

Calculating Dock Door Requirements

The determination of how many dock doors are required (or will be required) for an operation is part science and part art. There are a number of factors to be considered, each of which is described below:

Current requirements:

The first step is to document the current requirements. Institute a dock log at the receiving and shipping departments. The log should include, at a minimum:

1. Date
2. Time truck arrived (note if the truck was delayed due to unavailability of dock door or staging space)
3. Shipment or receipt
4. Load type (LTL, TL, palletized vs. floor load, parcel)
5. Time truck load/unload began
6. Time load/unload was complete
7. Number of pallets/cases that were handled
8. Time truck left
9. Elapsed time

The log should ideally be kept during the busiest season for a minimum of a week. Longer is better. Consideration must be made for any doors dedicated to dropped trailers, the availability of equipment to swap trailers and the need for specific door availability for route trucks, etc. A further consideration is the need for staging space, particularly for outbound shipments. From this information it is possible to determine peak requirements in terms of “door hours” to handle the freight.

This is a base line requirement. Validate the calculations with the operating staff and modify the calculations, if required.

Forecasts:

Obtain and evaluate forecasts for the time frame being used; that is, the “design day”, that time in the future you will have to accommodate. Consider how the forecasts will change the use of the docks. Discuss the impact of changing customer requirements with sales or customer service people.

1. Will there be more frequent, smaller shipments (in or out)?
2. Will your LTL loads become truck loads?
3. Will existing parcel shipments become LTL, or vice-versa?
4. Will shipments be shipper load and count, or driver load and count (more time required)?
5. Are you receiving floor loads that will change to unit loads or slip sheeted loads in the future, or vice-versa
6. Can carriers or back haul customers drop trailers?

Other considerations:

It is important to consider other factors contributing to the availability of docks, such as:

1. Are some docks limited in use due to size or accessibility? (i.e. due to restrictions, some doors may accommodate straight trucks or pups, but not 48' or 53' trailers)
2. How dependable are the carriers with regard to appointments. Poor compliance translates into more doors, or waiting truckers.
3. Are the receiving and shipping docks adjacent to one another, or in different parts of the building? Contiguous doors may allow for "swing docks" that can absorb peaks of one activity when the other has reduced activity.
4. Are any ramp doors required for van pick-ups and deliveries or special load requirements?
5. Will trash containers or compactors be using doors?
6. Is there a possibility that operations will permit fluid loading, without staging? This reduces staging areas, but ties up a door.
7. If cross-docking is anticipated, how will this tie up doors?
8. Will any doors be dedicated to trailers of corrugated, drums or pallets?
9. Can extended or added shifts be used to absorb peak activity?

After evaluating all of the above, consider the fact that adding doors during construction is less expensive than installing them later. If it is not in the budget to install the doors and dock equipment initially, try to have the building prepared for later additions. That is, have the building panels prepared for future openings, have the pits for dock levelers formed and floors poured so the demolition at a later date is simplified, and, if possible, have the electrical system sized to accommodate future needs. If possible have the back-in space and concrete pads installed in advance. They can always be used as "yard space" until the doors are installed.

Dock door check list:

Items to be considered for dock doors:

1. Mechanized or manual opening doors
2. Dock levelers, properly sized for the operation, pneumatic, manual or electric vs. dock plates
3. Truck seals and bumpers
4. Roof overhangs or canopies.
5. Truck restraint devices
6. Dock lights
7. Fans, if required for hot climates or seasons
8. Electrical interlocks for levelers, restraints and door openers
9. Security gates and dock edge "curbs" if doors are left open for ventilation
10. Drainage if aprons and approaches are not level