

# ACO Surface Water Management

Commercial Trench Drains



## **ACO DRAIN®**

*KlassikDrain Leaflet*

**Introduction to the general purpose KlassikDrain System**

**K100 – 100mm width, steel edge channel**

**K200 – 200mm width, steel edge channel**

**K300 – 300mm width, steel edge channel**



## ACO DRAIN®

ACO Drain® is the leading modular trench drain system and is ideal for commercial applications ranging from petrol stations to airports.

ACO Drain® systems comprise Polycrete® Channels\*, factory manufactured modular units made from corrosion resistant polymer concrete. Channels are to be used with grates from a variety of materials for all loading applications. ACO Drain® systems are available in 50mm, 100mm, 200mm and 300mm internal widths, and most systems have a built-in slope for up to 40 continuous metres.

The ACO Drain® brand is segmented into different product ranges, dependent on use.

### 1. Standard Products

KlassikDrain  
PowerDrain  
SlabDrain

### 2. Specialty Products

Brickslot  
MiniKlassik  
Grated Pits



## KlassikDrain

KlassikDrain is available in 100mm, 200mm and 300mm widths and is a general purpose trench drain comprising modular Polycrete® Channels\*. Each interconnecting unit is manufactured complete with integrally cast galvanised steel edge rails (K100/K200/K300) or for enhanced corrosion resistance and aesthetics, stainless steel edge rails (KS100/KS200/KS300).

A variety of grates is available in different materials and styles up to load class D (AS 3996). This is equivalent to approximately 8 tonne wheel load. There is also a specialist range of grates marketed under the trademark, Heelsafe® Anti-Slip. These are pedestrian friendly grates with certified slip ratings to AS 4586.

For quick fitting and removal during installation and maintenance, most grates are locked down with the patented, barless and boltless mechanism, DrainLok.

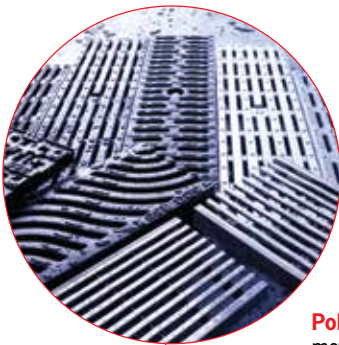
\* Polycrete® refers to ACO Products made from polymer concrete

### Typical applications

- *Parking lots & garages*
- *Shopping centres*
- *Pedestrian areas*
- *Light industrial areas*
- *Commercial areas*
- *Internal applications*



**Product overview – K100 / K200 / K300**



**Wide choice of grates** – in a variety of materials and designs including **Heelsafe® Anti-Slip** grates for applications from load class A to load class D (up to approx. 8 tonne wheel load) AS 3996.

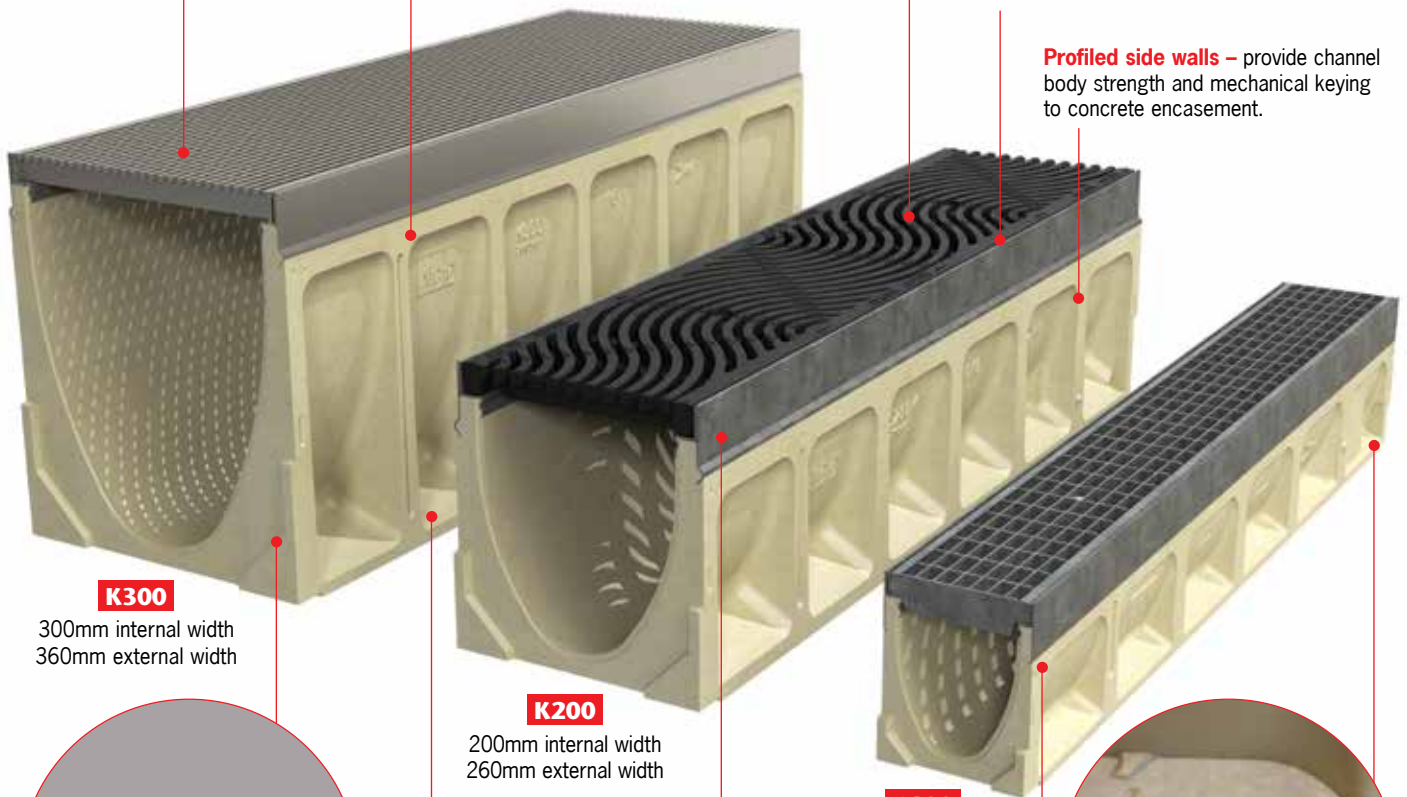


**DrainLok** – patented, barless and boltless locking system provides quick fitting and removal of grates. Helps reduce installation time, maintenance time and cost. Provides four locking points per metre.

**Polymer concrete** – a durable yet lightweight material made from polyester resin binder reinforced by mineral aggregates and fillers.

**'Anti-shunt' lugs** – lugs in some grates fit into recesses on the edge rail to prevent longitudinal movement.

**Profiled side walls** – provide channel body strength and mechanical keying to concrete encasement.



**K300**

300mm internal width  
360mm external width

**K200**

200mm internal width  
260mm external width

**K100**

100mm internal width  
130mm external width



**Interconnecting end profiles** allow easy and effective joining of channels. **SF Sealant Groove** – a groove is cast into both ends of every channel. The combined groove allows for a bead of appropriate flexible sealant to be inserted at joints, if required.

**Integrally cast-in galvanised steel edge rail** provides additional strength and protects channel body from damage. (Stainless steel grade 304 edge rail also available).



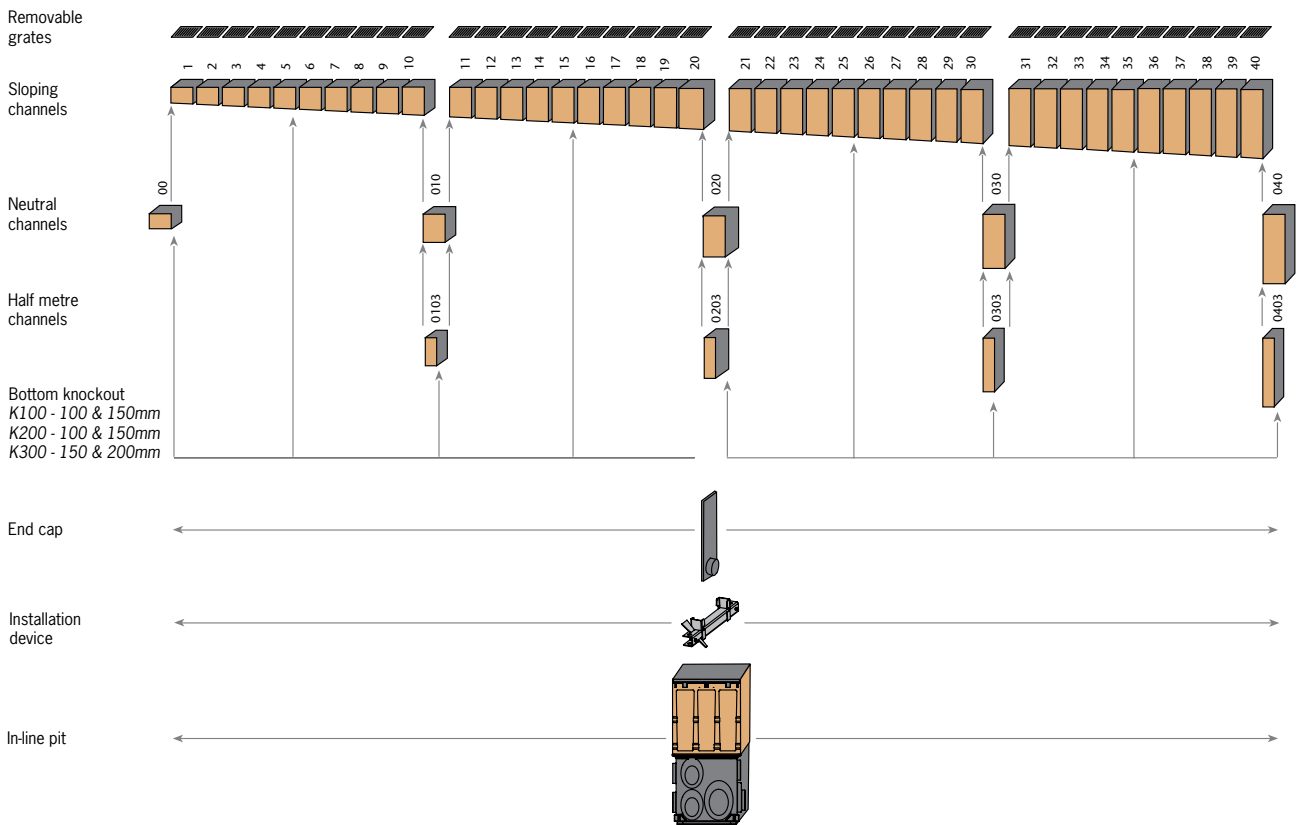
**Knock-outs** are included on every fifth channel unit to allow vertical outlet connection to the pipework.

**Sloped (0.5%) channel units** – metre long units provide 40 metres continuous slope. This equates to 5mm fall per metre. Five neutral channels extend run lengths. Four half-metre units and accessories also available.

**Channel identification and system numbering** – in addition to channel numbering on sidewalls and (invert) base of channel, each end of the channel indicates the number of the channel that will connect to it.



# Typical system layout – K100 / K200 / K300

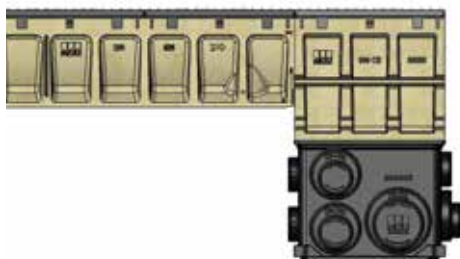


## In-line pit options

Polymer concrete in-line pits are most commonly used as the outlet to the underground pipework for a trench run. They provide the highest hydraulic output and allow easy access to the pipe system for maintenance.

Type 900 in-line pits are the same width as the trench run.

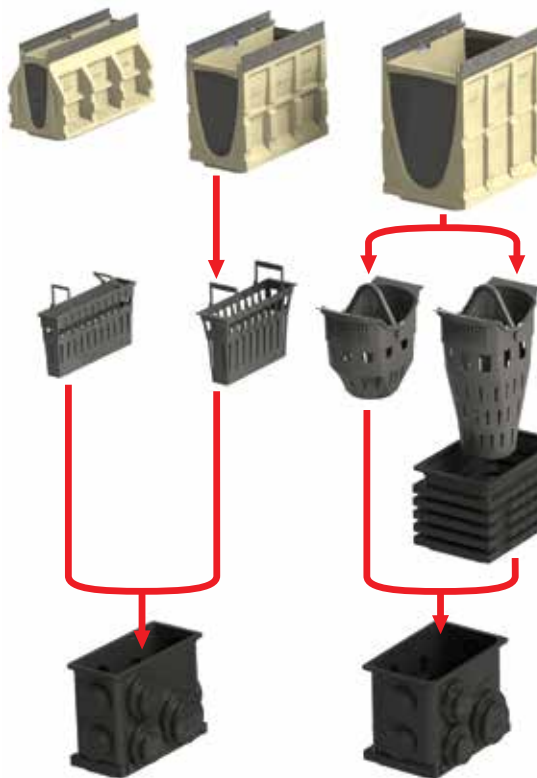
The polymer concrete in-line top enables the same grate to be used as the trench run for a seamless finish.



**K1-901G/S**

**K2-902G/S**

**K3-903G/S**



**Polymer concrete in-line top with steel edge rail.**

**Optional plastic rubbish basket**

**Optional plastic riser to increase depth and hydraulic output.**

**Plastic base with choice of outlet sizes and locations.**

Both K1-901 and K2-902 in-line pits use the same base and provides access for pipe maintenance.

**Note:** "G" indicates galvanised steel edge rail  
"S" indicates stainless steel edge rail

**Parts table**

	K100 – 100mm internal width				K200 – 200mm internal width				K300 – 300mm internal width			
	Part No.		Invert <sup>2</sup> Weight		Part No.		Invert <sup>2</sup> Weight		Part No.		Invert <sup>2</sup> Weight	
	Galv	S/S	mm	kg	Galv	S/S	mm	kg	Galv	S/S	mm	kg
<b>00 Neutral channel (1m)<sup>1</sup></b>	<b>144041</b>	<b>144441</b>	100	12.7	<b>145041</b>	<b>145441</b>	200	37.9	<b>146041</b>	<b>146441</b>	300	60.1
1 Sloped channel (1m)	144001	144401	105	12.7	145001	145401	205	37.9	146001	146401	305	60.1
2 Sloped channel (1m)	144002	144402	110	13.1	145002	145402	210	38.4	146002	146402	310	60.7
3 Sloped channel (1m)	144003	144403	115	13.5	145003	145403	215	38.9	146003	146403	315	61.2
4 Sloped channel (1m)	144004	144404	120	13.8	145004	145404	220	39.4	146004	146404	320	61.8
5 Sloped channel (1m) <sup>1</sup>	144005	144405	125	14.2	145005	145405	225	39.9	146005	146405	325	62.3
6 Sloped channel (1m)	144006	144406	130	14.6	145006	145406	230	40.4	146006	146406	330	62.9
7 Sloped channel (1m)	144007	144407	135	14.9	145007	145407	235	40.9	146007	146407	335	63.4
8 Sloped channel (1m)	144008	144408	140	15.3	145008	145408	240	41.4	146008	146408	340	64.0
9 Sloped channel (1m)	144009	144409	145	15.6	145009	145409	245	41.9	146009	146409	345	64.5
10 Sloped channel (1m) <sup>1</sup>	144010	144410	150	16.0	145010	145410	250	42.4	146010	146410	350	65.0
<b>010 Neutral channel (1m)<sup>1</sup></b>	<b>144043</b>	<b>144443</b>	150	16.0	<b>145043</b>	<b>145443</b>	250	42.4	<b>146043</b>	<b>146443</b>	350	65.0
<b>0103 Neutral channel (0.5m)<sup>1</sup></b>	<b>144044</b>	<b>144444</b>	150	7.7	<b>145044</b>	<b>145444</b>	250	25.4	<b>146044</b>	<b>146444</b>	350	34.2
11 Sloped channel (1m)	144011	144411	155	16.4	145011	145411	255	42.9	146011	146411	355	65.6
12 Sloped channel (1m)	144012	144412	160	16.7	145012	145412	260	43.4	146012	146412	360	66.1
13 Sloped channel (1m)	144013	144413	165	17.1	145013	145413	265	43.9	146013	146413	365	66.7
14 Sloped channel (1m)	144014	144414	170	17.5	145014	145414	270	44.4	146014	146414	370	67.2
15 Sloped channel (1m) <sup>1</sup>	144015	144415	175	17.8	145015	145415	275	44.9	146015	146415	375	67.8
16 Sloped channel (1m)	144016	144416	180	18.2	145016	145416	280	45.4	146016	146416	380	68.3
17 Sloped channel (1m)	144017	144417	185	18.6	145017	145417	285	45.9	146017	146417	385	68.9
18 Sloped channel (1m)	144018	144418	190	18.9	145018	145418	290	46.4	146018	146418	390	69.4
19 Sloped channel (1m)	144019	144419	195	19.3	145019	145419	295	46.9	146019	146419	395	69.9
20 Sloped channel (1m) <sup>1</sup>	144020	144420	200	19.7	145020	145420	300	47.4	146020	146420	400	70.5
<b>020 Neutral channel (1m)<sup>1</sup></b>	<b>144045</b>	<b>144445</b>	200	19.7	<b>145045</b>	<b>145445</b>	300	47.4	<b>146045</b>	<b>146445</b>	400	70.5
<b>0203 Neutral channel (0.5m)<sup>1</sup></b>	<b>144046</b>	<b>144446</b>	200	9.3	<b>145046</b>	<b>145446</b>	300	29.0	<b>146046</b>	<b>146446</b>	400	37.3
21 Sloped channel (1m)	144021	144421	205	20.0	145021	145421	305	47.9	146021	146421	405	71.1
22 Sloped channel (1m)	144022	144422	210	20.4	145022	145422	310	48.4	146022	146422	410	71.6
23 Sloped channel (1m)	144023	144423	215	20.8	145023	145423	315	48.9	146023	146423	415	72.2
24 Sloped channel (1m)	144024	144424	220	21.1	145024	145424	320	49.4	146024	146424	420	72.7
25 Sloped channel (1m) <sup>1</sup>	144025	144425	225	21.5	145025	145425	325	49.9	146025	146425	425	73.3
26 Sloped channel (1m)	144026	144426	230	21.9	145026	145426	330	50.4	146026	146426	430	73.8
27 Sloped channel (1m)	144027	144427	235	22.2	145027	145427	335	50.9	146027	146427	435	74.3
28 Sloped channel (1m)	144028	144428	240	22.6	145028	145428	340	51.4	146028	146428	440	74.9
29 Sloped channel (1m)	144029	144429	245	23.0	145029	145429	345	51.9	146029	146429	445	75.4
30 Sloped channel (1m) <sup>1</sup>	144030	144430	250	23.3	145030	145430	350	52.4	146030	146430	450	76.0
<b>030 Neutral channel (1m)<sup>1</sup></b>	<b>144047</b>	<b>144447</b>	250	23.3	<b>145047</b>	<b>145447</b>	350	52.4	<b>146047</b>	<b>146447</b>	450	76.0
<b>0303 Neutral channel (0.5m)<sup>1</sup></b>	<b>144048</b>	<b>144448</b>	250	10.9	<b>145048</b>	<b>145448</b>	350	30.8	<b>146048</b>	<b>146448</b>	450	40.6
31 Sloped channel (1m)	144031	144431	255	23.7	145031	145431	355	52.9	146031	146431	455	76.5
32 Sloped channel (1m)	144032	144432	260	24.0	145032	145432	360	53.4	146032	146432	460	77.1
33 Sloped channel (1m)	144033	144433	265	24.4	145033	145433	365	53.9	146033	146433	465	77.6
34 Sloped channel (1m)	144034	144434	270	24.8	145034	145434	370	54.4	146034	146434	470	78.2
35 Sloped channel (1m) <sup>1</sup>	144035	144435	275	25.1	145035	145435	375	54.9	146035	146435	475	78.7
36 Sloped channel (1m)	144036	144436	280	25.5	145036	145436	380	55.4	146036	146436	480	79.2
37 Sloped channel (1m)	144037	144437	285	25.9	145037	145437	385	55.9	146037	146437	485	79.8
38 Sloped channel (1m)	144038	144438	290	26.3	145038	145438	390	56.4	146038	146438	490	80.3
39 Sloped channel (1m)	144039	144439	295	26.6	145039	145439	395	56.9	146039	146439	495	80.9
40 Sloped channel (1m) <sup>1</sup>	144040	144440	300	27.0	145040	145440	400	57.4	146040	146440	500	81.4
<b>040 Neutral channel (1m)<sup>1</sup></b>	<b>144049</b>	<b>144449</b>	300	27.0	<b>145049</b>	<b>145449</b>	400	57.4	<b>146049</b>	<b>146449</b>	500	81.4
<b>0403 Neutral channel (0.5m)<sup>1</sup></b>	<b>144050</b>	<b>144450</b>	300	12.5	<b>145050</b>	<b>145450</b>	400	34.9	<b>146050</b>	<b>146450</b>	500	44.3
Type 900 In-line pit (0.5m) <sup>3</sup>	141817	141818	723 <sup>4</sup>	23.9	141819	141820	843 <sup>4</sup>	30.8	141821	141822	956 <sup>4</sup>	39.9
Type 900 In-line plastic rubbish basket		01498	–	0.5		13999	–	0.5		98653	–	1.6
Optional plastic riser										141729	300	4.5
Plastic rubbish basket – long										98665	–	1.8
Universal end cap		96822	315 <sup>4</sup>	0.2		96821	420 <sup>4</sup>	0.6		96826	520 <sup>4</sup>	1.1
Debris strainer for 100mm knockout		93488	–	0.1		93488	–	0.1				
Installation device		97477	–	1.3		97478	–	1.8		97479	–	2.2
Grate removal tool		01318	–	0.1		01318	–	0.1		01318	–	0.1

**Notes:**

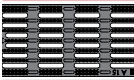
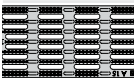
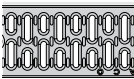
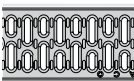
1. This channel offers bottom knockout feature; K100 – 100mm round & 150mm oval, K200 – 100mm & 150mm round, K300 – 150mm & 200mm round.
2. Inverts shown are male end, for female invert depth – subtract 5mm from male invert (except neutral channels where it will be same as male invert).  
To calculate overall channel depth: K100, add 20mm to invert depth; K200/K300, add 25mm to invert depth.
3. In-line pit assembly (polymer concrete top with galvanised (G)/stainless (S) steel edge rail and plastic base). Select appropriate grate to suit.
4. Overall depth of in-line pit and end caps.

# KlassikDrain DrainLok grates




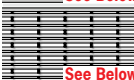

## K100 grates

Length mm Part No. Wgt kg    


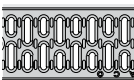
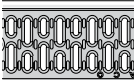
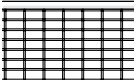



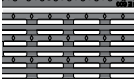
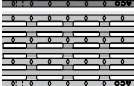
### LOAD CLASS A – AS 3996 – 10kN – approximate wheel load 330kg

	Type 494D Black Plastic Intercept Heelsafe® Anti-Slip	500	142459	0.8	✓	✓	✓	✓
	Type 495D Grey Plastic Intercept Heelsafe® Anti-Slip	500	142460	0.8	✓	✓	✓	✓
	Type 420D/421D Galv Slotted	1000 500	12610 12611	2.7 1.4	✓	✗	✓	✗
	Type 450D/452D Stainless Slotted	1000 500	12640 12641	2.7 1.4	✓	✗	✓	✗

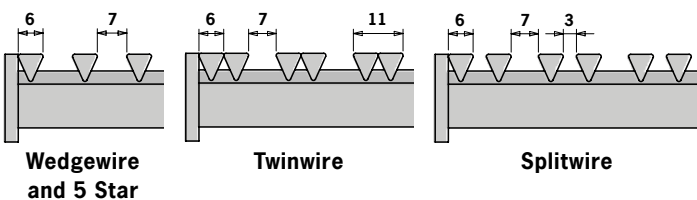
### LOAD CLASS B – AS 3996 – 80kN – approximate wheel load 2,670kg

	Type 447D/448D Stainless Wedgewire¹ Heelsafe® Anti-Slip	1000 500	142215 142216	3.2 1.6	✓	✓	✓	✓
	Type 443D/444D Stainless 5 Star¹ Heelsafe® Anti-Slip	1000 500	142217 142218	3.2 1.6	✓	✓	✓	✓
	Type 441D/442D Stainless Twinwire¹ Heelsafe® Anti-Slip	1000 500	142556 142557	4.4 2.2	✓	✓	✓	✓
	Type 439D/440D Stainless Splitwire¹ Heelsafe® Anti-Slip	1000 500	142569 142570	4.4 2.2	✓	✓	✓	✓
	Type 438D/437D Galv Longitudinal¹ Heelsafe® Anti-Slip	1000 500	132555 132550	4.0 2.1	✓	✓	✓	✓

### LOAD CLASS D – AS 3996 – 210kN – approximate wheel load 8,000kg

	Type 492D Plastic Slotted¹ Heelsafe® Anti-Slip	500	132720	1.0	✓	✓	✓	✓
	Type 425D/426D Galv Slotted	1000 500	12614 12615	4.0 2.0	✓	✗	✓	✗
	Type 455D/457D Stainless Slotted	1000 500	12644 12645	4.0 2.0	✓	✗	✓	✗
	Type 405Q/406Q Galv Mesh²	1000 500	142401 142402	4.3 2.2	✗	✗	✓	✗
	Type 430Q/431Q Stainless Mesh²	1000 500	142403 142404	4.1 2.1	✗	✗	✓	✗
	Type 480D Iron Wave¹ Heelsafe® Anti-Slip	500	142461	4.5	✓	✓	✓	✓
	Type 460D Iron Slotted	500	12670	4.6	✓	✗	✓	✗
	Type 476D Iron Intercept¹ Heelsafe® Anti-Slip	500	142171	5.8	✓	✓	✓	✓
	Type 475D Iron Galv Intercept¹ Heelsafe® Anti-Slip	500	142172	5.8	✓	✓	✓	✓






## Stainless Wire Cross-sections





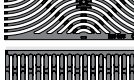



## K200 grates

Length mm Part No. Wgt kg    

### LOAD CLASS B – AS 3996 – 80kN – approximate wheel load 2,670kg

	Type 647D/648D Stainless Wedgewire¹ Heelsafe® Anti-Slip	1000 500	142219 142220	7.5 3.7	✓	✓	✓	✓
	Type 643D/644D Stainless 5 Star¹ Heelsafe® Anti-Slip	1000 500	142221 142222	7.5 3.7	✓	✓	✓	✓
	Type 641D/642D Stainless Twinwire¹ Heelsafe® Anti-Slip	1000 500	142558 142559	9.0 4.5	✓	✓	✓	✓
	Type 639D/640D Stainless Splitwire¹ Heelsafe® Anti-Slip	1000 500	142571 142572	9.0 4.5	✓	✓	✓	✓
	Type 607Q/608Q Galv Transverse²	1000 500	142411 142412	7.8 4.2	✗	✗	✓	✗

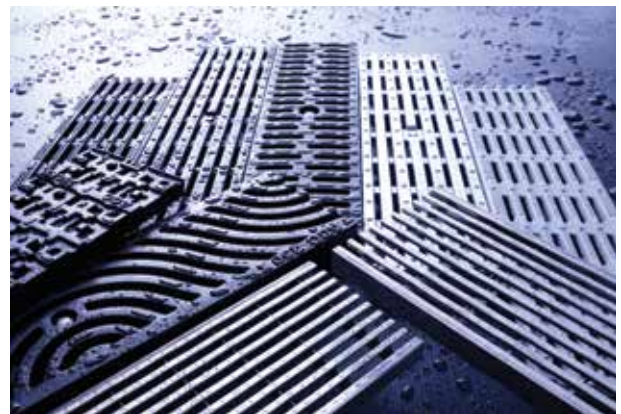
### LOAD CLASS D – AS 3996 – 210kN – approximate wheel load 8,000kg

	Type 605Q/606Q Galv Mesh²	1000 500	142405 142406	13.8 7.1	✗	✗	✓	✗
	Type 630Q/631Q Stainless Mesh²	1000 500	142407 142408	13.0 6.6	✗	✗	✓	✗
	Type 680D Iron Wave¹ Heelsafe® Anti-Slip	500	142462	12.7	✓	✓	✓	✓
	Type 660D Iron Slotted	500	142177	12.0	✓	✗	✓	✗
	Type 676D Iron Intercept¹ Heelsafe® Anti-Slip	500	142173	10.0	✓	✓	✓	✓
	Type 675D Iron Galv Intercept¹ Heelsafe® Anti-Slip	500	142174	10.0	✓	✓	✓	✓

## Heelsafe® Anti-Slip grates



ACO believes that pedestrian friendly grates and slip resistance go hand in hand. The grates with the trademark, **Heelsafe® Anti-Slip** comply to AS 3996, AS 4586 and all the specific user requirements described opposite. For more information visit [www.heelsafe.com.au](http://www.heelsafe.com.au)








KlassikDrain's Heelsafe® Anti-Slip grate range

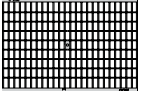
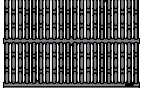

**K300 grates**

**Length mm Part No. Wgt kg**    

**LOAD CLASS B – AS 3996 – 80kN – approximate wheel load 2,670kg**

 <small>See Below</small>	Type 847D/848D Stainless Wedgewire¹ Heelsafe® Anti-Slip	1000	<b>142223</b>	12.5	✓	✓	✓	✓
	500	<b>142224</b>	6.2	✓	✓	✓	✓	
 <small>See Below</small>	Type 843D/844D Stainless 5 Star¹ Heelsafe® Anti-Slip	1000	<b>142225</b>	12.5	✓	✓	✓	✓
	500	<b>142226</b>	6.2	✓	✓	✓	✓	
 <small>See Below</small>	Type 841D/842D Stainless Twinwire¹ Heelsafe® Anti-Slip	1000	<b>142560</b>	15.1	✓	✓	✓	✓
	500	<b>142561</b>	7.6	✓	✓	✓	✓	
 <small>See Below</small>	Type 839D/840D Stainless Splitwire¹ Heelsafe® Anti-Slip	1000	<b>142573</b>	15.1	✓	✓	✓	✓
	500	<b>142574</b>	7.6	✓	✓	✓	✓	
	Type 807Q/808Q Galv Transverse²	1000	<b>142413</b>	12.4	✗	✗	✓	✗
	500	<b>142414</b>	6.3	✗	✗	✓	✗	

**LOAD CLASS D – AS 3996 – 210kN – approximate wheel load 8,000kg**





	Type 805Q Galv Mesh²	500	<b>142409</b>	12.7	✗	✗	✓	✗
	Type 830Q Stainless Mesh²	500	<b>142410</b>	15.1	✗	✗	✓	✗
	Type 880D Iron Wave¹ Heelsafe® Anti-Slip	500	<b>142463</b>	21.8	✓	✓	✓	✓
	Type 860D Iron Slotted	500	<b>13870</b>	19.0	✓	✗	✓	✗
	Type 876D Iron Intercept¹ Heelsafe® Anti-Slip	500	<b>142175</b>	15.9	✓	✓	✓	✓
	Type 875D Iron Galv Intercept¹ Heelsafe® Anti-Slip	500	<b>142176</b>	15.9	✓	✓	✓	✓

¹ Meets ASME A112.6.3 Section 7.12 (American high heel standard).

² Denotes QuickLok grates. QuickLok bar included in grate Part Number.

**Specific user requirements**

ACO's grates meet some or all of the legislative requirements described below:

-  Wheelchair compliant to AS 1428.2, Clause 9(c). Slots cannot exceed 13mm (width), 150mm (length). Longitudinal grates are to be placed at right angles to the principal direction of travel.
-  Grates designed to resist the penetration of a 10mm heel.
-  Bicycle tyre penetration resistant to AS 3996. Criteria on slot length dependant on slot width.
-  Pedestrian safe grates with slip resistance, rated to AS 4586.

**DrainLok – barless and boltless locking system**



Fast locking device removes the need for bars and bolts and improves the channels hydraulic capacity. The DrainLok mechanism simply clips into the channel edge rail for quick installation. ACO's DrainLok grates are fitted with anti-shunt lugs that restrict grate movement when installed, improving durability and longevity of the system.



**1**

**PLACE GRATE**

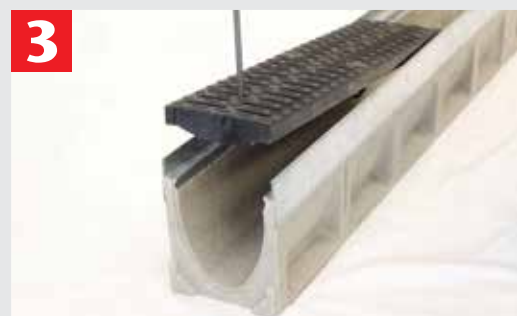
Position grate onto channel and align anti-shunt lugs with the recess in the rail.



**2**

**SECURE GRATE**

Push down or stand on the grate until it clicks into position.



**3**

**GRATE REMOVAL**

To remove first grate, insert grate removal tool into slots at the end of the grate and pull up sharply. Remaining grates can be removed by hand.



## Other ACO DRAIN® systems

### PowerDrain

A heavy duty trench drainage system available in 100mm, 200mm and 300mm internal widths.

### SlabDrain

For shallow slab areas where depth is limited. SlabDrain is available in 100mm, 200mm and 300mm internal widths with two edge rail options.

### Brickslot

A discreet continuous slot drainage solution for brick or stone pavers.

### MiniKlassik

A compact grated trench drain for small-scale areas.

### Grated Pits

A range of grated pits and risers made from polymer concrete.

## ACO Polycrete Pty Ltd

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