

Manufacturing Standards and Material Requirements for Warehouse Racking

Proper racking performance depends not only on design but also on adherence to recognized U.S. manufacturing and safety standards. Warehouse racking systems in the U.S. must meet strict material and engineering standards to ensure safety and long-term performance.

Material Standards:

- Structural steel provides superior impact resistance for heavy-duty applications.
- Roll-formed steel offers flexibility and cost efficiency for lighter, adjustable systems.

Engineering Requirements:

- Compliance with RMI/ANSI MH16.1 ensures correct load ratings, beam deflection limits, and upright strength.
- All load members must pass uniform load and weld integrity tests.
- Anchoring, bracing, and column reinforcement are verified for seismic and dynamic stability.

Protective Finishes:

- Powder coating and galvanization prevent corrosion in humid or refrigerated environments.

These standards align with OSHA 29 CFR 1910.176(b), which mandates that materials be stored safely and securely. Meeting them guarantees structural reliability, safer operations, and longer rack lifespan under everyday warehouse conditions.