

<b>DATA SHEET</b>	<b>SYSTEM OF DRAIN CHANNELS TYPE CS</b>	<b>CS</b>
Polymer concrete	CS10.10A/B/C, CS10.10LA/B/C	

„SYTEMY I TECHNOLOGIE SP. Z O. O.”

# DATA SHEET

SYSTEM OF DRAIN CHANNELS TYPE CS

Techn. Dept.  
2018-07-24

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## 1. Content

1. Content .....	2
2. Name of product:.....	4
3. Classification of product:.....	4
4. Related documents:.....	4
5. Purpose of product:.....	4
5.1 Basic information:.....	4
5.2 Scope of application: .....	4
5.3 Special application area:.....	5
6. Description of product:.....	5
6.1 Basic parameters: .....	5
6.2 Hydraulic capacity:.....	6
7. Installation principles: .....	6
7.1 Description:.....	6
7.2 Example of installation for channels type CS depending on load class and kind of surface. ....	6
8. Material .....	8
8.1 Resistance: .....	8
8.2 Durability: .....	8
8.3 Operating resistance:.....	9
9. Elements of the system type CS: .....	9
9.1 Channel CS load A15 1m:.....	9
9.2 Channel CS load B125 - C250 1m , without protective edges.....	10
9.3 Channel CS load B125 – C250 1m, with steel protective edges: .....	10
9.4 Drain sump (silt-box) CS load A15, without protective edges:.....	11
9.5 Drain sump (silt-box) CS load B125 – C250, without protective edges:.....	11
9.6 Drain sump (silt-box) CS load B125 – C250, with steel protective edges: .....	11
9.7 End-caps made of polymer concrete:.....	12
a) CS10.30 .....	12
b) CS10.30L.....	12
c) CS10.31 .....	12
d) CS10.31L.....	12

<b>DATA SHEET</b>	<b>SYSTEM OF DRAIN CHANNELS TYPE CS</b>	<b>CS</b>
Polymer concrete	CS10.10A/B/C, CS10.10LA/B/C	

10.Parameters of drain channels:..... 13

a) SYTEC channel without protective edges, for type : CS10.10A, CS10.10B and CS10.10C, ..... 13  
no slope: 13

b) SYTEC channel with protective edges, for type CS10.10B and CS10.10C, no slope: ..... 13

c) Gratings CS and COC SYTEC for channels type CS:..... 14

11.SYTEC Drain sumps (silt-box) made of polymer concrete with galvanized basket and steel grating CS or iron grating COC: ..... 14

12.Accessories for channels type CS..... 14

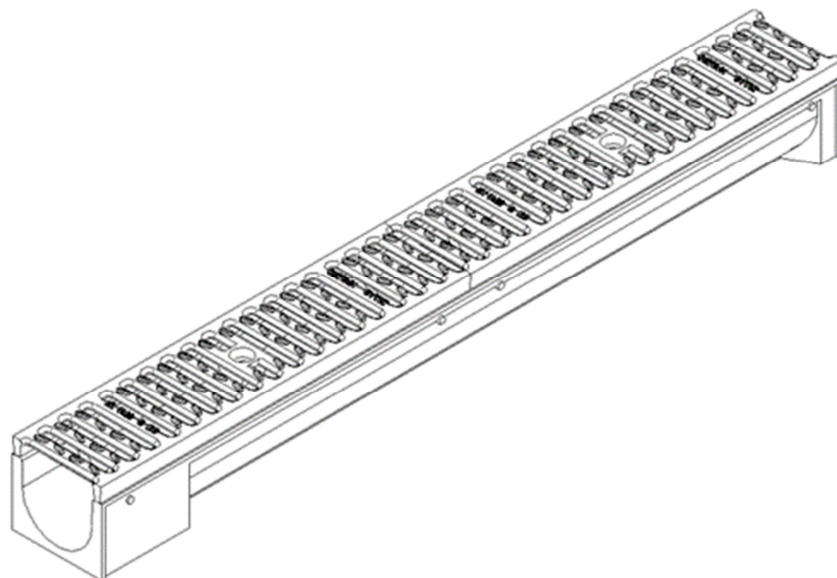
a) SYTEC end-cap: ..... 14



<b>DATA SHEET</b>	<b>SYSTEM OF DRAIN CHANNELS TYPE CS</b>	<b>CS</b>
Polymer concrete	CS10.10A/B/C, CS10.10LA/B/C	

2. Name of product:

**LIGTH TYPE LINEAR DRAINAGE CS, CS10.10A/B/C, CS10.10LA/B/C**



3. Classification of product:

23.61.12.1

4. Related documents:

Harmonized norm PN-EN 1433:2005/A1:2007 „Channels for draining the areas for pedestrian and vehicular traffic. Classification, structural requirements, testing, marking and compatibility assessment”.

5. Purpose of product:

5.1 Basic information:

Collect and drain the rain water from roads and yards to the drainage well and sewer system or storm water system or directly to the receiver tank located behind the drainage well.

5.2 Scope of application:

- ✓ System type „M” – 1<sup>st</sup> to 3<sup>rd</sup> group of the application areas of load A15-C250 in accordance with the norm PN-EN 1433.

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### 5.3 Special application area:

Collection and drainage of rainwater from communication routes for pedestrian and bicycle traffic, green areas, e.g. parks, squares, home areas, home garages, curbside areas, roadsides not loaded with traffic, car parks or coves for passenger cars, and the like.

## 6. Description of product:

### 6.1 Basic parameters:

- ✓ Structure: Drain channel consists of a channel body and steel grating type CS or two iron gratings type COC.
- ✓ Material: Channel body is made of polymer concrete with or without steel protective edges.
- ✓ Dimensions: Channels type CS are in no-slope version, four (4) heights: 90mm and 50mm for A15 load, and 110mm and 70mm for B125 and C250 load.
- ✓ Channel of 1m length is adapted to have an opening in the bottom for fixing an outlet pipe. Table as below includes possible size of outlet pipe.

Item	Type of channel	Size of outlet
1	CS10.10A/LA	DN75 or DN110
2	CS10.10B/LB	
3	CS10.10C/LC	

- ✓ Revision and cleaning: on the total length of system and through drain sump
- ✓ Max load class: C250
- ✓ Tightness of the system can be ensured by application of permanently elastic frost-resistant putty
- ✓ Installation of elements: have to consider min. slope of 0,2%. Recommended slope is min. 0,5%.
- ✓ Roughness factor of polymerconcrete:  $n=0,011$
- ✓ Overhaul, maintenance: not required
- ✓ Method of installation: in accordance with the guidelines of producer  
Type M – elements requiring a concrete apron
- ✓ Cleaning frequency of system: every 6 month or in accordance with a schedule of user
- ✓ Corrosion of polymerconcrete elements: noncorrosive, not contain reinforced steel
- ✓ Corrosion of steel elements: galvanized steel
- ✓ Corrosion of iron elements: superficial, passivation of iron, not require painting
- ✓ Ageing proces: natural

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## 6.2 Hydraulic capacity:

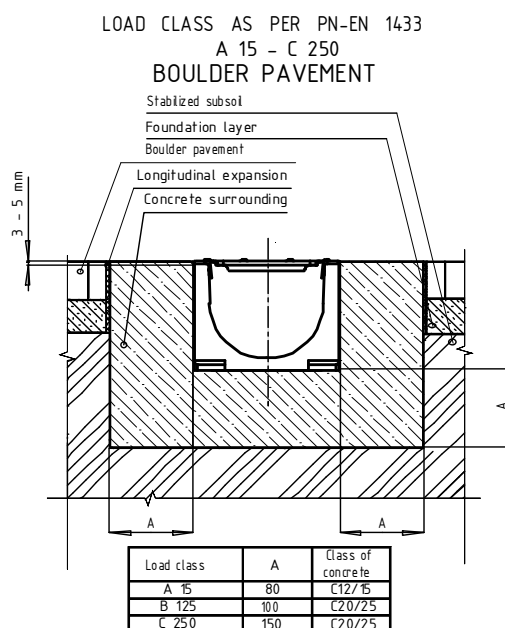
Type of channel	Load class	Cross section area [mm <sup>2</sup> ]	Wetted perimeter [mm]	Hydraulic capacity for longitudinal slope of 0,2% [l/s]	Hydraulic capacity for longitudinal slope of 0,5% [l/s]
<b>For channels CS10.10A</b>					
CS10.10A	A15	5970	201.11	1,8	2,9
CS10.10LA		2830	136.73	0,7	1,1
<b>For channels CS10.10B</b>					
CS10.10B	B125	6539	213.11	2,0	3,2
CS10.10LB		3390	148.89	0,9	1,4
<b>For channels CS10.10C</b>					
CS10.10C	C250	6539	213.11	2,0	3,2
CS10.10LC		3390	148.89	0,9	1,4

## 7. Installation principles:

### 7.1 Description:

- ✓ Drain channels type CS are equipped with fasteners (concave or crowned) which prevent the horizontal movements of channels.
- ✓ During installation, the channels should have spacers to prevent squeezing and damaging the walls of the channel.
- ✓ Steel gratings CS should be inserted into the grooves in channel body.
- ✓ Iron gratings COC should be fastened with bolt to channel body. It is possible to use anti-theft bolts.
- ✓ **IMPORTANT** : Channels type CS are channel type „M” – in accordance with the norm PN-EN1433 and require an additional support in form of a concrete casing. Installation of channels CS.

### 7.2 Example of installation for channels type CS depending on load class and kind of surface.



## SYSTEMY I TECHNOLOGIE

Spółka z ograniczoną odpowiedzialnością

59-100 Polkowice, ul. Kopalniana 7

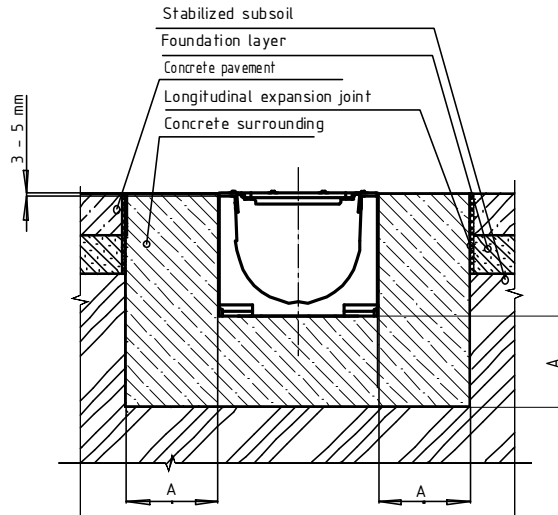
tel.: +48 76 72 34 235

e-mail: [sytec@sytec.pl](mailto:sytec@sytec.pl) <http://www.sytec.pl>

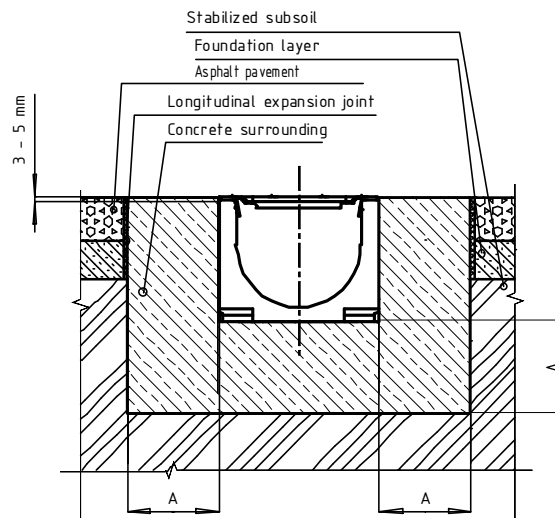
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LOAD CLASS AS PER PN-EN 1433  
A 15 - C 250

**CONCRETE PAVEMENT**



**ASPHALT PAVEMENT**

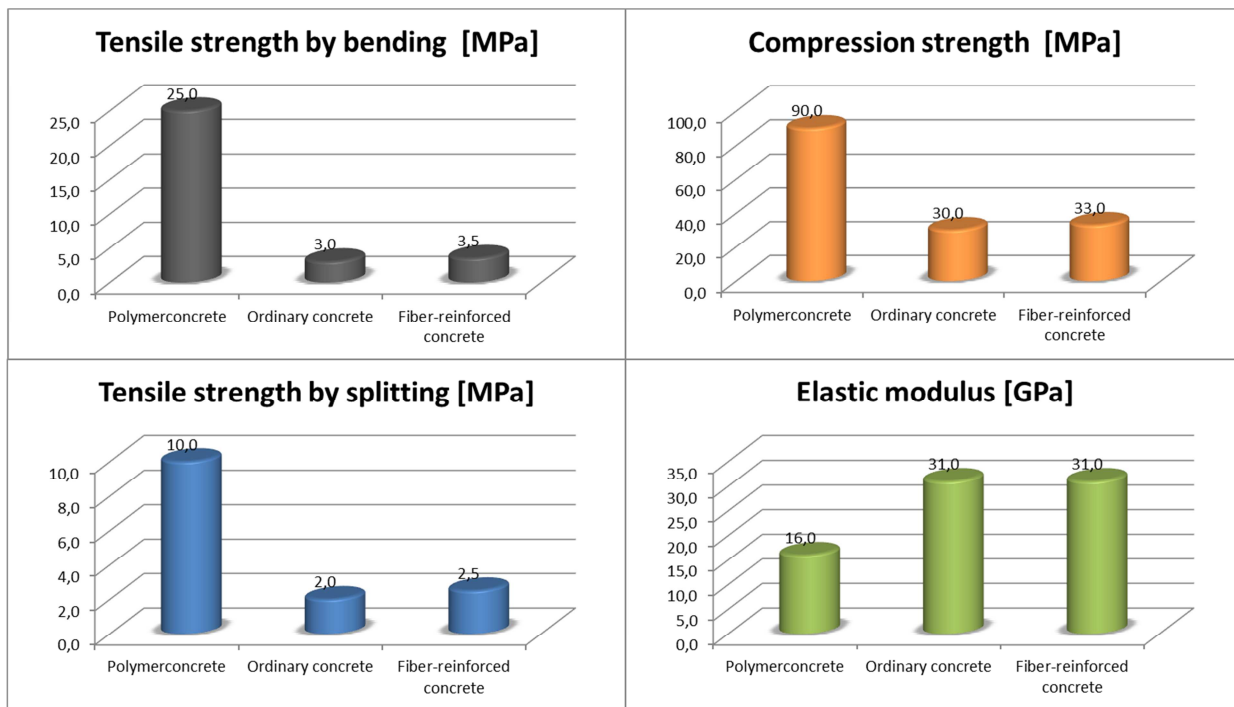


Load class	A	Class of concrete
A 15	80	C12/15
B 125	100	C20/25
C 250	150	C20/25

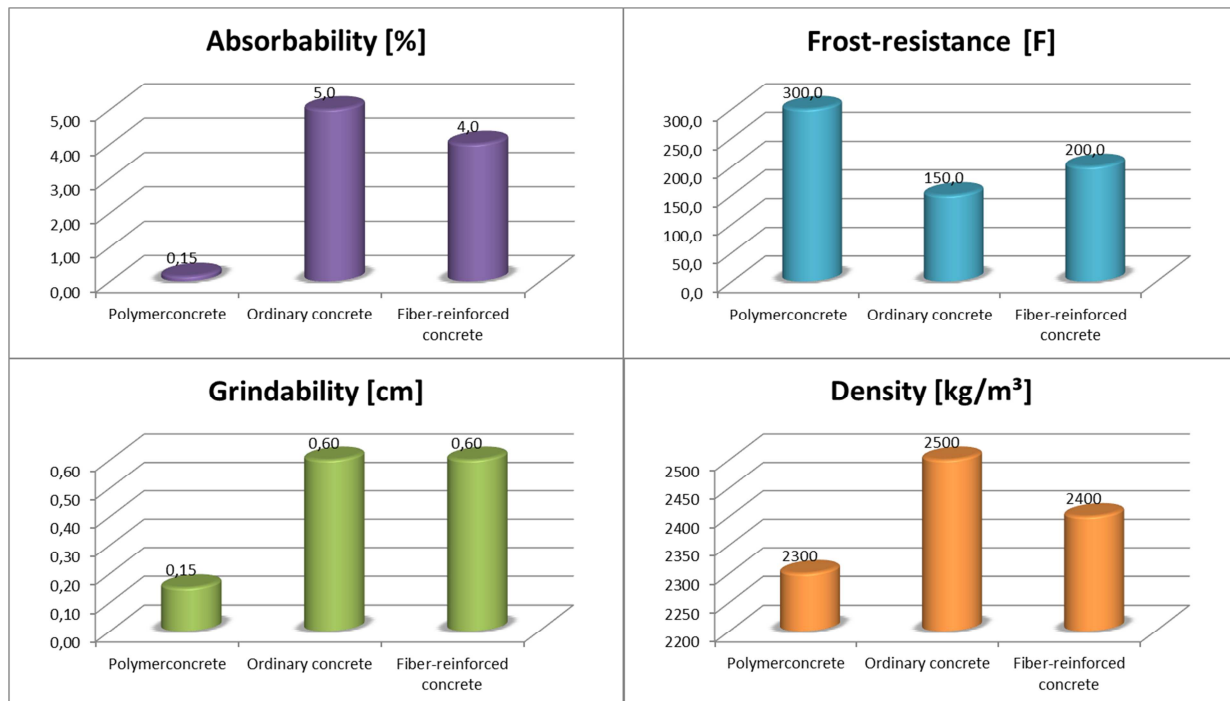
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## 8. Material

### 8.1 Resistance:



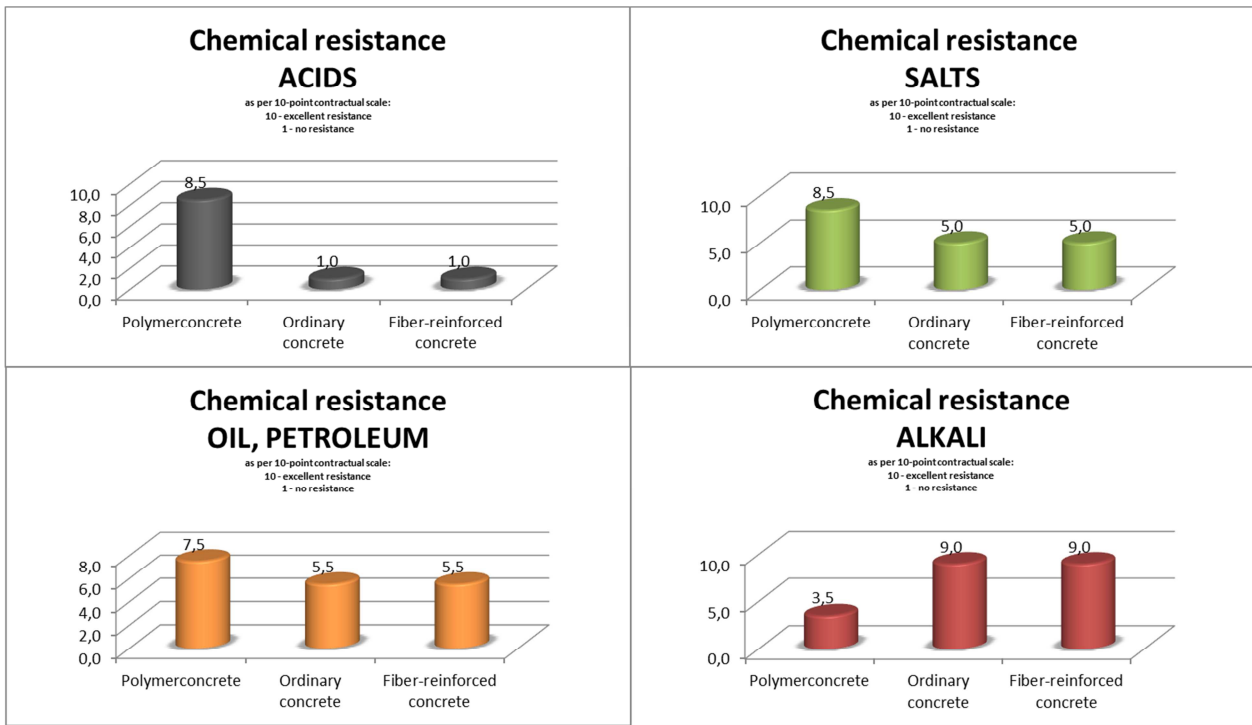
### 8.2 Durability:





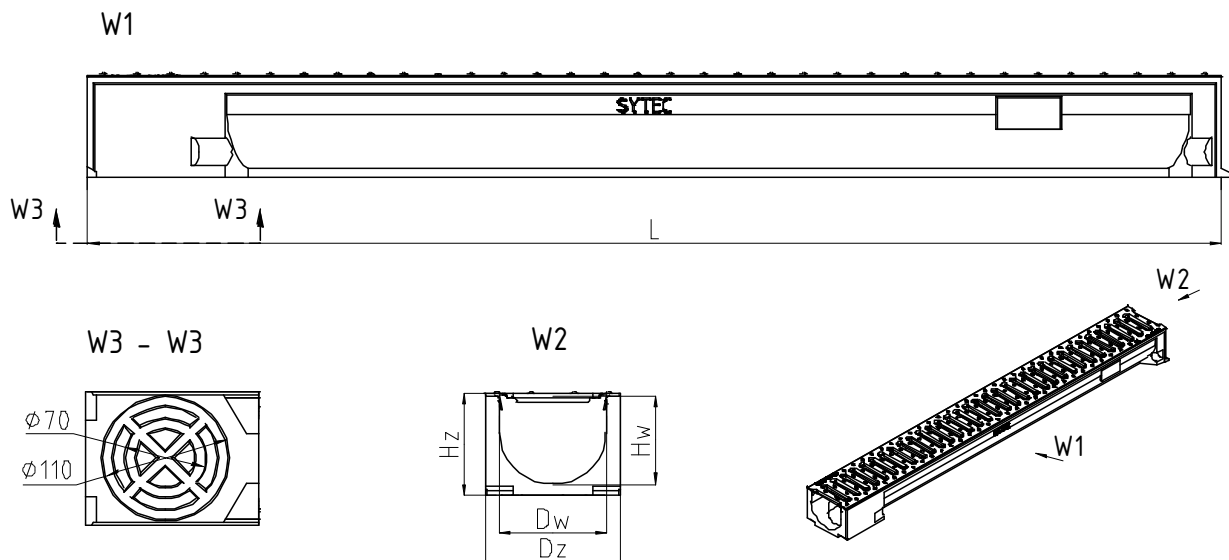
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### 8.3 Operating resistance:



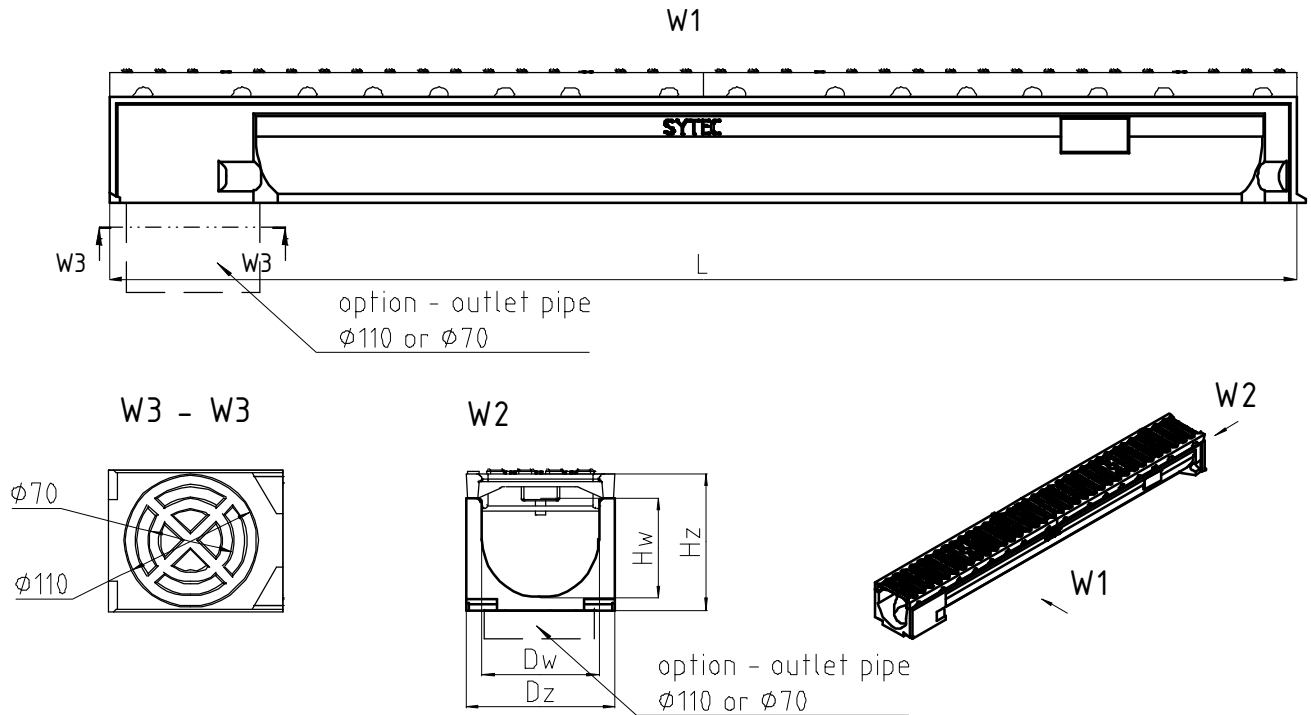
## 9. Elements of the system type CS:

### 9.1 Channel CS load A15 1m:

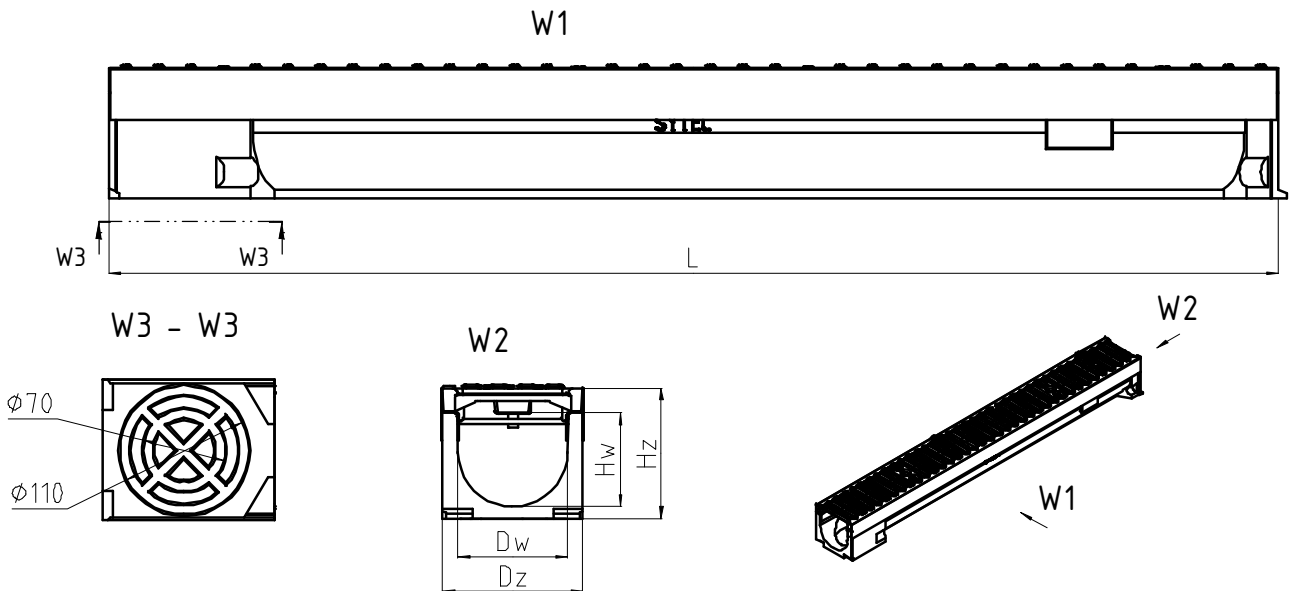


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9.2 Channel CS load B125 - C250 1m, without protective edges

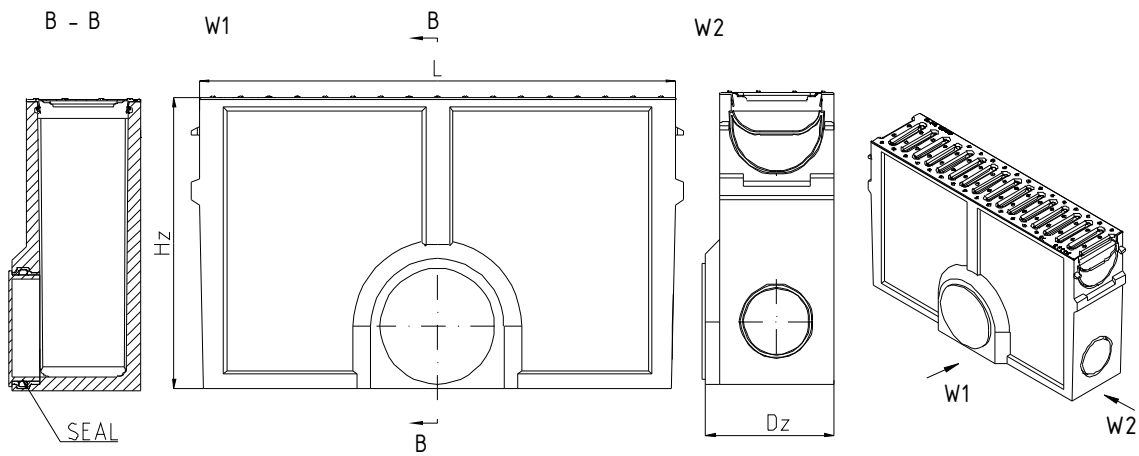


9.3 Channel CS load B125 - C250 1m, with steel protective edges:

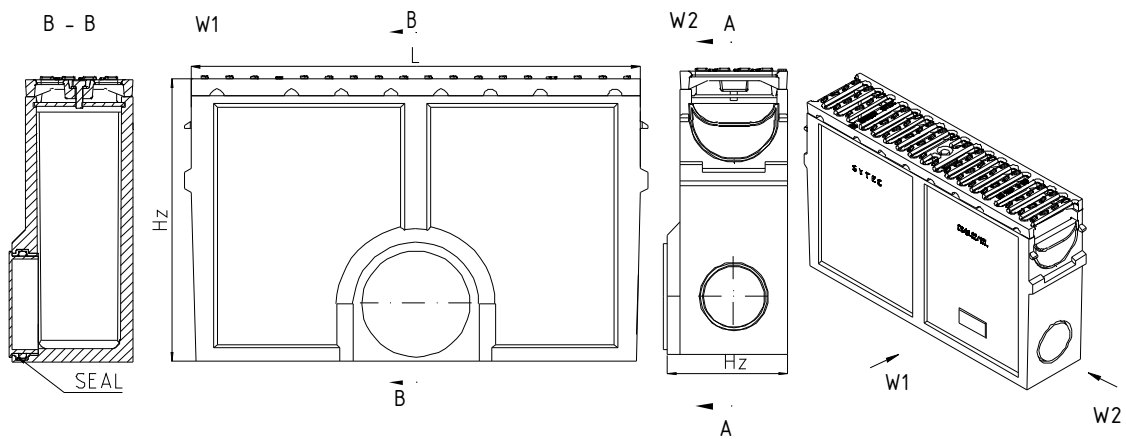


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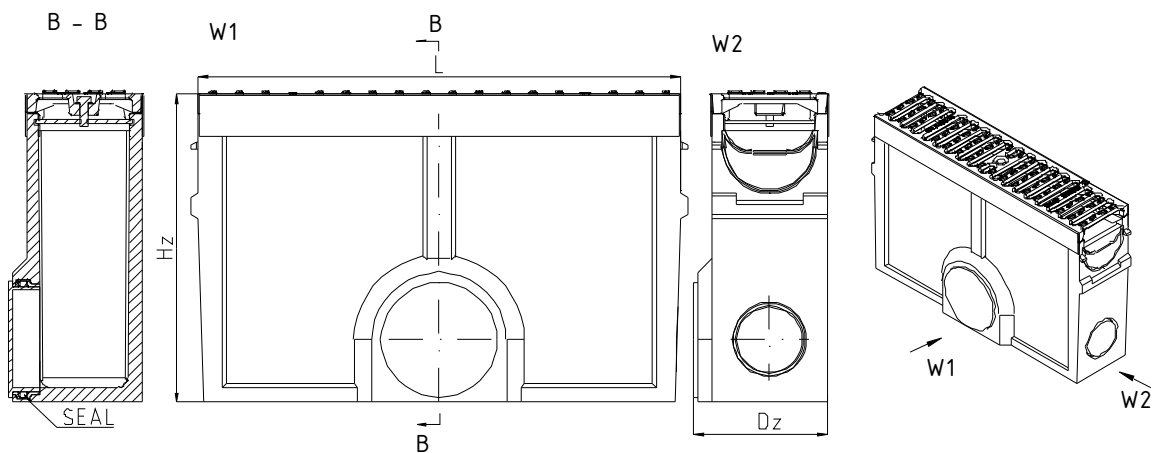
9.4 Drain sump (silt-box) CS load A15, without protective edges:



9.5 Drain sump (silt-box) CS load B125 – C250, without protective edges:



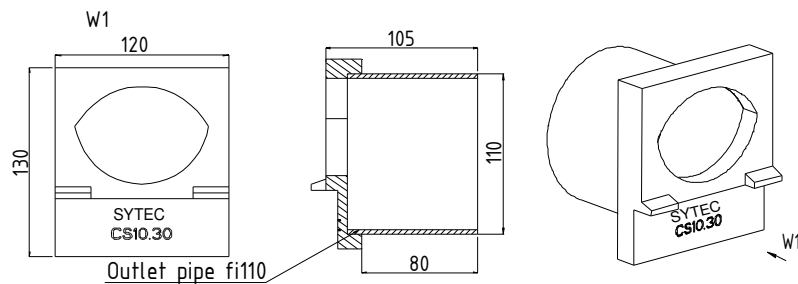
9.6 Drain sump (silt-box) CS load B125 – C250, with steel protective edges:



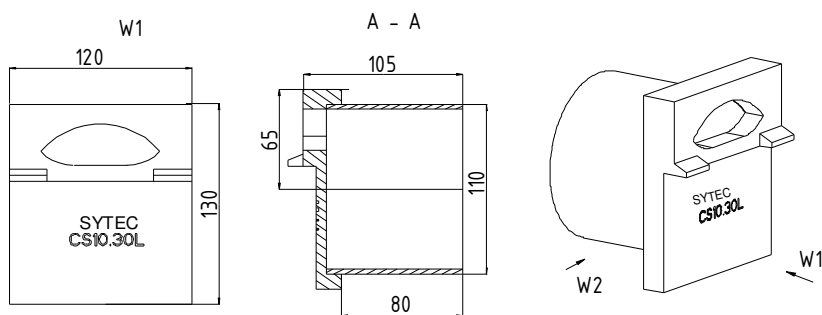
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9.7 End-caps made of polymer concrete:

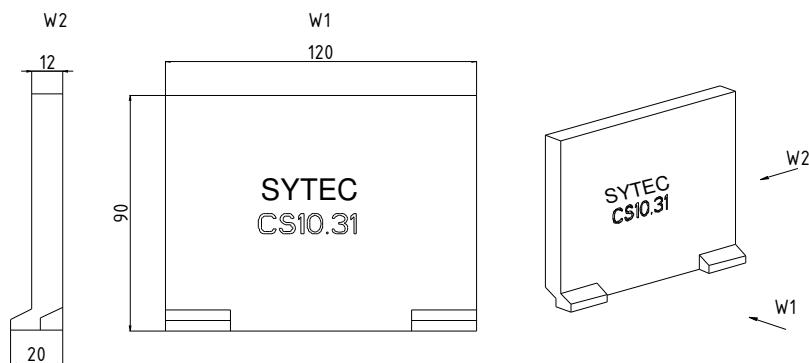
a) CS10.30



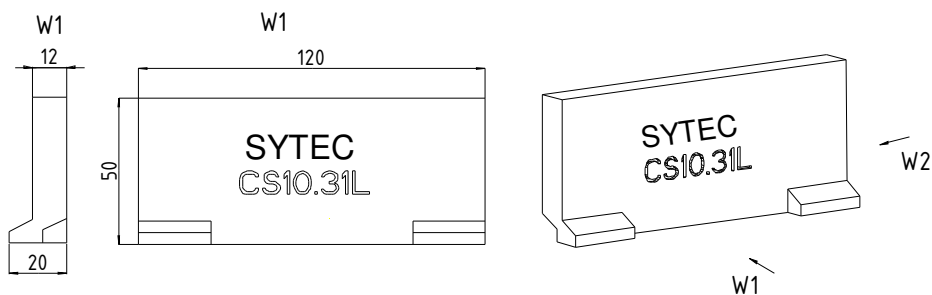
b) CS10.30L



c) CS10.31



d) CS10.31L



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## 10. Parameters of drain channels:

- a) SYTEC channel without protective edges, for type : CS10.10A, CS10.10B and CS10.10C, no slope:

Index	Galvanized steel edges	Height H <sub>Z</sub> [mm]	Height H <sub>W</sub> [mm]	Width D <sub>Z</sub> [mm]	Width D <sub>W</sub> [mm]	Length L [mm]
<b>For channels type CS10.10A</b>						
CS10.10A	Not occur	90	80	120	95	1000
CS10.10AH		90	80	120	95	500
CS10.10AK*		90	80	120	95	1000
CS10.10LA		50	40	120	95	1000
CS10.10LK*		50	40	120	95	1000
<b>For channels type CS10.10B</b>						
CS10.10B	Not occur	110	80	120	95	1000
CS10.13B		110	80	120	95	500
CS10.10BK*		110	80	120	95	1000
CS10.10LB		70	40	120	95	1000
CS10.10LBK*		70	40	120	95	1000
<b>For channels type CS10.10C</b>						
CS10.10C	Not occur	110	80	120	95	1000
CS10.13C		110	80	120	95	500
CS10.10CK*		110	80	120	95	1000
CS10.10LC		70	40	120	95	1000
CS10.10LCK*		70	40	120	95	1000

\*Channel with outlet pipe of DN75 or DN110

- b) SYTEC channel with protective edges, for type CS10.10B and CS10.10C, no slope:

Index	Galvanized steel edges	Height H <sub>Z</sub> [mm]	Height H <sub>W</sub> [mm]	Width D <sub>Z</sub> [mm]	Width D <sub>W</sub> [mm]	Length L [mm]
<b>For channels type CS10.10B</b>						
CS10.10B.ST	OK	110	80	120	95	1000
CS10.13B.ST		110	80	120	95	500
CS10.10BK.ST*		110	80	120	95	1000
CS10.10LB.ST		70	40	120	95	1000
CS10.10LBK.ST*		70	40	120	95	1000
<b>For channels type CS10.10C</b>						
CS10.10C.ST	OK	110	80	120	95	1000
CS10.13C.ST		110	80	120	95	500
CS10.10CK.ST*		110	80	120	95	1000
CS10.10LC.ST		70	40	120	95	1000
CS10.10LCK.ST*		70	40	120	95	1000

\* Channel with outlet pipe of DN75 or DN110

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c) Gratings CS and COC SYTEC for channels type CS:

Index	Material	Kind of grating	Fastening method	Load capacity	Length [mm]	Water inlet area [cm <sup>2</sup> /pc]
<b>For channels type CS10.10A</b>						
CS10.11	Galvanized steel	Slotted	Press-fit	A15	1000	247
CS10.11N	Stainless steel	Slotted	Press-fit	A15	1000	247
<b>For channels type CS.10.10B</b>						
COC10.01	Iron	Slotted	Bolt	B125	500	163
<b>For channels type CS.10.10C</b>						
COC10.01C	Iron	Slotted	Bolt	C250	500	163

11. SYTEC Drain sumps (silt-box) made of polymer concrete with galvanized basket and steel grating CS or iron grating COC:

Index	Load class	Fastening method of grating *	Outlet	Height H <sub>z</sub> [mm]	Width D <sub>z</sub> [mm]	Length L [mm]
<b>For channels type CS10.10A</b>						
CS10.SB.A	A15	Press-fit	DN110	300	134,5	500
<b>For channels type CS10.10B</b>						
CS10.SB.B	B125	Bolt	DN110	320	134,5	500
CS10.SB.B.ST*				320	134,5	500
<b>For channels type CS10.10C</b>						
CS10.SB.C	C250	Bolt	DN110	320	134,5	500
CS10.SB.C.ST*				320	134,5	500

\* Sump drain with steel protective edges

12. Accessories for channels type CS

a) SYTEC end-cap:

Index	Type	Height H <sub>z</sub> [mm]	For channels of indexes :	Weight [kg]
<b>For channels type CS10.10A, CS10.10B and CS10.10C</b>				
CS10.31	Plain	90	CS10.10A, CS10.10AH, CS10.10AK, CS10.10B, CS10.10BH, CS10.10BK, CS10.10C, CS10.10CH, CS10.10CK, CS10.10B.ST, CS10.10BH.ST, CS10.10BK.ST, CS10.10C.ST, CS10.10CH.ST, CS10.10CK.ST	0,30
CS10.31L	Plain	50	CS10.10L, CS10.10LK, CS10.10LB, CS10.10LBK, CS10.10LC, CS10.10LCK, CS10.10LB.ST, CS10.10LBK.ST, CS10.10LC.ST, CS10.10LCK.ST	0,16
CS10.30	Outlet pipe Ø110	90	CS10.10A, CS10.10AH, CS10.10AK, CS10.10B, CS10.10BH, CS10.10BK, CS10.10C, CS10.10CH, CS10.10CK, CS10.10B.ST, CS10.10BH.ST, CS10.10BK.ST, CS10.10C.ST, CS10.10CH.ST, CS10.10CK.ST	0,43
CS10.30L	Outlet pipe Ø110	50	CS10.10L, CS10.10LK, CS10.10LB, CS10.10LBK, CS10.10LC, CS10.10LCK, CS10.10LB.ST, CS10.10LBK.ST, CS10.10LC.ST, CS10.10LCK.ST	0,50

There is possibility for individual solution.

**SYSTEMY I TECHNOLOGIE**

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