

NAVIGATION AND VESSEL INSPECTION CIRCULAR (NVIC) NO. 13-86

Subj: Use of Underwriters Laboratories (UL) Listed Fire Extinguishers

1. **PURPOSE.** The purpose of this Circular is to provide guidance on the use of UL listed fire extinguishers as equivalent to Coast Guard approved fire extinguishers on commercial vessels.
2. **DIRECTIVES AFFECTED.** NVIC No. 3-82 is canceled.
3. **BACKGROUND.**
 - a. Title 46, Code of Federal Regulations (CFR), Subchapters C, D, H, I, I-A, R, T, and U, and Title 33, CFR Subchapters N and NN require carriage of Coast Guard approved portable and/or semiportable fire extinguishers. These regulations also specify the number, types, sizes, and location of the extinguishers aboard each type of vessel.
 - b. 46 CFR 162.028 and 162.039, the approval specifications for portable and semiportable fire extinguishers, respectively, contain the basic approval requirements. These specifications require the extinguishers to meet certain minimum criteria, and to be listed and labeled by a Coast Guard recognized independent testing laboratory as "Marine Type," and "USCG Approved." Coast Guard approved extinguishers are also marked with symbols indicating type and size designation, such as "Type B, Size I."
 - c. UL was until recently the only laboratory recognized for testing fire extinguishers for Coast Guard approval. UL conducts fire, reliability, and safety tests of fire extinguishers, and monitors the extinguisher manufacturers' quality control programs. All UL listed extinguishers are marked with UL's rating for the size test fire extinguished, such as "1-A; 10-B:C." These ratings differ from the markings the Coast Guard requires on approved extinguishers. The UL ratings also say nothing about the number, types, and sizes of extinguishers needed for shipboard hazards.
 - d. UL tests extinguishers for compliance with UL standards. Those extinguishers intended to be Coast Guard approved are subjected to additional Coast Guard approval criteria. Over the years, UL has upgraded its standards by incorporating criteria to which only marine extinguishers were subjected previously. This narrowed the gap in acceptance criteria to the point where some types of UL extinguishers are now comparable to U.S. Coast Guard approved extinguishers, and paved the way for accepting specific types of UL listed extinguishers in lieu of Coast Guard approved extinguishers under certain limited conditions.

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- e. The Coast Guard originally issued NVIC 3-82 to alert Coast Guard merchant vessel inspection personnel and the shipping industry to the conditions under which the Coast Guard accepts certain non-Coast Guard approved, but UL listed fire extinguishers as equivalent to Coast Guard approved fire extinguishers on commercial vessels. Part 4 of NVIC 3-82 contains a table which relates sizes and types of UL listed extinguishers with the corresponding Coast Guard's type and size designation.
4. **DISCUSSION.** This Circular, as NVIC 3-82 did previously, provides flexibility for the shipping industry by providing a means of accepting certain UL listed extinguishers in lieu of Coast Guard approved extinguishers under certain conditions. By accepting certain specific extinguishers which meet the general performance and reliability criteria of approved extinguishers, vessel safety is not compromised.
- a. Originally, NVIC 3-82 was to permit extinguisher substitutions under certain controlled conditions where industrial safety personnel and Coast Guard merchant vessel inspectors could make the appropriate extinguisher selection. One limited example of such an application is the loading and unloading of cargo from unmanned tank barges. Since extinguishers are only needed when cargo is loaded or unloaded, it is common practice to provide extinguishers from docks or warehouses, and return them to their original locations after loading or unloading activities are completed. The dock and warehouse extinguishers available are usually UL listed, but not always Coast Guard approved. In this and similar instances, the use of UL listed, but not Coast Guard approved extinguishers of appropriate sizes and types does not compromise safety, and represents an acceptable substitution.
 - b. NVIC 3-82 was not a blanket acceptance of all UL listed equipment, but it indicated that terminating the Coast Guard's extinguisher approval program in favor of UL listed extinguishers was being considered. This will not be done for the following reasons:
 - (1) UL lists and labels fire extinguishers for a wide range of industrial and residential applications, some of which are not compatible with marine applications. Blanket acceptance of the UL system would, therefore, result in the use of some unsuitable extinguishers aboard ships.
 - (2) The Coast Guard cannot require equipment to be certified by only one private organization. The same recognition must be obtainable by other qualified organizations as well. Part 159 of Title 46 CFR provides a means for all qualified independent laboratories to obtain Coast Guard recognition.
 - (3) UL is no longer the only laboratory recognized by the Coast Guard for labeling extinguishers "Marine Type," and "USCG Approved." Underwriters Laboratories of Canada is authorized to label fire extinguishers as "Coast Guard Approved" as well. Also, Factory Mutual Research is authorized for halon portable extinguishers only. Additional laboratories may be authorized in the future.
 - c. The acceptance of UL listed extinguishers was intended to apply only to commercial vessels, where the cost of large extinguishers is substantial, and where professional safety personnel are available to make the right extinguisher selection. This acceptance was not intended to be extended to recreational boats. The majority of the small portable extinguishers needed on recreational boats which are sold in major stores are Coast Guard approved. Since these extinguishers are comparably priced to UL listed extinguishers, no

economic hardship is placed on the owners of these crafts by requiring only approved extinguishers.

- d. This Circular provides clarification on the limited scope of Coast Guard acceptance of UL listed extinguishers as equivalent to, and substitution for, Coast Guard approved extinguishers.
5. **ACTION.** UL listed portable and semi-portable fire extinguishers may be accepted as meeting the carriage requirements for approved extinguishers for commercial vessels as outlined below. It is the responsibility of the vessel owner or operator to demonstrate to Coast Guard inspectors that the correct extinguishers have been selected.
- a. For vessels on inland waterways, UL listed extinguishers of a type and size described in the table in paragraph d. below may be accepted to meet the carriage requirements of the applicable vessel regulations.
 - b. For ocean-going and coastwise vessels, UL listed extinguishers of a type and size described in the table in paragraph d. below, bearing a manufacturing date of 1972 or later, and not incorporating a stainless steel cylinder, may be accepted to meet the carriage requirements of the applicable regulations.
 - c. Fire extinguishers not meeting 4a. or 4b. above must be of a Coast Guard approved type, i. e. extinguishers must be marked "Marine Type, USCG Approved, Type ..., Size ..., USCG Approval No. 162.028/..., etc."
 - d. The following specifies the type and minimum amount of net extinguishing agent for the corresponding Coast Guard extinguisher classifications as contained in the vessel regulations. Except for dock and warehouse extinguishers temporarily brought on board a vessel while loading or unloading cargo, all portable extinguishers must be restrained in mounting brackets of marine or motor vehicle types. All Type B extinguishers must bear a UL fire test rating of 5-B:C or higher.

Corresponding Sizes

Coast Guard Classification		Dry Chemical Lb.	Carbon Dioxide Lb.	Halon 1211 or 1301 Lb.	Foam Gallons
Type	Size				
A	II	5	-	-	2 1/2
B	I	2	5	2 1/2	1 1/4
B	II	10	15	10	2 1/2
B	III	20	35	-	12
B	IV	30	50	-	20
B	V	50	100	-	40
C	I	2	5	2 1/2	-
C	II	10	15	10	-
C	III	20	35	-	-
C	IV	30	50	-	-


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