Economic and Social Council

Inland Transport Committee

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Working Party on the Transport of Dangerous Goods

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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)

Forty-third session
Geneva, 22-26 January 2024
Item 5(b) of the provisional agenda
Proposals for amendments to the Regulations annexed to ADN: other proposals

ADN Checklist

Transmitted by the Government of Belgium

1. The Belgian delegation discussed the proposal of the Dutch delegation in working document ECE/TRANS/WP.15/AC.2/2024/29 and informal document INF.3 with the Belgian industry and representants of the inland waterway transport. Although the proposal contains already a lot of amendments, the Belgian delegation is of the opinion that some more ameliorations could improve the ADN checklist.

2. Annex 1 contains the "clean version" from informal document INF 3, with amendments in red as proposed by the Belgian delegation. An original checklist with track changes was very unclear.

3. The following remarks/amendments are made:

Page 1:

a) The vessel type can be filled in with a check box.

b) The vapour pressure or initial boiling point, as appropriate, is also part of the proper shipping name according to 3.1.2.1. For the following entries the vapour pressure and the initial boiling point is necessary in order to apply 3.2.3.3:

- UN 1224, entry 1 and 2

- UN 1265, entry 1 and 2

- UN 1267, entry 1 until 12,

- UN 1268, entry 1 until 4 and entry 7 until 12

- UN 1719, entry 1 and 2

[- UN 1760]

- UN 1863, entry 1 until 4 and 7 until 12

- UN 1986, all entries

- UN 1987, entry 2 until 5

- UN 1989, all entries

- UN 1992, all entries

- UN 1993, entry 1 until 4 and 7 until 12

- UN 2810, entry 1 and 2

- UN 2922, entry 1 and 2

- UN 2924, entry 1 until 6

- UN 2927, entry 1 and 2

- UN 2924, entry 1 until 6

- UN 2924, all entries

- UN 2924, entry 1 until 6

- UN 3271, entry 1 and 2

- UN 3272, entry 1 and 2

- UN 3286, all entries

- UN 3295, entry 1 until 4 and 7 until 12

- UN 3494, all entries

This uncertainty came with the deletion of remark 29 in the 2021version of the regulation annexed to the ADN.

c) Keep the order of the product description as it should appear in the transport document (See 5.4.1.1.2). After all, this is in accordance with the global regulations as contained in the Orange Book section 5.4.1.4.2. We understood from the Dutch delegation that a choice was made to follow the order of Table C and the vessel's substance list as asked by the Dutch industry and IWT sector. Apparently there is no unanimity in the industry and IWT sector.

d) The density should be mentioned in the table. The density is very important for the stability calculations and therefore an important security parameter. Two weeks after the Waldhof incident on the Rhine we had an accident in Antwerp with the Calendula 12, a similar tank vessel with centre tanks, where the stability of the vessel turned out to be critical with a substance density of 1.1 kg/l. The density is important to calculate the degree of filling according to 7.2.4.21. The stability calculations are followed up by the loading instrument because sufficient intact stability must be ascertained for all stages of loading and unloading and for the final loading condition according to 9.3.2(3).13.3.

When unloading the vessel, the skipper knows the density of the product from the loading of the substance.

Page 2:

e) Also for type G tank vessels a loading and unloading rate for gas should be agreed upon.

f) Since it is possible that several cargo tanks may contain different substances, the product name is added to the table of the loading or unloading rate.

Page 3 (Questions):

g) The column name is changed to "shore installation".

h) Question 1: It is more appropriate for the skipper to check whether the substance is mentioned on the vessel's substance list. Referring to working document ECE/TRANS/WP.15/AC.2/2024/10 concerning the proposal for a new entry of UN No. 1300 TURPENTINE SUBSTITUTE, we discovered that the concerned vessel didn't have the substance on the vessel's substance list, although the responsible parties were convinced the substance could be carried in the vessel.

i) New questions 2 and 3 According to 1.4.2.1.1 the consignor is required to furnish the carrier with information and data in a traceable form, taking into account the requirements of Chapter 5.4 and of the tables in Part 3. The Safety Data Sheet is mentioned because it is considered as very valuable safety information.

Note: It is preferable to mention the Safety Data Sheet explicitly in 1.4.2.1.1 (b).

j) New question 4: In case of toxic and CMR substances, the information concerning the hazards is also considered as very valuable safety information.

k) New questions 5 and 6: In many cases the crew of a vessel is familiar with the terminal where they usually load or unload the vessel, but in a lot of cases the crew is not. Normal and emergency operation procedures differ between terminals depending on the location, the filler, the country, the size of the terminal and other reasons. For safety reasons, the crew of the vessel should be aware of those procedures which should be handed over by the shore terminal itself.

l) New question 10 (between questions 5 and 6): It is wise to agree upon sampling and gauging procedures.

m) During previous session of the ADN Safety Committee, EBU/ESO referred to accidents with not empty loading hoses or where some substance from a previous application leaked out, most commonly on the vessel.

n) New question 14: for some local police regulations it is required to have the spill coamings closed. The crew on board the vessel is not always aware of the local requirement. In this case it should be brought to their attention by the shore installation.

Page 4 (Questions)

o) Old question 14 is deleted because already mentioned in more general new questions 5 and 6.

p) Old questions 15.3 and 15.4 (new 20.3 and 20.4): When we consider the requirements in 9.3.x.12.4, the ventilation system in the accommodation already requires the windows and the doors to be closed. Only in the event of a failure of the ventilation system installations and equipment in the accommodation that do not meet the requirements set out in 9.3.1.51 (a) and (b) [and (c)] and 9.3.1.52.1 must be stopped. This results in having not a general requirement to switch off the installations marked red.

q) ADN contains a service requirement in 7.2.4.60 according to which the shower and the eye and face bath prescribed in the rules for construction must be kept ready in all weather conditions for use during loading and unloading operations and cargo transfer operations by pumping, which is covered by question 20.5.

Page 5 (Questions)

r) Old question 19 (new 24): this part is only to be filled in in case of transport of refrigerated liquefied gases.

Annex I

8.6.3 ADN Checklist

ADN Checklist

concerning the observance of safety provisions and the implementation of the necessary measures for loading/unloading
The Explanation section constitutes an integral part of this Checklist

– **Particulars of vessel**

…….. (name of vessel)
No. ……... (official number)

☐G ☐C ☐N (vessel type)
…….. (explosion (sub)group / temperature class)

– **Particulars of loading or unloading operations**

……... (shore loading or unloading installation)
…….. (place)

……... (date)
…….. (time)

– **Particulars of the cargo as indicated in the transport document** (and given by the loader or unloader)

Quantity m^3	UN Number or Identification number	Proper shipping name*	Dangers**	Packing Group	Density (kg/l)
……	……..	……	……		…….. at …….°C (air/vac)***)

* *The proper shipping name given in column (2) of Table C of Chapter 3.2, supplemented, when applicable, by the technical name in parenthesis, the vapour pressure or initial boiling point as appropriate as per 3.1.2.1.*

** *Dangers indicated in column (5) of Table C, as relevant (as mentioned in the transport document in accordance with 5.4.1.1.2 (c)).*

*** *Delete as appropriate*

– **Particulars of last cargo*** (as given by ship's responsible)					**2 of 9**
Cargo tank number(s) of vessel	UN Number or Identification number	Proper shipping name **	Packing Group	Dangers***	Discharged/ empty/gas free
……	……	……	……	……	……
……	……	……	……	……	……
……	……	……	……	……	

- Particulars of loading/unloading

Loading/unloading rate ~~(not to be filled in if vessel is to be loaded with gas or have gas unloaded)~~

Product (full description, see above particulars of cargo to be loaded / unloaded)	Cargo tank number (s) of vessel	agreed rate of loading/unloading					
		start		middle		end	
		rate m^3/h	quantity m^3	rate m^3/h	quantity m^3	rate m^3/h	quantity m^3
……..…	……	……	……	……	……	……	……
……..……	……	……..…	……..…	……..…	……..…	……..…	……..…
……	……	……..…	……..…	……..…	……..…	……..…	……..…

- End of loading

How will the cargo piping be drained to the shore installation/to the vessel after loading/unloading? ****

by blowing**
by stripping**
by gravity**

If drained by blowing, how?

……
(e.g. air, inert gas, sleeve)

……. kPa
(permissible maximum pressure in the cargo tank)

…….litres
(estimated residual quantity)

* *To be filled in only if vessel is to be loaded*

** *The* proper *shipping name given in column (2) of Table C of Chapter 3.2, supplemented, when applicable, by the technical name in parenthesis, the vapour pressure or initial boiling point as appropriate as per 3.1.2.1.*

*** *Dangers indicated in column (5) of Table C, as relevant (as mentioned in the transport document in accordance with 5.4.1.1.2 (c)).*

**** *Delete as appropriate.*

Questions to the master or the person mandated by him and the person at the shore facility responsible for the handling Loading/unloading may only be started after all questions on the checklist have been checked off by "X", i.e. answered with YES and the list has been signed by both persons. Non–applicable questions have to be crossed out. If not all questions can be answered with YES, loading/unloading is only allowed with consent of the competent authority.			**3 of 9**
		vessel	Shore installation
1.	~~Is the vessel permitted to carry this cargo?~~ Is the cargo to be carried present on the ship's substance list?	O*	O*
2.	Before loading, is checked by the loader that sufficient information is handed over to the vessel about the product such as a Safety Data Sheet?		O*
3.	Before loading, has the ship's representative sufficient information received by the consignor about the product such as a Safety Data Sheet?	O*	–
4.	Are the hazards associated with toxic and/or CMR substances of the cargo identified? What is the National Accepted Exposure Limit, when applicable? ……..vppm	O	O
5.	Before loading / unloading, is sufficient terminal information / emergency procedures handed over to the vessel	–	O
6.	Before loading / unloading, is sufficient information about the emergency procedures received and will the skipper ensure that all crew members are aware of these terminal regulations.	O	–
~~3~~7.	Is the vessel well moored in view of local circumstances?	O	–
~~4~~8.	Have suitable means in accordance with 7.2.4.77 been provided for leaving the vessel, including in cases of emergency?	O	O
~~5~~9.	Are the escape routes and the loading/unloading place adequately lighted?	O	O
10.	Are sampling and gauging protocols agreed?	O	O
~~6~~11. ~~6~~11.1	Vessel/shore connections Is the piping for loading or unloading in satisfactory condition?	–	O
~~6~~11.2	Is the piping for loading or unloading correctly connected?	–	O
~~6~~11.3	Are all the connecting flanges fitted with suitable gaskets?	–	O
~~6~~11.4	Are all the connecting bolts (or equivalent) correctly fitted, tightened and do their threads project past the nuts?	O	O
~~6~~11.5	Are the shoreside loading/unloading arms free to move in all directions and (if present) do the hose assemblies have enough room for easy movement?	–	O
11.6	Are protocols available to ensure that, before connecting/disconnection the loading arm/loading hose and/or vapour return hose, the transfer equipment is isolated, fully drained, free of liquid and, if applicable, de-pressurized.	O	O
~~7~~12. ~~7~~12.1	Vessel piping systems Are all flanges of the connections of the piping for loading and unloading and of the venting piping not in use, on board, correctly blanked off?	O	[O–]
~~7~~12.2	Have all valves and other closing devices been checked for correct open – or closed position?	O	[O–]
~~8~~13	Are suitable means of collecting leakages placed under the pipe connections which are in use and are they empty?	O	O
14	Is there an agreement about the open or closed position of the openings of the spill coaming? ☐Open ☐Plugged off	O	O

* *To be filled in only if vessel is to be loaded.*

			4 of 9
		vessel	Shore installation
~~9~~15.	Connections between piping		
~~9~~15.1	Are the movable connecting pieces between the ballast and bilge piping on the one hand and the piping for loading and unloading on the other hand disconnected?	O	–
~~9~~15.2	Are the moveable connecting pieces between the suitable venting equipment on the one hand and the piping for loading and unloading on the other hand disconnected?	O	–
~~10~~16.	Safety provisions		
~~10~~16.1	Is continuous and suitable supervision of loading/unloading ensured for the whole period of the operation?	[O]	[O]
	[16.1.1 At the vessel?]	[O]	[–]
	[16.1.2 At the loading/unloading place?]	[–]	[O]
	[16.1.3 At the connection interface?]	[O]	[–]
~~10~~16.2	Are the required fire extinguishing systems and appliances operational?	O	O
~~10~~16.3	Has smoking been generally prohibited?	O	O
~~11~~17.	Communication		
~~11~~17.1	Is communication between vessel and shore ensured?	O	O
~~11~~17.2	The language used for operational verbal communication is ……	O	O
~~12~~18.	Venting and vapour return piping		
~~12~~18.1	Is the venting piping, where required, connected with the vapour return piping?	O	O
~~12~~18.2	Is it ensured that the shore installation is such that the pressure at the connecting-point of the vapour return piping and the venting piping cannot exceed the opening pressure of the pressure relief devices/high velocity vent valves? (pressure at connecting point: ……. kPa)	O	O
~~12~~18.3	When anti–explosion protection is required in Chapter 3.2, Table C, column (17) does the shore installation ensure that its vapour return piping is such that the vessel is protected against detonations and flame fronts from the shore.	–	O
~~13~~19.	Working pressure		
~~13~~19.1	Has the starting working pressure of the vessel's cargo discharge pump been adjusted to the permissible working pressure of the shore installation? (agreed pressure …….kPa)	O	O
~~13~~19.2	Has the starting working pressure of the shore pump been adjusted to the permissible working pressure of the on–board installation? (agreed pressure…….kPa)	O	O
~~14.~~	~~Is it known what actions are to be taken in the event of an "Emergency–stop" and an "Alarm"?~~	~~O~~	~~O~~
~~15~~20.	Check on the most important operational requirements on board:		
~~15~~20.1	Is the voltage cut off from the radar installations?	O	–
~~15~~20.2	Are the ventilation systems and gas detection systems switched on and operational?	O	–
~~15~~20.3	[Are all electrical installations and equipment marked red switched off or are they connected to the overpressure / gas alarm system? Remark: Other description necessary in case of 9.3.x.12.4 ?]	O	–
~~15~~20.4	[Are all windows and doors closed? Remark: Question relevant in case of 9.3.x.12.4 ?]	O	–
20.5	Is the shower and the eye and face bath checked and operational?	O	
~~16~~21.	Is the liquid level alarm–installation operational?	O	–

			5 of 9
		vessel	Shore installation
~~17~~22.	Overflow prevention		
~~17~~22.1	Is the overflow prevention device plugged in, in working order and tested when loading?	O	O
~~17~~22.2	Is the overflow prevention device plugged in, in working order and tested when unloading, when applicable?	O	O
~~17~~22.3	Is the device for switching off the on-board pump from the shore facility plugged in, in working order and tested when unloading?	O	O
~~18~~23.	Are the cargo tank hatches and cargo tank inspection and sampling openings closed or protected by flame arresters fulfilling the requirements of column (16) of Table C of Chapter 3.2?	O	–
~~19~~24.	To be filled in only in case of transport of refrigerated liquefied gases		
~~19~~24.1	When transporting refrigerated liquefied gases, has the holding time been determined according to 7.2.4.16.16, and is known and documented on board?	O*	[O*]
~~19~~24.2	Is the loading temperature within the range of the maximum permissible temperature as prescribed in 7.2.3.28? (agreed temperature)	O* __ °C	O*
~~19~~24.3	Are suitable facilities to collect leaked liquids provided underneath the refrigerated liquefied gas connections and are they empty?	O	O
~~19~~24.4	Is a water film as mentioned in 9.3.1.21.11 activated?	O	[O]

Checked, filled in and signed	
for the vessel:	for the shore installation ~~of loading and unloading~~:
.....	.....
(Full name in capital letters)	(Full name in capital letters)
.....	.....
(signature)	(signature)

* *To be filled in only if the vessel is to be loaded.*

Explanation **6 of 9**

General information

Particulars of vessel

For “vessel type”, state the type of vessel, cargo tank design, type of cargo tank and opening pressure of the pressure relief valves/high-velocity vent valves/safety valves following the definitions given in 1.2.1 and the certificate of approval (for example, C-2-2-50).

Particulars of last cargo

This concerns the last cargo of all tanks to be loaded.

For “Degassed” evidence should be provided of the vessel’s condition of being gas-free.

Particulars of loading/unloading

It should be unambiguous to which cargo tank the “cargo tank number(s) of vessel” refers. Where necessary, add additional information to distinguish between cargo tanks (e.g. “starboard 1-1”).

The “estimated residual quantity” is the maximum quantity of product that will flow after active loading or unloading has stopped. It is the amount of product remaining in the hose or loading arm estimated from the last closed valve, expressed in litres. Operationally, the quantity at which loading is stopped in the final stage should be agreed upon in order to safely receive the residual quantity.

The “permissible maximum pressure in the cargo tank” refers to the maximum pressure of the high-velocity vent valve.”

Questions

The list shall be completed, after the pipes intended for the handling are connected and prior to the handling, in duplicate and signed by the master or a person mandated by the designated responsible persons on board and at the shore facility, as described in 7.2.4.10.1.

Question 1

~~Prior to loading, both parties will check whether the vessel is permitted to carry this cargo by means of the vessel substance list.~~
The particulars of the cargo as given on page 1 of the checklist by the loader of the vessel must allow both parties to verify if the product can be found on the vessel substance list as per 1.16.1.4 or by authorization of a competent authority.

See also 1.4.2.2.1a, 1.4.3.3n, 7.2.1.21.

Question~~**s**~~ **2 and 3**

~~*(Reserved)*~~

The consignor is required to furnish the carrier with information and data in a traceable form, taking into account the requirements of Chapter 5.4 and of the tables in Part 3. The Safety Data Sheet is mentioned because it is considered as very valuable safety information. The consignor may rely on the information and data made available by other participants.

See also 1.4.2.1.1 and 1.4.2.1.2.

Question 4 **7 of 9**

The consignor must be able to provide the information concerning the hazards associated with toxic and/or CMR substances of the cargo. The carrier makes sure the information is available on board the vessel.

In addition the shore installation should be able to provide the National Accepted Exposure Limit as the local plant of a bigger association. According to workers safety regulation it is up to the employer to make sure that his employees are not exposed to the limits defined by the competent authority in that state.

See also 1.4.2.1.1(b), 1.4.2.2.1(b).

Question 5 and 6

For safety reasons, the crew of the vessel should be aware of the normal and emergency terminal procedures which should be handed over by the shore terminal itself.

See also 1.1.4.6

Question ~~3~~7

“Well moored” means that the vessel is fastened to the pier or the cargo transfer station in such a way that, without intervention of a third person, movements of the vessel in any direction that could hamper the operation of the cargo transfer gear will be prevented. Established or predictable variations of the water–level at that location and special factors have to be taken into account.

See also 1.1.4.6, 7.2.4.76, 7.2.5.3.

Question 4~~8~~

It must be possible to escape safely from the vessel at any time. If there is none or only one protected escape route available at the shoreside for a quick escape from the vessel in case of emergency, a suitable means of escape has to be provided on the vessel side if required in accordance with 7.2.4.77.

See also 1.4.3.3q, 1.4.3.7.1g.

Question ~~5~~9 ~~**7 of 8**~~

See also 7.2.4.53.

Question 10

Local police regulations sometimes require having the spill coamings closed. The shore installation should bring the crew of the vessel to the attention of the local requirement.

Question ~~6~~11

A valid inspection certificate for the hose assemblies must be available on board. The material of the piping for loading and unloading must be able to withstand the expected loads and be suitable for cargo transfer of the respective substances. The piping for loading and unloading between vessel and shore must be placed so that it cannot be damaged by ordinary movements of the vessel during the loading and unloading process or by variations of the water. In addition, all flanged joints must be fitted with appropriate gaskets and sufficient bolt connections or other types of suitable couplings (e.g. claw coupling) in order to exclude the possibility of leakage.

To prevent accidents with residues in hoses or in the transfer equipment, the crew on board the vessel as well as the shore installation are responsible to check the equipment.

For 6.1, see also 9.3.x.25.
For 6.3, see also 1.4.3.3t, 1.4.3.7.1k

Question ~~7~~12 **8 of 9**

All openings of the venting piping and connections to shore installations used for loading and unloading, through which the loading and unloading operation is carried out, shall be provided with safety valves. All openings, when not in use for loading and unloading, shall be fitted with a blind flange.

Question ~~8~~13

The receptacle intended for recovering possible liquid spillage shall be earthed to the metal structure of the vessel. Pipe connections shall be relieved of pressure prior to connection or disconnecting and the minimal amount of product that may be released shall be caught in the receptacle.

See also 7.2.4.16.5.

Question 14

See also 9.3.x.21.

Question ~~9~~15

The suitable venting equipment (fan, flame arresters and connecting pieces) should be disconnected from the piping for loading and unloading before the loading and unloading starts.

For ~~9~~15.1, see also 7.2.3.25.1, 7.2.3.25.2.
For ~~9~~15.2, see also 7.2.3.7, 7.2.3.25.1, 7.2.3.25.2.

Question 1~~0~~6

Loading/unloading must be supervised on board and ashore so that dangers which may occur in the vicinity of piping for loading and unloading between vessel and shore can be recognized immediately. When supervision is effected by additional technical means it must be agreed between the shore installation and the vessel how it is to be ensured.

For 1~~0~~6.1, see also 1.4.3.7.1l, 1.4.3.3u.
For 1~~0~~6.2, see also 7.2.4.40.
For 1~~0~~6.3, see also 7.2.4.41.

Question 1~~1~~7

For a safe loading/unloading operation good communications between vessel and shore are required. For this purpose telephone and radio equipment may be used only if of an explosion protected type and located within reach of the supervisor. Communication shall be ensured for the entire duration of the loading/unloading operation. It shall take place in a language both persons can understand.

Question 1~~2~~8

In addition to the requirement of 7.2.4.25.5 ADN other regulations could prescribe the use of the vapour return piping and the venting piping, such as local regulations or permits.

For 12.1, see also 7.2.4.25.5
For 12.2, see also 1.4.3.3s, 1.4.3.7.1j, 7.2.4.16.6.
For 12.3, see also 1.4.3.3r, 1.4.3.7.1i, 7.2.4.16.12.

Question 1~~3~~9 **9 of 9**

[OPTION 1:][1~~3~~9.1: The vessel ensures that the maximum working pressure of the vessel's cargo discharge pump(s) meets the unloading place's conditions. The unloading place only confirms the question if the conditions are met.

1~~3~~9.2 The loading place ensures that the maximum working pressure of the shore pump meets the vessel's conditions. The vessel only confirms the question if the conditions are met.

See also 7.2.4.16.1.]

[OPTION 2:][1~~3~~9.1: The pressure to be filled in, is determined in agreement, the vessel ensures that the maximum working pressure of the vessel's cargo discharge pump(s) does not exceed the agreed pressure.

1~~3~~9.2 The pressure to be filled in, is determined in agreement, the loading place ensures that the maximum working pressure of the shore pump does not exceed the agreed pressure.

See also 7.2.4.16.1.]

~~**Question 14**~~

~~Before the start of the loading/unloading operation the representative of the shore installation and the master or the person mandated by him must agree on the applicable procedure. The specific properties of the substances to be loaded/unloaded have to be taken into account.~~

Question ~~15~~20

The systems mentioned in ~~15~~20.3 shall remain switched on during the operation.

"Ventilation systems" refers to systems for the accommodation, wheelhouse and service spaces as described in 9.3.x.12.4.

For ~~15.6~~20.4, see also 7.2.3.51.6, 9.3.x.12.4.

For 20.5, see also 7.2.4.60, 9.3.3.60.

Question ~~16~~21

See also 9.3.x.21.4.

Question ~~17~~22

To prevent backflow from the shore, it is also necessary to activate the overflow prevention device on the vessel under certain circumstances when unloading. It is obligatory during loading and optional during unloading. Delete this item if it is not necessary during unloading.

For ~~17~~22.1 and ~~17~~22.2, see also 7.2.4.13.2, 9.3.x.21.5.

Question ~~18~~23

See also 7.2.3.22.

Question ~~19~~24

[OPTION 1:][If this question is applicable The loading place ensures that the permissible maximum loading temperature meets the conditions as described in instruction on maximum loading temperature 7.2.3.28. The vessel only confirms the question if the conditions are met.]

[OPTION 2:][For ~~19~~24.2: The loading temperature is determined in agreement, the loading place ensures that the permissible maximum loading temperature is within the permissible temperatures as described in instruction on maximum loading temperature (7.2.3.28).]

For ~~19~~24.2, see also 7.2.3.28.

For ~~19~~24.3, see also 7.2.4.29, 9.3.1.21.11.
For ~~19~~24.4, see also 7.2.4.29.