

Ojefer
Construction

Drainage Systems

- > POLYMER CONCRETE CHANNELS
- > ACCESSORIES

Linear Drainage of surface water

POLYMER CONCRETE

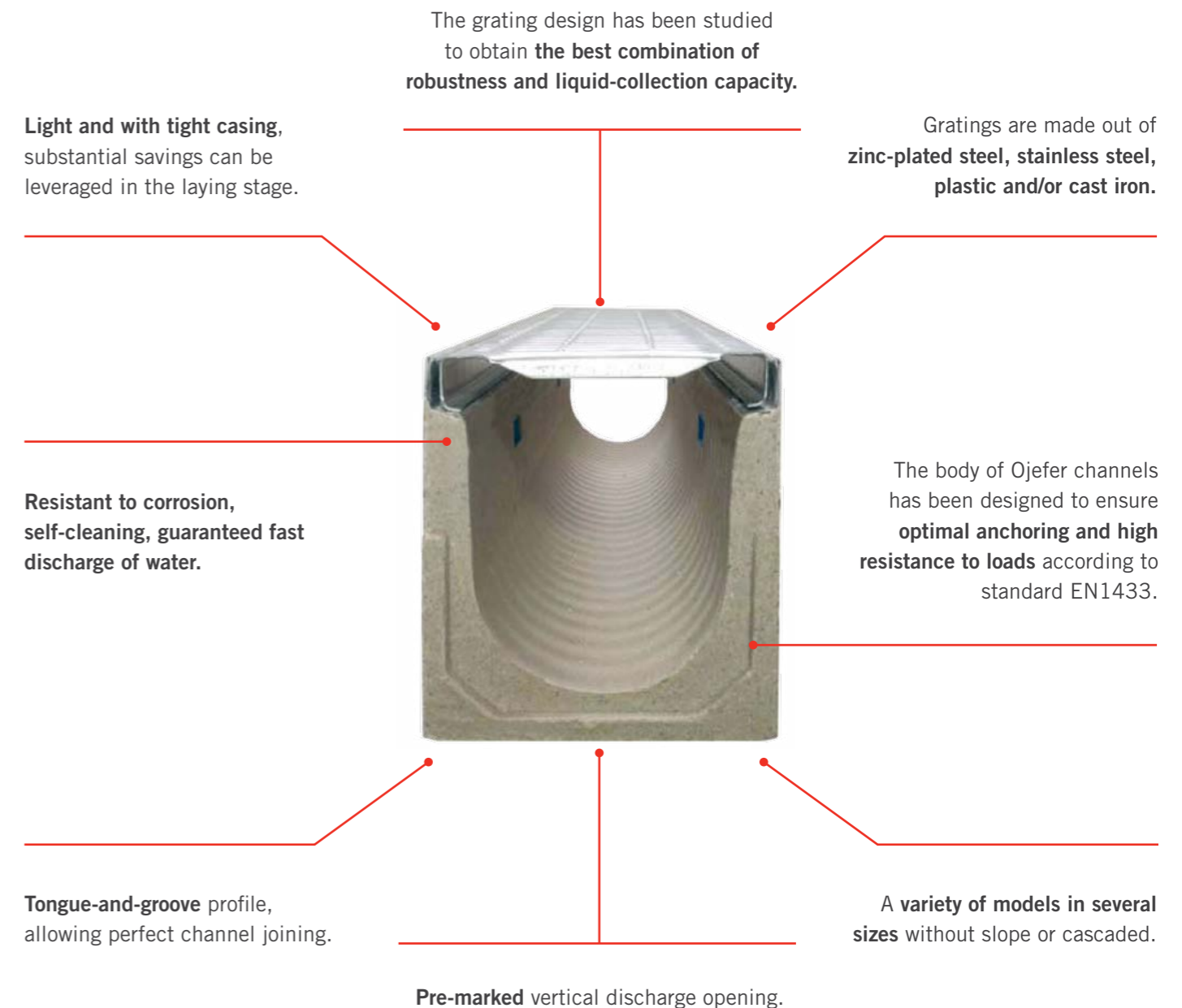
- > Linear drainage systems comprising polymer concrete channels with corresponding gratings made from different materials.
- > Channels from polymer concrete are distinguished for having superior mechanical properties and ease of application, since they are lighter than conventional concrete channels.
- > Gratings with different load bearing classes are made out of zinc-plated steel, stainless steel, plastic and/or cast iron.
- > This way the polymer concrete channels can be adapted to any kind of surface to be drained: car parks, pedestrian areas, garage access, sports facilities, swimming pools, roads, airports, farms...

Technical Specifications

- > Resistance to aggressive liquids.
- > Resistant to biological attack.
- > Maintenance free.
- > Lighter than conventional concrete.
- > Water absorption lower than 0.5%.
- > High compression resistance.
- > Excellent absorption of noise and grating vibrations.
- > Good temperature stability features.
- > Perfectly smooth surface enhancing hydraulic flow.
- > Good resistance to atmospheric influences and UV rays.
- > Can be recycled.

Technical Details

- RESISTANCE TO COMPRESSION:**
Over 75 MPa.
- RESISTANCE TO BENDING:**
Over 18 MPa.
- SPECIFIC WEIGHT:**
 $\pm 2.200 \text{ kg/m}^3$
- WATER ABSORPTION:**
Lower than 0.5%
- ROUGHNESS:**
25 μm .



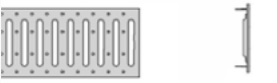



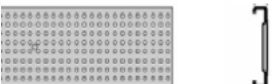


CHANNELS

- > One of the main features of polymer concrete channels is its weight, which is much lower than that of channels made out of other materials, and this involves a significant saving in assembly time and materials.
- > Polymer concrete guarantees rapid drainage, given its low roughness.
- > All channels have a pre-marked area (with a variety of diameters) below to make vertical outlets.
- > The length of a standard channel is 1 meter.

Please find details on all Ojefer channels on the left-hand side of this catalogue.

GRATING

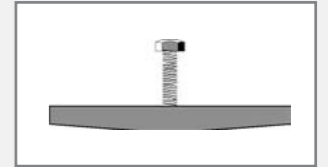
The available types of grates are:

STAMPED WALKWAY GRATING	HEEL-SAFE STAMPED WALKWAY GRATING	CRISSCROSS GRATING 33 X 33	HEEL-SAFE CRISSCROSS GRATING 33 X 11
Galvanized / Stainless steel	Galvanized / Stainless steel	Galvanized / Stainless steel	Galvanized / Stainless steel
			
PERFORATED STAMPED GRATING	POLYPROPYLENE CRISSCROSS GRATING	DUCTILE CAST IRON GRATING	
Galvanized / Stainless steel	P.P. Grey / P.P. Sand	Cast iron	
			

On the right-hand side of this catalogue you will find all the gratings for the channels on the left-hand side.

FASTENING SYSTEMS

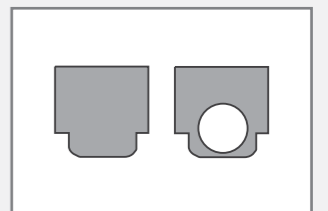
Channels and gratings are supplied together with fastening systems to prevent grating from moving, thus avoiding damage to the drainage system. Fastening of gratings is recommended for all channel types. For classes C, D and E, the gratings must always be fastened.



The fastening system for the gratings can be found on the following pages in the tables on the left-hand side below the grating types. Details are provided here on whether fastening of gratings is permitted for each channel type and a grating code is provided.

BLIND COVERS AND COVERS WITH OUTLET

Channels have a blind cover at the start and end, or a cover with an outlet. The diameter of the cover with an outlet is limited by the height of the channel.



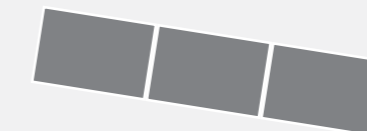
Please turn to pages 36-37 for a table with all covers, arranged in function of the channel width, the product codes are provided.

TYPES OF SLOPING

> Channel section without slope



> Channel section with natural ground slope







> Channel section with cascaded slope



LOAD CLASSES







A relevant issue in choosing a drainage system is the type of transit to be borne by the system. The following table shows the load classes in accordance with standard EN1433: "Drainage channels for transit areas used by pedestrians and vehicles".

Symbol	Load Class	Load	Usage suggestions
	A15	15 kN	Areas that can only be used by pedestrians and cyclists.
	B125	125 kN	Pavements, pedestrian areas and comparable areas, private carparks for vehicles or vehicle parking areas.
	C250	250 kN	Side kerbs and areas without traffic like hard shoulders and similar areas.
	D400	400 kN	Carriageways for roads (including pedestrian roads) and parking areas, for all types of road vehicles.
	E600	600 kN	Areas bearing high wheel loads, for instance, ports and lateral areas of docks and dykes.
	F 900	900 kN	Areas bearing particularly high wheel loads, for instance, taxiways for aircraft.

CHANNEL CODING

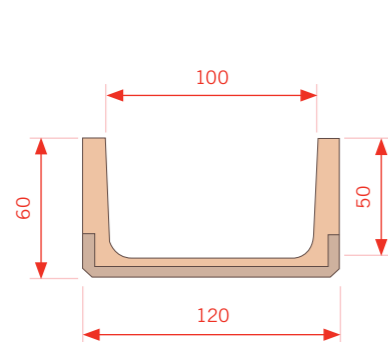


INDEX

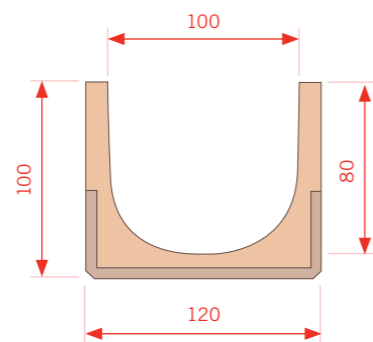
CHANNELS, GRATING AND FASTENING SYSTEMS				PAGE NUMBER
SYSTEM	CHANNEL	CLASS OF GRATE	CHANNEL WIDTH	
TOP LAY		A-B-C	100	8-9
			150	10-11
			200	12-13
			250	14-15
GRASS		A	100	16
SPORT		A	100	17
LAY IN		A-B-C	100	18-19
			175	20-21
GALVANIZED FRAME FOR HEAVY TRAFFIC		A-B-C-D-E	100	22-23
			150	24-25
			200	26-27
Z GALVANIZED PROFILE X STAINLESS PROFILE		A-B-C-D-E	100	28-29
			150	30-31
			200	32-33
			300	34-35
SOLID DRAIN		A-B-C-D	100	36-37
BLIND COVERS AND COVERS WITH OUTLET				38-39
INSTALLATION OF DRAINAGE SYSTEMS AND RECOMMENDATIONS				40-43

Top lay System

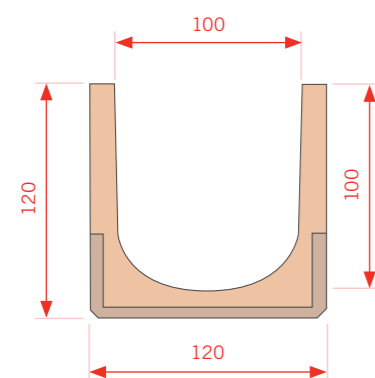
Channel 100 / Grating



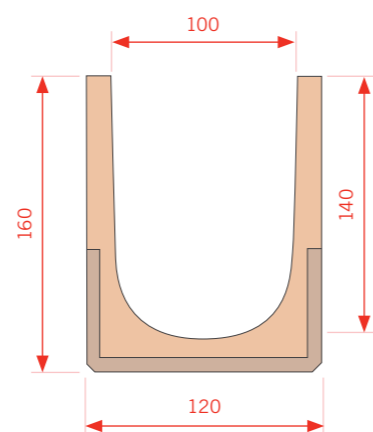
WCS100050



WCS100080



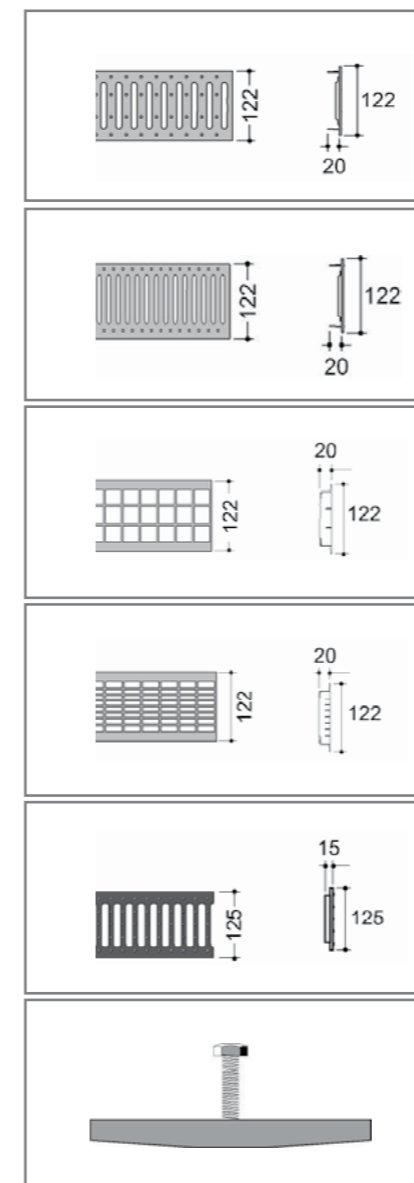
WCS100100



WCS100140

Code	Length mm.	Hydraulic Sect. cm ²	Outlet Diameter mm.	Weight Kg.	Units per pallet
WCS100050	1000	50	110	5,0	195
WCS100080	1000	69	110	7,0	135
WCS100100	1000	89	110	8,3	120
WCS100140	1000	134	110	9,5	105

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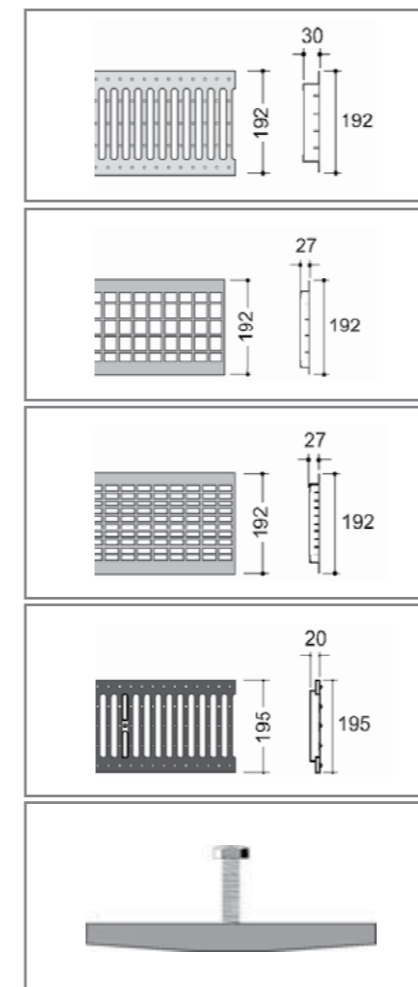
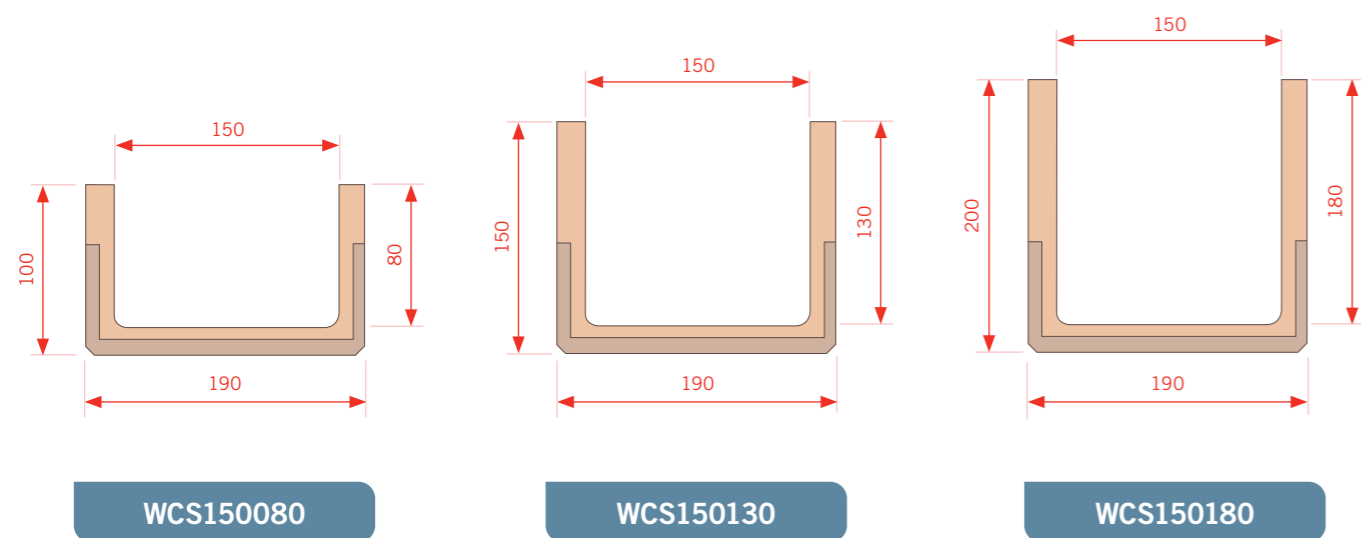


GRATES AND FASTENING SYSTEMS						
Code	Material	Length mm.	Load Class	Fastening Code	Weight Kg.	Units per pallet
STAMPED WALKWAY GRATING FOR TOP LAY						
DGP2000	Galvanized steel	1000	A	DSP100	1,65	195
DGPX2000*	Stainless steel	1000	A	DSPX100	1,65	195
HEEL-SAFE STAMPED WALKWAY GRATING FOR TOP LAY (6 mm. of water flow)						
DGP3000	Galvanized steel	1000	A	DSP100	1,65	195
DGPX3000*	Stainless steel	1000	A	DSPX100	1,65	195
CRISSCROSS GRATING 33 X 33 FOR TOP LAY						
DGQ1000	Galvanized steel	1000	A	DSP100	2,3	195
DGQX1000*	Stainless steel electro polished	1000	A	DSPX100	2,3	195
HEEL-SAFE CRISSCROSS GRATING 33 x 11 FOR TOP LAY						
DGR1000	Galvanized steel	1000	A	DSP100	3,0	195
DGRX1000*	Stainless steel electro polished	1000	A	DSPX100	3,0	195
DUCTILE CAST IRON GRATING FOR TOP LAY (2 pcs/linear meter)						
DGGP100	Cast iron	500	C	DSP100	3,6	390
FASTENING SYSTEMS (2 pcs/linear meter)						
DSP100	Galvanized steel					390
DSPX100*	Stainless steel					390

*Please verify delivery times.

Top lay System

Channel 150 / Grating



GRATES AND FASTENING SYSTEMS						
Code	Material	Length mm.	Load Class	Fastening Code	Weight Kg.	Units per pallet
STAMPED WALKWAY GRATING FOR TOP LAY						
DGP2500	Galvanized steel	1000	A	DSP150	3,0	72
DGPX2500*	Stainless steel	1000	A	DSPX150	2,8	72
CRISSCROSS GRATING 33 X 33 FOR TOP LAY						
DGQ6000	Galvanized steel	1000	B	DSP150	4,5	72
DGQX6000*	Stainless steel	1000	A	DSPX150	2,8	72
HEEL-SAFE CRISSCROSS GRATING 33 x 11 FOR TOP LAY						
DGR6000	Galvanized steel	1000	B	DSP150	7,6	72
DGRX6000*	Stainless steel	1000	A	DSPX150	4,2	72
DUCTILE CAST IRON GRATING FOR TOP LAY (2 pcs/linear meter)						
DGGP150	Cast iron	500	C	DSP150	6,0	144
FASTENING SYSTEMS (2 pcs/linear meter)						
DSP150	Galvanized steel					144
DSPX150*	Stainless steel					144

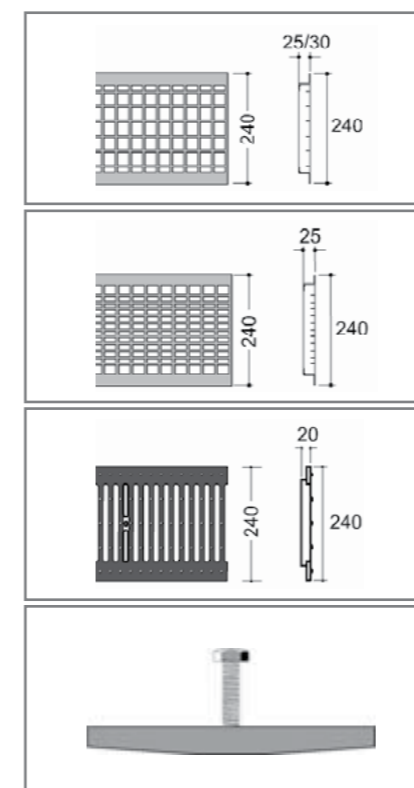
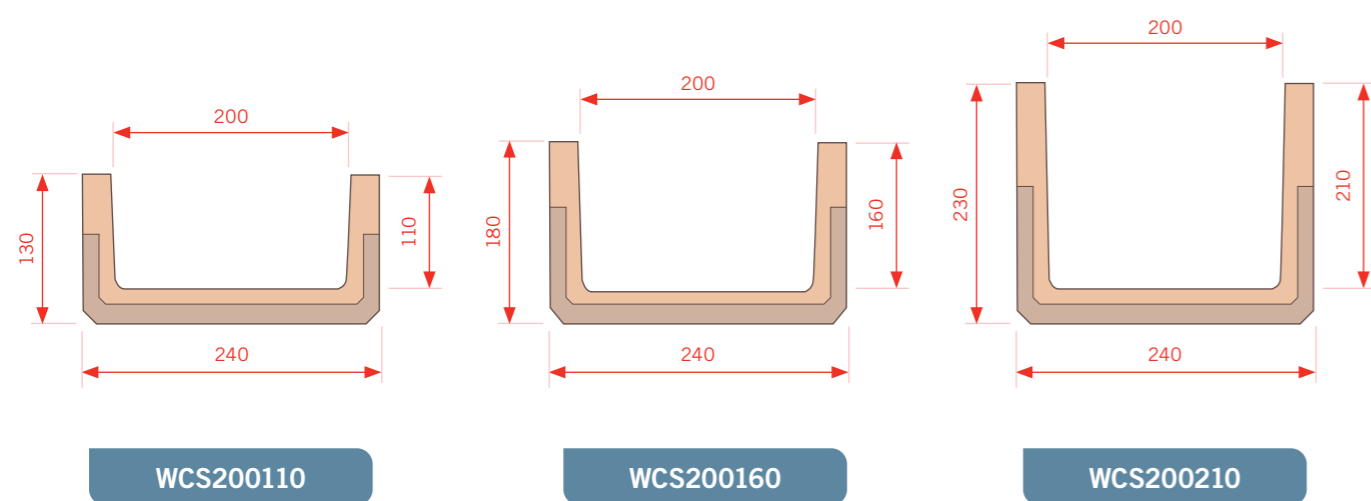
Code	Length mm.	Hydraulic Sect. cm ²	Outlet Diameter mm.	Weight Kg.	Units per pallet
WCS150080	1000	117	160	11,80	72
WCS150130	1000	191	160	15,50	63
WCS150180	1000	265	160	19,10	45

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*Please verify delivery times.

Top lay System

Channel 200 / Grating



GRATES AND FASTENING SYSTEMS						
Code	Material	Length mm.	Load Class	Fastening Code	Weight Kg.	Units per pallet
CRISSCROSS GRATING 33 X 33 FOR TOP LAY						
DGQ8000	Galvanized steel	1000	A	DSP200	5,2	49
DGQX8000*	Stainless steel	1000		DSPX200	5,2	49
HEEL-SAFE CRISSCROSS GRATING 33 x 11 FOR TOP LAY						
DGR8000	Galvanized steel	1000	A	DSP200	6,1	49
DGRX8000*	Stainless steel	1000		DSPX200	6,1	49
DUCTILE CAST IRON GRATING FOR TOP LAY (2 pcs/linear meter)						
DGGP200	Cast iron	500	C	DSP200	9,5	98
FASTENING SYSTEMS (2 pcs/linear meter)						
DSP200	Galvanized steel					98
DSPX200*	Stainless steel					98

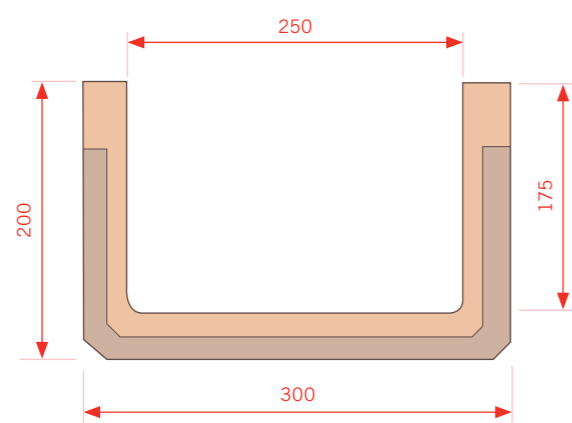
Code	Length mm.	Hydraulic Sect. cm ²	Outlet Diameter mm.	Weight Kg.	Units per pallet
WCS200110	1000	218	200	18,30	49
WCS200160	1000	317	200	22,10	42
WCS200210	1000	416	200	23,70	42

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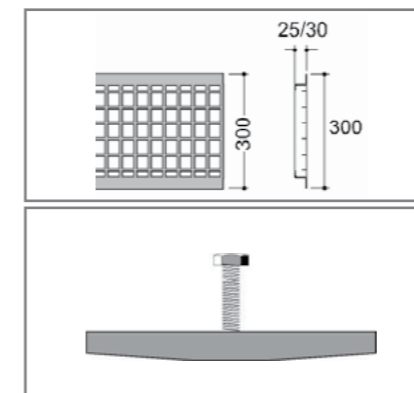
*Please verify delivery times.

Top lay System

Channel 250 / Grating



WCS250175



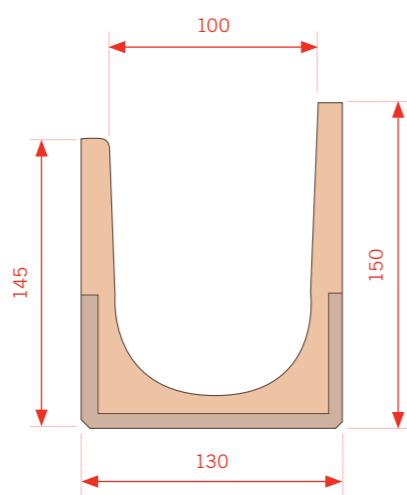
GRATES AND FASTENING SYSTEMS						
Code	Material	Length mm.	Load Class	Fastening Code	Weight Kg.	Units per pallet
CRISSCROSS GRATING 33 X 33 FOR TOP LAY						
DGQ9000	Galvanized steel	1000	A	DSP250	5,6	36
FASTENING SYSTEMS (2 pcs/linear meter)						
DSP250	Galvanized steel					72

Code	Length mm.	Hydraulic Sect. cm ²	Outlet Diameter mm.	Weight Kg.	Units per pallet
WCS250175	1000	434	160	28	36

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Grass System

Channel for artificial grass



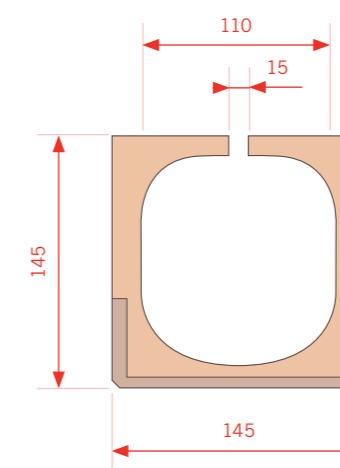
WCCESPED100125

Code	Length mm.	Hydraulic Sect. cm ²	Outlet Diameter mm.	Weight Kg.	Units per pallet
WCCESPED100125	1000	118	110	13	Consultar

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Sport System

Sport channel 100



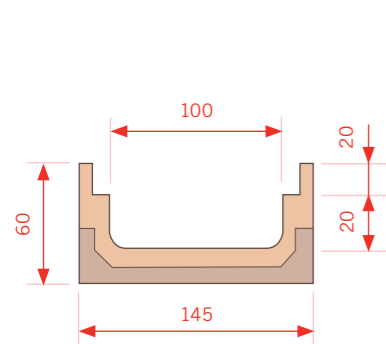
WCSPORT110

Code	Length mm.	Hydraulic Sect. cm ²	Outlet Diameter mm.	Weight Kg.	Units per pallet
WCSPORT110	1000	79	110	16	64

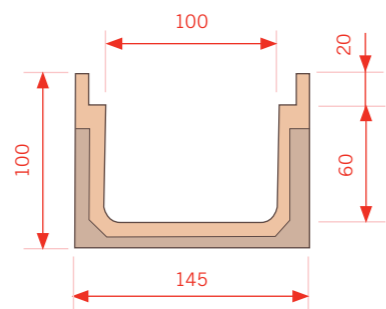
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Lay in System

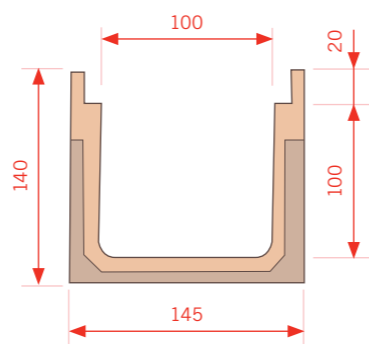
Channel 100 / Grating



WCE100040



WCE100080

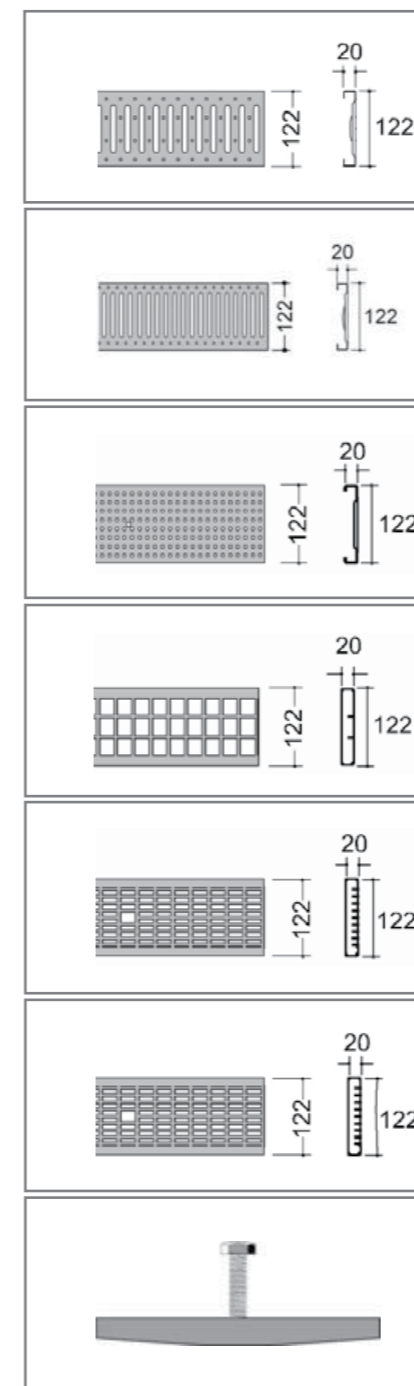


WCE100120

Code	Length mm.	Hydraulic Sect. cm ²	Outlet Diameter mm.	Weight Kg.	Units per pallet
WCE100040*	1000	19	110	7,20	130
WCE100080	1000	58	110	9,2	104
WCE100120	1000	98	110	11,5	78

*Grating cannot be fastened to WCE100040.

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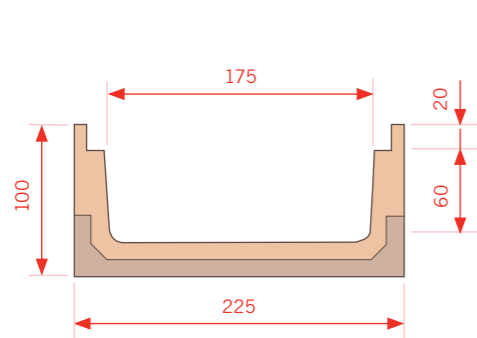


*Please verify delivery times.

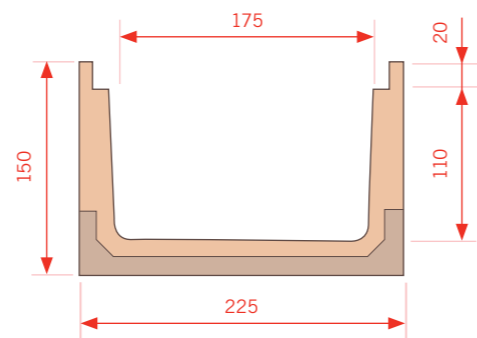
GRATES AND FASTENING SYSTEMS						
Code	Material	Length mm.	Load Class	Fastening Code	Weight Kg.	Units per pallet
STAMPED WALKWAY GRATING FOR LAY IN						
DPG1301	Galvanized steel	1000	A	DSP100	1,65	130
DPG1360A*	Stainless steel	1000	A	DSPX100	1,65	130
HEEL-SAFE STAMPED WALKWAY GRATING FOR LAY IN (6 mm. of water flow)						
DGP1302	Galvanized steel	1000	A	DSP100	1,65	130
DPG1361A*	Stainless steel	1000	A	DSPX100	1,65	130
PERFORATED STAMPED GRATING FOR LAY IN						
DPG130RPZ	Galvanized steel	1000	Peatonal	DSP100	1,60	130
DPG130RPI*	Stainless steel	1000	Peatonal	DSPX100	1,60	130
CRISSCROSS GRATING 33 X 33 FOR LAY IN						
DPG1320	Galvanized steel	1000	A	DSP100	2,6	130
HEEL-SAFE CRISSCROSS GRATING 33 X 11 FOR LAY IN						
DPG1311	Galvanized steel	1000	A	DSP100	3,1	130
POLYPROPYLENE CRISSCROSS GRATING (2 pcs/linear meter)						
AC130RR	PP gray	500	K3		0,63	260
AC130RRA	PP sand	500	K3		0,63	260
FASTENING SYSTEMS (2 pcs/linear meter)						
DSP100	Galvanized steel					260
DSPX100*	Stainless steel					260

Lay in System

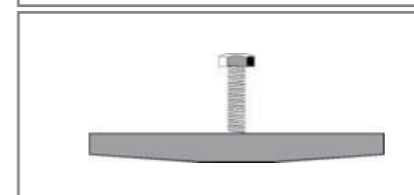
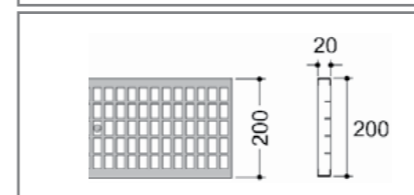
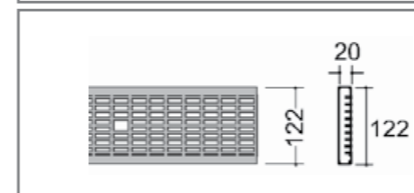
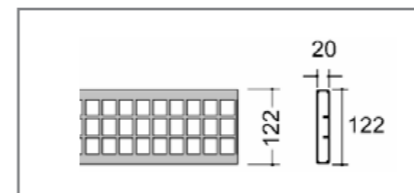
Channel 175 / Grating



WCE175080



WCE175130



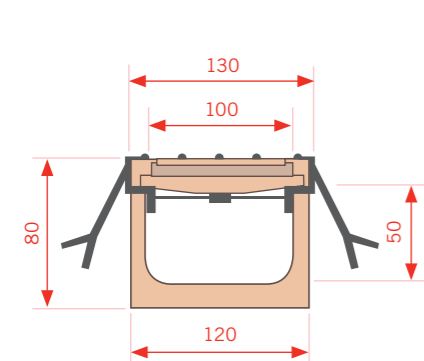
GRATES AND FASTENING SYSTEMS						
Code	Material	Length mm.	Load Class	Fastening Code	Weight Kg.	Units per pallet
CRISSCROSS GRATING 33 X 33 FOR LAY IN						
AC2320	Galvanized steel	1000	A	DSP175	3,72	70
HEEL-SAFE CRISSCROSS GRATING 33 X 11 FOR LAY IN						
AC2311	Galvanized steel	1000	A	DSP175	5,73	70
POLYPROPYLENE CRISSCROSS GRATING (2 pcs/linear meter)						
AC200RR	PP gray	500	L15		1,45	70
AC200RRA	PP sand	500	L15		1,45	70
FASTENING SYSTEMS (2 pcs/linear meter)						
DSP175	Galvanized steel					140

Code	Length mm.	Hydraulic Sect. cm ²	Outlet Diameter mm.	Weight Kg.	Units per pallet
WCE175080	1000	104	160	13,5	70
WCE175130	1000	174	160	18,5	36

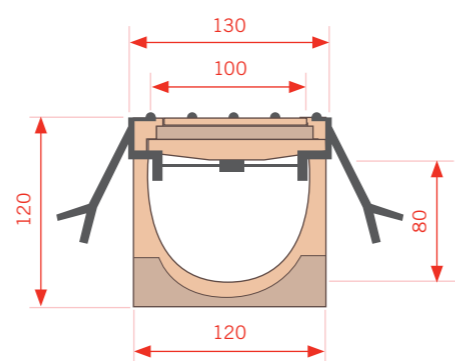
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Galvanized Frame System

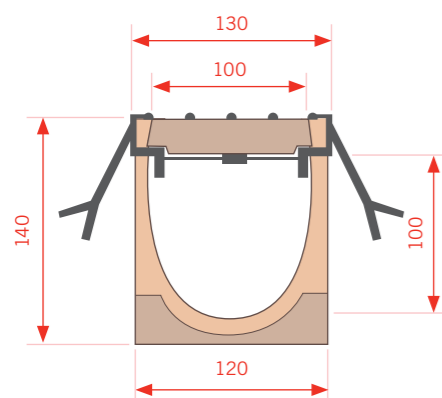
Channel 100 / Heavy Traffic



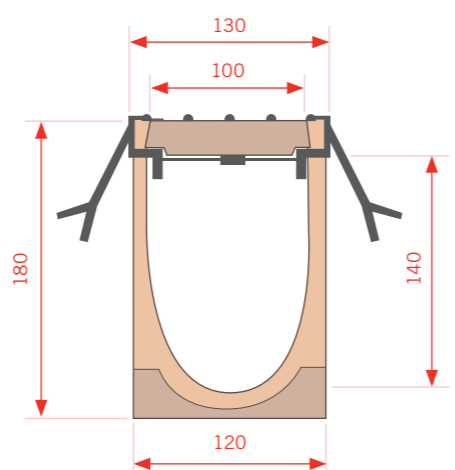
WCS100050



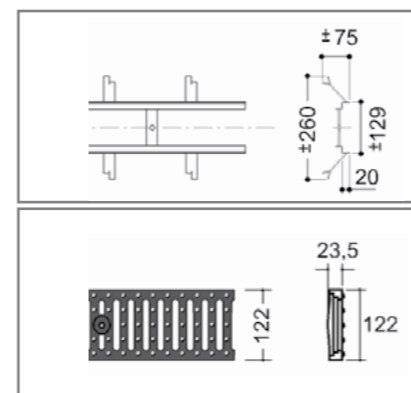
WCS100080



WCS100100



WCS100140



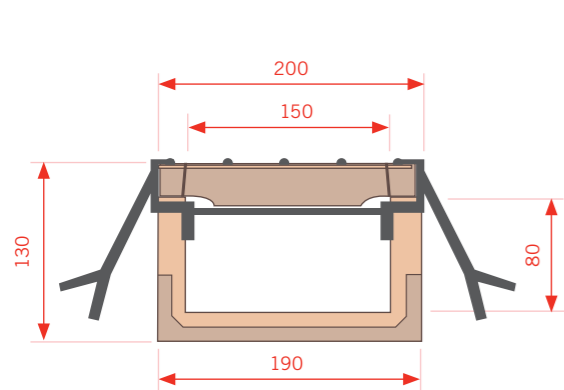
GRATES AND FASTENING SYSTEMS						
Code	Material	Length mm.	Load Class	Fastening Code	Weight Kg.	Units per pallet
GALVANIZED FRAME FOR CHANNEL 100						
DTEL1000	Galvanized steel	1.000			2,2	195
DUCTILE CAST IRON GRATING FOR LAY IN (2 pcs/linear meter)						
DGGC100	Cast iron	500	C		3,70	390
DGGE100	Cast iron	500	E		4,60	390

Code	Length mm.	Hydraulic Sect. cm ²	Outlet Diameter mm.	Weight Kg.	Units per pallet
WCS100050	1000	50	110	5,0	195
WCS100080	1000	69	110	7,0	135
WCS100100	1000	89	110	8,3	120
WCS100140	1000	134	110	9,5	105

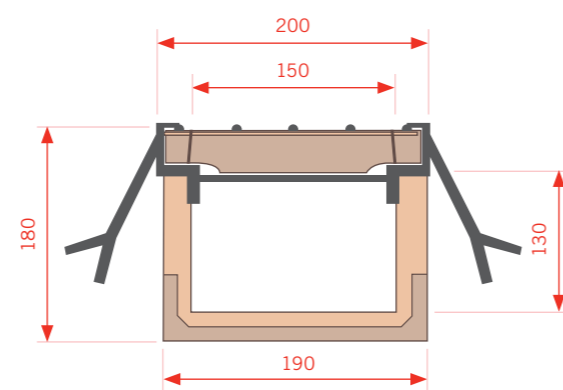
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Galvanized Frame System

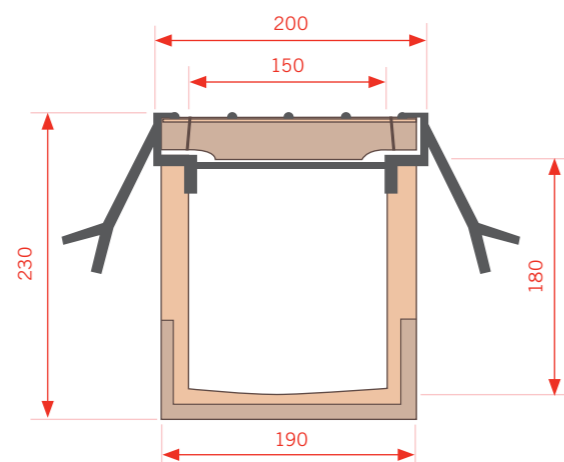
Channel 150 / Heavy Traffic



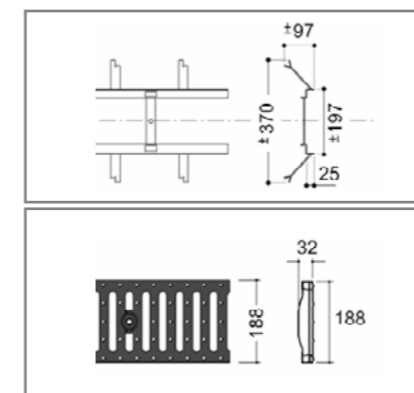
WCS150080



WCS150130



WCS150180



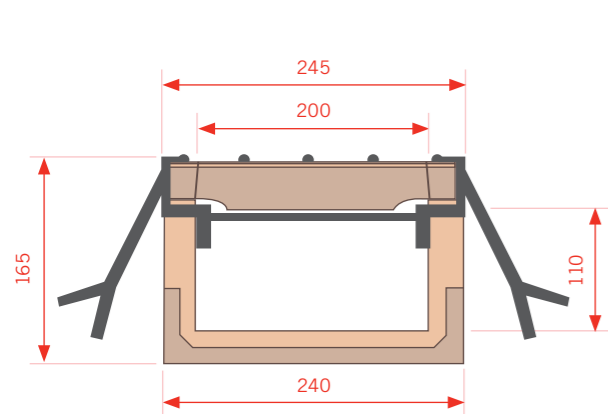
GRATES AND FASTENING SYSTEMS						
Code	Material	Length mm.	Load Class	Fastening Code	Weight Kg.	Units per pallet
GALVANIZED FRAME FOR CHANNEL 100						
DTEL6000	Galvanized steel	1.000			5,2	72
DUCTILE CAST IRON GRATING FOR LAY IN (2 pcs/linear meter)						
DGGE150	Cast iron	500	E		8,70	144

Code	Length mm.	Hydraulic Sect. cm ²	Outlet Diameter mm.	Weight Kg.	Units per pallet
WCS150080	1000	117	160	11,80	72
WCS150130	1000	191	160	15,50	63
WCS150180	1000	265	160	19,10	45

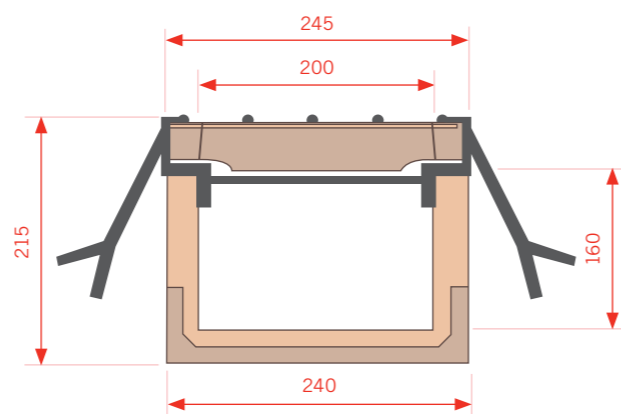
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Measurements provided are nominal values.

Galvanized Frame System

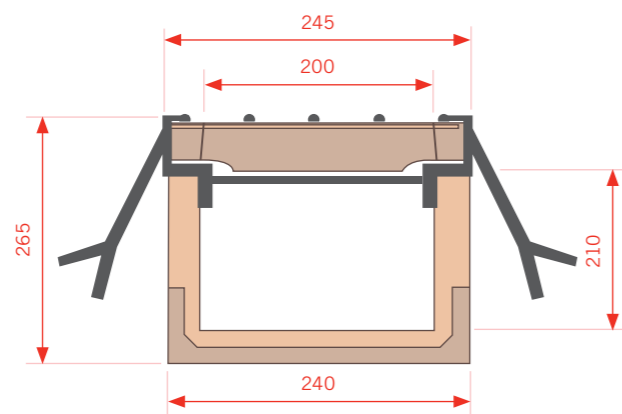
Channel 200 / Heavy Traffic



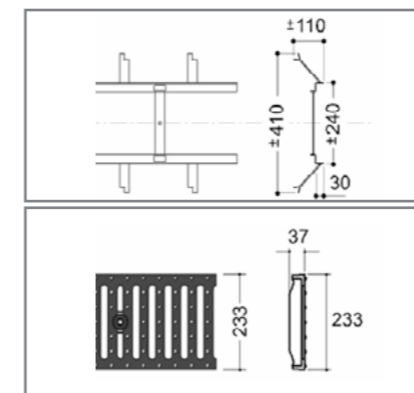
WCS200110



WCS200160



WCS200210



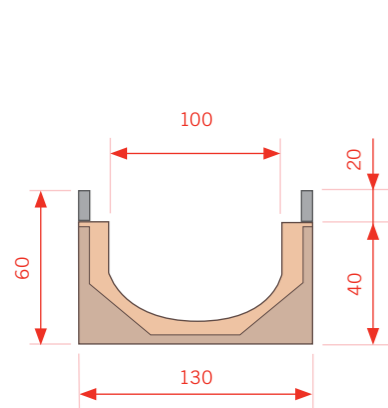
GRATES AND FASTENING SYSTEMS						
Code	Material	Length mm.	Load Class	Fastening Code	Weight Kg.	Units per pallet
GALVANIZED FRAME FOR CHANNEL 200						
DTEL8000	Galvanized steel	1.000			6,0	49
DUCTILE CAST IRON GRATING FOR LAY IN (2 pcs/linear meter)						
DGGE200	Cast iron	500	E		10,50	98

Code	Length mm.	Hydraulic Sect. cm ²	Outlet Diameter mm.	Weight Kg.	Units per pallet
WCS200110	1000	218	200	18,30	49
WCS200160	1000	317	200	22,10	42
WCS200210	1000	396	200	23,70	42

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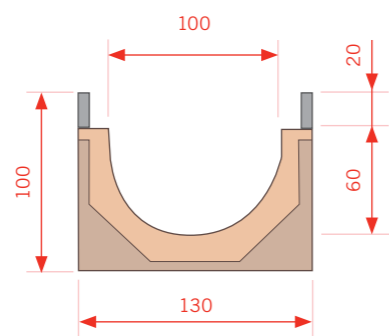
Z System Galvanized Profile X System Stainless Profile

Channel 100 / Lay in Grating



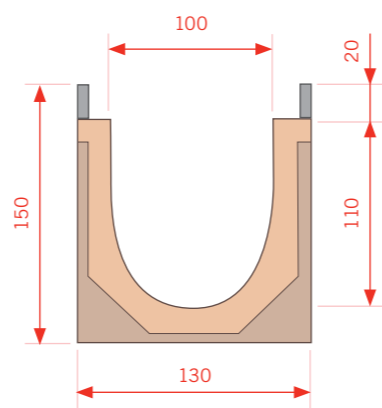
WCZ100040

WCX100040



WCZ100080

WCX100080



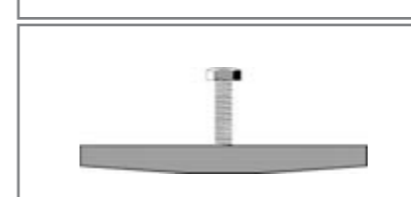
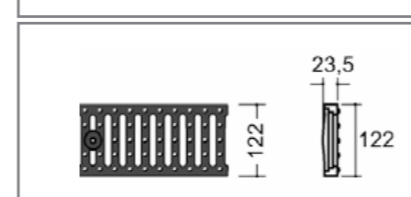
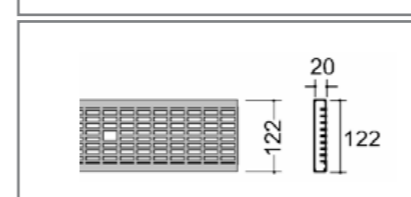
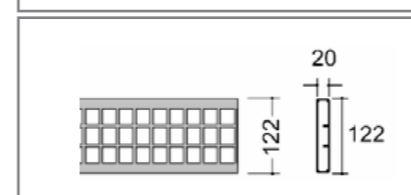
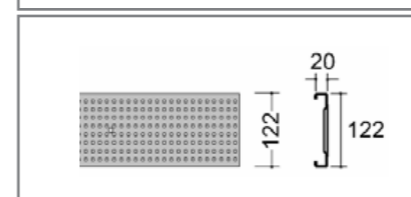
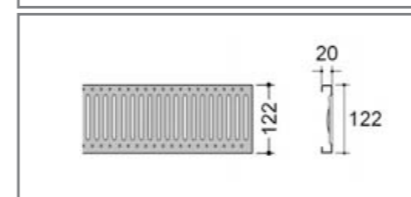
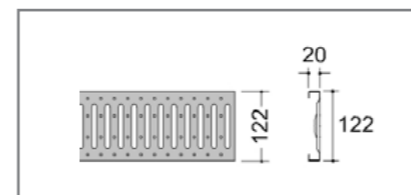
WCZ100130

WCX100130

Code	Length mm.	Hydraulic Sect. cm ²	Outlet Diameter mm.	Weight Kg.	Units per pallet
WCZ100040*	1000	12	110	6,55	143
WCX100040*					
WCZ100080	1000	38	110	9,60	143
WCX100080					
WCZ100130	1000	91	110	13,6	65
WCX100130					

*Grating cannot be fastened to WCZ100040 / WCX100040.

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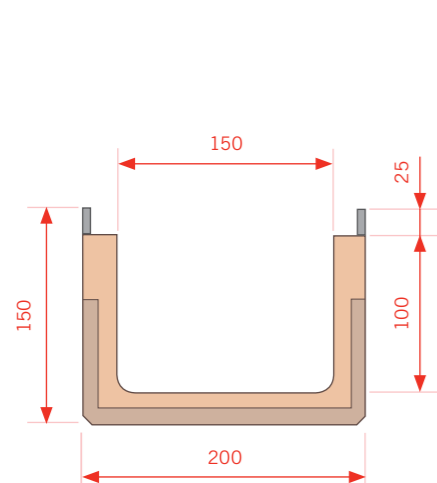


GRATES AND FASTENING SYSTEMS						
Code	Material	Length mm.	Load Class	Fastening Code	Weight Kg.	Units per pallet
STAMPED WALKWAY GRATING FOR LAY IN						
DPG1301	Galvanized steel	1000	A	DSP100	1,65	143
DPG1360A*	Stainless steel	1000	A	DSPX100	1,65	143
HEEL-SAFE STAMPED WALKWAY GRATING FOR LAY IN (6 mm. of water flow)						
DPG1302	Galvanized steel	1000	A	DSP100	1,65	143
DPG1361A*	Stainless steel	1000	A	DSPX100	1,65	143
PERFORATED STAMPED GRATING FOR LAY IN						
DPG130RPZ	Galvanized steel	1000	Peatonal	DSP100	1,60	143
DPG130RPI*	Stainless steel	1000	Peatonal	DSPX100	1,60	143
CRISSCROSS GRATING 33 X 33 FOR LAY IN						
DPG1320	Galvanized steel	1000	A	DSP100	6	143
DPG1460A*	Stainless steel	1000	A	DSPX100	6	143
HEEL-SAFE CRISSCROSS GRATING 33 X 11 FOR LAY IN						
DPG1311	Galvanized steel	1000	A	DSP100	3,1	143
DPG1470A*	Stainless steel	1000	A	DSPX100	3,2	143
DUCTILE CAST IRON GRATING FOR LAY IN (2 pcs/linear meter)						
DGGC100	Cast iron	500	C	DSP100	3,7	286
DGGE100	Cast iron	500	E	DSP100	4,6	286
FASTENING SYSTEMS (2 pcs/linear meter)						
DSP100	Galvanized steel					286
DSPX100*	Stainless steel					286

*Please verify delivery times.

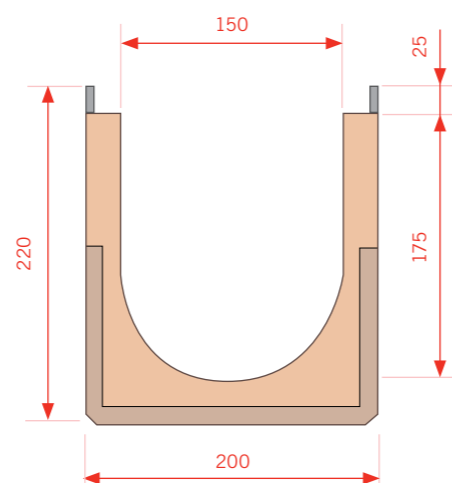
Z System Galvanized Profile X System Stainless Profile

Channel 150 / Lay in Grating



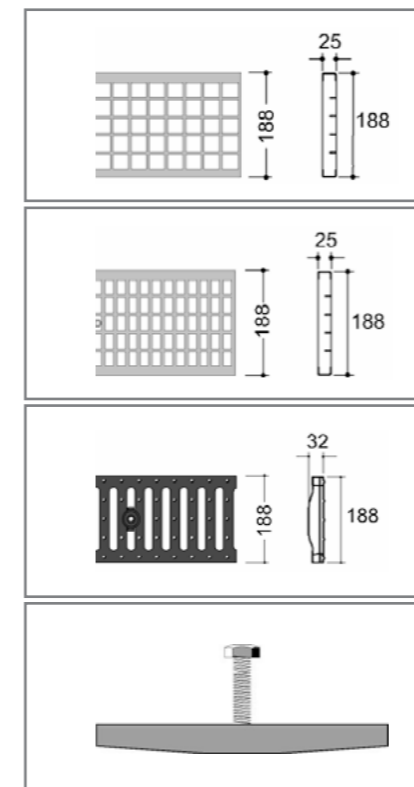
WCZ150125

WCX150125



WCZ150200

WCX150200



GRATES AND FASTENING SYSTEMS						
Code	Material	Length mm.	Load Class	Fastening Code	Weight Kg.	Units per pallet
CRISSCROSS GRATING 33 X 33 FOR LAY IN						
DKLA-Q150	Galvanized steel	1000	A	DSP150	3,5	54
DKLA-QX150*	Stainless steel	1000	A	DSPX150	5,1	54
HEEL-SAFE CRISSCROSS GRATING 33 X 11 FOR LAY IN						
DKLA-R150	Galvanized steel	1000	A	DSP150	4,2	54
DKLA-RX150*	Stainless steel	1000	A	DSPX150	5,8	54
DUCTILE CAST IRON GRATING FOR LAY IN (2 pcs/linear meter)						
DGGE150	Cast iron	500	E	DSP150	8,70	108
FASTENING SYSTEMS (2 pcs/linear meter)						
DSP150	Galvanized steel					108
DSPX150*	Stainless steel					108

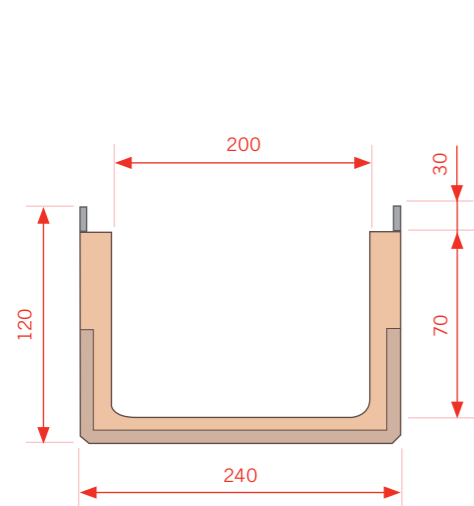
Code	Length mm.	Hydraulic Sect. cm ²	Outlet Diameter mm.	Weight Kg.	Units per pallet
WCZ150125	1000	112	160	16,70	54
WCX150125					
WCZ150200	1000	230	160	24,5	36
WCX150200					

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*Please verify delivery times.

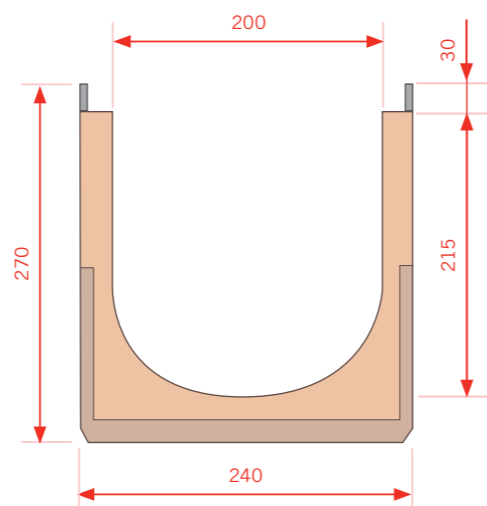
Z System Galvanized Profile X System Stainless Profile

Channel 200 / Lay in Grating



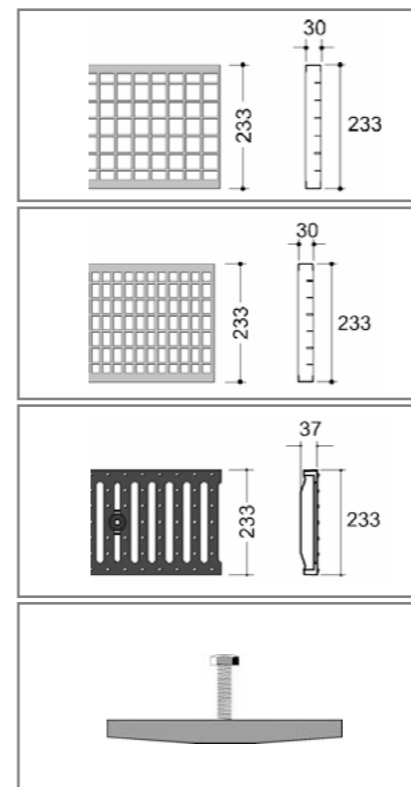
WCZ200100

WCX200100



WCZ200245

WCX200245



GRATES AND FASTENING SYSTEMS						
Code	Material	Length mm.	Load Class	Fastening Code	Weight Kg.	Units per pallet
CRISSCROSS GRATING 33 X 33 FOR LAY IN						
DKLA-Q200	Galvanized steel	1000	A	DSP200	5,1	56
DKLA-QX200*	Stainless steel	1000	A	DSPX200	5,1	56
HEEL-SAFE CRISSCROSS GRATING 33 X 11 FOR LAY IN						
DKLA-R200	Galvanized steel	1000	A	DSP200	5,8	56
DKLA-RX200*	Stainless steel	1000	A	DSPX200	5,8	56
DUCTILE CAST IRON GRATING FOR LAY IN (2 pcs/linear meter)						
DGGE200	Cast iron	500	E	DSP200	10,5	112
FASTENING SYSTEMS (2 pcs/linear meter)						
DSP200	Galvanized steel					112
DSPX200*	Stainless steel					112

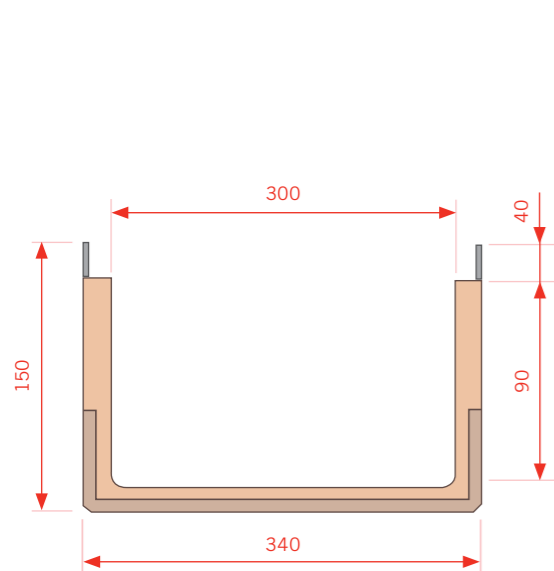
	Length mm.	Hydraulic Sect. cm ²	Outlet Diameter mm.	Weight Kg.	Units per pallet
WCZ200100	1000	128	200	15,0	56
WCX200100					
WCZ200245	1000	381	200	32,8	28
WCX200245					

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*Please verify delivery times.

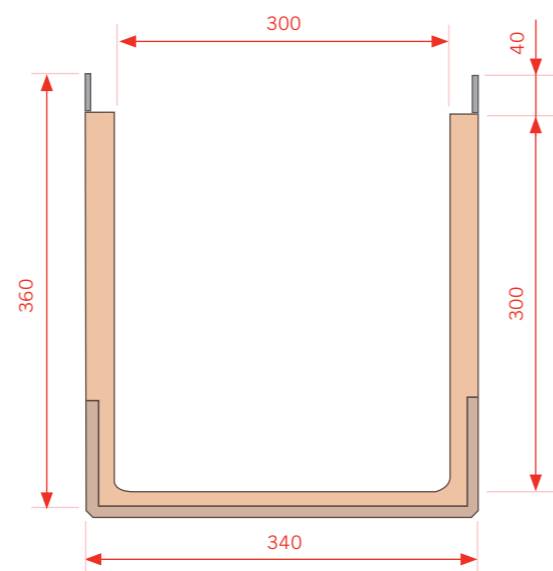
Z System Galvanized Profile X System Stainless Profile

Channel 300 / Lay in Grating



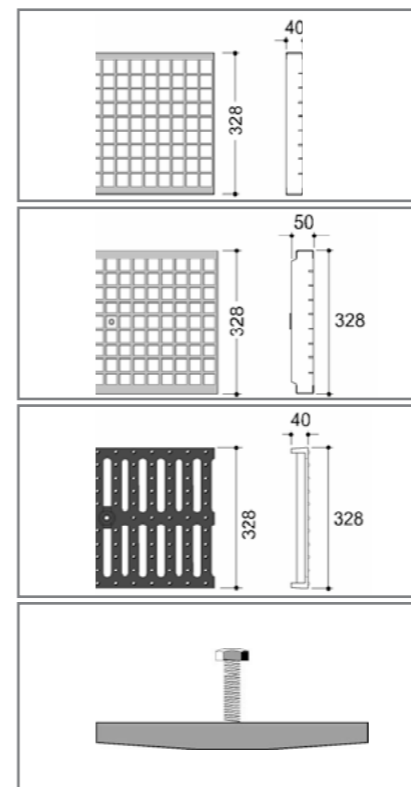
WCZ300130

WCX300130



WCZ300340

WCX300340



GRATES AND FASTENING SYSTEMS						
Code	Material	Length mm.	Load Class	Fastening Code	Weight Kg.	Units per pallet
CRISSCROSS GRATING 33 X 33 FOR LAY IN						
DKLA-Q300	Galvanized steel	1000	A	DSP300	9,1	35
DKLA-QX300*	Stainless steel	1000	A	DSPX300	9,1	35
HEEL-SAFE CRISSCROSS GRATING 33 X 11 FOR LAY IN						
DKLC300	Galvanized steel	1000	C	DSP300	20,3	35
DKLCX300*	Stainless steel	1000	C	DSPX300	20,3	35
DUCTILE CAST IRON GRATING FOR LAY IN (2 pcs/linear meter)						
DGGD300	Cast iron	500	D	DSP300	19,8	70
FASTENING SYSTEMS (2 pcs/linear meter)						
DSP300	Galvanized steel					70
DSPX300*	Stainless steel					70

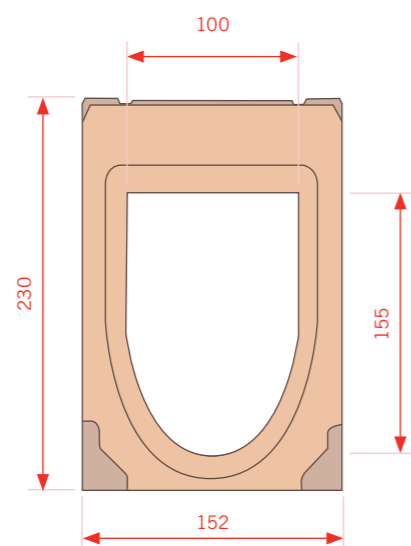
Code	Length mm.	Hydraulic Sect. cm ²	Outlet Diameter mm.	Weight Kg.	Units per pallet
WCZ300130	1000	179	250	26,2	35
WCX300130					
WCZ300340	1000	869	250	41,0	20
WCX300340					

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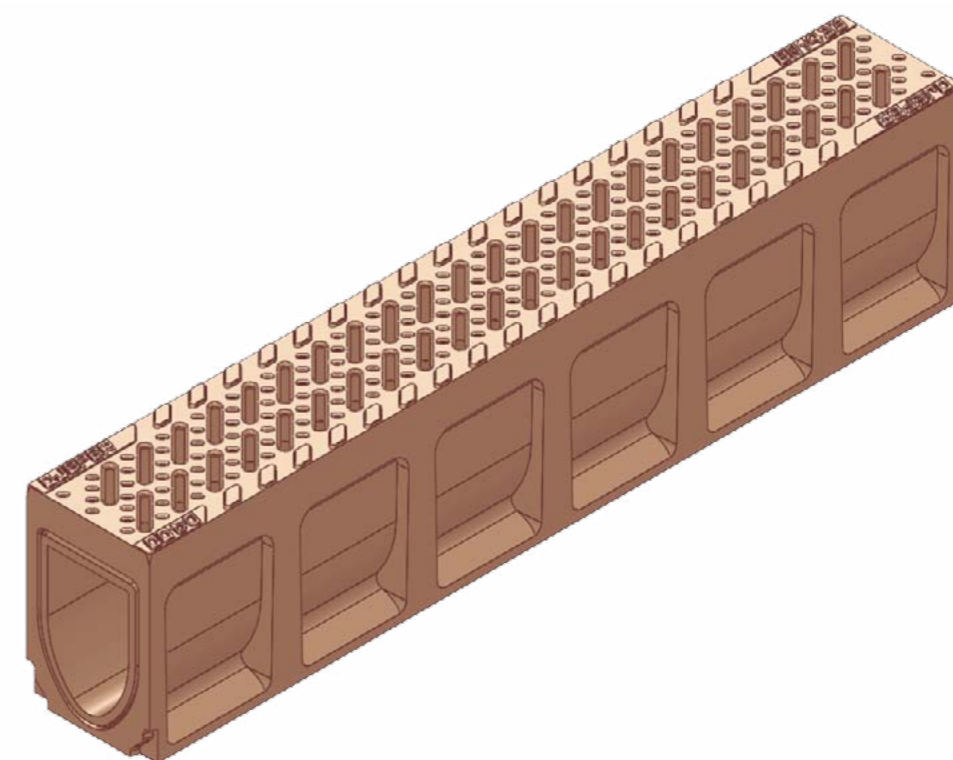
*Please verify delivery times.

Solid Drain

Channel 100 / Built-in grating



WCSD100160



- > Simple installation and integration for all types of surfaces.
- > Type of loads: A15 to D400.
- > Integrated design in a single piece provides specific advantages in respect to conventional drainage channels:
 - > Grating cannot be destroyed or loosened.
 - > Risks are minimised or avoided, making it ideal for children's playgrounds and schools.
 - > No noise.

Code	Length mm.	Hydraulic Sect. cm ²	Outlet Diameter mm.	Weight Kg.	Load Class	Units per pallet
WCSD100160	1000	136	110	31	D	32

BLIND COVERS AND COVERS WITH OUTLET				
Channel width	Channel code	Cover code	Description	Weight Kg.
100	WCS100080	WTC120100	Cover	0,39
		WTC120100S	Cover with outlet Ø 75	0,25
	WCS100100	WTC120120	Cover	0,48
		WTC120120S	Cover with outlet Ø 90	0,27
	WCS100140	WTC120160	Cover	0,63
		WTC120160S	Cover with outlet Ø 90	0,42
	WCZ100130 WCX100130	WTC130150	Cover	0,64
		WTC130150S	Cover with outlet Ø 90	0,43
	WCE100040	WTC145060	Cover	0,29
	WCE100080	WTC145080	Cover	0,38
		WTC145080S	Cover with outlet Ø 50	0,32
	WCE100120	WTC145140	Cover	0,67
110	WCSPORT110	WTP145145	Cover	0,70
		WTP145145S	Cover with outlet Ø 90	0,48
150	WCS150080	WTC190100	Cover	0,63
		WTC190100S	Cover with outlet Ø 75	0,48
	WCS150130	WTC190150	Cover	0,94
		WTC190150S	Cover salida Ø 110	0,63
	WCS150180	WTC190200	Cover	1,25
		WTC190200S	Cover with outlet Ø 160	0,60
	WCZ150125 WCX150125	WTC200150	Cover	0,99
		WTC200150S	Cover with outlet Ø110	0,68
	WCZ150200 WCX150200	WTC200220	Cover	1,45
		WTC200220S	Cover with outlet Ø 160	0,79

BLIND COVERS AND COVERS WITH OUTLET					
Channel width	Channel code	Cover code	Description	Weight Kg.	
175	WCE175080	WTP225095	Cover	0,70	
		WTP225095S	Cover with outlet Ø 50	0,64	
	WCE175130	WTP225150	Cover	1,11	
		WTP225150S	Cover with outlet Ø 110	0,80	
200	WCS200110	WTP240130	Cover	1,03	
		WTP240130S	Cover with outlet Ø 90	0,82	
	WCS200160	WTP240180	Cover	1,43	
		WTP240180S	Cover salida Ø 125	1,02	
	WCS200210	WTP240230	Cover	1,82	
		WTP240230S	Cover with outlet Ø 200	0,78	
	WCZ200100 WCX200100	WTP240120	Cover	0,95	
		WTP240120S	Cover with outlet Ø 90	0,74	
	WCZ200245 WCX200245	WTP240270	Cover	2,14	
		WTP240270S	Cover with outlet Ø 200	1,10	
	250	WCS250175	WTP300200	Cover	1,98
			WTP300200S	Cover with outlet Ø 160	1,32
300	WCZ300130 WCX300130	WTP340150	Cover	1,68	
		WTP340150S	Cover with outlet Ø 110	1,37	
	WCZ300340 WCX300340	WTP340360	Cover	4,04	
		WTP340360S	Cover with outlet Ø 200	3,00	

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INSTALLATION OF DRAINAGE SYSTEMS

- 1.- Establish the level according to chosen slope and start installing the channel from the discharge point, i.e., the lowest point (drain pipe, sump, etc.).
- 2.- Place the concrete base for the channel according to this installation guide.
- 3.- Lay the channel on the concrete base, placing a chalk line through the ditch to ensure proper alignment.
- 4.- Place the channel sections, leaving no gaps. When used solely for drainage, connect without treating the joint. When used for discharge of aggressive liquids, the joint must be sealed with a special mortar or silicone with elastic resistance.
- 5.- Channels and grating are installed around 2 to 3 mm under the final level of the pavement to protect sides from breaking (see installation guide).
- 6.- Pour concrete along sides of the channel following the instructions of this installation guide. In curb or pavement concreting jobs adjacent to the channel, given the lateral pressure emerging from the concrete or pavement, channels must be duly reinforced against horizontal loads, for instance, by placing the grating over the channels when these were not mounted.
- 7.- For concrete pavements, make an expansion joint between the channel and the surrounding pavement as shown in this installation guide. In the case of cross joints in relation to the channel, these must go through a channel joint.

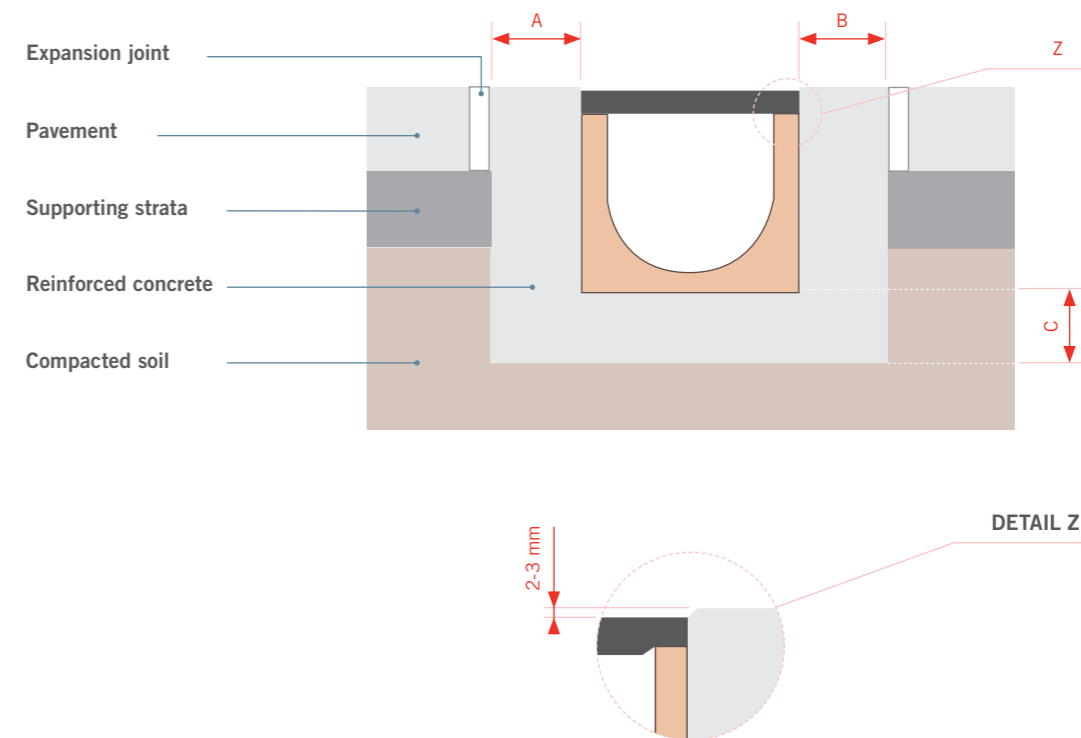
Load Class	A mm.	B mm.	C mm.	Concrete Type Kg / cm ²
A	100	100	100	150
B	100	100	100	250
C	150	150	150	250
D	200	200	200	250
E	200	200	200	250

For load classes C, D and E, reinforcing mesh is recommended.

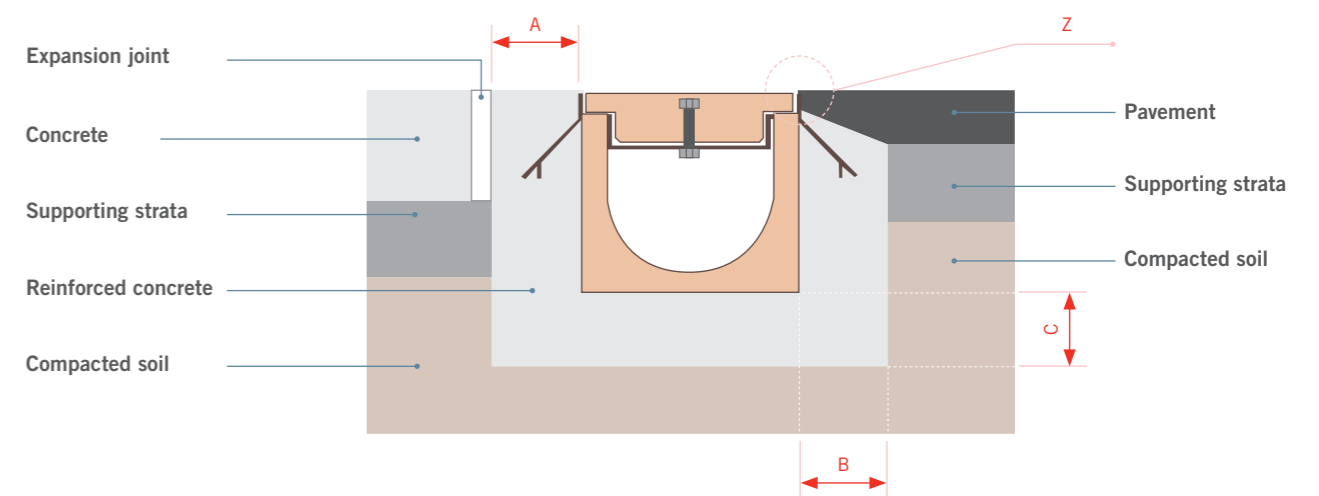
Note: For general information only, for further details, please contact our technical department.

> Installation guide of a standard Drainage Channel:

Distances A, B and C and the type of concrete used change depending on the load class. See chart on previous page.

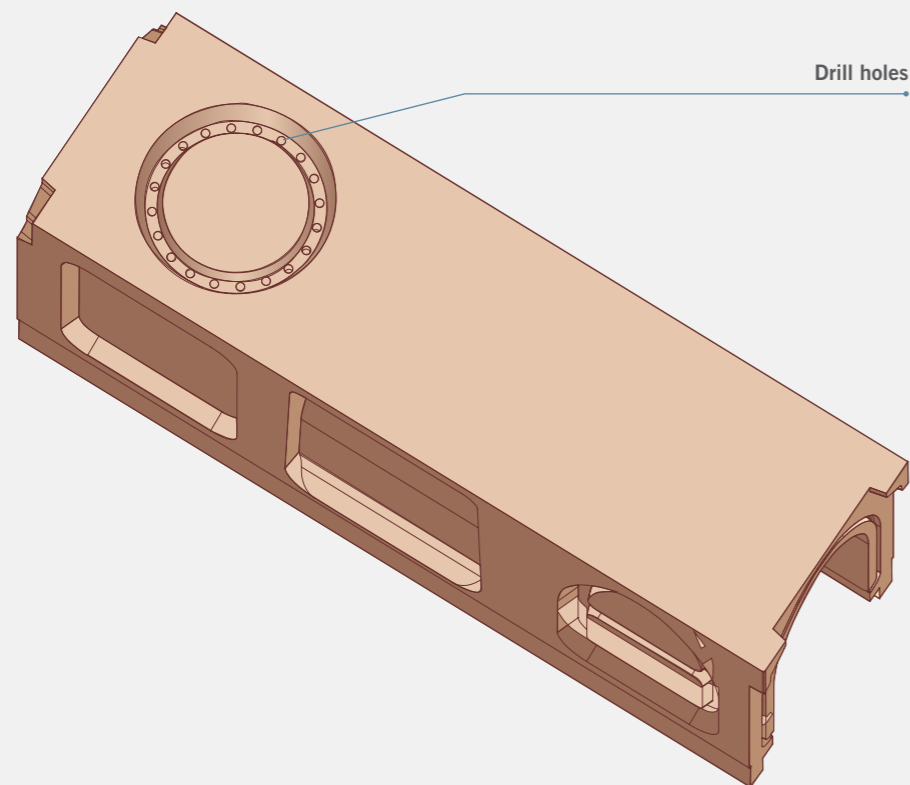


> Installation guide of TP System with Zinc-plated Frame for class E grating:



RECOMMENDATIONS

- 1.- Fasten the grating in all cases, and especially for speeds in excess of 10 km/h, or when the channel is situated on an access ramp.
- 2.- Regularly inspect the bottom of the channel and clean it when required. To do this, remove the grating and use a spade fitting the size of the channel.
- 3.- We recommend that the concrete support of the channel be extended in length direction for a distance of 2 to 3 times the height of the channel at the end of each channel section, in order to obtain a better load distribution.
- 4.- In principle, both the channels and the grating can be cut at the construction site to the appropriate lengths. In any case, we recommend that one fixation point of the grating be retained, as well as to ensure that there are no burrs or sharp edges on the cut elements.
- 5.- When realizing a vertical outlet, we recommend that holes be drilled in the diameter of the preformed ring of the knock-out opening in the bottom of the channel in order to weaken the cross section. The remaining material can then be knocked-out with a hammer and chisel. We suggest this is done from the inside to out.





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