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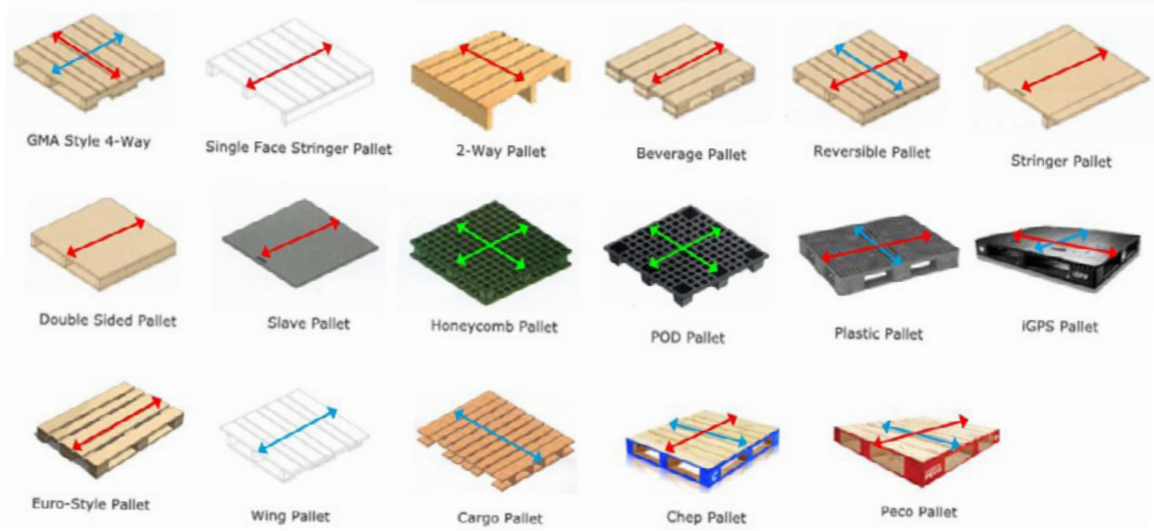
YOUR GRAVITY FLOW SPECIALISTS

PALLET TYPE & QUALITY FOR PALLET FLOW



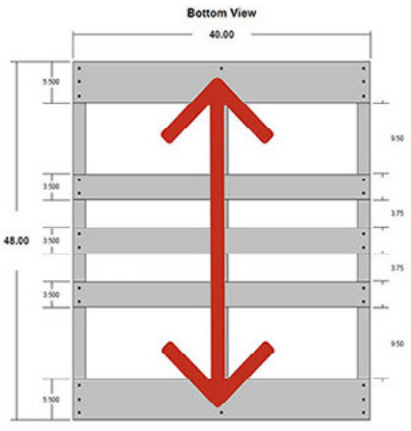
Everything You Need to Know About Pallets for Optimal Pallet Flow Performance

Pallets come in a wide range of sizes, styles, and materials, and your pallet flow must be designed to accommodate those specs for safe, reliable performance. Follow the guidelines outlined below for pallet flow success.

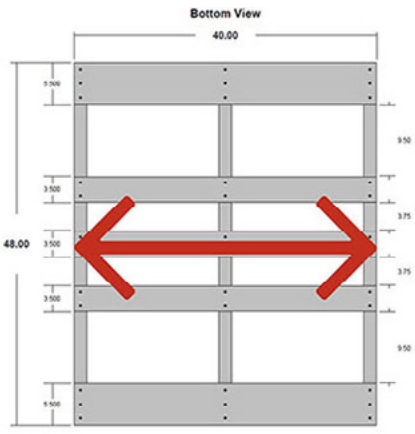
Pallet Orientation

Orientation refers to the pallet's bottom boards (runners) relative to the direction of flow. The Mallard team defines orientation as:

- The "easy" way (a.k.a. – right way) – bottom boards run parallel to the direction of flow
- The "hard" way (a.k.a. – wrong way) – bottom boards run perpendicular to the direction of flow
- Bi-directional – pallet flows in either direction with max dimension dictating the direction of flow



GMA- "Hard Way"



GMA - "Easy Way"

The Pallet Identification Chart at the top of the page arrows indicate orientation for options for common pallet designs:

Blue arrow = hard way Red arrow = easy way Green arrow = bi-directional

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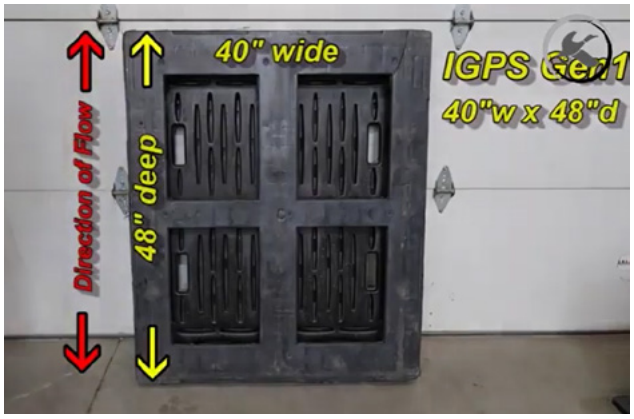
Standard Pallet Measurements

Pallets that meet industry standard manufacturing guidelines are referred to as GMA-style pallets. These universal pallets are helpful in that they enable pallet-handling equipment and automated systems to work efficiently across different industries and manufacturers.

GMA-Style Pallet Parameters:

- Dimensions: 48" x 40" x 6 ½"
- Stringers: 1 3/8" x 3 1/2" x 48"
- Top and bottom deck board 5/8" thick
- Top boards - 5 1/2" x 40" on ends & five 3 1/2" x 40" in the center.
- Bottom boards - 5 1/2" x 40" on ends & three 3 1/2" x 40" between the notches.
- Alt: 6 5/8" x 5 1/2" x 40" boards on top and four 5/8" x 5 1/2" x 40" on bottom.
- Other common pallet dimensions: 42 x 42 and 48 x 48



Click here to view video tutorial for measuring & orienting your pallets:

Wood Pallets for Pallet Flow

Turn your pallets over to examine how much surface area exists to connect with the flow rails -- the more surface area, the better the flow. Also, check the quality and thickness of the bottom boards. The number and arrangement will determine lane configuration and whether wheels or rollers are your best option. The better the quality and condition of the pallets, the more reliable the flow.

Considerations:

Lumber Type – Avoid softwoods, which can conform to pallet flow wheels or rollers under the load weight and obstruct the flow. CHEP and PECO are two quality hardwood pallet brands.

Load Capacity – Pallet capacity is *lower in pallet flow* systems due to the force from the movement.

Point Load in Wheeled Pallet Flow - Pallets on wheeled pallet flow are *point-loaded, not uniform*—the load weight transfers to the wheels vs. uniform distribution across the surface. Since pallets are load-rated for a UDL, you must verify load capacity with your supplier.

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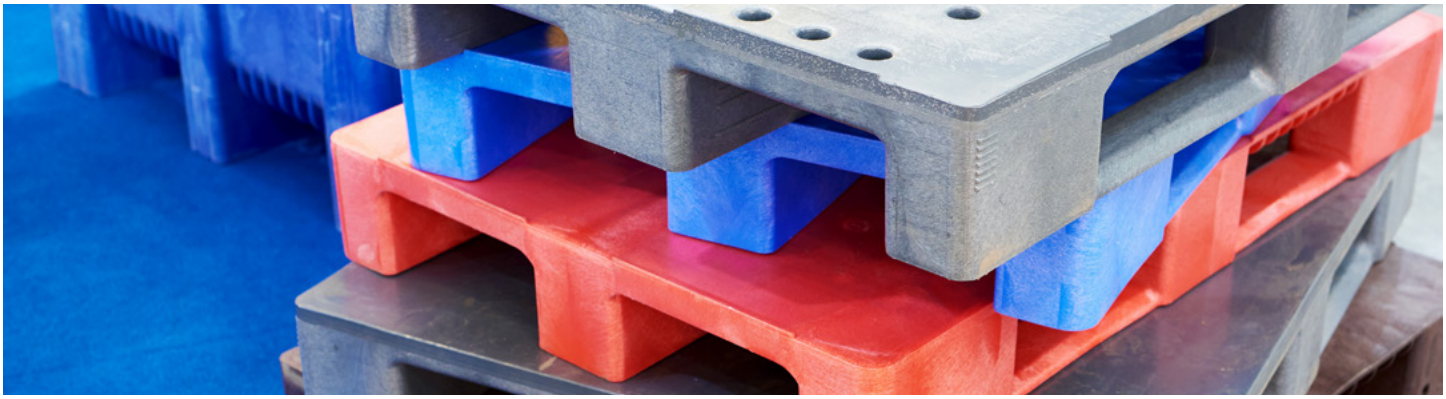
PALLET TYPE & QUALITY FOR PALLET FLOW

Plastic & Metal Pallets for Pallet Flow



Plastic & metal pallets range widely in design… particularly the bottom surface. Maximizing contact points to control pallet flow is a chief concern. Additionally, preventing the slippery plastic material from surfing over vs. being guided by the pallet flow rails is critical.

Plastic & Metal Pallet Cautions!

- Non-standard design
- Temperature sensitivity
- Load-weight sensitivities
- Pallet surfing

Considerations:

Flow Lane Contact - The bottom of plastic and metal pallets can be full surface or protruding feet --rubber-coated speed controllers help improve pallet-to-flow-rail contact for either type. Speed controllers maintain safe pallet velocity and tracking down the lane.

Materials - Plastic and metal pallet quality varies widely from thin, flimsy plastics to dense, heavy metals. Your pallet flow system must accommodate the precise pallet style and size --check that the pallets pass the stiffness test for safety at total load capacity.

Temperature-sensitive – Heat can change plastic, causing pallets to mold slightly to the flow rails, impeding free pallet movement and automatic restarting.

Load-weight sensitive – Plastic pallets may conform to wheeled pallet flow under heavy load weights. Full roller pallet flow is often the go-to for plastic pallets to distribute load weight more evenly.

Pallet surfing – Slick plastic and metal surfaces tend to skid over flow rails, compromising speed and safety. Rubber-coated speed controllers can minimize pallet skidding.

Important Consideration: An exception to the standard guideline mentioned earlier is the iGPS plastic Gen 1 pallet. Extensive testing in the Mallard lab revealed that the Gen 1 pallet performs optimally in a wheeled system, such as the Magnum wheel pallet flow. However, the Next Gen iGPS pallet with a waffled pattern bottom flows better on full roller pallet flow.

Gen 1 iGPS Pallet – Best on Wheeled Pallet Flow

Next Gen iGPS Pallet – Best on Roller Pallet Flow

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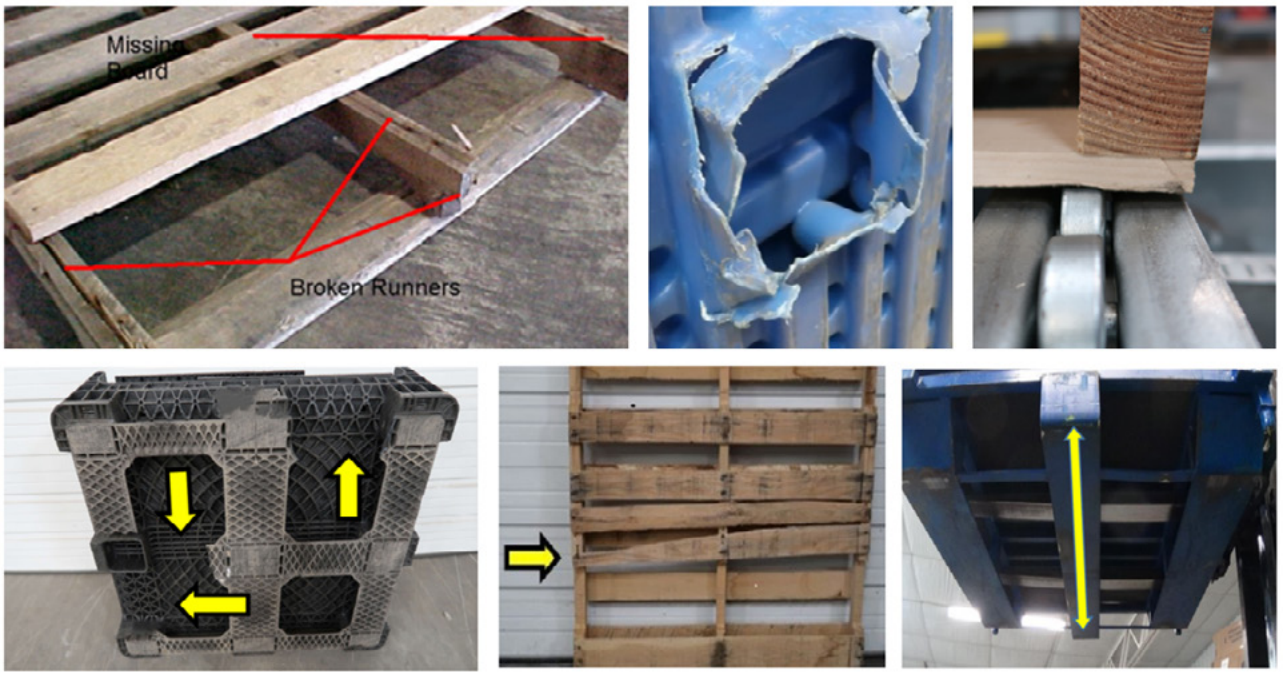
Avoid Pallet Flow Damage from Compromised Pallets



Advise your team to look at pallets for missing, broken, or splintered runners before placing pallets into the system. Compromised pallets can cause poor tracking and leave debris compromising equipment and pallet flow function.

Wood Pallet Cautions!

- Missing or broken runners
- Inadequate/inferior fasteners
- Protruding or damaged nails
- Weak blocks or warped boards
- Dangling stretch wrap or other debris

Broken and missing boards prevent the pallet from making proper contact with the flow rails, causing the pallet to skim over speed controllers or pallet separators. These conditions can cause a hazard in the lane.

Protruding nails are very common in wooden pallets, particularly near broken or missing boards, and can scratch or damage your flow rails, cause excess speed, and hang-ups.

Warping prevents good contact with the flow lane, possibly hanging up the pallet or causing excessive speed.

Plastic wrap dangling loose can get caught in the wheels or rollers and cause the pallet to hang up or deflect.

Free Resources

Download the Pallet Flow Maintenance Guide

Pallet Flow Videos:

Proper Loading & Unloading

Addressing Pallet Hang-Ups

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