PROFICIENCY TESTING

TABLE OF CONTENT

1. PURPOSE

1.1. The purpose of this document is to define the requirements of a proficiency testing scheme for participation by the CompanyName laboratories & external laboratories.

2. SCOPE

2.1. Inter- and intra-laboratory testing carried out to verify proficiency of testing, Laboratory Assistant training, equipment & what is required.

3. RESPONSIBILITY & ACCOUNTABILITY

3.1. The General Manager is responsible for ensuring that proficiency testing is carried out in accordance with this procedure **QTP07**.

4. DEFINITION & ABBREVIATION

4.1. **Inter-laboratory testing:** Participation in an external Proficiency Scheme and
4.2. **Intra-laboratory:** Internal verification of test methods, equipment settings, calibration & reproducibility of results.

5. LEGAL & OTHER REQUIREMENTS

5.1. General

ENTRY NUMBER	ENTRY REFERENCE NUMBER	ENTRY DESCRIPTION
5.1.1.		

5.2. Legal Reference

5.2.1. Legal Register.

5.3. Other requirements

5.3.1. SANS 878, SANS Lab Accreditation, SANS 5863:2006 & Client Requirements.

6. RECORDS

ENTRY NUMBER	ENTRY REFERENCE NUMBER	LOCATION/ CUSTODIAN	MINIMUM RETENTION TIME	DISPOSAL
6.1.	**QTF20** Compressive strength report	Technical Manager	1 year	Shred
6.2.	**QMF09** Non-conformance report	See **QMP02**		

7. PROCEDURE

7.1. **Tests Covered**
- 7.1.1. Compressive strength as per SANS 5863 and
- 7.1.2. Tests on are carried out at a frequency not exceeding six months.

7.2. **Routine Concrete Testing**
- 7.2.1. Ranges of compressive strengths of sets of cubes carried out in accordance with **QTW03**, crushed as part of routine concrete testing & expressed as a percentage of the mean should achieve:
  - 7.2.1.1. An average value within an predetermined percentage of the mean and
  - 7.2.1.2. No more than one (*1*) value in twenty (*20*) in excess of 10%.

7.3. **Internal Proficiency Testing**

7.3.1. Each Lab Assistant prepares cubes & carries out compressive strength tests in accordance with **QTW02** & **QTW03** & results/ SDs are compared and

7.3.2. Any anomalies identified in the results are followed up & depending on root cause, a Non-conformance Report: see **QMF09** may be issued.

7.4. **Cube Crushing Machines** (*Proficiency scheme*)

7.4.1. Verification of cube crushing machines by participation in an external Proficiency Scheme is carried out at least annually;

7.4.2. Test specimens are produced in each laboratory (*or a central laboratory for distribution later*) using:

7.4.2.1. Standard materials provided by the Proficiency Scheme Manager and

7.4.2.2. A standard mix design;

7.4.3. The mixing cycle is at least five (*5*) minutes & the concrete is remixed between groups. The cubes are not overfilled & they are compacted by vibration for a set time or by hand;

7.4.4. Moulding, compaction, curing & stripping: see **QTW02**;

7.4.5. Where cubes are made in bulk at one laboratory for distribution to other laboratories:

7.4.5.1. Each laboratory receives & tests one set from each group;

7.4.5.2. Cubes are transported in a way that minimizes damage & drying out and

7.4.5.3. As soon as cubes are received by the laboratory (*i.e. not more than 24 hours after receipt*), they are immersed in water at 22 to 25°C until tested.

7.4.6. The cubes are crushed in accordance with SANS 5863:2006 and

7.4.7. Results are recorded on a Compressive Strength Report: see **QTF20** & forwarded to the external Proficiency Scheme Manager.

7.5. **Evaluation & Interpretation of Cube Results** (*where required*)

7.5.1. The arithmetic mean & standard deviation for each set of cubes is calculated. After the results have been evaluated, they are distributed by the Proficiency Scheme Manager to the participating laboratories and

7.5.2. If any corrective or further action is required, a Non-conformance Report; see **QMF09** is raised.

8. APPENDIX & ASSOCIATED DOCUMENTATION

ENTRY NUMBER	ENTRY DESCRIPTION	ENTRY DOCUMENT NUMBER
8.1.	Internal audits	**QMP02**
8.2.	Making & curing test cubes	**QTW02**
8.3.	Compressive strength	**QTW03**
8.4.	Compressive strength of hardened concrete	**SANS 5863:200**

NAME		**DESIGNATION**	
SURNAME		**DATE**	
SIGNATURE			