



## TECHNICAL DATA SHEET – DUCORIT® S5<sub>R</sub> ULTRA HIGH PERFORMANCE GROUT

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### PRODUCT DESCRIPTION

The ultra high performance grout, Ducorit S5<sub>R</sub> is used for structural grouted connections in wind turbine foundations and oil & gas installations - both offshore and onshore. Ducorit S5<sub>R</sub> is characterised by ultra high strength and stiffness, making it a strong structural component.

Using Ducorit S5<sub>R</sub> does not require special precautions with respect to environmental hazards.

### PUMPABILITY

Ducorit S5<sub>R</sub> is pumpable up to several hundred metres through hoses between 2" and 5". Due to viscosity and high inner cohesion of the mixed material, there is no risk of washing out cement particles, separation or mixture with water when cast below sea level.

### EARLY STRENGTH DEVELOPMENT

Ducorit S5<sub>R</sub> develops a significant early strength. After 24 hours of curing at 20°C (68°F), the strength reaches approximately 40% of the 28-day value. The early strength is even more significant with regard to the material stiffness.

### FATIGUE

Due to the ultra high strength and durability of Ducorit S5<sub>R</sub> the fatigue strength is outstanding compared to normal concrete. As fatigue strength depends upon the static strength of concrete, the fatigue strength of Ducorit S5<sub>R</sub> can be up to more than five times the strength of normal concrete.

PROPERTIES	DUCORIT® S5 <sub>R</sub>
Compressive strength $f_c^2$ - MPa/psi	130 / 18,850
Static modulus of elasticity $E_c$ - GPa/ksi	55 / 8,000
Dynamic modulus of elasticity $E_d$ - GPa/ksi	60 / 8,700
Tensile strength $f_t$ - MPa/psi	7 / 1,000
Flexural strength $f_{bt}^*$ - MPa/psi	18 / 2,600
Density $\rho$ - kg/m <sup>3</sup>	2382
Poisson's ratio $\nu$	0.19
Consistency class <sup>1)</sup>	a2
Compressive Strength class <sup>3)</sup>	C110/125
Compressive Strength class (24h) <sup>1)</sup>	Class A
Shrinkage <sup>1)</sup> $\epsilon_{s,m,91}$	SKVB 0 (-)
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(Minimum 28 days curing at 20°C).

<sup>1)</sup> DAFStb-Richtlinie Herstellung und Verwendung von zementgebundenem Vergussbeton und vergussmörtel (Juni 2006).

<sup>2)</sup> Note that the stipulated values are mean values, based on 75x75 mm cubes.

<sup>3)</sup> Strength class refers to characteristic strengths on respectively 150x300 cylinders and 150x150 mm cubes.

Quality checked by

