Thoughtful design will avoid potential damage where heaving concrete slabs might create eccentric pressures. The lateral projection of either base courses or ashlar panels over grade slabs should be avoided in unstable soil conditions.

Figure 23 shows an expansion joint between steps and the cheekwall and also around the handrail post where the post goes through the stone into the concrete base.

Figure 24 shows a one-inch space between stone and the spandrel beam or floor slab. Too often the expansion of the beam will push stones out at corners on non-load-bearing walls with no expansion space provided.

![Diagram](image)

**RECOMMENDED**

**FIG. 21**

**FIG. 22**

**FIG. 23**

**FIG. 24**

**FIG. 25**

**pressure-relieving joints**

Shelf or clip angle support systems should be designed to accommodate expansion of stone due to thermal movement, contraction of the main building frame due to temperature, shrinkage or creep, to accommodate potential live-load deflections, and to avoid build-up of stresses due to these and other normal building movements. Also, installation of pressure-relieving joints at periodic intervals helps assure that bearing stresses of the stone on its supports remains within acceptable limits.

Typically, these pressure-relieving joints (often called relief joints) should be matched with similar pressure-relief joints in the back-up structure. Such joints are usually located at or near floor lines or the bottom of floor beams.

A pressure-relieving joint should be placed under each clip or shelf angle or under the bottom bed of a panel.