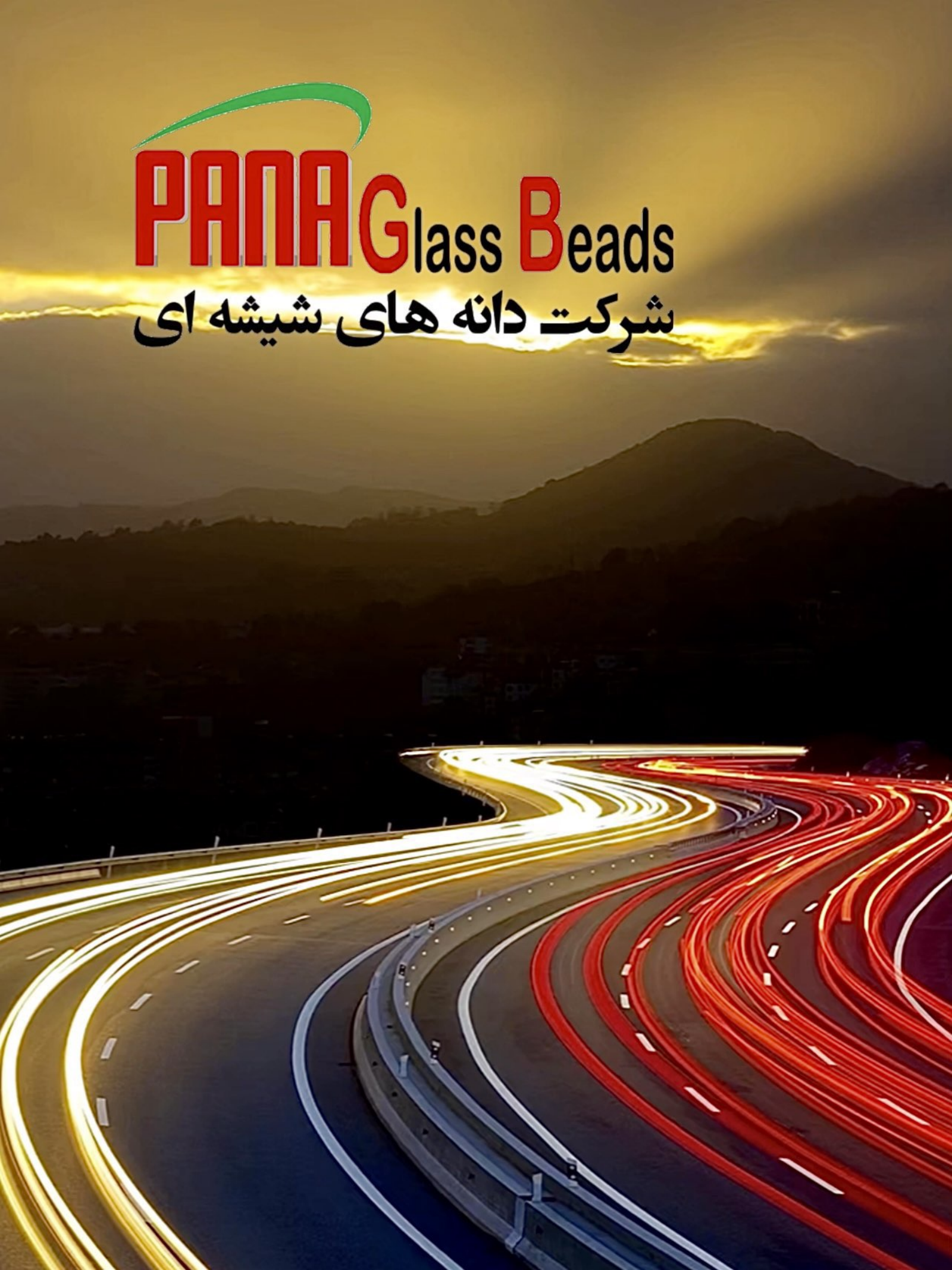
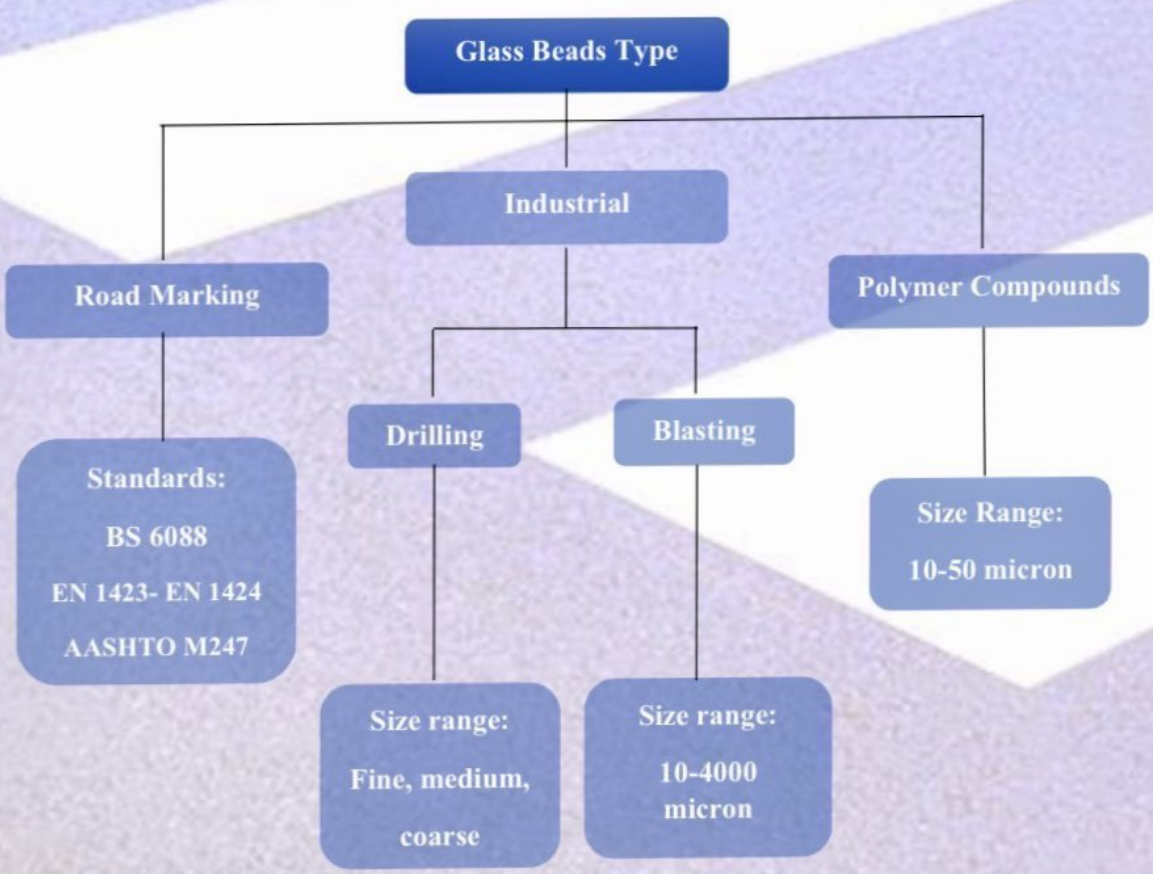

PANA Glass Beads
شرکت دانه های شیشه ای

Company Introduction

With the aim of advanced production technology we are a leading manufacturer of glass beads in the middle east.

Pana Glass Beads Co. is specializing in reflective road marking glass beads, industrial glass beads for applications like blasting and drilling, glass beads for polymer plastics which the glass beads in each application can have desired coating.

F. Mohaddess
Deputy of CEO

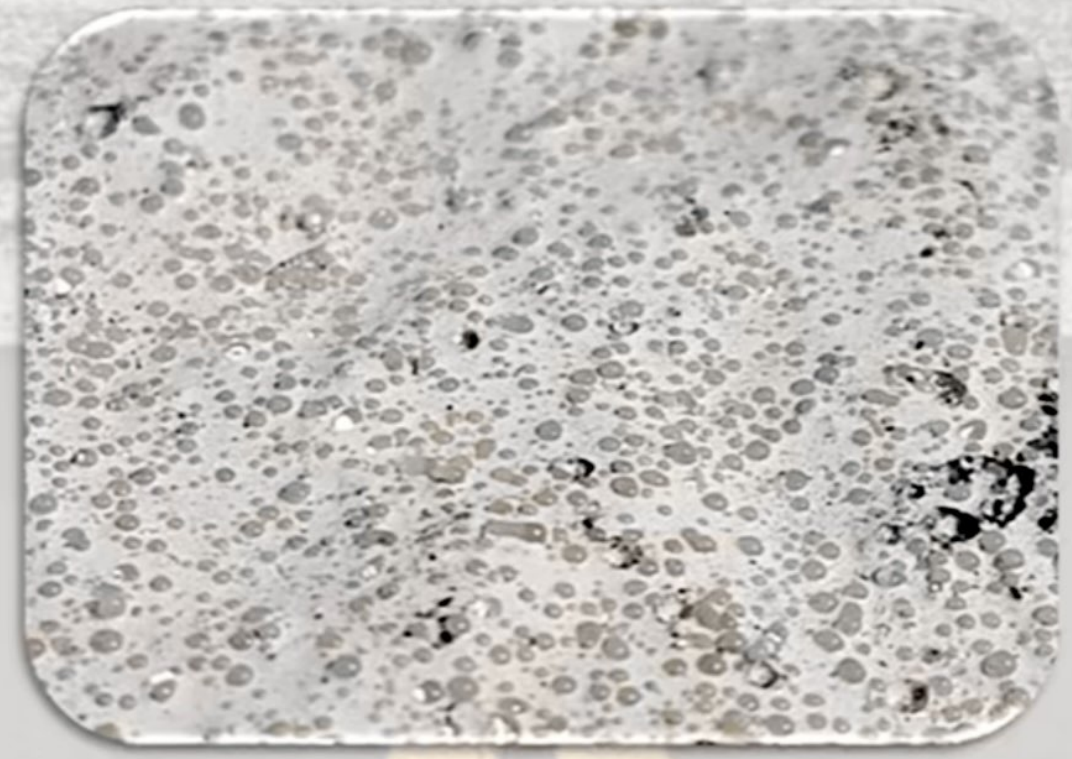


Glass Beads Properties

Glass beads are in general round, clear, without obvious bubbles and impurities. They are characterized via advanced laboratory devises based on international standards.

Physical	
Density	2.5 g/cm^3
Roundness	90%
Refractive Index	1.53%
Mechanical	
Young's Modulus	$10*10^6$ psi
Rigidity Modulus	$10*10^6$ psi
Hardness	6 Moh
Coefficient of Friction	0.9-1.0
Chemical Composition (%)	
SiO_2	72.5
Na_2O	13.7
CaO	9.8
MgO	3.3
Al_2O_3	0.4
Fe_2O_3	0.2
K_2O	0.1
Thermal	
Softening Point	704°C
Expansion Coefficient	In/°C*10^2

Road Marking Glass Beads



Road marking glass beads are used to guide road users in the darkness and in all weather condition as the glass beads reflect the light of vehicles from the surface of road marking. PANA Glass Beads Co. produce road marking glass beads in two types of drop on glass beads and premix glass beads. The drop on glass beads are named Microdrop which can be applied on the road marking in situ. The premix glass beads are named Micropre which can be mixed with the road marking paint during the paint manufacturing process. These glass beads can be manufactured in different size ranges and based on different standards based on the location and condition of the road marking process. Road marking glass beads can be coated to improve their floatation ability, hydrophobicity and adhesiveness to the paint. In this regard, they are produced in three types of silicon coated, silane coated and uncoated based on the costumer's desire.

Industrial Glass Beads

Glass Beads Blasting and Peening

Glass beads peening can increase the fatigue properties and resistance to stress corrosion cracking of the metal parts while leaving a smooth surface finish. On the other hand, glass bead blasting is used to clean and prepare the surface and also leave a desirable texture to the surface of substrate. These techniques are economical and do not damage the metal parts. The glass beads used in peening and blasting are light weight and chemically inert. They can be coated with moisture proof coatings or used uncoated based on the method of application.

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Industrial Glass Beads

Glass Beads for Drilling Mud

Glass beads are used in drilling mud to decrease the friction and torque in the deviated holes. The glass beads act as ball bearings which reduce the pressure. Pana Glass Beads Co. is able to provide glass beads for drilling mud in three sizes of Fine, Medium and Coarse based on the costumer's desire.

TORQUE-FREE is a mechanical lubricant which is act as ball bearings between surfaces slide and horizontal drilling. TORQUE-FREE is compatible with all types of fluids without any chemically changes in the fluids. In addition the Pills are effective when spotted across trouble zones while tripping. logging or running casing. TORQUE-FREE is available in different sizes from 1-1180 microns according to the requirement.

Glass Beads for Polymer Compounds

Glass beads are used in many thermoplastics and thermoset resins as additive. Due to glass bead's spherical shape, they act like ball bearing and have less effect on the polymer's melt fluidity compared to other additives. This ability lead to highly filled parts specially for complex geometries, less warpage and shrinkage of parts and less pressure for molding the polymers. Pana Glass Beads Co. can provide glass beads for polymers with Silane coatings for better compatibility of the glass beads with polymer resin. The type of Silane is chose based on the polymer resin.

Thermoplast
PC, ABS, POM, PVC & PA/SAN & PBT/PMMA & PS/PE & PP

Thermoset
Silicone/Epoxy, Phenolic, PU & Melamine/Polyester & Alkyd

Typical Size: 45-75 micron, 75-100 micron

Advantage:
Higher abrasion and scratch resistance Dimensional stability improvement (shrinkage and warpage) Good thermal conductivity Surface finish, aesthetic Faster and more economic processing (ball bearing effect) High chemical resistance Food approved These improvements can be achieved in a range of engineering plastics and are used by formulators to enhance applications in automotive, domestic appliances, electrical parts, aerospace, buildings and other industries.

Glass Powders

Glass powders are crushed virgin soda lime glass particles which can have a wide range of sizes. Glass powders having size of more than 1000 microns are called glass sands. They have the appearance of white powder and each particle has random shape.

Pana Glass Beads Co. produces glass powders in the size range of 10 to 4000 microns for different applications.

Water Filtration

The glass sands used for water filtration have the size of 0.6 to 1.4 mm and are amorphous soda lime glass particles. They have angular to sub-angular shape that increase the porosity of the inter granules in comparison with sphere particles. Amorphous glass are highly resistant to pressure and breakdowns. Also, they minimize the bacterial growth in the cracks . Due to the slight negative charge on the glass particles, they tend to attract the positive charged particles in the water like iron particles which make the water more clear. These attracted particles can easily released from the glass sands via back washing.

Glass Blasting

Using crushed glass as blasting media can remove the unwanted surface coating faster than other blasting materials, it can be used near sensitive areas as it produces no free silica, it is inert and deliver a whiter finish surface. The suitable size range of glass grit for blasting is chose based on the surface material and desired texture.

Paint Filler

Using glass powders in the paints as filler is cost effective and improves the paint's characteristics. Glass powders make the paint wear resistant when applied to the substrate which increase the life time of the paint. It also give a desirable glow to the paint surface when it is hit by light beams.

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Epoxy Flooring

Glass powders is added to the epoxy resin for flooring application as filler and additive. Glass powder make the flooring wear resistant and untislippery. Due to the inertness of glass powders, they increase the chemical resistivity of the flooring. Also, addition of glass powder to the epoxy resin make the flooring cost efficient. Such properties make the epoxy floorings suitable for places like parking, gym, labs and ... .

Concrete

Glass powders can be used in concrete for many purposes. They can be used as additives to achieve self compacting concrete (SCC) as they increase the flowability of the concrete mixture. Glass powders can be used as cement replacement and lower the pollution caused by cement production and also increase the strength of the concrete. Also, they can be used as concrete filler. On the other hand, glass powders are used in polymer concretes and also can be used in artistic concretes. The size of the glass powders used in concretes vary based on the application of the concrete.

Contact Us

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