

CATALOGUE OF PRODUCTS

Sklopísek Střeleč, joint stock company produces and supplies high quality glass, foundry, technical, filtration and sport sands, fine milled silica flour.

The Střeleč area represents the largest deposit of prime quality glass sand within the Czech Republic. The sands have been extracted and processed since 1939. The quarry is located 12 kilometres to the northwest of Jičín.

The deposit originated by sediments settling into a relatively shallow, well-aerated sea of the Mesozoic, Cretaceous formation. The deposit is created by sandstones cemented by kaolin with content of SiO₂ above 98,5 %. The dominant fraction in granularity is 0,10 up to 0,63 mm. The quality of sand is positively affected by very low content of colouring oxides Fe₂O₃, TiO₂, Al₂O₃. The deposit is being extracted by the open-cast mining in the quarry.

Natural high purity sands from Sklopísek Střeleč are basic raw materials for production of crystal, container and flat glass and glass fibres.

The Střeleč sands have a wide sphere of use in the foundry and building industries. They are a raw material for the production of bonding cements, levelling and joint compounds, special building mortars and plasters. The sands are also used as a filler into the industrial floors because of the compression strength. Further use is for production of glaze and enamels. The chemical purity and favourable particle size distribution of the sand are appreciated in other industrial sectors such as the electrical, ceramic, construction industries, in water treatment and in the production of water glass. Important use is also in blasting and rail transport, as well as the production of garden substrates, construction and maintenance of sport natural and artificial surfaces, it means golf courses, football pitches, tennis courts and multi-sport playing areas.

All produced sands have been exempted from registration requested by REACH Regulation and meet hygienic limits for outside sandpits and playing fields according to the relevant Czech legislation. Above that Technical sands meet legislative requirements for products, which are in touch with potable water and for water treatment.

Sklopísek Střeleč was certificated by the Bureau Veritas company for the Quality management system ISO 9001 in the year 1999, the Environmental management system ISO 14001 in the year 2004 as well as the Occupational health and safety management system according to OHSAS 18001 in 2004 which was certificated for standard ISO 45001 in the year 2020. We were also certificated for the Energy management system ISO 50001 in the year 2018.

PRODUCTION PROGRAMME

GLASS SANDS COARSE

Brand Name	Fe ₂ O ₃ (max %)	Granularity Range (mm)
ST 08 Premium	0,008	0,10-0,63
ST 10 Premium	0,010	0,10-0,63
ST 15	0,015	0,10-0,63
ST 40	0,040	0,10-0,63

GLASS SANDS FINE

Brand Name	Fe ₂ O ₃ (max %)	Granularity Range (mm)
STJ 06 Premium	0,006	0,063-0,315
STJ 09 Premium	0,009	0,063-0,315
STJ 12 Premium	0,012	0,063-0,315
STJ 25	0,025	0,063-0,315

FOUNDRY SANDS

Brand Name	d 50 (mm)	Granularity Range (mm)
ST 52	0,32	0,10-0,63
ST 53	0,26	0,10-0,63
ST 54	0,22	0,10-0,63
ST 55	0,19	0,063-0,50
ST 56	0,15	0,063-0,40

MICRO-MILLED SANDS - SILICA FLOUR

Brand Name	d 50 (μm)	Granularity Range (mm)
ST 2	27	0-0,090
ST 6	16	0-0,063
ST 7	12	0-0,045
ST 8	9	0-0,045
ST 9	6	0-0,045

TECHNICAL SANDS

Brand Name	d 50 (mm)	Granularity Range (mm)
ST 01/06	0,43	0,10-0,63
ST 03/08	0,59	0,315-0,80
ST 03/30	1,7	0,315-3,15
ST 05/10	0,73	0,50-1,00
ST 06/12	0,9	0,63-1,25
ST 10/40	2,5	1,00-4,00

OTHER SANDS

Brand Name	Granularity Range (mm)
ST 92	0,063-0,40
ST 93	0,10-4,00
ST 97	0,10-2,50

SPORT SANDS -

Sands SportTop are suitable for sport surfaces, details in Sport Sands Catalogue.

	GLASS SANDS - Company Standard PN-01-2014 (Extract) Table 1. Granularity - Quality Category								
Brand Name	Fraction (mm)								
	above 1,25	1,00	0,80	0,63	0,50	0,315	0,10	0,063	undersize
	Content of Component (%)								
STJ 06	0,00			0,0	max 0,5	max 7,0	min 90,5	max 2,0	
STJ 09									
STJ 12									
STJ 25									
ST 08	0,00		0,0	max 1,0	min 97,0		max 2,0		
ST 10									
ST 12									
ST 15									
ST 40	0,00	0,0	0,0	max 0,5	min 94,5		max 5,0		

Brand Name	GLASS SANDS - Company Standard PN-01-2014 (Extract)			
	Table 2. Chemical Composition			
	Content of Component (%)			
	SiO ₂	Fe ₂ O ₃	TiO ₂	Al ₂ O ₃
	min	max		
STJ 06	99,7	0,006	0,03	0,2
STJ 09		0,009		
STJ 12		0,012		
STJ 25	99,3	0,025	0,15	0,3
ST 08	99,7	0,008	0,03	0,2
ST 10		0,010		
ST 12		0,012		
ST 15	99,5	0,015	0,05	
ST 40	98,5	0,040	0,13	0,4

 SKLOPISEK STRELEC QUALITY IN EVERY GRAIN	FOUNDRY SANDS - Company Standard PN-02-2014 (Extract) <i>Table 1. Quality Category</i>				
Basic Characteristics	Brand Name				
	ST 52	ST 53	ST 54	ST 55	ST 56
d 50 (mm)	0,32	0,27	0,22	0,17	0,14
Granularity Range (mm)	±0,03	±0,03	±0,03	±0,03	±0,03
(d 75 : d 25) x 100	40 - 70	40 - 70	40 - 70	40 - 70	40 - 70
Washed matter (%) max	1			2	
Fe ₂ O ₃ (%) max	0,2			0,3	
K ₂ O + Na ₂ O (%) max	0,2				
CaO + MgO (%) max	0,2			0,4	

		MICRO-MILLED SANDS - Company Standard PN-03-2014 (Extract)									
		Table 1. Granularity and Chemical Composition									
		Brand Name									
Fraction (mm)		ST 2	ST 6	ST 7	ST 8	ST 9					
		Fraction (%)									
above 0,50	0,00	0,0	0,0	0,0	max 0,5						
0,315	0,0										
0,25	max 0,5										
0,20											
0,125	max 8,0	max 10,0	max 5,0	max 4,0							
0,090											
0,063	max 20,0										
0,045	not specified	not specified									
0,040											
undersize											
SiO ₂ (%) min	99,6										
Fe ₂ O ₃ (%) max	0,05										
Al ₂ O ₃ (%) max	0,3										
CaO + MgO (%) max	0,1										
Na ₂ O + K ₂ O (%) max	0,1										

		TECHNICAL SANDS - Company Standard PN-04-2017 (Extract)					
		Table 1. Quality Category					
		Brand Name					
Fraction (mm)	ST 01/06	ST 03/08	ST 05/10	ST 06/12	ST 10/40	ST 03/30	
	Fraction (%)						
above 4,0	max 25,0	max 10,0	0,00	max 10,0	max 5,0	max 3,0	
3,15					min 90,0		
1,25							
1,00		min 85,0	max 10,0	min 80,0	max 5,0		
0,80							
0,63	min 75,0						
0,50	min 73,0		max 10,0				
0,315		max 5,0					
0,20							
0,10		max 15,0			max 5,0		
undersize	max 2,0						
SiO ₂ (%) min	99,2						
Fe ₂ O ₃ (%) max	0,04		0,10				
washed matter (%) max	1						

GLASS SANDS COARSE

Sands with extremely high content of SiO₂ are an exclusive raw material for the glass industry, for the silicate chemistry products and for a wide range of use in other industrial areas. The sands are being sold wet or dried, in bulk or in bags, transported on trucks or wagons.

GRANULARITY AND OTHER CHARACTERISTICS

	ST 08	ST 10	ST 15	ST 40	Method
Middle Grain Size (d50)	0,33	0,33	0,32	0,24 mm	screening
AFS	41,7	42	43	61	screening
Bulk Weight	1,43	1,43	1,46	1,48 t/m ³	
> 800 µm				%	screening
> 630 µm	0,1	0,1	0,1	0,2 %	screening
> 500 µm	2,1	2,2	2	1,8 %	screening
> 400 µm	15,32	13,6	13,9	5,7 %	screening
> 315 µm	38,7	38,6	36,6	14,2 %	screening
> 200 µm	41,7	42,8	42,8	42,8 %	screening
> 100 µm	2,1	2,6	4,6	34,4 %	screening
< 100 µm	0,1	0,1	0,2	1 %	screening

CHEMICAL ANALYSIS (RFA) %

	ST 08	ST 10	ST 15	ST 40
SiO ₂	99,7	99,7	99,7	99,7
Fe ₂ O ₃	0,008	0,010	0,015	0,040
Al ₂ O ₃	0,08	0,09	0,20	0,30
TiO ₂	0,02	0,02	0,05	0,13

PHYSICAL CHARACTERISTICS

Density (g/cm ³)	2,65	Humidity in a wet state (%)	8,0 max
Hardness, Mohs	7	Humidity in a dry state (%)	0,2 max
Loss by annealing (%)	0,08 - 0,25	pH	7,3

Střeleč silica sands are improved natural raw materials. The above-mentioned information is based on average values. The data should be considered as indicative. Occurrence of coarser or finer fractions in trace quantities is possible. The user should test the product and consider, whether it is suitable for the desired purpose. On the customer's request we can discuss the tolerances of the products data. Sale and delivery is always based on agreed commercial conditions and relevant company standard or a quality agreement.

GLASS SANDS FINE

Sands with extremely high content of SiO₂ are an exclusive raw material for the glass industry and a wide range of use in other areas. The sands are being sold wet or dried, in bulk or in bags, transported on trucks or wagons.

GRANULARITY AND OTHER CHARACTERISTICS

	STJ 06	STJ 09	STJ 12	STJ 25		Method
Middle Grain Size (d50)	0,22	0,22	0,20	0,22	mm	screening
AFS	63,8	65	69	66		screening
Bulk Weight	1,41	1,43	1,41	1,41	t/m ³	
> 500 µm					%	screening
> 400 µm	0	0	0,1	0,1	%	screening
> 315 µm	1,7	1,7	2	2,3	%	screening
> 200 µm	61,9	59,5	49,9	55,2	%	screening
> 100 µm	35,4	37,3	46,1	41	%	screening
> 63 µm	1	1,4	1,9	1,3	%	screening
< 63 µm	0,1	0,1	0,1	0,1	%	screening

CHEMICAL ANALYSIS (RFA) %

	STJ 06	STJ 09	STJ 12	STJ 25
SiO ₂	99,7	99,7	99,7	99,7
Fe ₂ O ₃	0,006	0,009	0,012	0,025
Al ₂ O ₃	0,09	0,08	0,12	0,30
TiO ₂	0,02	0,03	0,03	0,15

PHYSICAL CHARACTERISTICS

Density (g/cm ³)	2,65	Humidity in a wet state (%)	8,0 max
Hardness, Mohs	7	Humidity in a dry state (%)	0,2 max
Loss by annealing (%)	0,06 - 0,25	pH	7,3

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PREMIUM GLASS SANDS

GRANULARITY AND OTHER CHARACTERISTICS

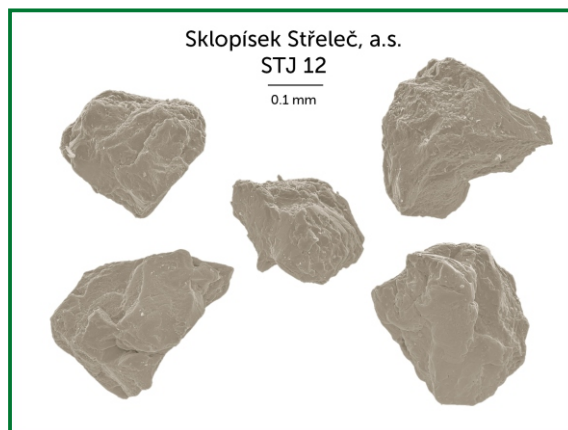
	STJ 06	STJ 09	STJ 12	ST 08	ST 10	
Middle Grain Size (d50)	0,22	0,22	0,20	0,33	0,33	mm
Bulk Weight	1,41	1,43	1,41	1,43	1,43	t/m ³
> 800 µm						%
> 630 µm				0,1	0,1	%
> 500 µm				2,1	2,2	%
> 400 µm	0	0	0,1	15,32	13,6	%
> 315 µm	1,7	1,7	2	38,7	38,6	%
> 200 µm	61,9	59,5	49,9	41,7	42,8	%
> 100 µm	35,4	37,3	46,1	2,1	2,6	%
> 63 µm	1	1,4	1,9			%
< 63 µm	0,1	0,1	0,1	0,1	0,1	%

CHEMICAL ANALYSIS (RFA) %

	STJ 06	STJ 09	STJ 12	ST 08	ST 10
SiO ₂	99,7	99,7	99,7	99,7	99,7
Fe ₂ O ₃	0,006	0,009	0,012	0,008	0,010
Al ₂ O ₃	0,09	0,08	0,12	0,08	0,09
TiO ₂	0,02	0,03	0,03	0,02	0,02

PHYSICAL CHARACTERISTICS

Density (g/cm ³)	2,65	Humidity in a wet state (%)	8,0 max
Hardness, Mohs	7	Humidity in a dry state (%)	0,2 max
Loss by annealing (%)	0,06 - 0,25	pH	7,3



FOUNDRY SANDS

Sands with high content of SiO_2 and favourable granularity are an exclusive raw material in the foundry industry for the sand casting and for production of sand core. Foundry sands are widely used in the building chemistry for production of bonding cements, levelling and joint compounds, special building mortars and plasters. Furthermore these sands are used for the natural lawn aeration. The sands are being sold wet or dried, in bulk or in bags, transported on trucks or wagons.

GRANULARITY, PHYSICAL AND OTHER CHARACTERISTICS

	ST 52	ST 53	ST 54	ST 55	ST 56		Method
Middle Grain Size (d50)	0,32	0,26	0,22	0,19	0,15	mm	screening
Beginning of sintering	1550	1550	1550	1550	1550	°C	
PH	7	7,5	7,4	7,8	7,5		
AFS	43,4	55,4	64,4	82,2	107		screening
Washed matter	0,09	0,16	0,05	0,04	0,06	%	
Loss by annealing	0,11	0,22	0,22	0,25	0,26	%	
Bulk Weight	1,48	1,48	1,47	1,48	1,48	t/m ³	
> 800 µm						%	screening
> 630 µm	0,1	0,1	0,1			%	screening
> 500 µm	1,7	0,8	0,5	0,13	0,01	%	screening
> 400 µm	12	6,1	3,3	1	0,6	%	screening
> 315 µm	37	22,6	12	5,1	2,8	%	screening
> 200 µm	45	47	43,3	36,6	21,3	%	screening
> 100 µm	3,9	22,5	40	47,3	53	%	screening
> 63 µm	0,1	1,00	1,2	7,6	16,4	%	screening
< 63 µm				2,2	5,8	%	screening

CHEMICAL ANALYSIS (RFA) %

	ST 52	ST 53	ST 54	ST 55	ST 56
SiO_2	99,3	99,2	99,2	99,0	99,0
Fe_2O_3	0,04	0,04	0,04	0,07	0,09
$\text{K}_2\text{O} + \text{Na}_2\text{O}$	0,1	0,1	0,1	0,1	0,2
$\text{CaO} + \text{MgO}$	0,1	0,1	0,1	0,1	0,2
Density (g/cm ³)	2,65			Humidity in a wet state (%)	8,0 max
Hardness, Mohs	7			Humidity in a dry state (%)	0,2 max

Střeleč silica sands are improved natural raw materials. The above-mentioned information is based on average values. The data should be considered as indicative. Occurrence of coarser or finer fractions in trace quantities is possible. The user should test the product and consider, whether it is suitable for the desired purpose. On the customer's request we can discuss the tolerances of the products data. Sale and delivery is always based on agreed commercial conditions and relevant company standard or a quality agreement.

TECHNICAL SANDS

Sands with extremely high content of SiO_2 are an exclusive raw material at water treatment for filtration of drinkable and technological water and for a wide range of use in the construction, for the investment casting technology. These sands are also used in the building industry as filler into the industrial floors and for the sand blasting of the concrete and steel constructions. Furthermore the technical sands are used for the artificial sports grass backfilling. Technical sand with low content of Fe_2O_3 is an exclusive raw material for the electro-technical industry as an extinguisher for high-voltage fuses, as a filling and insulating material for electrical heating bodies and for other wide ranges of use. The sands are being sold dried, in bulk or in bags, transported on trucks or wagons.

GRANULARITY AND OTHER CHARACTERISTICS

	ST 01/06	ST 03/08	ST 03/30	ST 05/10	ST 06/12	ST 10/40	Method	
Middle Grain Size (d50)	0,43	0,59	1,7	0,73	0,9	2,5	mm screening	
AFS	31	23,4	8	20,3	14,5	5,4	screening	
Bulk Weight	1,52	1,5	1,5	1,5	1,52	1,55	t/m ³	
> 4000 μm	0	0	0	0	6,1	0	% screening	
> 3150 μm							% screening	
> 1250 μm							98,9	% screening
> 1000 μm								% screening
> 800 μm	7,1	5,8	99,2	4,5	91,7	1,1	% screening	
> 630 μm								% screening
> 500 μm	90,8	92,5			85,3		2	% screening
> 315 μm								
> 200 μm		1,7	0,8	10,2		% screening		
> 100 μm						2		% screening
< 100 μm	0,1					% screening		

CHEMICAL ANALYSIS (RFA) %

	ST 01/06	ST 03/08	ST 03/30	ST 05/10	ST 06/12	ST 10/40
SiO_2	99,2	99,4	99,2	99,2	99,2	99,2
Fe_2O_3	0,04	0,04	0,1	0,022	0,03	0,03

PHYSICAL CHARACTERISTICS

Density (g/cm ³)	2,65	Humidity (%)	0,2 max
Hardness, Mohs	7	pH	7,2
Loss by annealing (%)	0,1 - 0,3		

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MICRO-MILLED SANDS

The micro-milled sands – silica flour are produced by milling in a ironless environment, by classification with use of air separators. The raw material used for the production of micro-milled sands – silica flour is treated silica sand with SiO₂ content above 99 %. The chemical purity, favourable particle size distribution, chemical inertia and hardness of micro-milled sands – silica flour is appreciated in the production of glass fibres, ceramic enamels, glazes, as a filler in plastics, in the production of special mortar mixtures, tile adhesives and in the foundry industry for the production of moulds. The sands are being sold dried, in bulk or in bags, transported on trucks or wagons.

GRANULARITY AND OTHER CHARACTERISTICS

	ST 2	ST 6	ST 7	ST 8	ST 9		Method
Middle Grain Size (d50)	27	16	12	9	6	µm	laser
Specific surface	2900	3800	4110	4250	7900	cm ² /g	blaine
Oil-absorption no.	33,9	36,2	37,1	39,1	40,5	ml/100g	
Bulk Weight	1,19	0,99	0,99	0,93	0,92	t/m ³	
> 90 µm	5,5					%	screening
> 63 µm	13,4					%	screening
> 45 µm		6,2	3,5	1,9	0,19	%	screening
> 40 µm	20					%	screening
> 45 µm	31	10	4,5	0,7	0,2	%	laser
> 40 µm	35	15	9	2	0,6	%	laser
> 32 µm	44	23	17	7	2	%	laser
> 20 µm	58	43	33	22	10	%	laser
> 15 µm	66	52	43	33	17	%	laser
> 10 µm	73	63	57	48	29	%	laser
> 5 µm	83	76	69	64	46	%	laser
> 2 µm	93	90	83	79	71	%	laser
> 1 µm	97	96	95	95	93	%	laser

CHEMICAL ANALYSIS (RFA) %

SiO ₂	99,6	CaO + MgO	0,1
Fe ₂ O ₃	0,05	Na ₂ O + K ₂ O	0,1
Al ₂ O ₃	0,2		

PHYSICAL CHARACTERISTICS

Density (g/cm ³)	2,65	Humidity (%)	0,2 max
Hardness, Mohs	7	pH	6,4
Loss by annealing (%)	0,2		

Střeleč silica sands are improved natural raw materials. The above-mentioned information is based on average values. The data should be considered as indicative. Occurrence of coarser or finer fractions in trace quantities is possible. The user should test the product and consider, whether it is suitable for the desired purpose. On the customer's request we can discuss the tolerances of the products data. Sale and delivery is always based on agreed commercial conditions and relevant company standard or a quality agreement.

OTHER SANDS

ST 92

Fine sand, product of a silica raw material wet treatment. Granularity and chemical content are not guaranteed. Main fractions are 0,063 – 0,4 mm and represent 80% of the weight. Sand humidity at the delivery is up to 8%. It is suitable for technical purposes. It's suitable first of all for horse ridding sports.

ST 93

Coarse sand, product of a silica raw material wet treatment. Granularity and chemical content are not guaranteed. Main content of grains larger than 0,315 mm accounts for approximately 35 % or more of weight. Sand humidity at the delivery is up to 8%. It is suitable for technical purposes.

ST 97

Natural sand. Granularity and chemical content are not guaranteed. Main fractions are 0,1 – 2,5 mm and represent 70% of the weight. It can contain some amount of sandstone clots. Sand humidity at the delivery is up to 8%. It is suitable for technical purposes.

Above mentioned data are only indicative.

SPORT SANDS -

Sands SportTop are suitable for sport surfaces, details in Sport Sands Catalogue.