

Masonry walls

- masonry walls consist of modular building blocks bonded together with mortar to form walls that are durable, fire resistant, and structurally efficient in compression.

Common types of masonry

- Bricks
- concrete
- castile
- structural glassblock
- natural/limestone

Wythe - a continuous vertical section of a wall that is one masonry unit in thickness



6" minimum thickness for:

- masonry bearing walls
- masonry shear "
- masonry parapet; parapet not 3x its thickness

- masonry walls may be constructed as solid walls, cavity or veneered walls

- masonry walls may be unreinforced or reinforced

• unreinforced also - plain masonry uses horizontal joint reinforcement and metal wall ties bonding wythe.

- RMW; uses steel reinforcing bars in grouted resisting stresses

Masonry bearing walls - parallel sets to support steel, wood or concrete (spanning system)

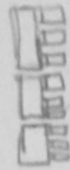
- Exterior must be weather-resistant and heat flow

Masonry Columns & Pilasters

- Plaster blocks
- Vertical reinforcement in grout-filled core
- Lateral ties
- Vertical reinforcement ties extend down to the foundation

Unreinforced masonry walls

- Truss ties / Ladder ties
- Wythes bonded by masonry headers
- Metal ties
- multiple wythes
- back up wythes



Grouted masonry

- interior joints

Cavity walls

- facing and backing wythes
- better one
- use metal ties in open space
- enhances thermal insulation

Reinforced masonry walls

- Grouted (metal ties)
- concrete horizontal bond beam
- reinforcement down to footing


Masonry Arches





Masonry lintels


Lintel must carry additional load if a concentrated load of roof or roof loads all within normal head range.

Lintel carries less wall load

 Reinforced brick lintels

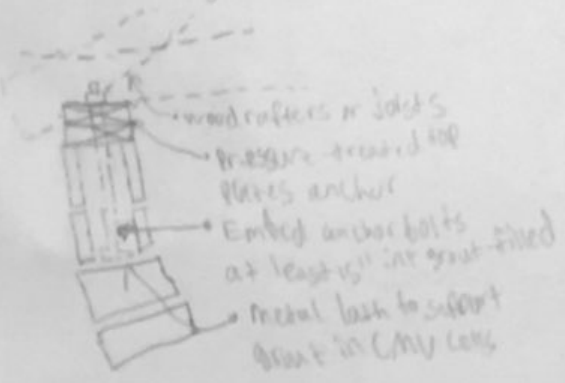
 Concrete masonry lintels

 Precast concrete lintels

 Steel Angle lintels

Masonry wall section

concrete, steel and wood floor and roof system are supported and tied to various types of masonry bearing walls.



Building Systems

- Structural Systems
to support and transmit applied gravity and lateral loads
- Enclosure system
shell or envelope of a building