

Detailing brick spandrels

The right detail depends on the structural frame and the spandrel depth

By Walter Laska

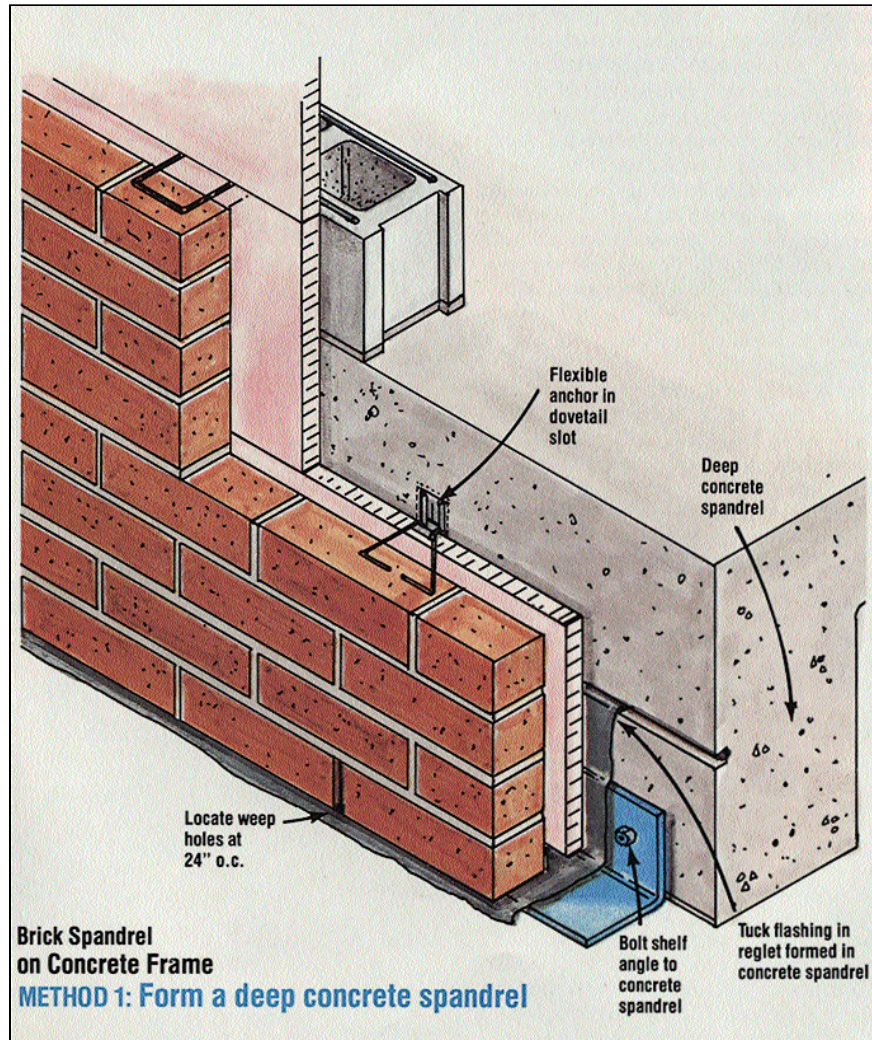
Long, horizontal bands of windows separated by long, narrow brick spandrels—the building design is now common, but detailing the brick spandrels can be challenging. Ceiling heights, mechanical space, glazing amounts, and aesthetics all affect how deep the spandrels must be. The depth of the spandrels and the type of structural frame, in turn, influence how the spandrels are detailed.

Concrete or steel frame

Brick spandrels must be properly secured to the structural frame. For concrete frames, the brick spandrel is supported by steel shelf angles bolted to the concrete spandrel beam (Method 1 shown here). Concrete spandrel beams become costly, however, if they are built too deep. A 20-inch-deep concrete spandrel, including an 8-inch-thick slab, is ideal. Deeper concrete spandrels can be constructed, but forming and form removal become more difficult.

If deep brick spandrels must be supported on a concrete frame, a steel support system can be suspended from each concrete spandrel (Method 2), instead of forming deep concrete spandrels. In this situation, the shelf angles are bolted to vertical steel angles, which in turn are welded to steel angles embedded in the concrete spandrel.

A steel-frame structure offers more flexibility (Method 3): designers can choose narrow, mid-depth, or deep brick spandrels. Detailing and construction, how-

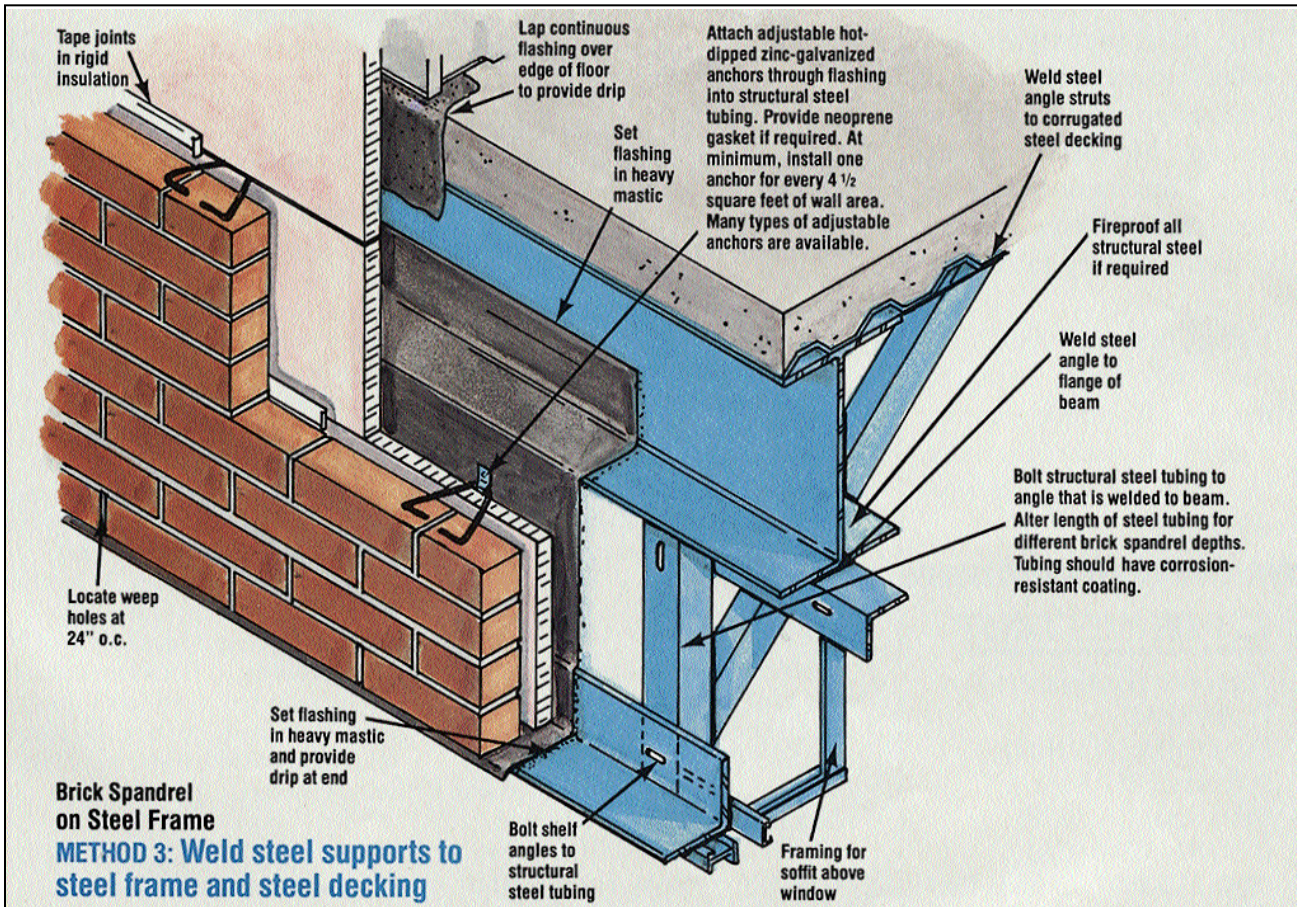
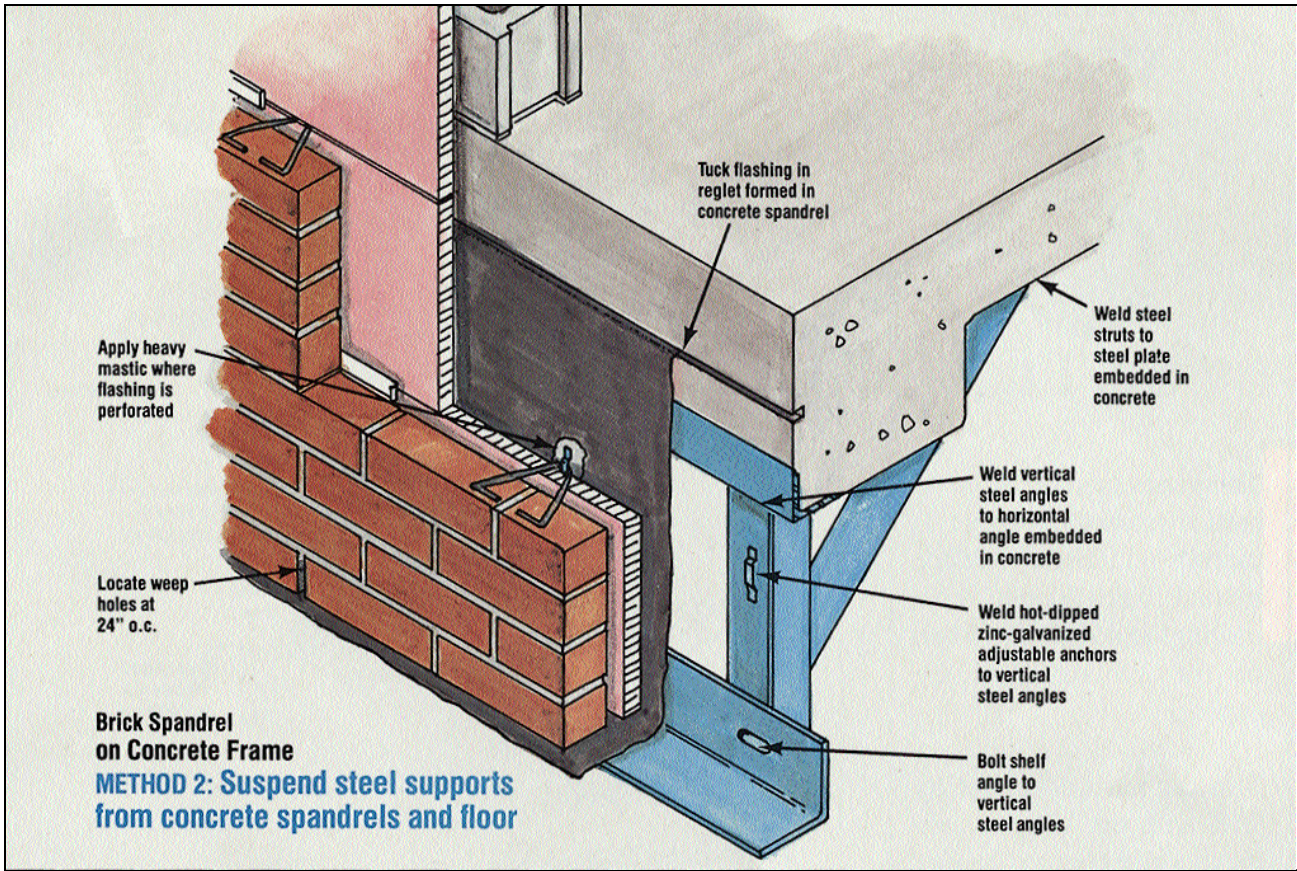


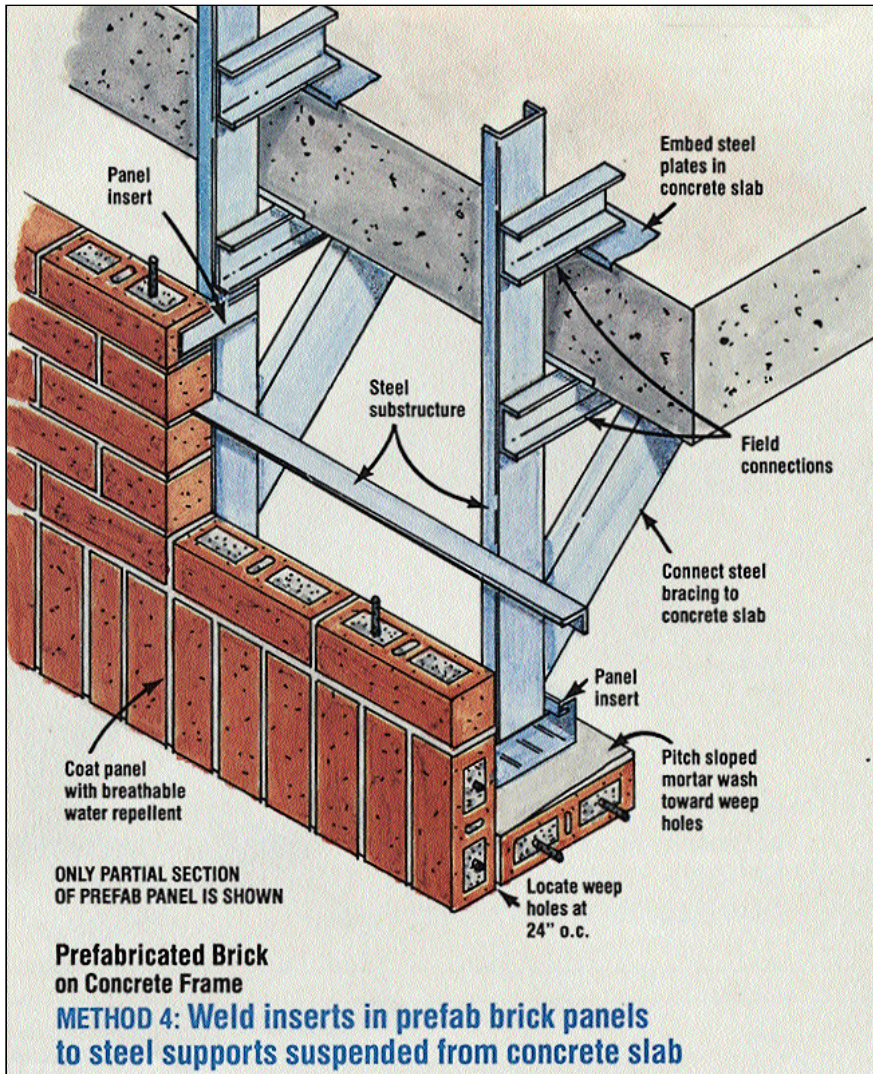
ever, are complicated. The shelf angles that support the brick spandrel are bolted to structural steel tubing. The tubing, in turn, is bolted to a steel angle welded to the steel frame. To withstand wind pressures, these steel backup components are braced by welding steel angle struts to the corrugated steel floor decking. The size and spacing of these steel backup components must be determined by

structural analysis.

Prefabrication

Possibly the easiest way to construct brick spandrels is to prefabricate them onsite or in a plant (Method 4). The panels are reinforced to increase flexural and tensile strengths and to withstand stresses caused by shipping, handling, and erection. Each panel is erected and anchored to the build-





ing frame as a single unit. Then the joints between panels are sealed.

Keeping the water out

To prevent water from entering the building, brick spandrels should be detailed as cavity walls. When a concrete frame is used, tuck the inside edge of the flashing in a reglet formed in the concrete spandrel. For steel frames, step the flashing up onto the steel beam and set the ends of it in heavy mastic. Also apply heavy mastic wherever the flashing is perforated, such as at wall anchors. To further help keep moisture out, tape all joints in the rigid insulation with waterproof tape. Because no flashing is included in prefabricated brick spandrels, coating the panels with a breathable water repellent is recommended. 🏠

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