



JAPANESE  
INDUSTRIAL  
STANDARD

Translated and Published by  
Japanese Standards Association

---

JIS T 8155 : 2014

(JSAA/JSA)

**Compressed air open-circuit  
self-contained breathing apparatus**

---

ICS 13.340.30

Reference number : JIS T 8155 : 2014 (E)

PROTECTED BY COPYRIGHT

Date of Establishment: 1971-03-01

Date of Revision: 2014-05-20

Date of Public Notice in Official Gazette: 2014-05-20

Investigated by: Japanese Industrial Standards Committee  
Standards Board

Technical Committee on Protective Equipment for  
Occupational Safety

---

JIS T 8155 : 2014, First English edition published in 2016-03

Translated and published by: Japanese Standards Association  
Mita MT Building, 3-13-12, Mita, Minato-ku, Tokyo, 108-0073 JAPAN

---

In the event of any doubts arising as to the contents,  
the original JIS is to be the final authority.

© JSA 2016

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

Printed in Japan

PROTECTED BY COPYRIGHT

## Contents

|                                                              | Page |
|--------------------------------------------------------------|------|
| Introduction .....                                           | 1    |
| 1 Scope .....                                                | 1    |
| 2 Normative references .....                                 | 1    |
| 3 Terms and definitions .....                                | 1    |
| 4 Classification .....                                       | 2    |
| 5 Performance .....                                          | 2    |
| 5.1 General .....                                            | 2    |
| 5.2 Gas tightness .....                                      | 2    |
| 5.3 Leakage rate of facepiece .....                          | 2    |
| 5.4 Inner pressure of facepiece .....                        | 3    |
| 5.5 Maximum air supply .....                                 | 3    |
| 5.6 Working gas tightness of exhalation valve .....          | 3    |
| 5.7 Air discharge volume of bypass valve .....               | 3    |
| 5.8 Workability of warning device .....                      | 3    |
| 5.9 Heat resistance of breathing apparatus .....             | 3    |
| 5.10 Cold resistance of breathing apparatus .....            | 3    |
| 5.11 Flame resistance of components .....                    | 4    |
| 6 Construction .....                                         | 4    |
| 6.1 General .....                                            | 4    |
| 6.2 Construction of each component .....                     | 5    |
| 7 Material .....                                             | 7    |
| 8 Tests .....                                                | 7    |
| 8.1 Pretreatments .....                                      | 7    |
| 8.2 Gas tightness test .....                                 | 8    |
| 8.3 Test of leakage rate of facepiece .....                  | 8    |
| 8.4 Test of inner pressure of facepiece .....                | 8    |
| 8.5 Maximum air supply test .....                            | 10   |
| 8.6 Working gas tightness test of exhalation valve .....     | 10   |
| 8.7 Test of air discharge volume of bypass valve .....       | 10   |
| 8.8 Test of workability of warning device .....              | 10   |
| 8.9 Heat resistance test of breathing apparatus .....        | 10   |
| 8.10 Cold resistance test of breathing apparatus .....       | 11   |
| 8.11 Flame resistance test of components .....               | 11   |
| 8.12 Elongation test of head harness .....                   | 13   |
| 8.13 Strength test of head harness and attachment part ..... | 14   |
| 8.14 Strength test of air supply hose attachment part .....  | 14   |

|      |                                      |    |
|------|--------------------------------------|----|
| 9    | Inspection .....                     | 14 |
| 10   | Marking .....                        | 14 |
| 10.1 | Marking on breathing apparatus ..... | 14 |
| 10.2 | Marking on facepiece .....           | 14 |
| 11   | Instruction manual .....             | 14 |

## Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Economy, Trade and Industry, through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by Japan Safety Appliances Association (JSAA)/Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14. Consequently **JIS T 8155:1994** is replaced with this Standard.

This **JIS** document is protected by the Copyright Law.

Attention is drawn to the possibility that some parts of this Standard may conflict with patent rights, applications for a patent after opening to the public or utility model rights. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying any of such patent rights, applications for a patent after opening to the public or utility model rights.

# Compressed air open-circuit self-contained breathing apparatus

## Introduction

This Japanese Industrial Standard was established in 1971 and has gone through four revisions. The revision at this time aims to respond to the revisions of related **JISs** and advances in technology that have taken place subsequent to the last revision which was made in 1994.

No corresponding International Standard has been established at this point.

## 1 Scope

This Standard specifies the compressed air open-circuit self-contained breathing apparatuses, to be used where there is a risk of inhalation of oxygen-deficient air or powdery dust, gas, steam, etc. harmful to human body in places of work sites such as factories, mines, etc., in occurrence of fire, inside ships, and in environment of higher pressure than atmospheric pressure, tunnels, and others. This Standard is not applicable to breathing apparatus for diving purposes.

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS B 1501 *Rolling bearings — Balls*

JIS T 8001 *Glossary of terms for respiratory protective devices*

JIS T 8159 *Leakage rate testing method for respiratory protective devices*

Japanese Agricultural Standard for Plywood

## 3 Terms and definitions

For the purpose of this Standard, the terms and definitions given in **JIS T 8001**, and the following apply.

### 3.1 demand type

breathing apparatus provided with a demand valve

### 3.2 pressure demand type

breathing apparatus provided with a pressure demand valve

### 3.3 air supply hose

generic term for inhalation hose and medium-pressure hose

## 4 Classification

The breathing apparatuses are classified into demand type and pressure demand type.

Classification according to flame resistance and class symbols are given in Table 1.

**Table 1 Classification according to flame resistance and class symbols**

| Flame resistance                                                    | Class of flame resistance | Symbol |
|---------------------------------------------------------------------|---------------------------|--------|
| With                                                                | 3                         | FR-3   |
|                                                                     | 2                         | FR-2   |
|                                                                     | 1                         | FR-1   |
| Without <sup>a)</sup>                                               | –                         | C      |
| Note <sup>a)</sup> Including those not tested for flame resistance. |                           |        |

## 5 Performance

### 5.1 General

The breathing apparatus and components thereof shall satisfy the following requirements.

The performance requirements shall be tested after conducting one of the pretreatment procedures specified in 8.1 on the breathing apparatus under test.

Among the following requirements, those with no pretreatment specification shall be tested with no pretreatment procedure conducted.

### 5.2 Gas tightness

The gas tightness shall satisfy the following requirements.

- a) When the high-pressure and medium-pressure parts of the breathing apparatus are tested in accordance with the method specified in 8.2 a) in the conditions of having been pretreated in accordance with 8.1 a) and 8.1 c), respectively, the pressure drop shall not exceed 2 MPa.

NOTE : All the pressure values given in this Standard, unless otherwise specified, are gauge pressures.

- b) When the low-pressure parts (facepiece, inhalation hose and low-pressure side of supply valve) of the breathing apparatus are tested in accordance with the method specified in 8.2 b) in the conditions of having been pretreated in accordance with 8.1 a), 8.1 b) and 8.1 c), respectively, no gas leakage shall occur.

### 5.3 Leakage rate of facepiece

When the leakage rate of facepiece is tested in accordance with the method specified in 8.3, a full facepiece shall conform to the value of Grade AAA or Grade AA, and a half facepiece, that of Grade A.