Joists are shipped to the site and stored in lay-down areas while awaiting erection in their respective bays. They are typically shipped in “joist bundles.”
The “joist bundles” are erected using a crane or modified loader. The bundles are set into the bay as a unit, reducing the number of loads (“picks”) to be handled by the crane.
The bundles are opened and the joists are “shaken out” (spread across the bay) to their required spacing.
Decking is laid over the joists and fastened to them using tack welds or mechanical fasteners (screws). This allows transfer of shear loads to the deck acting horizontally as a diaphragm. Vertical floor loads directly bear on the joists. HVAC ducts and conduit are often suspended or attached directly to the joists. The location of point loads is important in design of joists.
Joists are very versatile and an orientation other than horizontal can be implemented, if used appropriately. This picture clearly shows the joist “bridging” used to laterally brace the joists.