

PRODUCT DATA SHEET

SikaGrout[®]-9650

Bulk supplied, high strength grout with applied nanotechnology for grouting offshore wind turbine installations

DESCRIPTION

SikaGrout[®]-9650 is a shrinkage compensated grout which when mixed with water, produces a homogeneous, flowable and pumpable grout. Latest best binder packing models and applied cementitious nanotechnology produces a grout with superior technical performance, and exceptional rheological properties.

USES

SikaGrout[®]-9650 has been especially formulated for large scale, pump applications.

- For use as high strength grout in offshore foundations like monopiles using bolted connections
- For rock socket structural grouting in offshore applications, or similar.
- Grouting of structural and non-structural parts of offshore wind turbine installations, e.g as skirt backfill
- Grouting under very harsh conditions, e.g. at temperatures as low as 0°C.

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

PRODUCT INFORMATION

Packaging	SikaGrout [®] -9650 is supplied by bulk transport and is stored in special job-site silos or containers. Upon request, the material may be available as well in special 1000 kg big bags.
Shelf life	6 months from date of production. First-in / First-out principle shall however be used.
Storage conditions	Product must be stored in closed silos or warehouse under dry conditions.
Density	Approximately 2.25 gr/cm ³

FEATURES

- Available as silo material.
- Can be applied in the shortest weather windows.
- Excellent strength gain.
- No segregation or bleeding to ensure consistent final physical performance.
- For applications in a wide temperature range.
- Excellent flow and pumping properties reduce installation times and costs.
- Very fast grout installation: limited to no interference with the critical path of the installation vessel.
- Pumpable through 2" grout lines.
- Volume stable.

CERTIFICATES AND TEST REPORTS

Certified by Det Norske Veritas (DNV)

DNV Type Approval Certificate No: TAK0000202

TECHNICAL INFORMATION

Compressive strength	N/mm²	5 °C	10 °C	20 °C	(EN 12390-3)
	8 hours			≥ 5	
	12 hours		≥ 5	≥ 30	
	1 day	≥ 30	≥ 40	≥ 65	
	7 days		≥ 70	≥ 75	
	28 days	≥ 75	≥ 80	≥ 90	
Results of 150 mm cubes					
Characteristic compressive strength:					
Age		20 °C		-1 °C	
28 days		≥ 80 N/mm ²		≥ 80 N/mm ²	
Results of 150 x 300 mm cylinders					
Exposure classes:					
XO, XC4, XD3, XS2, XS3, XF3, XA2, WA					
Modulus of elasticity in compression	Age		GPa		(EN 12390-13)
	28 days		35.6		
	Poisson's ratio:				
0.19					
Flexural-strength	Age	20 °C	-1 °C		(EN 12390-3)
	28 days	≥ 15 N/mm ²	≥ 14 N/mm ²		
	Results of 40 x 40 x 160 mm prisms				
Shrinkage	Restrained shrinkage:				
	Age		mm/m		
	28 days		0.035		
Bleeding	No bleeding				
	Sedimentation stability:				
	No sedimentation (in accordance of DAfStb Self compacting concrete, section N.1.2.)				

APPLICATION INFORMATION

Mixing ratio	140 (± 5) litres / 1000 kg powder	
Consumption	1000 kg powder will yield approximately 485 to 530 litre of mixed grout.	
Layer thickness	50 - 1000 mm	
Material temperature	0 °C min. / +30 °C max.	
Ambient air temperature	0 °C min. / +30 °C max.	
Substrate temperature	0 °C min. / +30 °C max.	
Pot Life	20°C	10°C
	≥ 180 minutes	≥ 240 minutes

BASIS OF PRODUCT DATA

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

FURTHER DOCUMENTATION

Sika Method Statement: SikaGrout®-9650

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.

APPLICATION INSTRUCTIONS

LEGAL NOTES

NOTES ON INSTALLATION

- Sands or other products that could affect the products properties must not be added.
- SikaGrout®-9650 which will be exposed to strong drying conditions, e.g. mortar which is directly exposed to heavy wind and/or direct sunlight, should be protected using appropriate curing agents.
- As the powder may densify over time, especially when the goods are stored on the vessel in the off-shore silos and exposed to many vibrations, the First-in / First-out principle is key to a successful grouting job.

EQUIPMENT

Mixer and pump type	Continuous mixing and pumping system
	Batch mixing system

Operating limitations:

Minimum diameter of grout lines	≥ 2 inch
Grout annulus	50 ≤ t ≤ 1000
Pumping length through 2" flexible hose	L ≤ 225 m
Pumping elevated head with 2" flexible hose	H ≤ 25 m

CLEANING OF EQUIPMENT

Tools and spillages can be cleaned with water while SikaGrout®-9650 is still uncured. Once hardened, the material can only be removed mechanically.

LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for exact product data and uses.

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

Sika Gulf B.S.C. (c)

Tel: +973 177 38188
Email: info@bh.sika.com
Sika Kuwait Cons. Mat. & Paints Co WLL
Tel: +965 22 282 296
Email: sika.kuwait@kw.sika.com
Web: gcc.sika.com

Sika UAE LLC

Sika UAE LLC (Branch)
Sika International Chemicals LLC
Tel: +971 4 439 8200
Email: info@ae.sika.com
Web: gcc.sika.com

Sika Saudi Arabia Limited

Riyadh / Jeddah / Dammam / Rabigh
Tel: +966 9200 22167
Email: info@sa.sika.com
Web: gcc.sika.com

Sika MB LLC

Oman
Tel. +968 22 826 500
Email: info@om.sika.com
Web: gcc.sika.com



ISO 9001, 14001, 45001 – SGS:
- Sika UAE LLC
- Sika International Chemicals LLC
- Sika Gulf B.S.C. (c)
ISO 9001, 14001 – SGS:
- Sika Saudi Arabia Limited
ISO 9001, 14001 – TÜV:
- Sika UAE LLC (Branch)
ISO 9001 – SGS:
- Sika MB LLC

All products are supplied under a management system certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001, ISO 14001 and ISO 45001.



Product Data Sheet

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