

The Consideration of Weep Holes in NiCore™ Plank

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Concrete is a porous material that absorbs water and as a result, a floor or roof comprised of hollow-core planks is not a waterproof system by itself, and NiCore™ Planks are no exception. This is true not only for the finished system, where planks exposed to the elements must be protected by a permanent waterproof membrane, but also during construction of the building where the planks will absorb rain water or snow melt until the building is dried in. This absorbed water tends to collect and become entrapped within the hollow cores of planks between the solid grouted ends or between cast-in embedments such as weld plates or lifters. For typical planks with upward camber at midspan, the water will tend to drain towards the bearing ends and settle beside the solid grouted ends.

It is very important that this entrapped water be drained from the plank via weep holes drilled in each of the hollow cores near the bearing ends to allow the water to drain, as well as between solid-filled areas for embeds and grouted connections. Best practice is to drill these weep holes prior to water collecting so that water can immediately and continuously drain from the weep holes. This is especially important during cold weather, as entrapped water can freeze in an unheated structure and expand, usually causing the flange of the hollow-core plank to blow out below the ice (see example photo below). In most cases, the damage is primarily a cosmetic issue and can be repaired by filling the area solid with concrete or grout, but the most severe cases of ice damage can require extensive structural rehabilitation. It is a mistake to assume that planks erected during the spring, summer, and fall seasons are not vulnerable to this condition. Entrapped water during these seasons has been known to eventually migrate through the bottom soffit, resulting in damage to paint or other finish materials.

Nitterhouse Concrete Products, Inc. (NCP) recommends that weep holes be drilled 3/8" diameter and located approximately 3'-0" from the face of bearing in each core at each of the bearing ends of the plank (see detail below of one end of a plank for reference). It is also important that weep holes be maintained by the general contractor at the job site to ensure that they do not become plugged with ice, thus rendering them ineffective. After the building is dried in but prior to finishes being installed, the weep holes will need to be patched or caulked by and at the expense of another trade or the general contractor to prepare the surface for paint when the undersides of planks are exposed to view. Where not exposed to view, the weep holes can remain open for the life of the building.

One of the benefits of purchasing and investing in NiCore™ Plank from NCP is that we include factory installed weep holes at no cost to the customer, a service that few if any other hollow-core plank producers provide. If you purchase hollow-core plank from another producer, you will likely absorb the cost of having weep holes drilled in the field by the general contractor or another trade contractor shortly after their hollow-core plank are erected. Installing weep holes in the plant prior to shipping provides the best value and performance to ensure product durability.



Nitterhouse Concrete Products, Inc. (NCP) in Chambersburg, PA, has been family-owned and operated for five generations, serving the construction industry since 1923. Give us a call at 717-267-4505 or visit our website at www.nitterhouseconcrete.com for information on more quality precast, prestressed products to meet your design and construction needs. Choose with confidence and make NCP your single source for precast – what you need when you need it. Our experienced team of professionals is ready to help!

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