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Channel Drainage Systems

PolyChannel
Design and Installation Guide

FOR RESIDENTIAL, COMMERCIAL, INDUSTRIAL AND INFRASTRUCTURE APPLICATIONS

Intelligent Solutions for Below Ground Projects

OSMA

OSMA, from Wavin Plastics Limited, is the leading name in plastic systems for building, construction and utilities. The OSMA product range is unrivalled in scope and quality, covering:

- Above Ground systems
- Plumbing and Heating systems
- Below Ground Drainage systems
- Water Management systems
- Ducting systems
- Water and Gas Distribution systems

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All systems are backed by comprehensive technical support and a nationwide distribution network to ensure availability when and where required.

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Wavin is a leading European manufacturer of industrial plastic products, and one of the largest producers of plastic pipe and fittings in the world.

Wavin is credited with inventing and pioneering the use of plastic pipe for water distribution in the mid 1950s. Constant research and development has enabled Wavin to maintain its position at the forefront of plastics technology.

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Wavin Plastics Limited has BS EN ISO 9001: 2000 BSI status and was the first plastic pipe manufacturer to be accredited to BS EN ISO 14001 Environmental Management Systems.

Wavin Plastics Limited is committed to environmental responsibility, and is a leading pioneer of systems to conserve and control water. In production, the Company recycles the majority of waste materials, and sets annual targets for energy efficiency audited by the certifying body.

Passion and resourcefulness

All Wavin personnel are committed to providing a comprehensive, responsive service – and are passionate about delivering total Customer satisfaction.

Wavin Plastics Limited maintains an industry-wide dialogue and rigorous assessment of all procedures to ensure that Wavin product development and product support accurately addresses the needs of all Customers – today and into the future.

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Contents

Further information

The following related publications are available for OSMA Channel Drainage systems:

- **Product Guide**
- **Trade Price List**
- **System Selector**
- **Technical Data Sheet**
- **Nearest Equivalent Chart**

To obtain copies, please contact:

Literature requests
Tel: 01249 766333
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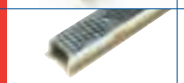
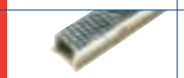
literature@wavin.co.uk

Introduction to the range

The PolyChannel range of polymer concrete channel drainage products offer a complete and integrated surface water drainage system for all applications. PolyChannel is suitable for any application where surface water requires transportation for disposal or recycling from supermarkets to sports stadia, bridges to bus depots, footways to airports, hospitals to food processing plants, car parks as well as domestic driveways and cycle paths.

The PolyChannel range consists of three core systems (SK, SKS & SPQ), in addition there are two light duty systems – 'OsmaChannel' and 'Osma Threshold'.

Table 1: PolyChannel Range Summary

System:		Ref:	Description:	Load Classifications of gratings available: NW100	NW150	NW200	NW300
OsmaChannel		OC	Lightweight, domestic channel supplied complete with galvanised grating and fixings, suitable for applications such as footpaths and patios	A	—	—	—
Osma Threshold		OC	Lightweight, domestic channel supplied complete with black composite gratings and fixings, designed to be used in front of doorways enabling level access as required by Part M of the Building Regulations	A,B,C	—	—	—
SK■		SK	General purpose channel system for all drainage situations up to class E600 loading. The channel incorporates full length galvanised steel edges for enhanced strength, full length anchoring ribs and the Red Dot vibration damping securing system to enable secure anchorage of the grating against vehicular override	B,C,E	C,E	C,E	E
SKCR		SKCR	Standard SK channel system with stainless steel edges for use with stainless steel or plastic gratings e.g. for use in industrial food preparation areas	C,E	—	—	—
SK Piccolo■		SKP	Shallow SK channel system developed for multi-storey parking facilities, flat roofs and other restricted depth construction areas	B,C,E	—	—	—
SKCR Piccolo		SKPCR	As above, except supplied with stainless steel edges instead of the standard galvanised steel edge strips	C,E	—	—	—
SKS■		SKS SKSH (PolyHeel version in NW100 only)	Heavy duty channel system for applications up to F900 loading. SKS is supplied as a one piece monolithic unit. The bond between the frame and channel has enormous strength. The frame and grating are armour coated Class F ductile iron, secured by the unique PolyLock® – boltless locking device, guaranteeing system performance for applications such as airports and industrial areas	F	F	F	F
SKS Piccolo■		SKSP SKSPH (PolyHeel version)	Shallow SKS channel system developed for multi-storey parking facilities, flat roofs and other restricted depth construction areas	F	—	—	—
SPQ		SPQ	Heavy duty channels designed for use where exceptional dynamic traffic loadings up to F900 of a compressive or vibrative nature occur. One piece monolithic polymer concrete construction provides enhanced strength, ideal for applications such as motorway crossovers	F	—	F	—

Notes:

■ PolyHeel gratings are available for these systems for use in pedestrian and shopping areas.

Flat channels are available in all lines.

Sloped channels are available in SK NW100, SKCR NW100 and SKS NW100.

Class/Loading: **A**=15kN
B=125kN
C=250kN
E=600kN
F=900kN

See Table 2 on page 5 for loading classification explanations

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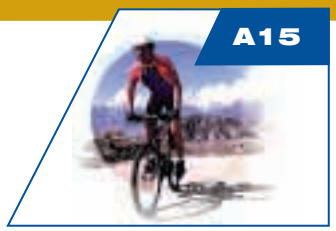
Table 2: Load Classifications to DIN 19580



Foot traffic, domestic driveway and cycle use.

Restricted car parks, pedestrian, precinct and footway use.

Roadway (kerbside) drainage, garage forecourt, light commercial vehicle, pedestrianised street and car park use.

Roadway drainage for fast moving vehicles.

Industrial and commercial areas of high imposed loadings and heavy slow-moving vehicle use, except for areas where vehicles turn.

Exceptional (off-road vehicle) imposed loadings, airport and taxiway use. Also roadways (cross carriageways) and where industrial vehicles and forklifts turn.

Channel Drainage v Point Drainage

Surface water can either be drained using traditional 'Point Drainage' which comprises a series of conventional gullies connected to underground pipework (see Fig. 1), or alternatively a 'Channel Drainage' system can be used, whereby linear channels are installed across the area to be drained (see Fig. 2).

The selection of the most appropriate type of drainage will depend on the specific requirements of each site, however, in most cases 'Channel Drainage' does offer the following benefits compared to 'Point Drainage':

- Channel Drainage is installed at shallower depths than Point Drainage, therefore can be more cost effective to install, as less overall excavation and cartaway is required.
- The surface water run-off can enter the system at any point along the whole length of the linear run and thus, the performance of the overall system will be faster and more efficient.
- The risk of ponding or differentiated settlement that can occur around the surface of traditional gully points, which often leads to frost damage, can be eliminated when using Channel Drainage.
- Linear channels cause minimal visual disturbance to the appearance of the site and gratings can be selected so that they are in keeping with the aesthetics of the surrounding area.

Fig. 1 Point Drainage*

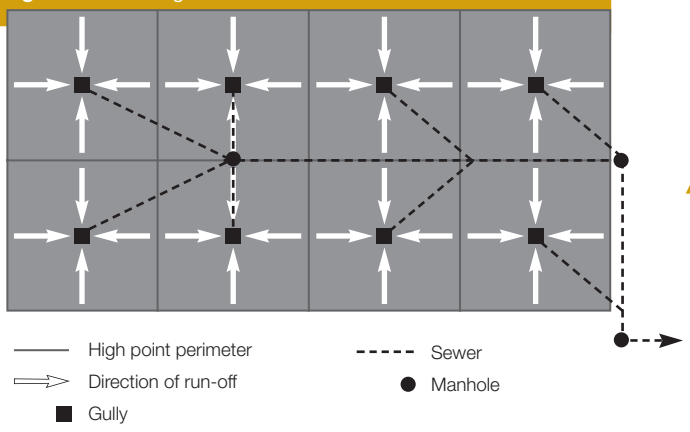
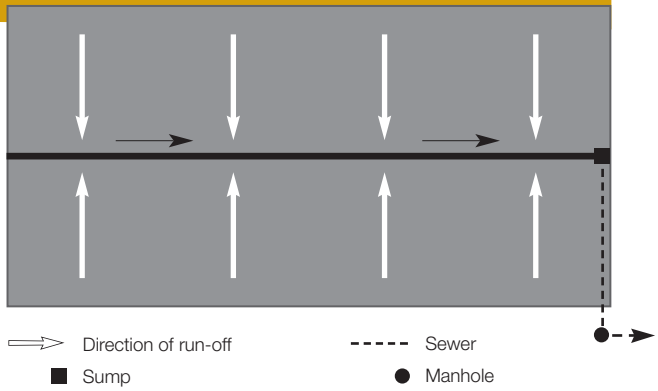


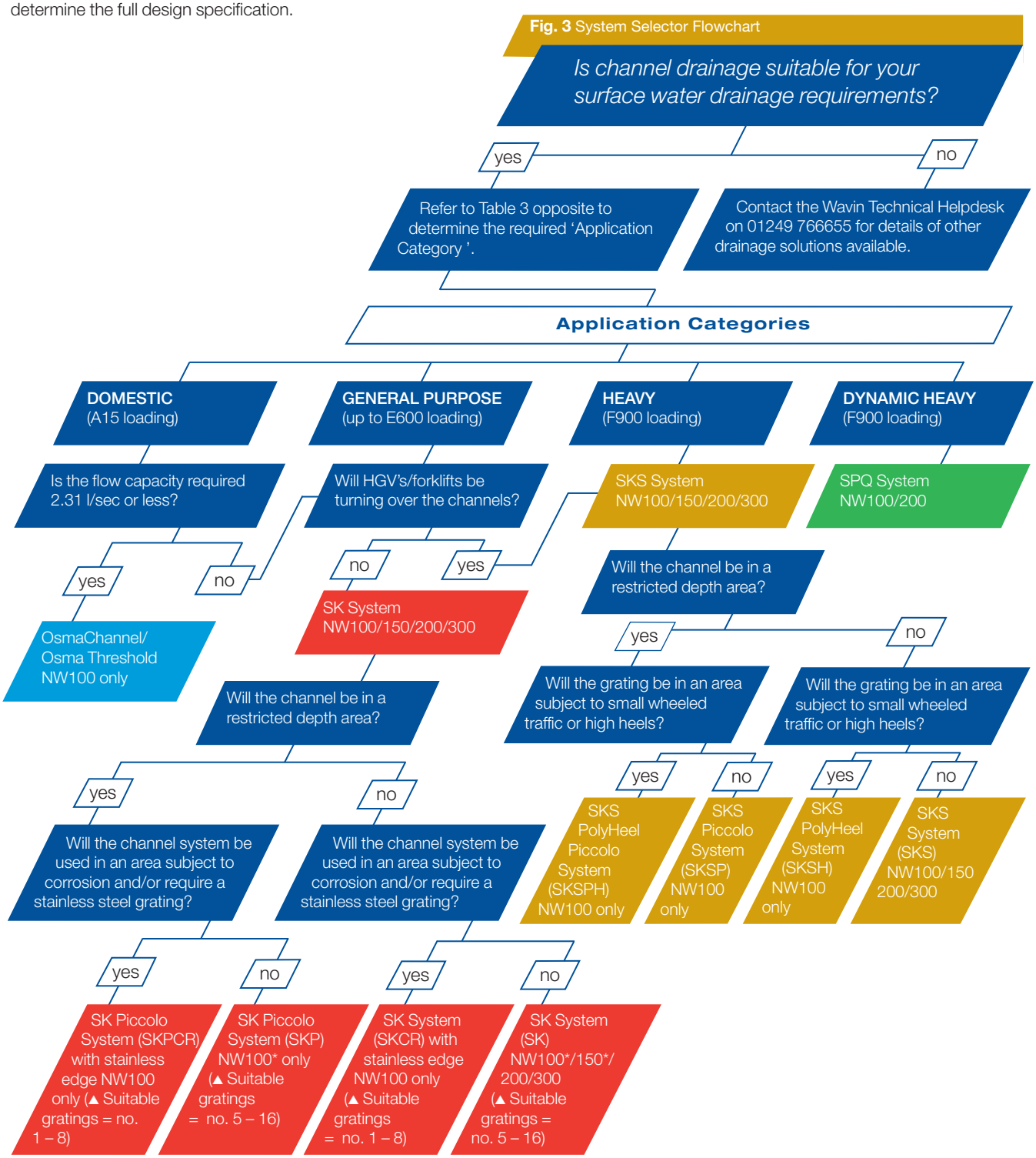
Fig. 2 Channel Drainage



Note:
* *For further information regarding Point Drainage systems, please contact the Wavin Technical Helpdesk on 01249 766655.*

The flowchart below can be used to enable you to easily select which PolyChannel system you require according to the application it will be used for. Once chosen, refer to the Design section of this guide to determine the full design specification.

Fig. 3 System Selector Flowchart



Notes:
▲ *See Table 4 opposite SK gratings no. 1 – 16*
* *PolyHeel gratings are available for use in pedestrian and shopping areas*

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Table 3: Application Categories

Application: ▲	Maximum Loading Restriction:	Category:
■ Housing/Domestic use	1.5 tonnes / A15	DOMESTIC
■ Cycle Paths ■ Car Parks ■ Industrial/Factories* ■ Shopping Precincts/Areas ■ Sports Stadium – Car parks/Concourses ■ Shower Areas ■ Warehouse/Dock Areas*	Up to 60 tonnes / E600	GENERAL PURPOSE
■ Petrol Stations/Forecourts*	Up to 60 tonnes / E600	GENERAL PURPOSE
	90 tonnes / F900	HEAVY
■ Lorry Parks ■ Airports ■ Warehouse/Dock Areas* ■ Motorway Crossovers ■ Industrial/Factories*	90 tonnes / F900	HEAVY
	90 tonnes / F900 (where exceptional dynamic traffic loadings of a compressive or vibrative nature occur)	DYNAMIC HEAVY

Notes:

△ For guidance regarding an application not listed or for further advice, please contact the Wavin Technical Helpdesk on 01249 766655. Alternatively, refer to Table 5 on page 8, for a detailed summary of applications, related load class, and recommended channel system and gratings.

* Where HGV's/forklift trucks will be turning, only the **SKS system** is suitable.

Table 4: SK Gratings Summary

Type: ▲	Loading Class:	Nominal Length:	Nominal Width & Part Number: ( ) = Standard lock code, for NW100 Piccolo channels the code suffix changes to SKP (eg. 100SKP807)			
			100	150	200	300
1. Slotted Stainless Steel Reinforced	C250	1.0m	100SK425 (100SK807)	–	–	–
2. Slotted Stainless Steel Reinforced	C250	0.5m	100SK427 (100SK807)	–	–	–
3. Slotted Stainless Steel Reinforced	E600	1.0m	100SK429 (100SK807)	–	–	–
4. Slotted Stainless Steel Reinforced	E600	0.5m	100SK431 (100SK807)	–	–	–
5. Black PolySpectra Composite	C250	0.5m	100SK581 (100SK805)	–	–	–
6. White PolySpectra Composite	C250	0.5m	100SK584 (100SK805)	–	–	–
7. Beige PolySpectra Composite	C250	0.5m	100SK585 (100SK805)	–	–	–
8. Grey PolySpectra Composite	C250	0.5m	100SK586 (100SK805)	–	–	–
9. Slotted Galvanised Steel	B125	1.0m	100SK420 (100SK810)	–	–	–
10. Slotted Galvanised Steel	B125	0.5m	100SK422 (100SK810)	–	–	–
11. Slotted Galvanised Steel Reinforced	C250	1.0m	100SK424 (100SK810)	–	–	–
12. Slotted Galvanised Steel Reinforced	C250	0.5m	100SK426 (100SK810)	–	–	–
13. Slotted Cast Iron	C250	0.5m	100SK502 (100SK805)	–	200SK502 (200SB805)	–
14. Slotted Cast Iron PolyHeel*	C250	0.5m	100SK508 (100SK805)	150SK508 (150SB805)	–	–
15. Slotted Ductile Iron	E600	0.5m	100SK504 (100SK805)	150SK504 (150SB805)	200SK504 (200SB805)	300SK504 (300SB805)
16. Z Tread Chequer Plate	E600	0.5m	100SK506 (100SK810)	–	–	–

Notes:

△ *Refer to Table 5 on page 8 for a detailed summary of applications, related load class, and recommended channel system & gratings.*

* *The PolyHeel grating is designed for pedestrian and shopping area drainage applications, where the use of high heels and small wheeled traffic (e.g. shopping trolleys) need to be accommodated. The size and configuration of the PolyHeel grating prevents narrow heels or small wheels being caught within the slots.*

Table 5: Typical Application Loadings

Application:	Category:	Channel System:	Loading Class:	Recommended Grating:
Domestic/Housing	DOMESTIC	OsmaChannel / Osma Threshold	A15	Grating supplied c/w channel
Cycle Paths	GENERAL PURPOSE	SK	B125	Galvanised slotted
Car Parks – Restricted/ Small Domestic	GENERAL PURPOSE	SK	B125	Galvanised slotted
Industrial/Factories, etc – non-loading	GENERAL PURPOSE	SK	B125	Galvanised slotted
Sports Stadium – Concourses	GENERAL PURPOSE	SK	B125	Galvanised slotted
Pedestrian Areas/ Shopping Precincts	GENERAL PURPOSE	SK	C250	Cast slotted heel/PolySpectra
Sports Stadium – Car Parks	GENERAL PURPOSE	SK	C250	Cast slotted heel or standard/ galvanised slotted
Car Parks – Commercial/ Industrial/Retail	GENERAL PURPOSE	SK	C250	Cast slotted heel or standard
Shower Areas	GENERAL PURPOSE	SKCR	C250	PolySpectra
Petrol Stations/Forecourts (non-turning)	GENERAL PURPOSE	SK	C250/E600	Cast slotted heel or standard/ ductile slotted
Industrial – Food/ Chemical	GENERAL PURPOSE	SKCR	C250/E600	PolySpectra/stainless steel slotted
Industrial/Factories, etc – loading (non-turning)	GENERAL PURPOSE	SK	E600	Ductile slotted
Warehouse/Dock Areas – loading (non-turning)	GENERAL PURPOSE	SK	E600	Ductile slotted
Warehouse/Dock Areas – loading (turning)	HEAVY	SKS	F900	Grating supplied c/w channel
Petrol Stations/Forecourts (turning)	HEAVY	SKS/SKSH	F900	Grating supplied c/w channel
Industrial/Factories, etc – loading (turning)	HEAVY	SKS	F900	Grating supplied c/w channel
Airports	HEAVY	SKS/SKSH	F900	Grating supplied c/w channel
Lorry Parks	HEAVY/ DYNAMIC HEAVY	SKS/ SPQ	F900	Grating supplied c/w channel/ one piece unit
Motorway Crossovers	DYNAMIC HEAVY	SPQ	F900	One piece unit

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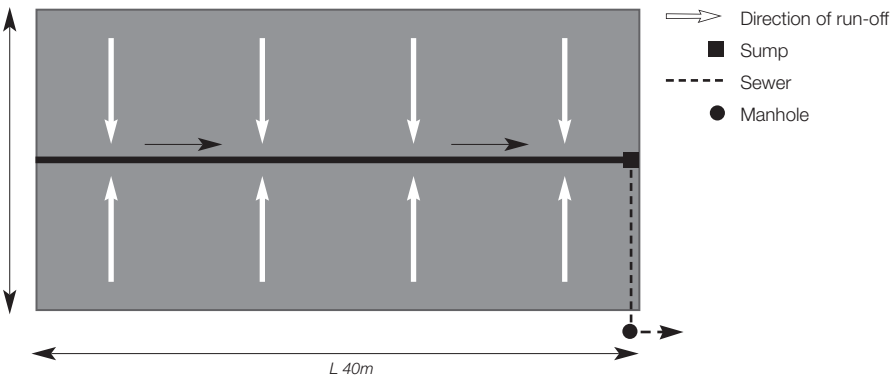
Key Design Considerations

When designing a PolyChannel Drainage run, the following design considerations will need to be taken into account:

- Area to be drained
- Rainfall Intensity Rate
- Surface Impermeability Factor
- Ground slope
- Type of outlet
- Loading requirements
- Preferred channel width
- Site aesthetics

Area to be Drained:

Multiply the total length of the catchment area by its width to calculate the total area to be drained, e.g. L x W = Area
40 x 20 = 800m²



Rainfall Intensity Rate

Establish the rainfall rate for the area to be drained. BS EN 752-4:1998 gives various categories of design rainfall covering a large variety of situations. Generally for the vast majority of cases only either category 1 or 2, as detailed below are required:

Category 1

50mm/hr for paved areas on which ponding can be tolerated during heavy storms and for a few minutes after the storm has finished.

Category 2

75mm/hr for sloping surfaces where ponding can not occur and for flat surfaces where ponding cannot normally be tolerated.

Surface Impermeability Factor

The impermeability of the surface area being drained is required to determine how much of the surface run-off will need to be drained by the channel system. As even semi-permeable surfaces can become water logged in periods of heavy rainfall, and blocked by silt over time, it is general practice to assume that all run-off falling onto the catchment area will flow into the channels, i.e. a factor of 1.0 is therefore recommended.

Ground Slope

If the channel run is to be laid on a sloping site, the slope will affect the performance of the channel system. If the fall is towards the outlet, the flow capacity rate is increased and therefore if the slope is away from the outlet the flow rate is decreased. The ground slope figure will be a positive % in the former situation and a negative % in the latter.

Type & Position of Outlet

The run-off that is transported along the channel system can be discharged via either of the following outlet options, depending on the flow rate capacity required.

- Horizontal End Outlet – to be used when connecting to an additional channel run.
- Vertical Outlet (using a PVC outlet connector fitted at the preformed knockout point) – most cost effective when the outlet does not require trapping or silt/debris to be collected.
- Sump – to be used when the collection of silt/debris and/or a trapped outlet is specified.

The position of the outlet may need to be determined by the location of the existing below ground pipework. Due to the outlet position being fixed you may require a larger channel than if you could for example, position the outlet in the centre of a run.

Loading Requirement

The loading levels for channel drainage are categorised as classes A15 to F900. It is important to select the appropriate class for the required application. For further details, please refer to Table 5 – Typical Application Loadings on page 8.

Preferred Channel Width

The PolyChannel range is available in widths of 100mm, 150mm, 200mm and 300mm. Generally the narrowest channel that can cope with the expected run-off levels will be selected. However, in certain industrial/commercial situations, channels wider than required can be specified, allowing the spare capacity to be used for storage, alleviating flood risk.

Site Aesthetics

The channel grating can be selected according to colour and/or material in order to blend in with the surrounding area. For example, coloured composite gratings are often specified for shower areas. The PolyChannel range offers galvanised/stainless steel gratings, slotted ductile iron, slotted cast iron, solid plate cast iron and composite gratings (in black, white, beige and grey).

Additional Design Factors

In addition to the eight key considerations outlined previously, there are other factors that may need to be considered depending on the specific site, these are as follows:

- **Chemical Resistance**
  Refer to Table 10 Chemical Resistance Chart on page 28, which lists the chemicals, test concentrations and maximum recommended temperatures that PolyChannel systems (manufactured from PolyDyn® material) can withstand.

- **Restricted Depth Installations**
  For applications where the construction depth is restricted for example on flat roofs or mult-storey parking facilities, the shallow channel system Piccolo (in NW100 SK or SKS) can be installed.

- **Potential Corrosion Risk**
  If the channel system is being used in an area subject to corrosion it is advisable to select a stainless steel or composite plastic (PolySpectra) grating, available in the SK range only. In addition, the channels will require stainless steel edges (i.e. the SKCR range). For further advice please refer to Fig. 3 System Selector Flowchart on page 6.

- **Channel Fall Arrangement**
  The PolyChannel systems are available in the fall options as shown in Table 6 opposite.

Table 6: PolyChannel Fall Options*

Fall Option:		Description:
	FLAT	The flat or level channel arrangement can be used where the slope of the ground already provides a suitable incline or where no fall is required.
	SLOPED	The sloped channels have an in-built fall of 0.6% and can be used to aid discharge efficiency, even where the ground is level. The increase in flow velocity will also help to promote a 'self cleaning' effect.
	COMBINED FLAT & SLOPED	For longer channel runs or added flexibility, a combination of flat and sloped channels can be used to create the desired fall levels depending on the size and topography of the site.
	STEPPED	The stepped arrangement uses the flat channels in conjunction with purpose designed step connectors to achieve the overall fall required.

Note:
* *Flat channels are available in all lines, and sloped channels are also available in SK NW100, SKCR NW100 & SKS NW100.*

System Design

PolyChannel drainage systems can be designed using either:

- The Hydraulic Flowchart (suitable for NW100 SK & SKS only)

or

- The PolyCalc Hydraulic Calculation Programme

The Hydraulic Flowchart (Suitable for NW100 SK & SKS only)

Overview

The Hydraulic Flowchart is an approximate manual method of calculating;

1) output flow from a site;

2) the recommended starter and end channels;

3) total run length.

You should then refer to the Design Principles at the end of this section to enable you to design the complete channel run. Alternatively, for a more accurate result, or for applications that require systems other than NW100 SK or SKS, the PolyCalc Hydraulic Calculation Programme must be used.

Note:
The Flowchart makes the following assumptions:
1. *100% surface impermeability i.e. a factor of 1.0.*
2. *A ground slope of 0%.*

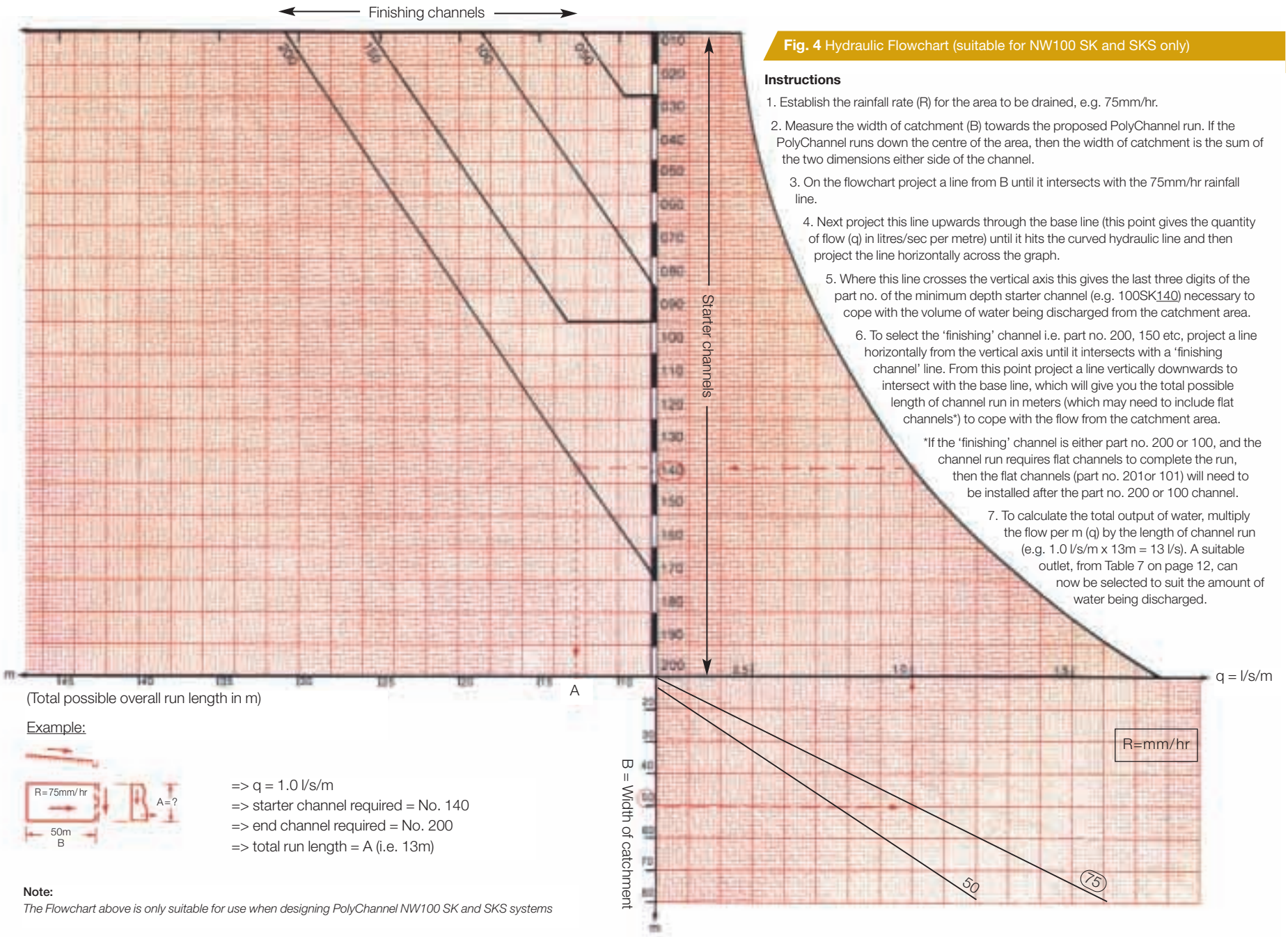


Fig. 4 Hydraulic Flowchart (suitable for NW100 SK and SKS only)

Instructions

1. Establish the rainfall rate (R) for the area to be drained, e.g. 75mm/hr.
2. Measure the width of catchment (B) towards the proposed PolyChannel run. If the PolyChannel runs down the centre of the area, then the width of catchment is the sum of the two dimensions either side of the channel.
3. On the flowchart project a line from B until it intersects with the 75mm/hr rainfall line.
4. Next project this line upwards through the base line (this point gives the quantity of flow (q) in litres/sec per metre) until it hits the curved hydraulic line and then project the line horizontally across the graph.
5. Where this line crosses the vertical axis this gives the last three digits of the part no. of the minimum depth starter channel (e.g. 100SK140) necessary to cope with the volume of water being discharged from the catchment area.
6. To select the 'finishing' channel i.e. part no. 200, 150 etc, project a line horizontally from the vertical axis until it intersects with a 'finishing channel' line. From this point project a line vertically downwards to intersect with the base line, which will give you the total possible length of channel run in meters (which may need to include flat channels*) to cope with the flow from the catchment area.

*If the 'finishing' channel is either part no. 200 or 100, and the channel run requires flat channels to complete the run, then the flat channels (part no. 201or 101) will need to be installed after the part no. 200 or 100 channel.

7. To calculate the total output of water, multiply the flow per m (q) by the length of channel run (e.g. 1.0 l/s/m x 13m = 13 l/s). A suitable outlet, from Table 7 on page 12, can now be selected to suit the amount of water being discharged.

Example:

=> q = 1.0 l/s/m
=> starter channel required = No. 140
=> end channel required = No. 200
=> total run length = A (i.e. 13m)

Note:
The Flowchart above is only suitable for use when designing PolyChannel NW100 SK and SKS systems

Note:
The capacities shown below are for the SK range. Capacities for the SKS range are the same, however the overall height of the SKS channels increases by 7mm (which is the height including the monolithically bonded frame and grate). Also the code suffix changes to SKS (e.g. 100SKSP070).

Table 7: NW100 SK & SKS Outlet Capacities in l/s

Terminating Component:	Part No.:	Vertically (V) or Horizontally (H) Discharged:	Discharge Via:	Capacity (l/s):
1.0m, flat Piccolo channel, 70mm overall height	100SKP070	V	Via the Ø110mm knockout and a separate Ø110mm PVC outlet	7.02
1.0m, flat Piccolo channel, 100mm overall height	100SKP100	V	Via the Ø110mm knockout and a separate Ø110mm PVC outlet	8.88
1.0m, flat Piccolo channel, c/w Ø110mm PVC outlet, 70mm overall height	100SKP071	V	Via the Ø110mm round PVC outlet provided	7.02
1.0m, flat Piccolo channel, c/w Ø110mm PVC Outlet, 100mm overall height	100SKP101	V	Via the Ø110mm round PVC outlet provided	8.88
End plate + Ø110mm PVC outlet, for channel 100SK050	100SK058	H	Via the Ø110mm outlet set into the end plate	8.31
End plate + Ø110mm PVC outlet, for channels 100SK100 – 100SK102	100SK108	H	Via the Ø110mm outlet set into the end plate	9.93
End plate + Ø110mm PVC outlet, for channel 100SK150	100SK158	H	Via the Ø110mm outlet set into the end plate	11.33
End plate + Ø110mm PVC outlet, for channels 100SK200 – 100SK202	100SK208	H	Via the Ø110mm outlet set into the end plate	12.57
1.0m, flat channel, 142mm overall height	100SK021	V	Via the Ø110mm knockout and a separate Ø110mm PVC outlet	10.03
1.0m, flat channel, 142mm overall height	100SK021	V	Via the Ø160mm knockout and a separate Ø160mm PVC outlet	19.79
0.5m, flat junction channel, 142mm overall height	100SK022	V	Via the Ø110mm knockout and a separate Ø110mm PVC outlet	10.03
0.5m, flat junction channel, 142mm overall height	100SK022	V	Via the Ø160mm knockout and a separate Ø160mm PVC outlet	19.79
1.0m, sloped channel, 154 – 160mm overall height	100SK050	V	Via the Ø110mm knockout and a separate Ø110mm PVC outlet	10.88
1.0m, sloped channel, 154 – 160mm overall height	100SK050	V	Via the Ø160mm knockout and a separate Ø160mm PVC outlet	21.46
1.0m, sloped channel, 184 – 190mm overall height	100SK100	V	Via the Ø110mm knockout and a separate Ø110mm PVC outlet	12.35
1.0m, sloped channel, 184 – 190mm overall height	100SK100	V	Via the Ø160mm knockout and a separate Ø160mm PVC outlet	24.34
1.0m, flat channel, 190mm overall height	100SK101	V	Via the Ø110mm knockout and a separate Ø110mm PVC outlet	12.17
1.0m, flat channel, 190mm overall height	100SK101	V	Via the Ø160mm knockout and a separate Ø160mm PVC outlet	23.99
0.5m, flat junction channel, 190mm overall height	100SK102	V	Via the Ø110mm knockout and a separate Ø110mm PVC outlet	12.17
0.5m, flat junction channel, 190mm overall height	100SK102	V	Via the Ø160mm knockout and a separate Ø160mm PVC outlet	23.99
1.0m, sloped channel, 214 – 220mm overall height	100SK150	V	Via the Ø110mm knockout and a separate Ø110mm PVC outlet	13.33
1.0m, sloped channel, 214 – 220mm overall height	100SK150	V	Via the Ø160mm knockout and a separate Ø160mm PVC outlet	26.28
1.0m, sloped channel, 244 – 250mm overall height	100SK200	V	Via the Ø110mm knockout and a separate Ø110mm PVC outlet	14.40
1.0m, sloped channel, 244 – 250mm overall height	100SK200	V	Via the Ø160mm knockout and a separate Ø160mm PVC outlet	28.39
1.0m, flat channel, 250mm overall height	100SK201	V	Via the Ø110mm knockout and a separate Ø110mm PVC outlet	14.19
1.0m, flat channel, 250mm overall height	100SK201	V	Via the Ø160mm knockout and a separate Ø160mm PVC outlet	27.98
0.5m, flat junction channel, 250mm overall height	100SK202	V	Via the Ø110mm knockout and a separate Ø110mm PVC outlet	14.19
0.5m, flat junction channel, 250mm overall height	100SK202	V	Via the Ø160mm knockout and a separate Ø160mm PVC outlet	27.98
0.5m Sump	100SK900	H	Via the high level Ø110mm outlet	15.55
0.5m Sump	100SK900	H	Via the low level Ø110mm outlet	21.76
0.5m Sump	100SK900	H	Via the high level Ø160mm outlet	28.05
0.5m Sump	100SK900	H	Via the low level Ø160mm outlet	41.65

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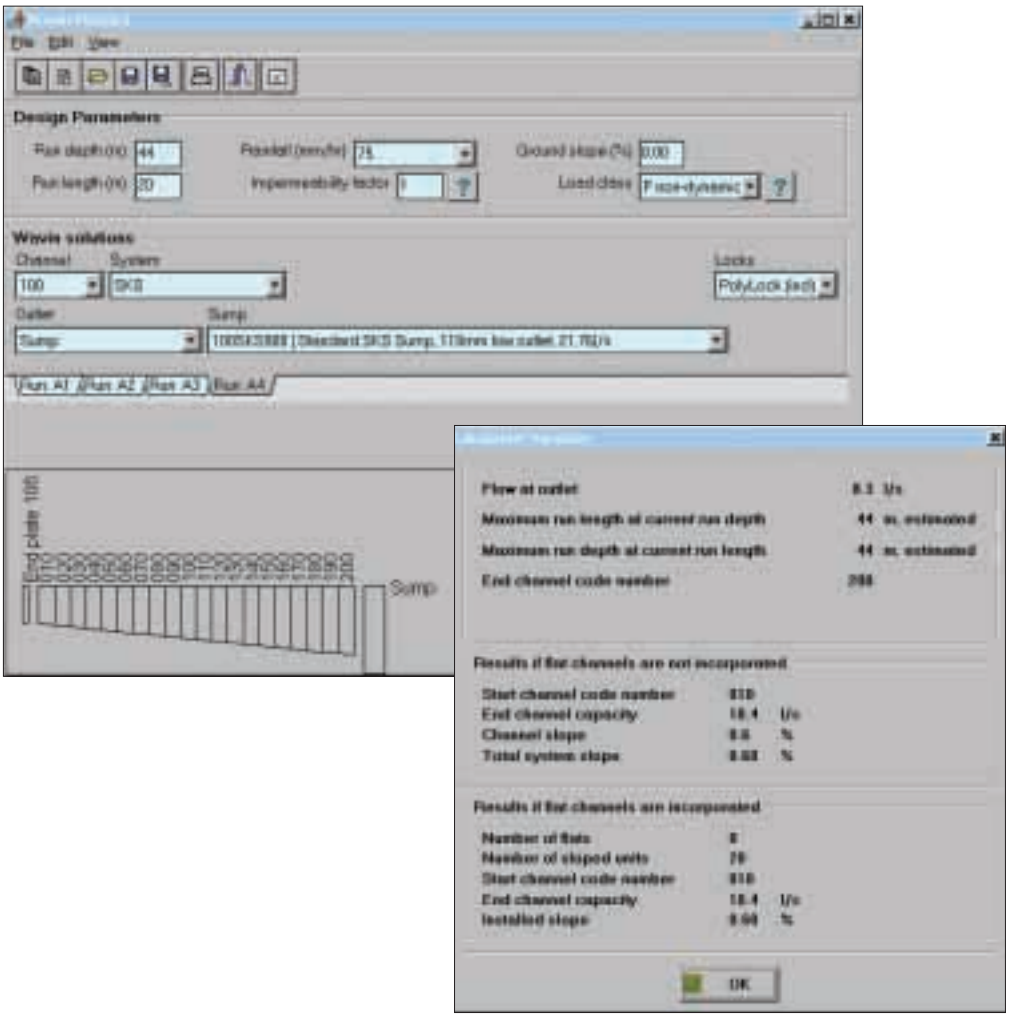
The PolyCalc Hydraulic Calculation Programme

Overview

Wavin Plastics have developed a purpose designed hydraulic calculation programme 'PolyCalc' that has been specifically created to take into account the inherent attributes of the PolyChannel systems. Using the Manning Strickler & Timm formulae as its base, the programme has been adapted and refined to reflect the actual flow conditions within PolyChannel systems.

Design Procedure

To design a channel drainage run using the PolyCalc software, please contact the Wavin Technical Helpdesk on 01249 766655.



PolyChannel Design Principles

Design principles are shown for all PolyChannel systems in each nominal width, other than Osma Threshold, as this system is only used as single channels in front of doorways, enabling level access as required by Part M of the Building Regulations.

Fig. 5 OsmaChannel NW100 – Design Principle

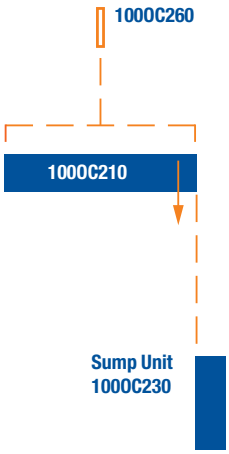


Fig. 6 SK NW100 – Design Principle

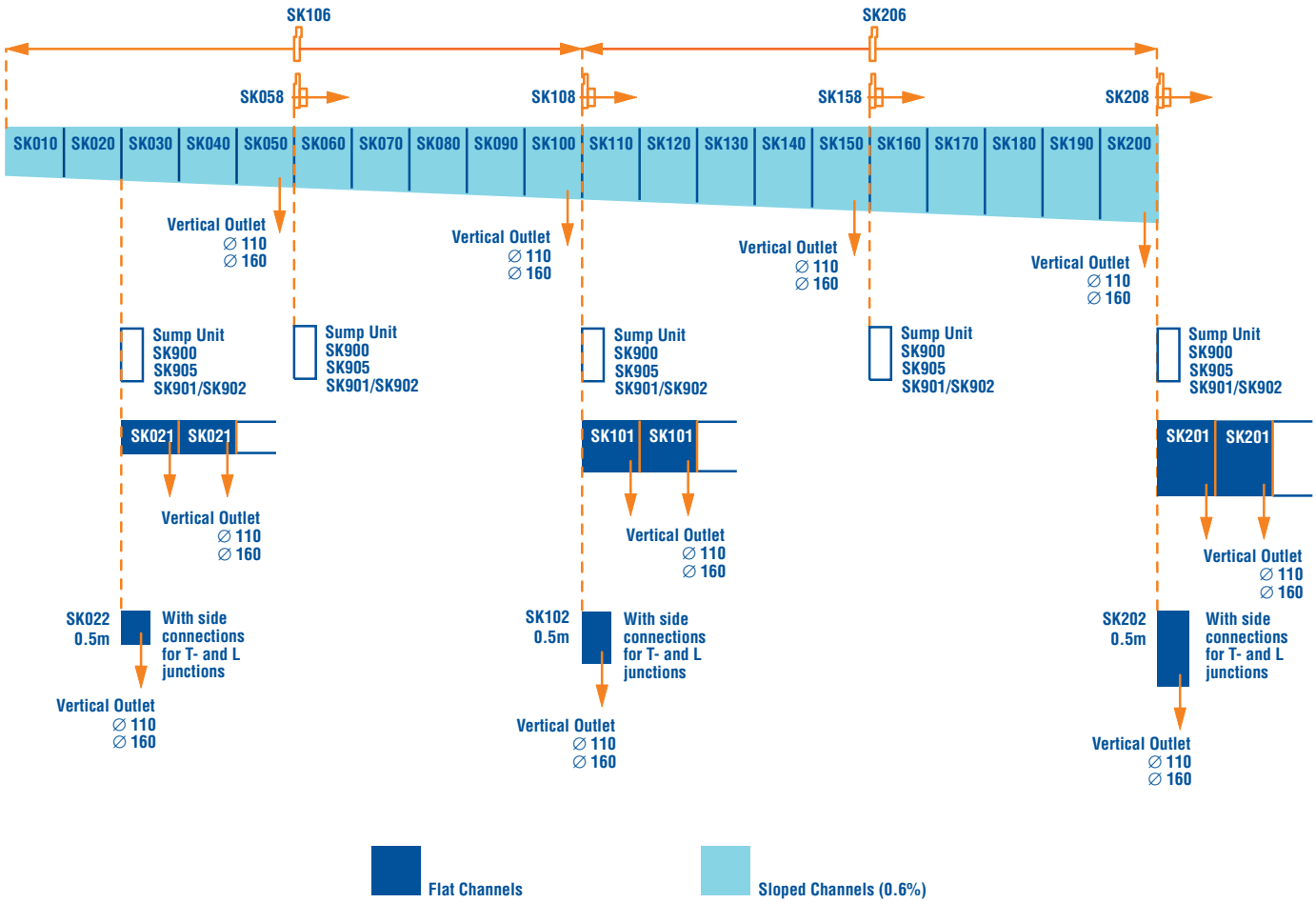


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Fig. 7 SK NW150 – Design Principle

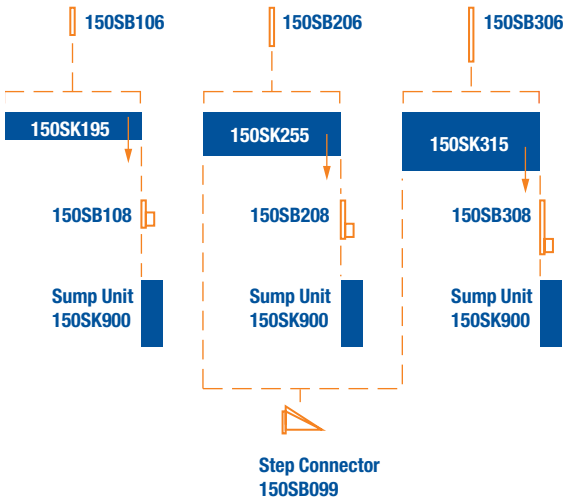

Fig. 8 SK NW200 – Design Principle

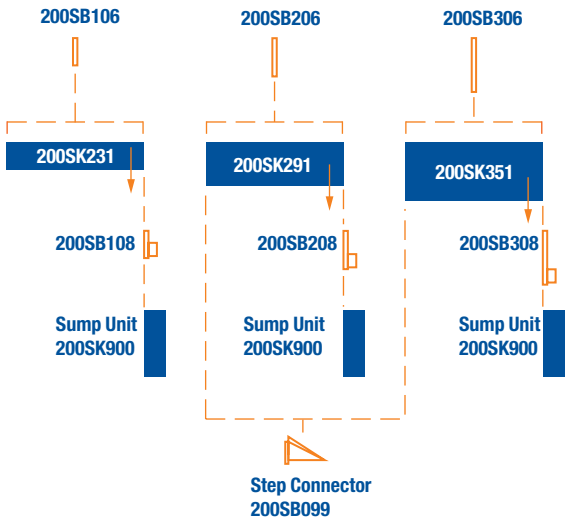

Fig. 9 SK NW300 – Design Principle

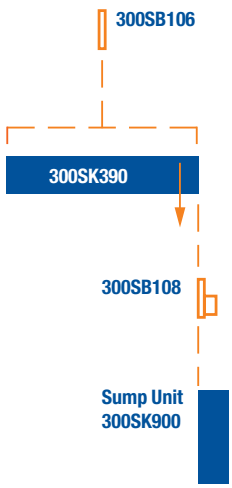

Fig. 10 SKS NW100 – Design Principle

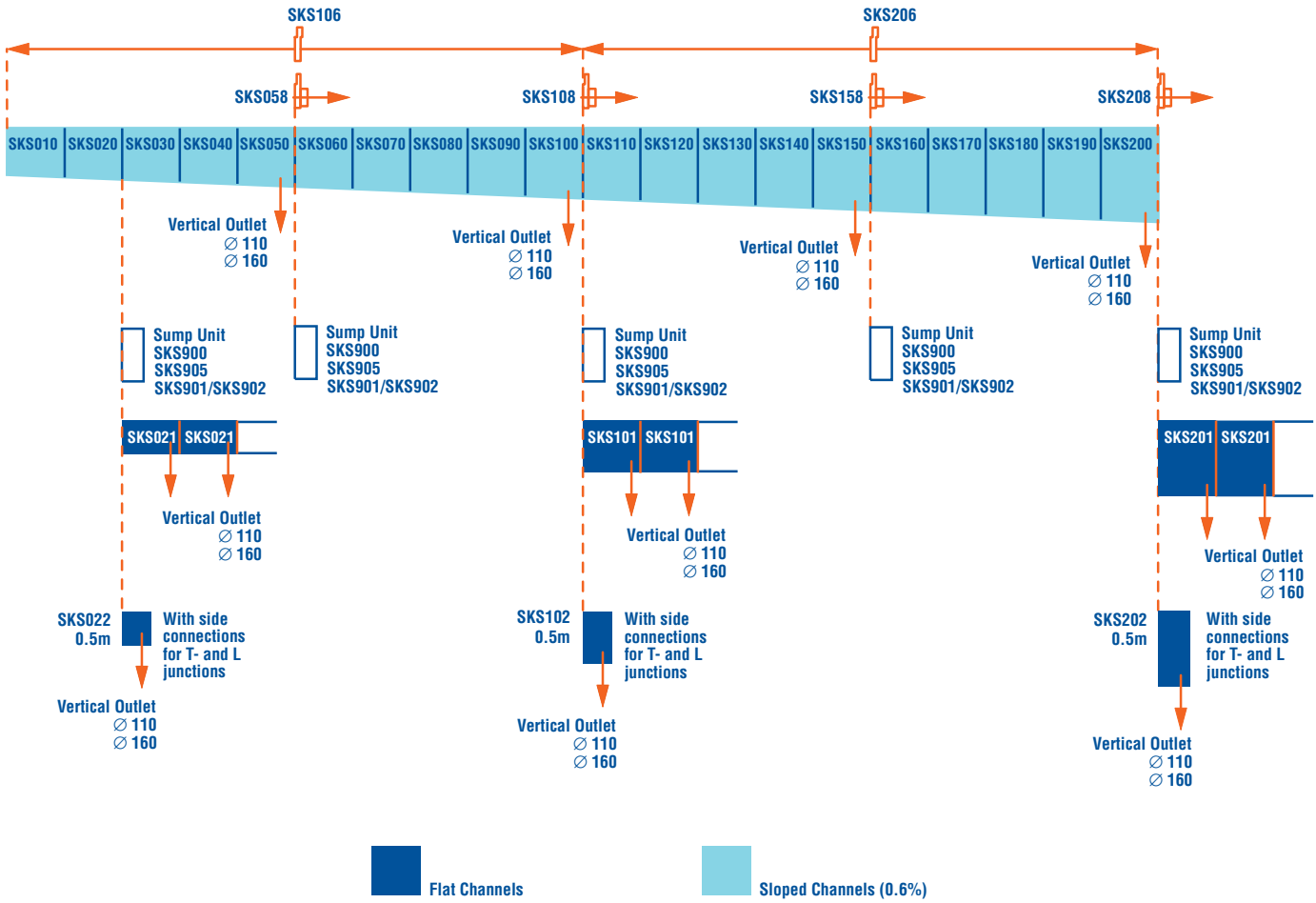

Fig. 11 SKS NW150 – Design Principle

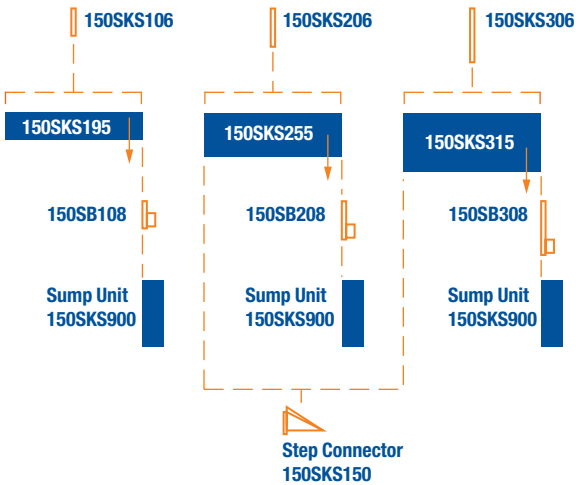

Fig. 12 SKS NW200 – Design Principle

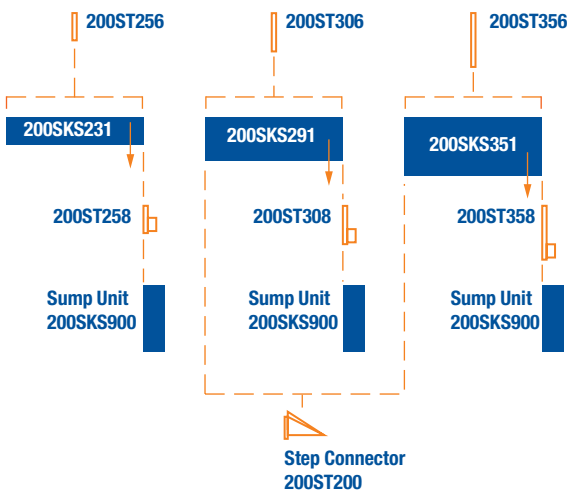

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Fig. 13 SKS NW300 – Design Principle

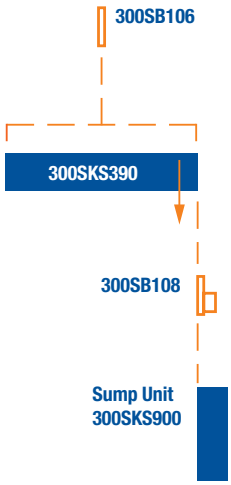


Fig. 14 SPQ NW100 – Design Principle

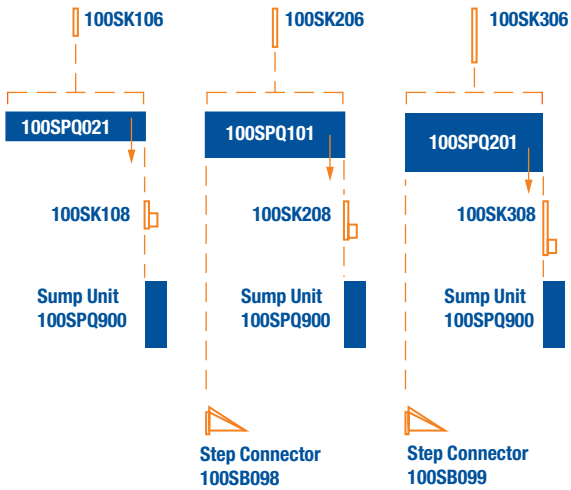
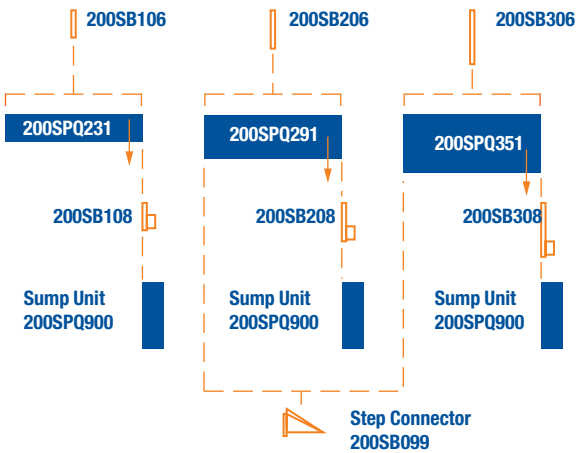


Fig. 15 SPQ NW200 – Design Principle



Handling and Storage

All components in the PolyChannel range should be handled with reasonable care, and must not be dropped or dragged across the ground. The polymer concrete channels are up to 75% lighter than traditional concrete but should be lifted in accordance with standard site Health & Safety guidelines.

The channels are modular with straight sides which enables them to be stacked during storage and transportation.

Health and Safety Guidelines

All components in the PolyChannel range are supplied in a finished state and do not present any hazard to health when used for the purpose for which they are intended.

Should any subsequent grinding, sawing, cutting or drilling operations need to be carried out then the appropriate protective clothing should be worn and adequate ventilation will be necessary to control any dust produced to below the acceptable level of a nuisance dust (O>E>S is 10mg/m^3).

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Channel Installation Introduction

The smooth, straight outside walls of PolyChannel systems enable quick and easy installation within any type of hard surfacing, including concrete, asphalt or block paving as detailed in this guide. Also when finished with concrete slabs it is important to provide expansion joints (see further details on page 27).

Fig. 16 SKS finished in concrete

Fig. 17 SKS finished in block paving

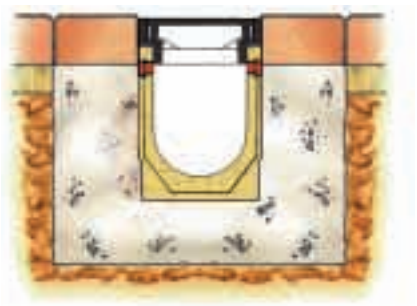
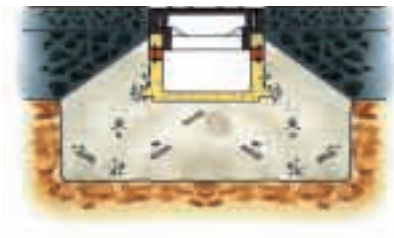


Fig. 18 SKS Piccolo finished in asphalt



PolyChannel Locking Devices for SK & SKS

PolyChannel SK system

Gratings are secured via the patented Red Dot vibration damping locking system. This ensures that the grates are secured in place during vehicular override.

The Red Dot locking system is not susceptible to dirt and corrosion. When the bolt is turned, the crossbar is automatically anchored inside the Red Dot. The resistance and shock absorbing qualities of the Red Dot helps prevent fragmentation of the PolyDyn® in the fixing area.

Fig. 19 PolyChannel SK Red Dot locking system

Fig. 20 PolyChannel SKS PolyLock® locking device

PolyChannel SKS system

Gratings are secured by the unique PolyLock® boltless locking device. The PolyLock® has no bolts or sliding devices and cannot corrode because there are no metallic parts or springs. Other benefits include:

- Maintenance friendly: easy installation and removal with PolyLever lifting tool
- Once in position, the grating cannot be left unlocked
- Two PolyLocks® for every 0.5m of grating

To fix grating:

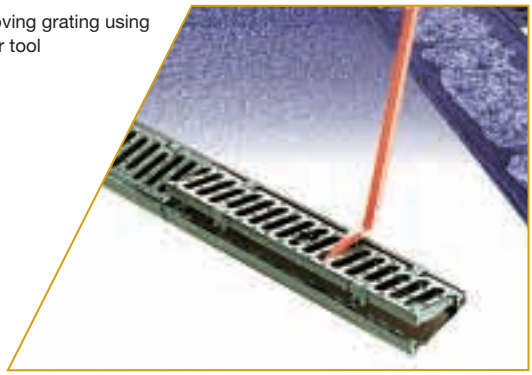
- Position grating with 'hinged' side engaged, and PolyLock® devices resting over their 'home' position
- Push PolyLocks 'home' with foot pressure

To remove grating:

- Locate PolyLever within slots from 'hinged' side of grating
- Exert downward pressure to lift grating

Fig. 21 Engaging PolyLock® locking device

Fig. 22 Removing grating using the PolyLever tool



To locate Sump Unit:

SKS Sump units are supplied with white coloured PolyLocks, rather than the standard black used for channels.

Fig. 23 SKS channel run shown with sump

For further details of the specialist features of each system and for a detailed breakdown of all components available, please refer to the PolyChannel Product Guide.

The 8 Steps to Installation

PolyChannel systems can be quickly and easily installed by following these 8 installation steps:

- **Step 1** Excavate trench
- **Step 2** Setting out
- **Step 3** Knock out connections
- **Step 4** Pour bedding
- **Step 5** Check alignments
- **Step 6** Grating installation (only applicable to the SK system)
- **Step 7** Concreting
- **Step 8** Clean up and hand over

The 8 Steps to Installation continued

Step 1 *Excavation*

- Excavate the trench allowing sufficient depth and width for the concrete bed and surround.
- Slope the bed of the trench towards the outlet following the depth of the proposed channels.

Fig. 24 Excavated trench

Step 2 *Setting out*

- Ensure that the arrows on the side of the channel point towards the outlet i.e. in the direction of flow.
- Set levels and lay out the channels alongside the trench, always starting at the outlet point.

Step 3 *Knock out connectors*

- Where channels or sumps are required to be connected to an underground system they are provided with knockouts.
- Knockouts should be removed with a drill and sharp chisel. Do NOT attempt removal by a hammer alone, this will break the unit. Firstly stitch drill around the perimeter of the pre-formed knockout using a masonry drill and then carefully remove the insert from inside using a sharp chisel and hammer, as required.

WARNING: **Protective eyeglasses or goggles should be worn when drilling, chiselling or cutting channels. Gloves should also be worn as required.**

- Pipework can be connected via the appropriate PVC outlet.
- Knockouts in sumps are best done in situ after initial concreting.
- Install the sump in concrete bed and surround and set to level. Make pipe connections and backfill.

Step 4 *Pour bedding*

(Please also refer to Table 8 Minimum Concrete Bed & Surrounds on page 22)

Note:
Whilst there are no specific codes of practice for the installation of polymer concrete products, contractors generally use C.O.P. for concrete products.

- Begin at the outlet position, a good quality concrete bedding should be poured into the trench.
- The depth and strength of the concrete is dependent on the anticipated loadings.
- Place the deepest channel up to the sump on the concrete bed (knockouts in the sump correspond to various channel inverts). Alternatively, if there is no sump, place deepest channel at outlet end.
- Working away from the outlet, lower the channels into position using the Male/Female interlock.
- Where watertight joints are required, these should be provided by the use of a suitable sealant.
- Finally fit the appropriate end plate to complete the run.

Step 5 *Check alignments*

- Check the alignment and level of the PolyChannel and dress the bed in the form of a fillet ensuring that this completely covers the special frost anchor.
- It is important that, in common with standard concreting practice, where two concrete surfaces join, both should be laid within a reasonable timescale to ensure adequate adhesion between the two layers.

Fig. 25 Checking alignment

Step 6 *Grating installation*

Note:
Only applicable to SK.

- The grating should be loosely laid and wrapped in plastic, spanning the channel joints to ensure a clean final installation.
- Placing a small washer at regular intervals, between the grating and the adjacent channel wall, will ensure easy removal of the gratings on the finished installation.
- All cast/ductile gratings are supplied with a light protective coating which is not intended as a permanent finish. These, in common with all similar gratings, will oxidize unless regularly trafficked – this does not affect their strength.

Fig. 26 SK channel with grating

The 8 Steps to Installation *continued overleaf*

The 8 Steps to Installation continued

Table 8: Minimum Concrete Bed & Surrounds

Class:	Load:	Minimum Concrete Bed:	Minimum Concrete Surround:	Minimum Concrete Strength:
A	15N/mm²	100mm	100mm	15N/mm²
B	125N/mm²	100mm	100mm	20N/mm²
C	250N/mm²	150mm	150mm	25N/mm²
D	400N/mm²	200mm	200mm	25N/mm²
E	600N/mm²	200mm	200mm	25N/mm²
F	900N/mm²	200mm	200mm	25N/mm²

Note:
The above table is provided as a guide only, as each installation should be designed individually taking into account the bearing capacity (CBR) of the sub grades and type of application.

Step 7 *Concreting*

- The concrete surround can now be poured into the trench, taking care not to disturb the line of the run. This should finish 3mm above the channel & grating top surface (except where SPQ is being installed in which case no overbuild is required).
- If installing within a concrete slab, expansion joints (both longitudinal and transverse*) should be located prior to concreting.
- For blocked paved areas the first row of blocks must be set into the concrete surround.

Note:
* *See further information in 'Expansion Joints' section on page 27.*

Fig. 27 Finished installation

Step 8 *Clean Up and Handover*

- Lift out the gratings, removing the protective plastic (if applicable). At this stage any debris should be removed from the channel and the system flushed through.
- Replace the gratings, locking them securely into the Red Dot locking devices to prevent unauthorised removal.
- Your completed project is now ready for handover.

Fig. 28 OsmaChannel finished in concrete

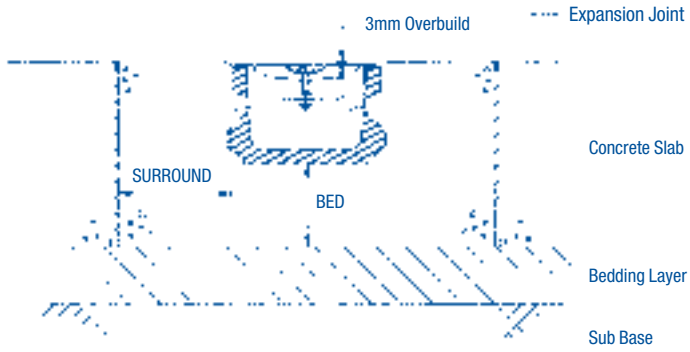


Fig. 29 OsmaChannel finished in block paving

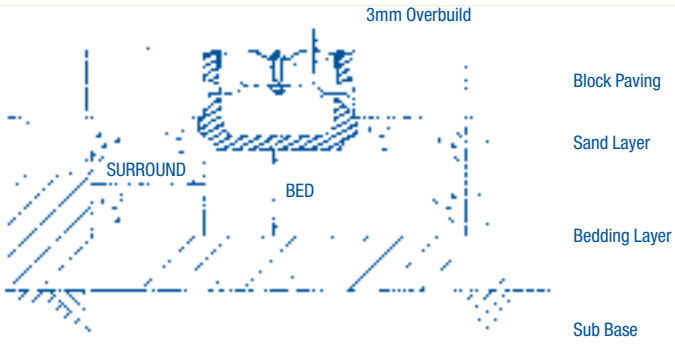
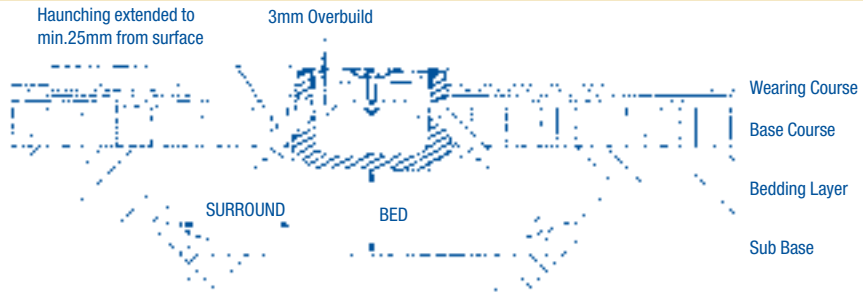


Fig. 30 OsmaChannel finished in asphalt



Class:	Load:	Minimum Concrete Bed:	Minimum Concrete Surround:	Minimum Concrete Strength:
A	15N/mm²	100mm	100mm	15N/mm²

Note:

The above table is provided as a guide only, as each installation should be designed individually taking into account the bearing capacity (CBR) of the sub grades and type of application.

Fig. 31 SK finished in concrete

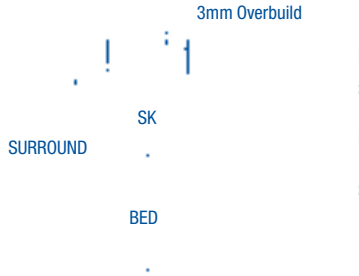
Class:	Load:	Minimum Concrete Bed:	Minimum Concrete Surround:	Minimum Concrete Strength:
A	15N/mm²	100mm	100mm	15N/mm²
B	125N/mm²	100mm	100mm	20N/mm²
C	250N/mm²	150mm	150mm	25N/mm²
D	400N/mm²	200mm	200mm	25N/mm²
E	600N/mm²	200mm	200mm	25N/mm²

Note:
The above table is provided as a guide only, as each installation should be designed individually taking into account the bearing capacity (CBR) of the sub grades and type of application.

Fig. 32 SK finished in block paving

Class:	Load:	Minimum Concrete Bed:	Minimum Concrete Surround:	Minimum Concrete Strength:
A	15N/mm²	100mm	100mm	15N/mm²
B	125N/mm²	100mm	100mm	20N/mm²
C	250N/mm²	150mm	150mm	25N/mm²

Blocks to be laid on 30–50cm wide concrete bed of same strength as bedding concrete and jointed perpendicularly to the channel.

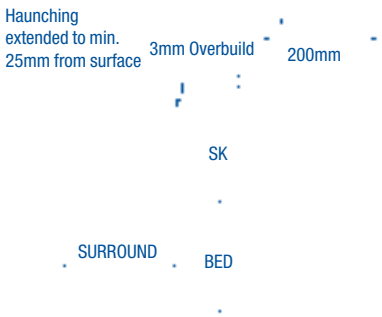


Note:
The above table is provided as a guide only, as each installation should be designed individually taking into account the bearing capacity (CBR) of the sub grades and type of application.

Fig. 33 SK finished in asphalt

Class:	Load:	Minimum Concrete Bed:	Minimum Concrete Surround:	Minimum Concrete Strength:
A	15N/mm²	100mm	100mm	15N/mm²
B	125N/mm²	100mm	100mm	20N/mm²
C	250N/mm²	150mm	150mm	25N/mm²
D	400N/mm²	200mm	200mm	25N/mm²
E	600N/mm²	200mm	200mm	25N/mm²

For extremely heavy applications (E600) extend surround to surface, 200mm either side of channel.



Note:
For class E600 installations where intense traffic may occur, channel should be protected by 200mm concrete surround as shown.
The above table is provided as a guide only, as each installation should be designed individually taking into account the bearing capacity (CBR) of the sub grades and type of application.

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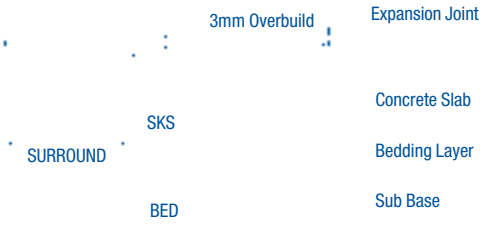
Fig. 34 SKS finished in concrete

Class:	Load:	Minimum Concrete Bed:	Minimum Concrete Surround:	Minimum Concrete Strength:
A	15N/mm²	100mm	100mm	15N/mm²
B	125N/mm²	100mm	100mm	20N/mm²
C	250N/mm²	150mm	150mm	25N/mm²
D	400N/mm²	200mm	200mm	25N/mm²
E	600N/mm²	200mm	200mm	25N/mm²
F	900N/mm²	200mm	200mm	25N/mm²

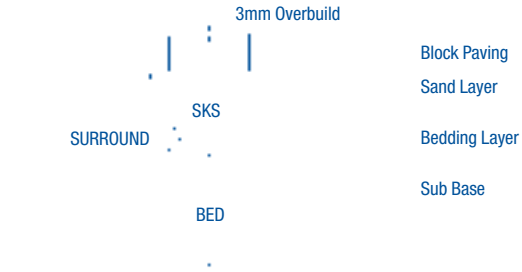


Note:
The above table is provided as a guide only, as each installation should be designed individually taking into account the bearing capacity (CBR) of the sub grades and type of application.

Fig. 35 SKS finished in block paving

Class:	Load:	Minimum Concrete Bed:	Minimum Concrete Surround:	Minimum Concrete Strength:
A	15N/mm²	100mm	100mm	15N/mm²
B	125N/mm²	100mm	100mm	20N/mm²
C	250N/mm²	150mm	150mm	25N/mm²

Blocks to be laid on 30–50cm wide concrete bed of same strength as bedding concrete and jointed perpendicularly to the channel.

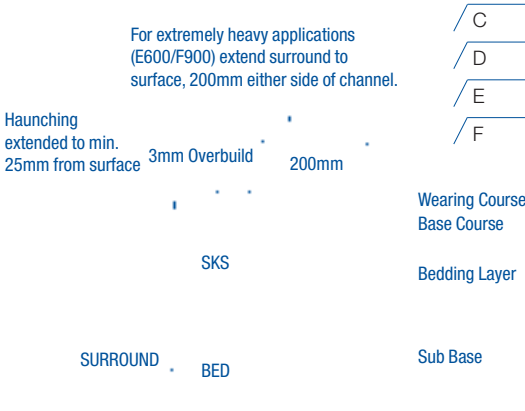


Note:
The above table is provided as a guide only, as each installation should be designed individually taking into account the bearing capacity (CBR) of the sub grades and type of application.

Fig. 36 SKS finished in asphalt

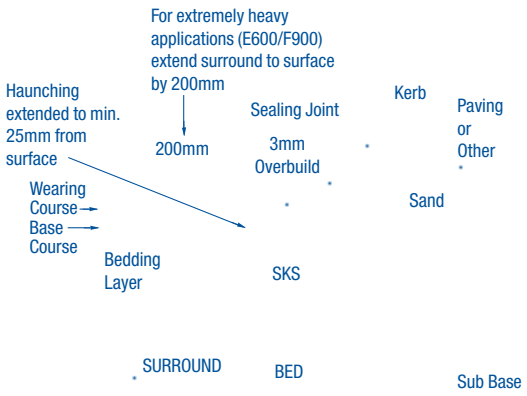
Class:	Load:	Minimum Concrete Bed:	Minimum Concrete Surround:	Minimum Concrete Strength:
A	15N/mm²	100mm	100mm	15N/mm²
B	125N/mm²	100mm	100mm	20N/mm²
C	250N/mm²	150mm	150mm	25N/mm²
D	400N/mm²	200mm	200mm	25N/mm²
E	600N/mm²	200mm	200mm	25N/mm²
F	900N/mm²	200mm	200mm	25N/mm²

For extremely heavy applications (E600/F900) extend surround to surface, 200mm either side of channel.



Note:
For class E600/F900 installations where intense traffic may occur, channel should be protected by 200mm concrete surround as shown.
The above table is provided as a guide only, as each installation should be designed individually taking into account the bearing capacity (CBR) of the sub grades and type of application.

Fig. 37 SKS finished in asphalt with kerb



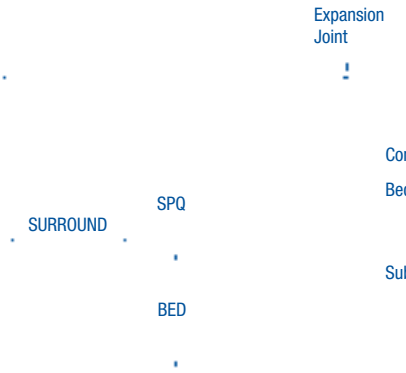
Class:	Load:	Minimum Concrete Bed:	Minimum Concrete Surround:	Minimum Concrete Strength:
A	15N/mm²	100mm	100mm	15N/mm²
B	125N/mm²	100mm	100mm	20N/mm²
C	250N/mm²	150mm	150mm	25N/mm²
D	400N/mm²	200mm	200mm	25N/mm²
E	600N/mm²	200mm	200mm	25N/mm²
F	900N/mm²	200mm	200mm	25N/mm²

Note:

For class E600/F900 installations where intense traffic may occur, channel should be protected by 200mm concrete surround as shown.

The above table is provided as a guide only, as each installation should be designed individually taking into account the bearing capacity (CBR) of the sub grades and type of application.

Fig. 38 SPQ finished in concrete

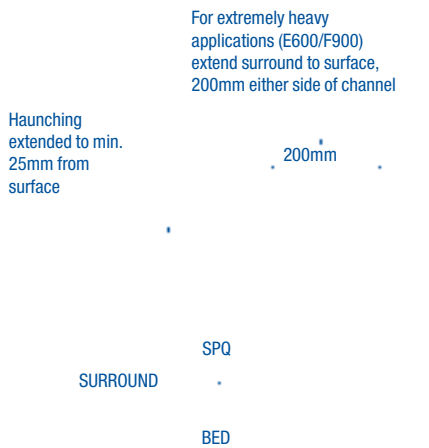


Class:	Load:	Minimum Concrete Bed:	Minimum Concrete Surround:	Minimum Concrete Strength:
A	15N/mm²	100mm	100mm	15N/mm²
B	125N/mm²	100mm	100mm	20N/mm²
C	250N/mm²	150mm	150mm	25N/mm²
D	400N/mm²	200mm	200mm	25N/mm²
E	600N/mm²	200mm	200mm	25N/mm²
F	900N/mm²	200mm	200mm	25N/mm²

Note:

The above table is provided as a guide only, as each installation should be designed individually taking into account the bearing capacity (CBR) of the sub grades and type of application.

Fig. 39 SPQ finished in asphalt



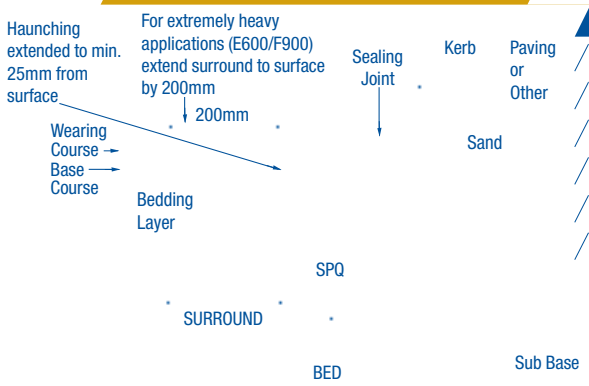
Class:	Load:	Minimum Concrete Bed:	Minimum Concrete Surround:	Minimum Concrete Strength:
A	15N/mm²	100mm	100mm	15N/mm²
B	125N/mm²	100mm	100mm	20N/mm²
C	250N/mm²	150mm	150mm	25N/mm²
D	400N/mm²	200mm	200mm	25N/mm²
E	600N/mm²	200mm	200mm	25N/mm²
F	900N/mm²	200mm	200mm	25N/mm²

Note:

For class E600/F900 installations where intense traffic may occur, channel should be protected by 200mm concrete surround as shown.

The above table is provided as a guide only, as each installation should be designed individually taking into account the bearing capacity (CBR) of the sub grades and type of application.

Fig. 40 SPQ finished in asphalt with kerb



Class:	Load:	Minimum Concrete Bed:	Minimum Concrete Surround:	Minimum Concrete Strength:
A	15N/mm²	100mm	100mm	15N/mm²
B	125N/mm²	100mm	100mm	20N/mm²
C	250N/mm²	150mm	150mm	25N/mm²
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F	900N/mm²	200mm	200mm	25N/mm²

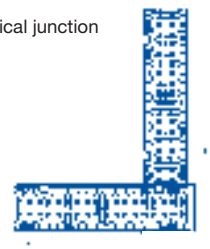
Note:
For class E600/F900 installations where intense traffic may occur, channel should be protected by 200mm concrete surround as shown.
The above table is provided as a guide only, as each installation should be designed individually taking into account the bearing capacity (CBR) of the sub grades and type of application.

Additional Installation Procedures

Corners (L Junctions) and T Junctions

To alleviate the need for cutting channels when installing either corners or T junctions, the NW100 SK and SKS ranges offer 0.5m length flat junction channels. These have purpose designed side knockouts for channels. Junction units should be installed between the appropriate adjacent channels as shown below in Fig. 41.

Fig. 41 Typical junction details



Cutting and Jointing

Channels in the PolyChannel range can be easily cut on site using a 200mm dia disc cutter (note: use either a metal or stone disc as required).

Note:
When sawing, cutting, drilling or grinding operations need to be carried out then the appropriate protective clothing should be worn and adequate ventilation will be necessary to control any dust produced to below the acceptable level of a nuisance dust (O>E>S is 10mg/m³).

Mitre Joints

To construct mitre joints the cut should be made vertically through both sides of the channel at the same time. The cut sections are then placed onto the concrete bed, butted together and then surrounded in concrete. Any small discrepancies in the accuracy of the cut can be made good with concrete or an appropriate sealant.

Note:
Mitre joints, as shown in Fig. 42 are only recommended for OsmaChannel and SK systems with a load class of up to B125. For load class C250 and above use junction channels.

Expansion Joints

Longitudinal expansion joints must be provided for systems laid within concrete slabs. The joint should run parallel to the installation and extend the full depth of the slab.

These surface joints should consist of any proprietary highly compressible material and have the top surface sealed with a mastic bead, finishing just below the surface of the surrounding concrete.

Transverse joints are also recommended at 6 – 12 metre spacings along the channel run, which should be alternated with crack joints.

Installed to line up with the connections between channels the inclusion of both of these joints will ensure a long life to the installation. When considering expansion or crack control joints within an installation professional advice should always be sought.

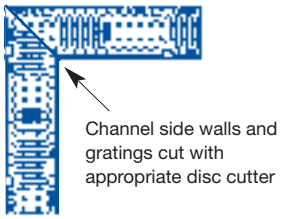


Fig. 42 90° mitred channel and grating joint detail

Inspection and Maintenance

The PolyChannel systems generally require less maintenance than other similar systems due to the mirror like internal surface of the channels and the in-built fall of 0.6% (on the sloped channels). However, it is recommended that the complete system is inspected on a regular basis and that the channels and sumps are cleaned out when required. The frequency of the maintenance will depend on the locality of the installation, but as a general rule all channel runs should be inspected at least once a year to establish when maintenance is required.

General Information

Materials

PolyChannel products are manufactured from PolyDyn®, an advanced formulation of selected quartz aggregates and inert materials. When bonded with high grade polyester resins, utilising a special thermosetting process, these combine to produce polymer concrete – an exceptional material offering outstanding properties. The process ensures chemical hardening, unlike some alternative materials, which utilise only hydraulic bonding agents in their process.

Performance

Table 9: Principle Properties of PolyDyn®

Property:	Explanation:
Chemical Resistance	PolyDyn® is non-porous with a sealed and capillary-free structure making it naturally resistant to most chemicals within the pH range 3-9.
Ageing Resistance	PolyDyn® components have a life expectancy exceeding that of traditional concrete products.
Low Water Absorption	PolyDyn® has a water absorption rate of less than 0.5%, therefore ensuring that it is frost proof.
Physical Qualities	PolyDyn® products are up to 75% lighter than traditional concrete products making them easy to transport and install, and can be easily machined, cut and drilled on site.
Mechanical Properties	Compressive strength approx. 90N/mm², bending strength approx. 22N/mm², thermal expansion approx. 0.018mm/m/°C.
Environmentally Friendly	PolyDyn® is a totally inert material and can therefore be used with confidence. Wavin's highly efficient manufacturing processes ensure that waste is kept to a minimum and recycled where possible.

Chemical Resistance

The table below lists the chemicals, test concentrations and maximum recommended temperatures that PolyDyn® material can withstand. The information given is intended as a guide only and more specific information is available on request.

Table 10: Chemical Resistance Chart

Chemical:	%:	°C:	Chemical:	%:	°C:	Chemical:	%:	°C:
Acetic Acid	10	25	Citric Acid	100	25	Petrol	100	60
Aluminium Bromide	All	60	Ethanol	99	25	Phosphoric Acid	85	60
Aluminium Chloride	All	25	Ethyl Oxide	100	25	Potassium Acetate	All	25
Aluminium Fluoride	All	25	Ferrous Nitrate	All	60	Potassium Bromate	All	60
Ammonium Chloride	All	60	Formaldehyde	25	50	Potassium Chloride	All	25
Ammonium Fluoride	40	25	Formic Acid	10	25	Potassium Cyanide	All	25
Ammonium Nitrate	All	60	Gluconic Acid	70	25	Potassium Dichromate	All	20
Ammonium Sulphate	Conc	60	Glycerine	100	60	Potassium Nitrate	All	60
Amyl Alcohol	100	25	Hydrochloric Acid	25	25	Sodium Biphosphate	All	60
Aniline Sulphate	All	60	Hydrogen Bromide (liquid)	100	25	Sodium Bisulphate	All	60
Barium Chloride	All	25	Lactic Acid	10	25	Sodium Bromate	5	25
Benzoic Acid	Conc	60	Lead Acitate	Conc	25	Sodium Bromide	All	60
Borax	Conc	25	Lead Nitrate	All	60	Sodium Carbonate	10	25
Boric Acid	Conc	60	Maleic Acid	100	121	Sodium Chlorate	50	25
Butyl Benzl Phthalate	100	30	Mineral Oil	100	60	Sodium Sulphate	All	60
Butylene Glycol	100	25	Nitric Acid	5	25	Sodium Sulphite	Conc	40
Calcium Chlorine	All	60	Oil (Domestic)	100	25	Sugar	All	60
Carbon Tetrachloride	100	25	Oleic Acid	100	60	Sulphuric Acid	25	60
Chlorine Gas	100	25	Oxalic Acid	Conc	25	Vegetable Oil	100	60
Chlorine Gas (Wet)	100	25	Parrafin	100	60	Water	100	40
						Wine	100	60

CUSTOMER SERVICES 01249 766611
TECHNICAL ENQUIRIES 01249 766655
TECHNICAL FAX 01249 766653
EMAIL info@wavin.co.uk

Standards and Approvals

The Wavin PolyChannel range is manufactured under a Quality Management System, accredited to BS EN ISO 9001: 2000. In addition the following approvals apply:

Enhanced Steel Edges

The SK range (NW 150, 200 and 300) with enhanced steel edges meets the requirements of the BS EN 1433 Standard.

DIN 19580 Compliance

The loading classifications of SK and SKS gratings comply with DIN 19580.

Specification Clauses

For SK, SKS & SPQ Systems

Please refer to the PolyChannel Product Guide (ref. CH301) for full Specification Clauses.

Supply

All OSMA systems are supplied through a nationwide network of merchant distributors. *For details of your nearest stockist, contact Wavin Customer Services*.

Conditions of Sale

The Company will not accept responsibility for the malfunction of any installation which includes components not supplied by Wavin Plastics Limited. Goods are sold subject to Company conditions of sale.

Tables and Figures Index

CUSTOMER SERVICES 01249 766611
TECHNICAL ENQUIRIES 01249 766655
TECHNICAL FAX 01249 766653
EMAIL info@wavin.co.uk

Technical Advice and Assistance

OSMA Channel Drainage systems are backed by Wavin's comprehensive technical advisory service. This is available to provide expert assistance at every stage of a project, from planning and product selection to installation and maintenance.

Services include:

- Full technical literature, including:
  - System Product Guides
  - Design and Installation Guides
  - Trade Price Lists
- Assistance with Channel Drainage systems product selection
- On site advice and troubleshooting

Contact Wavin Technical Design Department for prompt assistance:

TECHNICAL DESIGN
Tel: 01249 766655
Fax: 01249 766653
Email: technical.design@wavin.co.uk

Further Information

OSMA CHANNEL DRAINAGE SYSTEMS

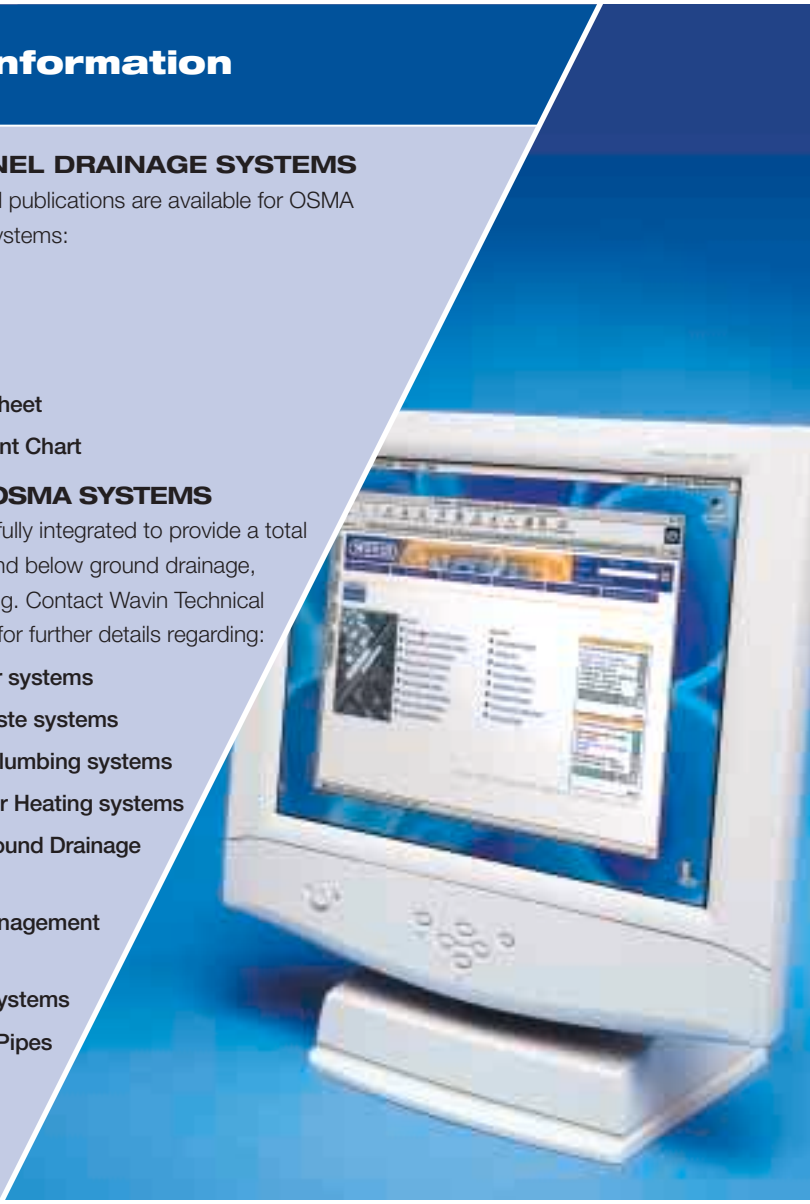
The following related publications are available for OSMA Channel Drainage systems:

- **Product Guide**
- **Trade Price List**
- **System Selector**
- **Technical Data Sheet**
- **Nearest Equivalent Chart**

ASSOCIATED OSMA SYSTEMS

OSMA systems are fully integrated to provide a total solution for above and below ground drainage, plumbing and heating. Contact Wavin Technical Design Department for further details regarding:

- **OSMA Rainwater systems**
- **OSMA Soil & Waste systems**
- **OSMA Flexible Plumbing systems**
- **OSMA Underfloor Heating systems**
- **OSMA Below Ground Drainage systems**
- **OSMA Water Management systems**
- **OSMA Ducting systems**
- **OSMA Pressure Pipes for Water**
- **OSMA Pressure Pipes for Gas**



WAVIN ONLINE

The complete OSMA product catalogue, together with design and installation guidance, is also available online at: **www.wavin.co.uk**

To request a copy of any item(s) of current literature, please contact:

LITERATURE REQUESTS
Tel: 01249 766333
Fax: 01249 766332
Email: literature@wavin.co.uk

wavin

OSMA

Channel Drainage Systems

PolyChannel
Design and Installation Guide

Meeting your needs

PolyChannel systems, developed by Wavin Plastics Limited, form part of a comprehensive range of systems to provide intelligent solutions for all building, construction and utilities projects.

These include:

Above Ground Projects
- OSMA Rainwater systems
- OSMA Soil & Waste systems

Plumbing & Heating Projects
- OSMA Flexible Plumbing systems
- OSMA Underfloor Heating systems

Below Ground Projects
- OSMA Below Ground Drainage systems
- OSMA Water Management systems
- OSMA Ducting systems

Pressure Pipe Projects
- OSMA Pressure Pipes for Water
- OSMA Pressure Pipes for Gas

All OSMA systems are backed by full technical literature and project support.

ISO 9001:2000

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