

## PRODUCT DATA SHEET

# SikaGrout®-9800

High strength grout with applied nanotechnology for grouting offshore wind turbine installations

### DESCRIPTION

SikaGrout®-9800 is a shrinkage compensated, cement based grout which when mixed with water, produces a homogeneous, flowable and easy pump able grout with exceptional mechanical and physical properties. Latest best binder packing models and applied cementitious nanotechnology produces a grout with superior technical performance and exceptional rheological properties.

### USES

SikaGrout®-9800 has been especially formulated for large scale, pump applications.

- Grouting of grouted connections in offshore installations, e.g. foundations of wind turbines or oil & gas installations.
- Typical applications are pile-sleeve and stab-in-pile grouted connections, clamp repair, leg filling etc...
- Grouting under very harsh conditions, e.g. offshore applications or below water grouting, at temperatures as low as 2°C or up to 42°C.
- All void filling from 30 mm to 600mm thickness where high strength is important.

Contact the Technical Department of your local Sika office regarding any application required not mentioned here.

### FEATURES

- C90/105 concrete strength class according EN206 and DIN1045
- Can be installed with a continuous mixing and pumping process. Typical output rates of  $\geq 20 \text{ m}^3/\text{hour}$  per mixing unit.
- Quick return to service and removal of temporary supports due to high early strength build-up.  $\geq 40 \text{ MPa @ 24hrs at } 20^\circ\text{C}$ .
- Very good strength gain at low temperatures.
- No segregation or bleeding to ensure consistent physical performance inside the grouted connection, and to prevent pump blockages.
- Excellent fatigue resistance
- No wash-out during below water grouting.
- Pump able over long distances and large heights.
- Specially graded sands and exceptional flow and low friction increases pump output, reduces installation times and costs as well as reducing pump pressures and wear.
- Available as silo material.

### CERTIFICATES AND TEST REPORTS

Certified by Det Norske Veritas (DNV)  
DNV Type Approval Certificate no: TAK00000RW

### PRODUCT INFORMATION

<b>Packaging</b>	SikaGrout®-9800 is supplied by bulk transport and is stored in special job-site silos. Upon request, the material may be available as well in special 1000, 1250 kg kg big bags.
<b>Shelf life</b>	6 months from date of production
<b>Storage conditions</b>	Product must be stored in closed silos or warehouse under dry conditions.
<b>Density</b>	Approximately 2.25 gr/cm3

## TECHNICAL INFORMATION

Compressive strength	<b>N/mm<sup>2</sup></b>	<b>20 °C</b>	<b>5 °C</b>	<b>2 °C</b>	(EN 12390-3)
	3 days	≥ 75	≥ 45	≥ 40	
	7 days	≥ 85	≥ 70	≥ 65	
	28 days	≥ 95	≥ 80	≥ 75	

Results of 100 mm cubes

**Exposure classes:**

XO, XC4, XD3, XS2, XS3, XF3, XA2, WA

(EN 206)

**Characteristic compressive strengths:**

<b>Specimen size</b>	<b>20 °C</b>	<b>5 °C</b>
100 mm cubes	$X_{k(n)} \geq 90 \text{ N/mm}^2$	$X_{k(n)} \geq 80 \text{ N/mm}^2$
150 x 300 mm cylinders	$X_{k(n)} \geq 80 \text{ N/mm}^2$	

Modulus of elasticity in compression	<b>Testing type</b>	<b>Result</b>
	Static elasticity modulus	≥ 30 GPa
	(150x300 mm cylinders)	
	Dynamic elasticity modulus	≥ 35 GPa
	(40x40x160 mm prisms)	
	<b>Poisson ratio:</b>	(ASTM C469)
	0.271	

Flexural-strength	<b>Age</b>	<b>N/mm<sup>2</sup></b>	(EN 12390-5)
	28 days	≥ 10	

Results of 700 x 150 x 150 mm bars

**Characteristic flexural strength:**

$X_{k(n)} \geq 9 \text{ N/mm}^2$

Results of 700 x 150 x 150 mm bars

Shrinkage	<b>Autogenous shrinkage:</b>
	≤ 0.4 mm/m
	Tested according to Schleibinger shrinkage drain method
	Test started 90 minutes after mixing – air sealed samples
	<b>Shrinkage class:</b>
	SKVM 0
	Tested according to DAfStb VeBMR Rili

Bleeding	No bleeding
	<b>Sedimentation stability:</b>
	No sedimentation (in accordance of DAfStb Self compacting concrete, section N.1.2.)

## APPLICATION INFORMATION

Mixing ratio	Approximately 145 lt / 1000 kg powder
Consumption	1000 kg of powder will yield approximately 500 to 525 litre of mixed grout.
Layer thickness	30 - 600 mm
Material temperature	+2 °C min. / +42 °C max.
Ambient air temperature	+2 °C min. / +42 °C max.
Substrate temperature	+2 °C min. / +42 °C max.
Pot Life	≥ 120 minutes
Setting time	≤ 10 hours

