

# Sampling cement based grout - compressive strength testing



## Introduction

The following information is provided as a guide to taking cement based grout samples on construction sites and preparing the samples for compressive strength testing. Parchem offers this information in good faith to assist customers in achieving similar test results for their cement based grout products compared to those achieved under laboratory conditions.

For accurate and true readings of the actual compressive strengths that are obtained on site the following steps should be followed to ensure the test results are as accurate as possible.

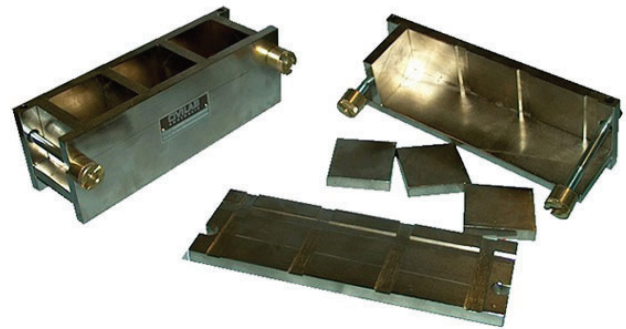
It is recommended that customers also refer to **AS 1478.2-2005; Methods of sampling and testing admixtures for concrete, mortar and grout.**

Cement based grouts should be tested for compressive strength using minimum 50mm x 50mm through to a maximum 75mm x 75mm cube specimens made in brass or steel cube moulds as directed in AS1478.2. (Parchem use 70mm x 70mm cubes).

## A. Equipment Required for Sampling

1. 70mm x 70mm brass or steel cube moulds + retainable metal cover plates [plastic moulds or plastic inserts are not acceptable for products containing expansive additives].

The cubes should be a minimum 6mm thick.



2. Mould Release agent - such as Fosroc Form Release Agent
3. Curing location temperature should ideally be 21°C – 24°C however, temperatures between 15°- 30° are acceptable. Cure temperatures below 15°C will result in slower strength build up; at 5°C cure will stop until the material warms.

## B. Sampling Procedure

1. Using mould release agent, spray cube mould and cover plate.
2. Fill all cube moulds full with the cement based grout. For Stiff or Trowellable consistency grouts, tamp the grout into the mould using tamping rod to remove any entrapped air. Tamping is not necessary nor recommended for Flowable or Fluid consistency grouts
3. Fill moulds to a slightly overfill condition.
4. Screed off cement based grout with a margin trowel using sawing motion so the surface of cement based grout is flush with the top of the mould.
5. Clean off any excess material around the top of the mould.
6. Place the cover plate on the mould and tighten with screws or clamps. A plastic sheet may be inserted beneath the steel plate to prevent the grout bonding to the steel plate.
7. Move the mould to an area where temperatures are above 15°C (ideally 23°C) and leave undisturbed for 24 hours. DO NOT transport newly cast cube specimens of cement based grout for 24 hours or within other specified time.
8. After 24 hours (unless early age compressive strength testing is required), de-mould the cubes, being careful not to damage the sample. Each grout cube should be carefully wrapped in damp hessian or damp cloth and sealed into Zip-lock bags ready for transport to the testing laboratory.

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9. Identify cubes with product name, batch numbers, start time, test date and temperature.
10. The cubes are then promptly sent to an independent laboratory to be tested to AS1478.2.
11. Tests are typically taken at 1, 7 and 28 days, however other times may be necessary to suit specific applications such as high early strength requirements. Always test a minimum of 2 cubes at the end of each cure period.
12. The crushing of the cubes is to be carried out at a loading rate of  $20 \pm 2$  MPa per minute. This is tested in accordance with AS1478.2 which in turn references AS1012.9 – 1999.
13. It is recommended that one of the internal (flat) faces of the cube is used for testing and not the top (restrained) face of the cube which can have imperfections and in turn potentially affect the result obtained.

End

## Important notice

Safety Data Sheets (SDS) and Technical Data Sheets (TDS) are available from the Fosroc website. Read the SDS and TDS carefully prior to use as application or performance data may change from time to time. In emergency, contact any Poisons Information Centre (phone 13 11 26 within Australia) or a doctor for advice.

## Product disclaimer

This Guide summarises our best knowledge of the process based on the information available at the time. You should read all literature carefully and consider the information in the context of how the product will be used, including in conjunction with any other product and the type of surfaces to, and the manner in which, the product will be applied. Our responsibility for products sold is subject to our standard terms and conditions of sale. Parchem does not accept any liability either directly or indirectly for any losses suffered in connection with the use or application of the product whether or not in accordance with any advice, specification, recommendation or information given by it.



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