

Pallet Rack Installation Guide | 货架安装指南

1. Pre-Installation Check | 安装前检查

English:

- Inspect Floor:** Ensure the concrete floor is level and capable of supporting the intended load.
- Inventory Parts:** Verify you have all uprights (frames), beams, safety pins, and floor anchors.
- Safety Gear:** Ensure all installers wear hard hats, steel-toe boots, and high-visibility vests.

中文:

- 地面检查:** 确保混凝土高度平整，并能承受预期的载荷。
- 清点配件:** 核对立柱片、横梁、安全销和地脚螺栓的数量。
- 安全装备:** 确保所有安装人员佩戴安全帽、劳保鞋和反光背心。

2. Layout and Marking | 划线定位

English:

- Snap chalk lines on the floor to mark the exact position of the uprights according to the layout plan.
- Maintain precise aisle widths for forklift clearance.

中文:

- 根据设计图纸，在地面上弹出墨线，标出立柱的确切位置。
- 确保留出足够的通道宽度，以便叉车通行。

3. Assembling the Frames (If not pre-assembled) | 组装立柱片

English:

- Connect the two vertical posts with horizontal and diagonal bracing using the provided bolts.
- Note:** Do not fully tighten bolts until the frame is squared.

中文:

- 使用配套螺栓将两根立柱与横撑和斜撑连接起来。
- **注意:** 在确保框架方正之前, 不要完全拧紧螺栓。

4. Installing Beams | 安装横梁

English:

- Stand two uprights and snap the bottom beams into the desired slots.
- Install the remaining levels from the bottom up.
- **Crucial:** Insert **Safety Pins** (Locking Pins) immediately after a beam is seated to prevent accidental dislodgement.

中文:

- 竖起两个立柱片, 将底层横梁卡入对应的孔位。
- 由下而上依次安装其余各层横梁。
- **至关重要:** 横梁挂好后, 必须立即插入**安全销**, 以防止横梁意外脱落。

5. Plumbing and Leveling | 找平与垂直度校正

English:

- Use a laser level or plumb bob to ensure uprights are perfectly vertical.
- Use metal shims under the baseplates if the floor is uneven.

中文:

- 使用激光水平仪或铅垂线确保立柱完全垂直。
- 如果地面不平, 请在底座下使用金属垫片进行调整。

6. Anchoring to the Floor | 地面锚固

English:

- Drill holes into the concrete through the baseplate holes.

- Drive in the wedge anchors and tighten to the manufacturer's specified torque.
- **Warning:** Never leave a rack unanchored; it is a major tip-over hazard.

中文:

- 通过底座孔在混凝土上钻孔。
- 打入膨胀螺栓，并按制造商规定的扭矩拧紧。
- **警告：** 严禁在未锚固的情况下使用货架，否则会有倾倒风险。

7. Final Inspection | 最终检查

English:

- Check that all safety pins are engaged.
- Ensure all bolts are tightened.
- Apply load capacity labels to the ends of the aisles.

中文:

- 检查所有安全销是否到位。
- 确保所有螺栓已拧紧。
- 在通道尽头贴上承重标识牌。

Safety Warning: Heavy-duty racks should only be installed by trained professionals. Never exceed the rated load capacity specified by the manufacturer. **安全警告：** 重型货架应由专业人员安装。严禁超过制造商规定的额定承载重量。

Annex 附录

Pallet Rack Maintenance Checklist | 货架维护检查表

1. Structural Integrity | 结构完整性

English:

- **Check for Impact Damage:** Inspect uprights and beams for dents, bends, or

creases, especially near the floor (forklift impact zones).

- **Straightness (Plumb):** Ensure columns have not shifted and remain vertically aligned.
- **Weld Inspection:** Look for any cracks or signs of stress at the connection points and weld seams.

中文:

- **检查碰撞损伤:** 检查立柱和横梁是否有凹痕、弯曲或折痕，特别是靠近地面的部位 (叉车易撞区)。
- **垂直度:** 确保立柱没有位移，保持垂直对齐。
- **焊缝检查:** 观察连接点和焊缝处是否有裂纹或应力迹象。

2. Connectors and Hardware | 连接件与硬件

English:

- **Safety Pins:** Verify that every beam-to-column connection has a functional safety pin or bolt.
- **Floor Anchors:** Ensure floor bolts are tight and have not been sheared off or loosened by vibration.
- **Loose Bolts:** Check and retighten any loose bracing bolts.

中文:

- **安全销:** 核实每个横梁与立柱的连接处是否都有完好的安全销或螺栓。
- **地面锚固:** 确保地脚螺栓紧固，没有因振动而剪断或松动。
- **松动螺栓:** 检查并重新拧紧任何松动的支撑螺栓。

3. Load Management | 载荷管理

English:

- **No Overloading:** Confirm that the weight on the racks does not exceed the maximum rated capacity.
- **Beam Deflection:** Check for excessive bowing in beams. Beams should return to

flat when unloaded.

- *Rule of thumb: Deflection should not exceed $L/200$ (Length divided by 200).*
- **Pallet Condition:** Ensure pallets are in good repair and seated correctly on the beams.

中文:

- **严禁超载:** 确认货架上的货物重量未超过最大额定承载能力。
- **横梁挠度 (下挠):** 检查横梁是否过度弯曲。卸载后, 横梁应恢复平直。
 - *经验法则: 挠度不应超过 $L/200$ (长度除以 200)。*
- **托盘状况:** 确保托盘完好无损, 并正确放置在横梁上。

4. Safety Accessories | 安全防护配件

English:

- **Upright Protectors:** Ensure column guards are intact and not crushed.
- **Safety Netting/Backstops:** If installed, check that they are secure to prevent items from falling into aisles.
- **Signage:** Ensure capacity plaques and safety warning signs are visible and legible.

中文:

- **护脚/护撞柱:** 确保立柱保护装置完好, 没有被撞扁。
- **安全背网:** 如果安装了背网, 检查其是否牢固, 防止货物掉入通道。
- **标识牌:** 确保承重牌和安全警示标志清晰可见。

Inspection Frequency | 检查频率

Frequency	Task	频率	任务
Daily	Visual walk-through for major damage.	日常	目测巡视重大损伤。

Frequency	Task	频率	任务
Monthly	Detailed check of anchors and safety pins.	每月	详细检查锚栓和安全销。
Annually	Formal professional structural audit.	年度	正式的专业结构审核。