

**TABLE 3.1**  
**MORTAR DURABILITY REQUIREMENTS**

Exposure environment	Location		Mortar class		
All	Interior	Normal	Clay units	M2	
			Concrete or calcium silicate units	M3	
		Subject to non-saline wetting and drying		M3	
		Subject to saline wetting and drying		M4	
	Exterior-coated in accordance with Clause 11.7, above a DPC and protected by roof, eave or coping, with properly flashed junctions		Clay units	M2	
			Concrete or calcium silicate units	M3	
	Below a DPC or in contact with the ground	Protected from water ingress by an impermeable membrane	Clay units	M2	
			Concrete or calcium silicate units	M3	
		Non-aggressive soils		M3	
			Aggressive soils		M4
Mild	Exterior	Clay units		M2	
		Concrete or calcium silicate units		M3	
Moderate	Exterior	Clay units		M2	
		Concrete or calcium silicate units		M3	
Industrial	Exterior	M4			
Marine (see Note 1)	Exterior	M3			
Severe marine (see Note 2)	Exterior	M4			
Special (see Note 3)	Exterior	(See Note 3)			

NOTES:

- 1 All external elements in contact with freshwater or subject to non-saline wetting and drying shall be treated as for a marine environment. For example, this applies to gardens against a house.
- 2 All external elements in contact with saline or contaminated water, or subject to saline wetting and drying, shall be treated as for a severe marine environment.
- 3 Requirements for especially aggressive environments depend on the nature of the corrosive agents and cannot be defined. Units, mortars, covers or coatings, shown by test or know by experience to be resistant to the particular corrosive agent, shall be used.
- 4 M2 mortar is not permitted for concrete and calcium silicate masonry. There are also limitations on the constituents of M3 and M4 mortars for calcium silicate masonry (see Table 3.2.).

**TABLE 3.2**  
**MORTAR MIXES**

Mortar class	Mix proportions by volume					Mortar suitability		
	Cement (GB/GP)	Masonry cement	Building lime	Sand	Water thickener	Fired clay	Concrete	Calcium silicate
M2	1	0	2	9	No	✓	×	×
M3	1	0	1	6	Optional	✓	✓	×
	1	0	0	5	Yes	✓	✓	✓
	0	1	0	4	Yes	✓	✓	×
M4	1	0	0.5	4.5	Optional	✓	✓	×
	1	0	0	4	Yes	✓	✓	✓
	1	0	0-0.25	3	Optional	✓	✓	×
	0	1	0	3	Yes	✓	✓	×

**LEGEND:**

✓ = satisfactory

× = unsatisfactory

Type GP = general purpose portland cement.

Type GB = general purpose blended cement.

### 3.2 MORTAR COMPONENTS

#### 3.2.1 Cement

Cements shall comply with AS 3972 for Type GP or GB or AS 1316 for masonry cement.

#### 3.2.2 Lime

Dry hydrated lime shall comply with AS 1672.1.

#### 3.2.3 Sand

Sand shall be free from material harmful to the mortar, grout, masonry units, reinforcement or any embedded items.

Sand shall be well graded and, when tested in accordance with the appropriate method of the AS 1141 series, shall contain not more than 10% of material passing the 75 micron sieve.

#### 3.2.4 Water thickener

Water thickener shall be methylcellulose-based water thickener specifically designed and packaged for use in masonry.

#### 3.2.5 Water

Water shall be free from any matter harmful to the mortar, grout, masonry units, reinforcement or any embedded items.

NOTE: Potable (drinkable) water is satisfactory.

#### 3.2.6 Additives

The following additives are acceptable for use in mortar:

- (a) Plasticizers or workability agents specifically designed for use in masonry and air-entraining agents complying with AS 1478.2.

NOTE: Overdosing mortar with workability agents reduces the durability and bond strength.

- (b) Colouring pigments complying with EN 12878.