

FIRE RATING LEVEL

FRL Design Of Concrete Masonry Walls

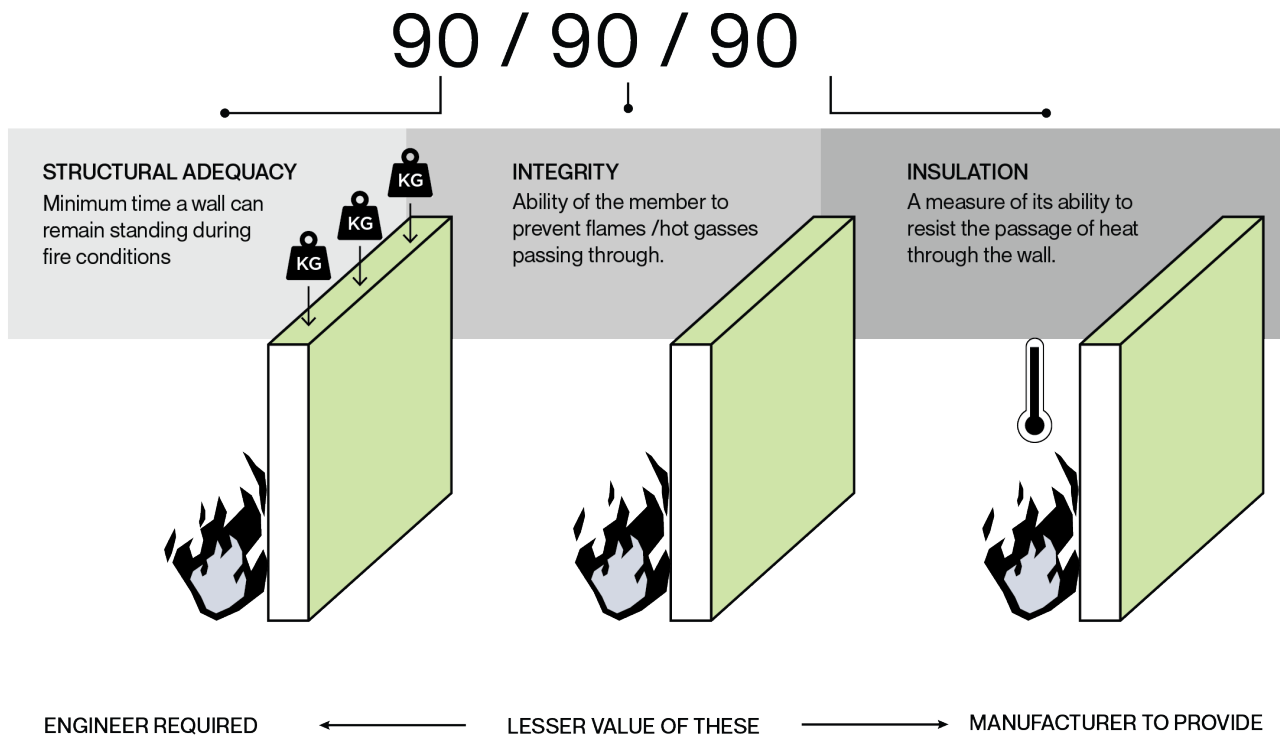
Midland Brick
CMAA

WHAT IS AN FRL?

A Fire Resistance Level (FRL) comes directly from the NCC. It considers 3 components, which are detailed in Section 6 of AS 3700. Each component has a unit of minutes, meaning that a given wall passed the testing criteria for at least that number of minutes when tested under AS 1530.4.

Requirements for obtaining FRLs for concrete masonry walls set out by the National Construction Code (NCC). AS 3700 (masonry structures) is referenced as the deemed-to-satisfy pathway to FRL compliance in NCC Volumes One and Two under specification 1 – S1C2 (d).

FRL DESIGN OF CONCRETE MASONRY WALLS



AS 3700 CLAUSE 6.3

Structural adequacy is dependent on the height, length and support conditions of a masonry wall, and as such, will differ in each design.

Depending on these variables, you will be able to achieve a fire-resistance period (FRP) for structural adequacy in minutes. Shorter walls will generally have a higher structural adequacy than taller, longer walls.

The CMAA provides tables within chapter B04 of Manual 55 that building designers can use to obtain a given FRP for structural adequacy.

AS 3700 CLAUSE 6.4

Integrity can be assumed to be the lesser of the values determined for structural adequacy and insulation.

For example, if you obtained an FRP of 90 minutes for structural adequacy and 60 minutes for insulation, you would assume an FRP of 60 minutes for integrity.

AS 3700 CLAUSE 6.5

Insulation is governed by the type and thickness of the material used to produce the masonry unit.

Manufacturers will conduct their own testing with their specific products to obtain an insulation FRP. This is the value that building designers should use for the insulation component of an FRL.

In the absence of this data, Table 6.3 of AS 3700 provides minimum thicknesses for concrete masonry units to achieve a given FRP of insulation.