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FuturZement C.1 | FuturBeton C.1

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 $\begin{array}{c} \textit{nanostructured cement/concrete} \\ \textit{high strength} \Leftrightarrow \text{CO2-low} \Leftrightarrow \text{super durability} \end{array}$



- from slag to high performance concrete -

01 drying & pre-milling of slag to Ground Granulated Blastfurnace Slag (GGBS)

- drying of slag by conventional drying techniques (oven etc.), remaining humidity should be < 1%
- pre-milling in a common drum ball mill (e. g. Zoz), processing time about 4 h (low-cost process)

02 super-activation of GGBS to HKP-GGBS

- High Kinetic Processing (HKP) utilizing a continuously operating Simoloyer[®] (Zoz, -s1 series + cement appl.)
- closed carrier-gas circuit (air) at zero emission with automatic charging & discharging

03 mixing FuturZement from OPC and HKP-GGBS

- mixing HKP-GGBS with Ordinary Portland Cement CEM I 52,5 R in a 30:70 ratio
- mixing approx. 3-5 min utilizing a ploughshare-mixer (e. g. Loedige)

04 composition of FuturBeton

- FuturZement, grit, gravel, sand, water and superplasticizer (Glenium[®] SKY, PCE-based, BASF Co.)
- water should preferably not contain accelerating ions, common concrete reinforcement possible

05 mixing FuturBeton

- in a common plate concrete mixer:
- a. add aggregates (grit, gravel, sand) and FuturZement, mix dry until the mixture is homogeneous (5-10 min)
- b. add water and mix shortly to disperse (ca. 5-10 min)
- c. add super-plasticizer and mix until slurry is homogeneous and smooth (5-10 min)

06 casting of FuturBeton

- form prepared with mould talcum powder, preferably at ambient temperature, casting by buckets or other
- densification & mould-degassing on a vibratory plate or inject mobile vibrating unit into slurry (5-10 min)

07 encasing of FuturBeton

- at a curing time of < 15 h, encasing can be done after 16 h at the high early strength of > 25 MPa !
- post-processing of the virtually shiny surface and transportation after 1 day !

08 the product FuturBeton

- after setting, the concrete binder matrix becomes stronger than the aggregates !
- light blue colored matrix due to GGBS will turn grayishwhite at air







	0.2%			TEN
FuturZement	6 79/			124
sand 0/2	0,1 %	17,3%		500
rhine gravel 2/8	31,1%			e ch
grit 8/16			31,6%	THEY
Glenium SKY 592	13.2%			D.K.
Water	10,278			A.S.A
				HAY.







