

Quantz®

The Next Generation of cement bonded materials!

Quantz is the Next Generation of cement bonded high tech materials with outstanding steel and ceramic like properties.

REFERENCES

G.tecz's clients are located worldwide. The material and the application range is large and starts with design objects, like the concrete-lace from the well known designer Doreen Westphal located in Eindhoven, pre-cast companies in The Netherlands and Germany that are producing facade elements or curbstones, machinery industry located in Germany that is building high-temperature ovens with Quantz to American clients that are producing facade systems and furniture. Clients are also located in Austria, Swiss, Spain, Romania, ...

AIM

Our aims are made-to-measure solutions for every individual client, product or production: developed fast, cost-effective, sustainable and industry compatible. One solution for everybody and everything - that's NOT our concept.

EXAMPLE

The following examples will show you characteristic mechanical properties of two Quantz developments: First one made for a company in The Netherlands and the second one for a special application where high compressive strength is needed.

Quantz Q156

Compr. Strength 7d	156 MPa
Flex. Strength 7d	19 MPa
Water/Cement Ratio	0.292
Slump (small cone)	29 cm
Density	2.38
Total Porosity	4 Vol.%
Permeability	n.m.
Pumpable	yes
Mixing Time	3-5 Min.
Application:	pre-cast elements Monolithic pre-cast bridge

Quantz Q300

Compr. Strength 28d	305 MPa	
Flex. Strength 28d	45 MPa	
Water/Cement Ratio	0.23	
Slump (small cone)	25 cm	
Density	2.65	
Total Porosity	n.m.	
Permeability	n.m.	
Mixing Time	5-6 Min.	n.m - not measureable
Application:	Security industry	



COMPARISON

The comparison between regular concrete, High-Performance concrete, Ultra-High Performance Concrete and Quantz will show the difference.

	regular concrete C38	HPC C100	UHPC	Quantz
Cement content	low	middle	high	middle
Silica fume content	-	low	high	low
Fines	-	low	middle	high
Coarse Aggregates	high	middle	low	low - high *)
Water Cement Ratio	0.5	0.33	0.24	0.19 - 0.40 *)
Workability	high	middle	low	earth-moist - fluid *)
Compr. Strength after 28d	45	100	145	80 - 300 *)
Compr. Strength after 56d	45	110	160	100 - 300 *)
Flex. Strength after 28d	35	6	13	6 - 25 *)
Density	2.36	2.48	2.45	2.3 - 2.7 *)
Porosity Vol.%	15.0	8.3	6.0	4.5 - n.m. *)
Permeability	high	middle	low	n.m.
Water absorption coefficient	high	middle	low	n.m.
Fire resistance	middle	middle	low	high - very high
Freeze Thaw Resistance	low	middle	high	high - very high
Prize per m ³	low	middle	high	low - middlel *)

Comparison between regular concrete, High-Performance Concrete, Ultra-High Performance Concrete (UHPC) and Quantz.

n.m. - not measurable; *) adjustable

MATERIAL PROPERTIES

The range of the mechanical properties for the fresh or hardened Quantz is comprehensive. G.tecz develops about ⁶ to ⁸ Quantz recipes per month - that are all individual:

COMPRESSIVE STRENGTH can be adjusted regarding demands and depends on raw-materials, reinforcement and production processes. Quantz is starting with ⁸⁰ MPa up to ³⁰⁰ MPa and for special applications up to ⁵⁰⁰ MPa.

FLEXURAL STRENGTH within a young age starts with ⁶ MPa up to ²⁰ MPa without fibres. In combination with fibres, ⁴⁰ MPa or more are realizable.

SLUMP of Quantz can be adjusted. About ⁹⁵ cm for fluid Quantz including fibres within t_{500} ^{4,5} seconds is possible.

DENSITY can vary between ^{0,6} (e.g. with Aerogel) up to ^{2,75} kg/dm³ with fibres.

WORKFLOW & SERVICE

Only a few steps are necessary: The first common step is always to fix the aim, the specification of the concrete class regarding mechanical demands and national codes. This goes along with the analysis of production facilities and handling of the raw materials, concrete and e.g. formwork. G.tecz analysis the raw materials in the lab with special equipment and optimizes the material. Test series will show the materials properties. The recipe will be transferred to your company and G.tecz will accompany you while the first production due to a final adaptation of the recipe. Services, like adaptation of the recipe in case of changing raw materials or our hotline are included and part of the aimed long-term relationship between our companies.

YOUR individual Quantz

This reference shows the enormous ecological and economical potential of Quantz. Please contact G.tecz for further information.

