



Off-Site Construction: Coordination of Fabrication and Building Site Inspections

Builders can be deterred from using off-site construction due to lack of familiarity with inspections that occur on two different sites. This fact sheet will provide information for contractors and code officials regarding inspection requirements, model code standards, and variations in state plan review and inspection practices. There are many advantages of off-site construction, and increased understanding of the process will not only benefit the construction industry but also result in more sustainable, affordable, and well-constructed buildings.

What is Off-Site Construction?

With off-Site construction, panelized systems, whole-building modules or precut lumber are constructed in an enclosed space to provide protection of materials from inclement conditions during assembly and to allow work to continue uninterrupted. Panelized systems or modular buildings may include mechanical, electrical, or plumbing system components. Alternatively, these components may be installed on-site:

- *Panelized systems* include manufactured wall or floor assemblies, Structural Insulated Panels (SIPs), or precast panels.
- *Modular buildings* or whole-building modules encompass a room, an entire building, or a section (ex. half) of a building.
- *Precut lumber* includes building components such as roof or floor trusses.

Note: Whole building modules exclude “mobile housing” which is regulated by U.S. Department of Housing and Urban Development (HUD).

Where are Inspections and How Many are Required?

In the United States, the requirements for off-site construction vary from state to state. Off-site construction projects typically do not take place in the same jurisdiction where the building is ultimately sited, and each location may follow different code requirements. Authorities Having Jurisdiction (AHJ) can address this conflict and other administrative issues associated with inspections by adopting an off-site inspection policy (e.g. ICC/MBI 1200 *Standard for Off-Site Construction: Planning, Design, Fabrication, and Assembly* and 1205 *Standard for Off-Site Construction: Inspection and Regulatory Compliance*.)



Photo: Modular Building Institute



The number of inspections should not change due to off-site construction, but coordination is needed between off-site inspections and on-site inspections to avoid schedule delays. Typical new building inspections include foundations, drainage, framing, insulation in walls and ceilings, roof, electrical, HVAC, plumbing, fire protection, and final.

Who Inspects Off-Site Construction?

Some state and local AHJs adopt policies for off-site construction inspections, particularly projects constructed mostly outside of the jurisdiction, whereas others have a project-by-project protocol. Both approaches describe the responsibilities of inspectors, builders, and fabricators. During the permit phase, builders should identify the off-site construction location.

- *State or local Inspectors:* training in the aspects of off-site construction inspections is important to have consistent recordkeeping and communications with fabricators and builders. Off-site inspections may employ remote virtual inspections (RVI).
- *Third party inspectors:* AHJs may hire a third party in the off-site construction location to inspect the work. Seventy-five percent of states require use of third-party inspectors for at least some types of off-site construction. Third-party inspectors are covered by third-party insurance.

Off-Site Construction Regulations

Thirty-nine states regulate off-site construction at the state level, which means that the elements of a project are reviewed and inspected under the auspices of a state off-site construction building program. Jurisdictions reference off-site construction using different terminology such as industrialized buildings, factory-built buildings, or prefabricated buildings. Therefore, each jurisdiction has specific rules for the various types of off-site construction (volumetric or non-volumetric) and construction segment (residential, commercial, or both). Off-site building programs outline requirements for third-party plan review and/or inspection, and whether inspections can be done through remote virtual inspections (RVI). In these states, all on-site elements of projects and assembly of off-site construction components at the job site are the responsibility of the AHJ.

In states without statewide programs, jurisdictions can work with third-party providers to do plan review and inspection, but the process must be established on a project-by-project basis.

Third Party vs. State Plan Reviews and Inspections

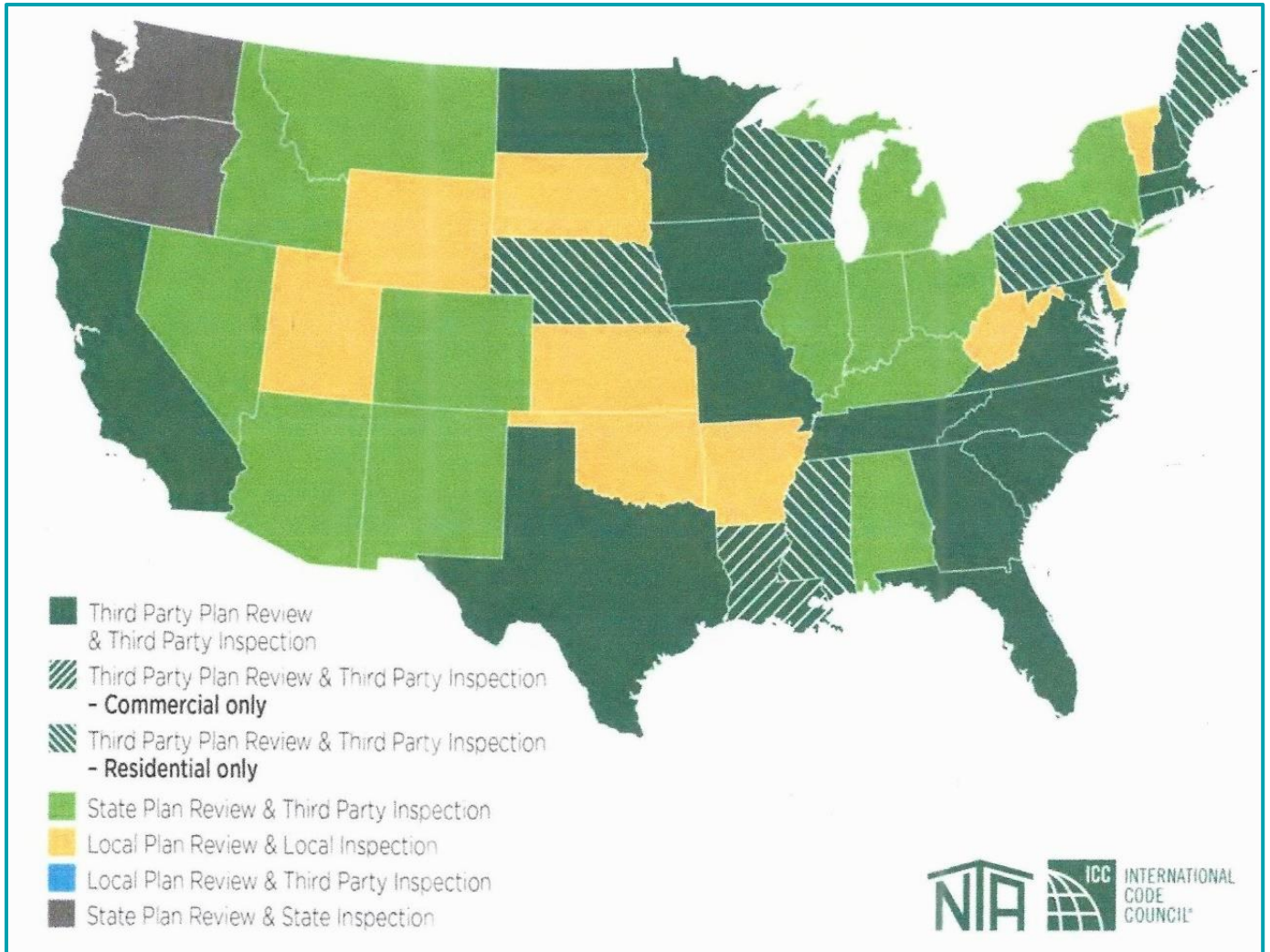


Figure 1: State Regulation of Off-site Construction, as of October 4, 2021, International Code Council, NTA