



Uniclass L7315 + L2123	EPIC J3413
CI/SfB (52.5)	



*Heavy duty channel drainage system*

**ACO S Range**

# ACO S Range

## CHANNEL DRAINS

Load Class BS EN 1433:2002



### Optimum solution

The ACO S Range is an interconnecting heavy duty channel surface water drainage system, that has been designed as the optimum solution to a wide range of Load Class F900 applications.

### Open-minded innovation

ACO S Range is the result of over 30 years experience of innovative surface drainage solutions for local authority, retail, commercial and domestic users.

### Free technical support

To support the specifier and contractor in designing and installing ACO S Range schemes, ACO's Design Services Department offers computer-aided scheme design, hydraulic performance calculations and installation advice services.

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### Benefits for specifiers

- ▶ **Wide range of applications such as airports, industrial, military bases, bus and freight yards**
- ▶ **Pre-sloped invert plus level invert units**
- ▶ **Resin concrete construction offers excellent chemical resistance**
- ▶ **Quick scheme design using level invert units**
- ▶ **Sump and gully outlet connections to underground drainage**
- ▶ **Robust design for demanding heavy duty applications**



### Benefits for Contractors

- ▶ **Quick to install, minimal excavation**
- ▶ **Resin concrete channel construction is strong and rigid for lifetime integrity**
- ▶ **Available in a range of widths**
- ▶ **Heavy duty gratings with eight bolts per metre**



# ACO S Range

## CHANNEL DRAINS

### Specification features

Heavy duty channel drainage system to Load Class F900 (BS EN 1433:2002), with special strengthening design features including a cast iron edge rail, heavy duty grating and eight bolts per metre. Sump unit and unions to sub-surface drainage connection.

Internal width channels 100mm (S100), 150mm (S150), 200mm (S200) and 300mm (S300).

### SF and DF option

Please note that all channels are available with an SF sealant groove. The double recess detail on the channel joint allows easy sealing between units.

An option for draining porous asphalt (DF) is available for all constant depth S Range channels. Channels come with twelve cast-in side openings per metre to allow draining of porous asphalt surfaces.

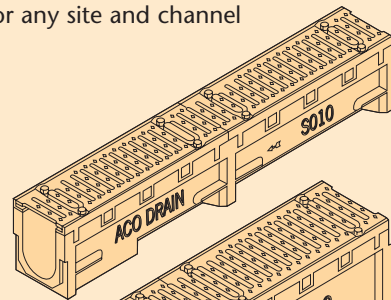
Both the SF and DF options are available on special request.

### Hydraulic performance

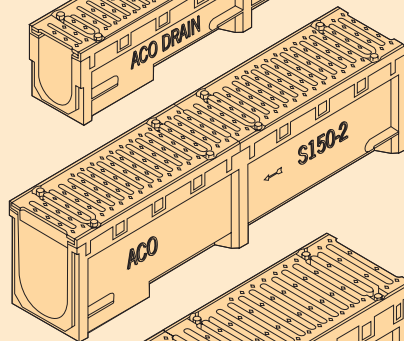
The ACO S Range provides excellent hydraulic performance, significantly greater than equivalent 100mm internal diameter pipes. As inflow is possible all along the open channel, hydraulic performance can be complex to display, and is modified by a number of variables.

Flow charts for constant depth channels, on 0.0% and 0.5% ground falls, are given on pages 5 and 6 of this catalogue. Details of ACO's computer-generated Hydraulic Design program are given in the ACO Technical Design Guide, offering a free service which can calculate flow performance for any site and channel configuration.

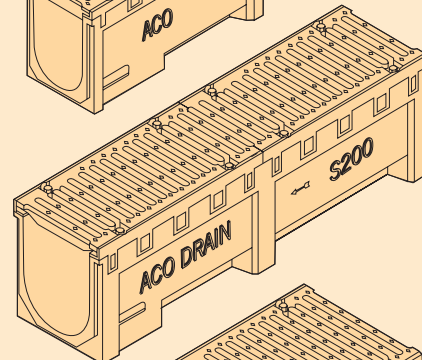
*S100 channel unit in 30 pre-sloped units and 5 constant depth units*



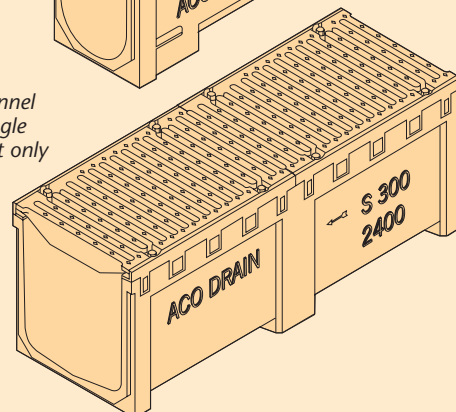
*S150 channel unit in 3 constant depth units*



*S200 channel unit in single depth unit only*



*S300 channel unit in single depth unit only*



# ACO S Range

## HYDRAULIC PERFORMANCE TABLES

### Design method

The examples given here demonstrate the general principles in the design of drainage schemes using ACO channel systems. A detailed design method for drainage channel with an in-built sloping invert is given below. The user can accurately design an ACO 100mm wide channel with a pre-sloped 0.6% fall to a maximum length of 30m to an outlet, and for any application where the channel grating is laid level.

For combined ground falls with sloping invert channel systems and other complex topographical, asymmetric areas and unequal discharge factors, use of a sophisticated computer program such as that developed by ACO is required. Please contact ACO's Drain Design Services Department for further details.

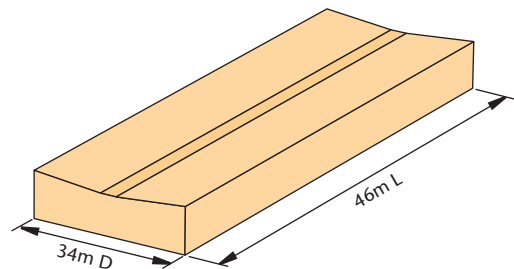
The design approach is essentially the same for both internal and external applications. In both cases, the total inflow to the channel is assumed to be uniformly distributed along the channel length.

For external applications, the length of the catchment area is measured in the direction of the channel run, while the depth is the greatest distance (on plan) which the water travels before entering the channel at right angles.

Using historical data for the site location, the design rainfall intensity in mm/hour must be determined for a specific frequency (return period) and storm duration. Alternatively, it may be simpler to adopt the default rainfall intensity figure of 50mm/hour; this is one of the recommended rates of rainfall given in BS EN 752-4.

### External applications

#### Design examples



Assume the following figures:

**D = 34m (depth of catchment area)**

**L = 46m (length of channel parallel to one side of the catchment area)**

**i = 50mm/hour (rainfall intensity)**

#### Inflow calculation

Assuming the length of the channel is equal to the length of the catchment, then for the catchment length L (say 46m) and catchment depth D (say 34m):

$$q \text{ (inflow per metre)} = \frac{(D \times L) \times i}{60 \times 60 \times L}$$

$$q = \frac{46 \times 34 \times 50}{60 \times 60 \times 46}$$

$$q = 0.47 \text{ l/s/m}$$

Once the design inflow rate has been calculated, the Hydraulic Performance table (opposite page) can be used to identify a suitable sequence of channels.

Using the Hydraulic Performance tables, select channel runs which would perform satisfactorily in the simplest and most effective way bearing in mind the practical and geometric constraints on the system.

Select a Discharge Capacity on the hydraulic performance table that is greater than, or at least equal to, the calculated design flow rate. This will give a corresponding channel run or, in most cases, a choice of runs, which will perform satisfactorily under the given conditions.

It is important to select a channel run which terminates with (ie. discharges from) a channel number which either has a pre-formed bottom outlet or which is able to mate satisfactorily to the ACO Sump Unit or Universal Gully.



# ACO S Range

## HYDRAULIC PERFORMANCE TABLES

For example some suitable sloping invert channel runs for a uniform design inflow rate of 0.47 l/s/m would include the following (interpolating hydraulic performance table):

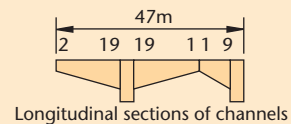
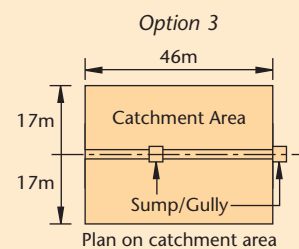
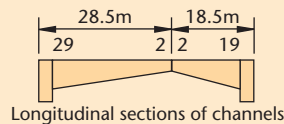
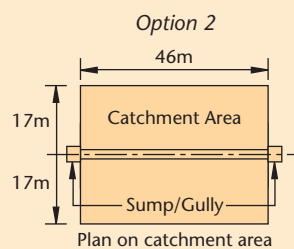
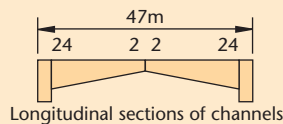
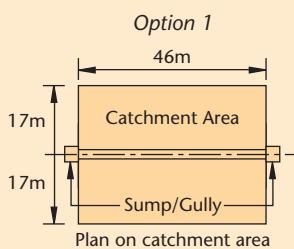
Channel numbers:		Length of run (m)	Discharge capacity (l/s)
Beginning	End		
3	30	28	13.2 > 0.47 l/s/m
3	25	23	10.8 "
3	20	18	8.5 "
1	10	10	4.7 "

### Arrangement options

The following are optional arrangements of sloping invert channel for a 46m run:

	Channel Numbers:		Length of run (m)
	Beginning	End	
Option 1	2	24	2 x 23
Option 2	2	29	28
	2	9	18
Option 3	2	19	18
	1	9	9
	1	19	19

These three layout options give plan views and longitudinal sections of possible channel configurations, which allow for different outlet positions. There are many further variations which can be offered to enable outlet positions to be located at different positions on a site.



## Hydraulic performance table

### ACO S100 sloping invert channel systems

#### Total Flow Rate (litres/sec), site fall 0%

Length of channel to an outlet (m)	Start channel no.					
	1	6	11	16	21	26
4	4.3	6.2	8.5	10.8	13.6	16.6
9	5.5	8.0	10.5	13.0	16.5	
14	7.8	9.6	12.0	16.1		
19	9.6	11.0	13.8			
24	11.0	13.8				
29	12.9					

#### Notes on table usage.

This table may be used for ACO S100 sloping invert channels.

It is assumed that the gratings are laid level and that a constant invert fall of 0.6% is maintained for the full length of the channel.

Laid with a longitudinal ground slope, the Total Flow Rates can be considerably increased or alternatively, the length of the channel to an outlet can be greatly extended. Please contact ACO Design Services for further guidance.

**Note: Constant invert depth channels may be used to extend channel length. Please contact ACO Drain Design Services Department.**

# ACO S Range

## HYDRAULIC PERFORMANCE TABLES

### Constant invert channel systems

To illustrate the drainage performance available with the main ACO channel drain ranges, the following tables shows drainage performance with constant depth systems for level and sloping installations. For pre-sloped systems, stepped systems or combinations of systems, and on other falls, please consult the ACO Drain Design Services Department, who will provide performance figures illustrating the exact configuration required. Longer lengths and other ground slopes are possible, please consult product brochures or contact ACO Drain Design Services Department.

#### S Range S100

Length (m)	Constant depth Channel No.	Max. flow (litres/sec)	
		Site fall 0%	0.5%
5	S01	2.4	3.1
	S05	3.7	4.7
	S010	5.7	6.9
	S020	10.6	12.0
10	S030	16.4	18.7
	S01	2.2	3.5
	S05	3.5	5.1
	S010	5.2	7.3
15	S020	9.9	12.6
	S030	15.6	18.8
	S01	2.0	3.7
	S05	3.3	5.3
20	S010	5.1	7.9
	S020	9.6	13.2
	S030	14.6	19.1
	S01	2.0	3.8
25	S05	3.2	5.6
	S010	4.8	8.0
	S020	9.2	13.4
	S030	14.0	19.4
30	S01	1.9	3.8
	S05	3.0	5.7
	S010	4.7	8.1
	S020	8.8	13.6
35	S030	13.7	19.7
	S01	1.8	3.9
	S05	2.9	6.0
	S010	4.5	8.2
40	S020	8.4	13.8
	S030	13.2	19.9

#### S Range S150

Length (m)	Constant depth Channel No.	Max. flow (litres/sec)	
		Site fall 0%	0.5%
5	1501	10.8	12.8
	1502	17.2	20.0
	1503	25.0	28.2
10	1501	10.1	13.7
	1502	16.4	20.8
	1503	23.6	28.9
15	1501	9.7	14.4
	1502	15.8	21.7
	1503	22.6	29.6
20	1501	9.3	15.0
	1502	15.2	22.3
	1503	21.9	30.4
25	1501	9.1	15.3
	1502	14.7	22.4
	1503	21.3	30.9
30	1501	8.9	15.2
	1502	14.3	22.7
	1503	20.6	31.4

#### S Range S200

Length (m)	Max. flow (litres/sec)	
	Site fall 0%	0.5%
5	29.2	33.0
10	27.7	34.4
15	26.7	35.9
20	26.1	37.6
25	25.4	38.0
30	24.8	38.3

#### S Range S300

Length (m)	Max. flow (litres/sec)	
	Site fall 0%	0.5%
5	67.0	74.3
10	64.3	76.8
15	62.9	79.8
20	61.6	82.6
25	60.3	84.8
30	59.3	86.9

Please note: S300 gully unit will only take flows up to 63l/s.  
Raising pieces should be used to increase the outlet invert depth.

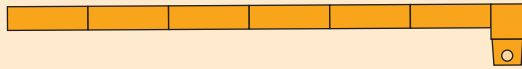




# ACO S Range

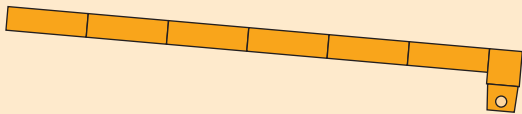
## CHANNEL DRAINS

### Hydraulic choices with ACO S100



#### 1. Constant Invert, Level Ground

- effective drainage but may need more regular maintenance due to greater chance of silting.



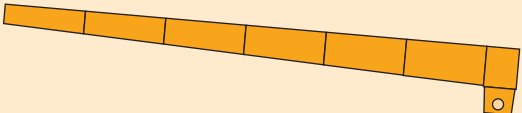
#### 2. Constant Invert, Sloped Ground

- improved hydraulic capacity over system 1.



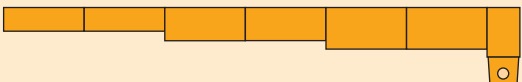
#### 3. Sloping Invert, Level Ground

- 0.6% invert slope provides positive drainage to outlet for petrol or chemicals etc.



#### 4. Sloping Invert, Sloping Ground

- improved hydraulic capacity over 3.



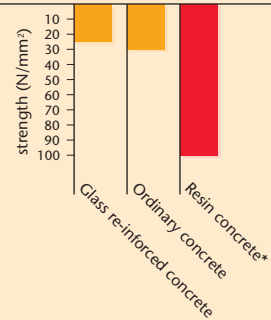
#### 5. Stepped Invert, Level Ground

- will give a similar hydraulic capacity as sloping invert 3.

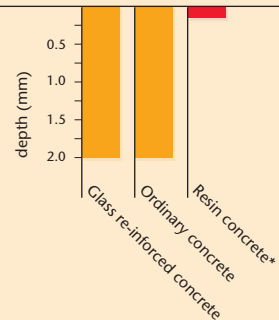
### Resin concrete

- ▶ Minimal lifetime maintenance
- ▶ 3-4 times compressive strength of OPC (Ordinary Portland Cement) concrete, so equivalent strength products can be made lighter
- ▶ Water absorption <0.01% by weight\*

#### Compressive strength



#### Water absorption

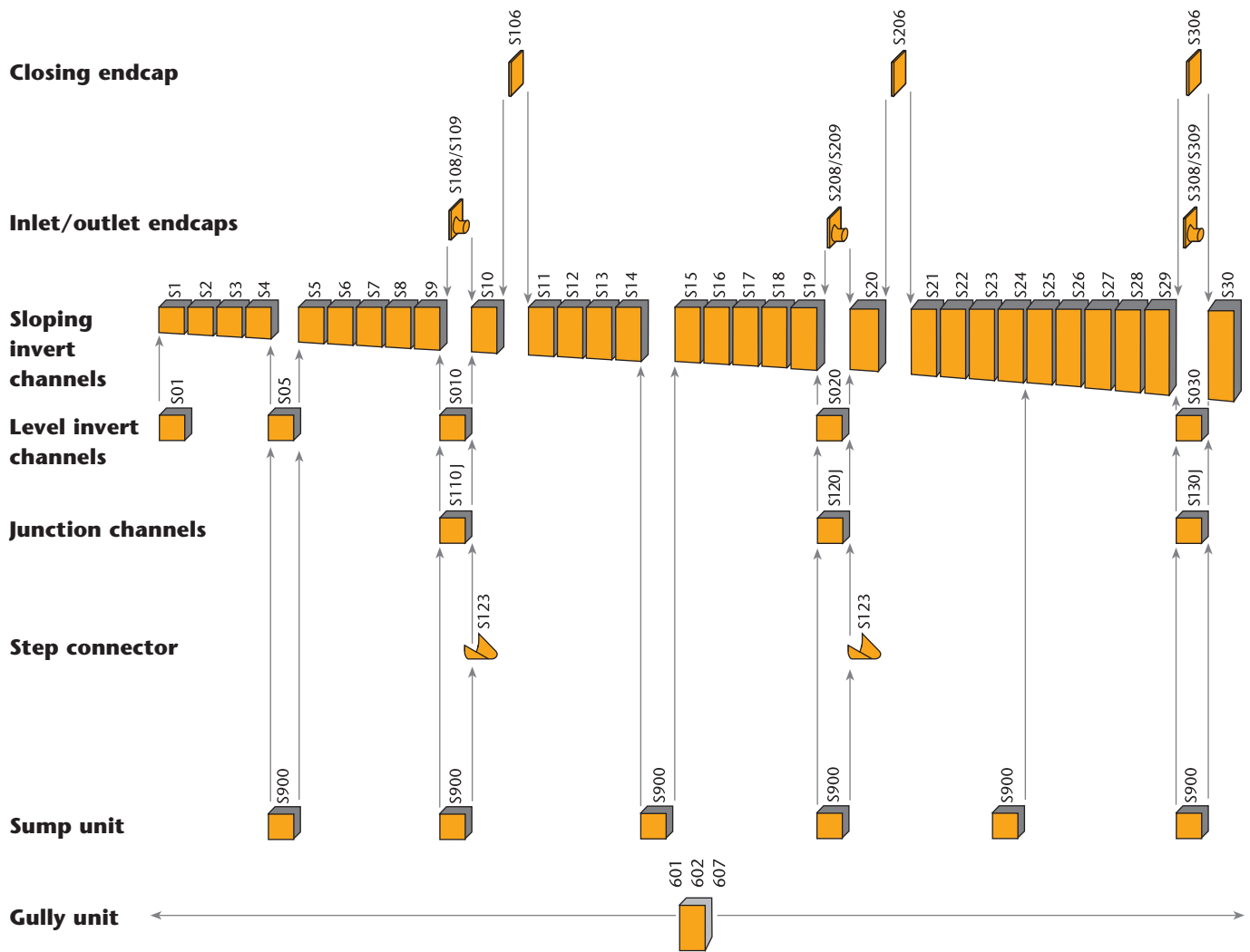


\* BBA report No. 1580



# ACO S100 Channel

## S100 CHANNEL RANGE LAYOUT





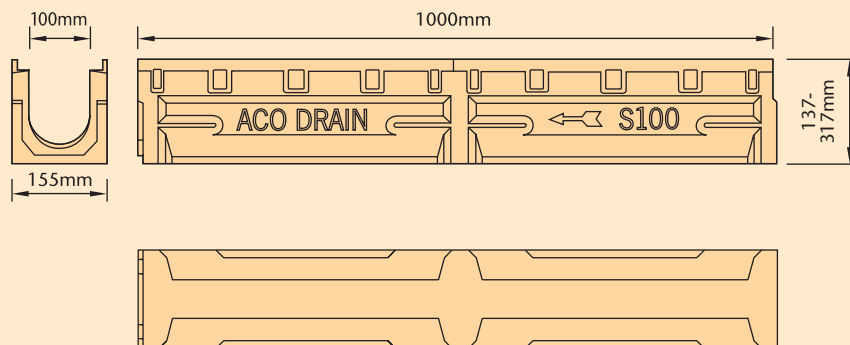


# ACO S100

## PARTS TABLE

### Channels - sloping invert

Description	Order no.	Dimensions (mm)			Weight (kg)	Connection Availability			Closing Endcap	Outlet Endcap	Inlet Endcap	Step Connector
		Depth Overall	Invert	Length		Knockout Union	Sump	Gully Unit				
S1	0270	137/143	112/118	1000	20.0	-	-	601/602/607	S106	-	-	-
S2	0271	143/149	118/124	1000	20.3	-	-	601/602/607	S106	-	-	-
S3	0272	149/155	124/130	1000	20.4	-	-	601/602/607	S106	-	-	-
S4	0273	155/161	130/136	1000	20.9	-	S900	601/602/607	S106	-	-	-
S5	0275	161/167	136/142	1000	21.0	-	-	601/602/607	S106	-	-	-
S6	0276	167/173	142/148	1000	21.1	-	-	601/602/607	S106	-	-	-
S7	0277	173/179	148/154	1000	22.9	-	-	601/602/607	S106	-	-	-
S8	0278	179/185	154/160	1000	23.3	-	-	601/602/607	S106	-	-	-
S9	0279	185/191	160/166	1000	24.1	-	S900	601/602/607	S106	S108	-	-
S10	0281	191/197	166/172	1000	24.7	-	-	601/602/607	S106	-	S109	-
S11	0282	197/203	172/178	1000	24.8	-	-	601/602/607	S206	-	-	-
S12	0283	203/209	178/184	1000	24.9	-	-	601/602/607	S206	-	-	-
S13	0284	209/215	184/190	1000	25.0	-	-	601/602/607	S206	-	-	-
S14	0285	215/221	190/196	1000	25.7	-	S900	601/602/607	S206	-	-	-
S15	0286	221/227	196/202	1000	25.8	-	-	601/602/607	S206	-	-	-
S16	0287	227/233	202/208	1000	26.3	-	-	601/602/607	S206	-	-	-
S17	0288	233/239	208/214	1000	27.4	-	-	601/602/607	S206	-	-	-
S18	0289	239/245	214/220	1000	27.7	-	-	601/602/607	S206	-	-	-
S19	0290	245/251	220/226	1000	28.5	-	S900	601/602/607	S206	S208	-	-
S20	0292	251/257	226/232	1000	28.8	-	-	601/602/607	S206	-	S209	-
S21	0293	257/263	232/238	1000	29.2	-	-	601/602/607	S306	-	-	-
S22	0294	263/269	238/244	1000	29.3	-	-	601/602/607	S306	-	-	-
S23	0295	269/275	244/250	1000	30.0	-	-	601/602/607	S306	-	-	-
S24	0296	275/281	250/256	1000	31.1	-	S900	601/602/607	S306	-	-	-
S25	0297	281/287	256/262	1000	31.2	-	-	601/602/607	S306	-	-	-
S26	0298	287/293	262/268	1000	31.3	-	-	601/602/607	S306	-	-	-
S27	0299	293/299	268/274	1000	32.3	-	-	601/602/607	S306	-	-	-
S28	0300	299/305	274/280	1000	32.7	-	-	601/602/607	S306	-	-	-
S29	0301	305/311	280/286	1000	33.1	-	S900	601/602/607	S306	S308	-	-
S30	0303	311/317	286/292	1000	34.7	-	-	601/602/607	S306	-	S309	-



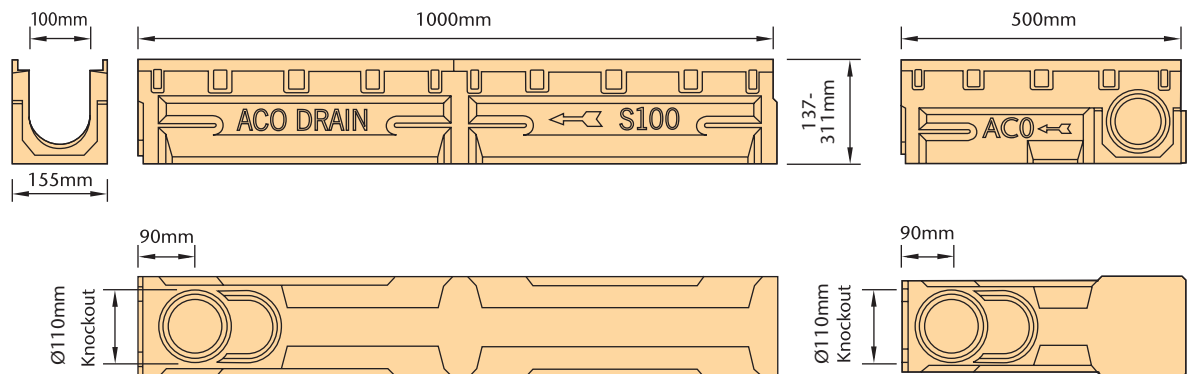
**Note:** As with all pre-cast products, polymer concrete units are subject to weight and dimensional tolerances.

# ACO S100

## PARTS TABLE

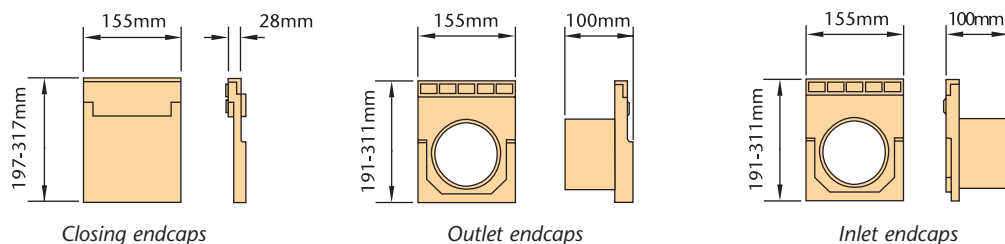
### Channels - level invert

Description	Order no.	Dimensions (mm)						Connection Availability						
		Depth		Width		Length	Weight (kg)	Knockout			Closing Endcap	Outlet Endcap	Inlet Endcap	Step Connector
		Overall	Invert	Bore	Overall			Union	Sump	Gully Unit				
S01	0269	137	112	100	155	1000	20.4	820/821	-	601/602/607	S106	-	-	-
S05*	0274	161	136	100	155	1000	21.9	820/821	S900	601/602/607	S106	-	-	-
S010*	0403	191	166	100	155	1000	25.3	820/821	S900	601/602/607	S106	S108	S109	123
S110]*	0280	191	166	100	155	500	13.7	820/821	S900	601/602/607	S106	S108	S109	123
S020*	0405	251	226	100	155	1000	28.9	820/821	S900	601/602/607	S206	S208	S209	123
S120]*	0291	251	226	100	155	500	17.4	820/821	S900	601/602/607	S206	S208	S209	123
S030*	0407	311	286	100	155	1000	33.3	820/821	S900	601/602/607	S306	S308	S309	-
S130]*	0302	311	286	100	155	500	19.7	820/821	S900	601/602/607	S306	S308	S309	-



### S100 endcaps

Description			Dimensions (mm)					
			Order no.	Depth Overall	Invert	Width Bore	Overall	Length
Closing	S106	0411	197	-	-	-	155	28
	S206	0413	257	-	-	-	155	28
	S306	0414	317	-	-	-	155	28
Outlet	S108	0415	191	166	100	155	100	1.2
	S208	0416	251	226	100	155	100	1.5
	S308	0418	311	286	100	155	100	1.9
Inlet	S109	0419	191	166	100	155	100	1.1
	S209	0420	251	226	100	155	100	1.5
	S309	0421	311	286	100	155	100	1.9



\* These level invert channels have a vertical Ø110mm knockout.

] Indicates availability of side junction for 90° bends.

**Note:** As with all pre-cast products, polymer concrete units are subject to weight and dimensional tolerances. Level invert channels can be inserted to extend a run. Please refer to the channel range layout on page 8. See channel parts table to match endcap with correct channel.

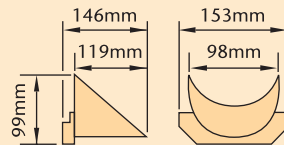


# ACO S100

## PARTS TABLE

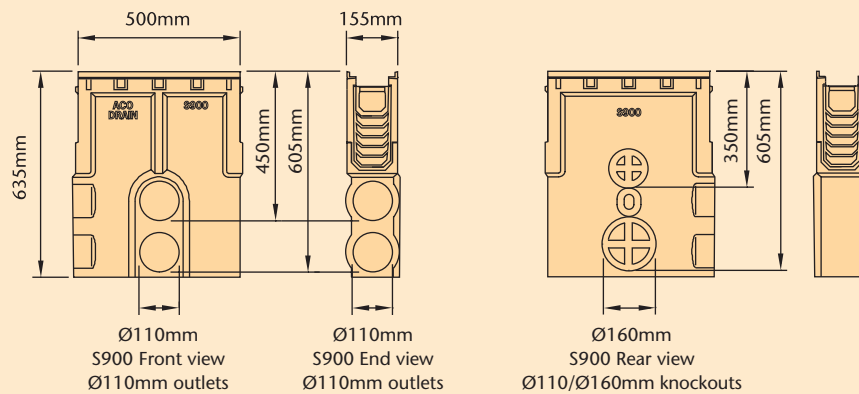
### Step connectors

Description	Order no.	Dimensions (mm)		Width		Length	Weight (kg)
		Depth Overall	Invert	Bore	Overall		
60mm step S123	0858	99	60	98	153	119	1.1



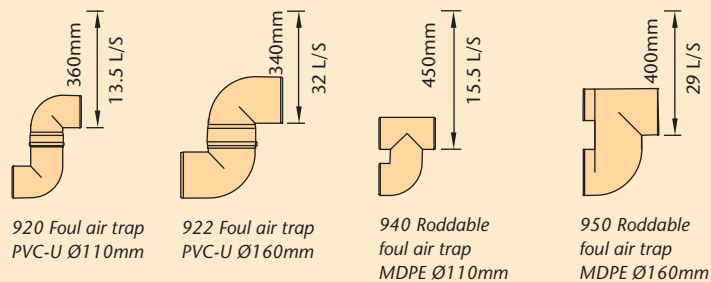
### S100 no S900 universal sump unit 500mm lg

Description	Order no.	Dimensions (mm)		Width		Length	Weight (kg)
		Depth Overall	Invert	Bore	Overall		
Sump unit and polypropylene bucket assembly S900	4223	635	605	100	155	500	38.3
Sump unit only S900A	4221	635	605	100	155	500	37.8



### Foul air traps

Description	Order no.	Dimensions (mm)		Width		Length	Weight (kg)
		Depth Overall	Invert	Bore	Overall		
920 Foul air trap PVC-U Ø110mm	2640	-	360	100	110	-	0.5
922 Foul air trap PVC-U Ø160mm	2638	-	340	150	160	-	1.9
940 Roddable foul air trap MDPE Ø110mm	7931	-	450	100	110	-	0.6
950 Roddable foul air trap MDPE Ø160mm	7932	-	400	150	160	-	0.8

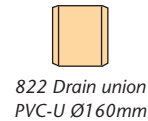
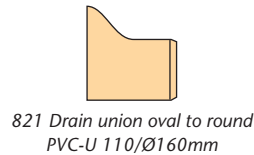
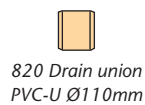


# ACO S100

## PARTS TABLE

### Drain unions

Description	Order no.	Dimensions (mm)					
		Depth		Width		Length	Weight (kg)
		Overall	Invert	Bore	Overall		
820 Drain union PVC-U Ø110mm	0056	-	-	100	110	100	0.1
821 Drain union oval to round PVC-U 110/Ø160mm	0057	-	-	150	160	175	0.5
822 Drain union PVC-U Ø160mm	0058	-	-	150	160	150	0.5



### S100 gratings - load class F900

Description	Order no.	Dimensions (mm)		
		Width Overall	Length	Weight (kg)
Slotted heavy duty ductile iron. Ref. 772†	4604	139	500	5.6
"Heelguard" heavy duty ductile iron ref. 774†	0774	139	500	6.7
Intercept heavy duty ductile iron ref. 776†	0776	139	500	6.8

### S100 gratings - load class E600

Description	Order no.	Dimensions (mm)		
		Width Overall	Length	Weight (kg)
Solid cover ductile iron ref. 778†	7626	139	500	6.7



Slotted heavy duty  
ductile iron grating



"Heelguard" heavy duty  
ductile iron grating



Intercept heavy duty  
ductile iron grating

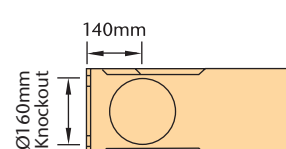
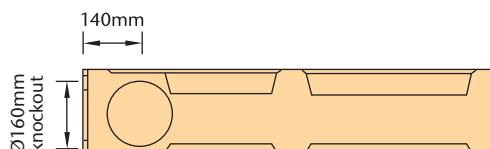
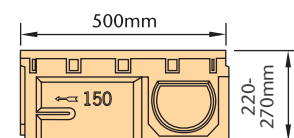
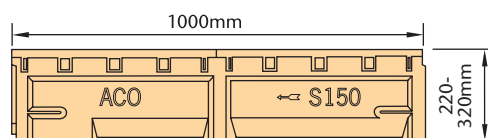
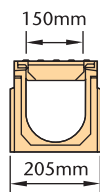


Solid cover ductile iron

## ACO S150 Parts Table

### Channels - level invert complete with class F900 grating

Description	Order no.	Dimensions (mm)							Connection Availability					
		Depth		Width			Weight (kg)	Knockout Union	Sump	Gully Unit	Closing Endcap	Outlet Endcap	Inlet Endcap	Step Connector
Overall	Invert	Bore	Overall	Length										
S150 1501*	1151	220	195	150	205	1000	44.1	822	0875	601/602/607	1130	1131	-	1159
S150 1502*	1152	270	245	150	205	1000	52.8	822	0875	601/602/607	1130	1132	-	1159
S150 1503*	1153	320	295	150	205	1000	57.2	822	0875	601/602/607	1130	1133	-	1159
S150 1504j*	1176	220	195	150	205	500	26.1	822	0875	601/602/607	1130	1131	-	1159
S150 1505j*	1154	270	245	150	205	500	28.6	822	0875	601/602/607	1130	1132	-	1159



\* These Level Invert Channels have a vertical Ø160mm knockout

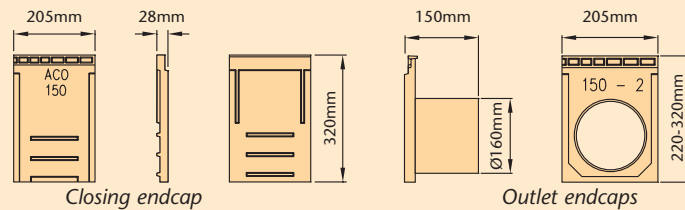
† Indicates availability of side junction for 90° bends

# ACO S150

## PARTS TABLE

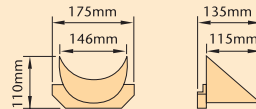
### Endcaps

Description	Order no.	Dimensions (mm)		Width		Length	Weight (kg)
		Depth Overall	Invert	Bore	Overall		
Closing S150*	1130	320	-	-	205	28	2.6
Outlet S150 1131	1131	220	195	150	205	150	2.4
S150 1132	1132	270	245	150	205	150	2.7
S150 1133	1133	320	295	150	205	150	3.0



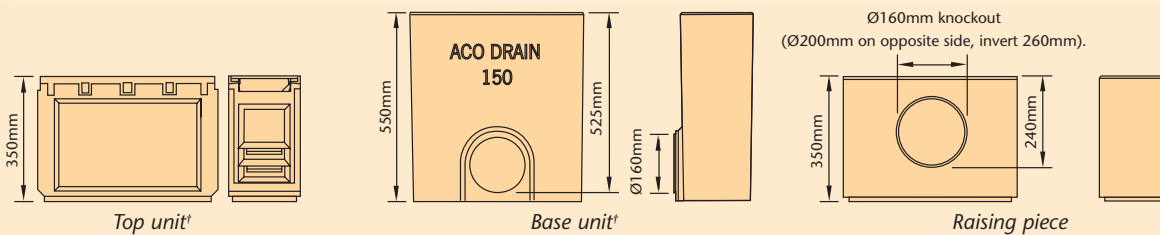
### Step connectors

Description	Order no.	Dimensions (mm)		Width		Length	Weight (kg)
		Depth Overall	Invert	Bore	Overall		
50mm step	1159	110	50	146	175	115	1.0



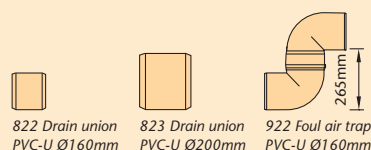
### Sump units

Description	Order no.	Dimensions (mm)		Width		Length	Weight (kg)
		Depth Overall	Invert	Bore	Overall		
Sump assembly top and base	0875	900	875	150	205	500	62.7
Raising piece	1168	350	240	150	205	500	18.5



### Drain unions & foul air trap

Description	Order no.	Dimensions (mm)		Width		Length	Weight (kg)
		Depth Overall	Invert	Bore	Overall		
822 Drain union PVC-U Ø160mm	0058	-	-	150	160	150	0.5
823 Drain union PVC-U Ø200mm	2723	-	-	190	200	200	0.5
922 Foul air trap PVC-U Ø160mm	2638	-	Varies	150	160	-	1.9



\* Can be cut on site to suit invert depths.

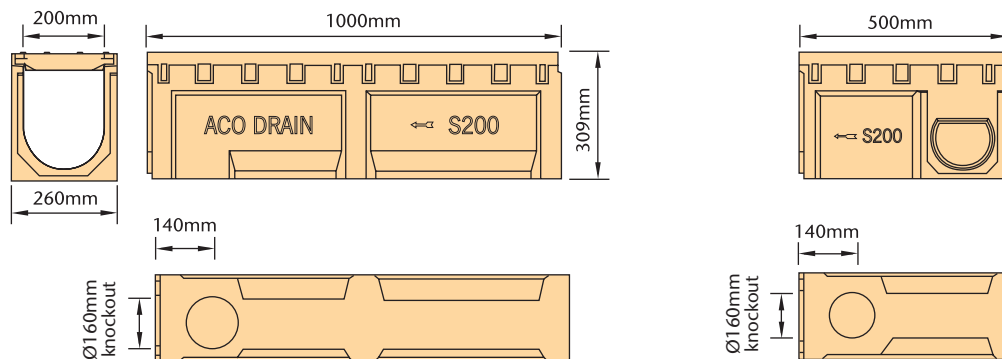
**Note:** For a deeper sump, the raising piece may be inserted between the top and base units. For gully details please refer to page 15. As with all pre-cast products, polymer concrete units are subject to weight and dimensional tolerances.

# ACO S200

## PARTS TABLE

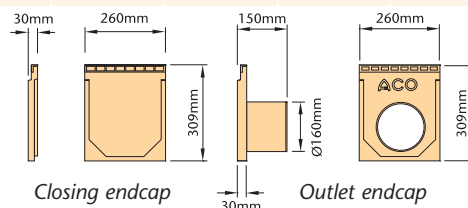
### Channels - level invert complete with class F900 grating

Description	Order no.	Dimensions (mm)						Connection Availability				
		Depth		Width		Length	Weight (kg)	Knockout		Closing Endcap	Outlet Endcap	Inlet Endcap
		Overall	Invert	Bore	Overall			Union	Gully Unit			
S200 2300*	1427	309	279	200	260	1000	82.5	822	601/602/607	1516	1517	-
S200 2310J*	2847	309	279	200	260	500	40.0	822	601/602/607	1516	1517	-



### Endcaps

Description	Order no.	Dimensions (mm)					
		Depth		Width		Length	Weight (kg)
		Overall	Invert	Bore	Overall		
Closing S200	1516	309	-	-	260	30	3.7
Outlet S200 Ø160mm	1517	309	274	150	260	150	3.5



### Drain union

Description	Order no.	Dimensions (mm)					
		Depth		Width		Length	Weight (kg)
		Overall	Invert	Bore	Overall		
822 Drain union PVC-U Ø160mm	0058	-	-	150	160	150	0.5



822 Drain union  
PVC-U Ø160mm

\* All Level Invert Channels have a vertical Ø160mm knockout.

] Indicates availability of side junction for 90° bends.

**Note: For gully details please refer to page 15. As with all pre-cast products, polymer concrete units are subject to weight and dimensional tolerances.**

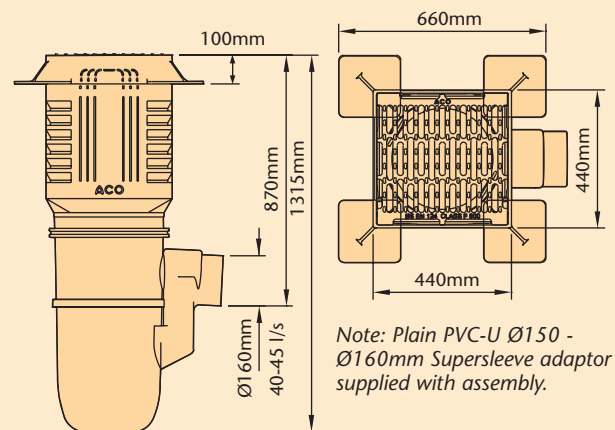


# ACO S100, S150, S200

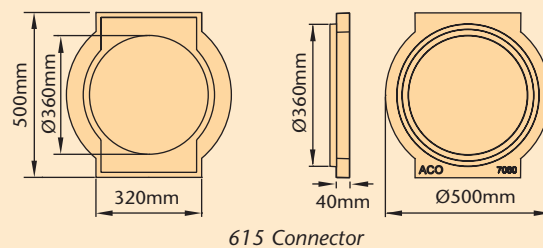
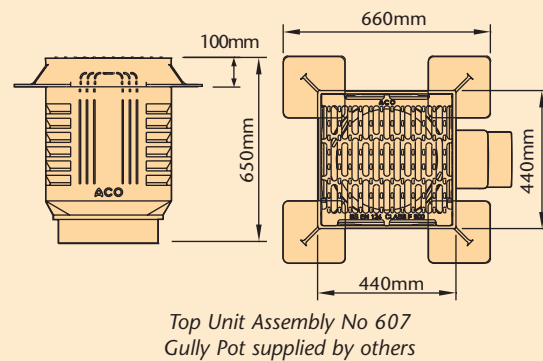
## PARTS TABLE

Universal gully units for S100, S150, S200 only - complete with class F900 grating

Description	Order no.	Dimensions (mm)		Width Clear opening	Frame	Weight (kg)
		Depth Overall	Invert***			
601†	33601	1315	870	400 x 400	440 x 440	78.8
602††	33602	1315	870	400 x 400	440 x 440	77.4
607††	33607	650	-	400 x 400	440 x 440	73.1
615 connector	7060	40	-	Ø360	-	7.0



No 601 and No 602 Gully Assembly



615 Connector

† with sediment bucket †† without sediment bucket

\*\*\* minimum with no allowance for bedding. All weights are nominal.

**Note:** As with all pre-cast products, polymer concrete units are subject to weight and dimensional tolerances.

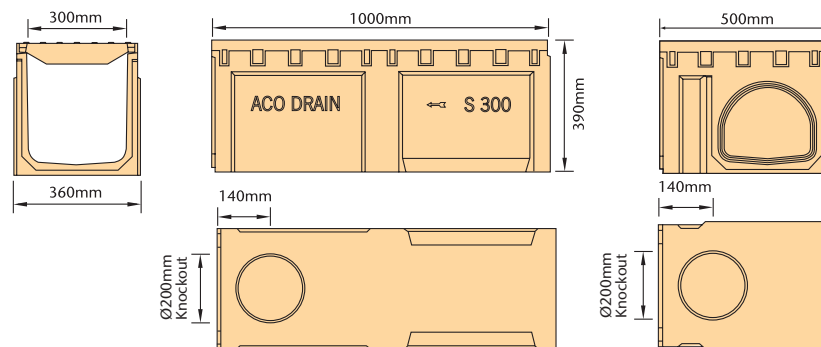


# ACO S300

## PARTS TABLE

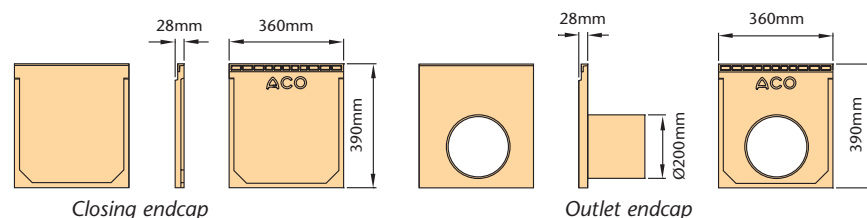
### Channels - level invert, complete with class F900 grating

Description	Order no.	Dimensions (mm)							Connection Availability		
		Depth Overall	Invert	Width Bore	Overall	Length	Weight (kg)	Knockout Union	Closing Endcap	Outlet Endcap	Inlet Endcap
S300 2400*	2632	390	360	300	360	1000	132.50	823	2573	2574	-
S300 1766j*	1766	390	360	300	360	500	62.83	823	2573	2574	-



### Endcaps

Description	Order no.	Dimensions (mm)					
		Depth Overall	Width Invert	Bore	Overall	Length	Weight (kg)
Closing S300	2573	390	-	-	360	28	6.3
Outlet S300 Ø200mm	2574	390	358	190	360	205	3.0



\* All Level Invert Channels have a vertical Ø200mm knockout.

j indicates availability of side junction for 90° bends.

**Note:** As with all pre-cast products, polymer concrete units are subject to weight and dimensional tolerances.

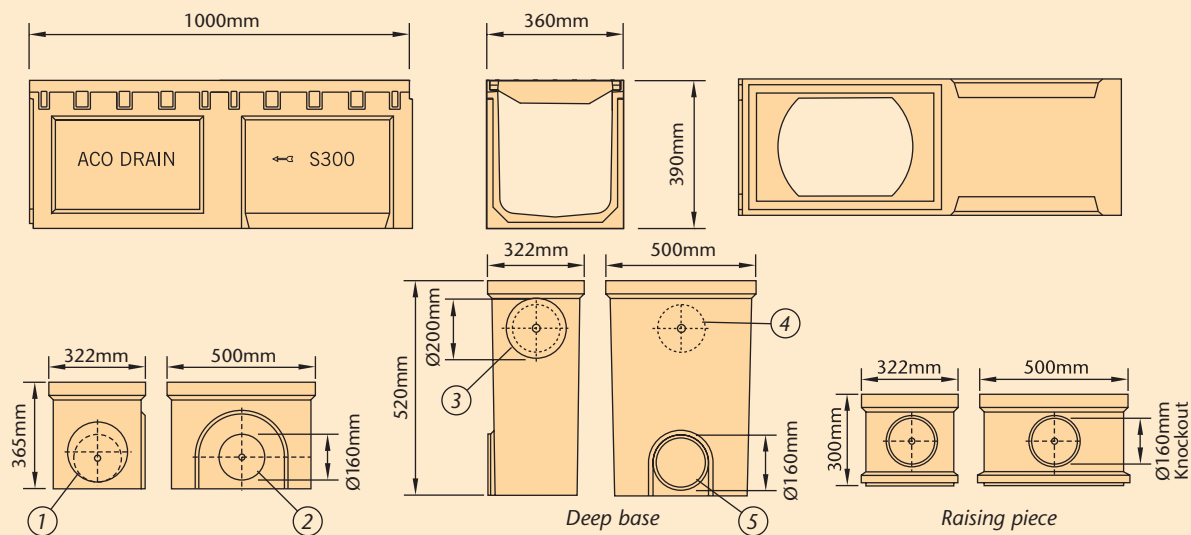


# ACO S300

## PARTS TABLE

### Gully units S300 only

Description	Order no.	Dimensions					Weight (kg)	Connection Availability			
		Depth Overall	Depth Invert	Width Bore	Width Overall	Length		Knockout Union	Gully Unit	Closing Endcap	Outlet Endcap
Channel Gully top*	3102	390	360	300	360	1000	133.2	-	-	2573	2574
Shallow base unit	1614	365	-	-	322	500	25.4	822/823	-	-	-
Deep base unit	4198	520	-	-	322	500	34.3	822/823	-	-	-
Raising piece bucket	1616	300	-	-	322	500	24.0	822	-	-	-

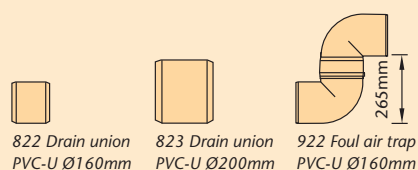


### Invert Depths

- ① 714mm
- ② 714mm
- ③ 641mm
- ④ 601mm
- ⑤ 870mm

### Drain unions and foul air traps

Description	Order no.	Dimensions (mm)					
		Depth Overall	Depth Invert	Width Bore	Width Overall	Length	Weight (kg)
822 Drain union PVC-U Ø160mm	0058	-	-	150	160	150	0.5
823 Drain union PVC-U Ø200mm	2723	-	-	190	200	200	0.7
922 Foul air trap PVC-U Ø160mm	2638	-	Varies	150	160	-	1.9



\* With base outlet.

**Note: Inverts shown are related to S300 grating level. As with all pre-cast products, polymer concrete units are subject to weight and dimensional tolerances.**

# ACO S Range

## CHANNEL DRAINS

### 1.0 Ground Conditions

The customer should ensure that the minimum dimensions shown are suitable for the existing ground conditions. Engineering advice may be necessary.

### 2.0 Block Pavements

The channel must be supported laterally and therefore blocks must be restrained from movement by bedding securely e.g. by using a Polymer Modified Mortar for bed and perpendicular joints (for example RONAFIX Mortar Mix C from Ronacrete: Tel 01279 638700). Engineering advice may be required.

### 3.0 Surface Cracks

Alternate crack control and movement joints transversely within bed and haunch may reduce unsightly surface cracking.

### 4.0 Joint Sealant

Where ACO Drain channel joints and fittings are to be sealed (where used in foul water applications or where impermeability is required) contact a sealant specialist for guidance on the most appropriate sealing compound to use.

### 5.0 Surface Protection

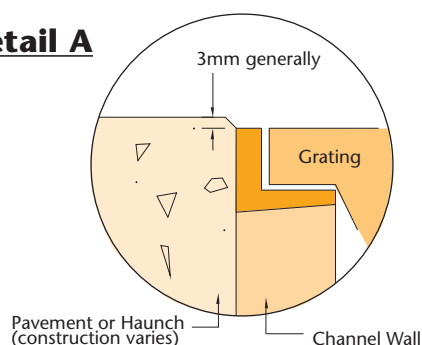
In asphalt pavements avoid contact between compaction equipment and channel/grating. This may be achieved by ensuring that the finished surface level lies above the grating level (by at least 3mm). Stones should be removed prior to laying/rolling wearing course.

### 6.0 Asphalt Pavement: Top of concrete haunch

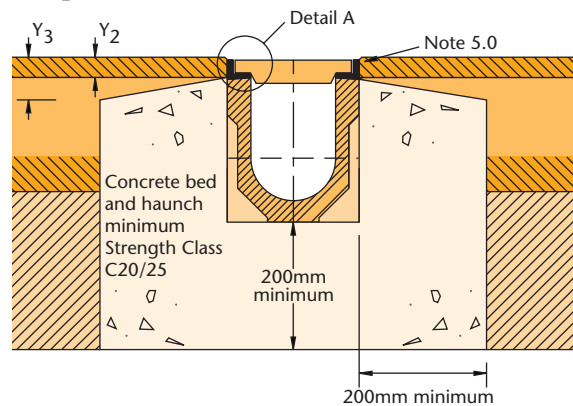
Y2 = 35mm maximum

Y3 = 70mm maximum

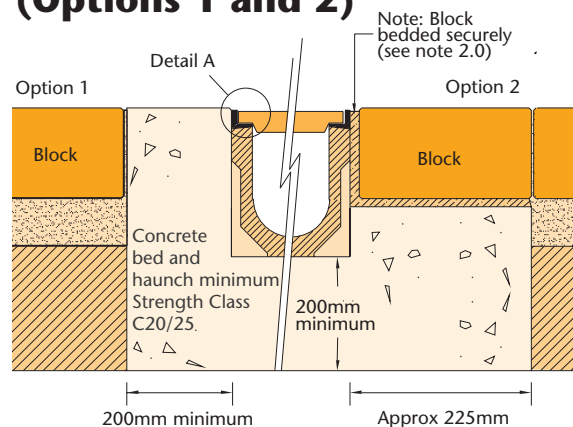
#### Detail A



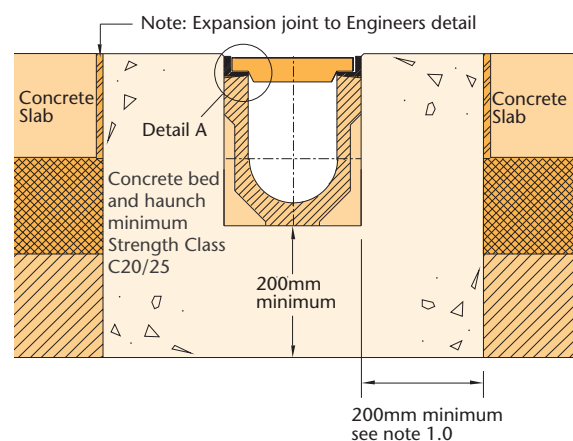
### Asphalt Pavement



### Block Pavement (Options 1 and 2)



### Concrete Pavement





# ACO S Range

## CHANNEL DRAINS

### Model specification clause

The surface drainage system shall be ACO Drain S100/S150/S200/S300† channel system as supplied by ACO Technologies plc; all materials and components within the scope of this channel system shall be obtained from this manufacturer.

The system shall be certificated to Load Class F900 as defined in BS EN 1433:2002; load test certificates shall be supplied to the Supervising Officer.

The system shall be of 100mm/150mm/200mm/300mm† nominal internal width, manufactured in polyester resin concrete with cast-in grey iron edge rails.

The channels shall be installed with manufacturer's grating appropriate to the Load Class of the place of installation and locked securely in place using 4 bolts per half metre.

The system shall be installed in accordance with the manufacturer's printed instructions, and the work carried out as specified in drawing no. ( \* ) and in accordance with recognised good practice. Standards of workmanship shall generally be as specified in BS EN 752 Parts 1-4 and BS 8000:Part 14:1989.

*\* insert appropriate information*

*† delete non-appropriate information*

### Technical Support Services

To support architects, engineers and contractors in designing and installing ACO S System schemes, ACO's Drain Design Services Department offers computer-aided scheme design, hydraulic performance calculations and installation advice services. Our Telephone Hotline 01462 816666, and Fax Hotline 01462 851081, enable us to give you the response you need.



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