



# NanoGrout

Non shrink, ready to use, cementitious grout

<b>Description</b>	NanoGrout is a ready to use, non-shrink cementitious grout. It can be used as fluid or plastic consistencies for grouting of equipment and machinery, bearing pads, rails and anchoring.												
<b>Primary Applications</b>	<ul style="list-style-type: none"> <li>• Machine foundations.</li> <li>• Grouting bearing pads and plinths.</li> <li>• Grouting under machinery base plates, stanchion bases and crane rails.</li> <li>• Underpinning.</li> <li>• Completely filling the void between a base plate and a substrate.</li> <li>• It can also be used for anchoring a wide range of fixings. These include masts, anchor bolts and fence posts.</li> <li>• Pre-Cast panels &amp; structural supports.</li> <li>• General concrete repairs.</li> </ul>												
<b>Features /Benefits</b>	<ul style="list-style-type: none"> <li>• Gaseous expansion system compensates for shrinkage and settlement in the plastic state.</li> <li>• No metallic iron content to cause staining.</li> <li>• Prepackaged material overcomes potential on-site batching variations.</li> <li>• Develops high early strength without the use of chlorides.</li> <li>• High ultimate strength and low permeability ensure the durability of the hardened grout.</li> <li>• Non-shrink providing full structural support.</li> <li>• Extended working time in warm weather.</li> </ul>												
<b>Standards compliance</b>	Complies with ASTM C 1107 as Type C and CRD-C621-83-10.2												
<b>Properties</b>	<p>The following results were developed under laboratory conditions at 25°C.</p> <table> <tr> <td>Compressive strength ASTM C 109</td> <td>25 N/mm<sup>2</sup> at 1 day 45 N/mm<sup>2</sup> at 7 days 65 N/mm<sup>2</sup> at 28 days</td> </tr> <tr> <td>Flexural strength BS 4551 1980</td> <td>10.0 N/mm<sup>2</sup> at 28 days</td> </tr> <tr> <td>Time for expansion start</td> <td>15 - 20 minutes</td> </tr> <tr> <td>Finish</td> <td>1.5 - 2.0 hours</td> </tr> <tr> <td>Fresh wet density</td> <td>Approximately 2200kg/m<sup>3</sup></td> </tr> <tr> <td>Expansion</td> <td>0.1% at 28 days.</td> </tr> </table>	Compressive strength ASTM C 109	25 N/mm <sup>2</sup> at 1 day 45 N/mm <sup>2</sup> at 7 days 65 N/mm <sup>2</sup> at 28 days	Flexural strength BS 4551 1980	10.0 N/mm <sup>2</sup> at 28 days	Time for expansion start	15 - 20 minutes	Finish	1.5 - 2.0 hours	Fresh wet density	Approximately 2200kg/m <sup>3</sup>	Expansion	0.1% at 28 days.
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<b>Packaging</b>	20 Kg bag												
<b>Storage</b>	Store in dry and cool place below 35°C. Protect from direct sunlight.												
<b>Shelf life</b>	12 months if stored properly in original unopened packaging.												
<b>Instruction for use</b>	<p><b>Watch Points:</b></p> <p>The temperature of both the grout and elements coming into contact with the grout should be in the range of 10°C -25°C. Do not use water in an amount or at a temperature that will produce a flow of less than 20 seconds (CRD-C79-77) or cause mixed grout to bleed or segregate. If outside that range, special information on high and low temperature grouting techniques are available from your local Nano Vision representative or technical services department. When the grout will be in contact with steel which is or will be stressed to over 550 mpa, do not use NanoGrout, consult Nano Vision technical Services Department for steel which will be stressed to over 550 mpa or for post-tensioned cables and strands.</p>												



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## Surface preparation:

All surfaces must be clean and sound. Remove all surface laitance by acid etching or grinding, also dust and debris. All surfaces should be thoroughly wetted 6-24 hours before starting and be in a moist condition during placing. Any free surface water must be removed before application.

## Mixing:

For optimum results a high shear paddle or vane grout mixer should be used. Colloidal impeller mixers are not suitable for use with this product. Air entrainment should be avoided. For large or continuous placement ensure that adequate mixing capacity and sufficient labor is available. A holding tank fitted with agitation may be used. Add the correct amount of water for the required consistency to the mixer and then add the complete pack(s) slowly while mixing. Mix for a further 3 -4 minutes until smooth and cohesive. Allow to stand for 1 minute before use. Re-Mix and use immediately.

## Yield

Quantity of water required to be added 20 kg bags to achieve the desired consistency and yield are below:

Consistency	Water	Yields
Trowel-able	2.20 – 2.60 liters	8.0 liters
Flow-able	2.80 – 3.60 liters	9.09 liters

## Application :

Ensure sufficient material is available to complete the work and obtain a continuous fill. Pour from one side only to avoid air entrapment, keeping a head on the grout to promote flow. Do not vibrate but rods, straps and chains can be used to aid complete filling. A high gravity feed may also be used.

## Grouting large volumes:

NanoGrout may be used up to 150mm thick sections. Above this the addition of clean, graded 10mm aggregates at up to one to one by weight is recommended. In this instance normal concrete mixers and pumps may be used.

## Pumping:

NanoGrout may be placed using piston, ram or diaphragm type grout pumps fitted with ball valves. In all cases, ensure maximum restraint is maintained, otherwise compressive strength will be reduced.

## Curing:

Proper curing procedures are important to ensure the durability and quality of the grout. Cure the grout with a high solids curing compound, such as NanoCure compound must be ordered separately.

## Cleaning & Disposal

Clean tools and equipment with water before the material hardens. Do not dispose off into water or soil but according to local regulations.

## Precautions/Limitations

- Do not add any admixture or fluidities.
- Proper curing is required.
- Employ cold weather or hot weather grouting practices as the temperatures dictates.
- Do not use as a topping.
- Do not use material at temperatures that may cause premature freezing. Rate of strength gain is significantly affected at temperature extremes.

## Health & safety

NanoGrout is alkaline and should not come into contact with skin and eyes. Avoid inhalation of dust during mixing. Gloves, goggles and dust mask should be worn. If contact with skin occurs, wash with water. Splashes to eyes should be washed immediately with plenty of clean water and medical advice sought.