

## IACS Technical Resolutions adopted from July to December 2016

ClassNK has been regularly providing preliminary reports of outcomes of the International Maritime Organization (IMO)'s meetings and the latest development at IACS.

For this issue, we would like to introduce Unified Requirements (URs) and Unified Interpretations (UIs) adopted and published from Jul 2016 to Dec 2016 with their summaries.

URs and UIs are technical resolutions, which are set, revised and withdrawn by IACS. URs are classification rules established for the uniform implementation among IACS member societies. URs shall be incorporated in the rules of each member society within one year of adoption unless otherwise specified.

UIs are developed for uniform interpretations of the requirements of Convention which are left to the satisfaction of the Administration or vaguely worded while Administrations have not set clear instructions.

These resolutions are/will be incorporated into ClassNK's Rules and Guidance for the survey and construction of steel ships after review by ClassNK's relevant Technical Committee.

Texts of these resolutions and their Technical Backgrounds have been published on [IACS website](#). In addition, the underlined versions of URs and UIs, in which revised parts are clearly shown, have been published on [ClassNK's website](#).

Table 1 List of new/amendments to URs (Unified Requirements) published from Jul 2016 to Dec 2016

Resolution	Revision	Adoption	Title	Implementation	Outline
UR Z23	Rev.6	Nov. 2016	Hull Survey for New Construction	1 Jan. 2018	(1)
UR Z17	Rev.12	Nov. 2016	Procedural Requirements for Service Suppliers	1 Jan. 2018	(2)
UR Z10.5	Rev.16	Nov. 2016	Hull Surveys of Double Skin Bulk Carriers	1 Jan. 2018	(3)
UR Z10.4	Rev.14	Nov. 2016	Hull Surveys of Double Hull Oil Tankers	1 Jan. 2018	(3)
UR Z10.2	Rev.33	Nov. 2016	Hull Surveys of Bulk Carriers	1 Jan. 2018	(3)
UR M44	Corr.2	Nov. 2016	Documents for the approval of diesel engines	---	---
UR A2	Rev.4/ Corr.1	Dec. 2016	Shipboard fittings and supporting hull structures associated with towing and mooring on conventional ships	1 Jan. 2018	(4)
UR A1	Rev.6/ Corr.1	Dec. 2016	Anchoring Equipment	1 Jan. 2018	(4)
UR Z15	Corr.1	Oct. 2016	Hull, Structure, Equipment and Machinery Surveys of Mobile Offshore Drilling Units	---	---
UR W32	New	Sep. 2016	Qualification scheme for welders of hull structural steels	1 Jan. 2018	(5)

Resolution	Revision	Adoption	Title	Implementation	Outline
UR S14	Rev.6	Sep. 2016	Testing Procedures of Watertight Compartments	1 Jan. 2018	(6)
UR M77	New	Sep. 2016	Storage and use of SCR reductants	1 Jan. 2018	(7)
UR W1	Rev.3	Aug. 2016	Material and welding for gas tankers	1 Jan. 2017	(8)
UR Z18	Rev.6	Aug. 2016	Periodical Survey of Machinery	1 Jul. 2017	(9)
UR G1	Rev.3	Jun. 2016	Cargo containment of gas tankers	1 Jul. 2016	(10)
UR E25	New	Jun. 2016	Failure detection and response of all types of steering control systems	1 Jul. 2017	(11)

\*Corr.(Corrigenda) means the correction that basically does not include the contents of resolution but literal error.

Table 2 List of new/amendments to UIs (Unified Interpretations) published from Jul 2016 to Dec 2016

Resolution	Revision	Adoption	Title	Implementation	Outline
UI SC191	Corr.2	Dec. 2016	IACS Unified Interpretations (UI) SC 191 for the application of amended SOLAS regulation II-1/3-6 (resolution MSC.151(78)) and revised Technical provisions for means of access for inspections (resolution MSC.158(78))	---	---
UI SC282	New	Dec. 2016	Application of materials other than steel on engine, turbine and gearbox installations	1 Jul. 2017	(12)
UI SC269	Rev.1	Dec. 2016	Means of escape from the steering gear space in cargo ships	1 Jan. 2018	(13)
UI GC18	New	Nov. 2016	Test for Cargo tank's high level alarm (on ships built on or after 1st July 2016)	1 Jan. 2018	(14)
UI SC227	Rev.2	Nov. 2016	The dedicated seawater ballast tanks in SOLAS Chapter II-1 (Regulation 3-2)	1 Jul. 2017	(15)
UI SC213	Rev.4	Nov. 2016	Arrangements for remotely located survival craft	1 Jan. 2017	(16)
UI SC257	Rev.1	Oct. 2016	Pilot Transfer Arrangements (SOLAS V/23 as amended by Resolution MSC.308 (88))	1 Jul. 2013	(17)
UI SC220	Corr.1	Sep. 2016	Special requirements for vehicle ferries, ro-ro ships and other ships of similar type	---	---
UI SC267	Rev.2	Sep. 2016	Implementation of the requirements relating to lifeboat release and retrieval systems (LSA Code Paragraph 4.4.7.6 as amended by resolution MSC.320(89))	1 Jan. 2017	(18)
UI SC275	Rev.1	Sep. 2016	Suitable number of spare air cylinders to be provided in connection with drills	1 Jan. 2017	(19)
UI MODU2	New	Aug. 2016	Inclusion of the weight of mediums of the fire-fighting systems in lightweight (2009 MODU Code Chapter 1, paragraph 1.3.30)	1 Jan. 2017	(20)
UI SC272	Rev.1	Jul. 2016	Inert gas supply to double-hull spaces (SOLAS II-2/4.5.5.1)	1 Jan. 2017	(21)
UI SC281	New	Jul. 2016	Single fall and hook system used for launching a lifeboat or rescue boat - Interpretation of the LSA Code as amended by MSC.320(89) and MSC.81(70) as amended by MSC.321(89)	1 Jul. 2017	(22)
UI GC8	Rev.1	Jun. 2016	Permissible stresses in way of supports of Type C cargo tanks	1 Jul. 2016	(23)
UI GC7	Rev.1	Jun. 2016	Carriage of products not covered by the code	1 Jul. 2016	(23)

Resolution	Revision	Adoption	Title	Implementation	Outline
UI SC94	Rev.2	Jun. 2016	Mechanical, hydraulic and electrical independency of steering gear control systems	1 Jul. 2017	(24)
UI MPC128	New	May 2016	Inclusion of mediums of the fire-fighting systems in lightweight (MARPOL Annex I/Regulation 1.24)	1 Jan. 2017	(20)
UI HSC10	New	May 2016	Inclusion of mediums of the fire-fighting systems in lightweight (2000 HSC Code Chapter 1, Regulation 1.4.34)	1 Jan. 2017	(20)
UI SC273	Rev.1	May 2016	Inclusion of mediums of the fire-fighting systems in lightweight (SOLAS II-1/2.21, SOLAS II-2/3.28) and lightship condition (IS Code 2008 Paragraph 2.23)	1 Jan. 2017	(25)

\*Corr.(Corrigenda) means the correction that basically does not include the contents of resolution but literal error.

Outlines of IACS Technical Resolutions listed in the above Tables are mentioned below.

#### **(1) Z23 (Rev.6)**

UR Z23 details requirements of hull survey for new construction. In response to some of the observations made in IMO Goal Based Standards (GBS) audit findings, the UR was revised to clarify that the areas subjected to high stress fatigue, and in general the critical structural areas, should be subjected to witness surveys in lieu of the patrol surveys. Also the requirement of verification of the Ship Construction File (SCF) upon completion of ship construction was included in the UR.

#### **(2) UR Z17 (Rev.12)**

UR Z17 stipulates minimum requirements for approval and certification of service suppliers (external firms providing services, such as measurements, tests or maintenance of safety systems and equipment that are used in classification or statutory surveys). The UR was revised to provide clarity for the provisions for the certifications of the supervisors and the operators of certified service suppliers engaged in thermographic testing of primary and secondary barriers of gas carriers with membrane cargo containment systems.

#### **(3) UR Z10.5 (Rev.16), Z10.4 (Rev.14) & Z10.2 (Rev.33)**

UR Z series listed above cover the hull surveys of ships in service. In response to an observation made in IMO GBS audit findings, these URs were revised to include the detail requirements regarding updating and verification of the SCF, stored on

board or on shore archive.

#### **(4) UR A2 (Rev.4/Corr.1) & A1 (Rev.6/Corr.1)**

Considering concerns raised by the Industry in view of an increasing number of incidents like mooring lines, etc., IACS decided to review and update the related UR A1 and A2, by clarifying the strength requirements of towing and mooring equipment and stipulating that MBL and number of mooring lines are decided based upon side projected area. IACS Recommendation No. 10 "Anchoring, Mooring, and Towing Equipment" was also revised in parallel, providing a guidance for anchoring equipment for ships in deep and unsheltered water and recommended strengths of towing and mooring lines and fittings.

#### **(5) UR W32 (New)**

UR W32 stipulates requirements for a qualification scheme for welders intended to be engaged in the fusion welding of steels of hull structures, except oxy-acetylene welding and welding of pipes. The UR was developed based on the existing IACS Recommendation 104 and also taking into consideration the standards ISO 9606-1 and EN 287-1 on qualification testing of welders. Rec. 104 shall be withdrawn upon implementation of the UR.

#### **(6) UR S14 (Rev.6)**

The test procedures in UR S14 are to confirm the water tightness and the structural adequacy of tanks and watertight compartments. In response to an observation made in IMO GBS audit findings and to comply with SOLAS II-1/11, Rev.6 of UR S14 has been split into two Parts; Part A giving requirements for SOLAS ships including CSR ships and Part B

giving requirements for non-SOLAS ships and ships which have been given exemption/equivalency by their Flag Administration. The revision also requires documentary evidence of the owner's agreement to request exemption/equivalency to the Flag Administration.

#### **(7) UR M77 (New)**

As per NOx Technical Code, NOx reducing devices such as Selective Catalytic Reduction (SCR) may be used so that marine diesel engines comply with MARPOL Annex VI/regulation 13. UR M77 stipulates requirements applicable to the arrangements for the storage and use of SCR reductants, such as urea/water solution, aqueous ammonia or anhydrous ammonia, which are typically carried on board in bulk quantities. The UR is developed with reference to NOx Technical Code, MEPC resolutions (MEPC.198(62), MEPC.217(63), MEPC.66/INF.4), CIMAC paper (no. 220 Field experience of Marine SCR) and EPA/452/B-02-001 (section 4, NOx Controls).

#### **(8) UR W1 (Rev.3)**

UR W1 provides the requirements regarding materials and welding for cargo containment systems of liquefied gas carriers. The UR was substantially revised to make it in line with the revised IGC Code (IMO resolution MSC.370(93)) which takes into account the latest technologies.

#### **(9) UR Z18 (Rev.6)**

UR Z18 stipulates requirements of periodical survey of machinery. The UR was revised to specify that, during surveys of boilers, the direct visual internal inspection by a surveyor may be replaced by a hydrostatic pressure test or by alternative verifications as determined by the Classification Society in cases a visual inspection is not feasible due to boiler size limitations, such as the boilers being small or the interior of the boiler being narrow, etc.

#### **(10) UR G1 (Rev.3)**

UR G1 gives the requirements for cargo containment systems of liquefied gas carriers. The purpose of this revision is to align it with the latest

version of the IGC Code (IMO Resolution MSC.370(93)). The content of the UR has been included in the latest version of the IGC Code and so the vessels which comply with the requirements of the IGC Code are excluded from the application of the UR.

#### **(11) UR E25 (New)**

UR E25 stipulates that most probable failures that may cause reduced or erroneous system performance of steering control systems shall be automatically detected and also provides a list of failure scenarios to be considered. In the event of detection of a failure, the rudder should stop in the current position or return to the neutral position. The UR is based on IACS UI SC94 (Mechanical, hydraulic and electrical independency of steering gear control systems).

#### **(12) UI SC282 (New)**

UI SC282 specifies the applicable requirements for materials other than steel used for engine, turbine and gearbox installations considering the risk of fire associated with the component and its installation. The UI was developed considering modern practice to use low melting point materials such as aluminium alloy in engine installations.

#### **(13) UI SC269 (Rev.1)**

UI SC269 was developed to provide an interpretation for the requirements related to arrangement of means of escape from the steering gear space in cargo ships (SOLAS Chapter II-2, Regulation 13.4.2.3). In Rev.1 of the UI, it was further clarified that if the escape routes that pass only through stairways and/or corridors have fire integrity protection equivalent to steering gear spaces or stairways / corridors, whichever is more stringent, they are considered as providing a "direct access to the open deck".

#### **(14) UI GC18 (New)**

In Chapter 13.3.5 of IGC Code as amended by resolution MSC.370(93), the timing of the testing of high-level alarms is specified. UI GC18 was newly set out to interpret the expression (the first occasion of full loading after) "each dry docking"; which should

be considered to be the survey of the outside of the ship's bottom required for the renewal of the Cargo Ship Safety Construction Certificate and or the Cargo Ship Safety Certificate. The UI is based on the fact that the renewal of the "International Certificate of Fitness of Liquefied Gases in Bulk" is linked to the renewal of the Cargo Ship Safety Construction Certificate and or the Cargo Ship Safety Certificate.

#### **(15) UI SC227 (Rev.2)**

UI SC227 specifies that sea water ballast tanks in passenger vessels also designated for the carriage of grey water or black water, and in livestock carriers also designated for the carriage of the livestock dung shall be exempted from the application and requirements of the IMO PSC. Rev.2 was developed to clarify that these tanks are confirmed by the coating manufacturer to be resistant to the media stored in these tanks and provided such coatings are applied and maintained according to the coating manufacturer's procedures.

#### **(16) UI SC213 (Rev.4)**

UI SC213 clarifies the requirements related to survival craft located at aft/forward end of the ships, if such location is distant more than 100 m from the closest survival craft. Rev.4 deleted the interpretation related to calculation of the length of the embarkation ladder.

#### **(17) UI SC257 (Rev.1)**

UI SC257 interprets pilot transfer arrangements. Rev.1 clarifies that SOLAS Chapter V, regulation 23.3.3.1 prescribes an operational instruction that limits the climb to not more than 9m on a single ladder regardless of the trim or list of the ship.

#### **(18) UI SC267 (Rev.2)**

UI SC267 provides interpretations to the paragraphs 4.4.7.6 in LSA Code, as amended by resolution MSC.320 (89). The UI is related to the components in a lifeboat, which are to be of material corrosion resistant in the marine environment, such as release mechanism/interlock devices. In Rev.2 of the UI, the criteria value for the pitting resistance equivalent number (PREN) was amended in order to be

aligned with MSC.1/Circ.1529 on Unified interpretations of paragraph 4.4.7.6 of the LSA Code, which was approved at MSC96.

#### **(19) UI SC275 (Rev.1)**

UI SC275 provides the definition of the term 'suitable number of spare cylinders' in SOLAS II-2/15.2.2.6. Rev.1 clarifies that a suitable number of spare cylinders to be carried on board to replace those used for fire drills shall be at least one 'set of cylinders' for each mandatory breathing apparatus, and that if additional spare cylinders are required by the shipboard safe management system (SMS), the SMS should be followed. 'Set of cylinders' means the number of cylinders which are required to operate the breathing apparatus.

#### **(20) UI MODU2 (New), UIs MPC128 (New), HSC10 (New)**

UIs listed above were developed by IACS to clarify that, in light of approval of MSC.1/Circ.1540, 1541 and 1542 and MEPC.1/Circ.867, the weight of mediums on board for the fixed fire-fighting systems (e.g. freshwater, CO<sub>2</sub>, dry chemical powder, foam concentrate, etc.) is to be included in the definition of lightweight in 2009 MODU Code (Chapter 1, paragraph 1.3.30), MARPOL Annex I/regulation 1.24, and 2000 HSC Code (Chapter 1, regulation 1.4.34). This is an extension of the scope of the interpretation in UI SC 273.

#### **(21) UI SC272 (Rev.1)**

UI SC272 defines "double-hull spaces" in SOLAS II-2/4.5.5.1. As per Rev.1 of the UI, double-hull spaces which are required to be fitted with suitable connections for the supply of inert gas as per SOLAS II-2/4.5.5.1.4.1 are all ballast tanks and void spaces of double hull and double bottom spaces adjacent to the cargo tanks, except cargo pump-rooms and ballast pump-rooms.

#### **(22) UI SC281 (New)**

UI SC281 was developed to clarify the application of functional and test requirements such as tensile strength test for single fall launching appliances fitted to rescue boat or life boat in LSA code and MSC 81(70).

**(23) UI GC8 (Rev.1) and GC7 (Rev.1)**

UI GC8 relates to the calculation of permissible stresses in way of supports of type C cargo tanks. UI GC7 specifies the requirements of carriage of products not covered by the IGC code. The code has been updated and as a result the UIs were also updated to align references with the new Code (IMO Resolution MSC.370(93)).

**(24) UI SC94 (Rev.2)**

UI SC94 applies to steering gear control systems, as defined in SOLAS regulation II-1, 3/1, for the main and auxiliary steering gear, operable from the navigation bridge, for which SOLAS stipulates two steering gear control systems independent of each other. Following development of the new UR E25 (Failure detection and response of all types of steering control systems), related interpretation in the UI became obsolete and hence removed. Also

IEC 60092-204:1987 standard referenced in the UI was withdrawn and hence removed.

**(25) SC273 (Rev.1)**

UI SC273 clarifies that weight of mediums on board for the fixed fire-fighting systems (e.g. freshwater, CO2, dry chemical powder, foam concentrate, etc.) is to be included in the lightweight and lightship condition mentioned in regulations SOLAS II-1/2.21, SOLAS II-2/3.28 and IS Code 2008 Paragraph 2.23. The UI was slightly revised to align the text of the UI with the text agreed in IMO SDC 3 unified interpretations to SOLAS Chapter II-1 on the "Inclusion of the weight of mediums of the fire-fighting systems in lightweight".

ClassNK External Affairs Department is pleased to provide international trends promptly.

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