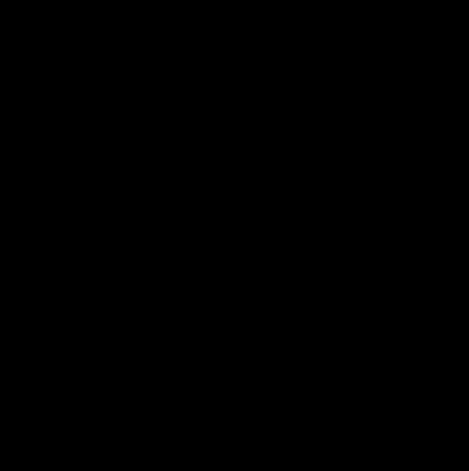
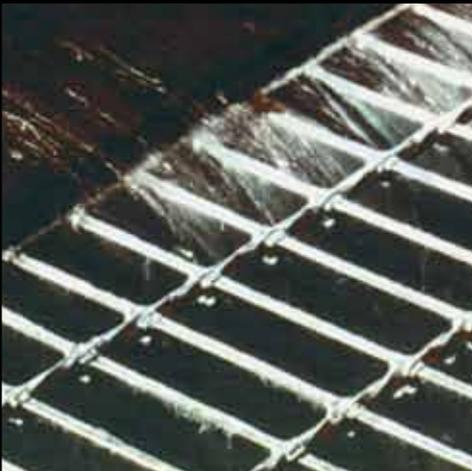
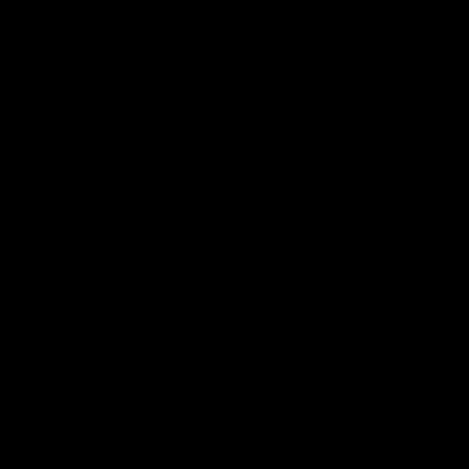


NEPEAN
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TM

Weldlok® Drainage Products





Images and drawings in this brochure are to be taken as a guide only. Our commitment to continual product development requires occasional changes to specification, detail and design. Please confirm product details with NEPEAN Building & Infrastructure before ordering.

Information contained in this brochure is supplied in good faith and with a view to help the user in the correct selection of our products. While every care is taken to ensure that the information contained in this brochure is correct, no warranty is made nor is any condition expressed or implied. The information contained herein does not constitute an offer nor do we guarantee its accuracy or completeness and assume no responsibility for errors or omissions or for any consequences of reliance on this publication. All dimensions in this brochure are nominal. © NEPEAN Building & Infrastructure, February 2013. All rights reserved. No part of this publication may be reproduced, stored in retrieval system, electronic system, or by any other means without prior written permission of NEPEAN Building & Infrastructure.

NEPEAN Building & Infrastructure is a division of NEPEAN, Australia's largest privately owned engineering, mining services and industrial manufacturing organisation.

Through our renowned Weldlok® brand, NEPEAN Building & Infrastructure manufactures and supplies a wide range of innovative drainage products which set the benchmark for other suppliers to follow. Beware of imitations.

This brochure is designed to assist councils, civil engineers, architects and drainage contractors with the correct selection of Weldlok® forge-welded mild steel drainage grates.

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WELDLOK® DRAINAGE GRATES CONSTRUCTION

Standards compliance

Weldlok® drainage grates comply with the following Australian Standards, unless stated otherwise:

- > **AS3996-2006**
Access covers and grates
- > **AS/NZS4680:2006**
Hot-dip galvanising
- > **AS/NZS 1594:2002**
Hot rolled steel flat products.
- > **ISO/IEC17025:2005**
Competence of testing and calibration laboratories

Testing

Drainage grates are load class tested in our own NATA-accredited load test facility. Test reports are available on request, subject to conditions. The National Association of Testing Authorities (NATA) is Australia's Government-endorsed provider of accreditation for laboratories.



Accreditation No. 12043

Hydraulic performance

Weldlok® forgebar grating provides superior hydraulic flow over traditional cast iron grates.

Pedestrian/bicycle safe

Weldlok® grates are suitable for both pedestrian and bicycle traffic applications.

Construction

- > Manufactured from steel grade HA250
- > Cross bars are forge-welded into the load bars, providing one-piece construction
- > Every load bar is welded to the edging bars
- > Heavy-duty fixed hinge pins
- > Handle-shaped concrete tie-ins

Load class selection

Unless stated otherwise, the stormwater grates detailed in this brochure are manufactured to comply with the load classes shown in the table below.



Table Notes:

1. The appropriate class for a grate depends on the location of the installation. The table provides a guide to load class relative to location.
2. The selection of the appropriate class is the responsibility of the designer. Where there is doubt, the stronger class should be specified.
3. Nominal wheel loads are provided for guidance only. Consideration should be given to the type, size and pneumatic pressure of the applied loads.
4. Class B design loads exceed AS5100.2 requirements for footway loading.
5. Class D design loads exceed AS5100.2 requirements for a W80 wheel load.
6. Class C grates are based on an intermediate load.
7. The serviceability load is set at two-thirds of the ultimate limit state design load.
8. A force of 1kN is approximately equal to a weight of 100kg.

| TRAFFIC CONDITIONS | | NOMINAL WHEEL LOADING (KG) | SERVICEABILITY DESIGN LOAD (kN) | ULTIMATE LIMIT DESIGN LOAD (kN) |
|---|--|----------------------------|---------------------------------|---------------------------------|
| CLASS A – Extra Light Duty: Areas, including footways, accessible only to pedestrians and pedal cyclists and closed to other traffic | | 330 | 6.7 | 10 |
| CLASS B – Light Duty: Areas, including footways and light tractor paths accessible to vehicles (excluding commercial vehicles) or livestock | | 2670 | 53 | 80 |
| CLASS C – Medium Duty: Malls and areas open to slow-moving commercial traffic | | 5000 | 100 | 150 |
| CLASS D – Heavy Duty: Carriageways of roads and areas open to commercial vehicles | | 8000 | 140 | 210 |

Table reproduced with the permission of Standards Australia

ORDERING & INSTALLATION

Ordering Information

Our experienced sales staff can recommend the most appropriate drainage product for your application.

Before ordering drainage grates, please compile the following information:

Traffic Loading

What loads will be applied to the grate?

- > Pedestrian only
- > Car
- > Tractor
- > Commercial vehicle
- > Semi-trailer
- > Forklift (weight fully laden)
- > Other (specify)

Direction of Traffic

In what direction will vehicles be travelling?

- > Predominantly in one direction, parallel to load bars
- > Multi-directional travel

Location

Where will the grate be installed?

- > Footway
- > Mall
- > Carpark
- > Road (kerb & gutter)
- > Road (traffic lane)
- > Other (specify)

Load Class

What class rating is required?

- > Refer to Load Classification table on opposite page

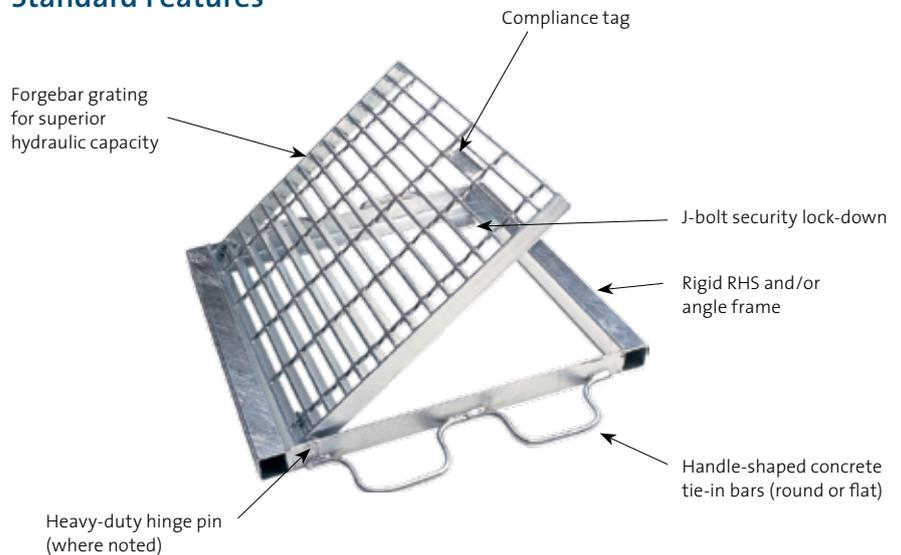
Pit Size

- > What are the clear internal pit dimensions?
- > Is it an existing pit (provide details) or will it be formed up?

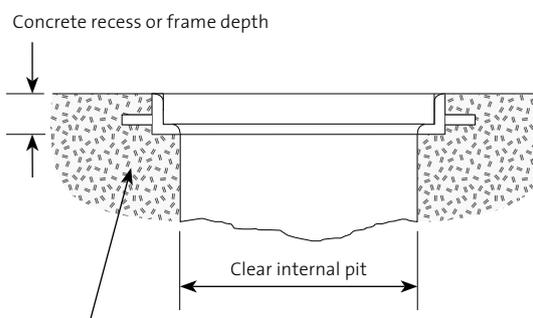
Special Requirements

- > Are there any special council requirements? (provide drawing details)
- > Is hinging required?
- > Is J-bolt lock-down fixing required?

Standard Features



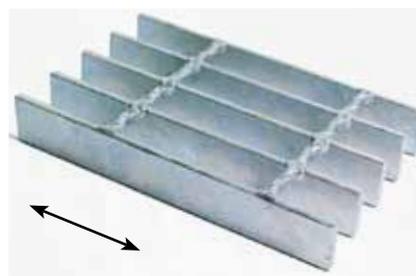
Cross-Section Through Pit



Surrounding concrete should have a minimum compressive strength of 32 MPa and be fully compacted in and around the frame to eliminate voids

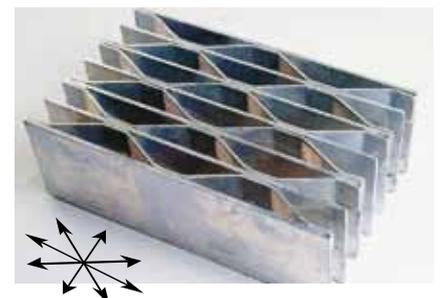
Correct Installation – Relative to vehicle traffic direction

IMPORTANT: Incorrect installation may lead to reduced product service life



Forgebar Grating

Traffic direction parallel to load bars



Diamond Grating

Multi-directional traffic

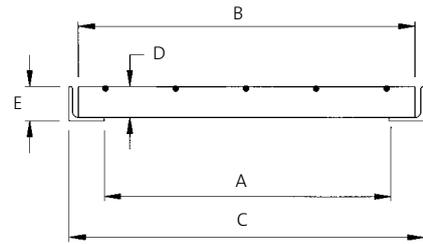
WELDLOK® DRAINAGE GRATES

HPG

Hinged Pit Grates

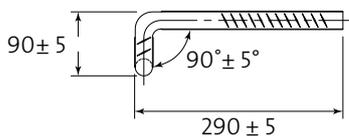
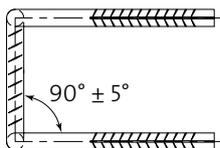
| WELDLOK PRODUCT CODES | AS3996 CLASS RATING | INSIDE PIT DIM. (NOM.) A (MM) | GRATE SIZE B (MM) | FRAME OVERALL C (MM) | GRATE DEPTH D (MM) | FRAME DEPTH E (MM) |
|-----------------------|---------------------|-------------------------------|-------------------|----------------------|--------------------|--------------------|
| HPG4545A | A | 450 x 450 | 500 x 455 | 515 x 520 | 25 | 30 |
| HPG4560A | A | 450 x 600 | 500 x 605 | 515 x 670 | 25 | 30 |
| HPG6060A | A | 600 x 600 | 650 x 605 | 665 x 670 | 25 | 30 |
| HPG6090A | A | 600 x 900 | 650 x 905 | 665 x 970 | 25 | 30 |
| HPG9090A | A | 900 x 900 | 950 x 905 | 965 x 970 | 25 | 30 |
| HPG3030B | B | 300 x 300 | 350 x 305 | 365 x 370 | 25 | 30 |
| HPG4545B | B | 450 x 450 | 530 x 455 | 545 x 550 | 40 | 45 |
| HPG4560B | B | 450 x 600 | 530 x 605 | 545 x 700 | 40 | 45 |
| HPG6060B | B | 600 x 600 | 700 x 605 | 715 x 720 | 50 | 55 |
| HPG6090B | B | 600 x 900 | 700 x 905 | 715 x 1020 | 50 | 55 |
| HPG9090B | B | 900 x 900 | 988 x 905 | 1005 x 1010 | 57 | 65 |
| HPG4545D | D | 450 x 450 | 538 x 455 | 555 x 560 | 57 | 65 |
| HPG4560D | D | 450 x 600 | 538 x 605 | 555 x 710 | 57 | 65 |
| HPG6060D | D | 600 x 600 | 688 x 606 | 705 x 712 | 57 | 65 |
| HPG6090D | D | 600 x 900 | 688 x 906 | 705 x 1012 | 57 | 65 |
| HPG9090D | D | 900 x 900 | 988 x 906 | 1005 x 1012 | 57 | 65 |

Hinged Pit Grate

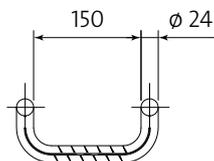


Step Irons

Plan View

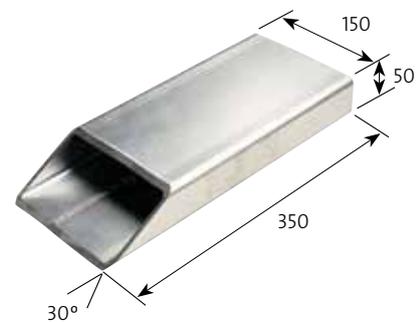


Elevation



End Elevation

Weep Hole (150 x 50 x 4 RHS)

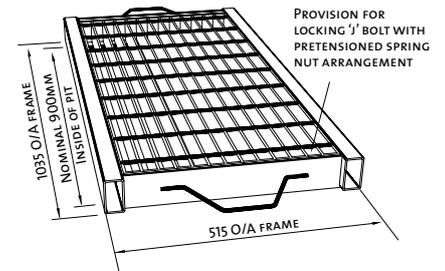


Weep Holes manufactured from 150 x 50 x 4 RHS section.

WELDLOK® DRAINAGE GRATES

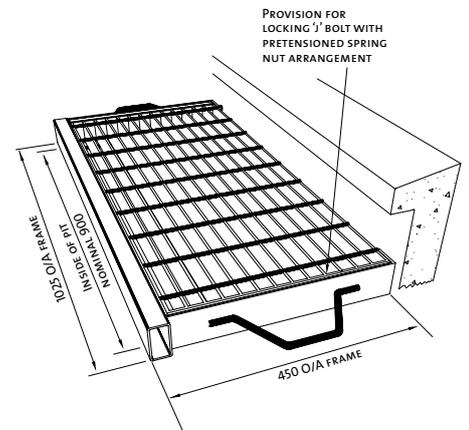
GG42D Gully Grate – Four-Sided Frame

- > Load Class D
- > Suitable for highways and expressways
- > Internal clear opening 900mm x 430mm
- > Four-sided frame
- > Hinged grate and frame
- > Security J-bolt locking system
- > Bicycle safe



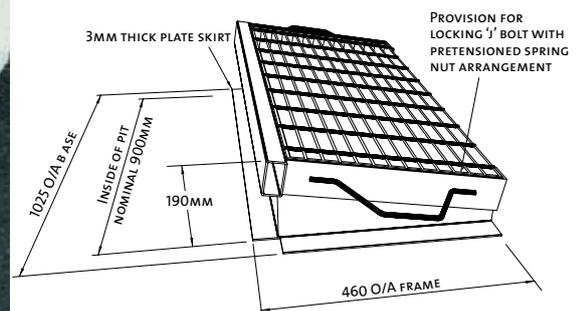
GG50D Gully Grate – Three-Sided Frame

- > Load Class D
- > Suitable for sub-divisions and highways
- > Internal clear opening 900mm x 400mm
- > Three-sided frame for ease of pit access
- > Hinged grate and frame
- > Security J-bolt locking system
- > Bicycle safe



GG51D Gully Grate – Skirted Base

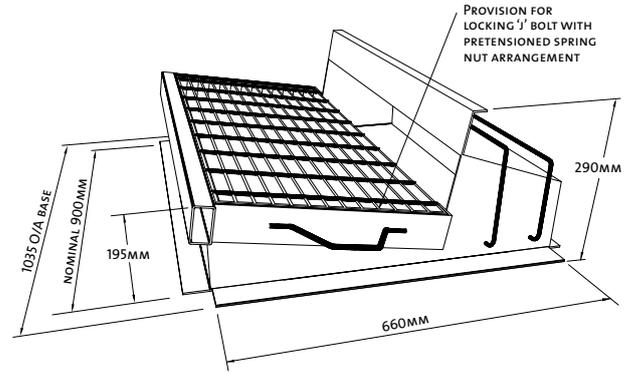
- > Load Class D
- > Suitable for sub-divisions and highways
- > Internal clear opening 900mm x 400mm
- > Three-sided frame matched to road camber
- > Hinged grate and frame
- > Security J-bolt locking system
- > Bicycle safe



WELDLOK® DRAINAGE GRATES

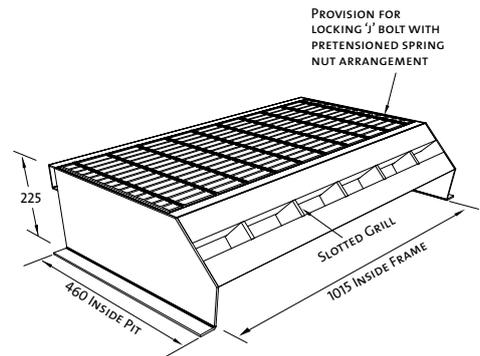
GG57D Gully Grate – Skirted Base & Lintel

- > Load Class D
- > Suitable for sub-divisions
- > Internal clear opening 900mm x 400mm
- > Three-sided frame with lintel, matched to road camber
- > Hinged grate and frame
- > Security J-bolt locking system
- > Bicycle safe



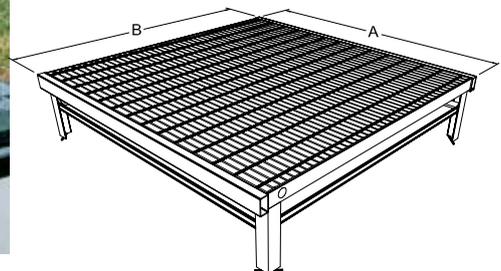
GG64C Median Strip Grate

- > Load Class C
- > Suitable for median strips
- > Internal clear opening 900mm x 460mm
- > Four-sided frame with slotted grill
- > Hinged grate and frame
- > Security J-bolt locking system



SPG Surcharge Pit Grates

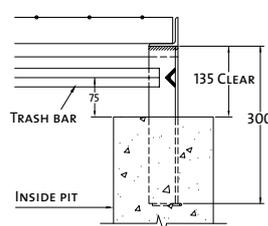
- > Load Class A
- > Legs cast-in or bolt-down
- > Hinged grate and frame
- > Security J-bolt locking system



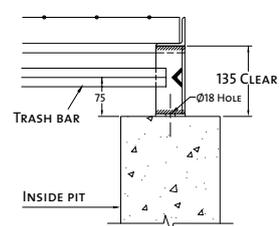
| SPG PRODUCT CODE | NOM. INSIDE PIT DIMENSIONS (MM) | DIMENSIONS | |
|------------------|---------------------------------|------------|------|
| | | A | B |
| SPG66 | 600 x 600 | 810 | 760 |
| SPG69 | 600 x 900 | 810 | 1080 |
| SPG99 | 900 x 900 | 1100 | 1080 |
| SPG912 | 900 x 1200 | 1100 | 1370 |
| SPG1212 | 1200 x 1200 | 1410 | 1370 |

To order optional Bolted Legs, add 'BL' suffix to product code, e.g., SPG66-BL.

STANDARD CAST-IN LEG



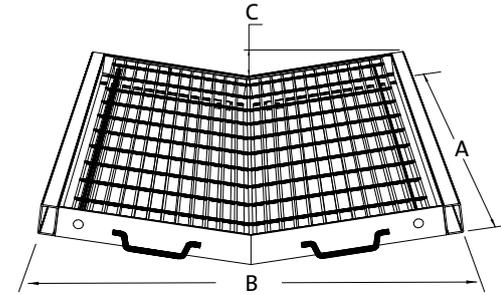
OPTIONAL BOLTED LEG



WELDLOK® DRAINAGE GRATES

DCG Dished Crossing Grates

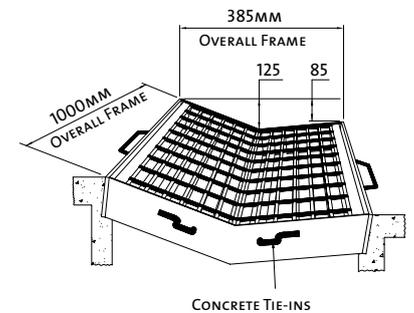
- > Load Class C or D
- > Suitable for dished crossings
- > Hinged both sides
- > Security J-bolt locking system
- > Bicycle safe



| DCG PRODUCT CODE | CLEAR OPENING (MM) | DIMENSIONS | | |
|------------------|--------------------|------------|-----|----|
| | | A | B | C |
| DCG66D | 600 x 600 | 700 | 705 | 50 |
| DCG77D | 750 x 750 | 850 | 820 | 50 |
| DCG96D | 900 x 600 | 1000 | 705 | 50 |
| DCG98D | 900 x 800 | 1035 | 885 | 65 |

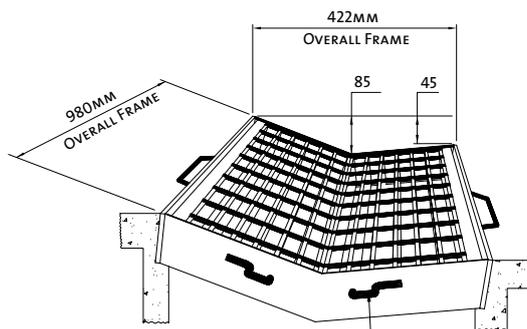
RFK Roll-Formed Kerb Grates

- > Load Class D
- > Suitable for roll-formed kerbs in sub-divisions
- > Security fixing as noted
- > Bicycle safe

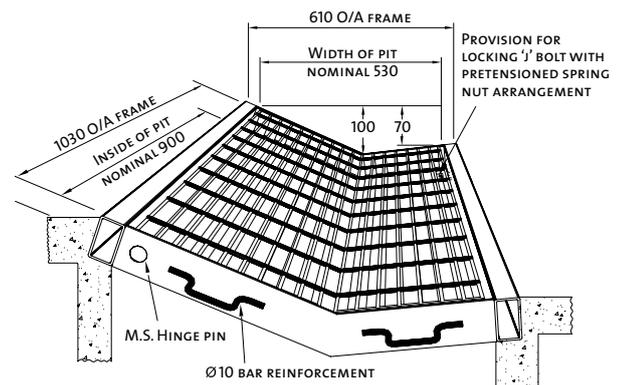


RFK93SMD

| RFK PRODUCT CODE | CLEAR OPENING (MM) | TYPE | FIXING |
|------------------|--------------------|----------|-----------|
| RFK93SMD | 900 x 375 | LIFT-OUT | BOLT-DOWN |
| RFK94WCD | 900 x 410 | LIFT-OUT | BOLT-DOWN |
| RFK95SYD | 900 x 530 | HINGED | J-BOLT |



RFK94WCD



RFK95SYD

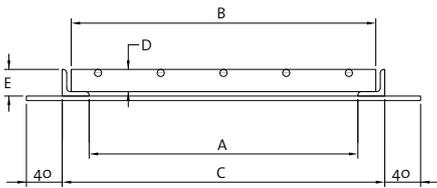
WELDLOK® DRAINAGE GRATES

TGF

Trench Grates & Frames

- > Load Class rated as noted
- > TGF15A has longitudinal load bars, all others have transverse load bars
- > Hinged trench grating available on request

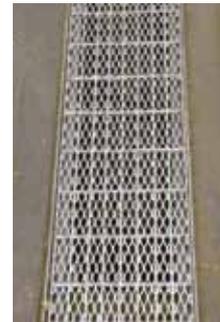
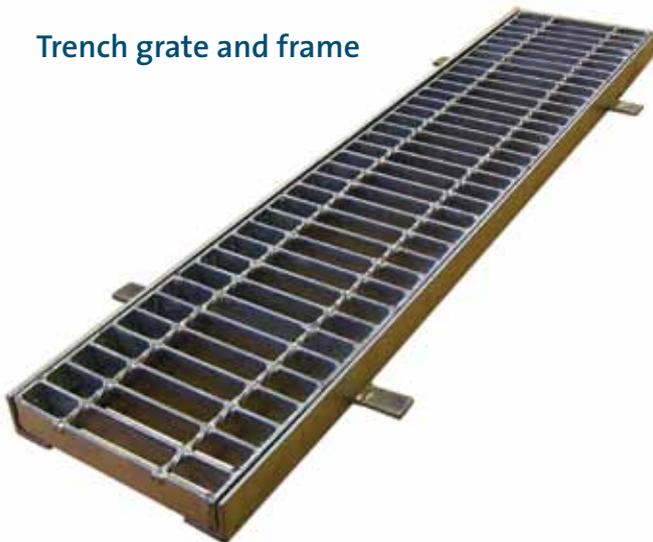
| WELDLOK PRODUCT CODE | AS3996 CLASS RATING | CLEAR OPENING A (MM) | GRATE WIDTH B (MM) | FRAME OVERALL C (MM) | GRATE DEPTH D (MM) | FRAME DEPTH E (MM) |
|----------------------|---------------------|----------------------|--------------------|----------------------|--------------------|--------------------|
| TGF15A | A | 150 | *215L | 230 | 32 | 40 |
| TGF20A | A | 200 | 244 | 260 | 25 | 30 |
| TGF15B | B | 150 | 214 | 230 | 32 | 40 |
| TGF24B | B | 240 | 284 | 300 | 25 | 30 |
| TGF30B | B | 300 | 364 | 380 | 32 | 40 |
| TGF45B | B | 450 | 534 | 550 | 45 | 50 |
| TGF60B | B | 600 | 684 | 700 | 57 | 65 |
| TGF30C | C | 300 | 384 | 400 | 45 | 50 |
| TGF45C | C | 450 | 528 | 550 | 65 | 75 |
| TGF60C | C | 600 | 678 | 700 | 65 | 75 |
| TGF15D | D | 150 | 224 | 240 | 40 | 45 |
| TGF24D | D | 240 | 334 | 350 | 50 | 55 |
| TGF30D | D | 300 | 378 | 400 | 65 | 75 |
| TGF45D | D | 450 | 544 | 562 | 75 | 80 |
| TGF60D | D | 600 | 694 | 712 | 75 | 80 |



* TGF15A has longitudinal load bars

Trench grates are not suitable for forklift and heavy vehicle loading. Please consult NEPEAN Building & Infrastructure.

Trench grate and frame



Safety mesh for heels is available for the top of grates (on request)

WELDLOK® DRAINAGE GRATES

Custom Grates & Frames

NEPEAN Building & Infrastructure supplies many municipal councils, government departments, road authorities and drainage contractors with a variety of galvanised mild steel drainage grates. We can custom manufacture drainage grates to specific customer requirements, with load testing to AS3996:2006 if required.



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NEPEAN
Building & Infrastructure

HEAD OFFICE

NSW

117-153 Rookwood Road
(PO Box 57)
Yagoona NSW 2199
Australia

P: + 61 2 9707 5000
F: + 61 2 9790 1013
E: bi@nepean.com

BRANCHES

NSW (COFFS HARBOUR)

47 Wingara Drive
(PO Box 396)
Coffs Harbour, NSW 2450
Australia

P: + 61 2 6652 4100
F: + 61 2 6652 2285
E: coffs.bi@nepean.com

QLD

967 Nudgee Road
(PO Box 283)
Banyo QLD 4014

P: + 61 7 3633 1333
F: + 61 7 3633 1313
E: qld.bi@nepean.com

VIC

171 Derrimut Drive
Derrimut VIC 3030
Australia

P: + 61 3 9394 1001
F: + 61 3 9394 1441
E: vic.bi@nepean.com

WA

98 Campbell Street
Belmont WA 6104
(PO Box 267
Cloverdale, WA 6985)

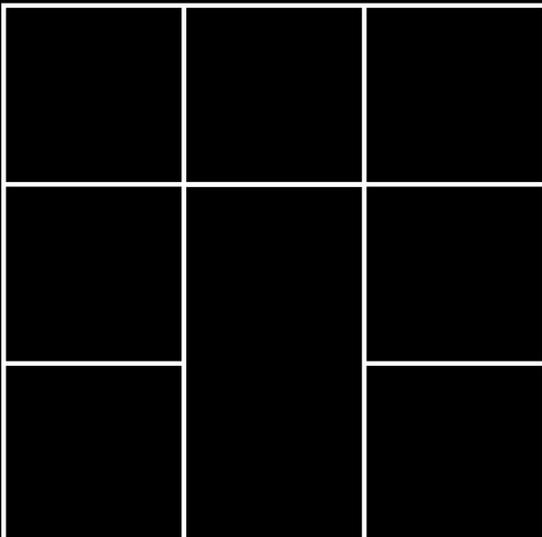
P: + 61 8 9478 1034
F: + 61 8 9277 7742
E: wa.bi@nepean.com

CHINA

12F Digital Mansion
16 Huizhandonglu Road
Torch Zone, Zhongshan City
Guangdong Province
P.R. China 528437

P: + 86 760 8992 3558
F: + 86 760 8992 3559
M: + 86 159 1334 3700 (China)
M: + 61 419 782 122 (Australia)
E: nepean.asia@nepean.com

www.nepean.com



TM