

[1] BIM

Good Evening. So what did you think?

-- BIM Discussion --

[2] Exam

Let's get back to work here, first by reviewing the Exam.

[3] Masonry

Now for our regularly-scheduled program:

Brick Masonry

History

Middle East: [4] Mesopotamia (Bricks)

[5] Egypt (Stone)

Mediterranean: [6] Greece (Stone)

[7] Rome (Brick)

What is a Masonry Wall?

[8] For the sake of simplicity, masonry construction consists of both masonry units -- ie, bricks, in this case -- and mortar. Let's talk about mortar first. [9]

Mortar Definition and typical chemistry;
Modern Mortar Types: M, S, N, O

[10] Brick Masonry: Definition -- Clay-based unit masonry

[11] Special Importance of Unit Masonry
and Coursing

[12] Molding of Bricks
Firing of Bricks

[13] Brick Sizes
Special Shapes

Choosing Bricks: Weathering, Color, Texture
Severe Weathering, Moderate W., Neglig. W.
Type FBX (High degree Perfection)
Type FBS (Range of Variability)
Type FBA (Nonuniform)

[14] Laying Bricks
Wythe
Stretchers
Headers
Rowlock
Soldier
Bond Types: Common bond, flemish bond,
English Bond

[15] Procedures: Laying of Leads; Line between leads;
Next set of leads.

Mortar Joints: Variations and effect.

Cleaning: Muriatic Acid

Additional Considerations: Environment (moisture and
efflorescence; temperature & workability)

[16] Considerations of Sustainability in Brick Masonry

Materials often found locally;	+
Energy Intensive;	-
Gathering Materials do disrupt habitats	-
Long lasting, and re-usable	+
No negative effect on indoor air quality	+
Thermal mass useful in energy systems	+
Relatively small waste in construction	+

[17] Spanning Openings:

Lintels (steel, conc., masonry)
Corbel
Arch

[18] Reinforced Brick Masonry

Masonry Accessories: Ties, truss-type reinforcing...

CSI Spec Divisions for Masonry:

04050 Basic Masonry Materials and Methods
04100 Mortar and Masonry Grout
04150 Masonry Accessories
04200 Masonry Units
04400 Stone
04500 Refractories
04600 Corrosion-Resistant Masonry
04700 Simulated Masonry
04800 Masonry Assemblies
04900 Masonry Restoration and Cleaning

Important Question: How Many Syllables are in the word “masonry”??? [19]

[20], Examples of Brick in Architecture [21], [22]

Exercises: Coursing and Brick Sizes: 8.1, 8.2, 8.3, 8.4

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[23]

Stone and Concrete Masonry

[24] Types of Stone

 Igneous Rock -- Granite to Pumice or Tufa

 Sedimentary Rock -- Limestone, sandstone

 Metamorphic Rock -- Marble, Slate

[25] Collection, Quarrying and Milling of Stone

Stone Masonry: Laid in Mortar or Mechanically Fastened

[26] Laying of Stone: Rubble and Ashlar;

 Random and Coursed Stone

[27]

[28] Concrete Masonry: Laid in Mortar

 Manufacture, Sizes, Finishes, Textures

 Laying of Concrete Blocks (like bricks)

Other Types of Masonry Units

[29] Glass Block; terracotta; Autoclaved Cellular Conc.

[30] Examples of Glass Block in architecture

Stone Exercises: 9.1, 9.2