Australian Standard™

Electrodes and fluxes for submerged-arc welding

Part 1: Carbon steels and carbon-manganese steels

Standards Australia

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee WD-002, Welding Consumables, to supersede AS 1858.1—1986.

The objective of this Standard is to provide classification and designation systems, as well as requirements, for solid and composite welding electrodes and fluxes for submerged-arc welding of carbon steels and carbon manganese steels.

This Standard is based on ANSI/AWS A5.17, *Specification for Carbon Steel Electrodes and Fluxes for Submerged-arc Welding.*

The principle behind the classification and designation systems adopted was that each of the three factors involved, electrodes, flux and weld metal, should be capable of individual selection and identification. In particular, the concept of the classification of weld metal as a separate entity is regarded as being of great significance. For ease of selection, the weld metal is classified according to its tensile strength and divided into grades related to its Charpy V-notch impact energy value. The Standard, therefore, separately deals with electrodes, fluxes, weld metal and testing.

Because of the large number of electrode/flux combinations available, guidance is frequently needed on the suitability of the process for a specific weldment. The intent here is that the designer should only need to specify on the drawing the weld metal designation, thereby nominating the mechanical properties required for the satisfactory functioning of the welded joint. The fabricator, taking into account recommendations by the manufacturer of the consumables, can select the electrode/flux combination that are appropriate to the materials of construction and the conditions pertaining at the time.

If procedure qualification is called up in the relevant application code, it may be necessary for the chosen electrode/flux combination to be qualified by procedure testing.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

Statements expressed in mandatory terms in notes to tables are deemed to be requirements of this Standard.

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