1. EQUIPMENT

1.1. Cube press calibrated as per **QTP03** (*Laboratory equipment calibration checking and maintenance*) & checked as per **QTF11** (*Checking platens & loading rate*) AND

1.2. Scale with an accuracy of 1 g, calibrated as per **QTP03** & checked as per **QTF08** (*Checking scale [across range]*)

2. METHOD

2.1. Preparation -

2.1.1. Ensure that the person that does the compression strength testing wear all the relevant personal protective equipment;

MARK "X" FOR APPLICABLE PERSONAL PROTECTIVE EQUIPMENT REQUIRED		
	**Hard Hat**	
	**Eye Protection**	X
	**Face Protection: Welding Helmet**	
	**Hand Protection**	X
	**Protective Clothing: Overall**	X
	**Foot Wear: Safety Boots**	X
	**Gum boots**	
	**Dust mask**	X
	**Respirator**	
	**Reflective Clothing**	X
	**Safety Harness**	
	**Apron**	
	**Hearing Protection**	X
	**Use waste bins for waste separation**	X
	**Lock-out**	X

2.1.2. Conduct continuous risk assessment, the daily safe task instruction (*DSTI*);

2.1.3. Wear gloves & eye protection now;

2.1.4. Check the calibration label on the compression machine if it is still valid (*expiry date not lapsed*), if the date has expired report this to your manager (*do not test any cubes!*);

2.1.5. Check the compression machine that it is operational, safe & not contaminated;

2.1.6. Check the calibration label on the scale if it is still valid (*expiry date not lapsed*), if the date has expired report this to your manager;

2.1.7. Check the scale is operational, safe & be aware of electrical hazards that can cause serious injury & damage incidents and

2.1.8. Make & cure test specimens as per **QTW02** (*Making & curing test cubes*);

Note: Any specimens received dry are saturated for at least 24 hours prior to testing.

3. PROCEDURE

3.1. **Testing** Cubes:

- Immediately before testing, remove cubes (*as per crushing date on the label*) from the water bath & wipe excess moisture from all surfaces;
- Weigh each cube, & record mass in kg on the relevant **QPF22** (*Call report*) Cube Worksheet (*see **QTW01***);
- If cubes will not be crushed immediately after weighing, cover them with damp cloth or plastic to retain moisture;
- Ensure that the loading plate is not contaminated. Carefully center the specimen in the jaws of the machine with the cast surface (*top of cube*) facing forward & the smooth surfaces in contact with the top & bottom platen;
- Follow instructions for operating the crushing machine;
- Record the result of each test on the relevant form and
- Remove the crushed cube & discard in accordance with relevant environmental procedures.
- Carefully wipe all debris (*into a bucket*) from both top & bottom platens before crushing the next cube (*be aware of any hand injury hazards*).

3.2. **Test Results**:

3.2.1. Calculate individual compressive strength test results to the nearest 0.1 MPa, in accordance with cube size, eg. 150mm x 150mm x 150mm cubes & using the relevant calibration factor (*if any*) for the cube press;

3.2.2. Calculate the average strength of three cubes rounded to the nearest 0.5 Mpa (*where only two cubes are required, the average of two [2] results*).

3.2.3. Note any abnormal failures (*cubes not achieving expected strength, or failing in a pattern other than an hour-glass shape*) & retain the cube in a designated holding area for inspection by immediate supervisor;

3.2.4. Record the above on the relevant **QPF22** cube worksheet, & sign the cube worksheet **QPF22** to confirm that no abnormal failures were noted;

3.2.5. If cubes have been made for crushing at later date(*s*), file the cube worksheet **QPF22** for recording further results, e.g. for 28-day cubes.

3.2.6. Reporting results **QTF20** Compressive strength report & see **QTP06** reporting test results.

4. RECORDS

Note: Records generated as a result of this procedure are as follows:

ENTRY NUMBER	RECORD	LOCATION/ CUSTODIAN	MINIMUM RETENTION	DISPOSAL METHOD

			TIME	
4.1.	**QTF08** Scale check (*across range*)	See **QTP03** - Laboratory equipment calibration checking and maintenance		
4.2.	**QTF11** Checking platens & loading rate	See **QTP03** - Laboratory equipment calibration checking and maintenance		
4.3.	**QTF20** Compressive strength report	Laboratory Assistant	1 year	Shred
4.4.	**QTF22** Cube worksheet	Laboratory Assistant	1 year	Shred
4.5.	Cube press Calibration Certificate	**Various**		
4.6.	Scale Calibration Certificate	**Various**		

5. REFERENCES AND APPENDIXES

ENTRY NUMBER	ENTRY DESCRIPTION	REFERENCE NUMBER
5.1.	Calibration, checking & maintenance of laboratory equipment	**QTP03**
5.2.	Reporting test results	**QTP06**
5.3.	Slump test	**QTW01**
5.4.	Compression testing	**SANS 5863:2006**
5.5.	Scale Calibration Certificates	**Various**
5.6.	Making & curing test specimens	**QTW02**
5.7.	Risk Assessment Documentation (*DSTI*)	**Various**
5.8.	Personal Protective Equipment Issue Record	**Various**
5.9.	Personal Protective Equipment Checklist	**Various**
5.10.	Training Certificates	**Various**

TECHNICAL MANAGER NAME		**DESIGNATION/ AREA**	
TECHNICAL MANAGER SURNAME		**Date**	
TECHNICAL MANAGER SIGNATURE		**IDENTITY NUMBER**	

ACKNOWLEDGEMENT OF UNDERSTANDING OF HOW TO DO COMPRESSION TESTING

TECNICIAN NAME		**DESIGNATION/ AREA**	
TECHNICIAN SURNAME		**Date**	
TECHNICIAN SIGNATURE		**IDENTITY NUMBER**	