AS 1358—1989

Australian Standard®

Bursting discs and bursting disc devices—Guide to application, selection, and installation

[Title allocated by Defence Cataloguing Authority: DISK, RUPTURABLE (Guide to application, selection and installation)]

This Australian Standard was prepared by Committee ME/1, Boilers and Unfired Pressure Vessels. It was approved on behalf of the Council of Standards Australia on 12 May 1989 and published on 18 August 1989.

The following interests are represented on Committee ME/1:

Aluminium Development Council
Australian Compressed Air Institute
Australian Institute for Non-destructive Testing
Australian Institute of Energy
Australian Institute of Petroleum
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Sugar Research Institute
Work Health Authority, N.T.

This Standard was issued in draft form for comment as DR 88118.

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Bursting discs and bursting disc devices—Guide to application, selection, and installation

First published as AS 1358—1972.
Second edition 1989.

Incorporating:
Amdt 1—1991

PUBLISHED BY STANDARDS AUSTRALIA
(STANDARDS ASSOCIATION OF AUSTRALIA)
1 THE CRESCENT, HOMEBUSH, NSW 2140

ISBN 0 7262 5788 5

PREFACE

This Standard was prepared by Standards Australia's Committee on Boilers and Unfired Pressure Vessels, to supersede AS 1358-1972, *Bursting discs*.

In the preparation of this Standard, the committee considered ISO 6718, *Bursting discs and bursting disc devices*, and the assistance gained therefrom is acknowledged.

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STANDARDS AUSTRALIA

Australian Standard

Bursting discs and bursting disc devices—Guide to application, selection, and installation

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This Standard provides guidance on the application, selection, and installation of bursting discs and bursting disc devices.

Information which the purchaser may provide to assist in the design or the selection of bursting discs and bursting disc devices is shown in Appendix A.

The information which may be used for identification and the information which may be marked on bursting discs and bursting disc devices is shown in Appendix B.

Equations for the calculation of the discharge capacity for single phase flow are shown in Appendix C.

1.2 DEFINITIONS. For the purpose of this Standard, the definitions below apply.

1.2.1 Bursting pressure—the value of the pressure differential across the disc at which a bursting disc device functions. (See Note to Clause 1.2.2.)

1.2.2 Specified bursting pressure—the pressure, quoted with a coincident temperature, specified by the user or his agent when defining the disc requirement.

NOTE: The words maximum and minimum may be used with the terms bursting pressure and specified bursting pressure.

1.2.3 Average bursting pressure—the arithmetic average value, at the coincident temperature, of the test bursts carried out on a batch of discs.

1.2.4 Coincident temperature (bursting pressure)—the temperature used in conjunction with bursting pressure.

1.2.5 Operating temperature—the average temperature of the disc and the surrounding parts during normal operation.

1.2.6 Bursting tolerance—the maximum variation of test results in equal positive and negative quantities or percentages related to the average bursting pressure. Where a zero manufacturing range is stated, the tolerance is applied directly to the specified bursting pressure.

1.2.7 Manufacturing range—a range of pressure within which the average bursting pressure of a batch of bursting discs falls in order to be acceptable for a particular application.

1.2.8 Performance tolerance—a range of pressure in positive and negative quantities or percentages which includes both manufacturing range and bursting tolerance at a coincident temperature, which is applied directly to the specified bursting pressure.

1.2.9 Foil—the sheet or strip used for the manufacture of metallic bursting discs.

1.2.10 Batch—a group of bursting discs of the same type, size, average bursting pressure, and coincident temperature, manufactured from material of the same identity and properties made as a single group.

1.2.11 Bursting disc device—a non-reclosing pressure-relief device actuated by differential pressure and designed to function by the bursting or venting of the bursting disc.

1.2.12 Bursting disc assembly—the complete assembly of components which are installed in the bursting disc holder to perform the desired function.

1.2.13 Bursting disc—the pressure-containing and pressure-sensitive element of a bursting disc device.

1.2.14 Bursting disc holder—that part of a bursting disc device which retains the bursting disc assembly in position.

1.2.15 Backpressure—the static pressure existing at the outlet of a bursting disc device at the time the device is required to operate. It is the result of pressure in the discharge system from other sources or as a result of vacuum on the upstream side.

1.2.16 Backpressure support—that component of a bursting disc assembly which prevents the failure of the disc due to backpressure differential.

NOTE: A backpressure support which is intended to prevent the failure of the disc when the system pressure falls below atmospheric pressure is sometimes referred to as a vacuum support.

1.2.17 Baffle plate—a plate attached to vent side of a bursting disc device or system to redirect discharge or reduce recoil.

1.2.18 Muffled outlet—a component of a bursting disc device which disperses the discharge.

1.2.19 Stiffening ring—an integral component of the bursting disc assembly used primarily for the stiffening of fragile discs.

1.2.20 Coating—a layer of metallic or non-metallic material applied by brush, spray, dipping, fluidized bed, or other similar method to components of a bursting disc device.

1.2.21 Lining—an additional sheet or sheets of material forming part of the bursting disc assembly or holder. The lining can be metallic or non-metallic.

1.2.22 Plating—a metal layer applied to a disc or holder by a plating process.

1.2.23 Excess flow valve—a device which permits limited flow. When this flow is exceeded the valve closes.

1.2.24 Conventional domed bursting disc—a bursting disc which is domed in the direction of the bursting pressure and designed to fail in tension. (See Figures 2.2 and 2.3.)

1.2.25 Slotted lined bursting disc—a conventional domed bursting disc made up of two or more layers, one of which is slit or slotted so as to reduce its strength and to control the bursting pressure of the bursting disc. (See Figure 2.4.)