Notes:

A. It is advisable that all stone for each project be furnished from a single quarry. This should result in the best possible color control.

B. VARIEGATED stone will contain an uncertain percentage of the individual stones containing both colors while other stones may be all buff or all gray. When both colors occur within a single stone, the dividing line is usually readily discernible, and may be horizontal, vertical, diagonal and/or curved. The degree of contrast between the two colors, whether they appear in a single stone or in stones of solid individual colors, may be readily apparent or nearly indiscernible. Neither fabricator nor erector will attempt to control the location in the building of panels or individual stones according to their natural variations of color or texture.

C. Since it is impossible to show all natural characteristics by sample, the approval sample should be used only as a general guide to final building appearance. Characteristics noticeable at arm's length will appear differently when viewed in the building at normal distance.

D. As stone sizes increase, GRADE selectivity decreases until it may no longer be possible to classify SELECT or STANDARD grades according to ILI Classifications. Color, stone size and project size thus become the governing criteria. Designers and specifiers are urged to consult ILI or its member companies for specific current information.

Note: Large-scale samples, including sample walls (mockups) complete with connections and joint closures, can be helpful in selecting stone color and quality. These constructions should be preplanned and included in bid specifications where their additional expense is warranted.

staining and efflorescence

Alkali Stain

Staining or discoloration on Indiana Limestone in new work is known to occur when conditions favoring its development exist. Those conditions can be avoided by correct design and installation procedures.

The most common problem is alkali stain. It takes the form of a light golden to dark brown discoloration. This stain is caused by alkali-charged moisture which permeates the limestone from its back or bottom bed. It cannot be produced in objectionable form by moisture absorbed through the stone's exterior face. Ground moisture absorbed by the stone's face when below grade is an exception to this rule.

The source of the alkali is usually nearby concrete walls, floors, or grade. The moisture may be rainwater, wash from concrete pours, excess moisture in mortar, or moisture from or at grade. This moisture picks up water-soluble free alkali from various sources as it migrates to an evaporation surface at the stone's above-grade face. Alkali-laden moisture moving through the stone dissolves minute bits of organic matter. The material is transported to the face of the stone as the moisture moves toward the face. The moisture then goes off as vapor, leaving the alkali and organic matter at the surface in the form of stain.

Efflorescence

The mechanics of alkali stain are identical to those of efflorescence, although its chemistry is different. The moisture typically picks up sulfates of sodium, calcium, magnesium, iron, and potassium from sources within the wall. The dissolved chemicals are deposited at and under the stone's surface in the form of a whitish bloom or powder.

This material is somewhat more soluble in water than is the staining material, and for this reason usually is more easily removable.

Damage from efflorescence can occur when crystal growth occurs below the stone's surface. It causes stress on pore walls. The result is flaking, or exfoliation.

Avoid contact between soil and stone. Dampproofing treatments of either a bituminous or cementitious nature may be used as a barrier to the ground water or construction moisture causing these stains. See pp. 30-32.

The old adage common to all masonry applies—KEEP THE WALLS DRY.

Additional information on this subject is contained in ILI's booklet, How To Avoid Small Area Stains and Blemishes, copies of which are available to architects and specifiers on request.