

# Intermediate Bulk Containers (IBCs) General FAQs



## WHAT IS NFPA 30?

NFPA 30 is the Flammable and Combustible Liquids Code published by the National Fire Protection Association. The code provides safeguards to reduce the hazards associated with the storage, handling and use of flammable and combustible liquids. NFPA 30 is the law in most states.

## WHERE IS NFPA 30 THE LAW?

NFPA 30 is enforceable under building and fire prevention codes in the following states: Ala., Ariz., Ark., Calif., Colo., Conn., Fla., Hawaii, Iowa, Ill., Ind., Kan., Ky., Mass., Maine, Mich., Minn., Mo., Mont., N.D., Neb., N.J., N.M., Nev., Ohio, Ore., R.I., Texas, Utah, Va., Vt. and Wis. It is also enforceable in several local jurisdictions. Other avenues of enforcement may include Occupational Safety and Health Administration (OSHA) regulations.

## WHAT IS AN INTERMEDIATE BULK CONTAINER (IBC)?

Intermediate bulk containers are closed shipping vessels with a liquid capacity from 450 up to 3,000 L (119 to 793 gallons). They are intended for storing and transporting liquids defined in the Code of Federal Regulations and the United Nations' *Recommendations on the Transport of Dangerous Goods*, which include combustible and flammable liquids.\* These rules, however, do not require any fire testing of IBCs.

## WHAT TYPES OF IBCS ARE COMMONLY USED?

IBCs can be constructed of metal, plastic or a composite of materials. Composite IBCs are commonly a combination of blow-molded plastic containers in a metal cage or a plastic bag in a corrugated box.

## WHAT TYPES OF IBCS ARE ALLOWED BY NFPA 30?

NFPA 30 only permits three types of IBCs in an industrial building. Metal, rigid plastic and composite. Only liquids with a closed cup flash point of 38 C (100 degrees F) or greater



are permitted to be stored in these containers. However, the composite IBCs must be listed and labeled. The complete rules on what types of IBCs are allowed in buildings can be found in Chapter 9 of NFPA 30 (visit [www.nfpa.org/30](http://www.nfpa.org/30) to access the chapters for free).

## WHAT IS THE FIRE HAZARD OF A COMPOSITE IBC?

When composite IBCs containing combustible or flammable liquids are stored together in warehouses or other facilities, they can cause dangerous pool fires. These fire hazards have two components:

- 1. Release of combustible and flammable liquids.**  
When IBCs containing flammable or combustible liquids fail, they can release a large pool of these liquids. If ignited, the extreme heat release rates can overtax most fire sprinkler systems. This hazard exists regardless of how the IBC is constructed.
- 2. Composite IBCs can be easily breached and then the IBC itself contributes to the fire hazard.**  
Composite IBCs can be easily breached by exposure to even a small fire. Additionally, once the unit is emptied, the composite may ignite and contribute to the liquid pool. Pool fires caused by composite IBCs can be catastrophic events and are capable of destroying the building where the event occurs. A spreading pool fire can also threaten adjacent buildings.

## HOW BIG OF A PROBLEM IS THIS?

While there have only been a few fires that were caused or escalated by this hazard, those fires have led to the complete destruction of the buildings involved. It also

\*See: Title 49, Code of Federal Regulations, Parts 100 through 199 and Part 6 of the United Nations' Recommendations on the Transport of Dangerous Goods.

must be recognized that this hazard might be found in any community with industrial, manufacturing or warehouse operations. Of the dozens of composite IBCs on the market, there is currently only a very small fraction of listed and labeled composite IBCs in use. The vast majority of composite IBCs that are used to store combustible or flammable liquids are creating a serious hazard.

### **DOES NFPA 30 PROVIDE A “PROTECTED STORAGE” OPTION FOR COMPOSITE IBCS?**

Chapter 16 of NFPA 30 provides protection criteria for palletized and rack storage of composite IBCs. However, the IBCs must be listed and labeled.

### **HOW CAN YOU IDENTIFY A LISTED AND LABELED COMPOSITE IBC?**

NFPA 30 recognizes IBCs that have successfully passed testing to standards listed in Chapter 2 as acceptable listed IBCs and requires all listed units to be clearly labeled by the listing agency to confirm they meet the criteria set in the standard.

### **HOW ARE COMPOSITE IBCS NOT IN COMPLIANCE WITH NFPA 30 GETTING INTO PROTECTED FACILITIES?**

U.S. Department of Transportation (DOT) and United Nations regulations permit the shipping of combustible liquids and some flammable liquids in many types of IBCs. However, transportation regulations do not require IBCs to be fire tested and DOT has no jurisdiction over commodities in storage. Yet, many producers and customers alike believe that a shipping container approved by DOT is also approved for storage in a warehouse. This is not the case. NFPA 30 rules limit the types of IBCs allowed in buildings and also set limits on the liquid types permitted in them. Additionally, warehouse or facility personnel responsible for accepting or storing goods are often unaware of the serious fire hazard created by composite IBCs containing combustible and flammable liquids. As a result, improper storage and potentially dangerous conditions often go unrecognized.

### **HOW AND WHY SHOULD WAREHOUSES COMPLY WITH NFPA 30?**

It is not only the law in most parts of the United States, but it also reduces the risk that catastrophic pool fires will destroy a building. Risk can be reduced by following the four steps of compliance:

- **One: Determine whether the IBC is in or will eventually enter a protected facility.**
- **Two: Identify the liquids to be stored.**
- **Three: Identify the IBC material.**
- **Four: Determine if the IBC material is appropriate for storage of its contents in the protected facility.**



### **HOW MUCH SAFER IS A LISTED COMPOSITE IBC COMPARED TO ONE THAT IS UNLISTED?**

Listed Composite IBCs have been designed, built and certified to last in a fire for at least 20 minutes. Unlisted composite IBCs have not been inspected or certified to provide any fire endurance and have been shown to fail quickly in a fire.

### **WHAT IS BEING DONE TO FIX THIS PROBLEM?**

There is currently an ongoing public education effort aimed at decreasing the pool fire risk posed by composite IBCs. Groups, and individuals who have the ability to help reduce this risk will be encouraged to take several steps in making a commitment to safe storage. Tailored information is available for container manufacturers, chemical manufacturers, code and fire officials, warehouse owners, managers and staff, insurance representatives, procurement and supply chain specialists, risk managers and firefighters. Generally these steps include: education, identification and correction.