AS 1414—1990

Australian Standard®

Flowsheets and symbols relating to coal preparation plant

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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.
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Joint Coal Board
National Association of Testing Authorities, Australia
Queensland Coal Board
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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

STANDARDS AUSTRALIA

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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 impurity 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.