BUILDING TRUST

PRODUCT DATA SHEET

# NaX® Q125-F

Ultra high performance cementitious grout

## DESCRIPTION

NaX® Q125-F is supplied as a ready to use cement-based fiber-reinforced dry powder system. On mixing with controlled amount of potable water, it produces a flowable, cohesive ultra-high performance cementitious (UHPC) mix, which develops high compressive strength in short period of time. With proper curing, the hardened product has a unique combination of superior technical characteristics including ductility, strength, and durability, while providing highly moldable high-quality surface aspect.
NaX® Q125-F possesses superior mechanical strengths and stiffness with higher cracking resistance, compared to high-performance concrete (HPC). Unlike HPC, which is weak in tension with no ductility, the product is designed for high tensile strength and possesses tensile ductility with stain hardening behavior, such that the ultimate strength is higher than the plain material strength (first-crack strength). This enables traditional volume of reinforcing steel bars to be reduced, or in some cases, eliminating them. Furthermore, the UHPC mix is designed for good flowability with high inherent cohesiveness to facilitate material placement in narrow formworks without segregation, enabling production of thin shell structure and slimline architectural profiles.
NaX® Q125-F is based upon an advanced nano-engineered binder technology, which is composed of special blends of Portland cements, pozzolan cements and special cements, to produce a high quality structural cementitious material.
NaX® Q125-F is chloride-free, shrinkage-compensated and exhibits low water permeability and high resistance to aggressive ion penetration.

## USES

NaX® Q125-F is suitable for structural repairs to marine structures, bridges, columns, etc. It is also conducive for use in the following repair works where single placing is in excess of 10 mm thickness:
- Bridge columns and beams
- Jetty piles
- Concrete piling
- Spillways
- Dams

NaX® Q125-F can be applied by gravity pour or mechanical pumping.

## CHARACTERISTICS / ADVANTAGES

- Tensile ductility with stain hardening
- Good flowability
- High early strength
- Shrinkage compensated
- High Young's modulus
- Excellent fatigue resistance
- No segregation or bleeding

## PRODUCT INFORMATION

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|---|---|
| **Packaging** | ▪ 25 kg bag<br>▪ Coated jumbo big bags between 500 kg to 1500 kg |
| **Shelf Life** | 12 months from date of production |
| **Storage Conditions** | Stored in a sheltered and dry place in its original packaging. |

## TECHNICAL INFORMATION

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|---|---|---|---|
| **Compressive Strength** | 1 day | > 65 MPa | (EN 12390-3, ASTM C109, EN 1015-11) Based on 75 mm & 50 mm cube, 40×40×160 mm prism |
| | 3 days | > 85 MPa | |
| | 7 days | > 110 MPa | |
| | 28 days | > 135 MPa | |
| | 56 days | > 140 MPa | |
| **Tensile Strength in Flexure** | First crack | 17 MPa | (EN 1015-11) Based on 40×40×160 mm prism |
| | Ultimate | 24 MPa | |
| **Tensile Strength** | ~8.0 MPa | | (ASTM C307) |
| **Shrinkage** | < 0.15 ‰ at 91 days | | (ASTM C1090) |
| **Chloride Ion Diffusion Resistance** | < 200 Coulomb (Very low penetrability) | | (ASTM C1202) |
| **Porosity** | Air content < 2.5 % | | (EN 1015-7) |
| **Reaction to Fire** | Class A1 (Non-combustibility & Heat of combustion) | | (EN 13501-1) |

## APPLICATION INFORMATION

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|---|---|---|---|
| **Fresh Mortar Density** | 2.39–2.45 | | |
| **Layer Thickness** | 10 mm min. / 300 mm max. | | |
| **Flowability** | Initial | 290–310 mm | (ASTM C1437) |
| | 1 hour | 270–290 mm | |
| **Mixing Ratio** | Approx. 10.0–11.5 % by mass of powder, depending on temperature during application. | | |
| **Substrate Temperature** | +15 °C min. / +35 °C max. | | |
| **Setting Time** | Initial | 4–5.5 h | (EN 196-3) |
| | Final | 5–7 h | |

## BASIS OF PRODUCT DATA

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

## ECOLOGY, HEALTH AND SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

## LEGAL NOTES

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