



# CONSTRUCTION MATERIAL TESTING

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## INTRODUCTION

For over 20 years, we have offered a full range of materials testing to suit the requirements of local, national and international civil engineering contractors, consultants as well as manufacturers, the resource industry and government agencies.

The SGS Materials Testing Division is one of the largest group of laboratories in Australia for this field.

Our independence guarantees the data you receive is always accurate and objective.

We provide an extensive scope with capacity to conduct large testing programs to deliver clients with a reliable and accurate service. SGS' professional standing and commitment to the highest standards of quality, safety and health is reinforced by accreditations held with NATA, ISO 9001 and AQIS, ensuring we meet Australian and international standards.

Furthermore, our company's research and development have allowed for our in-house testing methods to be approved by NATA.

We can offer you more than just test results. A key to our service is technical support, practical recommendations and solutions using a wide range of technical equipment and software analysis tools which enables you to tap into a wealth of geotechnical and materials technology experience and capabilities.

Over recent years we have developed sophisticated operational software packages to ensure efficient management of test requirements and reporting. This system is available in all of our permanent and field laboratories.



# SOILS

The scope of testing the SGS Materials Testing Soils Division offers makes us one of Australia's leading laboratories in this field.

We can conduct over 200 tests to various methodologies which meet Australian standards and local authority requirements such as state main roads authority standards such as Main Roads (WA), RTA (NSW), DMR (QLD). Our testing capacity ranges from sampling, basic soil classification tests to advanced soil mechanics testing.

Our soil testing laboratory can supply you with technical data for the initial design phase of a project right through to quality control testing during construction phase. Tests such as particle size distribution, compaction, plasticity, and linear shrinkage will

provide basic classification of the soil you are working with whilst tests such as the Emerson classification number, permeability and chemical constituents such as carbonates can assist you with soil suitability for specific projects.

If you require more complex soil testing, our soil mechanics testing section offers state of the art testing equipment to handle triaxial, consolidation and direct shear testing.

We also offer field testing in the metropolitan area for compaction control with tests such as nuclear density and penetrometer testing.

We currently hold a quarantine license with AQIS which enables us to receive and test samples from international sources.



## CONCRETE AND AGGREGATES

SGS Materials Testing Laboratory is accredited for and conducts a diverse range of concrete and aggregate tests following Australian Standards, American Standards, British Standards and in-house methods.

In addition, our investigations section specialises in concrete investigation and restoration. Our expertise is enhanced and supported by research through our strong associations with the various universities such as The University of Western Australia, Curtin University and TAFE.

Our concrete and aggregate section offers testing from the moment you source the aggregate from the quarry or stockpile by doing on-site quality control monitoring to physical characterisation of the aggregate in our base laboratory.

SGS are aware that a major issue that concerns many clients for suitability

of aggregates for use in concrete is Potential Alkali Silica Reactivity. We offer accelerated mortar bar testing to CSIRO, American Standards or local roads authority test procedures to characterise the behaviour of the aggregate straight from the source.

From the moment you pour your concrete, our highly skilled technicians can sample and perform slump testing on site, transport those samples back to the laboratory and test the hardened material for physical characteristics such as compressive strength and water absorption values.

We are the first of only four laboratories in Australia to be NATA accredited for the Round Determinate Panel Test, the premier safety test in the mining and tunnelling industry.

We also offer durability testing for hardened materials with tests such as Chloride Diffusion Resistance,

Rapid Chloride Penetration and Water Permeability tests which form a common scope used by many specifications and consultants.

Another area of concern for many clients applicable to both aggregates and hardened concrete are contaminants such as chlorides and sulphates.

SGS are NATA accredited for these determination tests following both Australian and British Standards.

If you have concerns of original composition of the hardened material being supplied we can offer cement content determinations and original Water/Cement Ratio calculations to name just a few tests that the Specialised Construction Materials Testing section offer.





## ROCKS, BRICKS AND BLOCKS

SGS is one of only two testing facilities in Australia specialising in rock examinations. The data we provide from strength and other physical properties testing in a project's design phase can enable you to save time and money in the long run as you will be able to modify designs from the start rather than wait until problems arise.

SGS are aware that every environment we construct in is unique and thus we offer testing regimes for your material customised to meet your specific requirements. For example, if underwater construction is involved, we can perform dredging tests for behavioural analysis of your material. Our high grade facilities in our

laboratories are specifically designed to maintain marine conditions experienced by rocks while testing is conducted over time.

## SITE AND FIELD LABORATORIES

Given the vast expanse of Australia it is only natural you may require geotechnical testing in a remote location at some point. Having identified this need we compliment our metropolitan field testing with project and site laboratories.

When you are in remote locations, timing becomes a critical issue. We are accredited by NATA to establish our own onsite laboratory with a

capacity to deploy testing facilities at any time. Our field technicians have remote and offshore experience with specialised skills for road, rail, mining and building projects, providing you with continuous, flexible, efficient and integrated project support. We have provided over 100 project and site laboratories since our formation, earning a reputation for first-class, onsite support.

SGS site laboratories are fully equipped to provide compaction control, including in-situ density, moisture, concrete sampling, penetrometer and classification testing. Certificates of endorsement can be provided to you onsite, saving you time and project flexibility.



## PROTECTIVE COATINGS

SGS recognise that sometimes, concrete is just not enough for certain structures for durability purposes and have thus developed a specialised section to provide testing of protective coatings to go hand in hand with our concrete testing section.

We are the only laboratory in the southern hemisphere that is NATA

accredited to test protective coatings and concrete for Carbon Dioxide Diffusion Resistance. We also offer Water Vapour Transmission Testing and Chloride Diffusion Resistance Testing which form the backbone of protective coatings testing regimes.

We also offer accelerated weathering testing for products using our QUV and

accelerated carbonation exposure using our custom made exposure tanks to name a few of our specialised tests that exists for protective coatings.

## CONCLUSION

The capabilities and capacity of SGS will ensure all material testing requirements can be conducted in-house with one provider. Tests referred to are a small sample of what we have to offer.

A full list of our testing capabilities can be found on our website to meet your job specific requirements.

The quality and technical accreditations of the company coupled with extensive technician experience and qualifications ensure that all activities are conducted thoroughly and accurately.

The quality systems in place and our supporting software management system will enable efficient management

and reporting of results in support of any project big or small.

# CONTACTS



**SGS IS THE GLOBAL LEADER AND INNOVATOR IN INSPECTION, VERIFICATION, TESTING AND CERTIFICATION SERVICES. FOUNDED IN 1878, SGS IS RECOGNIZED AS THE GLOBAL BENCHMARK IN QUALITY AND INTEGRITY. WITH OVER 59,000 EMPLOYEES, SGS OPERATES A NETWORK OF OVER 1,000 OFFICES AND LABORATORIES AROUND THE WORLD.**

**FOR MORE INFORMATION ON OUR TESTING FACILITIES VISIT [WWW.AU.SGS.COM/INDUSTRIAL](http://WWW.AU.SGS.COM/INDUSTRIAL) OR WRITE TO US AT [AU.INDUSTRIAL@SGS.COM](mailto:AU.INDUSTRIAL@SGS.COM)**

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