

ACO Surface Water Management

Commercial Trench Drains



ACO DRAIN®

PowerDrain Leaflet

Introduction to the heavy duty PowerDrain System

S100K – 100mm width, ductile iron edge channel

S200K – 200mm width, ductile iron edge channel

S300K – 300mm width, ductile iron 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



PowerDrain

PowerDrain is available in 100mm, 200mm and 300mm widths and is a heavy duty general purpose trench drain comprising modular Polycrete® Channels*. Each interconnecting unit is manufactured complete with integrally cast ductile iron edge rails.

A choice of 2 grates (including Heelsafe® Anti-Slip) is available up to load class G (AS 3996). This is equivalent to approximately 30 tonne wheel load.

For quick locking and removal during installation and maintenance, all grates are locked down with the patented, barless and boltless mechanism, PowerLok.

* Polycrete® refers to ACO Products made from polymer concrete

Typical applications

- Airports
- Highways
- Heavy duty industrial areas
- Petrol stations
- Docks and ports
- Military bases
- Truck stops



Product overview – S100K / S200K / S300K



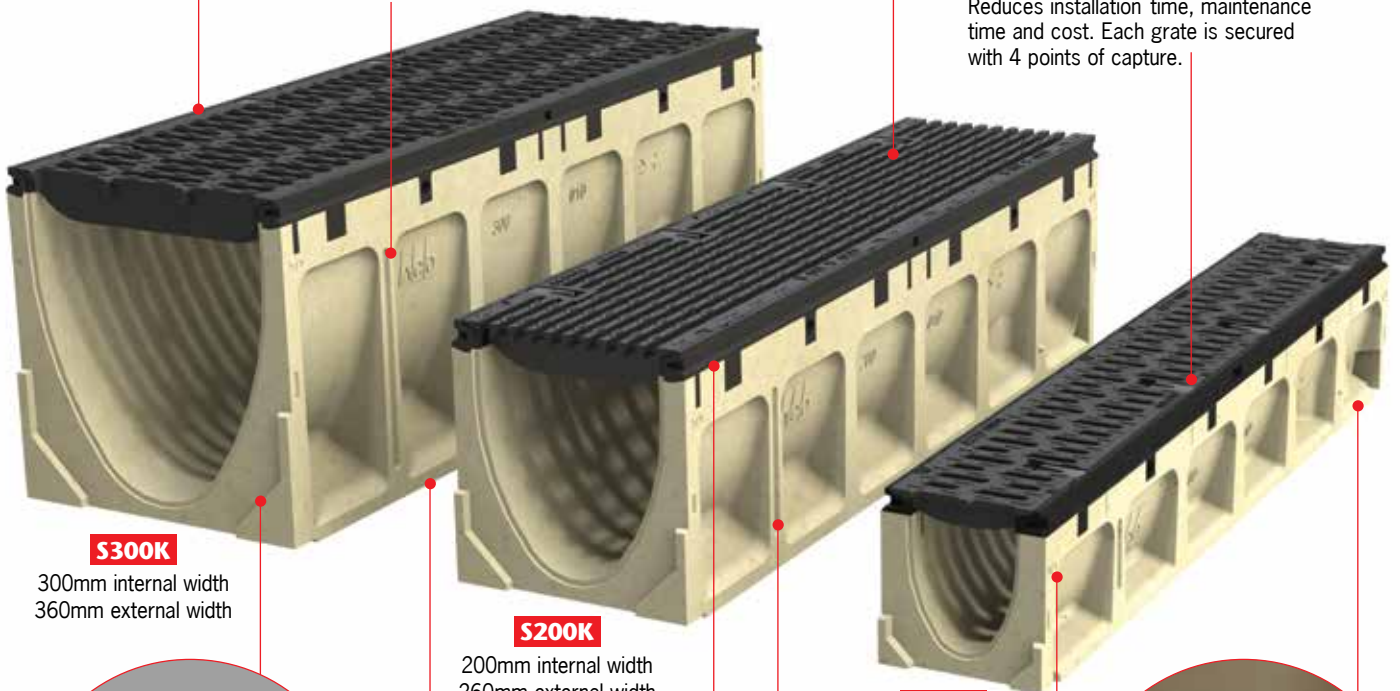
'Anti-shunt' lugs – recesses in grate fit around lugs on the edge rail to prevent longitudinal movement.



Ductile iron grates – rated up to AS 3996 load class G (approx. 30 tonne wheel load) heavy duty ductile iron Slotted or Intercept **Heelsafe®** Anti-Slip grates.

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

PowerLok – is a patented, barless and boltless locking system that provides easy fitting and removal of grates. Reduces installation time, maintenance time and cost. Each grate is secured with 4 points of capture.



S300K

300mm internal width
360mm external width

S200K

200mm internal width
260mm external width

S100K

100mm internal width
160mm 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.

Ductile iron edge rail – integrally cast-in rail provides maximum strength and protection for channel body.

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



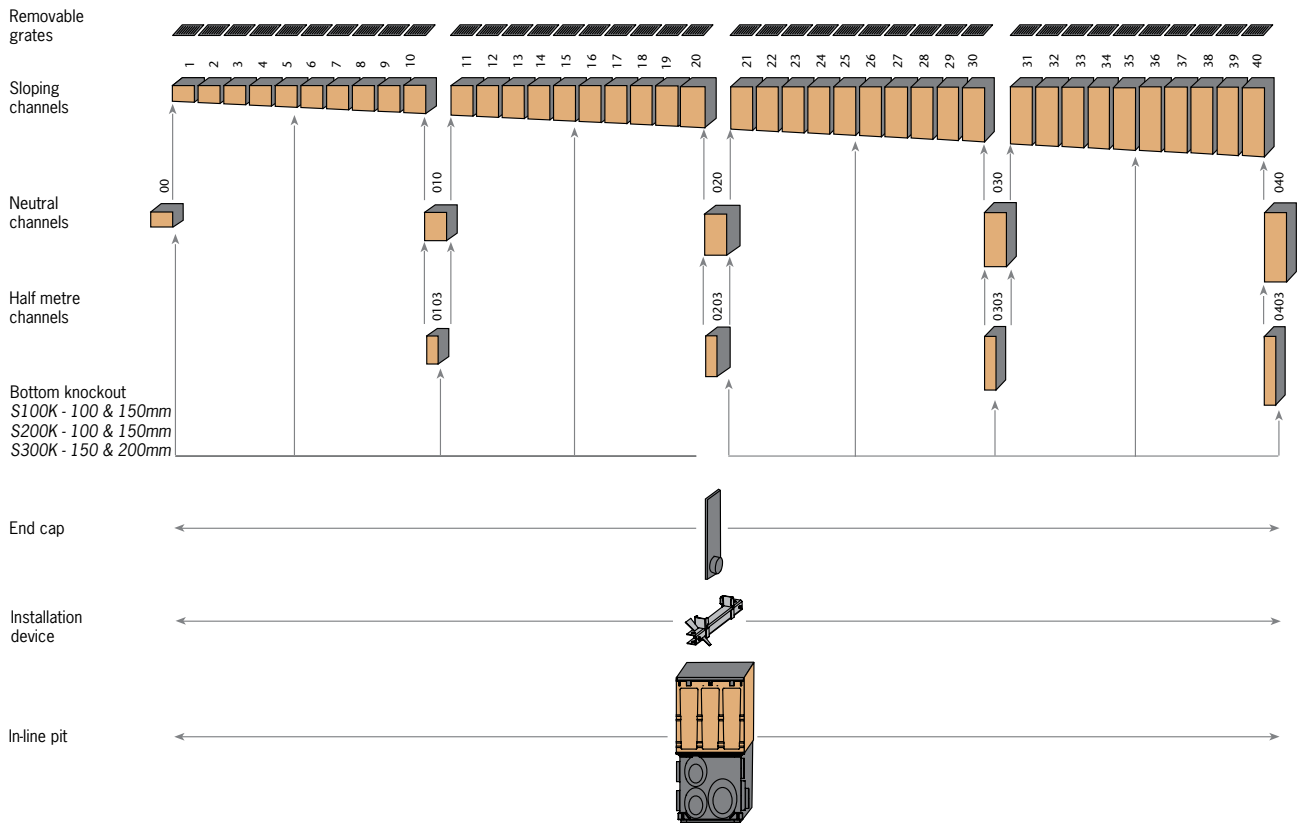
Knock-outs are included on every fifth channel unit to allow vertical outlet connection to the pipework.

Sloped (0.5%) channel – 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 are 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 – S100K / S200K / S300K



PowerLok – barless and boltless locking system



1 To open PowerLok, insert tool between rail and PowerLok device.



2 Rotate tool 90°; PowerLok device should push away from rail.



3 To close, place hook part of tool into 'V' and push towards rail.

PowerLok – safety clip (optional)



For areas of security or safety concerns, the PowerLok safety clip provides a visual alert to confirm the grate is locked and secure.



The safety clip push-fits next to the locked PowerLok device. Safety clip sits flush with grate surface and grate cannot be unlocked.



To open PowerLok device, the safety clip must be removed. If no red block is visible, the locking is not guaranteed. This provides a visual alert that grates may not be locked.

Parts table

| | S100K – 100mm internal width | | | S200K – 200mm internal width | | | S300K – 300mm internal width | | |
|--|------------------------------|------------------------|-----------|------------------------------|------------------------|-----------|------------------------------|------------------------|-----------|
| | Channel Part No. | Invert ² mm | Weight kg | Channel Part No. | Invert ² mm | Weight kg | Channel Part No. | Invert ² mm | Weight kg |
| 00 Neutral channel (1m)¹ | 67041 | 100 | 22.5 | 68041 | 200 | 36.1 | 69041 | 300 | 59.1 |
| 1 Sloped channel (1m) | 67001 | 105 | 22.5 | 68001 | 205 | 36.1 | 69001 | 305 | 59.1 |
| 2 Sloped channel (1m) | 67002 | 110 | 22.9 | 68002 | 210 | 36.6 | 69002 | 310 | 59.6 |
| 3 Sloped channel (1m) | 67003 | 115 | 23.4 | 68003 | 215 | 37.1 | 69003 | 315 | 60.2 |
| 4 Sloped channel (1m) | 67004 | 120 | 23.8 | 68004 | 220 | 37.6 | 69004 | 320 | 60.7 |
| 5 Sloped channel (1m) ¹ | 67005 | 125 | 24.3 | 68005 | 225 | 38.1 | 69005 | 325 | 61.3 |
| 6 Sloped channel (1m) | 67006 | 130 | 24.7 | 68006 | 230 | 38.6 | 69006 | 330 | 61.9 |
| 7 Sloped channel (1m) | 67007 | 135 | 25.2 | 68007 | 235 | 39.1 | 69007 | 335 | 62.4 |
| 8 Sloped channel (1m) | 67008 | 140 | 25.6 | 68008 | 240 | 39.6 | 69008 | 340 | 63.0 |
| 9 Sloped channel (1m) | 67009 | 145 | 26.1 | 68009 | 245 | 40.1 | 69009 | 345 | 63.5 |
| 10 Sloped channel (1m) ¹ | 67010 | 150 | 26.5 | 68010 | 250 | 40.6 | 69010 | 350 | 64.1 |
| 010 Neutral channel (1m)¹ | 67043 | 150 | 26.5 | 68043 | 250 | 40.6 | 69042 | 350 | 64.1 |
| 0103 Neutral channel (0.5m)¹ | 67044 | 150 | 13.7 | 68044 | 250 | 26.5 | 69045 | 350 | 35.3 |
| 11 Sloped channel (1m) | 67011 | 155 | 27.0 | 68011 | 255 | 41.1 | 69011 | 355 | 64.6 |
| 12 Sloped channel (1m) | 67012 | 160 | 27.4 | 68012 | 260 | 41.6 | 69012 | 360 | 65.2 |
| 13 Sloped channel (1m) | 67013 | 165 | 27.9 | 68013 | 265 | 42.1 | 69013 | 365 | 65.8 |
| 14 Sloped channel (1m) | 67014 | 170 | 28.3 | 68014 | 270 | 42.6 | 69014 | 370 | 66.3 |
| 15 Sloped channel (1m) ¹ | 67015 | 175 | 28.8 | 68015 | 275 | 43.1 | 69015 | 375 | 66.9 |
| 16 Sloped channel (1m) | 67016 | 180 | 29.3 | 68016 | 280 | 43.6 | 69016 | 380 | 67.4 |
| 17 Sloped channel (1m) | 67017 | 185 | 29.7 | 68017 | 285 | 44.1 | 69017 | 385 | 68.0 |
| 18 Sloped channel (1m) | 67018 | 190 | 30.2 | 68018 | 290 | 44.6 | 69018 | 390 | 68.5 |
| 19 Sloped channel (1m) | 67019 | 195 | 30.6 | 68019 | 295 | 45.1 | 69019 | 395 | 69.1 |
| 20 Sloped channel(1m) ¹ | 67020 | 200 | 31.1 | 68020 | 300 | 45.6 | 69020 | 400 | 69.7 |
| 020 Neutral channel (1m)¹ | 67045 | 200 | 31.1 | 68045 | 300 | 45.6 | 69044 | 400 | 69.7 |
| 0203 Neutral channel (0.5m)¹ | 67046 | 200 | 15.7 | 68046 | 300 | 29.9 | 69047 | 400 | 38.5 |
| 21 Sloped channel (1m) | 67021 | 205 | 31.5 | 68021 | 305 | 46.1 | 69021 | 405 | 70.2 |
| 22 Sloped channel (1m) | 67022 | 210 | 32.0 | 68022 | 310 | 46.6 | 69022 | 410 | 70.8 |
| 23 Sloped channel (1m) | 67023 | 215 | 32.4 | 68023 | 315 | 47.1 | 69023 | 415 | 71.4 |
| 24 Sloped channel (1m) | 67024 | 220 | 32.8 | 68024 | 320 | 47.6 | 69024 | 420 | 71.9 |
| 25 Sloped channel (1m) ¹ | 67025 | 225 | 33.3 | 68025 | 325 | 48.1 | 69025 | 425 | 72.4 |
| 26 Sloped channel (1m) | 67026 | 230 | 33.7 | 68026 | 330 | 48.6 | 69026 | 430 | 73.0 |
| 27 Sloped channel (1m) | 67027 | 235 | 34.2 | 68027 | 335 | 49.1 | 69027 | 435 | 73.6 |
| 28 Sloped channel (1m) | 67028 | 240 | 34.7 | 68028 | 340 | 49.6 | 69028 | 440 | 74.1 |
| 29 Sloped channel (1m) | 67029 | 245 | 35.1 | 68029 | 345 | 50.1 | 69029 | 445 | 74.7 |
| 30 Sloped channel (1m) ¹ | 67030 | 250 | 35.6 | 68030 | 350 | 50.6 | 69030 | 450 | 75.3 |
| 030 Neutral channel (1m)¹ | 67047 | 250 | 35.6 | 68047 | 350 | 50.6 | 69046 | 450 | 75.3 |
| 0303 Neutral channel (0.5m)¹ | 67048 | 250 | 17.7 | 68048 | 350 | 32.0 | 69049 | 450 | 41.8 |
| 31 Sloped channel (1m) | 67031 | 255 | 36.0 | 68031 | 355 | 51.2 | 69031 | 455 | 75.8 |
| 32 Sloped channel (1m) | 67032 | 260 | 36.5 | 68032 | 360 | 51.7 | 69032 | 460 | 76.4 |
| 33 Sloped channel (1m) | 67033 | 265 | 36.9 | 68033 | 365 | 52.2 | 69033 | 465 | 76.9 |
| 34 Sloped channel (1m) | 67034 | 270 | 37.4 | 68034 | 370 | 52.7 | 69034 | 470 | 77.5 |
| 35 Sloped channel (1m) ¹ | 67035 | 275 | 37.8 | 68035 | 375 | 53.2 | 69035 | 475 | 78.1 |
| 36 Sloped channel (1m) | 67036 | 280 | 38.3 | 68036 | 380 | 53.7 | 69036 | 480 | 78.6 |
| 37 Sloped channel (1m) | 67037 | 285 | 38.7 | 68037 | 385 | 54.2 | 69037 | 485 | 79.2 |
| 38 Sloped channel (1m) | 67038 | 290 | 39.2 | 68038 | 390 | 54.7 | 69038 | 490 | 79.7 |
| 39 Sloped channel (1m) | 67039 | 295 | 39.6 | 68039 | 395 | 55.2 | 69039 | 495 | 80.3 |
| 40 Sloped channel (1m) ¹ | 67040 | 300 | 40.1 | 68040 | 400 | 55.7 | 69040 | 500 | 80.8 |
| 040 Neutral channel (1m)¹ | 67049 | 300 | 40.1 | 68049 | 400 | 55.7 | 69048 | 500 | 80.8 |
| 0403 Neutral channel (0.5m)¹ | 67050 | 300 | 19.8 | 68050 | 400 | 36.0 | 69050 | 500 | 45.5 |
| Type 900 In-line pit (0.5m) ³ | 142547 | 737 ⁴ | 39.3 | 142548 | 843 ⁴ | 32.3 | 142549 | 956 ⁴ | 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 | 96824 | 317 ⁴ | 0.2 | 96823 | 420 ⁴ | 0.6 | 96827 | 520 ⁴ | 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 |
| PowerLok safety clip | 10443 | – | – | 10443 | – | – | 10443 | – | – |

Notes:



1. This channel offers bottom knockout feature; S100K – 100mm round and 150mm oval, S200K – 100mm and 150mm round, S300K – 150mm and 200mm round.
2. Inverts shown are male ends, for female invert depths – subtract 5mm from male invert (except neutral channels where it will be the same as the male invert).
To calculate overall channel depth, add 25mm to invert depth.
3. In-line pit assembly (polymer concrete top with ductile iron edge rail and plastic base).
4. Overall depth of in-line pit and end caps.

PowerDrain PowerLok grates

S100K grates

Length mm Part No. Wgt kg    

LOAD CLASS G – AS 3996 – 900kN – approximate wheel load 30,000kg

| | | | | | | | | |
|---|--|-----|--------|-----|---|---|---|---|
|  | Iron Slotted | 500 | 96082 | 5.6 | ✓ | ✗ | ✓ | ✗ |
|  | Iron Intercept ¹ Heelsafe® Anti-Slip | 500 | 141299 | 6.8 | ✓ | ✓ | ✓ | ✓ |

S200K grates

Length mm Part No. Wgt kg    

LOAD CLASS G – AS 3996 – 900kN – approximate wheel load 30,000kg

| | | | | | | | | |
|---|--------------|-----|-------|------|---|---|---|---|
|  | Iron Slotted | 500 | 71976 | 14.5 | ✗ | ✗ | ✓ | ✗ |
|---|--------------|-----|-------|------|---|---|---|---|

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

| | | | | | | | | |
|---|--|-----|--------|-----|---|---|---|---|
|  | Iron Intercept ¹ Heelsafe® Anti-Slip | 500 | 142685 | 8.5 | ✓ | ✓ | ✓ | ✓ |
|---|--|-----|--------|-----|---|---|---|---|

S300K grates

Length mm Part No. Wgt kg    

LOAD CLASS G – AS 3996 – 900kN – approximate wheel load 30,000kg

| | | | | | | | | |
|---|--------------|-----|-------|------|---|---|---|---|
|  | Iron Slotted | 500 | 02445 | 24.4 | ✗ | ✗ | ✓ | ✗ |
|---|--------------|-----|-------|------|---|---|---|---|

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

| | | | | | | | | |
|---|--|-----|--------|------|---|---|---|---|
|  | Iron Intercept ¹ Heelsafe® Anti-Slip | 500 | 142686 | 15.0 | ✓ | ✓ | ✓ | ✓ |
|---|--|-----|--------|------|---|---|---|---|

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

Heelsafe® Anti-Slip grates



ACO believes that pedestrian safe grates and slip resistance go hand in hand. The grates with the **Heelsafe® Anti-Slip** trademark, comply to the standards AS 3996, AS 4586 and all the specific user requirements below.

For more information visit www.heelsafe.com.au



Iron Intercept **Heelsafe® Anti-Slip** grate

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.

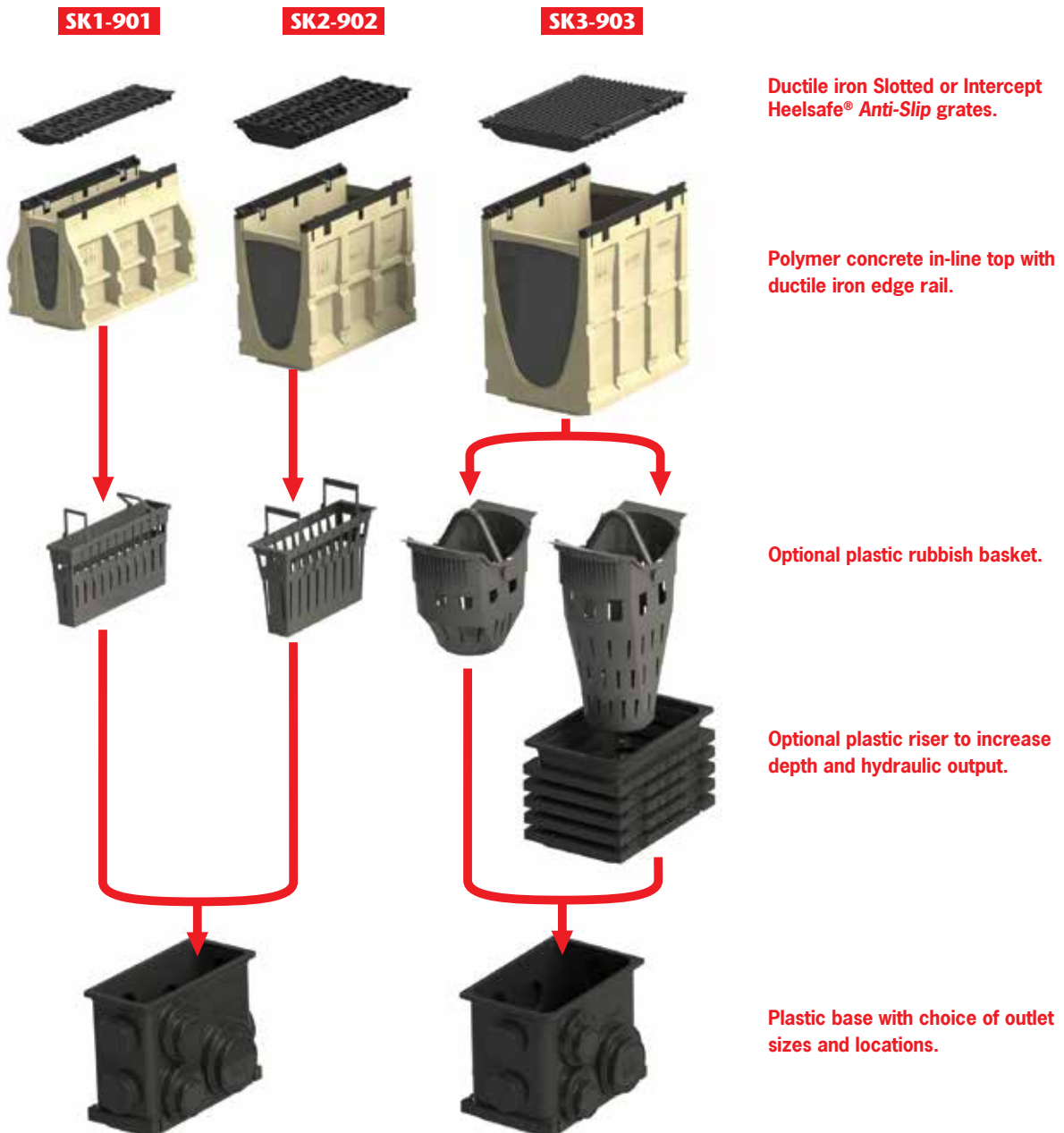
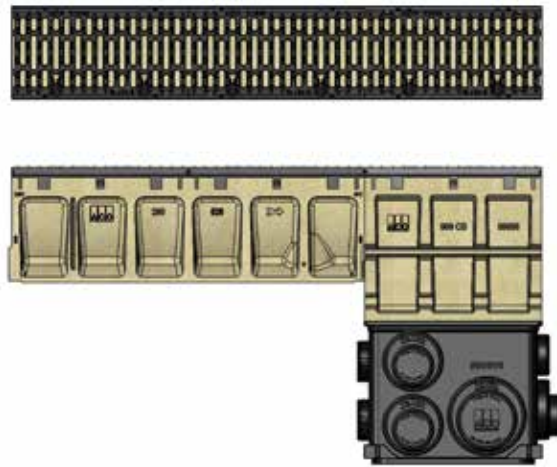


In-line pit options

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.



Both SK1-901 and SK2-902 in-line pits use same base – provides suitable width/access for pipe maintenance.



Other ACO DRAIN® systems

KlassikDrain

The most widely used general purpose drain available in 100mm, 200mm and 300mm internal widths with a wide range of grates.

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.

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