle content*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 3857-1, ISO 5598, ISO 8573-1 and ISO 8573-4 apply.

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4 Units and symbols

For the purposes of this part of ISO 8573, the following, including non-SI-preferred, units are used:

- 1 bar = 100 000 Pa;
- 1 l (litre) = 0,001 m³;
- bar(a), used for expressing absolute pressure;
- bar(e), used for expressing effective pressure.

For the graphic symbols used in Figure 1, see ISO 1219-1.

5 Selection of methods

The gravimetric method to be used is suitable for mass concentration measurement, however, where water and oil is present in the compressed air, it shall be reduced to a minimum.

A suitable method for solid particle diameter measurement may be selected from those given in Table 1.

Table 1 — Solid particle diameter measurement methods

Type of method	Maximum solid particle diameter <i>d</i> µm	Liquid water and oil contaminant mg/m ³
Microscope method	$d \geq 0,5$	≤ 20
Particle sizer method	$0,1 \leq d \leq 40$	Not admitted

6 Sampling techniques

The sampling shall be made at or near the actual pressure and at a constant flow rate.

The choice of sampling method will depend upon the actual level of contamination and the compressed air flow in the compressed air system. For sampling methods, see ISO 8573-2 and ISO 8573-4.

For partial flow sampling, it should be noted that, where large particle sizes are involved, the effects of gravity could introduce sampling errors.

Compressed air samples may be routed back into the main pipe or vent to the atmosphere after measurement. The value of air sample parameters (pressure, temperature, air velocity, etc.) shall be within the ranges specified by the test equipment manufacturer. Method B1 uses full flow sampling from the main pipe flow by means of a Y-piece.