

THE NMFTA PACKAGING GUIDE

*The Critical Importance of Complying with the
National Motor Freight Classification (NMFC)[®]
Minimum Packaging Requirements*



PRECURSOR

Imagine this scenario for a shipper. It's not one you'll like, but it's one for which you must be prepared:

You successfully go through the process of classifying your freight and have a carrier pick it up for transport. The pricing is accurate, and the carrier understands everything about handling, stowing, and liability of your freight.

But you then find out that the freight was damaged in transport, and when you make a claim to the carrier to cover the cost, the claim is denied.

Why? Not because you didn't classify it correctly.

You got that perfectly right. The problem is that the freight needed to be in a specific type of packaging, based on the classification. By failing to package the freight accordingly, you as the shipper put yourself at risk of freight damage and a denied claim.

Now, of course you don't want that to happen. But it can happen if you overlook the need to comply with the NMFC's minimum packaging requirements.

Our purpose here is to make sure this does not happen to you.

INTRODUCTION

The National Motor Freight Classification (NMFC)[®] is designed to help shippers classify their freight to ensure that the carrier knows what they are transporting. But the classification of the article is only part of the process. Each classification comes with minimum packaging requirements, which are critical not only for the protection of the freight, but also to ensure that shipper claims against carriers are valid in the event of items being damaged.

For nearly 10 years, National Motor Freight Traffic Association, Inc. (NMFTA)[™] has hosted a series of webinars designed to explain how all this works. Those who attend the educational sessions leave with a solid understanding of how to match classification results with the packaging requirements specified to protect the freight.

Full requirements can be found on ClassIT[®] or you can sign up for the packaging webinars at nmfta.org/events linked below. If you've missed these webinars, or even if you attended and you would like to keep a written primer handy, this guide is for you.

[CLICK HERE TO REGISTER FOR PACKAGING WEBINARS](#) >



FIRST THINGS FIRST

Before you can identify the required packaging for your freight, you need to accurately determine the classification of the articles you are shipping.

There are just a few steps to this. Once you've determined the most specific NMFC item number, you can determine the minimum packaging requirements. You can also determine what class or classes may be assigned to that item. If the item has classes based on density, you can determine the density of the item by measuring the length, width, and height—including the pallet and the packaging—then multiplying length by width by height. This tells you your cubic inches, which you then convert to cubic feet by dividing the cubic inches by 1,728.

Next, you determine the weight in pounds and divide it by total cubic feet. This will give you the density of the freight. After that, plug your information into the freight class calculator on ClassIT to determine the applicable subprovision.

THREE TYPES, AND FOUR FUNCTIONS, OF PACKAGING

Before we go any further, we must define two critical concepts — the three types of packaging and the four functions of packaging.

The three types of packaging are as follows:

1. Primary packaging (bottles or cans, which hold the end product itself)
2. Secondary packaging (such as a fiberboard box, in which multiple primary packages are placed)
3. Tertiary packaging (complete unit loads of fiberboard boxes secured together and to the lift truck skid or pallet)

For example, one might observe a bottle of soda sitting in a trailer and say, "It's not in packaging." But technically it is. The bottle is the package—the primary package.

Under normal circumstances, of course, you wouldn't put beverages like that on a truck all by themselves. They would be contained in something like a fiberboard box, which is the secondary packaging.

Sometimes you secure a number of those fiberboard boxes together while also securing them to the skid or the pallet. That's tertiary packaging.

The type of packaging is one of the factors taken into consideration when the Freight Classification Development Council (FCDC) determines the minimum packaging required for a given classification of freight. Keep in mind that, frequently in less-than-truckload (LTL), the primary package may be a box, crate, or drum.

Then we look at the four functions of packaging, which are:

1. Protect—Enclose the product and minimize damage.
2. Contain—Prevent spilling, leaking, or sifting.
3. Provide communication—What is it? How much is there? Any warnings?
4. Provide convenience—Does the item have a pourable spout? Easy opening packages?

So, the minimum packaging requirements for a given classification of freight will take into consideration both the type of packaging, and it's up to the shipper to ensure the articles being shipped are adequately protected, will contain the articles, communicate what is included as necessary, and provide convenience.

PACKAGING AFFECTS DENSITY

Before we get into the details of minimum packaging requirements, it is also critical to understand—when determining the density of freight for the purpose of classifying it—that packaging affects density.

During a recent packaging webinar, we looked at a piece of furniture contained in a fiberboard box, strapped on a 48-by-40 pallet. On the pallet, the density of the package is 3.83 pounds per cubic foot. When the item is taken off the pallet, the total cube is much less, and the density increases dramatically to 10.55 pounds per cubic foot.

That makes the difference between a weight class of 250 on the pallet, and 92.5 off the pallet. However, when not strapped on the pallet, it is more difficult for the carrier to handle, which can increase the chance of damage.

LIABILITY ISSUES RELATED TO PACKAGING

Packaging also impacts the consideration of liability. As stated earlier, the purpose of packaging is to protect and contain the freight and to prevent it from spilling, leaking, or seeping—which can damage the item itself and can also damage other items. Depending on the nature of the item, it can also create a safety hazard.

If packaging is not sufficient to achieve this objective, it heightens the shipper's liability in the event of damage or a safety issue.

Remember the scenario we presented at the start of this guide. If the shipper does not use packaging that complies with the standards in the classification, then carriers will not have to accept liability if something goes wrong and may deny the claim.



MINIMUM PACKAGING REQUIREMENTS: HOW PACKAGING IS TO BE CONSTRUCTED

Complying with the classification's packaging requirements is not just a matter of which types of packaging are used. There are also requirements related to how the packaging is constructed. In this section, we offer some details on the requirements for various kinds of packaging.

Boxes are six-sided containers that completely enclose the articles and may be made of various materials such as wood, plastic, or metal. But the most common material used for boxes in the LTL environment is fiberboard.

Current construction requirements for wood boxes concern the base, the side framing and panels, the top and interior requirements. Full details on these requirements are found in Item 222-1. When a box is fully compliant, it will display a Box Manufacturer's Certificate (BMC), which indicates that all the provisions of Item 222 are met.

Bundles, Coils, and Rolls must be banded, strapped, wrapped, or otherwise protected and secured. Articles tendered in this manner must be protected by packing forms or other packaging materials, and they cannot overhang the lift truck skid, pallet, or platform deck.

Reels must be securely fastened to the lift truck skid, pallet, or platform. The skid, pallet, or platform must be of sufficient design, size, and strength to support it. The last layer of the article must be lagged or wrapped between the flanges of the ends or of the heads with packaging material sufficient to protect the article.

Crates, Slats, or members of crates must be sufficiently close to one another to adequately protect contents on the sides, ends, tops and bottoms, but openings on sides, ends and tops must not exceed 25 inches in their greatest dimension, which may be the length, width, height, or diagonal measurement of the opening. If the surface is liable to damage, it must be fully covered and protected. Articles within the crate must be sufficiently blocked and braced. And if the crates are made of wood, they must be constructed using three-way locking corners.

Cylinders tendered for shipment on lift truck skids, pallets, or platforms must be secured to the lift truck skid, pallet, or platform such that they can withstand the normal rigors of the LTL environment. Cylinders oriented horizontally on lift truck skids, pallets, or platforms must not overhang the lift truck skid, pallet, or platform deck.

Lift Trucks, Skids, Pallets, and Platforms Must have a full platform on which to secure freight and must provide access for fork handling equipment. They can be made from a variety of materials, including wood and plastic, and can come in varieties of two-way, four-way, or eight-way entry.

Two or more lift truck skids, pallets, or platforms must not be used in combination to create, or in lieu of, a single, appropriately sized platform.

Intermediate Bulk Containers (IBC) are flexible, semi-rigid or rigid portable package designed for mechanical handling. It must have a capacity of between 119 and 793 gallons OR a net mass of at least 882 pounds.

Some IBC-type systems consist of an interior plastic bag, a fiberboard container and a lift truck, skid, or pallet. These will typically hold granular or liquid products.

Another type of IBC is the flexible IBC, which may have handles or be secured to lift truck skids or pallets.

'In Packages' includes articles securely fastened to lift truck skids, pallets, or platforms, unitized quantities, or articles in crate-like framework not complying with Item 245, but does not include articles "in bulk," "loose," "on skids," or articles racked or braced in vehicles. And the article(s) must be protected to withstand the normal rigors of the LTL environment.

Loose Items is defined as "freight that is not packaged, not unitized, not on skids, and not securely fastened to lift trucks, skids, pallets, or platforms."

Items can only be shipped in a loose fashion when the transportation of the articles is reasonably safe and practicable so the items can withstand the normal rigors of the LTL environment. That definition is very open to interpretation, so when in doubt, it's always best to use compliant packaging.

DISCUSSION OF NMFC'S NUMBERED PACKAGES

Found in the back of the book and linked on ClassIT, these numbered packages may be complete package specifications or exceptions to general packaging rules. Shippers can submit a package design for inclusion into the NMFC for a specific commodity.

To cite one example: A water heater manufacturer developed a numbered package, identified as package 2536, which specifies interior and exterior packaging, plastic film, and marking requirements for its tank-type water heaters. When this type of packaging is used for this item, it must be identified by a package certificate. This is a guaranteed stamp that all specifications have been complied with.

IN THE LAB

Shippers can conduct test procedures in laboratories that simulate the motor carrier environment—using these testing procedures to develop compliant packaging specifically for certification. If NMFTA issues a package certification, the shipper can then placard those items with a certification symbol that shows the packaging is compliant.

CONCLUSION: A PACKAGE DEAL

While the classification's minimum requirements for packaging can be general, the rules provide precise and exact specifications, which are critical for the safe and successful transport of articles by carriers. These requirements have been put in place to protect the freight.

Shippers will feel confident if their packaging complies with the classification's requirements because it will help to mitigate the chance of damage claims.

Carriers will feel confident knowing that when they load a handling unit or package onto their vehicles for transport, the shipper has properly packaged the articles and there is no reasonable concern of damage or safety issues.

Adherence to packaging requirements up front will save both shippers and carriers from issues of economic loss, liability and even conflict over who is responsible for things that go wrong. And of course, articles will reach their desired destination safely and securely for the benefit of the end customer.

This is why we put so much time and effort into getting these packaging requirements right, and into making sure that everyone involved in the process understands them.

To talk with a member of NMFTA's staff, contact research@nmfta.org.





1001 N Fairfax Street Suite 600
Alexandria, Virginia 22314-1798
(866) 411-6632
www.nmfta.org