QZS 700

Silica sand

GENERAL: Silicon sand's main ingredient is silicon in the form of silicon dioxide (SiO_2- silica). This corresponds to a group of minerals that are exclusively made of oxygen and silicon, the two ingredients that are in great abundance in the earth's crust. Although its chemical formula is quite simple, SiO_2 appears with different shapes and crystal structures. The most common form of silica crystal is Quartz, hence the name quartz sand.
Silica sand by THRAKON: QZS 700 is a silica sand that has undergone industrial process, cleaning and drying and is graded in different granulometries. The sand comes from rivers and contains no salts or foreign bodies. It is high in silica (SiO_2) that gives the product increased hardness: 6-7 on the Mosh scale. Sand grain has an almost spherical shape that gives the product perfect low properties, and binds it with the connecting materials (cement, lime hydrate).

Advantages:

- Increased hardness, 6 - 7 on Mosh scale
- Spherical grains that give perfect workability and ideal finish to mortars
- Provides solid density and high bending tolerance
- Provides high friction tolerance
- It is chemically inactive and does not affect the properties of the binder
- Not affected by corrosion or air pollution
- Protects from weather conditions
- Smaller water absorption compared to limestone aggregates
- Undergone cleaning and sieving

TECHNICAL CHARACTERISTICS

Packaging:

- Plastic open nozzle bags 25 kg
- Big bags 1000-1500 kg

Consumption:

Depends on the application.

Shades:

Grey/Yellow

Storage:

Stored indoors in closed bags for an unlimited period. Sun exposure of the packages must be avoided because the plastic bags will be destroyed.

Application:

Suitable as an additive for the production of mortars.

FIELDS OF APPLICATION

The product is used in building and many other works such as:

- Cement floors (slabs, pipes etc.)
- Industrial floors
- Cement screed production
- Laying and joining ceramic setts
- Drainage works
- Potable and non-potable filters
- Golf courts
- Athletic constructions, tartan covers, sandpits etc.
- Horse tracks
- Gardening

The method of application, the consumption and selection of the appropriate granulometry (or even the combination of more than one granulometries), varies depending on the case.

APPLICATION

A mixture of various grain sizes reaching up to 3500μm is used in mortars depending on the application thickness. For example, in common building mortars such as coatings, adhesives and floors, we use the following mixtures of silica sand:

Coatings:
• Rough cast: mixture up to 3500 μm
(THRAKON types 1-2-3-4-5)
• Base coat: mixture up to 2500 μm
(THRAKON types 1-2-3-4)
• Final or decorative coat: depending on application coat
up to 500 (THRAKON type 1),
up to 700 (THRAKON types 1-2),
up to 1400 (THRAKON types 1-2-3)

Tile adhesives:
• For application thickness ≤1 cm Mixture of up to 500 μm (THRAKON types)
• For application thickness ≤1-1.5 cm mixture up to 700 μm (THRAKON types 1-2).

Floors:
• Cement screeds: mixture up to 3500 μm (THRAKON types 1-2-3-4-5)
• Floor hardeners: mixture up to 1400 or 2500 μm (THRAKON types 1-2-3-4)

The final mixture to be used must have the optimum grain distribution, in order to achieve maximum resistance, increase tightness and prevent cracks.

PRECAUTIONS

There are no risks if the product is used normally and no particular protection measures must be taken. The product is neither flammable nor toxic. For more information, please refer to the latest Safety Sheet for the Product.

Product ID	
Form	Dry granular material
Color	Grey/Yellow
Basic characteristics	Quartz/Felspars
Specific gravity	1,3 - 1,5 gr/cm^3
Flammability	No
Toxicity	No

Summary grain features
QZS 700 / No 1 200 – 500 μm
QZS 700 / No 2 500 – 700 μm
QZS 700 / No 3 700 – 1400 μm
QZS 700 / No 4 1400 – 2500 μm
QZS 700 / No 5 2500 – 3500 μm

Chemical analysis	
SiO_2	80.89%
Al_2O_3	8.87%
Fe_2O_3	1.76%
CaO	1.04%
MgO	0.39%
K_2O	3.13%
Na_2O	2.01%
TiO_2	0.27%
SO_3	0.00%
LOI	1.10%

Granulometry Analysis – Cumulative residue (%)					
SIEVE (μm)	QZS 700 No 1	QZS 700 No 2	QZS 700 No 3	QZS 700 No 4	QZS 700 No 5
0	100	100	100	100	100
100	99-100	100	100	100	100
200	89-91	99-100	100	100	100
500	1-4	59-68	87-97	100	100
710	0	0-2	39-69	99-100	100
800		0-0,2	25-35	99-100	100
1250		0	0-2	92-96	100
1400			0-0,5	77-80	100
2000			0	13-17	98-100
2500				0-2	76-86
3350				0	1-3
4000					0

Granulometry Analysis – Cumulative passage (%)					
SIEVE (μm)	QZS 700 No 1	QZS 700 No 2	QZS 700 No 3	QZS 700 No 4	QZS 700 No 5
0	0	0	0	0	0
100	0-1	0	0	0	0
200	9-11	0-1	0	0	0
500	96-100	32-41	3-13	0	0
710	100	98-100	31-60	0-1	0
800		99,8-100	65-75	0-1	0
1250		100	98-100	4-8	0
1400			99-100	20-23	0
2000			100	83-87	0-2
2500				98-100	14-24
3350				100	97-99
4000					100

Technical characteristics	Units	Standard	Value
Grain size 0/4	d/D	EN 933-1	0/4
Percentage pea fraction	F_{10}	EN 933-1	11
Sand equivalent (fraction 0/2)	>SE	EN 933-8	>66
Pea quality	MBF_{10}	EN 933-1	≤10
Acid soluble sulfur	<%AS0,2	EN 1744-1	0.02
Total sulfur	<1% w/w	EN 1744-1	0.03
Chloride ion quantity	<%Cl	EN 1744-1	<0.01
Carbon ion quantity	$\%CO_2$	EN 1744-1	40.6
Organic impurities	0	EN 1744-1	No amount
Lightweight impurities	%	EN 1744-1	0.20
Gross Density p_{rd}	gr/cm^3	EN 1097-6	2.650
Density pa	gr/cm^3	EN 1097-6	2.711
Water absorption	% WA	EN 1097-6	1.02
Magnisium sulfate health test	MS	EN 1367-2	MS_{18}
Alkalisilicate reaction	-	-	Harmless
Petrographic analysis	$CaCO_3$	-	≈4%/silica
No heavy metals are observed	-	-	

*Note: The measurements were taken in laboratory environment under a temperature of +23^{0}C, Relative humidity 50% and without ventilation. It is possible for them to vary depending on the conditions prevailing at the worksite, such as temperature, humidity, ventilation, absorbability of the substrate.

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