

# WELDLOK DRAINAGE PRODUCTS



**Weldlok** INDUSTRIES



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

## WELDLOK INDUSTRIES

A division of the Graham Group

An Australian-owned company with over 50 years experience.

Since 2007 The Graham Group has been owned by the Nepean Group, which is Australia's leading privately owned, diversified engineering and industrial manufacturing conglomerate.

Weldlok Industries 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)
<b>CLASS A – Extra Light Duty:</b> Areas, including footways, accessible only to pedestrians and pedal cyclists and closed to other traffic 	330	6.7	10
<b>CLASS B – Light Duty:</b> Areas, including footways and light tractor paths accessible to vehicles (excluding commercial vehicles) or livestock 	2670	53	80
<b>CLASS C – Medium Duty:</b> Malls and areas open to slow-moving commercial traffic 	5000	100	150
<b>CLASS D – Heavy Duty:</b> Carriageways of roads and areas open to commercial vehicles 	8000	140	210

Table reproduced with the permission of Standards Australia

# ORDERING & INSTALLATION

## Ordering Information

Weldlok's 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?

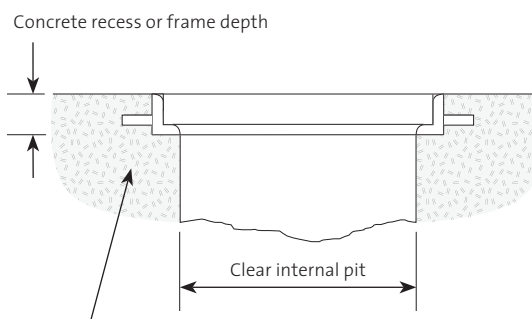
### Special Requirements

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

## Standard Features



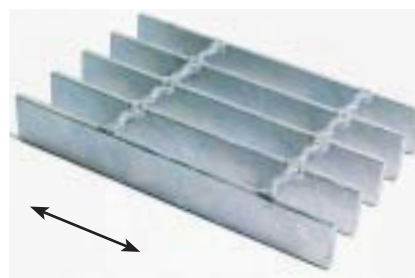
## Cross-Section Through Pit



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

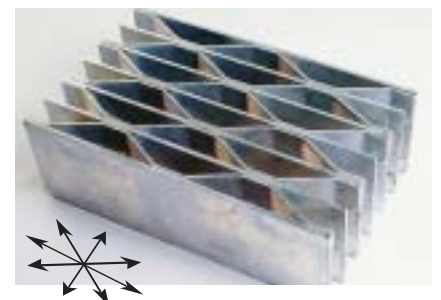
## Correct Installation – Relative to vehicle traffic direction

**IMPORTANT:** Incorrect installation may lead to reduced product service life



### Forgebar Grating

Traffic direction parallel to load bars



### Diamond Grating

Multi-directional traffic

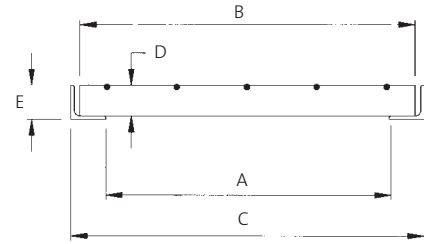
# WELDLOK DRAINAGE GRATES

## HPG

### Hinged Pit Grates

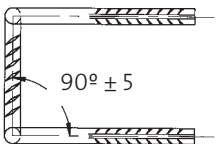
WELDLOK PRODUCT CODES	AS3996 CLASS RATING	INSIDE PIT DIM. (NOM.) A (MM)	GRATE SIZE B (MM)	FRAME OVERALL C (MM)	GRATE DEPTH D (MM)	FRAME DEPTH E (MM)
HPG4545A	A	450 x 450	500 x 455	515 x 520	25	30
HPG4560A	A	450 x 600	500 x 605	515 x 670	25	30
HPG6060A	A	600 x 600	650 x 605	665 x 670	25	30
HPG6090A	A	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

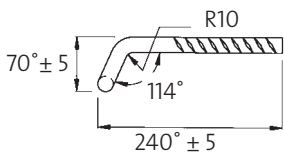


### Step Irons

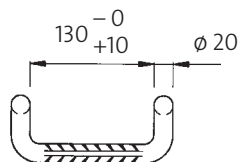
Plan



Sydney Water Standard Step Irons available with prior notification.

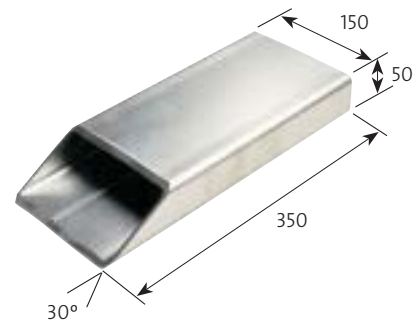


Elevation



End Elevation

### Weep Hole (150 x 50 x 4 RHS)

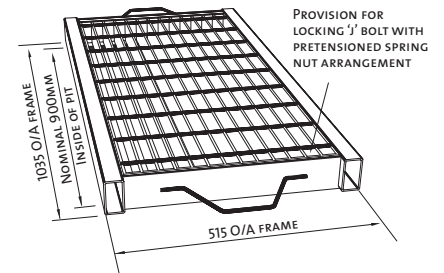


Weep Holes manufactured from 150 x 50 x 4 RHS section.

# WELDLOK DRAINAGE GRATES

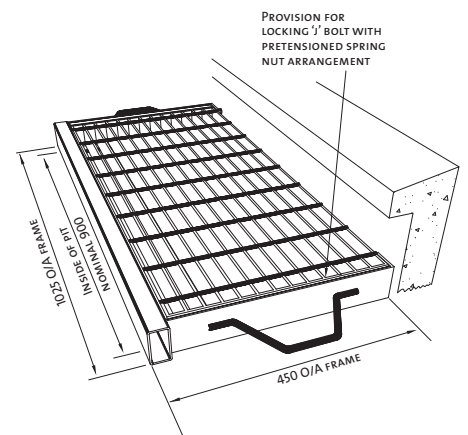
## GG42D Gully Grate – Four-Sided Frame

- > 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



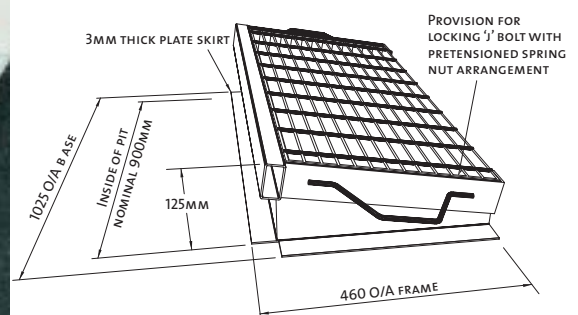
## GG50D Gully Grate – Three-Sided Frame

- > 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

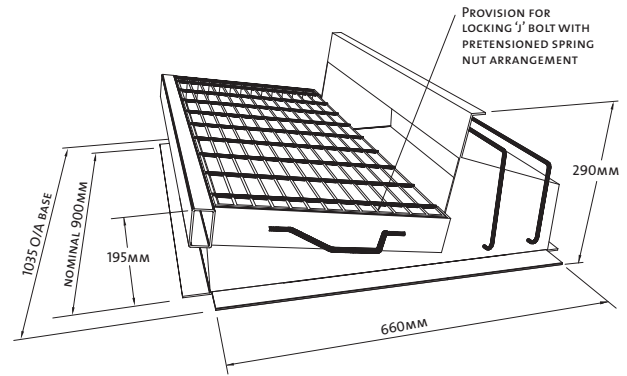
- > Load Class D
- > Suitable for sub-divisions and highways
- > Internal clear opening 900mm x 400mm
- > Three-sided frame matched to road camber
- > Hinged grate and frame
- > Security J-bolt locking system
- > Bicycle safe



# WELDLOK DRAINAGE GRATES

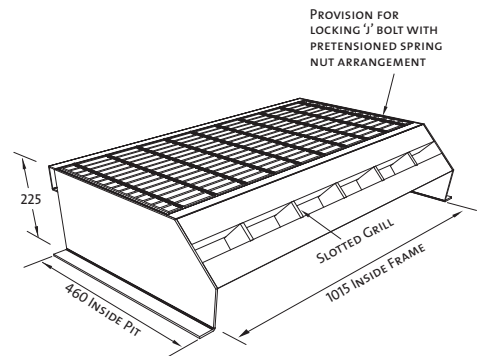
## GG57D Gully Grate – Skirted Base & Lintel

- > 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



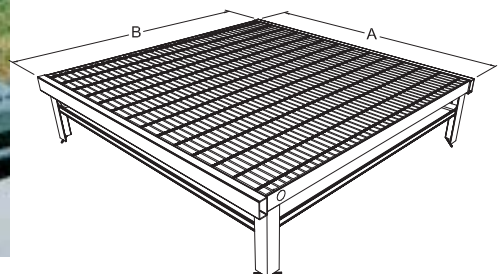
## GG64C Median Strip Grate

- > 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

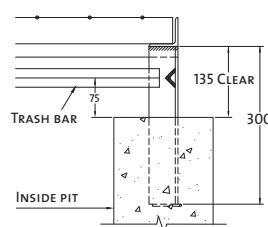
- > Load Class A
- > Legs cast-in or bolt-down
- > Hinged grate and frame
- > Security J-bolt locking system



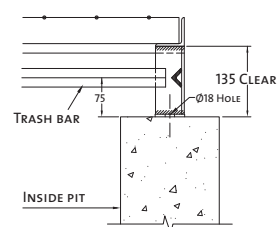
SPG PRODUCT CODE	NOM. INSIDE PIT DIMENSIONS (MM)	DIMENSIONS	
		A	B
SPG66	600 x 600	810	760
SPG69	600 x 900	810	1080
SPG99	900 x 900	1100	1080
SPG912	900 x 1200	1100	1370
SPG1212	1200 x 1200	1410	1370

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

STANDARD CAST-IN LEG



OPTIONAL BOLTED LEG

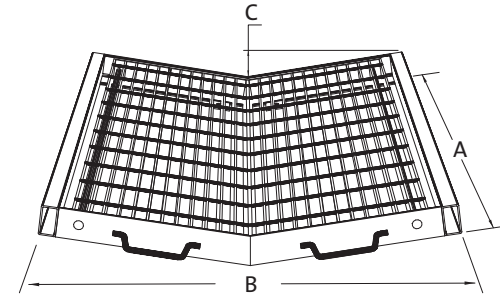


# WELDLOK DRAINAGE GRATES

## DCG

### Dished Crossing Grates

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

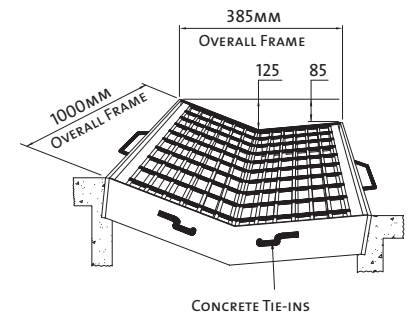


DCG PRODUCT CODE	CLEAR OPENING (MM)	DIMENSIONS		
		A	B	C
DCG66D	600 x 600	700	705	50
DCG77D	750 x 750	850	820	50
DCG96D	900 x 600	1000	705	50
DCG98D	900 x 800	1035	885	65

## RFK

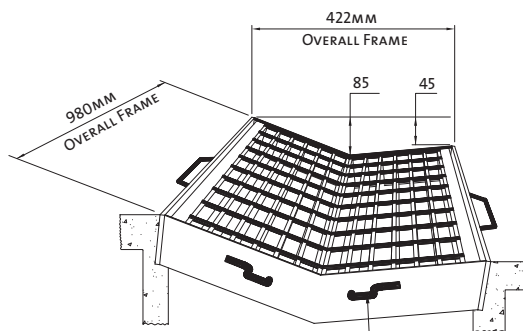
### Roll-Formed Kerb Grates

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

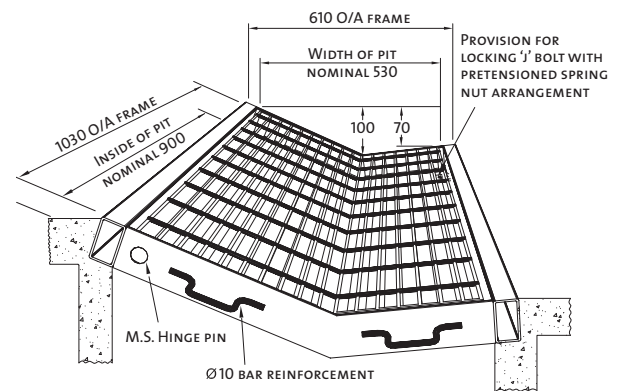


RFK93SMD

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

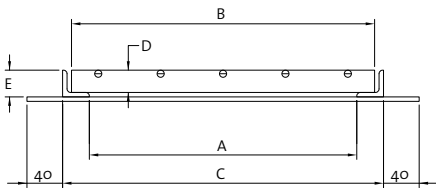
# WELDLOK DRAINAGE GRATES

## TGF

### Trench Grates & Frames

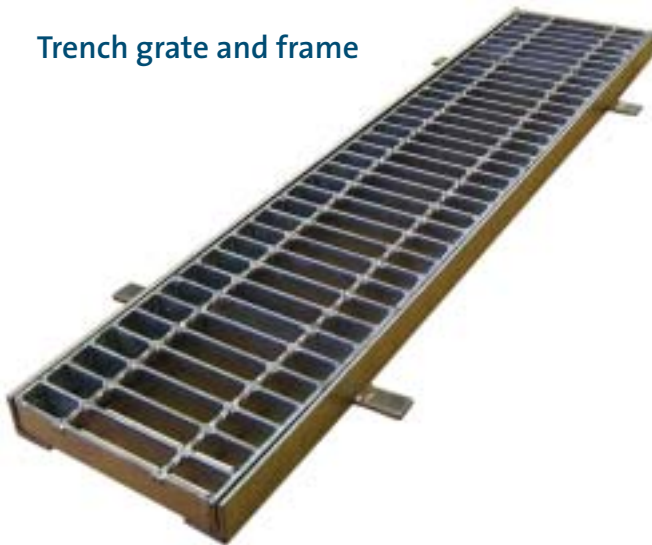
- > Load Class rated as noted
- > TGF15A has longitudinal load bars, all others have transverse load bars
- > Hinged trench grating available on request
- > For areas subject to forklift and heavy vehicle loading, consult Weldlok

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 grate and frame



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

# WELDLOK DRAINAGE GRATES

## Custom Grates & Frames

Weldlok 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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