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Economic Commission for Europe**Inland Transport Committee****Working Party on the Transport of Dangerous Goods****Joint Meeting of Experts on the Regulations annexed to the European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN) (ADN Safety Committee)****Thirty-eighth session**

Geneva, 23–27 August 2021

Item 4 (b) of the provisional agenda

**Proposals for amendments to the regulations annexed to the ADN:
other proposals****Construction materials****Transmitted by the European Barge Union (EBU) and the European Skippers Organisation (ESO)*. ****

Related documents:	Informal documents INF.5 (by Germany) and INF 22 (by EBU/ESO) of the thirty-seventh session of the ADN Safety Committee meeting. ECE/TRANS/WP.15/AC.2/76, report of the thirty-seventh session.
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Introduction

1. During its thirty-second session in January 2018 (ECE/TRANS/WP.15/AC.2/2018/19), the ADN Safety Committee agreed on its preference for a table to list materials of objects on board of tank barges, other than steel, and adopted the proposal from EBU/ESO.
2. In the table, materials other than steel which are allowed to be used on the deck of the barge, in the cargo area are mentioned such as wood, aluminum alloys, plastic materials or rubber. The table was found to be quite clear and gives guidance to barge crew, owners and authorities.
3. It was also discussed that this table was not meant to be limitative.
4. After notifications of inspection bodies and an inventory among the members of EBU/ESO, the application of other or new techniques, and signals of the chemical industry,

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it became clear that some materials have not been mentioned in the table of 9.3.x.0.3, but are already quite often present on board of ADN tank barges or might be present in near future.

5. At the thirty-seventh session, EBU and ESO proposed in informal document INF.22 the addition to the table of necessary materials such as aluminum life boats, aluminum ladders or stairs, aluminum wire baskets, aluminum necessary for protective and rescue equipment, aluminum or wooden boat's hook and other loose, portable objects not being mentioned, but contributing to workers safety. Also, cargo sample bottles of glass were proposed.

6. During the thirty-seventh session an extensive discussion took place. It was concluded that life boats made of aluminum alloys materials are allowed. The wording of ES-TRIN was considered and it was confirmed that "ship's boat" is the correct wording.

7. EBU/ESO hereby proposes an update to the table in which several objects and materials are added. Furthermore, the new type of material "composite" (in German "Verbundwerkstoffe"), which could be expected more often in the future, is added. This material is often a mixture of plastics and fibers.

8. To improve the readability, a re-structuring of the text is proposed; it is mainly existing text and proposed changes are marked in bold and underlined. The table is divided in fixed, permanently installed materials and portable equipment.

9. EBU/ESO asks the ADN Safety Committee to continue the discussion on safe materials on board, based on the revised table, which gives guidance to barge crew, owners and authorities.

Proposal

Type G tank vessels

"9.3.1.0 Materials of construction

9.3.1.0.1.1 The vessel's hull and cargo tanks shall be constructed of shipbuilding steel or other at least equivalent metal, **special provisions of the additional requirements/remarks of column 20 of Table C excepted.**

9.3.1.0.1.2 Independent cargo tanks and membrane tanks may also be constructed of other materials, provided these have at least equivalent mechanical strength and resistance against the effects of temperature and fire.

For membrane tanks the equivalence for resistance against the effect of temperature and fire is deemed to be proven where the materials of the membrane tanks fulfil the following requirements:

- They withstand the range between the maximum temperature in service and 5 °C below the minimum design temperature, but not lower than -196 °C; and
- They are fire-resistant or protected by a suitable system such as a permanent inert gas environment or provided with a fire-retardant barrier.

9.3.1.0.2 Every part of the vessel including any installation and equipment which may come into contact with the cargo shall consist of materials which can neither be dangerously affected by the cargo nor cause decomposition of the cargo or react with it so as to form harmful or hazardous products. In case it has not been possible to examine this during classification and inspection of the vessel a relevant reservation shall be entered in the vessel substance list according to 1.16.1.2.5.

9.3.1.0.3 Except where explicitly permitted in 9.3.1.0.3 below or in the certificate of approval, the use of wood, aluminium alloys, plastic materials, rubber, **glass or composite** within the cargo area is prohibited.

9.3.1.0.4 The use of wood, aluminium alloys, plastic materials, rubber, **glass or composite** in the cargo area is permitted as shown in the following table: ”

Type C and type N tank vessels (X = 2 or 3)

“9.3.X.0 Materials of construction

9.3.X.0.1.1 The vessel’s hull and cargo tanks shall be constructed of shipbuilding steel or other at least equivalent metal, **special provisions of the additional requirements/remarks of column 20 of Table C excepted.**

9.3.X.0.1.2 Venting piping shall be protected against corrosion

9.3.X.0.1.3 Independent cargo tanks and membrane tanks may also be constructed of other materials, provided these have at least equivalent mechanical strength and resistance against the effects of temperature and fire.

9.3.X.0.2 Every part of the vessel including any installation and equipment which may come into contact with the cargo shall consist of materials which can neither be dangerously affected by the cargo nor cause decomposition of the cargo or react with it so as to form harmful or hazardous products. In case it has not been possible to examine this during classification and inspection of the vessel a relevant reservation shall be entered in the vessel substance list according to 1.16.1.2.5.

9.3.X.0.3 Except where explicitly permitted in 9.3.1.0.3 below or in the certificate of approval, the use of wood, aluminium alloys, plastic materials, ~~or~~ rubber, **glass or composite** within the cargo area is prohibited.

9.3.X.0.4 The use of wood, aluminium alloys, plastic materials, ~~or~~ rubber, **glass or composite** in the cargo area is permitted as shown in the following table:

(X means "allowed")

	Wood	Aluminium alloys	Plastic material / Composite	Rubber	<u>Glass</u>
<u>Permanently installed materials</u>					
Chocking of cargo tanks which are independent of the vessel's hull and chocking of installations and equipment	X		X		
Masts and similar round timber	X	X	X		
Engine parts		X	X		
Protective covers of engines and pumps			X		
<u>Notice boards (Prohibition of admittance and smoking)</u>		<u>X</u>	<u>X</u>		
Parts of the electrical installation		X	X		
	<u>According to the applicable technical norms</u>				
Parts of the loading and unloading installation, e.g., gaskets		X	X	X	
Supports and stops of any kind	X		X		
Ventilators, including hose assemblies for ventilation		X	X		
Parts of the water spray system, the shower and the eye and face bath		X	X		
Insulation of cargo tanks and of piping for loading and unloading, gas discharge pipes and heating pipes		<u>X</u>	X	X	
Coating of cargo tanks and of piping for loading and unloading		X	X	X	
<u>Insulation of cargo tanks (Table C, Column (20), Remark. 32)</u>		<u>X</u>	<u>X</u>	<u>X</u>	
<u>All kinds of gaskets</u>		<u>X</u>	X	X	
	<u>Subject to Table C, Column (20), Remark 39 a)</u>				
Cables for electrical equipment			X	X	
	<u>According to the applicable technical Norms</u>				
<u>Boxes, cabinets or other receptacles placed on the deck for storage of disposal and recovery equipment for capstans, extinguishers, fire hoses, etc.</u>		<u>X</u>	<u>X</u>		
<u>Boxes, cabinets or other receptacles placed on the deck for storage of disposal of waste</u>		<u>X</u>	<u>X</u>		
	<u>For oily and greasy wastes fire-resistant receptacles only (7.2.1.21.6)</u>				

	Wood	Aluminium alloys	Plastic material / Composite	Rubber	Glass
Portable equipment					
Gangways	X	X	X	X	
External ladders and passageways (gangways) *)		X	X	X	
Outboard ladders		<u>X</u>	<u>X</u>	<u>X</u>	
Ladders		<u>X</u>	<u>X</u>	<u>X</u>	
Cleaning equipment, e.g. brooms	X	<u>X</u>	X	X	
Fire extinguishers, portable gas detectors,		<u>X</u>	<u>X</u>	<u>X</u>	
Rescue winches		<u>X</u>			
Personal protective and safety equipment, rescue equipment conforming to ES-TRIN		<u>X</u>	<u>X</u>	<u>X</u>	
Driptrays			X		
Fenders	X		X	X	
Mooring lines, ropes for tenders, etc.			<u>X</u>		
			<u>respecting 7.x.4.76</u>		
Mat under hose assemblies for loading and unloading piping system			X	X	
Fire hoses, air hoses, hoses for cleaning the deck, etc.			X	X	
Other kinds of hoses	In line with 8.1.6.2 and Norms mentioned				
Aluminium gauging rods		<u>X</u>			
	If fitted with brass feet or protected in another way to avoid sparking.				
Sampling equipment			X		

	Wood	Aluminium alloys	Plastic material / Composite	Rubber	Glass
Receptables for oily and greasy wastes (7.2.4.1)		X	X		X
	fire-resistant receptables, (7.2.1.21.6)				
Receptables for residual products and receptables for slops		X	X		
	Respecting ADR, RID or IMDG-Code regarding the admission requirements of materials.				
Sampling bottles			X		X
	Respecting ADR, regarding the admission requirements of materials.				
Photo-optical copies of the certificate of approval according to 8.1.2.6 or 8.1.2.7, and of the vessel's certificate, the measurement certificate and the Rhine navigation membership certificate		X	X		
Aluminum basket for storing of mooring wires/lines		X			
Boot's hook	X	X	X		
Ship's boat (In case of 7.2.3.29.1 and 7.2.3.31.1 allowed in the cargo area)		X	X		
	Only when the material shall not readily ignite				

9.3.x.0.5 The paint used in the cargo area shall not be liable to produce sparks in case of impact.

9.3.x.0.6 All permanently fitted materials in the accommodation or wheelhouse, with the exception of furniture, shall not readily ignite. They shall not evolve fumes or toxic gases in dangerous quantities, if involved in a fire.”