Polymer concrete

Polymer concrete is a structural material, like ordinary concrete, in which the aggregate has been replaced by silica sand and where synthetic resins, hardened by the addition of curing agents, have been used instead of cement. One of its important properties is high mechanical and chemical resistance.

SYTEC
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Management System ISO 9001:2015
TÜVRheinland CERTIFIED
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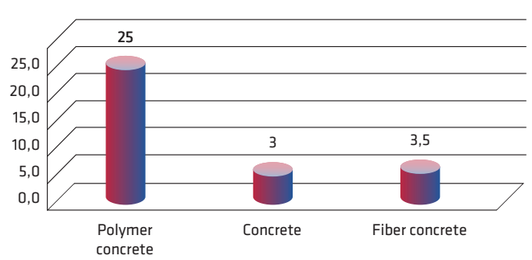
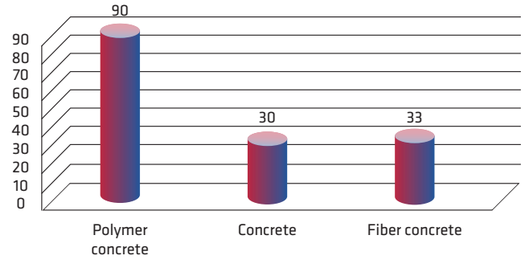
- A2-s1,d0 — Non-flammable material
- Water-resistant
- High mechanical strength
- High resistance to frost
- Good insulation properties
- Environmentally friendly material
- Mechanical processing with diamond tools
- High resistance to aggressive chemicals, including acids and bases
- Finish in different colours
- Short curing time

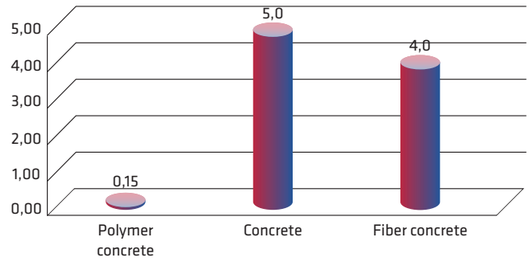
Flexural strength [MPa]



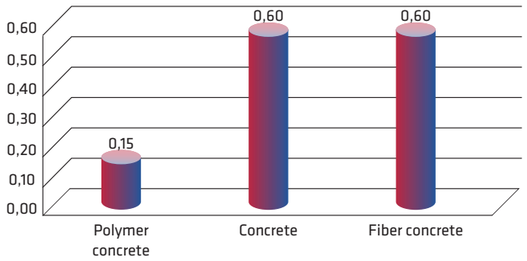
Compressive strength [MPa]



Water absorption [%]



Abrasion value [cm]



This folder is of a purely advertising nature and the presented technical solutions are subject to change.

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TUNNEL CHANNEL SYSTEM KST

PRODUCT DESCRIPTION:

1. General information.
The tunnel channels system consists of elements made of highest quality polymer concrete which complies with the current requirements of the law, standards and the market. The system is designed to be able to fulfill the main function of a typical drainage system, which consists in taking sewage away from tunnel roads, or to be an element of highly effective tunnel protection system ensuring removal of toxic and flammable liquids spilled on tunnel roads as a result of a random accident which could happen inside a tunnel, for example an accident involving a tank truck carrying toxic and flammable chemicals.

2. System description.
The elements of this system like channels and sumps in many execution versions make up a fully universal and elastic drainage system, tailored to all tunnel building situations. The tunnel channels elements consist in their monolithic structure both channels for collecting liquid waste and kerb elements designed to separate road and pavement zones. Unique polymer concrete formulation ensures high smoothness not attainable for regular concrete for surfaces which transport flammable and toxic liquids.

3. Execution at site.
The tunnel channels system consists of elements in "I" type, which means that they do not require to be supported on both long sides with regular concrete during the execution stage. This means less work and a lower cost for a contractor. Our solution is recommended in a situation when time is a key issue during the execution stage due to a unique design and solution provided by our system.

4. Market and law requirements.
"Directive 2004/54/EC of the European Parliament and of the Council of 29 April 2004 on minimum safety requirements for tunnels in the trans-European road network (official Journal of the European Union L 167, 30.04.2004, p. 39) amended by: Regulation (EC) No. 596/2009 of the European Parliament and of the Council L 188 page 14, 18.07.2009 and corrected by: Corrigendum, OJ L 201, 07.06.2004, p.56 (2004/54/EC).

5. Classification, design and testing requirements, marking and evaluation of conformity.
Harmonized standard PN-EN 1433:2005/A1:2007.

6. Load class.
Class C250-D400 according to PN-EN 1433:2005/A1:2007.

7. Production.
Highest quality of our production conforms with ISO 9001:2015 by TÜV Rheinland®.

8. Material.
The tunnel channels system is made of polymer concrete which is the only material that can be properly resistant at the same time to mechanical, chemical and fire loads which could occur during tunnel exploitation. Additionally, because it contains no cement and is fully resistant to water absorption, all types of corrosion typical of regular concrete with cement do not apply to the polymer concrete. Unique properties of polymer concrete make this material strong enough to carry required load class without any steel reinforcement and any other reinforcement. Because no steel, cement or any other potentially risky, non–resistant components are used to make this product and due to its high freeze-thaw resistance caused by marginal water absorptivity, the product has higher durability and longer lifetime.

9. Main properties of the tunnel channels system.
- Several times higher mechanical resistance in comparison with typical structural regular concrete means that thin-walled lighter elements require no steel or any others type of reinforcement. No steel bars inside.
- Excellent chemical resistance to all industrial liquids much higher than in case of typical structural regular concrete in a wide range of pH scale means no chemical corrosion.
- No cement and full resistance to water absorption eliminates the possibility of occurrence of corrosion typical of regular concrete, which means highest possible durability and pot life. Excellent freeze-thaw resistance also to winter road maintenance substances like salt.
- System made of non-flammable material.
- Highly efficient system ensuring toxic and flammable liquids flow rate of 100 L/s at the slope 2%

1. Left-slot channel KST.01L 3mb
2. Left-non-slot channel KS01.LA 2,495mb
3. Left-slot-crossing channel KSP.01L 2,5mb
4. Left-non-slot-descending channel KS.01LA-ZR - 1,25mb
5. Left-slot channel KST.01L or left-slot channel with inspection cover KST.01L.RP 3,0 mb
6. Drainage well to slot channel two-sided SKS.01.A1 or left -sided SKS.01L.A1 or right -sided SKS.01R.A1 1,30mb
7. End cap ZKST.01
8. Polymer concrete cover
9. Inspection cover