

CCS J 04



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 40336-2021

**Non-destructive testing - Leak testing - Calibration of reference
leaks for gases**

Issued on: May 21, 2021

Implemented on: December 1, 2021

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

Table of Contents

1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Nominal leak rate	2
5 Classification of leaks	2
6 Comparison calibration	3
7 Volume calibration	7
8 Overall impact	21
9 Report	21
10 Reference leak label	22
11 Reference leak operation	22
Appendix A (informative) Calculation of the loss of tracer gas in the gas chamber resulting in a decrease in the leakage rate	23
References	25

Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1. Structure and Drafting Rules of Standardization Documents"

Drafting.

This document uses the redrafting method to modify and adopt ISO 20486.2017 "Non-destructive testing of leak detection gas reference leak calibration".

Compared with ISO 20486.2017, this document has the following structural adjustments.

---The chapter number of this document is 3.2, which corresponds to the ISO 20486.2017 chapter number 3.3;

---The chapter number 3.3 of this document corresponds to the ISO 20486.2017 chapter number 3.4;

---The chapter number of this document is 7.4.2.2, which corresponds to the ISO 20486.2017 chapter number 7.4.2.1;

---The chapter number 7.4.2.3 of this document corresponds to the chapter number 7.4.2.2 of ISO 20486.2017.

Compared with ISO 20486.2017, there are technical differences between this document, and the clauses involved in these technical differences have been passed on the outer margins.

The vertical single line (|) of the position is marked, and the corresponding technical differences and their reasons are as follows.

- a) Modified the description of the scope of application of this document in Chapter 1 to make the description of the scope of application more concise and comprehensive;
- b) Regarding normative reference documents, ISO 20486 is replaced by GB/T 12604.7, which is modified and adopted by the international standard, to adapt to my country

Technical conditions;

- c) Deleted the ISO 20486.2017 term and definition "3.2 Reference Leak", this term has been defined in GB/T 12604.7, no

Repeat the list again;

- d) The notes in Chapter 4 have been added to adapt to my country's technical conditions and usage habits.

This document has also made the following editorial changes.

---Added 7.2.4 and 7.3.4 introductory words;

---Modified the number of formulas in international standards.

1 Scope

This document specifies two types of calibration methods for leaks used when adjusting the leak detector to determine the leak rate. One is to compare with the reference leak.

Calibration, the other is to calibrate directly by measuring or calculating the gas pressure with a known volume.

This document applies to the calibration of leaks with leak rates within the range shown in Figure 1.

- a) Comparison calibration b) Volume calibration

Normal range; possible range.

Indexing serial number description.

X --- Leak rate, in Pascal cubic meters per second (Pa.m³/s);

A ---Method A;

B ---Method B;

AS---Method AS;

BS---Method BS;

C ---Method C;

D ---Method D;

E --- Method E;

F ---Method F;

G ---Method G.

Figure 1 Calibration range

2 Normative references

The contents of the following documents constitute the indispensable clauses of this document through normative references in the text. Among them, dated quotations

Only the version corresponding to that date is applicable to this document. For undated reference documents, the latest version (including all amendments) applies to

This document.

GB/T 12604.7 Non-destructive testing terminology leak detection (GB/T 12604.7-2021, ISO 20484.2017, MOD)