

# QuantumPERFORMANCE

## UHPC

### Concrete Add-on

Add-on **QuantumPERFORMANCE** is used in concretes to improve the rheological properties of fresh concretes, use own raw materials.

Depending on the amount of product added, the flow properties of the fresh concrete can be significantly improved. As a result of the improved flow properties, up to 50% of the superplasticizer content can be saved, particularly in the case of UHPCs. Furthermore, the water content can be reduced due to the improved flow properties, which has a positive effect on the w/c ratio and the strength development. This makes it possible to save and reduce the cement content and thus the CO<sub>2</sub> emissions of the concrete mix.

### ADVANTAGE

- Reduces the carbon footprint and can increase strength
- Cost reduction of UHPC
- (between 15% and 30% compared to ready mixes)
- Increase in packing density
- Easier processing (reduction of superplasticizer possible)
- Increased mechanical properties (compression and flexural strength)
- Stable product quality (no raw material fluctuations)
- Reduction of expensive raw materials, such as silica.

### CO<sub>2</sub> REDUCTION

40%

### PRIMARY ENERGY REDUCTION

20%

### REDUCE CEMENT

Up 40%

### REDUCE SUPERPLASTICIZER

Up 50%

### QUALITY

Increased

### WORCABILITY

Increased

### COST

Reduced

### CONCRETE UHPC

### COLORE

White

## TECHNICAL PARAMETERS

(YOUR Raw MATERIAL + ADD-on = UHPC)

- compressive strength: up to 230 MPa with fibers
- compressive strength: 180MPa (28d) with high energy mixer
- compressive strength: 120MPa - 150MPa (28d) with simple compulsory mixer or planetary mixer
- flexural strength (matrix): up to 19 MPa with high energy mixer
- flexural strength (reinforced) up to 75 MPa
- fracture energy 50 - 90 kN/m
- possible unit thickness > 5 mm
- carbonating 1.5 mm after 3 years
- chloride-diffusion: no capillary pores, not measurable with standard methods
- water resistance: no capillary pores, not measurable with standard methods
- frost-resistance < 100 g/m<sup>2</sup>
- shrinkage 1 - 1.5 ‰
- crack width << 0.1 mm
- density 2.300 kg/m<sup>3</sup>



## BASIC UHPC QuantumPERFORMANCE FOTRULATION

Cement	CEM I 52,5 (N or R)	600 to 800 kg/m <sup>3</sup>
Quartz or limestone fines		90 to 280 kg/m <sup>3</sup>
Quarty Fine Sand	0.2 – 0.7 mm	1000 to 1100 kg/m <sup>3</sup>
Water		185 to 195 kg/m <sup>3</sup>
Superplasticizer	PCM (fluid)	35 kg/m <sup>3</sup>
<b>QuantumPERFORMANCE</b>		125 to 315 kg/m <sup>3</sup>

### Option:

Glass Fiders	6 to 12 mm	26.5 to 53 kg/m <sup>3</sup>
Steel Fiders	12 mm	115 to 230 kg/m <sup>3</sup>

**QuantumFusion** — your technology partner for working with white UHPC

At **QuantumFusion**, we understand that working with UHPC is more than just purchasing a material — it's a complete process where every detail matters. That's why we offer not only high-quality white UHPC mix, but also full technical support.

Our team helps set up production, adapt the mix design to your specific needs, train your staff, and ensure consistent quality at every stage. We're with you from the first batch to full-scale production — so you get not just a product, but confidence in the result.

**QuantumFusion** — UHPC with intelligence, experience, and support.

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**SOLVING CONCRETE  
CHALLENGES,  
BUILDING  
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