REVIEW QUESTIONS

1 Name three building types for which structural roofing could be used and three for which architectural roofing would normally be specified.

2 What are the metals that make up Galvalume? What makes Galvalume superior to galvanizing?

3 How can one tell whether self-drilling screws for through-fastened roofing have been properly installed?

4 What is the minimum slope recommended for "waterproof" roofs? Does it matter if the roof is in snow country?

5 Name at least three types of roofing seams.

6 What are the advantages and disadvantages of standing-seam roofing vis-à-vis through-fastened roofing?

7 Since standing-seam roofing can slide relative to purlins, why are expansion joints needed in it?

8 Which type of roofing is best for a hip roof?

9 Which wind-uplift tests are commonly specified for standing-seam roofing? Are they needed for through-fastened roofing?

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Source: METAL BUILDING SYSTEMS

CHAPTER 7
WALL MATERIALS

7.1 INTRODUCTION

Gone are the days when metal buildings were uniformly clad in corrugated galvanized panels. Were Rip van Winkle to go to his nap in the 1940s and awake today, he might have trouble recognizing those buildings. Now, the choices of exterior wall materials for metal building systems are as numerous as for conventional construction; it is difficult to tell which structure is hidden behind a sleek contemporary facade.

This chapter's discussion is focused on common wall materials for metal building systems: metal panels, masonry walls, concrete, and some modern lightweight finishes. A few possible combinations of these materials to serve various functional or aesthetic needs are explored. Ours is not an exhaustive study of all the available choices; we can only afford a briefest of discussions, omitting such familiar materials as glass, wood, and stone.

7.2 METAL PANELS

First mass-produced pre-engineered buildings were clad in unpainted galvanized steel panels. Color was introduced in the late 1950s; paint was applied by spraying and baking on, as in refrigerators and car fenders. In contrast, modern metal panels are formed from factory-coated coils and come in many durable finishes.

Wall panels of metal buildings are normally supported on cold-formed C or Z girts. Most panels are made of 24-, 26-, or 28-gage galvanized steel with additional coatings discussed in Chap. 6. Metal roof and wall panels are similar in many ways, and some products can be used for both applications. Wall panels are typically shorter than their roof brethren and thus do not expand as much with temperature changes. Therefore, the standing-seam panel design, so popular in roofs, is not needed for walls. Metal wall panels can be of the shop- or field-assembled kind, and with either exposed or concealed fasteners.

7.2.1 Field-Assembled Panels

Field-assembled panels consist of exterior wall siding, fiberglass blanket insulation, and in some cases, liner sheets. The liners provide finished interiors and can readily accommodate (or be replaced by) acoustical surface treatments. In addition, they provide lateral bracing for girts.

A panel can be assembled by either of two methods. In the first method, insulation blankets are fastened to the eave girts and allowed to hang down, being held in place with retaining strips; then exterior sheets are attached to the girts through the insulation (Fig. 7.1). Finally, the liners, if needed, are installed.

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