

Guide to Freight Classifications

Freight class was developed by the National Motor Freight Traffic Association, Inc. (NMFTA). Every commodity has a corresponding National Motor Freight Classification number or NMFC which is assigned a freight class.

It is important to note that class alone does not contain any rates or charges for transportation services nor does it suggest rates or charges.

The Commodity Classification Standards Board (CCSB) is an autonomous board that creates the NMFC numbers and amends rules and classifications as commodities change over time.

How Class is Determined

To determine a commodity’s freight class (NMFC) - The CCSB considers 4 transportation characteristics of density, handling, stowability and liability.

1. Density

- a. Prime importance in assigning a class
- b. Commodities with wide density ranges may be assigned to density-based classes
Example: Furniture is a density based item

Item	Description	Class
	FURNITURE GROUP: subject to item 79000	
	Metallic or Wooden: subject to item 79600	
⇒80440	Cabinets or Lockers, with or without components of other materials, see Notes, items 80441, 80442 and 80443, viz.:	
	Base Cabinets (Work Bases);	
	Cabinets or Lockers, storage or wardrobe, NOI;	
	Kitchen or Bathroom Cabinets, see Note, item 80444;	
	Sink or Stove Cabinets;	
	In crates or Packages 1F, 2F, 3F, 5F, 16F, 19F, 21F, 22F, 25F, 50F, 53F, 69F, 111F, 133F or 149F, see Note, item 80446, subject to Items 170 and 171 and having a density in pounds per cubic foot of:	
Sub 1	Less than 1.....	400
Sub 2	1 but less than 2	300
Sub 3	2 but less than 4	250
Sub 4	4 but less than 6	150
Sub 5	6 but less than 8	125
Sub 6	8 but less than 10	100
Sub 7	10 but less than 12	92.5
Sub 8	12 but less than 15	85
Sub 9	15 or greater	70

- c. Density expressed as Pounds per Cubic Foot (PCF) and can be calculated by:
 - i. $\text{Weight} / (\text{L} \times \text{W} \times \text{H} / 1728)$
 1. 1728 = Inches in a cubic foot
 2. This is the reason we request dimensions and weight for all shipments
 3. Once you have the weight and dimensions and have calculated the Density (PCF) you can look up the estimated class (absent any handling or liability issues)

COMMODITY CLASSIFICATION STANDARDS BOARD DENSITY GUIDELINES	
Minimum Average Density (in pounds per cubic foot)	Class
50	50
35	55
30	60
22.5	65
15	70
13.5	77.5
12	85
10.5	92.5
9	100
8	110
7	125
6	150
5	175
4	200
3	250
2	300
1	400
Less than 1	500

The density guidelines are used in the assignment of classes where average density is representative or reflective of the range of densities exhibited. Furthermore, the density/class relationships set forth in the guidelines presume that there are no unusual or significant handling, stowability or liability characteristics, which would call for giving those characteristics additional or different "weight" in determining the appropriate class.

Density : Putting it all together

1. The product is a piece of patio furniture and you know it is 32x51x16 and the weight is 168 lbs – you want to estimate freight class:
 - a. Use Density Formula -> $\text{Weight} / (L \times W \times H) / 1728$
 - i. $168 / (32 \times 51 \times 16 / 1728) = 11.13 \text{ PCF}$
 - b. Look up 11.13 PCF On Density Guidelines Chart = 10.5 = Class 92.5
2. **Handling**
 - a. Represents ease or difficulty in handling and transportability of commodity
 - b. Example: Non palletized freight is difficult to handle and can receive a higher class
3. **Stowability**
 - a. Represents how a commodity is stowed during transit or “how well it plays with others.”
 - b. Example: a long flag pole makes it difficult for a driver to load pallets and thus receives a higher class
4. **Liability**
 - a. Represents susceptibility to theft, damage, propensity to be damaged by freight stowed nearby, perishability, or hazardousness.
 - b. Example: high value items such as TV’s can be damaged and are a top theft commodity – and thus receive a very high class
 - c. Expressed in Value Per Pound according to the following chart:

COMMODITY CLASSIFICATION STANDARDS BOARD VALUE GUIDELINES	
Class	Maximum Average Value Per Pound
50	\$ 1.25
55	\$ 2.50
60	\$ 3.80
65	\$ 6.30
70	\$ 9.50
77.5	\$ 12.65
85	\$ 19.00
92.5	\$ 25.30
100	\$ 31.65
110	\$ 34.80
125	\$ 39.55
150	\$ 47.50
175	\$ 55.45
200	\$ 63.35
250	\$ 79.15
300	\$ 95.00
400	\$ 126.65
500	\$ 158.35

Unlike density, value per pound is not in and of itself a separate transportation characteristic. Value per pound is only one component of the liability characteristic. Accordingly, information relating to value per pound must be analyzed in conjunction with the other liability elements, i.e., susceptibility to theft, liability to damage, propensity to damage other freight, perishability, and hazardous nature. Where those other liability elements are found to present no substantial problems or concerns, value per pound is of less significance.

Consequently, the value guidelines cannot be viewed as forming a matrix with the density guidelines, where one is measured against the other to arrive at the appropriate class representing an "average" of the two factors. Rather, the value guidelines provide an indication of the upper value limits associated with the various classes, as determined using the density guidelines.

Liability : Putting it all together

1. Let's use our example from above for Density where we know our patio table is a class 92.5
2. Looking at the chart above, we know that we can expect ~ \$25.30 per pound
3. The weight of our table is 168 lbs so we would expect ~ \$4,250 in a damage claim
4. If the replacement cost of our item is much less and is packaged well - we can negotiate a lower class with the freight carriers as a reward for lower claims costs.
5. If the replacement cost of our item is higher and you anticipate a potential claim – you would request additional insurance from the carrier or a 3rd party insurance provider