

Demystifying freight classification:

A handy guide.



FREIGHTQUOTE[®] by  C.H. ROBINSON



So what are freight classes?

While the freight class system has been a crucial part of the LTL shipping industry for years, you're not alone if sometimes you find it baffling.

One online source recently referred to the system implemented by the National Motor Freight Traffic Association (NMFTA) as "a black hole of codes and references."

Some find it perplexing to correctly classify a freight shipment, arguing that products seem randomly grouped into the same category. Others are caught off-guard when they memorize classifications and assume they have everything covered, only to find the grouping was updated by the NMFTA without their knowledge.

A good number of factors affect freight classification, such as value and density, but that doesn't mean calculating a correct shipping class has to be dreadful.

This handy guide should keep you from wasting time and feeling frustrated by disparities over your freight classifications. Taking time to educate yourself on the basics of the freight class system can keep you and your company on the right road.

National Motor Freight Classification (NMFC) is a common "language" used between freight carriers, shippers and freight service providers. Before being transported, each pallet or item in a shipment must be coded with a corresponding class number from the NMFC database, and noted on your bill of lading.

The NMFC encompasses 18 categories of commonly shipped goods ranging from class 50 to class 500, creating a database that's constantly being updated. In simple terms, the system attempts to rank the ease of getting a particular commodity to its destination, mostly evaluated by the safety of the freight while in transit, as well as the conditions and capacity needed to complete a shipment.

To further categorize freight classes, each type of freight is evaluated according to four characteristics: density, handling, liability and stowability. In general, the less burden placed on a freight carrier, the lower the class and shipping cost. As such:

- **Density** is defined as the pounds per cubic feet of your shipment. Higher density typically means a lower freight class.
- **Handling** addresses the ease or difficulty of handling between LTL terminals, factoring in fragility and packaging.
- **Liability** is based on the likelihood the shipment will be damaged or stolen, or its ability to damage adjacent freight.
- **Stowability** addresses how difficult the goods will be to stow in relation to other freight; for example, hazardous items must be shipped separately from non-hazardous items and merchandise with odd dimensions often fits poorly into available space.



That all seems pretty straightforward, but several other elements tend to cause confusion. For example:

- Certain fixed-class items, like auto transmissions, have a permanent class regardless of size or weight.
- Shippers have the option of classifying merchandise entirely by density (See "What is dimensional rating?" on page 3) to make classification simpler. As such, items of lower density are assigned a higher class number because they require more space per pound for transport. Use of that methodology is growing, and charges for hundreds of categories including aluminum and paper are already commonly configured using density.
- Classifications are subject to change by the NMFTA, often in response to fluctuating market values.

Some industries have complained about changes that lead to major hikes in their shipping expenses. To help determine your shipment's freight class, you can enter its dimensions and weight into [Freightquote's online density calculator](#), reference the NMFC book or use tools such as ClassIT or Fast Class. You may also contact the manufacturer of the goods being shipped.

The NMFTA also offers courses in determining class and packaging requirements.

Length (in.)	Width (in.)
<input type="text" value="0"/>	<input type="text" value="0"/>
Height (in.)	Weight (lbs.)
<input type="text" value="0"/>	<input type="text" value="0"/>
<input type="button" value="Get Density"/>	



What do the classifications mean to LTL shippers and carriers?

Before a carrier leaves with a shipment, the shipper must legibly identify the goods with the correct NMFC number on a bill of lading that aligns with the NMFC database.

If the wrong classes are delineated on that bill, the following could occur:

- The freight may be incompatible with the carrier's equipment, weight limits and storage capacity.
- The company may pay too much for the shipment.
- The carrier might opt to correct the classification, causing a disparity on the invoice.
- The misclassified goods may not be properly handled, leading to damage, financial loss or dissatisfied customers.
- Inspections are more common when no NMFC number is listed or the number is incorrect.
- The inspector might arbitrarily re-assign the classification to a more expensive category.
- Disputes regarding classifications can be time consuming and complicated, and the shipper will ultimately be charged for discrepancies not in their favor.



What is dimensional rating?

Expected to become more pervasive in the coming years is pricing freight via dimensional rating, which takes into account the **length, width and height of shipped products in addition to weight**.

Already instituted by some major carriers, the methodology has a ways to go before it's accepted by the entire business community. In fact, **74 percent of respondents in a recent survey say they disagree with such pricing due to claims it's more expensive and unfair to businesses and shippers**.

For now, the methodology generally works in favor of those who ship dense commodities and against those who ship lightweight freight. As such, it's expected to discourage the shipping of large containers with a high percentage of air, and encourage shippers to condense such shipments to cut costs.

Proponents say dimensional rating is much more transparent in terms of pricing, and that it prevents negative outcomes like poorly stacked pallets and over-use of expensive packing materials by more accurately quantifying the space occupied by a package along with its weight.

Others predict it won't grow industry-wide until the technology for fast and easy density measurement comes down in price.

"The capture of pallet-level dimensional data is mission critical in implementation, and without more dimensional scanners at LTL terminals the industry will be handcuffed to the class-based system established in the 1930s," forecasts industry analyst Jesse Gates, in a post on Parcelindustry.com. "However, if you are properly equipped with accurate data and have access to the technology required to consider a density-based pricing model, you would find yourself in an enviable negotiation position."

While most shippers are now at least acquainted with the methodology, a surprising number of businesses remain unfamiliar. The aforementioned survey found **28 percent of online businesses aren't aware of how it works**, even though the largest carriers in the U.S. embraced it in 2007 (with updates in 2013 and 2015).





The pros and cons of density-based (dimensional) rating.

For now, shippers have the choice to employ freight-based classification, density-based classification or a combination of both. Both sides have their proponents, as follows:

Advocates of dimensional rating say:

- It's simpler and more efficient than the NFMC for calculating costs, since some freight classes use more than 100 different numbers to sub-categorize products.
- The cost of shipping less-dense materials is usually lower under the dimensional system.
- New technology saves time and labor by facilitating automatic density measurement via overhead cameras and computerized scales.
- Shippers can more easily classify density-based freight themselves without need for an authority figure (i.e. NIFTWA) to make clarifications.
- The density-based system allows for fewer mistakes in classification, with fewer incorrect charges as a result.
- Fewer classification adjustments with density-based freight mean merchandise is less likely to be mishandled or damaged.
- Some major carriers have already embraced dimensional rating.
- Dimensional rating classes are less likely to change as a result of fluctuating market values, making them easier for shippers to track.
- The NFMC system is inconsistent with many other transport modes.
- Classifying shipments with multiple kinds of goods can be complex under the NFMC.
- Some argue the NFMC system is ambiguous and somewhat subjective.

Advocates of keeping the NFMC say:

- The freight class-based shipping system is organized and established well across industries.
- The system allows for clearer product definition, safer shipping conditions and less likelihood of mishandling.
- Density-based shipping is subject to mathematical mistakes.
- Freight-based shipping costs are lower and more fair across the board.

How your freight service provider can help.

To find more answers to logistics questions like freight classification, contact Freightquote today or start your free quote.

About us:

Based in Kansas City, MO, Freightquote by C.H. Robinson is a freight service provider that offers powerful yet easy-to-use online shipping tools, as well as a full-service team of highly responsive freight experts that deliver convenient, one-stop shopping for LTL, truckload and intermodal freight. Freightquote provides customers with streamlined and efficient capabilities to compare competitive rates from multiple contract carriers, book and track shipments and receive dedicated customer service. As a part of C.H. Robinson, Freightquote's stability and resources are strengthened by being part of one of the world's leading freight service providers.

FREIGHTQUOTE®

by  C.H. ROBINSON

901 W Carondelet Dr, Kansas City MO, 64114
800.323.5441 www.freightquote.com