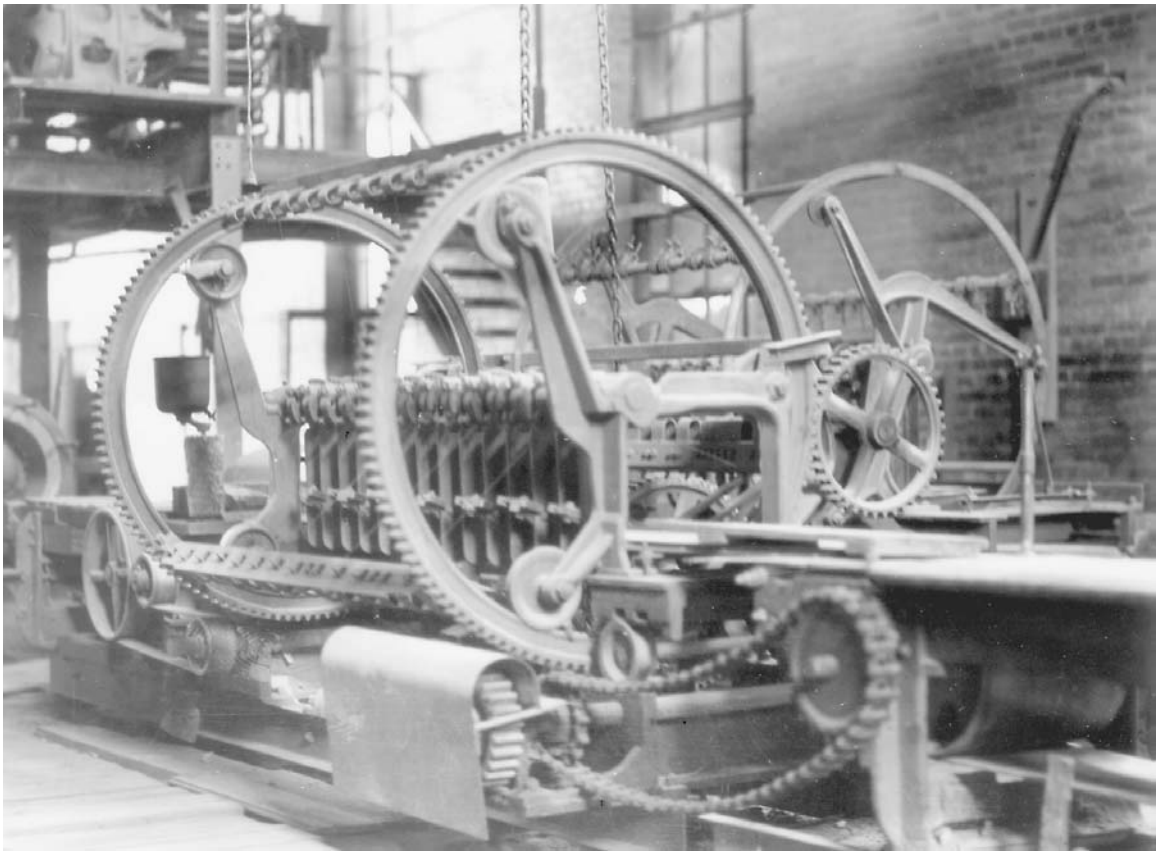

Figure 2-2 Wire-cutting extruded, stiff-mud brick. (*Photo courtesy BIA.*)

Automated machinery can accomplish soft-mud molding more uniformly and efficiently than hand work, and is now widely used. The soft-mud process is particularly suitable for clays which contain too much natural water for the extrusion method. The clay is tempered to a 20 to 30% moisture content (about twice that of the stiff-mud clays) and then pressed into wooden molds by hand or machine to form standard or special shapes. To prevent the clay from sticking, the molds are lubricated with sand or water. The resulting "sand-struck" or "water-struck" brick has a unique appearance characterized by either a rough, sandy surface or a relatively smooth surface with only slight texture variations from the individual molds (*see Fig. 2-3*). In addition to having an attractive rustic appearance, soft-mud units are more economical to install because less precision is required, and bricklayers can usually achieve a higher daily production. Manufacturers often simulate the look of hand-made brick by tumbling and roughening extruded brick.

The mortar bedding surfaces of sand-struck or sand-molded brick must be brushed clean of loose sand particles so that mortar bond is not adversely affected. Even if sand is not actually applied to the bed surfaces in the manufacturing process, stray particles along the edge of a unit can inhibit the critical mortar-to-unit bond at the weathering face of a wall, creating an unwanted increase in moisture penetration.

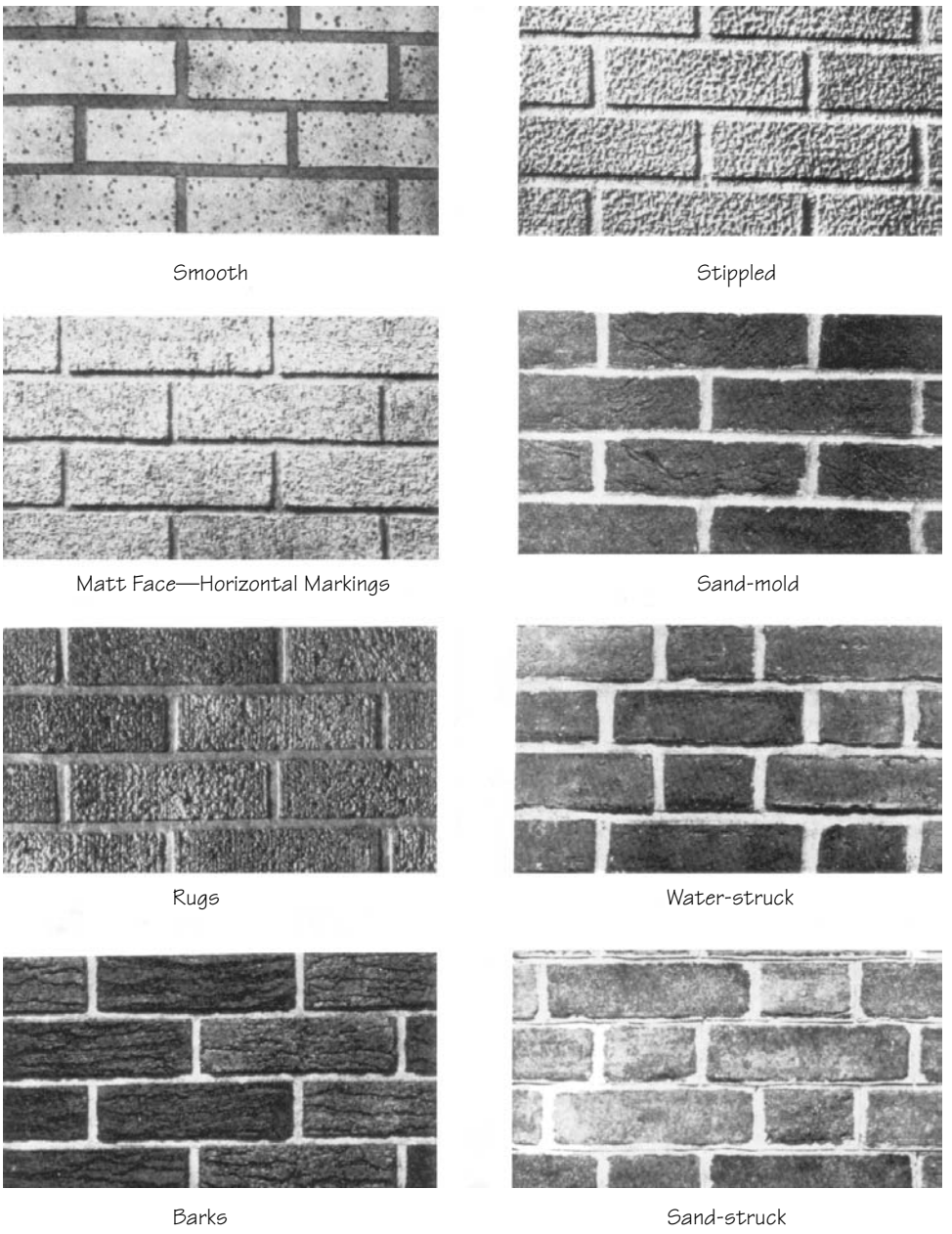

Figure 2-3 Typical clay brick textures. (*Photo courtesy BIA.*)

The *dry-press method,* although it produces the most accurately formed units, is used for less than 0.5% of U.S.-made brick. Clays of very low natural plasticity are required, usually with moisture contents of 10% or less. The relatively dry mix is pressed into steel molds by hydraulic plungers exerting a force of 500 to 1500 psi to form the unit.

2.1.6 Drying

Green clay units coming from the molding or cutting machines may contain 10 to 30% free moisture, depending on the forming process used. Before