

SANS 51008 Concrete Mixing Water Testing

Professional laboratory assessment of water used for concrete mixing, curing, batching and construction applications.

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Municipal, borehole, surface and recycled water. Ready-mix and site-batched concrete. Construction and infrastructure projects. H₂OGuru interpretation included.

Confirm Whether Your Water Is Suitable for Concrete Production

Water used in concrete is not simply a convenience. Its chemical quality can influence cement hydration, setting behaviour, compressive strength, reinforcement corrosion, surface finish and long-term durability.

The H₂OGuru SANS 51008 Concrete Mixing Water Testing package is designed for construction companies, engineers, batching plants, mining operations and infrastructure projects that need to evaluate water intended for concrete mixing or curing.

Clear-looking water is not always suitable. Borehole water, recycled process water, dam water and other alternative sources may contain dissolved salts, chlorides, sulphates, suspended material or organic contamination that could interfere with concrete performance.

H₂OGuru helps select the appropriate laboratory profile, arrange representative sampling and interpret the results from a practical construction perspective.

Package at a Glance

Standard

SANS 51008 concrete mixing water assessment

Water Sources

Municipal, borehole, dam, river and recycled water

Applications

Ready-mix, precast, site batching and curing

Primary Risks

Corrosion, setting problems, strength loss and durability concerns

Laboratory

SANAS-accredited testing partner

Reporting

Laboratory results and H2OGuru interpretation

Who Should Use This Package?

Ready-Mix Concrete Suppliers

Verify the quality of water used in batching plants and production facilities.

Construction Companies

Assess alternative water sources before use on building and civil engineering sites.

Consulting Engineers

Support material specifications, quality control and project documentation.

Mining Operations

Evaluate borehole, process or recycled water used in concrete works and underground projects.

Precast Manufacturers

Help maintain consistent product quality, finish, setting and strength performance.

Infrastructure Projects

Assess water for roads, bridges, dams, pipelines, reservoirs and large civil works.

What Does the Package Assess?

The final parameter list is confirmed according to the water source, project specification and intended use. A typical concrete water assessment may include the following groups:

Parameter Group	Typical Determinants	Why They Matter
General Chemical Quality	pH, conductivity and total dissolved solids	Provides an overall indication of mineral content and possible chemical interference.

Chlorides	Chloride concentration	Important because excessive chloride may increase the risk of reinforcement corrosion.
Sulphates	Sulphate concentration	High sulphate levels may affect durability and contribute to harmful chemical reactions.
Suspended Material	Suspended solids, sediment and visible contaminants	May affect mix consistency, finishing quality and the uniformity of concrete production.
Organic Contamination	Selected indicators of organic matter where required	Certain organic substances may interfere with cement hydration and setting.
Alkalis and Dissolved Salts	Sodium, potassium and other selected salts where required	May influence chemical reactions, efflorescence and long-term durability.
Project-Specific Contaminants	Metals, oils, detergents or process chemicals where relevant	Necessary where recycled or industrial water is being considered.

The required parameter list may differ between municipal water, borehole water, dam water and recycled process water. Project specifications should always be reviewed before finalising the test profile.

Why Concrete Mixing Water Quality Matters

Setting Time

Certain dissolved chemicals or contaminants may accelerate or delay concrete setting.

Compressive Strength

Poor-quality water may interfere with hydration and reduce the strength achieved by the concrete.

Reinforcement Corrosion

Elevated chloride can increase corrosion risk in reinforced and prestressed concrete.

Durability

Sulphates, salts and other contaminants may contribute to long-term deterioration.

Surface Appearance

Dissolved salts and suspended material may contribute to staining, efflorescence or poor finishing.

Quality Consistency

Variable water quality can lead to inconsistent batching, setting and production results.

Suitable Water Sources for Testing

Municipal Water

Usually the most consistent source, but confirmation may still be required for project records or specifications.

Borehole Water

May contain elevated salts, chloride, sulphate, hardness, iron or other naturally occurring minerals.

Dam and River Water

Can vary with rainfall, evaporation, sediment, algae, runoff and seasonal conditions.

Rainwater

May be suitable where collection surfaces, tanks and contamination risks are properly managed.

Recycled Process Water

Requires careful assessment for salts, cement fines, oils, chemicals and suspended material.

Blended Water

Combining sources may improve or worsen suitability depending on the chemistry of each source.

Common Problems This Test Can Identify

High Chloride

May increase the risk of corrosion in reinforced concrete structures.

High Sulphate

Can contribute to durability concerns and harmful chemical reactions.

Excessive Salinity

May affect concrete performance, finishing and long-term durability.

Organic Contamination

May interfere with cement hydration and alter setting behaviour.

Suspended Solids

Can affect mix uniformity, water demand and surface finish.

Industrial Contamination

Oils, detergents, metals or process chemicals may make recycled water unsuitable.

Where This Testing Is Commonly Used

Concrete Batching Plants

Routine source verification and quality-control monitoring.

Road and Bridge Construction

Assessment of water used in large civil and transport projects.

Dams and Reservoirs

Support for structural concrete and water-retaining infrastructure.

Mining and Industrial Sites

Evaluation of non-municipal or recycled water used in concrete works.

Precast Production

Maintaining consistency in blocks, panels, pipes and structural components.

Remote Construction Sites

Testing borehole, river, dam or stored water where municipal supply is unavailable.

The H₂OGuru Sample-to-Solution Process

1

Review the source and project requirements

2

Confirm the required SANS 51008 profile

3

Collect a representative sample

4

Complete accredited laboratory testing

5

Interpret construction-related risks

6

Support corrective action or retesting

Where a water source changes seasonally or is blended from more than one supply, repeat testing may be necessary to confirm ongoing suitability.

What You Receive

Laboratory Test Report

The formal analytical results issued by the accredited testing laboratory.

H₂OGuru Interpretation

A practical summary of the main concrete mixing water risks and suitability concerns.

Recommended Next Steps

Guidance may include source changes, blending, treatment, additional testing or engineering review.

Why Choose H₂OGuru?

H ₂ OGuru Service	Benefit to the Client
Application-based test selection	The test profile is selected according to the source, project and intended concrete application.
Accredited laboratory testing	Provides reliable analytical data produced within the laboratory's accredited scope.
Practical interpretation	Explains how the results may affect setting, strength, corrosion and durability.
Sampling support	Helps ensure the sample represents the actual water being used on site.
Follow-up assistance	Supports source changes, blending, treatment decisions and verification testing.

Need a Different Analysis?

Not every water source or project requires the same laboratory profile. Explore the other H₂OGuru testing packages to select the analysis that matches your water source and intended use.

SANS 241 Chemistry and Microbiology

A complete drinking water assessment covering chemical and microbiological quality.

SANS 241 Chemistry Only

For minerals, metals, salts, hardness, scaling and chemical compliance.

SANS 241 Microbiology Only

For E. coli, coliforms and routine microbiological monitoring.

SANS 1657 Bottled Water

For bottled, purified, refill and packaged drinking water.

Irrigation Water Testing

For salinity, sodium hazard, crop suitability and irrigation performance.

Wastewater and Effluent

For treatment performance, discharge assessment and reuse investigations.

Water Source Identification

Compare seepage water with municipal, borehole or groundwater sources.

Custom Water Testing

Tailored parameter selection for specialised projects and investigations.

Protect Concrete Quality Before Construction Begins

Arrange professional SANS 51008 concrete mixing water testing and receive clear guidance on corrosion, durability, setting and strength-related risks.

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