

SINGAPORE STANDARD

**Specification for steel gratings for roads,
drains and walkways**



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and walkways**

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The General Engineering and Safety Standards Committee, appointed by the Standards Council, consists of the following members:

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	Assoc Prof Zhou Wei	<i>Singapore Welding Society</i>

The Technical Committee on Safety and Health Involving the Use of Equipment, appointed by the General Engineering and Safety Standards Committee and responsible for the preparation of this standard, consists of representatives from the following organisations:

	Name	Capacity
Chairman	: Assoc Prof Hoon Kay Hiang	<i>General Engineering and Safety Standards Committee</i>
Secretary	: Ms Julia Yeo	<i>Singapore Manufacturing Federation – Standards Development Organisation</i>
Members	: Mr Ang Choon Huat	<i>Building and Construction Authority</i>
	Mr Choo Choong Huat	<i>Singapore Institution of Safety Officers</i>
	Mr Idilfitri Bin Mohammed Yatim	<i>Singapore Manufacturing Federation</i>
	Mr Lau Huat Poh	<i>Singapore Contractors Association Limited</i>

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		Mr Patrick Phoa	<i>Land Transport Authority</i>
		Mr Seah Chong An	<i>TÜV SÜD PSB Pte Ltd</i>
		Mr Alex Teo	<i>Association of Singapore Marine Industries</i>

The Working Group on Steel Gratings for Roads, Drains and Walkways, appointed by the Technical Committee to assist in the preparation of this standard, comprises the following experts who contribute in their *individual capacity*:

	Name
Convenor	: Mr Rajandran Veerappan
Members	: Er. Chen Bo David
	Mr Bernard Cheng Kwang Meng
	Mr Goh Chong Suan
	Mr Khoo Wei Tat
	Dr Kuncha V Channakeshava
	Ms Leong Pei Ying, Cherlyn
	Mr Tan Loo Yong
	Dr Tao Nengfu
	Mr Tay Yak Hong

The organisations in which the experts of the Working Group involved are:

Association of Consulting Engineers Singapore
Defence Science and Technology Agency
Housing & Development Board
Institution of Engineers, Singapore
JTC Corporation
Land Transport Authority
PUB, the National Water Agency
SETSCO Services Pte Ltd
Singapore Polytechnic
Singapore Structural Steel Society

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Foreword

This Singapore Standard was prepared by the Working Group on Steel Gratings for Roads, Drains and Walkways appointed by the Technical Committee on Safety and Health Involving the Use of Equipment under the direction of the General Engineering and Safety Standards Committee.

It is a revision of SS 363 : 1993, "Specification for steel gratings for roads and drainage". The changes from the 1993 edition include the following:

- (a) Updating of the title of this standard to: "Specification for steel gratings for roads, drains and walkways".
- (b) Inclusion of BC 1 : 2012 as a reference.
- (c) Revision to the designation of the gratings, design load and load contact area.
- (d) Revision to align with current industry practices.

In preparing this standard, reference was also made to the following publications:

- | | |
|---------------------|---|
| 1. BC 1 : 2012 | Design guide on use of alternative structural steel to BS 5950 and Euro code 3 |
| 2. BS EN 124 : 1994 | Gully tops and manhole tops for vehicular and pedestrian areas.
Design requirements, type testing, marking, quality control. |
| 3. SANS 1115 : 2007 | Cast iron gratings for gullies and stormwater drains |
| 4. SS 30 : 1999 | Specification for Manhole tops and surface-box tops |

Table 3 of the Singapore Standard is "an identical adoption of Table 2 of SANS 1115:2007 and is implemented with the permission of the South African Bureau of Standards".

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. Enterprise Singapore shall not be held responsible for identifying any or all of such patent rights.

NOTE

1. *Singapore Standards (SSs) and Technical References (TRs) are reviewed periodically to keep abreast of technical changes, technological developments and industry practices. The changes are documented through the issue of either amendments or revisions.*
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Specification for steel gratings for roads, drains and walkways

1 Scope

This Singapore Standard specifies requirements for:

- (a) Steel gratings for roads, drains and walkways;
- (b) Steel gratings for drop inlet chambers.

The standard falls into three main parts. Clauses 4 to 10 specify general requirements applicable to the articles covered in Clauses 11 and 12. Clause 11 deals with road gratings and frames. Clause 12 deals with kerb-type gratings and frames.

Annex A shows the various parts of a grating and its terminology. Annex B contains the information for the loading tests.

2 Normative references

The following referenced documents are indispensable for the application of this standard. For dated references, only the edition cited applies.

BS 4190 : 2001	ISO metric black hexagon bolts, screws and nuts. Specification.
BS EN 124 : 1994	Gully tops and manhole tops for vehicular and pedestrian areas. Design requirements, type testing, marking, quality control.
BS EN 1011-1 : 2009	Welding. Recommendations for welding of metallic materials. General guidance for arc welding.
BS EN 1011-2 : 2001	Welding. Recommendations for welding of metallic materials. Arc welding of ferritic steels.
BS EN 10025-1 : 2004	Hot rolled products of structural steels. General technical delivery conditions.
BS EN 10025-3 : 2004	Hot rolled products of structural steels. Technical delivery conditions for normalised/normalised rolled weldable fine grain structural steels.
BS EN 10025-4 : 2004	Hot rolled products of structural steels. Technical delivery conditions for thermomechanical rolled weldable fine grain structural steels.
BS EN 10029 : 2010	Hot-rolled steel plates 3 mm thick or above. Tolerances on dimensions and shape.
BS EN 10210-1 : 2006	Hot finished structural hollow sections of non-alloy and fine grain steels. Technical delivery requirements.
BS EN ISO 376 : 2011	Metallic materials. Calibration of force-proving instruments used for the verification of uniaxial testing machines.
BS EN ISO 7500-1 : 2004	Metallic materials. Verifications of static uniaxial testing machines. Tension/compression testing machines.

ISO 1460 : 1992	Metallic coatings. Hot dip galvanised coatings on ferrous materials. Gravimetric determination of the mass per unit area.
ISO 1461 : 2009	Hot dip galvanised coatings on fabricated iron and steel articles. Specifications and test methods