

## SECTION 04210 BRICKWORK

THERE ARE NOTES AND CLAUSES IN THE SUSTAINABILITY GUIDE ON THIS TRADE.  
THIS TRADE SECTION DEPENDS ON COORDINATION BETWEEN THIS SPECIFICATION AND THE FINISHES SCHEDULE AS WELL AS WALL TYPES DRAWINGS WHICH SHOW DETAILED INFORMATION ON WALL THICKNESS, FIRE AND SOUND PERFORMANCE RATINGS AS WELL AS ACOUSTIC SEALING AS REQUIRED.

### PART I GENERAL

#### 101 Scope

General: supply and build the brickwork shown on the drawings or needed to complete the brickwork, including but not limited to the following:

Provide all brickwork to locations shown on the drawings.

The installations are to include but not limited to the following brickwork types:

- Structural and non-structural brickwork
- Face brickwork
- Rendered brickwork
- Brickwork associated with Landscape works
- Read this component of the specification in conjunction with the Finishes Schedules and provide also the following:
  - Labour and materials.
  - Building in of miscellaneous items provided by others.
  - Staging and scaffolding.
  - Cleaning.

#### 102 Related Work ENSURE THAT THE ITEMS LISTED BELOW ARE RELEVANT TO YOUR PROJECT.

Cooperate and coordinate with the following trades:

Windows Doors and door frames

Structural steel

Concrete

Associated documents:

Read this trade section in conjunction with the following:

- BCA Report for fire rating requirements for each of the listed wall types
- Wall types drawings for performance of the listed wall types
- Finishes Schedule
- Structural engineering documentation for provision of wall stiffeners etc.

#### 103 Quality Assurance WHERE FORMAL QA REQUIREMENTS MUST BE MET, REFER TO SECTION 01400 QUALITY ASSURANCE FOR ADDITIONAL INSTRUCTIONS.

Approved samples: at the start of brick laying, arrange with the architect to designate a beginning section of each type of face brickwork not less than 6 courses high x 1200 long as the control sample. When approved by the architect, the section/s become the control standard/s for brickwork and remain part of work.

Efflorescence control:

Submit efflorescence control measures for each of the brickwork face work components and provide remedial action plan for this item. Provide technical data sheets of proposed efflorescence control products for architect's approval.

#### 104 References

Comply with applicable portions of current editions of the following Australian Standards:

AS 1316 2003	Masonry cement. (R2016)
AS/NZS 1576	Scaffolding. <i>There are 6 parts, 2000– 2016.</i>
AS 1672.1 1997	Limes and limestones – Limes for building. (R2016)
AS/NZS 2904 1995	Damp-proof courses and flashings. <i>2 Amdts, 1998, 2013.</i>
AS 3700 2011	Masonry structures. <i>There are 2 Supplements 2004, 2012, 2 Amdts 2012, 2015.</i>
AS 3972 2010	General purpose and blended cements.

Comply throughout with the current edition of the NCC.

#### 105 Submissions

Submit samples, provide control panel and provide shop drawings for each brickwork wall type. Obtain approval prior to commencing work.

Samples:

Provide four brick samples for each of the listed brickwork types. Provide samples of all accessories for this trade section such as flashings and DPC's.



**202 Mortar and Grout Materials and Types**

- A. Materials: comply with AS 3700 as follows:
1. Mortar: restrict the amount of fine aggregate passing a 75 micron test sieve to 5% maximum.
  2. Grout:
  3. Pigment: powdered metallic oxides used in accordance with the manufacturer's instructions.
  4. Refractory mortar: approved refractory mortar, treated as recommended by the manufacturer.
- B. Types: comply with AS 3700, providing materials in the proportions described below:
1. Mortar:

**AMEND CEMENT SPECIFIED IN TABLE BELOW AS REQUIRED BY STRUCTURAL ENGINEER**

Classification	Mix Proportions (by volume) Type GP Portland Cement	Building Lime	Sand
M1	0	1	3
M2	1	2	9
	1	2	8
M3	1	1	6
	1	0	5
M4	1	0.5	4.5

**SEE TABLE 10.1 IN AS 3700 FOR ADDITIONAL OPTIONS. REVIEW AND SELECT BELOW. PLEASE NOTE THAT THE BRACKETS INDICATE ALTERNATES, LEAVE ONLY YOUR SELECTION IN YOUR SPEC.**

- Mortar for load bearing brickwork: M3 (M4) (M2)  
Mortar for grouted and reinforced brickwork: M3 (M4)  
Mortar for non-load bearing brickwork: M3 (M4) (M2)  
Mortar for repair of lime mortar brickwork: M1 (M2)  
Mortar for bagging: **SPECIFIER SELECT FROM:**

Same mortar as used for laying.

**APPROPRIATE WHEN THE WORK IS TO BE BAGGED AS BRICKLAYING PROCEEDS.**

**M3 mortar. APPROPRIATE WHEN THE WHOLE OF THE BAGGING IS TO BE CARRIED OUT AS A SEPARATE OPERATION.**

M3 mortar, with powdered metallic oxide pigment added to achieve a dry colour approved by the architect.

**PLEASE NOTE:**

**SAME MORTAR AS USED FOR LAYING: APPROPRIATE WHEN THE WORK IS TO BE BAGGED AS BLOCKLAYING PROCEEDS.**

**M3 MORTAR: APPROPRIATE WHEN THE WHOLE OF THE BAGGING IS TO BE CARRIED OUT AS A SEPARATE OPERATION.**

**M3 MORTAR, WITH POWDERED METALLIC OXIDE PIGMENT ADDED TO ACHIEVE A DRY COLOUR APPROVED BY THE ARCHITECT: APPROPRIATE WHEN THE WHOLE OF THE BAGGING IS TO BE CARRIED OUT AS A SEPARATE OPERATION AND A UNIFORM TEXTURED COLOURED MORTAR IS TO BE THE PERMANENT FINISH.**

2. Grout: f'c not less than 12 MPa AS 3700.

**203 Miscellaneous Materials** **CHECK THAT DETAILS EXIST ON THE STRUCTURAL OR ARCHITECTURAL DRAWINGS, SEE CLAUSE 204 BELOW.**

Comply with AS 3700 as follows:

- A. Wall ties and accessories:  
Where building is to be located within 10 kilometres of the coast wall ties: **SELECT FROM STAINLESS STEEL OR PLASTIC.**
- B. [ Reinforcement:
- C. Lintels and other steel in brickwork:  
Extend lintels 230mm minimum past each jamb of openings.
- D. [ Caulking: elastomeric sealing compound, coloured to match mortar; for general caulking including movement control joints:  
[ Liquid polysulphide polymer.  
[ Neutral silicone
- E. [ Damp-proof courses:
- F. [ Flashings:
- Note: both to comply with AS/NZS 2904.
- G. [ Expansion joint material:
- H. [ Control joint material:



[ Carry out bagging as a separate operation after bricklaying has been completed.

**306 Bonding and Tying** ENSURE THAT THE ITEMS LISTED BELOW ARE RELEVANT TO YOUR PROJECT

Build work in stretcher bond.  
Space wall ties in accordance with AS 3700.  
Keep cavities clean and free from mortar droppings using a cavity batten.  
Fix to concrete or steel columns and at junction with concrete walls with frame ties built at least 250mm into brick joint and fix to the structure as close as possible to the course line.

**307 Door Frames**

Build in door frames as the work proceeds. Generally allow for lugs at 400 to 450mm centres except FU door frames which have lugs to sizes and centres required by the fire test report pertaining to the particular type of door. Grout solid cavities behind frames.

**308 Incidental Work**

Chases: refer to AS 3700, and, as far as possible, provide for chases to be made as the work rises. No horizontal chase may exceed 1200mm in length and no vertical chase may be closer than 600mm to an element providing lateral support. No chase may be more than 1/3 of the thickness of the wall.  
Perform miscellaneous incidental brickwork as required throughout and for other trades. Make good after other trades.

**309 Field Quality Control** NOTE: FEW, IF ANY, OF THESE TESTS WILL BE ROUTINELY NEEDED. COMPRESSIVE AND BOND STRENGTH TESTS ON BRICKWORK WILL BE REQUIRED WHEN THE BRICKWORK IS ENGINEER DESIGNED AS SPECIAL MASONRY ON THE BASIS OF AS 3700.

A. [ Tests.

Have the following tests performed in a laboratory NATA registered for the particular test. Supply copies of the resulting test certificates to the architect.

TEST:	TEST METHOD:
For mortar: sampling method	Refer structural engineer
Chemical composition	
Other	
For brickwork: compressive strength	AS 3700 Appendix A
Bond strength	
Characteristic strength	AS 3700 Appendix B
Other	

B. [ Test frequency.

For mortar:

For special masonry: DESCRIBE; EG. AT A RATE OF ONE TEST PER 10,000 BRICKS LAID.

DESCRIBE ON THE BASIS OF: THE GREATEST OF ONE SAMPLE PER STOREY HEIGHT OF BRICKWORK; ONE SAMPLE PER 400 M2 OF WALL AREA AND TWO SAMPLES - FROM AS 3700.

For other masonry: DESCRIBE; EG. AT A RATE OF ONE TEST PER 10,000 BRICKS LAID.

**310 Cleaning of Facework**

Take care to keep walls clean constantly. Should further cleaning be necessary, use hydrochloric acid not stronger than 5%, treating only a small area at one time. Wet the wall prior to applying the acid, work from the top down and thoroughly wash off after brushing. Do not leave acid solution on wall at stoppage of work.

**311 Completion**

Complete contracted work in accordance with contract documents and written variation orders issued by the architect.

On completion, clean up mortar droppings, debris, etc., remove scaffolding, make good put-log holes and blemishes and leave work in a first class condition.

Protect facework surfaces where necessary to avoid damage during other building operations.

Protect top of work from water ingress until roofing is installed, then remove.

**END OF SECTION**