SINGAPORE STANDARD

SS 510 : 2005

(ICS 25.160)

CODE OF PRACTICE FOR

Safety in welding and cutting (and other operations involving the use of heat)

(Formerly CP 50)

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Contents

Foreword

This Singapore Standard was prepared by the Technical Committee on General Safety In Workplace under the purview of the General Engineering and Safety Standards Committee. It is a revision of the code of practice, CP 50 which was first prepared in 1990 by the Technical Committee on Safety in Welding and Cutting (and other Operations Involving the Use of Heat) and last revised in 1997 by the Technical Committee on General Safety. CP 50 has been re-numbered as SS 510.

The revisions made were mainly on the oxygen fuel gas systems for welding and cutting. The schematic arrangement of piping and station outlet protective equipment was updated. New subclauses on electron beam welding, laser welding and cutting, electro slag welding were included. Other changes include the addition of graphical diagrams depicting the protective clothing for welding personnel.

The following publications were referred to during the preparation of this Code:

1.	ANSI Z49.1 : 1999	Safety in welding, cutting and allied processes
2.	SS 99 : 1998	Welded low carbon steel cylinders for storage and transportation of compressed liquefied gases
3.	SS CP 84 : 2000	Entry into and safe working in confined spaces
4.	The Factories (Shipbuilding and Ship-repairing) Regulations, 1998	

Acknowledgement is made for the use of information from the above publications.

Attention is drawn to the possibility that some of the elements of this Singapore Standard may be the subject of patent rights. SPRING Singapore shall not be held responsible for identifying any or all of such patent rights.

NOTE

1. *Singapore Standards are subject to periodic review to keep abreast of technological changes and new technical developments. The changes in Singapore Standards are documented through the issue of either amendments or revisions.*

2. *Compliance with a Singapore Standard does not exempt users from legal obligations.*

Code of practice for safety in welding and cutting (and other operations involving the use of heat)

1 Scope

1.1 This Code is for the protection of persons from injury and illness and the protection of property (including equipment) from damage by fire and other causes arising from welding and cutting equipment, its installation, operation and maintenance.

1.2 Specific provisions are included for gas welding, shielded-metal-arc welding, submerged-arc welding, gas-metal-arc welding, gas-tungsten-arc welding, brazing, resistance welding, and thermit welding. However, the requirements of this Code are generally applicable to the other welding processes shown in Annex A – 'Master chart for welding and allied processes'. Annex B gives brief descriptions and schematic diagrams of different welding and allied processes.

NOTE – The titles of the publications referred to in this Code are listed at the end of the standard.

2 Definitions

2.1 Approved

Acceptable to the authority having jurisdiction after testing by a nationally recognised testing agency.

2.2 Burner/cutter/cutting operator

Any operator of cutting or heating equipment which uses electricity or gas.

NOTE – All other welding terms used herein are in accordance with AWS Standard A3.0 - 'Welding terms and definitions'.

2.3 Competent person

A person with the knowledge and skill, and who has received such training for the task he is assigned to.

2.4 Confined space

Any chamber, tank, vat, pit, pipe, flue including any other similar space in which:

(a) dangerous airborne substances are liable to be present to such an extent as to involve risk of fire or explosion occurring; or

(b) dangerous airborne substances are liable to be present to such an extent as to involve risk of persons being overcome by such substances; or

(c) there is a risk of persons being asphyxiated due to inadequate supply of air.

2.5 Liquefied petroleum gas (LPG)

A clear liquid composed of readily liquefiable hydrocarbon gases which are produced in the course of processing natural gas or refining crude oil. The composition of LPG is mainly propane and butane and can vary widely depending on the source and nature of the processes to which it has been subjected.