



U.S. Department  
of Transportation

**Pipeline and Hazardous  
Materials Safety  
Administration**

1200 New Jersey Avenue SE  
Washington, DC 20590

**JUL 28 2015**

Mr. Andy Altemos  
HMT Associates, L.L.C.  
6416 Grovedale Dr.  
Alexandria, VA 22310

Reference No. 15-0086

Dear Mr. Altemos:

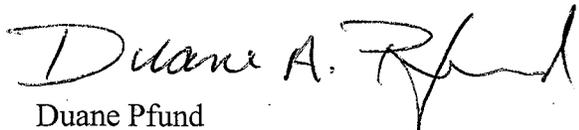
This is in response to your March 31, 2015 e-mail request regarding requirements under the International Maritime Dangerous Goods (IMDG) Code applicable to transport requirements for transport units used to transport flammable liquids under temperature control solely for commercial reasons. Specifically, you ask if section 7.3.7.6.2 of the IMDG Code requires explosion proof electrical fittings both inside and outside of the cooled compartment in which flammable liquids are loaded, or only within the cooled compartment for transport units used to transport flammable liquids under temperature control solely for commercial reasons.

Explosion proof electrical fittings are only required within the cooled compartment for transport units used to transport flammable liquids under temperature control solely for commercial reasons. Section 7.3.7.6.1 of the IMDG Code sets the general requirements applicable to all flammable gasses or liquids with a flashpoint under 23°C c.c. that are packed or loaded in a refrigerated transport unit regardless of safety or commercial reasons. This section requires the cooling or heating equipment to be in compliance with section 7.3.7.3. Sections 7.3.7.3.2.3 and 7.3.7.3.2.5, for single and dual mechanical systems respectively, only require explosion proof electrical fittings to be used within the coolant compartment.

Section 7.3.7.6.2, which prescribes requirements for flammable liquids having a flashpoint less than 23°C c.c. and not requiring temperature control for safety reasons which are transported under temperature control conditions for commercial reasons, states that explosion proof fittings are required except when the substance is transported at a control temperature at least 10 °C below its flashpoint. It is the opinion of this office that the reference to "explosion proof electrical fittings" in section 7.3.7.6.2 refers to explosion proof fittings in compliance with the requirements of 7.3.7.3.

I trust this information is helpful. If you have further questions, please do not hesitate to contact this office.

Sincerely,

A handwritten signature in black ink that reads "Duane A. Pfund". The signature is written in a cursive style with a large, stylized initial "D".

Duane Pfund  
International Standards Coordinator  
Standards and Rulemaking Division

Webb  
\$176.76  
IMDG  
15-0086

**Dodd, Alice (PHMSA)**

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**From:** Webb, Steven (PHMSA)  
**Sent:** Tuesday, May 05, 2015 2:05 PM  
**To:** Goodall, Shante CTR (PHMSA); Dodd, Alice (PHMSA)  
**Subject:** FW: Interpretation of IMDG Code 7.3.7.6.2  
**Attachments:** Request for interpretation of IMDG Code provision.pdf

Can we log this PDF in as an interp request and assign it to me please. There's no need to maintain the discussion portion of the emails below in the file just the PDF attached. I know I just got an interp, but I'd like this one as I've already done some behind the scenes coordination to get an answer for Mr. Altemos.

Thanks

**Steve Webb**

*Transportation Specialist- International Standards*

Pipeline & Hazardous Materials Safety Administration (PHMSA) -U.S. DOT

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**From:** Kelley, Shane (PHMSA)  
**Sent:** Monday, May 04, 2015 12:14 PM  
**To:** Webb, Steven (PHMSA)  
**Subject:** FW: Interpretation of IMDG Code 7.3.7.6.2

Andy sent us the attached and also a draft response (below). Before we send to Amy and co. for review, can you take a look and give me your thoughts?

Dear Mr. Altemos,

This is in response to your letter dated March 31, 2015, in which you requested confirmation of the intent of paragraph 7.3.7.6.2 of the IMDG Code as it relates to the need to employ explosion proof electrical fittings in the refrigeration equipment of transport units (both freight containers and portable tanks) used to transport flammable liquids under temperature control *solely* for commercial reasons (i.e., goods for which temperature control is not required for safety reasons). As relevant to your request, this paragraph states: "When flammable liquids having a flashpoint less than 23°C c.c. and not requiring temperature control for safety reasons are transported under temperature control conditions for commercial reasons, explosion proof electrical fittings are required". You ask for confirmation that the intent of this provision is that explosion proof fittings are required to be employed only *within* the cooled compartment of the transport unit.

In support of this confirmation you note that the preceding paragraph 7.3.7.6.1 prescribes that when flammable liquids having a flashpoint less than 23°C c.c. are packed or loaded in a cargo transport unit equipped with a refrigeration system, the cooling equipment shall comply with 7.3.7.3. This section prescribes the provisions for temperature control for substances required to be transported under controlled temperature environments (such as certain organic peroxides), and, to the extent explosion proof equipment is required for mechanical refrigeration systems to control the risk of ignition of flammable vapors, such explosion proof electrical fittings are specifically required to be employed only "within the cooling compartment." You submit that it would be illogical to require

explosion proof electrical fittings only within the cooled compartment for those liquids emitting flammable vapors that are required to be transported under temperature control, and for "standard" flammable liquids to impose the much higher standard of requiring explosion proof electrical fittings both inside *and outside* of the cooled compartment.

You further note that a transport unit containing flammable liquids having a flashpoint less than 23°C c.c. transported under temperature control conditions for commercial reasons only may be loaded on a vessel in immediate proximity to the cooling equipment on a transport unit containing non-dangerous goods or containing other dangerous goods *required* to be transported under temperature control in conformance with Section 7.3.7.3, the electrical fittings of the refrigeration equipment on the exterior of which are not required to be, and generally will not be explosion proof. You submit that it would be illogical that the cooling equipment on the transport unit containing the flammable liquid be required to employ explosion proof electrical fittings outside of the cooled compartment when the electrical fittings on other refrigerated units positioned immediately adjacent to that transport unit are not explosion proof. On this basis you also conclude that the actual intent of 7.3.7.6.2 is to mirror the clearly stated intent of 7.3.7.3.2.3 and 7.3.7.3.2.5 that explosion proof electrical fittings are required to be used only "within the cooling compartment."

We agree. It is our position that the intent of paragraph 7.3.7.6.2 of the IMDG Code is to require explosion proof electrical fittings *only* within the cooled compartment and not both within and outside of the cooled compartment.

# HMT ASSOCIATES, L.L.C.

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E.A. ALTEMOS  
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WRITERS DIRECT DIAL NUMBER

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March 31, 2015

Mr. Shane Kelley  
International Standards (PHH-13)  
Pipeline and Hazardous Materials  
Safety Administration  
Department of Transportation  
1200 New Jersey Avenue, SE  
East Building, 2<sup>nd</sup> Floor  
Washington, D.C. 20590-0001

Dear Mr. Kelley,

This is to request confirmation of my understanding of the intent of paragraph 7.3.7.6.2 of the IMDG Code as it relates to the need to employ explosion proof electrical fittings in the refrigeration equipment of transport units (both freight containers and portable tanks) used to transport flammable liquids under temperature control *solely* for commercial reasons (i.e., temperature control is not required for safety reasons). In pertinent part this paragraph states: "When flammable liquids having a flashpoint less than 23°C c.c. and not requiring temperature control for safety reasons are transported under temperature control conditions for commercial reasons, explosion proof electrical fittings are required except...[remainder of text not relevant to this request.]" The question has arisen whether the intent of this provision is to require explosion proof electrical fittings both inside and outside of the cooled compartment in which the flammable liquids are loaded, or only within the cooled compartment.

For the following reasons, my understanding of this requirement is that explosion proof fittings are intended to be required only *within* the cooled compartment of the transport unit. First, the preceding paragraph 7.3.7.6.1 prescribes that when flammable liquids having a flashpoint less than 23°C c.c. are packed or loaded in a cargo transport unit equipped with a refrigeration system, the cooling equipment shall comply with 7.3.7.3 – which, in turn, prescribes the provisions for temperature control for substances *required* to be transported under controlled temperature environments (such as certain organic peroxides). In relation to the use of both single and dual mechanical refrigeration systems to achieve temperature control, and to the extent explosion proof equipment is

## HMT ASSOCIATES, L.L.C.

Mr. Shane Kelley

March 31, 2015

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required to control the risk of ignition of flammable vapors, 7.3.7.3.2.3 and 7.3.7.3.2.5, respectively, prescribe that explosion proof electrical fittings are specifically required to be employed only “within the cooling compartment” (emphasis added), and not also in the parts of the cooling equipment positioned outside of that compartment. This being the case, it would appear illogical to require explosion proof electrical fittings only within the cooled compartment for liquids emitting flammable vapors that are required to be transported under temperature control, and for “standard” flammable liquids not required to be transported under temperature control to impose the much higher standard of requiring explosion proof electrical fittings both inside *and outside* of the cooled compartment.

Furthermore, the possibility certainly exists that a transport unit containing flammable liquids having a flashpoint less than 23°C c.c. transported under temperature control conditions for commercial reasons only, may be loaded on a vessel in immediate proximity to the cooling equipment on a transport unit containing non-dangerous goods or, more importantly, containing other dangerous goods *required* to be transported under temperature control in conformance with Section 7.3.7.3 – the electrical fittings of the refrigeration equipment on the exterior of which are not required to be, and in all probability will not be explosion proof. This being the case, it is again illogical that the cooling equipment on the transport unit containing the flammable liquid be required to employ explosion proof electrical fittings outside of the cooled compartment when the electrical fittings on other refrigerated units positioned next to, or even directly end to end with, that transport unit are not explosion proof. Therefore, it is entirely reasonable to conclude that the actual intent of 7.3.7.6.2 is to mirror the clearly stated intent of 7.3.7.3.2.3 and 7.3.7.3.2.5 that explosion proof electrical fittings are required to be used only “within the cooling compartment.”

In summary, for the foregoing reasons my understanding of the intent of paragraph 7.3.7.6.2 of the IMDG Code is to require explosion proof electrical fittings *only* within the cooled compartment and not both within and outside of the cooled compartment. Your confirmation of this understanding will be most appreciated.

Thank you for your consideration of this matter, and please do not hesitate to contact me if you have questions or require additional information in relation to this request.

Sincerely,



E. A. Altemos