

Common Causes of Roof Leaks During Construction

ZIP System® sheathing is designed for wall and roof applications. When used in a roof application where the roof pitch is 2:12 or greater, ZIP System sheathing can fulfill design and code requirements as the structural roof deck and one layer of roof underlayment. After ZIP System sheathing is properly installed and panel seams are sealed with ZIP System™ flashing tape or liquid flash, the roof assembly will offer a layer of weather protection until the finished roofing materials can be installed. However, a ZIP System roof assembly without the finished roof covering is not considered a fully dried-in roof assembly. This technical tip will address some of the common areas where water intrusion may still occur before finished roof and wall coverings are installed.

Construction Phase Considerations

The first step in determining the source of a leak during construction is to consider what phase of construction the build is currently in. Before all exterior finishes such as roof coverings, claddings, windows and doors are installed, the building is not considered dried in. Before this phase is complete, water can intrude through any remaining rough openings, holes, windows or doors that are not flashed, or other areas yet to be finished.

At this phase, the roof and wall assemblies are also experiencing more direct water exposure than they will in-service. Underlayments and water resistive barriers are designed to prevent incidental water that has penetrated behind the exterior roofing or wall cladding from further intruding into the roof or wall assembly and are not intended to be the primary layer of defense.

Unfinished Flashings and Transitions

During roof construction, certain penetrations and transition areas with higher risk of water intrusion may require multiple layers of water protection beyond that offered by the ZIP System roof assembly. For example, a roof to wall intersection as seen in Figure 1 will require the use of a metal flashing transitioned back to the wall sheathing to properly protect the angled transition. Other areas that require additional flashing include, but are not limited to, valleys, plumbing vent and flue vent penetrations, skylights, and chimneys. The ridges of the roof are also commonly left open until the finished roofing is installed, at which point a ridge cap will be the primary means of water protection.

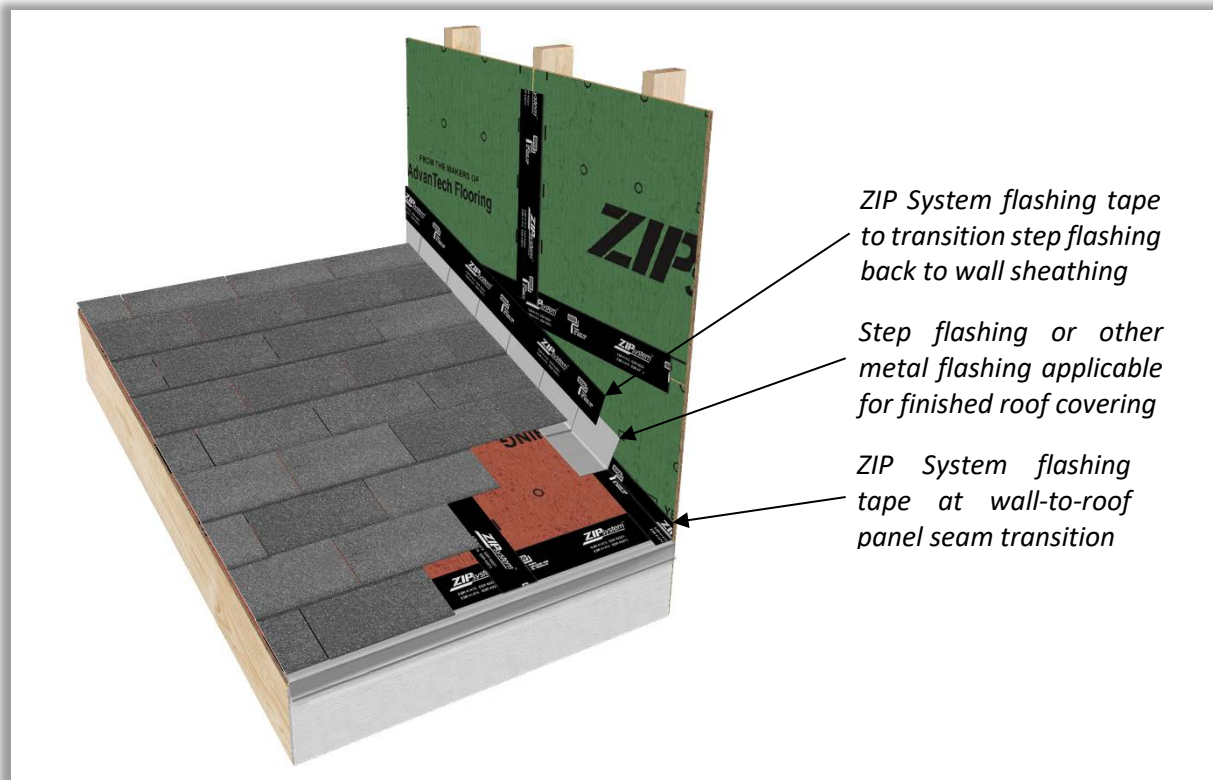


Figure 1: Multiple layers of protection installed at a roof to wall connection

H-Clips

H-clips or plywood clips are not commonly required when using ½” or 5/8” ZIP System sheathing in roof applications, however they are used with 7/16” ZIP System sheathing on framing greater than 16-inches on center (see the technical tip *When H-Clips are Necessary with ZIP System Sheathing* for more information). During sheathing installation, these clips may bend slightly apart and create a raised edge. The raised edge can prevent proper tape adhesion to the panel and in some cases the H-clips can damage or tear the ZIP System flashing tape. This is even more of an issue if the incorrect sized H-clip is used. If these issues occur, additional ZIP System flashing tape should be installed to protect the at-risk area. The ZIP System flashing tape must be rolled on all sides around the H-clip.

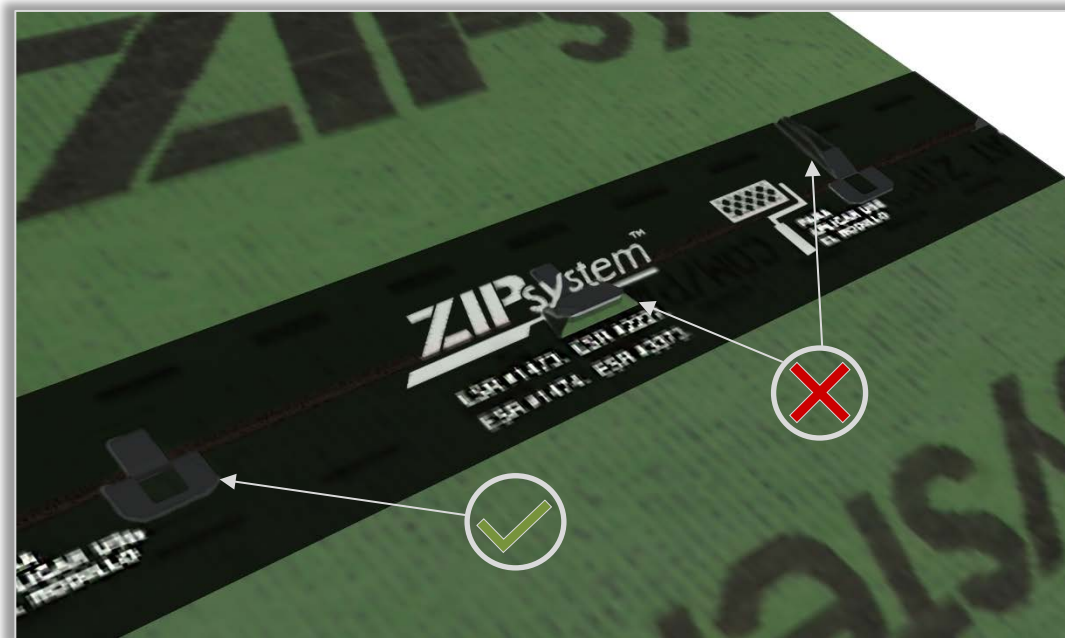


Figure 2: Common leak points caused by bent H-clips

Holes from Removed Fasteners

Safety equipment such as toe boards, harness clips and roof jacks may be used during the roof installation and removed during or after finished roof applications. If fasteners are removed from the roof deck when the safety equipment is taken down, holes left by these fasteners must be addressed with ZIP System flashing tape or liquid flash.

In any case where mechanically fastened roofing materials are removed from the roof deck, the holes from the fasteners must be sealed with one of the following: ZIP System flashing tape, ZIP System liquid flash or the roof deck must be covered with another layer of underlayment.

Low-Sloped Roofs

The slope of a roof is used in determining the amount of protection the roof needs from water infiltration. According to the International Residential Code and International Building Code, roofs with a slope between 2:12 and 4:12 pitch require a second layer of underlayment to be installed to increase the moisture resistance of the roof system. Roofs below a 2:12 pitch require the use of flat roofing membrane such as an EPDM or TPO roofing.

Please visit Huberwood.com or contact our technical department at 800-933-9220 Ext 2716 or at techquestions@huber.com with any questions or comments.