

BOLTED VS. WELDED

Globally, a high percentage of the industrialized countries that use roll-form pallet storage racking, make annual purchases of 'part-bolted frame' racking that far exceeds that of 'all welded frame' racking. However, domestically, the shift to the global norm has been slow. Is this due to habit, rack manufacturers' reluctance to modify production facilities or the belief in the outdated supposition that bolted construction is inferior to welded construction? Here is our position.

We agree that welded connections have their place in a variety of applications. In pallet racking, the Horizontal Load Beam has welded end-connectors, and the use of a welded connection to fix the baseplates to the upright column sections serves to avoid the rare, but real phenomenon known as 'block shear rupture'. (All of UMH's uprights have welded baseplates!). But the bolting of upright bracing to upright columns provides both financial and structural benefits. Specifically, part-bolted pallet racking requires less production time, provides greater compactness with regards to freight loads, and it is well-designed to allow for ease of component replacement as the main method of rack repair. All three of these advantages result in cost savings!

The structural equivalencies and advantages of the UMH part-bolted frame, include the use of 55,000 KSI tensile-strength steel, as recommended by Rack Manufacturers Institute (RMI) and many of the top structural engineers in the Material Handling Equipment (MHE) industry. Also, the performance of bolted rack structures is such that it has been shown to react better than all-welded racking to many seismic event and impact forces, because of its' ability to 'give' rather than break at critical connection points.

One of the most recent and important uses of bolted rack construction is that of Heavy-Duty Row Spacers. Different from its more simplistic counterpart, this substantial bolted brace provides lateral strength and stability that can reduce anchoring requirements and improve load-bearing capacities. In simplest terms, the strength of these lateral braces effectively creates a single system from two connected back-to-back rows of rack. In other words, the height-to-depth ratio can be significantly reduced with the bolted heavy-duty row spacer.

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