

## Construction and Extraction

### Brickmasons and Blockmasons

**Brickmasons and Blockmasons** work with their hands to create attractive, durable surfaces and structures. The profession has a long history and for thousands of years, these workers have built buildings, fences, roads, walkways, fireplaces and walls using bricks, concrete blocks, and natural stone. The structures that they build will continue to be in demand for years to come. Often referred to as bricklayers, their job entails laying and binding building materials, such as brick, structural tile, concrete block, cinder block, glass block, and terra-cotta block, with mortar and other substances to construct or repair walls, partitions, arches, sewers, and other structures. The work varies in complexity, from laying a simple masonry walkway to installing an ornate exterior on a high-rise building.

Brickmasons and blockmasons cut or break the materials used to create walls, floors, and other structures. They often have to saw bricks to fit them around windows, doors, and other openings. Once their building materials are properly sized, they are laid with or without a binding material. Workers use their own perceptions and a variety of tools to ensure that the structure meets the desired standards. Some operational knowledge of machinery is needed as well as precision with sharp tools. When building a structure, brickmasons usually start in the time-consuming corners. They spread a bed of mortar (a mixture of cement, lime, sand, and water) with a trowel (a flat, bladed metal tool with a handle), place the brick on the mortar bed, and press and tap the brick into place. After they finish laying the bricks, blocks, or stone, the workers clean the finished product with a variety of cleaning agents.

Some brickmasons specialize in different areas such as installing firebrick linings in industrial furnaces. Refractory masons are brickmasons who specialize in installing firebrick and refractory tile in high-temperature boilers, furnaces, cupolas, ladles, and soaking pits in industrial establishments. Most refractory masons are employed in steel mills, where molten materials flow on refractory beds from furnaces to rolling machines. They are also employed at oil refineries, glass furnaces, incinerators, and other locations requiring high temperatures during the manufacturing process.

Most Brickmasons and blockmasons' work is done outdoors. The job involves minimal paperwork and is physically demanding as it habitually requires heavy lifting. Skills needed include the ability to measure distances and mark guidelines as well as some ability to interpret blueprints or drawings. Creative problem solving may be necessary as workers often deal with plants or animals getting in the way of construction. Clients require cost estimates for projects so it is important that brickmasons and blockmasons have the ability to calculate the materials necessary for a job, especially if they are in supervisory roles. They sometimes spend long hours on foot in hot, cold or inclement

weather. Hours are usually flexible depending on the project. The length of the week is determined by the amount of work available and they often work late into the evening or on weekends.

## **Education/Training**

### *How to Obtain:*

Generally a High School Diploma or equivalent is needed, and many workers also have a technical certificate from a vocational school or through an Associate's degree program. Some brickmasons or blockmasons may have background or training in architecture, though this is not always required. A large number of brickmasons or blockmasons learn the trade informally on the job as helpers or laborers. Another option is to join an apprenticeship program, which typically lasts between 3 and 4 years. Apprenticeships can usually be located through local unions, contractors, or professional associations. In addition to on-the-job training, as helpers, laborers or mason tenders, apprenticeships will often require a minimum of 144 hours of classroom instruction per year, in blueprint reading, mathematics, layout work, sketching, and other subjects.

Requirements for becoming an Apprentice:

- Minimum age of 17
- Physically capable of meeting the demands of the job
- A high school diploma or equivalent is recommended
- Classes in math, sketching, and shop are recommended

### *More Information on Apprenticeship Programs:*

- Associate Builders and Contractors website:  
<http://www.abc.org/>
- International Masonry Institute (IMI):  
<http://www.imiweb.org/>

### *Average Costs:*

Apprenticeship programs generally do not charge the apprentice for classroom instruction, provided the apprentice maintains employment with a contractor affiliated with the apprenticeship program, throughout the apprenticeship period of 3 to 4 years.