Densit

TECHNICAL DATA SHEET – DUCORIT® $S5_R$ ULTRA HIGH PERFORMANCE GROUT

Revised: 01/2021

PRODUCT DESCRIPTION

The ultra high performance grout, Ducorit $S5_R$ is used for structural grouted connections in wind turbine foundations and oil & gas installations - both offshore and onshore. Ducorit $S5_R$ is characterised by ultra high strength and stiffness, making it a strong structural component.

Using Ducorit $S5_R$ does not require special precautions with respect to environmental hazards.

PUMPABILITY

Ducorit $S5_R$ 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 $S5_R$ 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 $S5_R$ the fatigue strength is outstanding compared to normal concrete. As fatigue strength depends upon the static strength of concrete, the fatigue strength of Ducorit $S5_R$ can be up to more than five times the strength of normal concrete.

PROPERTIES	DUCORIT® $S5_R$
Compressive strength f_c - MPa/psi[2]	140.7 / 20,407
Static modulus of elasticity E_c- GPa/ksi[2]	56.1 / 8,136
Dynamic modulus of elasticity E_d - GPa/ksi[2]	60 / 8,700
Tensile strength f_t - MPa/ps[2]	8.2 / 1,189
Flexural strength f_{bt}*- MPa/ps[2]	14.9 / 2,161
Hardened Density ρ - kg/m[3 2]	2408
Poisson's ratio v [2]	0.18
Consistency class[1)]	a2
Compressive Strength class[3)]	C110/125
Compressive Strength class (24h)[1]	Class A
Shrinkage1) εs,m,91	SKVB 0 (-)
Shrinkage1) εs,i,91	SKVB 0 (-)

(Minimum 28 days curing at 20°C)

[1] DAfStb-Richtlinie Herstellung und Verwendung von zementgebundenem Vergussbeton und vergussmörtel (Juni 2006).

[2] Values shown above are mean values taken from Ducorit S5R DNV GL TAC TAK0000074

[3] Strength class refers to characteristically strengths on respectively 150x300 cylinders and 150x150mm cubes.

Note: Values show above are mean values, please see Ducorit S5R DNV GL TAC TAK0000074 for characteristic values to be used for design purposes.

Quality checked by

MPA HANNOVER

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