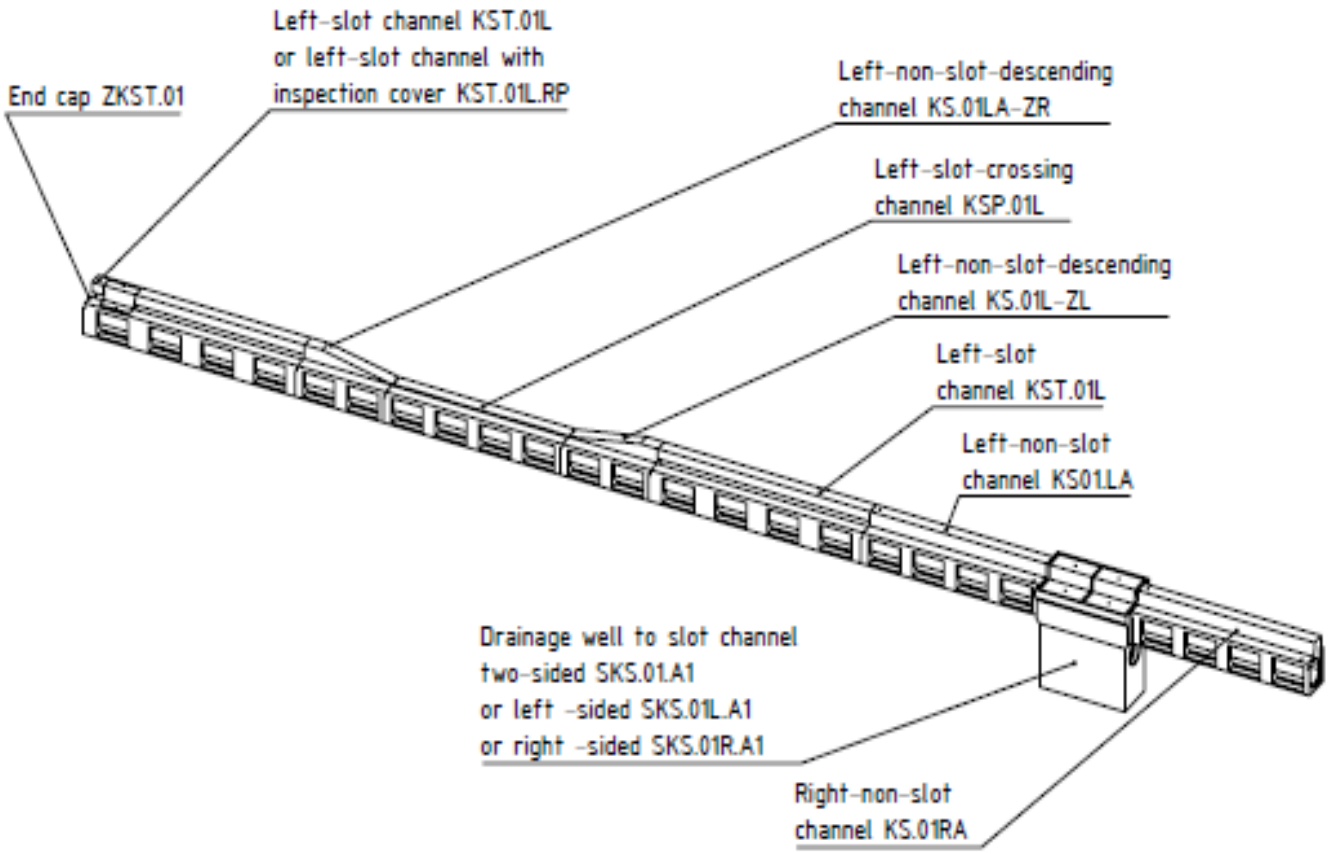
DATA-SHEET	TUNNEL DRAINAGE	OT
Polymerconcrete	KST	

1. **Name of product**:

POLYMERCONCRETE TUNNEL DRAINAGE SYSTEM



2. **Classification of product:**

26.61.11-00.00

3. **Related documents:**

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

4. **Guarantee of quality:**

The guarantee of highest quality is the ISO 9001:2015 certificate in the scope of production and trade in tunnel channels.

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5. Purpose of products:

a. Basic information:

Tunnel drainage is a specialist group of products which is used to collect and drain the surface water in tunnels and roads in deep trench. Tunnel drainage system contains a kerb with linear drainage. Is installed along the road in kerb zone, fulfills requirements of D400 load class.

b. Scope of application:

- ✓ System type „I" – groups 1-6 of the application areas of load from A15 to F900 in accordance with the norm PN-EN 1433

c. Special application area:

Particular elements of tunnel drainage system are manufactured as monolithic of polymer concrete.

Basic element of the system – slot channel – is of dimensions 3000*370*600mm (Length*Width*Height), and its flow profile is of dimensions 3000*240*351 (Length*Width*Height).

The system consists of right and left channel, slot and non-slot version, end-cap and drainage well of one or two siphons. Channel with horizontal slot is designed for quick and smooth collection of rain water, and draining of water to a drainage well.

Tunnel drainage system is characterized with very large hydraulic capacity.

Non-slot channels are installed directly before or directly after a drainage well. Those channels perform a fire function – stop an access to oxygen in case of fire.

Successive elements are connected on the basis of tongue and groove join. Water tightness of the system is ensured by a rubber seal, placed on tongue connection.

Tunnel channels are installed along the road in kerb zone. Fulfill the requirements of D400 load class.

In accordance with the norm the tunnel drainage is the system of type "I". This means the system does not require building in a concrete apron which is labor- and time-consuming. This enables to shorten considerably the performance time of the tunnel drainage.

Tunnel channel performs two functions : kerb and drainage.

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6. Description of product:

a. Basic parameters:

- ✓ Structure: One-piece, cast, monolithic
- ✓ Height H=600mm
- ✓ Material: Polymerconcrete
- ✓ Revision and cleaning: along the drainage system and through a drainage well (silt-box)
- ✓ Max load class: D400
- ✓ Slope option (built-in): 0,0% (non-sloped elements)
- ✓ Installation of elements: have to consider min. slope of 0,2%. Recommended slope is min. 0,5%.
- ✓ Method of installation: in accordance with the guidelines of producer
- ✓ Roughness factor of polymerconcrete: n=0,011
- ✓ Cleaning frequency of system: every 6 month or in accordance with a schedule of user
- ✓ Overhaul, maintenance: not required
- ✓ Corrosion of polymerconcrete elements: noncorrosive, not contain reinforced steel
- ✓ Ageing process: natural
- ✓ Durability: min. 30 years
- ✓ Type I – elements not requiring a concrete apron

b. Hydraulic parameters:

Channel type	External width of channel	External height of channel	Cross seetion of channel	Lost circuit of channel
	[cm]	[cm]	[cm^2]	[cm]
KST01	37,0	60,0	548,8	724,5

c. Hydraulic capacity channel:

Type	Longitudinal shope [%]	Hydraulic capacity [l/s]
KST01	0,2	31,5
KST01	0,5	49,8

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d. Hydraulic capacity pipe:

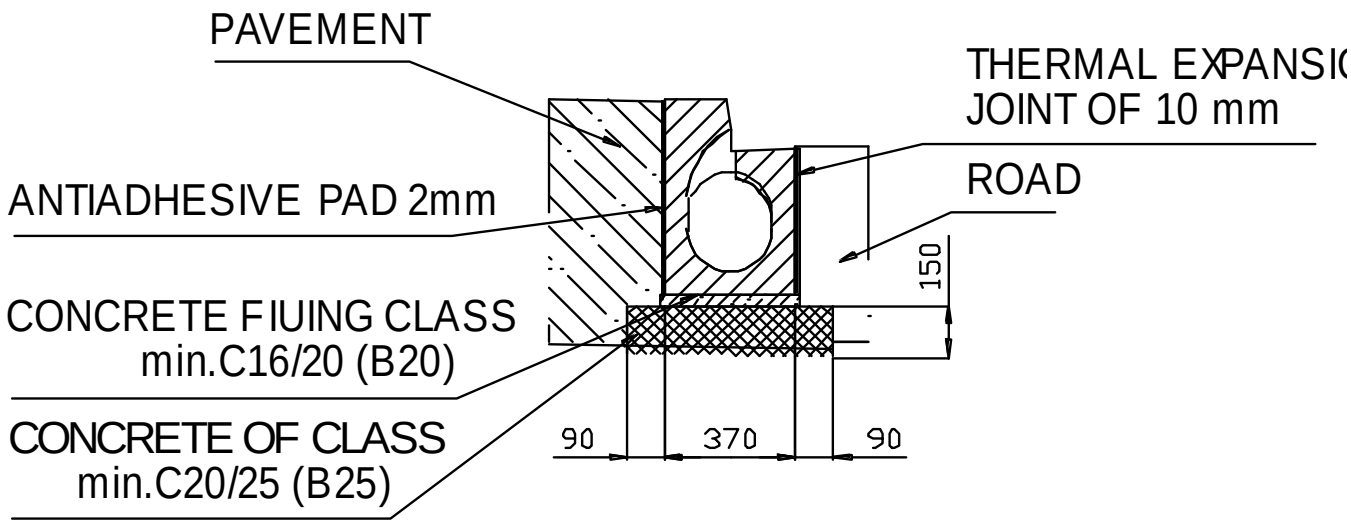
Type	Pipe slope [%]	Hydraulic capacity [l/s]
PVC-U 315/9,2 (DN300)	1,5	127,93

7. Installation:

a. Description:

- ✓ Points of contact: equipped with fasteners (concave or crowned) which prevent the vertical and/or horizontal movements of channels
- ✓ Tightness of system: enable to install a rubber seal
- ✓ IMPORTANT: in every case, installation of tunnel drainage system should be performed in accordance with the installation guidelines of producer

b. Example of installation of tunnel channel D400 load class:



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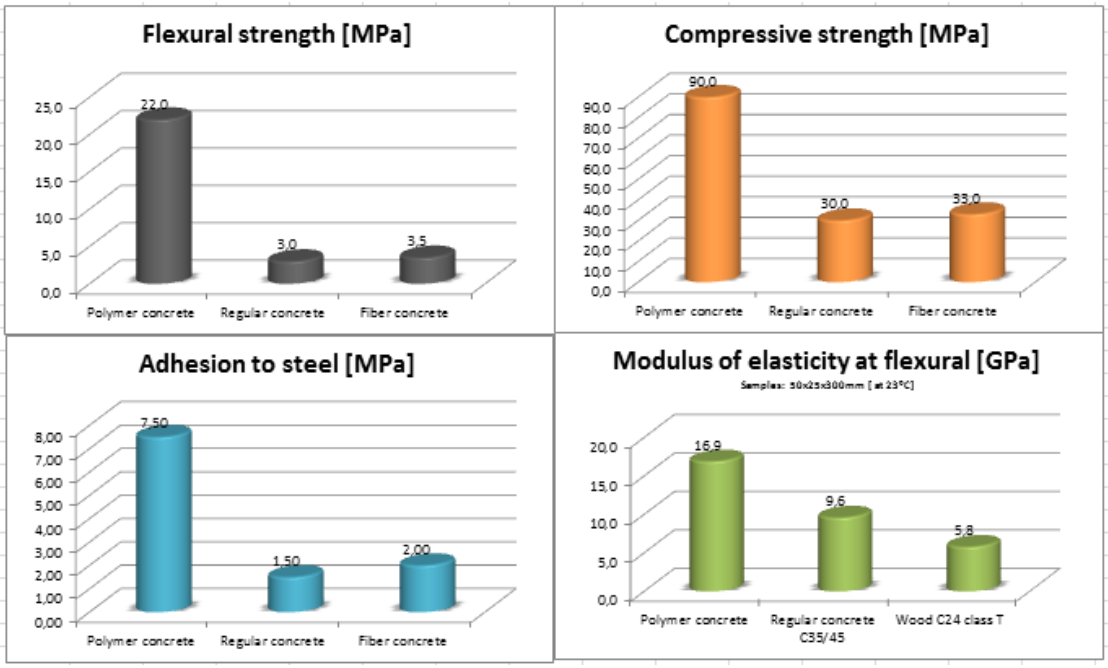
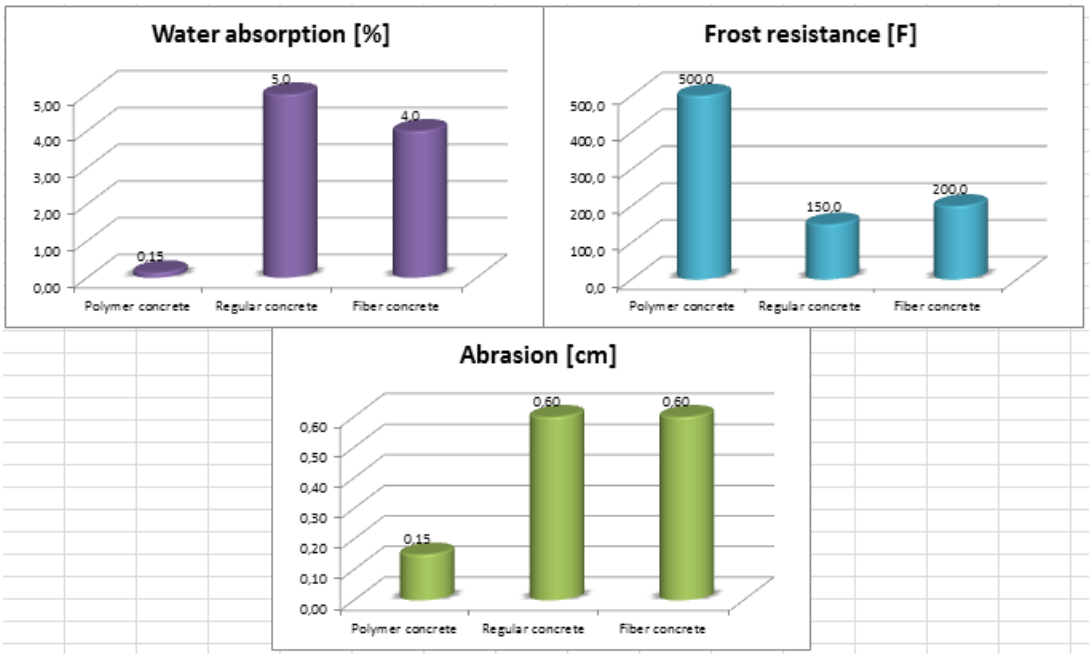
8. Material

a. Mechanical properties:



b. Durability properties:



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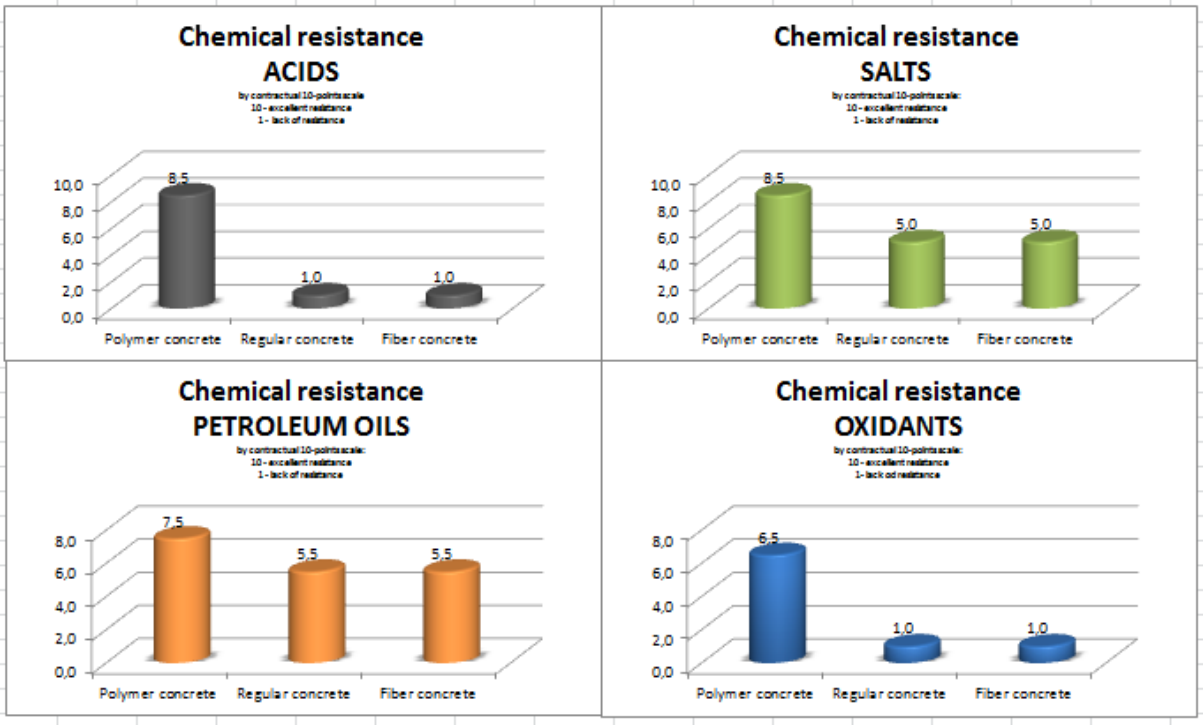
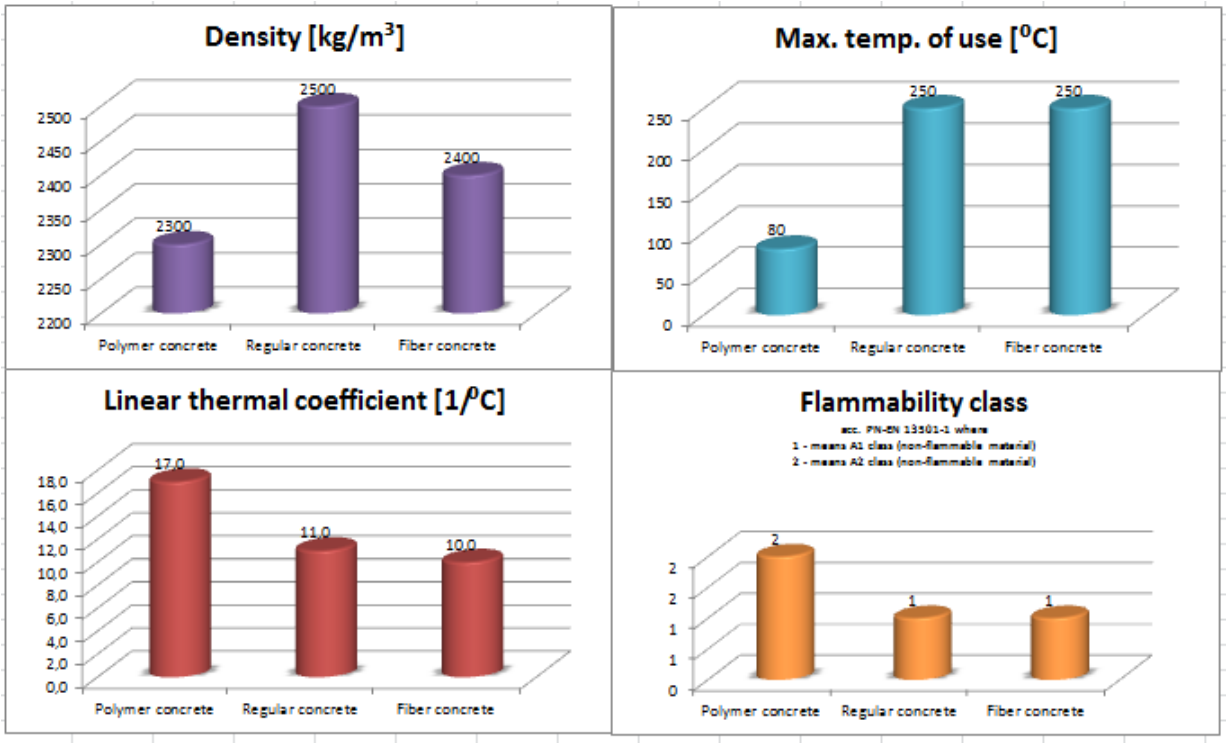
c. Chemical resistance properties:



d. Another material properties:



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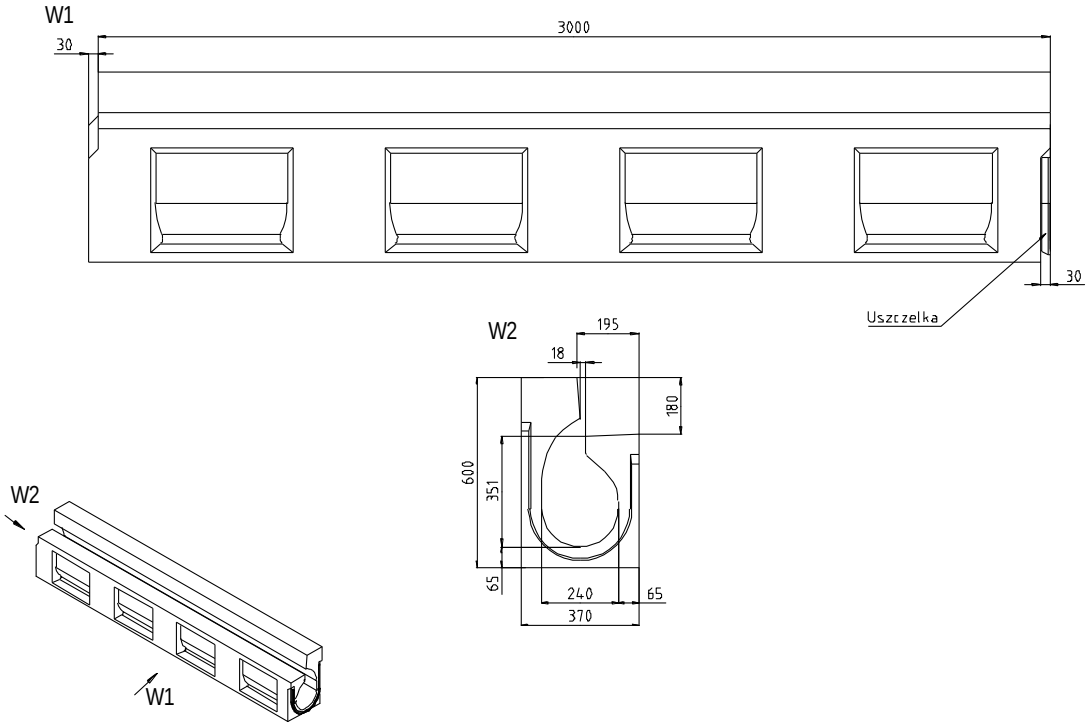
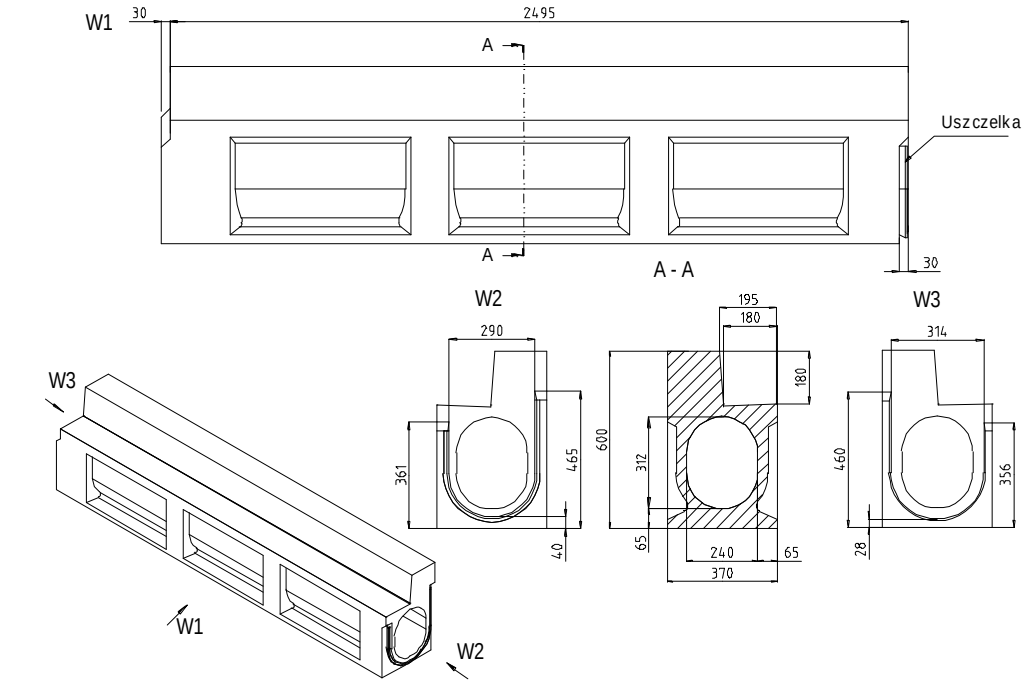
9. Elements of tunnel drainage system:

a. Slot channel - 3m:



b. Non-slot channel - 2,5m:



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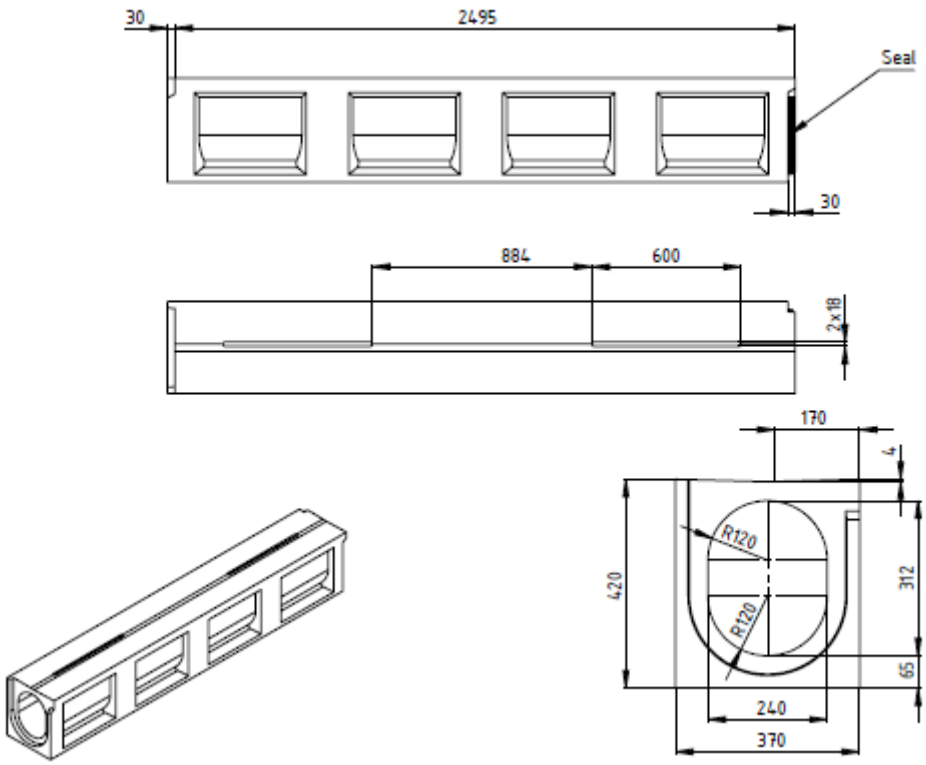
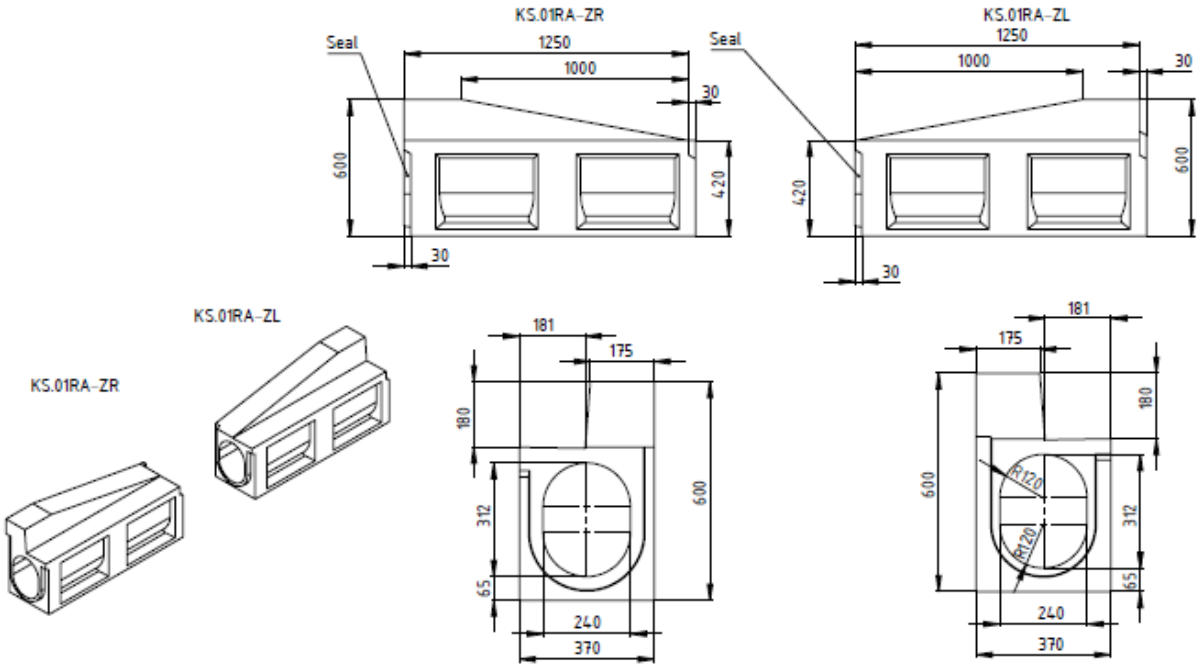
c. Crossing slot channel – 2,5m:



d. Non-slot- drescending channel – 1,28m:



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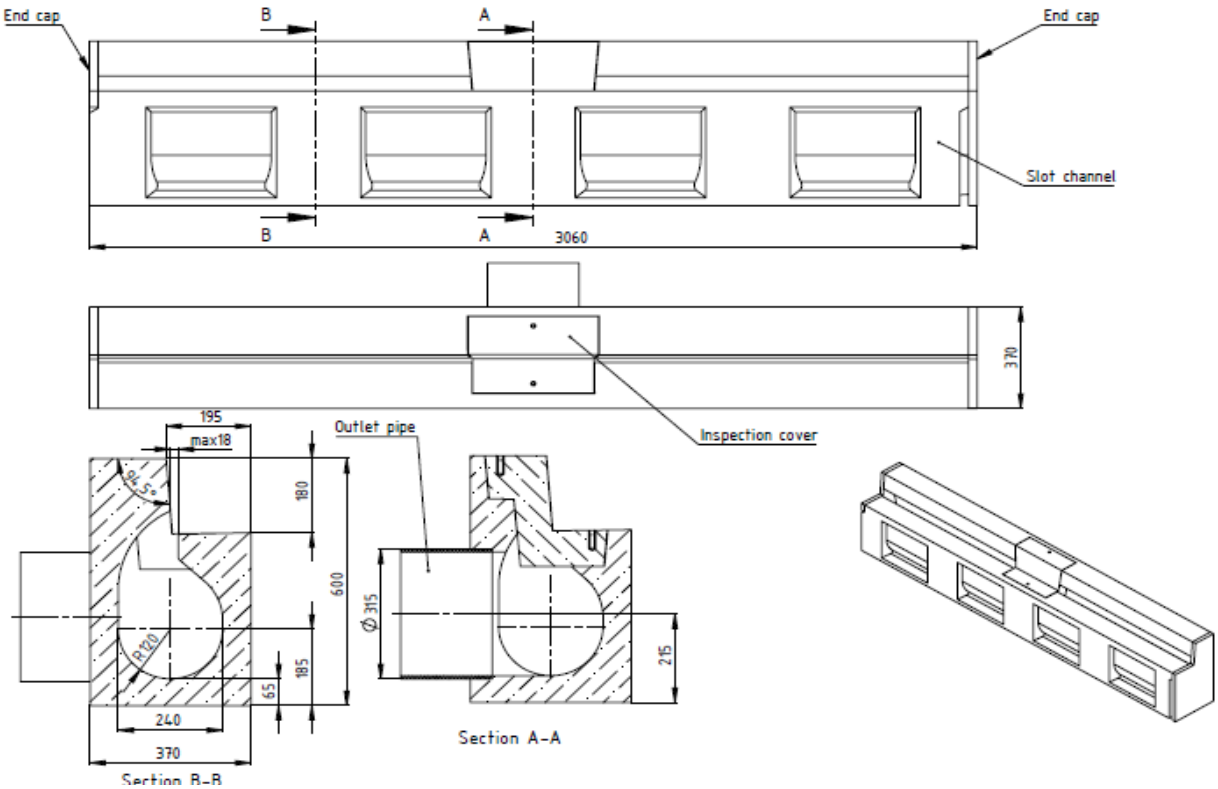
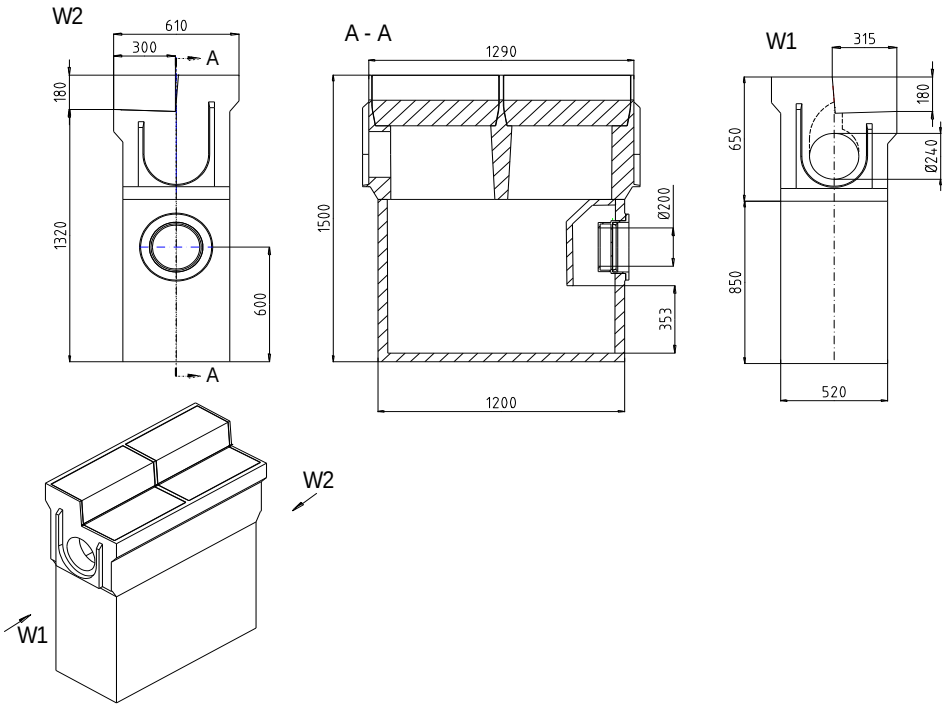
e. Slot street inlet – 3m:



f. Drainage well to slot channel two-sided – 1,3m:



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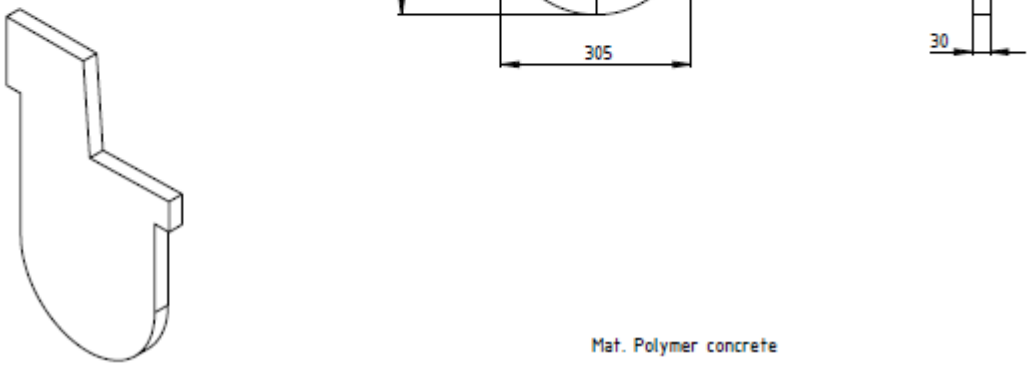
g. Polymerconcrete end-cap:



Mat. Polymer concrete

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