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Barrier Free Showers
Requirements and Applications in "Accessible Showers"

Barrier free showers are growing increasingly popular in the hospitality industry. Growth in demand can be related to the appearance created with barrier free construction as well as benefits in functionality. Barrier free implies that there is no curb or obstruction to entering a shower. A shower without a curb can provide a European style, contemporary look and improve accessibility. In addition, people with physical impairments may require a barrier free entrance. As baby boomers age, that need is likely to increase.

This article should help expand understanding of the regulations for Accessible Showers, relevant plumbing code requirements and information concerning products and methods.

A barrier free shower does not have to be wheelchair accessible. However, a handicapped accessible shower must be barrier free. The Americans with Disabilities Act (ADA) delineates "Accessibility Requirements" including size of shower compartments and descriptions of required seats, shower controls and grab bars. There are 2 basic types of accessible shower compartments. "Standard Roll-in Showers" provide wheelchair access. And, as the name implies, "Transfer Type Showers" facilitate moving from a wheelchair into the shower compartment.

Showers get more water than any rainforest, so waterproofing is critical. Plumbing codes apply and installations need to be approved by a plumbing official. Accessible showers have specific requirements mandated in the ADA Guidelines. The International Code Council (ICC) developed ANSI A117.1 to detail those requirements.

There are some areas of conflict between plumbing code and ADA accessibility requirements. In those cases, ADA requirements win. For example, a slope of ¼" to ½" per foot to the drain is required. Plumbing codes state that the threshold (or high point) in a shower must be at least 2" above the drain. The ADA mandates a maximum height of a threshold of ½" and requires at least 4' from the entrance to the drain. Applying those requirements puts the height above the drain for an accessible shower at 1½". Since plumbing inspectors interpret codes, it is prudent to confirm your plans with local officials at the outset. Although not generally required by code, it may be appropriate to waterproof areas adjacent to curbless showers.

Two common methods are used to waterproof showers: mortar bed and thin-bed. Both methods require that the floor be sloped ¼" to ½" per foot from perimeters to a drain. The mortar bed method requires a reinforced mortar bed (approximately 1¼") over the waterproof membrane. The membrane is typically referred to as a shower pan.

Thin bed waterproofing eliminates the need for the 1¼" mortar bed and is generally preferred in barrier free showers. After the membrane is bonded to a sloped substrate, tile can be bonded directly to the membrane. Requirements for thin-bed waterproofing membranes are detailed in ANSI A118.10.

There are various types of thin-bed waterproofing membranes including trowel applied, liquid and sheet membranes. Trowel applied and liquid membranes can offer advantages when the installation involves areas that are oddly shaped. However, sheet membranes offer greater uniformity and reduce workmanship variables, which can provide greater assurance of waterproofing integrity. NobleSeal® TS is widely used in barrier free application because of its durability, record of performance and outstanding test data. For example, TS has the lowest moisture/vapor transmission rate (0.050 perms) of commonly specified waterproofing membranes.

There are a variety of thin-bed waterproofing products. When evaluating membranes, consider durability, ease of installation and performance elements of the products. Thin-bed waterproofing membranes must meet ANSI A118.10, which is based on performance rather than membrane thickness and composition. Most plumbing officials require that the product be listed by a plumbing code authority.

There are two primary national plumbing codes: The International Plumbing Code (IPC) and The Uniform Plumbing Code (UPC). The IPC is the plumbing code for the International Code Council (ICC) and is used by most states. The UPC is written by the International Association of Plumbing and Mechanical Officials (IAPMO) and is prevalent in Western States. There are not substantial differences in code requirements. However, ensure that your plumbing inspector approves of the product you intend to use.

Use of linear drains in barrier free showers is also growing. Linear drains have been popular in Europe for years. However, European drain piping is configured differently than ours. Therefore, European drains are not easily adapted for applications in the U.S. At this point, some linear drains are "listed" by code authorities and should be suitable for applications in barrier free showers. There are some special requirements for drains in accessible showers. For example, the size of openings in the strainer must be under ¼".

Linear drains offer a number of benefits including the use of large format tiles. Standard shower drains must be sloped in all directions to the drain. That requires at least multiple arcs which necessitates small tiles. Linear drains require a single slope from the perimeter to the drain. The single slope allows for the use of large format tile. Linear drains can be placed in a variety of locations in the shower including at the exit. Those features allow for great creativity in design and can also provide added compressive strength needed for some accessible designs. Linear drains can also be installed at the exit of the bathroom to contain potential flooding.

FreeStyle Linear Drains™ offer some unique features. For example, they incorporate a top-mounted clamping mechanism to ensure that the thin-bed membrane is clamped into the drain. The drain is made from a single piece of ABS or PVC plastic which significantly reduces the potential for leaks. There are no welds like those needed to fabricate drains made from stainless. While linear drains offer numerous benefits, applications require specific design elements and cannot be an afterthought.

Some final thoughts about barrier free and accessible showers: understand the regulations that affect your project; confirm that the products you intend to use are acceptable to local inspectors; and, choose products and methods that meet your needs and are available when you need them.