VELTER

LOW-CARBON CONCRETE

Greener future now.

TECHNICAL DESCRIPTION

Higher durability. Less carbon.

INTERBETON
A TITAN GROUP COMPANY

TITAN EDGE
WHERE PERFORMANCE MEETS SUSTAINABILITY

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LOW-CARBON CONCRETE

Technical Description

INTERBETON Building Materials S.A. introduces to the Greek market the innovative family of low-carbon concretes under the commercial name VELTER™ Low Carbon Concrete. The VELTER™ products comply with all general and specific requirements of the Concrete Technology Regulation (Government Gazette 1561, June 2, 2016 – hereinafter referred to as CTR 16) for the execution of concrete works.

In particular, VELTER™:

- Is a ready-mix, normal-weight concrete with an approximate density of 2,375 kg/m^3, in accordance with the limits of CTR 16 (A1.3.1: from 2,000 kg/m^3 to 2,600 kg/m^3).
- Is available in compressive strength classes C20/25, C25/30, and C30/37 (Table A1-1 of CTR 16).
- Complies with the normative references cited in section A2.1 of CTR 16.
- Is produced at permanent concrete batching plants and delivered wet to the construction site. The project owner, through their designated supervisors, inspects the wet concrete on site. However, they do not have access to details regarding the raw materials, mix design, or production processes (CTR 16, Chapter A3 – Terms and Definitions, section A.3-1.22).
- Is produced using the following materials:
  - Cement types that meet the requirements of EN 197-1, bear the CE marking as per the standard and Article 9 of Regulation (EU) 305/2011. All cement types listed in Tables 1 and 2 of EN 197-1 are made exclusively from raw materials sourced or processed in Greece (e.g., fly ash).
  - Aggregates that meet the requirements of EN 12620 and bear the CE marking as per the same standard and Regulation (EU) 305/2011. They also fulfill the geometric (B1.3.2), physical (B1.3.3), chemical (B1.3.4), and additional (B1.3.5) specifications outlined in CTR 16.
  - Mixing water that meets the requirements of EN 1008.
  - Chemical admixtures that comply with EN 934-2 and bear the CE marking as specified in Regulation (EU) 305/2011.
- The mix designs of VELTER™ have been specifically developed to ensure consistent quality, good workability for efficient pumping, placing, and compaction using standard equipment. The concrete exhibits the strength, durability, and additional properties described in the product datasheet available on our website: https://interbeton.gr/proionta-kai-ypiresies/proionta-skyrodematos-gia-viosimes-kataskeves/velter/
- Ordering of VELTER™ concrete follows CTR 16 protocols. The buyer receives concrete that meets the standard's specifications, including compressive strength class, consistency class, maximum aggregate size, and exposure class, as defined in Table B2-7 – Concrete Requirements by Exposure Class, and chloride content class, as defined in Table B2-2 of CTR 16.
- Transport and delivery are conducted in accordance with CTR 16 – Chapter B4 (Transport and Delivery).
- Quality control is carried out in accordance with Chapter C – Concrete Inspection and Reinspection of CTR 16.
- Construction requirements for concrete works using VELTER™ do not differ from those set out in CTR 16 and cover:
  - Formwork and scaffolding (D1)
  - Construction details (D2)
  - Concrete placement (D3)
  - Compaction (D4)
  - Curing (D5)
  - Concreting under high (D6) or low (D7) temperatures
- INTERBETON Building Materials S.A. is responsible for the properties of VELTER™ in both fresh and hardened states, including consistency, compressive strength, and exposure class, as defined in Chapter E – Responsibilities, CTR 16.

Production

VELTER™ is produced at the concrete batching plant and transported to the site using ready mixed trucks. Its production and delivery comply with CTR 16 and the procedures defined by our company's Unified Management System.

VELTER™ is a performance concrete engineered for low heat of hydration, specifically developed for mass concrete applications.
Its optimized binder composition controls peak temperature development and limits thermal gradients during hydration, significantly reducing the risk of early-age thermal cracking.
VELTER™ supports stable strength development, improved volumetric stability, and enhanced long-term durability in large structural elements such as rafts, foundations, thick sections, and infrastructure works.

Technical Specifications

VELTER™ ready-mix concrete series

	C20/25	C25/30	C30/37	C35/45
Slump class S4	●	●	●	●
Maximum aggregate size 31.5 mm	●	●	●	●
Maximum aggregate size 16 mm		●	●	●
Option for crystalline admixture			●	●

All VELTER™ mix design studies are accompanied by environmental performance certificates,available on the website interbeton.gr

Product	Density (Kg/m^3)	Cement	Aggregates	Water	Chemical Admixtures
VELTER	2,392	12-16%	72-76%	6-8%	0,17-0,20%

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Applications

VELTER™ concrete is suitable for use in reinforced concrete structural elements, such as:

- Shear walls
- Columns
- Beams
- Slabs
- Cantilevers

Surface Requirements

If the project specifications require fair-faced / exposed concrete, the following recommendations apply:

1. Use non-absorbent, well-insulated formwork to achieve a smooth and uniform surface tone. Areas with high absorption or leakage will produce darker, matte finishes.
2. Select the appropriate release agent based on mock-up testing.
3. Use suitable spacers to avoid visible marks or reinforcement “ghosting” on the surface.
4. Provide access points within the reinforcement for the pump hose to enter the formwork.
5. Ensure all formwork is of equal quality and usage count to maintain color uniformity. A smoother formwork surface yields a lighter final concrete shade than a rougher one.
6. Clearly plan and execute joints using appropriate formwork materials (e.g., fillets).

Application Process

Transport – Delivery:

1. Prior to discharge, the concrete must be agitated at high speed for at least 2 minutes.
2. When discharging directly from the truck mixer, the distance from the chute to the concrete surface must not exceed 50 cm.

Pumping:

1. The concrete pump must be clean.
2. Lubrication of the pump is recommended using a cement slurry. The first mix after lubrication should be discarded to prevent contamination.
3. The pump must be equipped with appropriately sized hoses that can enter the formwork via the designated access points.
   For vertical elements, the hose outlet should remain within 50 cm of the concrete surface to prevent surface contamination.
4. Pumping should be slow and continuous. The system should be of the “S-pipe” type to minimize free-fall height.
5. The hopper must remain full throughout the pumping process.

Weather Conditions

VELTER™, like any conventional concrete in CTR 16, must not be produced or placed during adverse weather conditions (e.g., heatwaves, frost, rain), as defined by the current Concrete Technology Regulation.

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