



**FIGURE 7.11** Rusted screws in through-fastened wall panels.

The best way to determine the effectiveness of this and other joint construction methods in containing water and air leaks is by full-scale testing by spraying water at a specific rate, while maintaining an air-pressure differential between the inside and outside wall surfaces.

The promised benefits of pressure-equalized rain screen walls are yet to be fully proved. It is not even totally clear whether perfect pressure equalization is possible to achieve at all. Meanwhile, a basic cavity-wall rain screen, when properly designed and constructed, provides a reliable, simple, and cost-effective method of protection against the elements and water leakage.

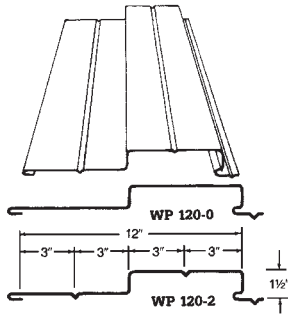
### 7.2.6 Details at the Base

At the base, metal panels can be supported by a variety of means shown in Fig. 7.14. A base tube (*a*) embedded into the foundation concrete is favored by many panel installers, mainly because it requires no fastening to concrete on their part. However, the tubes must be delivered in time for concrete placement, which adds to the jobsite coordination requirements. In contrast, the two most popular designs—the base angle (*e*) and the base channel (*c*)—are anchored to the top of the foundation after it is placed and cured.

**Load Span Table—WP 120**

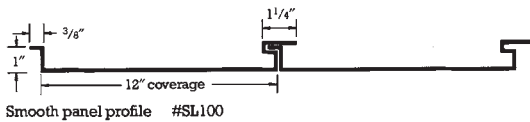
NOTE: Numbers shown reflect wind loads for corresponding profiles. Deflections are less than L/180

Material	Span	20 PSF	30 PSF	40 PSF	50 PSF
		Wall	Wall	Wall	Wall
20 Gage	1	8-6	7-5	6-9	6-3
	2	11-5	9-11	9-0	8-5
	3	10-6	9-2	8-4	7-9
22 Gage	1	7-9	6-9	6-2	5-9
	2	10-5	9-1	8-3	7-8
	3	9-7	8-5	7-7	7-1
24 Gage	1	6-11	6-1	5-1	5-1
	2	9-4	8-2	7-5	6-9
	3	8-7	7-6	6-10	6-4
.032 Alum.	1	5-9	4-8	4-1	3-7
	2	6-11	5-8	4-11	4-5
	3	7-9	6-4	5-6	4-11
.04 Alum.	1	7-0	5-8	4-11	4-5
	2	8-2	6-8	5-8	5-2
	3	9-2	7-6	6-6	5-9

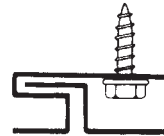


Standard Maximum Length - 32'.  
Contact Carlisle for lengths over 32'.

(a)



(b)



(c)

**FIGURE 7.12** Concealed-fastener wall panel: (a) exterior wall panel (WP by Carlisle); (b) interior liner (no. SL100 by Carlisle); (c) detail of interlocking connection and concealed fastener. (Carlisle Engineered Metals.)

The base channel has two main advantages over the base angle. First, it allows the fasteners to be placed farther away from the foundation edge than is possible with the base angle. The larger the edge distance, the less is the possibility of concrete spalling, as occasionally happens when the fasteners are placed too close to the edge. Second, the base channel simplifies the anchorage of liner panels (Fig. 7.15), vis-à-vis the detail of Fig. 7.2, which requires two connecting elements at the base.

The base girt design (Fig. 7.14d) does not require any anchorage to concrete at all, but at a cost of supplying an additional girt and its connections to columns. Obviously, the base girt design does not provide a tight seal at the bottom of the wall. The girt will be displaced by hurricane wind pressure or suction, allowing wind and rain to penetrate the building and damage its contents. Accordingly, we do not recommend this detail.

The base details discussed above can be used when wall siding overhangs the edge of concrete. All of them require a base closure or trim at the bottom (see Fig. 7.7 for one trim design used with a base tube). The base closure or trim is needed for a variety of reasons. It separates the aluminum- or zinc-coated panels from the uncoated steel and from concrete, closes off the edge of the siding, and prevents moisture, insects, and various critters from getting into the building. It also helps reduce air infiltration into the wall and retain the insulation at the bottom.