- [Narrator] Imagine a car is being suspended 30 feet above your head. You probably want strict safety precautions to be taken. Rack systems are performing the same task, yet safety considerations for this critical equipment are often overlooked. Many operators and managers don't realize that rack systems have a series of key requirements that must be fulfilled before, during, and after the installation to ensure a safe workplace. So what are the key points you should consider when preparing for an installation? For the purposes of this video, we'll be examining the installation process for selective rack. Selective rack is the simplest implementation, so you can assume another rack type will require at least these considerations and potentially more.

Before the crew arrives, you'll need to take a critical look at your facility. Do you have the proper fire protection? Is the sprinkler system in the correct proximity to where the planned rack will be? Has the appropriate electrical work for the area been completed? Are there any overhead, wall-mounted, or floor-mounted obstructions that'll present an obstacle for the installation? Is the floor or slab sufficient for the rack design? Level shelves are critical to the safety and efficacy of the rack. Accommodations must be made for floors that are not level, such as shimming. And be sure that your engineer of record is fully aware of all conditions related to your slab, such as comprehensive strength, rebar patterns, and thickness. Do you have the necessary permits? It's recommended that a permit be obtained for all installations, and a building and fire inspector should complete a final sign off prior to the job completion. It's also critical that the installers be licensed and insured in your state. With good planning, you can minimize the impact that an installation has on your facility's efficiency, although accommodations must be made from a safety and workflow standpoint. Think of your installation area as a building construction site. First, make sure the staging area is free and clear of non-installation equipment and personnel. Next, consider how the ingress and egress will work with the installation crew. Will you have to make adjustments to your operations to ensure that the staging area will be kept continuously clear, and that materials can get to and from the work site? Lastly, make sure that your staff have been trained on safety protocols and are prepared to follow them for the duration of the installation.

Facility staff aren't the only ones who need to undergo safety training and uphold strict protocols. The installation crew also needs to be OSHA compliant. Here's a few things to be on the lookout for. Firstly, for every rack installation, a rack design engineer develops a load application and rack configuration, or LARC drawing. This CAD details the location, configuration, and capacity of the plan system. This LARC drawing will be your most important guideline to reference in order to ensure the safety and correct installation of the rack. To ensure rack stability during installation as quickly as possible, make sure that all structural components are properly secured and tightened progressively, and the rack is fully anchored in a way that the system was designed. This methodology should be identified in the LARC drawing. OSHA has specific requirements for crew members working at an elevation of six feet or higher. Any changes during and/or post installation need to be approved by your engineer of record. Installers must use body harnesses, double-tied lanyards, and connectors secured only to areas that can withstand the force of a fall. Typically, fall protection systems are connected around a column, just above a shelf beam connection, or around a column at the point where it connects to a cross-aisle tie. Make sure these and other tie off points are approved by a qualified engineer.

Your rack system should undergo a final inspection prior to loading, and then regularly scheduled inspections in perpetuity. Usually, a local building inspector requires inspection prior to use to finalize the building permit process. For help determining the frequency and schedule of your regular ongoing inspections, please reference our rack installation and inspection video. As a best practice, the final inspections are completed by a qualified professional approved and overseen by the design engineer, or engineer of record on the project. With so many considerations, it's easy for something to fall through the cracks.

If you want to make sure your bases are covered, always work with a member of the Rack Manufacturers Institute, or their approved distributors. As some of the industry's most active thought leaders regarding rack standards, they'll be able to guide you through the installation and inspection requirements. For in-depth information on many of the concepts outlined in this video, you can visit our Rack Safety blog. You can also download our considerations for the planning and use of industrial steel storage racks document at mhi.org/rmi. And for a quick guide, you can download our installation checklist.