

**7.1.7.2.2** Where a stair is used to meet the requirements of **7.1.7.2**, the tread depth of such stair shall be not less than 13 in. (330 mm).

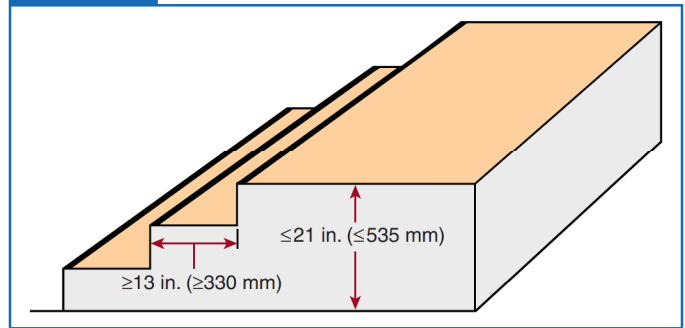
**7.1.7.2.3** Tread depth in industrial equipment access areas as provided in **40.2.5.3** shall be permitted.

**7.1.7.2.4** The presence and location of each step shall be readily apparent.

Prior to 1988, the *Code* prohibited stairs where changes of elevation were less than 21 in. (535 mm), because steps spanning such small elevation differences often go unnoticed and create conditions conducive to missteps. The minimum 13 in. (330 mm) tread depth and the requirement to make the presence and location of each step readily apparent were established to help reduce missteps. The text of **A.7.1.7.2** provides additional details on stair arrangement to help reduce the problem.

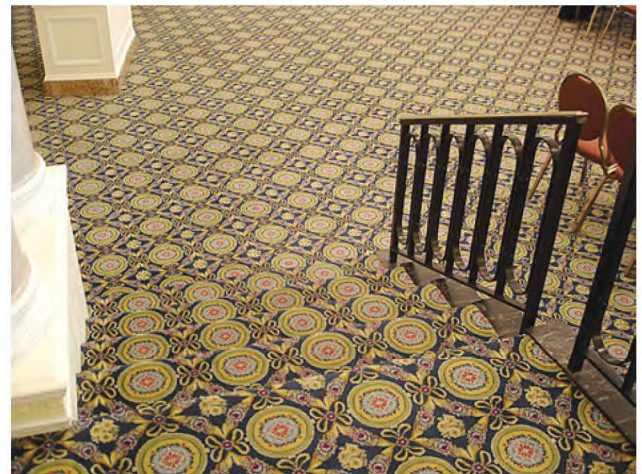
**Exhibit 7.19** illustrates an arrangement intended to meet the requirements of **7.1.7**. In the exhibit, tread depth has been increased over the usual minimum 11 in. (280 mm) to a minimum of 13 in. (330 mm). The leading edge of each tread has been marked to make its presence and location readily

**Exhibit 7.19**



*Special features for stairs involving changes in elevation of 21 in. (535 mm) or less.*

**Exhibit 7.20**



*Patterned carpet obscures any indication of tread edge location. (Photo courtesy of Jake Pauls)*

**Exhibit 7.21**



*Tread cover striping clearly indicates the location of each tread edge. (Photo courtesy of Jake Pauls)*

...ation differences connected by ramps might also go unnoticed and create conditions conducive to missteps. **Paragraph 7.1.7.2.1** covers the hazards of trips and other missteps on ramps where such hazards are not clear to persons walking in an area where a small change of elevation is otherwise not evident. Although the consequences of a misstep are usually not as severe on ramps as on stairs, hazard mitigation is needed.

Single risers and other combinations of a few risers are considered stairs and must meet all the requirements for stairs. Because such risers are considered stairs, handrails are needed along the natural path of egress travel. In **Exhibit 7.20**, the small elevation difference is achieved by stair treads with the exaggerated depth required by **7.1.7.2.2**, complete with a handrail at one side (as required for existing stairs by **7.2.2.4.1.6**), but the patterned carpet obscures any indication of tread edge location — the stairs are not seen as separate stepping surfaces. See the second paragraph of **A.7.2.2.3.3.2**. In **Exhibit 7.21**, the small elevation difference is achieved by stair treads with the exaggerated depth required by **7.1.7.2.2**, complete with handrails at both sides (as required for new stairs by **7.2.2.4.1.1**), and the variation in tread cover striping clearly indicates the location of each tread edge.

**7.1.8\* Guards.** Guards in accordance with **7.2.2.4** shall be provided at the open sides of means of egress that exceed 30 in. (760 mm) above the floor or the finished ground level below except where guards are specifically exempted by provisions of **Chapters 11 through 43**.

When Guards are required.