

Dup

LOAN COPY
INFORMATION CENTRE
STANDARDS AUSTRALIA

des Revision see DR97400

WITHDRAWN:
19990105
SUPERSEDED BY: AS 1414—1990
AS 4156.4—1999

Australian Standard®

**Flowsheets and syntheses relating to
coal preparation plants**

H



STANDARDS AUSTRALIA 

This Australian Standard was prepared by Committee MN/1, Coal and Coke. It was approved on behalf of the Council of Standards Australia on 4 December 1989 and published on 7 May 1990.

The following interests are represented on Committee MN/1:

Australasian Institute of Mining and Metallurgy
Australian Coal Association
Australian Coal Industry Research Laboratories
Australian Coal Preparation Society
Australian Institute of Energy
Bureau of Steel Manufacturers of Australia
Confederation of Australian Industry
CSIRO, Division of Coal Technology
Department of Minerals and Energy, N.S.W.
Department of Mines, Qld
Department of Primary Industries and Energy
Electricity Supply Association of Australia
Institution of Engineers, Australia
Joint Coal Board
National Association of Testing Authorities, Australia
Queensland Coal Board
Royal Australian Chemical Institute
Standing Committee on Coalfield Geology of New South Wales
University of New South Wales
University of Queensland

Review of Australian Standards. To keep abreast of progress in industry, Australian Standards are subject to periodic review and are kept up-to-date by the issue of amendments or new editions as necessary. It is important therefore that Standards users ensure that they are in possession of the latest edition, and any amendments thereto.

Full details of all Australian Standards and related publications will be found in the Standards Australia Catalogue of Publications; this information is supplemented each month by the magazine 'The Australian Standard', which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn Standards.

Suggestions for improvements to Australian Standards, addressed to the head office of Standards Australia, are welcomed. Notification of any inaccuracy or ambiguity found in an Australian Standard should be made without delay in order that the matter may be investigated and appropriate action taken.

This Standard was issued in draft form for comment as DR 87101.

Australian Standard®

**Flowsheets and symbols relating to
coal preparation plants**

First published as AS 1414—1973.
Second edition—1990.

PREFACE

This Standard was prepared by the Standards Australia Subcommittee on Coal Preparation under the supervision of the Committee on Coal and Coke and the direction of the Minerals Standards Board to supersede AS 1414—1973, *Flowsheets and diagrams relating to coal preparation plant*. Its purpose is to provide principles relating to the preparation of flowsheets for coal preparation plant. The Standard is based upon ISO 924, *Coal preparation plant—Principles and conventions for flowsheets* and ISO 561, *Coal preparation plant—Graphical symbols*. Minor modifications have been made to conform with established Australian practice.

CONTENTS

	<i>Page</i>
SECTION 1 SCOPE AND GENERAL	
1.1 SCOPE	3
1.2 REFERENCED DOCUMENTS	3
1.3 DEFINITIONS	3
SECTION 2 PRINCIPLES AND CONVENTIONS FOR FLOWSHEETS	
2.1 TYPES OF FLOWSHEETS	4
2.2 GROUPING OF OPERATIONS AND PRODUCTS	4
2.3 CONVENTIONS FOR FLOWSHEETS	4
SECTION 3 SYMBOLS FOR ITEMS OF PLANT	
3.1 STANDARD SYMBOLS	11
3.2 DRAWING CONVENTIONS	11
APPENDICES	
A NOTES ON CAPACITY DEFINITIONS	29
B ALPHABETICAL LIST OF SYMBOLS	30

© Copyright — STANDARDS AUSTRALIA

Users of Standards are reminded that copyright subsists in all Standards Australia publications and software. Except where the Copyright Act allows and except where provided for below no publications or software produced by Standards Australia may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing from Standards Australia. Permission may be conditional on an appropriate royalty payment. Requests for permission and information on commercial software royalties should be directed to the Head Office of Standards Australia.

Standards Australia will permit up to 10 percent of the technical content pages of a Standard to be copied for use exclusively in-house by purchasers of the Standard without payment of a royalty or advice to Standards Australia.

Standards Australia will also permit the inclusion of its copyright material in computer software programs for no royalty payment provided such programs are used exclusively in-house by the creators of the programs.

Care should be taken to ensure that material used is from the current edition of the Standard and that it is updated whenever the Standard is amended or revised. The number and date of the Standard should therefore be clearly identified.

The use of material in print form or in computer software programs to be used commercially, with or without payment, or in commercial contracts is subject to the payment of a royalty. This policy may be varied by Standards Australia at any time.

STANDARDS AUSTRALIA

Australian Standard

Flowsheets and symbols relating to coal preparation plant

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE. This Standard sets out recommended principles and drawing conventions for flowsheets and symbols relating to coal preparation plant.

1.2 REFERENCED DOCUMENTS. The following document is referred to in this Standard:

AS
2418 Glossary of terms relating to solid mineral fuels

1.3 DEFINITIONS. For the purpose of this Standard, the definitions in AS 2418 and those below apply.

NOTE: Further information on the capacity definitions is given in Appendix A.

1.3.1 Coal preparation—collectively, physical and mechanical processes applied to coal to make it suitable for a given application.

1.3.2 Basic flowsheet—a diagram of the various stages in the treatment of the coal in a preparation plant, usually either a block flowsheet or a process flowsheet.

1.3.3 Block flowsheet—a basic flowsheet indicating, in words, the main operational steps within the plant, the movement of the various materials between the steps and the final products obtained; it can also show the average mass flow at various points in the plant.

1.3.4 Process flowsheet—a diagram indicating, in symbols, the units of plant used in the various operational steps carried out within a coal preparation plant.

1.3.5 Balanced flowsheet—a specialized process flowsheet indicating the operational capacities at various points in the plant.

1.3.6 Equipment flowsheet—a specialized process flowsheet indicating the number of units, and their sizes and design capacities.

1.3.7 Nominal capacity—a notional figure, expressed in mass per hour, used in the title of a flowsheet and in general descriptions of a plant, applying to the plant as a whole and to the specific project under consideration.

1.3.8 Design capacity—the rate of feed defined by limits expressing the extent and duration of load variations, at which specific items of plant subject to a performance guarantee have to operate continuously and give the guaranteed results on a particular quality of feed.

1.3.9 Peak design capacity—the rate of feed, in excess of the design capacity, which specific items of plant will accept for short periods without necessarily fulfilling the performance guarantees given for them.

1.3.10 Mechanical maximum capacity—the highest rate of feed at which specific items of equipment, not subject to performance guarantees, will function on the type and quality of feed for which they are supplied.

1.3.11 Operational capacities—figures given on a flowsheet to indicate quantities per unit time passing various points in the plant, taking account of fluctuations in the rate of supply and composition (as to size and purity content) and the balance of the circuits.

NOTE: The figures given on flowlines are derived from design capacity figures and include combinations of design capacity figures at product junction points.