



**stikloporas**  
expanded glass



# Glass cullets is transformed into a warm house

Stikloporas JSC is a manufacturer of white expanded glass of the highest quality, also known as granulated foam glass. Company's headquarters and manufacturing facilities are located in Lithuania, in Northern Europe.

24 high quality specialists guarantee stable operation of the factory 24 hours a day, 7 days a week.

The company focuses on the production of expanded glass granules since 2009.

Granulated expanded glass Stikloporas – is the innovative, ecologically valuable material made from recycled glass.

Porous, organic aggregate is processed when recycled glass is milled, mixed with blowing agents and melted down in extremely high temperature.

Expanded glass granulate is unique for its granules' structure, as this allows to keep air closed inside the pellet.

This technology is known as the most developed one, which demonstrates the best thermo-isolating and sound-isolating features.



The variety of fractions of expanded glass granules allows a very wide application. It can be used in agricultural sector, automotive, machinery, oil and gas, biofiltration sectors and more.

Granulated expanded foamglass is widely used in construction as a loose product for thermo-isolation, or it can be used as a component part of the following products: dry mixtures, light concrete, blocks, finishing plates, drainage, products of stone mass, sound insulation products, fire-resistant products and etc.

Company is constantly investing by renewing the old machinery and buying the new, innovative one. Scientific researches are conducted in its own laboratory. The investment in product development is constantly carried out while working together with the best technical universities in Europe.

The experience that has been gained allows the company to improve the highest level of technical support for customers as well as to provide the possibility to make customised products.

Therefore, 98% of Company's products are exported globally.

**WE CHERISH NATURE!  
NO PRODUCTION WASTE!**



# Expanded glass granulate

Expanded glass granulate is a unique thermal insulation material made from glass breakage in the form of small, porous granules according to the patented technology.

Expanded glass granulate (porous, blown glass) is the very porous, porous, inorganic thermal insulation material in the form of granules that is received when the finely ground glass is melted down with the blowing agents. Its structure reminds rigid soap foam.

## Characteristics



### Low coefficient of thermal conductivity

The foamglass granulate retains warmth due to the structure of granules – the fine pores inside as if “lock” the air inside of the granule. Therefore, the thermal conductivity coefficient  $\lambda$  is between 0.059 and 0.08 W/mK.



### Resistance

The foamglass granules are resistant to compression in the cylinder from 1.5 to 2.5 MPa. This feature does not change during the entire maintenance period.



### Fire resistance

The constructions with foamglass are more fire-resistant. The chemical composition of the main component is just simple blown silicate glass, consisting of the molten highest oxides, which do not evaporate or burn. The operating temperature regime of foamglass granulate is from -200°C to 700°C.



### Humidity resistance

The unique structure of the foamglass granulate prevents absorbing more than 10% of water from total volume even if it is completely immersed into water. This happens because the granule is covered by the fusion layer. It is very important that water absorption does not increase with time and the material maintains all the initial thermal insulation characteristics and stability.



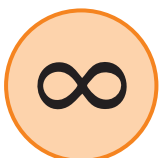
### Chemical and biological persistence

The foamglass granulate is completely resistant to the impact of organic and inorganic chemical reagents (the only exception is fluorine hydrogen acid that is used to melt glass). Besides, the foamglass is resistant to the biological impact; it does not decompose or decay. None of the known biological microorganisms has the possibility to exist in it and it is not eaten by rodents.



### Cleanliness

This inorganic material is completely friendly to the environment, because it is simply a glass. When in use, and under the effect of changing temperatures or humidity, no chemical substances are generated.



### Durability

Due to the closed cavities inside of the pores of the foamglass granulate, this material remains unchanged for many years, thus its exploitation period is indefinite.

# Technical data

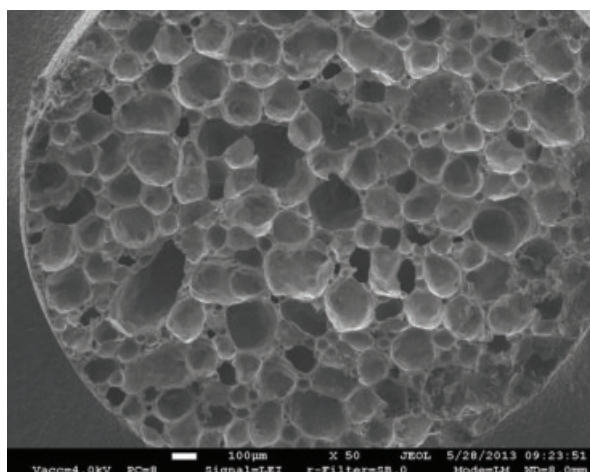
Stikloporas expanded glass is available in six standard granular sizes from 0.1 - 8 mm.

PROPERTIES	STANDARD	BASIC GRANULAR SIZES					
Granular size in mm	LST EN 933-1	0,1-0,3	0,25-0,5	0,5-1	1-2	2-4	4-8
Bulk density in kg/m <sup>3</sup> (±15%)	LST EN 1097-3	400 (±15%)	340 (±15%)	270 (±15%)	230 (±15%)	200 (±15%)	190 (±15%)
Compressive strength in MPa (±0,5 MPa)	LST EN 13055-1, A annex	2,8	2,5	2,3	2	1,4	1,2
Thermal conductivity in W/(m-K)	LST EN 12939:2002	-	0,0767	0,713	0,0663	0,0639	0,0661
Water absorption % by mass*	LST EN 1097-6:2002, C Annex	25	25	20	20	23	20
Climate changes frost/thawing resistance % by mass**	LST EN 13055-1:2004, C Annex	No more than 3					
Oversize	LST EN 13055-1	10%					
Undersize	LST EN 13055-1	15%					
pH value		9-11					
Moisture content on delivery		<0.5%					
Softening point		Approx. 7000C / 13000F					
Acid soluble sulphates		Average value 0,06 %					
Total sulphur		Average value 0,02 %					
Colour		Cream white					

\* Absorption, % after 24 hours soaking in water

\*\* After 20 cycles

The data of basic fractions satisfy the requirements of LST EN 13055-1:2004/AC:2004. Lightweight aggregates- Part 1: Lightweight aggregates for concrete, mortar and grout.



Internal view of foamglass granule of 2/4 mm fraction magnified 50 times

	<b>Certificate of Factory Production Control</b> No.1325-CPD-1935
Inspecta Latvia has granted this certificate as proof that	
<b>Lightweight aggregates for concrete, mortar and grout - foamglass granulate</b> grading: 0,25-0,5 mm; 0,5-1 mm; 0-2 mm; 0-4 mm; 1-2 mm; 2-4 mm; 4-8 mm; 8-16 mm	
PRODUCED BY THE MANUFACTURER: <b>UAB STIKLOPORAS</b> ADDRESS: M. K. Čiurlionų g. 111, LT-44151 Duglinskai, Lietuva ADDRESS OF MANUFACTURER: UAB „Stikloporas“, Vėpelių g. 22, LT-09499, Vėpeliai m., Duglinskai sav., Lietuva	
CERTIFIED ACCORDING: Certification scheme 2+, based on initial inspection of the factory and of the factory production control and the continuous surveillance, assessment and approval of the factory production control according to the Annex ZA of standard EN 13055-1:2002+AC:2004	
PRODUCT COMPLIES WITH THE REQUIREMENTS OF STANDARD: <b>EN 13055-1:2002+AC:2004</b> Declared properties: grading, fines, loose bulk density, water absorption, crushing resistance, chlorides, acid soluble sulfates, total sulfur, freezing-thawing resistance, dangerous substances	
This certificate is issued according to Council Directive (89/106/EEC) Article 14 (1) (b). Manufacturer or his authorized representative established in EEA (European Economic Area) is entitled to affix CE marking on the certified product (-s) as described in Annex ZA of EN 13055-1:2002+AC:2004.	
CERTIFICATE ISSUED ON: 28.06.2013.  <b>Martins Maskelis</b> Certification Manager	
Certificate first issued 29.08.2012 and remains valid as long as the conditions of the mentioned standard, related provisions and the manufacturing conditions in the factory or the FPC test are not modified significantly. Certificate is issued on 1 (one) page	
AS "Inspecta Latvia" Būvniecības iestāde, Rīga LV-1013, Latvija Tālrunis: +371 67 627 900	
Group Headquarters: Inspecta Group Oy Helsinki, Finland 	

# Expanded glass granulate is an excellent aggregate of concrete and grout

	Usage according to the fractions, mm							
Products	0,1-0,3	0,25-0,5	0,5-1	1-2	2-4	4-8	8-16	Benefit
Plastering mixtures —cement, cement- lime, plaster		●	●	●				Output bigger by up to 4 times Weight smaller up to 50% Thermal insulation better up to 40% No cracking Good acoustic characteristics
Tile Adhesives/ Cement Adhesives	●	●						Output bigger by up to 3 times Weight smaller up to 50% Good leveling Fast work
Masonry mixtures, repair mixtures	●		●	●	●			Output bigger by up to 4 times Weight smaller up to 50% Thermal insulation better up to 40% Excellent results Fast and easy work
Cement mixtures for floor				●	●	●		Output bigger by up to 4 times Weight smaller up to 50% Thermal insulation better up to 40% Excellent results Fast and easy work
Insulation plates			●	●	●			Weight smaller up to 50% Good thermal insulation properties Good sound insulation Non-flammability
Lightweight constructions of residential houses					●	●		Weight smaller up to 60% “Breathing” thermal insulation Good acoustic characteristics Non-flammability
Lightweight concrete blocks					●	●		Weight smaller up to 60% “Breathing” thermal insulation
Lightweight concrete products, small architecture					●	●		Weight smaller up to 60% Natural appearance
Insulation of chim- ney inserts					●			Weight smaller up to 60% Non-flammability
Artificial stone					●	●		Weight smaller up to 60% Natural appearance and excellent design possibilities Reduced cracking probability
Drainage, heating of outdoors communi- cations							●	Durability Unchanged characteristics during usage Resistance to humidity
Aggregate — leveling plus loose insulation						●	●	Constructions bearing load smaller by 50% “Breathing” thermal insulation Resistance to bacteria, mould and rodents Durability Unchanged characteristics during usage Resistance to humidity

# Packing

## Bags of 100 l

Stikloporas expanded glass granulate can be delivered in PE plastic bags of 100 liters. The average loading capacity is as follows: usual truck can fit up to 22 pallets, 1 pallet fits up to 24 or 30 bags. Truck with a trailer can fit up to 24 pallets. One pallet can fit up to 24 or 30 bags. Your order is going to be delivered on non returnable pallets. All pallets are wrapped, marked, and certified.

## FIBC Big-bags of 1,5m<sup>3</sup>

Stikloporas expanded glass granulate big-bags have an emptying hose and can be reused for several times. Big-bags are delivered on non-returnable pallets. Average loading capacity is as follows: usual truck can fit up to 22 pallets. Altogether, it can fit from 22 to 44 big-bags 66 m<sup>3</sup>.

Therefore, one or two big-bags can be put on a pallet. Truck with a trailer can fit up to 24 pallets. Altogether, it can fit from 24 to 48 big-bags. Your order is going to be delivered on non-returnable pallets. All pallets are wrapped, marked, and certified.

## Bulk deliveries

Stikloporas expanded glass granulate is also available as bulk material. Stikloporas bulk material is delivered by 60 m<sup>3</sup> silo trucks. All expanded glass granulate grain sizes can be pneumatically conveyed or discharge pressure max. 0.7 bar.



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