



The Mobile Robot Company

Knowledge Center — Route and Floor Suitability · 2026-08-04

<https://info.mobilerobot.com/applications/planning/route-and-floor-suitability>

Route and Floor Suitability

Autonomous J1600 operation is a level-floor, indoor application. This page covers what a route must look like physically and how routes are created, so you can walk your facility and qualify every intended path.

PRELIMINARY SPECIFICATIONS

The January 2026 specifications on this page are preliminary and subject to change. Confirm limits against current product documentation before a deployment decision.

Floor requirements along the route

Parameter	Requirement
Gradeability, automatic mode	0° / 0% — level floors only
Gradeability, manual mode, no load	2.86° / 5%
Gradeability, manual mode, full load	1.72° / 3%
Maximum traversable bump height	25 mm (1 in)
Maximum traversable gap width	20 mm (0.8 in)
Floor flatness/levelness	TR34 FM3 (FF 25 / FL 20)

Expansion joints, drain covers, and thresholds count against the bump and gap limits. Dock plates, ramps, and slopes are [manual territory](https://info.mobilerobot.com/documentation/user-guides/manual-operation/): an operator can take the vehicle up a 5% grade unloaded or 3% at full load, but no autonomous route may include a slope.

Clearances

Plan aisle widths, doorways, and turning areas around [these dimensions](https://info.mobilerobot.com/documentation/technical-reference/dimensions/):

Parameter	Metric	Imperial
Vehicle length	1,893 mm	75 in
Vehicle width	850 mm	33 in
Turning radius	1,501 mm	59 in
Vehicle height, forks lowered	2,060 mm	81 in

Top speed (<https://info.mobilerobot.com/products/j1600/dimensions-and-performance/>) is 5.4 km/h (1.5 m/s). The 360-degree safety field is speed-dependent and expands at higher speeds, and blue floor lights show the protected area around the vehicle. See **how J1600 safety works** (<https://info.mobilerobot.com/safety-compliance/safety-overview/how-j1600-safety-works/>).

How routes are created

There is no route programming. The J1600 maps the facility with **3D LiDAR SLAM** (<https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/>), while an operator drives it manually, then plans its own paths:

1. Drive the vehicle through the facility with the tiller. It continuously learns and updates its 3D environment model.
2. Drive to each intended **drop point** (<https://info.mobilerobot.com/documentation/installation/mapping-and-drop-point-setup/>) and tap **Save location**. There is no software limit to the number of saved locations.
3. Combine **saved locations** (<https://info.mobilerobot.com/documentation/user-guides/location-management/>) freely into tasks. The robot navigates to any saved point without teaching every possible origin-destination pair.

Because navigation needs no fixed tracks, wires, reflectors, or building changes, routes survive **layout changes** (<https://info.mobilerobot.com/applications/scenarios/dynamic-route-changes/>): the robot maps and avoids obstacles in dynamic environments, and preferred travel zones can be defined for safer routing through production areas.

Route length and traffic

A route can be a few meters or more than 100 meters — the working concept is the same. Along the route the robot detects and avoids obstacles and people; in a public

first-use demonstration it routed around bystanders on its own. [Persistently crowded or cluttered areas](https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/) (<https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/>), are still better handled manually: the operator improvises a path, then hands over to autonomous mode where the route is predictable. For the reasoning behind this split, see [human-in-the-loop automation](https://info.mobilerobot.com/documentation/concepts/human-in-the-loop-automation/) (<https://info.mobilerobot.com/documentation/concepts/human-in-the-loop-automation/>).

Walking your facility: a route checklist

- ☐ The route is entirely indoors and level.
- ☐ No bump over 25 mm, no gap over 20 mm anywhere on the path.
- ☐ No dock plate, ramp, or slope on any autonomous segment.
- ☐ Doorways and aisles clear the 850 mm width with working margin, and turning points accommodate the 1,501 mm turning radius.
- ☐ Every autonomous destination accepts a floor-level pallet drop.
- ☐ Floor quality meets TR34 FM3 (FF 25 / FL 20), or the route will be validated during a trial.

Confirm the rest of the facility with [Site suitability](https://info.mobilerobot.com/applications/planning/site-suitability/) (<https://info.mobilerobot.com/applications/planning/site-suitability/>), then plan a [trial](https://info.mobilerobot.com/applications/planning/trial-planning/) (<https://info.mobilerobot.com/applications/planning/trial-planning/>) on your own floors.