CONTRACT CELL DEPARTMENT

CORRIGENDUM - II

Tender No.: UCSL/CC/SER/T/175-182/284/2026 Date: 15-09-2026

Sir,

CORRIGENDUM-II – TENDER FOR ONBOARD NOISE & VIBRATION MEASUREMENT TEST AT 6300 DWT GENERAL CARGO VESSEL

The following terms of the subject tender are amended as follows:

Sl. No.	Tender Reference / Clause	FOR	READ AS / CLARIFICATION
1	Bid Documents	Part-II Technical Bid and Part-III Price Bid	**Part-I Technical Bid and Part-II Price Bid**
2	Tender Number	UCSL/CC/SER/T/175-185/284/2026	**UCSL/CC/SER/T/175-182/284/2026**
3	Clause 18.1 – Security Deposit	Reference to Security Deposit	The reference to **Security Deposit under Clause 18.1 was inadvertently included and shall be disregarded**. The applicable terms and conditions for this tender shall be as stipulated in **Annexure-I – Terms & Conditions (T&C) of the Tender Enquiry**.
4	Techno-Commercial Check List	Annexure-V – Techno Commercial Check List	**Annexure-VII – Techno Commercial Check List**
5	Annexure-III – Power of Attorney	Assistant General Manager (Materials & Contract Cell)	**Assistant General Manager (Contract Cell)**
6	Clause 25.8 – General Conditions of Contract (GCC)	Reference to UCSL General Conditions of Contract (GCC)	The reference to **UCSL General Conditions of Contract (GCC) under Clause 25.8 was inadvertently included and shall be disregarded**. For this tender, the applicable contractual terms and conditions shall be as stipulated in **Annexure-I – Terms & Conditions (T&C) of the Tender Enquiry**.

Sl. No.	Tender Reference / Clause	FOR	READ AS / CLARIFICATION
7	Clause 3.2(a) – Minimum Qualification Criteria	Bidder should submit Work Order / Work Completion Certificate for similar nature of work in Shipyards during the last **1 year**	Bidder shall submit relevant **Work Order(s)/Work Completion Certificate(s)** for similar nature of work executed in Shipyards during the **last 5 years**.
8	Onboard Vibration Measurement – Habitability Area	—	Vibration measurements shall be carried out at **cruising speed, i.e. not less than 80% of Maximum Continuous Rating (MCR)**.
9	Onboard Vibration Measurement – Rotary / Reciprocating Equipment	—	Vibration measurements shall be taken **at the foundation of the equipment**.
10	Technical Standard – Noise Measurement / Order of Precedence	Tender requirements pertaining to onboard noise measurement	For the applicable onboard noise measurement requirements, bidders shall refer to **Attachment-1: Norwegian Maritime Authority – Circular Series R, RSR 04-2014 dated 30.06.2014, "Implementation of Resolution MSC.337(91) on Protection Against Noise (IMO's Binding Code on Noise Levels)"**, issued along with this Corrigendum. **Attachment-1 shall be the governing technical reference for onboard noise measurement requirements.**
11	Order of Precedence – Noise Measurement Requirements	—	In the event of any **conflict, inconsistency, discrepancy or contradiction** between the Tender Enquiry and **Attachment-1** in respect of onboard noise measurement requirements, **the provisions of Attachment-1 shall prevail and supersede the corresponding provisions of the Tender Enquiry, to the extent of such conflict or inconsistency**.

Sl. No.	Tender Reference / Clause	FOR	READ AS / CLARIFICATION
12	Sea Trial Duration / Additional Man-day Rate	Existing Price Bid does not provide a separate provision for additional man-day charges beyond the stipulated sea trial duration.	A separate provision for quoting the **additional day rate** is included in the **Revised Price Bid Format**. In the event the sea trial extends beyond the stipulated **two (02) days due to reasons attributable to UCSL/Vessel**, additional day charges shall be considered at the rate quoted by the bidder in the Revised Price Bid, **subject to certification/ confirmation by UCSL**.
13	Price Bid Format	Existing Price Bid Format	The **Revised Price Bid Format issued along with this Corrigendum shall supersede the Price Bid Format issued earlier**. Bidders shall submit their price offer **only in the Revised Price Bid Format**.
14	Tender Opening Date	18th September 2026 (Friday) 15:30 hrs	25th September 2026 (Friday) 15:30 hrs

15. All other terms and conditions of the Tender Enquiry, except those specifically **amended, clarified or superseded through this Corrigendum and its attachments**, shall remain unchanged.

Attachments forming part of Corrigendum-II

Attachment-1 – Technical Reference
Norwegian Maritime Authority – Circular Series R, RSR 04-2014 dated 30.06.2014
"Implementation of Resolution MSC.337(91) on Protection Against Noise (IMO's Binding Code on Noise Levels)"

Attachment-2 – Revised Price Bid Format
The Revised Price Bid Format includes a separate provision for quoting the **additional day rate** applicable in case the sea trial extends beyond the stipulated two (02) days due to reasons attributable to UCSL/Vessel.

For Udupi Cochin Shipyard Limited,

Assistant General Manager (Contract Cell)

FOR

के पी प्रजीत चंद्रन
K P PRAJIT CHANDRAN
प्रबंधक MANAGER
उडुपि कोचीन शिपयार्ड लिमिटेड
UDUPI COCHIN SHIPYARD LIMITED
माल्पे, कर्नाटक/MALPE, KARNATAKA-576 108

Sjøfartsdirektoratet
Norwegian Maritime Authority

Circular - Series R

Circular Series R (Regulations) supersedes previous Series F.
In the new Series R, relevant legal amendments and amendments to conventions are also published.

Circular recipients: (check box)

- ☒ Sdir : The Norwegian Maritime Authority
- ☐ A: 16 specially authorized employment offices
- ☐ U: Selected Foreign Service stations
- ☐ P: Equipment manufacturers, any subgroups
- ☐ OFF: Offshore companies/platform managers/operators
- ☐ Hov: Main organizations
- ☐ H.i. Bodies or agencies for their comments
- ☐ Others:

No.: RSR 04-2014
Date: 30/06/2014
Journal No.: 2013/44176
Supersedes:
Reference to: Excerpts from the Norwegian Passenger and Cargo Ship Legislation 2014 page 1176

The Circular should be entered into a special diagram or as appropriate in the latest editions of relevant NMA publications and kept until the next editions.

Implementation of Resolution MSC.337(91) on protection against noise (IMO's binding Code on noise levels)

1. Introduction

The Norwegian Maritime Authority (NMA) hereby lays down amendments to the Regulations of 1 January 2005 No. 8 concerning the working environment, health and safety of persons working on board ship (Working Environment Regulations) for the implementation of Resolution MSC.337(91) on protection against noise. These amendments enter into force on 1 July 2014.

The Code on noise levels on board ships (the Code), which is IMO's binding Code on noise levels, applies to new ships of 1,600 gross tonnage and upwards, and replaces Resolution A.468(XII) on noise levels on board ships. The Code was adopted by Resolution MSC.337(91), and is a binding instrument under SOLAS chapter II-1. Some parts of the Code are recommendatory.

A new regulation II-1/3-12 has been added to SOLAS, which enters into force on 1 July 2014 - at the same time as the Code. The regulatory amendments for the implementation of the Code enters into force as from the same date.

The existing Norwegian provisions on noise in the Working Environment Regulations entered into force on 22 February 2006, and were mainly an implementation of Directive 2003/10/EC on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (noise). The Working Environment Regulations apply to all Norwegian ships where persons are working on board.

The purpose of the regulatory amendments is to implement the Code, as well as to continue Directive 2003/10/EC. It is also the NMA's intention to clear up any uncertainties regarding the application of the rules on noise for high-speed craft.

The recommendations (the "should" rules) of the Code have not been included in the Regulations in order to avoid stricter requirements for Norwegian ships than stipulated by international law. In the cases where Directive 2003/10/EC have more stringent or other requirements than the Code, these requirements have been included in the Regulations in addition to the requirements of the Code.

The Code and EEA Directive 2003/10/EC are attached in English original version and Norwegian translation.

2. Current law before the regulatory amendment

2.1 Norwegian law

Noise requirements for ships were regulated by chapter 15 of the Working Environment Regulations. The Regulations are laid down pursuant to sections 21 and 22 of the Ship Safety and Security Act. The requirements of the Regulations apply to all types of ships where persons are working on board, as well as to mobile offshore units unless otherwise provided by the Working Environment Act and the Regulations currently in force relating to health, environment and safety in the petroleum activities. Chapter 15 of the Working Environment Regulations were mainly based on Directive 2003/10/EC.

2.2 EEA regulations

EEA Directive 2003/10/EC stipulates minimum requirements for protection of workers against noise, and is applicable to both shore-based activities and ships. The Directive includes rules on noise exposure limit values, risk assessment, noise reduction by technical means and personal protective equipment, worker information and training related to noise, noise-prevention measures and health surveillance. In line with the scope of application of the Ship Safety and Security Act, the Directive has by way of the Working Environment Regulations been made applicable to all persons working on board Norwegian ships.

2.3. IMO

2.3.1 The Code on noise levels on board ships

The Code on noise levels on board ships (the Code) originates from Resolution A.468(XII), but has updated and more stringent requirements compared to this. The stricter requirements of the new Code are a result of technological progress and a desire to improve the working and living conditions on board ships. As opposed to Resolution A.468(XII), the Code has been made binding, with the exception of those parts of the text where it is stated that the rules *should* be followed. These recommendations have been included throughout the Code instead of including them at the end of each of the chapters of the Code.

The purpose of the Code is to provide standards to prevent the occurrence of potentially hazardous noise levels on board ships and to provide standards for an acceptable environment for seafarers. These standards have been developed to address passenger and cargo ships. Since some sizes and certain service types of ships have been exempted from the Code, full application of the Code to ships that differ appreciably from conventional ships will require special considerations.

More particularly, the Code includes requirements for:

a) measurements of noise levels and exposure;
b) protecting seafarers from the risk of noise-induced hearing loss under conditions where at present it is not feasible to limit the noise to a level which is not potentially harmful;
c) limits on acceptable maximum noise levels for all spaces to which seafarers normally have access; and
d) verification of acoustic insulation between accommodation spaces.

At the end of the Code, four non-binding appendices have been included:

1. Format for noise survey report
2. Guidance on the inclusion of noise issues in safety management systems
3. Suggested methods of attenuating noise
4. Simplified procedure for determining noise exposure

2.3.2 2000 HSC Code

There are special noise requirements for high-speed craft in the Regulations of 5 January 1998 No. 6 concerning the construction, equipment and operation of high-speed craft used as passenger craft or cargo craft. The 2000 HSC Code has by way of these Regulations been made binding for high-speed craft the keel of which is laid, or which is at a similar stage of construction, on or after 14 February 2012, engaged on foreign voyages or domestic voyages in Norway when the craft is 24 metres of length (L) and upwards and is capable of a maximum speed of 20 knots or more, or engaged on domestic voyages in a host State, cf. section 1 third paragraph of the Regulations, cf. section 2 subparagraph l).

The special limits for noise levels on high-speed craft are laid down in paragraph 4.10 of the 2000 HSC Code, where it is stipulated that the noise level in public spaces and crew accommodation shall be kept as low as possible to enable the public address system to be heard, and shall not in general exceed 75 db(A).

3. More on the implementation of the Code

The Code is, as mentioned in the introduction, binding only for new ships of 1,600 gross tonnage and upwards, and does otherwise not apply to fishing vessels, mobile offshore units, high-speed craft etc.

In the cases where the Code has more stringent or other requirements than Directive 2003/10/EC, the vessels which are exempted from the Code are also exempt from the corresponding requirements of the Regulations. This is discussed in particular in point 4.2 below.

4. The regulatory amendments

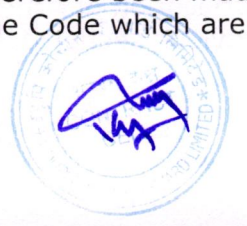
4.1 The need for new legislation

Chapter 15 of the Working Environment Regulations contains regulations on the protection against noise for persons working on board, and is laid down pursuant to sections 21 and 22 of the Ship Safety and Security Act. The Code has new rules on noise levels on ships compared to Norwegian legislation, and the amended Regulations are necessary in order to implement these rules.

4.2 On the Regulations in general

The amendments to the Regulations are based on the binding rules of the Code and Directive 2003/10/EC. In addition to implementing the Code into Norwegian legislation, it is important to ensure that the Directive 2003/10/EC on noise is continued. In some areas the Directive has more stringent requirements or requirements which do not ensue from the Code. These more stringent requirements and the additional requirements from the EEA Directive has been included in the Regulations in addition to the binding requirements of the Code.

High-speed craft is an example of vessels which are exempted from the Code. High-speed craft are, however, covered by Directive 2003/10/EC, and the parts of the Code which correspond to the rules of the EEA Directive have therefore been made applicable to high-speed craft in the Regulations. The rules of the Code which are



not found in the EEA Directive, have on the contrary not been made applicable to high-speed craft.

The recommendations (the "should" rules) of the Code have not been included in the Regulations as it is not considered appropriate to regulate non-binding provisions in regulations. It may nevertheless be useful to refer to the recommendations of the Code when performing noise measurements.

4.3 Comments to the provisions of chapter 15 of the Regulations

To section 15-1 *Definitions*
Definitions from the Code and Directive 2003/10/EC have been included in this section. When a definition is only used once in the Regulations, the definition has instead been moved to the relevant section.

When considering which definitions to include, the need for information for persons working on board has been taken into account, so that e.g. the terms "exposure limits" and "action values" from Directive 2003/10/EC have been included in the definitions.

The definition of "high-speed craft" is taken from section 2 subparagraph g) of the Regulations of 5 January 1998 No. 6 concerning the construction, equipment and operation of high-speed craft. The definitions of fishing vessels and mobile offshore unit have not been included, as the terms have already been used in the section on scope of application of the Working Environment Regulations.

To section 15-2 *Systematic prevention of noise*
The text is taken from Article 5 No. 1 of Directive 2003/10/EC.

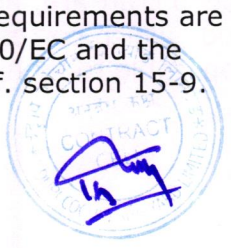
To section 15-3 *Risk assessment*
The text is taken from Article 4 of Directive 2003/10/EC.

To section 15-4 *Measuring equipment*
The text is taken from chapter 2 of the Code. The provision is a clarification of Article 4 No. 2 of the current Directive 2003/10/EC and the previous section 15-9 of the Working Environment Regulations.

First paragraph: In accordance with the Code, standards other than IEC 61672-1(2002-05) may be applied if the company provides documentary evidence for the Norwegian Maritime Authority showing that the standard is equivalent. Sound level meters type/class 1 manufactured according to IEC 651/IEC 804 may be used until 1 July 2016.

Second paragraph: In accordance with the Code, standards other than IEC 61260 (1995) may be applied if the company provides documentary evidence for the Norwegian Maritime Authority showing that the standard is equivalent.

To sections 15-5 to 15-15
The requirements for noise measurement, methods of measurement and personnel to carry out the measurements are regulated by chapter 3 of the Code, and have been included in sections 15-5 to 15-15 of the Regulations. The requirements are a clarification of Article 4 No. 1 to 5 of the current Directive 2003/10/EC and the previous section 15-6 of the Working Environment Regulations, cf. section 15-9.



To section 15-7 *Operating conditions at sea trials*
Seventh paragraph: In case of vessels with Dynamic Positioning (DP), which is intended for use in normal working condition, additional noise measurements at DP mode shall be made at control stations, duty stations, and accommodation spaces to ensure that the maximum noise level limits in these spaces are not exceeded. Such measurements shall be carried out with at least 40% load on the DP thruster system. This may be done either by simulation of, or by testing under, weather conditions making it necessary to put at least 40% load on the DP thruster system in order to keep the ship in the approximate position.

To section 15-11 *Calibration and measurement uncertainties*
Third paragraph: The possibility to apply a standard deviation has been added in accordance with the DNV GL's rules for comfort class, so that deviations of 1 to 3 dB(A) from the noise level limits are now accepted for up to 15% of the number of cabins, including hospitals, and for up to 20% of the area of public spaces and offices on board.

According to paragraph 3.9 of the Code, the uncertainty of measurements, represented by a dispersion of results of less than or equal to the standard deviation, can be expected to lie within ±1.5 dB. Such as this standard deviation is defined, this means that there will still be measurement results outside of this limit. For a normal distribution of results, for example, this will entail that only approx. 70% of results are within the ±1.5 dB limit. The remaining results are outside of this limit, and 15% of these are expected to be +1.5 dB and +3 dB above the mean value. This is the background for the acceptance of a standard deviation in DNV GL's rules for comfort class, which the NMA also applies for measurement in accordance with the Code.

To section 15-16 *Limitaion of noise exposure*
The text is taken from Article 7 of Directive 2003/10/EC.

To section 15-17 *Measures in the event of exceeded action values*
The text is taken from Article 5 No. 2 of Directive 2003/10/EC.

To section 15-18 *Exposure limit values and exposure action values*
The text is taken from Article 3 of Directive 2003/10/EC.

To section 15-19 *Noise level limits*
The text is taken from paragraphs 1.3.7, 4.1, 4.2 and 5.1 of the Code, and stipulates limits for noise levels in various areas of the ship.

Seventh paragraph: For vessels designed for and employed on voyages of short duration, or on other services involving short periods of operation of the vessel, the Norwegian Maritime Authority may upon application decide that the noise level limits of section 15-19 for accommodation spaces and service spaces only applies with the vessel in the port condition. "Voyages of short duration" means voyages where the vessel is not generally underway for periods long enough for the persons working on board to require sleep, or long off-duty periods, during the voyages. "Port condition" means the condition in which all machinery solely required for propulsion is stopped.

Eighth paragraph: The requirements are not found in Directive 2003/10/EC, and vessels exempted from the Code are exempt from the provision. Pleasure craft not

used for commercial purposed are already exempt from the scope of application of the Working Environment Regulations, and are therefore not exempted again here.

To section 15-20 *Noise level limits on high-speed craft*
For high-speed craft the noise level limits have been taken from the 2000 HSC Code. Even though the HSC Code is also incorporated into the Regulations of 5 January 1998 No. 6 concerning the construction, equipment and operation of high-speed craft used as passenger craft or cargo craft, the noise requirements of the HSC Code are nevertheless included in the Working Environment Regulations as these regulate the working environment, and are meant to be used by the persons working on board.

To section 15-21 *Use of hearing protectors*
The text is taken from chapter 7.1 of the Code and Article 6 of Directive 2003/10/EC.

To section 15-22 *Techincal requirements for hearing protectors*
The text is taken from chapter 7 of the Code. The provision is a clarification of Article 6 No. 1 of the current Directive 2003/10/EC and the previous section 15-14 of the Working Environment Regulations, cf. section 3-4.

To section 15-23 *Warning notices*
The text is taken from chapter 7 of the Code and Article 5 No. 3 of Directive 2003/10/EC.

To section 15-24 *Health surveillance and hearing examination*
The text is taken from Article 10 No. 1 to 3 of Directive 2003/10/EC.

The purpose of the examinations is to protect the hearing of persons working on board, and to uncover any hearing loss caused by noise at an early time.

To section 15-25 *Follow-up of health surveillance*
The text is taken from Article 10 No. 4 of Directive 2003/10/EC.

To section 15-26 *Information and training*
The text is taken from Article 8 of Directive 2003/10/EC.

To section 15-27 *Acoustic insulation between accommodation spaces*
The text is taken from paragraph 1.3.4 of the Code.

Fourth paragraph: The requirements are not found in Directive 2003/10/EC, and vessels exempted from the Code are exempt from the provision. Pleasure craft not used for commercial purposed are already exempt from the scope of application of the Working Environment Regulations, and are therefore not exempted again here.

To section 15-28 *Survey report*
The text is taken from chapter 4.3 of the Code.

Article 4 of Directive 2003/10/EC and the previous section 15-6 of the Working Environment Regulations, cf. section 15-9, assumes that a corresponding noise survey report is issued in connection with noise measurements. Existing ships which were issued a noise survey report before 1 July 2014 in accordance with the

previous rules of the Working Environment Regulations, satisfy the requirement of section 15-28 of the Regulations.

An example of format for noise survey report is indicated in Appendix 1 to the Code.

To section 15-29 *Exemptions*
First paragraph: The text is taken from paragraph 1.3.6 of the Code and Article 1 of framework directive 89/391/EEC concerning the introduction of measures improving the safety and health of workers at work.

The Norwegian Maritime Authority may upon application grant exemptions from one or more of the noise protection requirements of chapter 15 of the Working Environment Regulations when it is acceptable in terms of health and protection, and it is documented that compliance with the requirement(s) will not be possible despite applicable and reasonable technical noise reductions measures. The Norwegian Maritime Authority may demand that the company submits a statement from a competent person or body in connection with the application, and may impose specific conditions for the exemption.

The purpose of the Code, cf. paragraph 1.2 of the Code, has been included as conditions for exemption in subparagraphs a) to e). The condition stipulated in subparagraph f) is taken from Article 3 No. 1 of Directive 2003/10/EC.

Second paragraph: The text is taken from Article 11 of Directive 2003/10/EC. The Norwegian Maritime Authority may in particular cases grant exemptions from section 15-16 on limitation of noise exposure and from section 15-21 on use of hearing protectors.

John Malvin Økland
Acting Director General of Navigation and Shipping

Bjørn Pedersen
Head of Department

Annex: Regulation concerning amendments to the Regulations of 1 January 2005 No. 8 concerning the working environment, health and safety of persons working on board ship

Regulation concerning amendments to the Regulations of 1 January 2005 No. 8 concerning the working environment, health and safety of workers on board ship

Legal basis: Laid down by the Norwegian Maritime Authority on 30 June 2014 under the Act of 16 February 2007 No. 9 relating to Ship Safety and Security (Ship Safety and Security Act) sections 6, 21 and 22, cf. Formal Delegation of 16 February 2007 No. 171 and Formal Delegation of 31 May 2007 No. 590.

I

Regulations of 1 January 2005 No. 8 concerning the working environment, health and safety of workers on board ship are amended as follows:

Chapter 15 should read:

Chapter 15 Provisions concerning the protection against noise

Section 15-1 *Definitions*

1. *"A-weighted equivalent continuous sound level $L_{Aeq}(T)$":* A-weighted sound pressure level of a continuous steady sound that, within a measurement time interval, T, has the same mean square sound pressure as a sound under consideration which varies with time. It is expressed in decibels A (dB(A)) and is given by the following equation:

$$L_{Aekv,T} = 10log\frac{1}{T}\int_0^T \frac{pa(t)^2}{{p_0}^2}.dt$$

where: T = measurement time
p_a (t) = A-weighted instantaneous sound pressure
p_0 = 20 µPa (the reference level).

2. *"A-weighted sound pressure level or noise level":* The quantity measured by a sound level meter in which the frequency response curve is weighted according to the A-weighting curve (see IEC 61672-1).

3. *"Navigating bridge wings":* The parts of the vessel's navigating bridge extending out towards the vessel's sides.

4. *"C-weighted equivalent continuous sound level $L_{Ceq}(T)$":* C-weighted sound pressure level of a continuous steady sound that, within a measurement time interval, T, has the same mean square sound pressure as a sound under consideration which varies with time. It is expressed in decibels C (dB(C)) and is given by the following equation:

$$L_{Ceq,T} = 10log\frac{1}{T}\int_0^T \frac{pc(t)^2}{{p_0}^2}.dt$$

where: T = measurement time
p_c (t) = C-weighted instantaneous sound pressure
p_0 = 20 µPa (the reference level).

5. *"C-weighted sound pressure level or noise level"*: The quantity measured by a sound level meter in which the frequency response is weighted according to the C-weighting curve (see IEC 61672-1 (2002-05)).

6. *"C-weighted peak sound level, L_{Cpeak}":* C-weighted maximum instantaneous sound pressure level. It is expressed in decibels C (dB(C)) and is given by the following equation:

$$L_{Cpeak} = 10log\frac{{p_{peak}}^2}{{p_0}^2}$$

where: p_{peak} = C-weighted maximum instantaneous sound pressure
p_0 = 20 µPa (the reference level).

7. *"Daily noise exposure level ($L_{ex,8h}$) (dB(A) re. 20 µPa)":* Time-weighted average of the noise exposure levels for a nominal eight-hour working day as defined by international standard ISO 1999:1990, point 3.6. It covers all noises present at work, including impulsive noise.

8. *"Daily noise exposure level ($L_{ex,24h}$)"* represents the equivalent noise exposure level for a period of 24 hours.

$L_{ex,24h} = L_{Aeq,}T + 10\log(T/T_0)$

where: T is the effective duration on board
T_0 is the reference duration 24 h.

The total equivalent continuous A-weighted sound pressure level (L_{Aeq} T) shall be calculated by using the different noise levels ($L_{Aeq,}T_i$) and associated time periods with the following equation:

$$L_{Aeq,\ T} = 10log\left[\frac{1}{T}\sum_{i=1}^{n}\left(T_i \times 10^{0.1L_{Aeq,T_i}}\right)\right]$$

where:
L_{Aeq,T_i} is the equivalent continuous A-weighted sound pressure level, in decibels, averaged over time interval T_i,

$$T = \sum_{i=1}^{n} T_i$$

$L_{ex,24h}$ = $L_{Aeq,24h}$ when the persons working on board are on board the vessel for a period of 24 hours.

9. "*Dynamically supported craft*": A craft which is operable on or above water and which has characteristics different from those of conventional displacement ships. Within the aforementioned generality, a craft which complies with either of the following characteristics:
   .1 the weight, or a significant part thereof, is balanced in one mode of operation by other than hydrostatic forces;
   .2 the craft is able to operate at speeds such that the function $\frac{v}{\sqrt{gL}}$ is equal to or greater than 0.9, where "v" is the maximum speed, "L" is the water-line length and "g" is the acceleration due to gravity, all in consistent units.

10. *"Exposure limits":* Noise exposure values which require immediate actions if they are exceeded.

11. *"High-speed craft":* Craft as defined in the International Convention for the Safety of Life at Sea, 1974, regulation X/1.

12. *"Hearing loss*": Hearing loss is evaluated in relation to a reference auditory threshold defined conventionally in ISO Standard 389-1(1998). The hearing loss corresponds to the difference between the auditory threshold of the subject being examined and the reference auditory threshold.

13. "*Hearing protector*": A device worn to reduce the level of noise reaching the ears. Passive noise-cancelling headsets block noise from reaching the ear. Active noise-cancelling headphones generate a signal that cancels out the ambient noise within the headphone.

14. *"Impulsive noise":* High-intensity noise of short time duration.

15. "*Integrating sound level meter*": A sound level meter designed or adapted to measure the level of the mean squared time averaged A-weighted and C-weighted sound pressure.

16. *"Continuously manned spaces":* Spaces in which the continuous or prolonged presence of persons working on board is necessary for normal operational periods.

17. *"Sound":* Energy that is transmitted by pressure waves in air or other materials and is the objective cause of the sensation of hearing.

18. "*Sound pressure level* L_p": Sound pressure level expressed in decibel (dB), or a sound or noise given by the following equation:

$$L_p = 10log\frac{p^2}{{p_0}^2}$$

where: p= sound pressure, in Pascal
p_0 = 20 µPa (the reference level).

19. *"Peak sound pressure (p_{peak})":* Maximum value of the 'C'-frequency weighted instantaneous sound pressure.

20. "*Machinery spaces*": Any space which contains steam or internal-combustion machinery, pumps, air compressors, boilers, oil fuel units, major electrical machinery, oil filling stations, thrusters, refrigerating, stabilizing, steering gear, ventilation and air conditioning machinery, etc., and trunks to such spaces.

21. "*Dredger*": A vessel undertaking operations to excavate bottom sediment, where the vessel has permanently installed excavation equipment.

22. "*Pile driving vessel*": A vessel undertaking operations to install pilings in the seabed.

23. *"Accommodation spaces":* Cabins, offices (for carrying out ship's business), hospitals, messrooms, recreation rooms (such as lounges, smoke rooms, cinemas, gymnasiums, libraries and hobbies and games rooms) and open recreation areas to be used by persons working on board.

24. *"Noise":* For the purpose of this chapter all sound which can result in hearing impairment, or which can be harmful to health or be otherwise dangerous or disruptive.

25. *"Noise level"*: See A-weighted sound pressure level in paragraph 2 of this section.

26. "*Noise induced hearing loss*": A hearing loss, originating in the nerve cells within the cochlea, attributable to the effects of sound.

27. *"Action values":* Noise exposure values which requires actions to be taken in order to reduce the health risk and unfortunate strain to a minimum.

28. *"Duty stations"*: Those spaces in which the main navigating equipment, the ship's radio or the emergency source of power are located or where the fire recording or fire control equipment is centralised and also those spaces used for galleys, main pantries, stores (except isolated pantries and lockers), mail and specie rooms, workshops other than those forming part of the machinery spaces and similar such spaces.

29. *"Weekly noise exposure level ($L_{ex,8h}$)":* Time-weighted average of the daily noise exposure levels for a nominal week of five eight-hour working days as defined by international standard ISO 1999:1990, point 3.6 (note 2).

30. "*Weighted sound reduction index, R_w*": A single number value expressed in decibels (dB) which describes the overall sound insulation performance (in laboratory) that walls, doors or floors provides (see ISO 717-1:1997 as amended by 1:2006).

Section 15-2 *Systematic prevention of noise*

(1) The work shall be planned and carried out in such a manner as to protect the persons working on board against noise. Measures shall be taken at source as far as practicable with regard to technical improvements, or by limiting the duration and intensity of sound exposure in other ways.

(2) Technical devices shall be arranged, used and maintained in such a way that unnecessary noise does not arise.

(3) Risks arising from exposure to noise shall be reduced based on the general principles or prevention set out in chapter 2 of these Regulations, taking into account in particular:

a) other working methods that require less exposure to noise;
b) the choice of appropriate work equipment, taking account of the work to be done, emitting the least possible noise, including the possibility of making available to persons working on board work equipment with the aim or effect of limiting exposure to noise;
c) the design and layout of workplaces and work stations;
d) adequate information and training to instruct persons working on board to use work equipment correctly in order to reduce their exposure to noise to a minimum;
e) noise reduction by technical means:
   i) reducing airborne noise, e.g. by shields, enclosures, sound-absorbent coverings;
   ii) reducing structure-borne noise, e.g. by damping or isolation;
f) appropriate maintenance programmes for work equipment, the workplace and workplace systems;
g) organisation of work to reduce noise:
   i) limitation of the duration and intensity of the exposure;

ii) appropriate work schedules with adequate rest periods.

Section 15-3 *Risk assessment*

(1) Risk assessments of the noise levels to which the persons working on board are exposed, shall be carried out. The requirements of this chapter for noise limits, noise measurements, methods of measurement, measuring equipment and personnel to carry out the measurements, are a part of such risk assessment. The risk assessments shall be kept up to date on a regular basis, and new risk assessments shall always be carried out when significant changes affect the noise exposure or when the results of health surveillance show it to be necessary.

(2) The risk assessments shall give particular attention to the following:

a) the level, type and duration of exposure, including any exposure to impulsive noise;
b) the exposure limits and action values for noise exposure laid down in section 15-18;
c) any effects concerning the health and safety of persons working on board belonging to particularly sensitive work groups;
d) as far as technically achievable, any effects on the health and safety of persons working on board, resulting from interactions between noise and work-related ototoxic substances, and between noise and vibrations;
e) any indirect effects on the health and safety of persons working on board, resulting from interactions between noise and warning signals or other sounds that need to be observed in order to reduce the risk of accidents;
f) information on noise emission provided by manufacturers of work equipment used on board;
g) the existence of alternative work equipment designed to reduce the noise emission;
h) exposure to noise beyond normal working hours;
i) appropriate information obtained following health surveillance, including published information, as far as possible;
j) the availability of hearing protectors with adequate attenuation characteristics.

(3) The risk assessments shall be kept readily accessible to all persons working on board in order for the information to be applied at a later point in time.

(4) When preparing the individual risk assessments, the Act of 14 April 2000 No. 31 relating to the processing of personal data shall apply.

Section 15-4 *Measuring equipment*

(1) Measurement of sound pressure levels shall be carried out using precision integrating sound level meters that meet the requirements of this chapter. Such meters shall be manufactured to IEC 61672-1(2002-05) type/class 1 standard as applicable. Standards other than IEC 61672-1(2002-05) may be applied if the company provides documentary evidence for the Norwegian Maritime Authority showing that the standard is equivalent. Sound level meters type/class 1 manufactured according to IEC 651/IEC 804 may be used until 1 July 2016.

(2) Octave filter set, either used alone or in conjunction with a sound level meter, shall conform to IEC 61260 (1995). Standards other than IEC 61260 (1995) may be applied if the company provides documentary evidence for the Norwegian Maritime Authority showing that the standard is equivalent. "Octave filter set" means octave-band and fractional-octave-band filters.

(3) Sound calibrators shall comply with the standard IEC 60942 (2003-01) and shall be approved by the manufacturer of the sound level meter used.

(4) Calibrator and sound level meter shall be verified at least every two years by a Norwegian standard laboratory or a competent laboratory accredited according to ISO/IEC 17025:2005/Cor 1:2006.

(5) A microphone wind screen shall be used when taking readings outside, e.g. on navigating bridge wings or on deck, and below deck where there is any substantial air movement.

Section 15-5 *Noise measurement*

(1) For vessels covered by section 15-19 the measurement of noise levels in all spaces specified in section 15-19 second paragraph shall be carried out upon completion of the construction of the vessel, or

as soon as practicable thereafter. The measurements shall take place under the operating conditions specified in section 15-7, and shall be recorded in a survey report, cf. section 15-28.
(2) Measurements of the A-weighted equivalent continuous sound level, $L_{Aeq}(T)$ shall be made, and measurements of the C-weighted equivalent continuous sound level, $L_{Ceq}(T)$ and the C-weighted peak sound level L_{Cpeak} shall be made in spaces where $L_{Aeq}(T)$ exceeds 85 dB(A).

Section 15-6 *Personnel to carry out noise measurements*
(1) Persons conducting noise measurements shall have:
a) knowledge in the field of noise, sound measurements and handling of used equipment;
b) training concerning the procedures specified in this chapter.
(2) The measuring institutes or experts shall prove their competence with view to noise measurements.
(3) Testing institutions which support a quality management system according to ISO 17020/25 are considered to fulfil the requirements of the first and second paragraphs.

Section 15-7 *Operating conditions at sea trials*
(1) The course of the vessel shall be as straight as possible. The actual conditions during the measurements shall be recorded in the noise survey report, cf. section 15-28.
(2) Noise measurements shall be taken at normal service speed and, unless otherwise provided in this section, no less than 80% of the maximum continuous rating (MCR). Controllable pitch and Voith-Schneider propellers, if any, shall be in the normal seagoing position. For special vessel types and for vessels with special propulsion and power configurations, such as diesel-electric systems, due consideration may be given to actual ship design or operating parameters when applying the requirements of this and the second paragraph.
(3) All machinery, navigation instruments, radio and radar sets, etc., normally in use at normal seagoing condition and levels, including squelch shall operate throughout the measurement period. However, neither energised fog signals nor helicopter operations shall take place during the taking of these measurements.
(4) Measurements in spaces containing emergency diesel engine driven generators, fire pumps or other emergency equipment that would normally be run only in emergency, or for test purposes, shall be taken with the equipment operating.
(5) Mechanical ventilation, heating and air-conditioning equipment shall be in normal operation, taking into account that the capacity shall be in accordance with the design conditions.
(6) For thrusters, measurements shall be made at 40% thruster power and the ship's speed shall be appropriate for thruster operation. Measurements shall be taken at positions around such machinery when in operation and in adjacent accommodation spaces and duty stations. If such equipment is intended for continuous operation, e.g. stabilizers, measurements shall be made. If such systems are intended for short temporary use only, for instance during port manoeuvres, measurements are only relevant for ensuring compliance with section 15-18 on noise exposure.
(7) In case of vessels with Dynamic Positioning (DP), which is intended for use in normal working condition, additional noise measurements at DP mode shall be made at control stations, duty stations and accommodation spaces to ensure that the maximum noise level limits in these spaces are not exceeded. Such measurements shall be carried out with at least 40% load on the DP thruster system.

Section 15-8 *Environmental conditions during noise measurements*
(1) During the measurement only noise sources related to the vessel, such as machinery and propulsion, shall be taken into account. Noise from wind, waves, ice, alarms, public address systems (PA system) etc. are not included.
(2) The following conditions shall be recorded in the noise survey report, cf. section 15-28:
a) water depth which is less than five times the draught, or when there are large reflecting surfaces in the vessel's vicinity;
b) the meteorological conditions such as wind and rain, as well as sea state, which influence the measurements;

c) wind force exceeding 4 and wave height of more than 1 m.

(3) Care shall be taken to see that noise from extraneous sound sources, such as people, entertainment, construction and repair work, does not influence the noise level on board the vessel at the positions of measurement.

Section 15-9 *Measuring procedures*

(1) During noise level measurement, only persons necessary for the operation of the ship and persons taking the measurements shall be present in the space concerned.

(2) Sound pressure level readings shall be taken in decibels using an A-weighting (dB(A)) and C-weighting (dB(C)) filter and if necessary also in octave bands between 31.5 and 8,000 Hz.

(3) The noise level measurements shall be taken with the integrating sound level meter using spatial averaging, cf. section 15-14 second paragraph, and over a time period until stable readings are found or at least 15 s in order to represent the average value from variations due to irregular operation or variations in the sound field. Readings shall be made only to the nearest decibel. If first decimal of the dB reading is 5 or higher, the reading shall be made to nearest higher integer.

(4) For a vessel which is not yet put into operation, compliance with the requirements of section 15-19 can be verified on the basis of sea trial measurements of noise levels by calculation of the expected noise exposure of each category of crew members in accordance with the method prescribed in section 15-10.

Section 15-10 *Determination of noise exposure*

In addition to the continuous sound level measurements, the noise exposure level of persons working on board shall be determined based upon ISO 9612:2009.

Section 15-11 *Calibration and measurement uncertainties*

(1) The sound level meter shall be calibrated with the calibrator referred to in section 15-4 third paragraph before and after measurements are taken.

(2) The uncertainty of measurements on board vessels depends on several factors, for example, measurement techniques and environmental conditions. Measurements made in conformity with this chapter with few exceptions result in reproducibility standard deviation of the equivalent continuous A-weighted sound pressure level equal to or less than 1.5 dB.

(3) Deviations of 1 to 3 dB(A) from the noise level limits are accepted for up to 15% of the number of cabins, including hospitals, and for up to 20% of the area of public spaces and offices on board.

Section 15-12 *Points of measurement*

(1) Measurements shall be taken with the microphone at a height of between 1.2 m (seated person) and 1.6 m (standing person) from the deck. Measurements shall not be taken closer than 0.5 m from the boundaries of a space. The microphone positions shall be as specified in the third paragraph and sections 15-13 to 15-15. Measurements shall be taken at positions where the personnel work, including at communication stations.

(2) The noise level shall be measured at all points where work is carried out. Additional measurements shall be performed in spaces containing duty stations if variations in noise level are thought to occur in the vicinity of the duty stations.

(3) When measuring noise levels, the microphone should, where possible, not be placed within a 30° angle away from the direction of the gas stream and not less than a distance of 1 m from the edge of the intake or exhaust opening of engines, ventilation, air conditioning and cooler systems, and as far as possible from reflecting surfaces.

Section 15-13 *Measurements in machinery spaces*

(1) Measurements shall be taken at the principal working and control stations of the persons working on board, in the machinery spaces and in the adjacent control rooms, if any, special attention being paid to telephone locations and to positions where voice communication and audible signals are important.

(2) Where it is not possible to take measurement further away than 1 m from operating machinery, or from decks, bulkheads or other large surfaces, or from air inlets, measurement shall be taken at a position midway between the machinery and adjacent reflecting surface.
(3) Measurements from machinery which constitutes a sound source should be taken at 1 m from the machinery.

Section 15-14 *Measurements in navigation spaces and accommodation spaces*
(1) Measurements shall be taken on both navigating bridge wings.
(2) One measurement shall be taken in the middle of the space. The microphone shall be moved slowly horizontally and/or vertically over a distance of 1 m +/- 0.5 m, taking into account the measurement criteria in section 15-12 first paragraph.
(3) The number of measurement cabins shall be not less than 40 per cent of the total number of cabins. Cabins which are obviously affected by noise, i.e. cabins adjacent to machinery or casings, must be considered in any case.
(4) For vessels with a large number of cabins for the persons working on board, such as passenger/cruise ships, it will be acceptable to reduce the number of measurement positions. The selection of cabins to be tested shall be representative for the group of cabins being tested by selecting those cabins in closer proximity to noise sources.
(5) On open deck, measurements shall be taken in any areas provided for the purpose of recreation.

Section 15-15 *Measurements in normally unoccupied spaces*
(1) In addition to the spaces referred to in sections 15-12 to 15-14, measurements shall be taken:
   a) in all locations with unusually high noise levels where persons working on board may be exposed, even for relatively short periods; and
   b) at intermittently used machinery locations.
(2) Noise levels need not be measured for normally unoccupied spaces, holds, deck areas and other spaces which are remote from sources of noise.
(3) In cargo holds, at least three microphone positions in parts of holds where personnel are likely to carry out work shall be used.

Section 15-16 *Limitation of noise exposure*
(1) Persons working on board shall not be exposed to noise exceeding the exposure limit values set out in section 15-18.
(2) If exposures above the exposure limit values are detected, the company shall:
   a) take immediate action to reduce the exposure to below the exposure limit values;
   b) identify the reasons why overexposure has occurred; and
   c) amend the protection and prevention measures in order to avoid any recurrence.

Section 15-17 *Measures in the event of exceeded action values*
(1) If the upper exposure action values referred to in section 15-18 are exceeded, necessary technical and/or organisational measures shall be established and implemented, so that the noise exposure is eliminated at source or reduced to a minimum.
(2) The measures shall be developed on the basis of the risk assessments carried out pursuant to section 15-3, taking into account in particular the measured referred to in section 15-2 third paragraph.

Section 15-18 *Exposure limit values and exposure action values*
(1) The exposure limits in respect of the daily noise exposure levels and peak sound pressure are $L_{ex,8h}$ = 87 dB(A) og p_{peak} = 200 Pa (140 dB(C) in relation to 20 µPa).
(2) When applying the exposure limit values, the determination of the effective exposure shall take account of the attenuation provided by the individual hearing protectors worn by the persons working on board.
(3) The action values in respect of the daily noise exposure levels and peak sound pressure are:

a) upper exposure action values: $L_{ex,8h}$ = 85 dB(A) and p_{peak} = 140 Pa (137 dB(C) in relation to 20 µPa);
b) lower exposure action values: $L_{ex,8h}$ = 80 dB(A) and p_{peak} = 112 Pa (135 dB(C) in relation to 20 µPa).

(4) The exposure action values shall not take account of the effect of any hearing protectors.

(5) When assessing the levels of noise to which the persons on board are exposed, the weekly noise exposure level may, for the purposes of applying the exposure limits and the exposure action values, be used in place of the daily noise exposure level, for activities where daily noise exposure varies markedly from one working day to the next, on the condition that:

a) the weekly noise exposure level as shown by adequate monitoring does not exceed the exposure limit value of 87 dB(A); and
b) appropriate measures are taken in order to reduce the risk associated with these activities to a minimum.

Section 15-19 *Noise level limits*

(1) This section applies to vessels of 1,600 gross tonnage and upwards, the keel of which is laid or which are at a similar stage of construction on or after 1 January 2014.

(2) The noise level limits (dB(A)) in the below table shall not exceed the values specified for the various spaces:

Designation of rooms and spaces	**Vessel size**	
	1,600 up to 10,000 GT	**≥10,000 GT**
1 Work spaces		
Machinery spaces	110	110
Machinery control rooms	75	75
Workshops other than those forming part of machinery spaces	85	85
Non-specified work spaces, incl. open deck workspaces that are not machinery spaces, and open deck workspaces where communication is relevant	85	85
2 Navigation spaces		
Navigating bridge and chartrooms	65	65
Look-out posts, incl. navigating bridge wings and windows	70	70
Radio rooms with radio equipment operating but not producing audio signals	60	60
Radar rooms	65	65
Accommodation spaces		
Cabins and hospitals	60	55
Messrooms	65	60
Recreation rooms	65	60
Open, external recreation areas	75	75
Offices	65	60
4 Service spaces		
Galleys, without food processing equipment operating	75	75
Serveries and pantries	75	75

5 Normally unoccupied spaces		
Spaces referred to in section 15-15	90	90

(3) The noise level limits specified in the second paragraph shall be regarded as maximum levels and not as desirable levels. Where reasonably practicable, it is desirable for the noise level to be lower than the maximum levels specified.
(4) Before the vessel is put in service, the noise level limits shall be assessed by the equivalent continuous sound level measurement for the spaces specified in the second paragraph. In large rooms with many measurement positions the individual positions shall be compared to the noise level limits.
(5) The noise level limit for machinery spaces of 110 dB(A) pursuant to the second paragraph assumes that hearing protectors giving protection meeting the requirements for hearing protectors in section 15-22 are worn.
(6) For vessels not put in service, the noise level limits pursuant to the second paragraph are considered fulfilled if the sea trial measurements pursuant to section 15-9 fourth paragraph show that the persons working on board are not exposed to an $L_{ex}(24)$ exceeding 80 dB(A). That is to say, that within each day or 24-hour period the equivalent continuous noise exposure does not exceed 80 dB(A).
(7) For vessels designed for and employed on voyages of short duration, or on other services involving short periods of operation of the vessel, the noise level limits for accommodation spaces and service spaces pursuant to the second paragraph only applies with the vessel in the port condition. This is provided that the periods under such conditions are adequate for the rest and recreation for the persons working on board. "Voyages of short duration" means voyages where the vessel is not generally underway for periods long enough for the persons working on board to require sleep, or long off-duty periods, during the voyages. "Port condition" means the condition in which all machinery solely required for propulsion is stopped.
(8) The following vessels are exempt from the requirements of this section:
a) high-speed craft;
b) fishing vessels;
c) dynamically supported craft;
d) manned barges;
e) mobile offshore units;
f) ships belonging to the Norwegian Armed Forces and ships used in such service;
g) pile driving vessels;
h) dredgers; and
i) ships not propelled by mechanical means.

Section 15-20 *Noise level limits on high-speed craft*
(1) The noise level in public spaces and spaces for the persons working on board shall be kept as low as possible to enable the public address system to be heard (PA system), and shall in general not exceed 75 dB(A).
(2) The maximum noise level in the wheelhouse shall in general not exceed 65 dB(A).

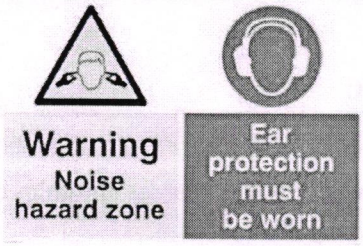
Section 15-21 *Use of hearing protectors*
(1) If the risks arising from exposure to noise cannot be prevented by other means, appropriate and properly fitting individual hearing protectors shall be made available to the persons working on board, under the conditions set out below:
a) where noise exposure exceeds the lower exposure action values, the company shall make individual hearing protectors available to the persons working on board;
b) where noise exposure matches or exceeds the upper exposure action values, individual protectors shall be used.
(2) Individual hearing protectors shall be in accordance with section 15-22, and shall be so selected as to eliminate the risk to hearing or to reduce the risk to a minimum.

(3) The company shall see to that hearing protectors are worn, and is responsible for checking the effectiveness of the measures taken in compliance with the first and second paragraphs.

Section 15-22 *Technical requirements for hearing protectors*
(1) Hearing protectors shall be of a type such that they can reduce sound pressure levels to 85 dB(A) or less.
(2) Selection of suitable hearing protectors shall be in accordance with the HML method described in ISO 4869-2:1994.
(3) Noise-cancelling technology may be used if the headset(s) have equivalent performance to hearing protectors in their unpowered condition.

Section 15-23 *Warning notices*
(1) Where the noise level in machinery spaces (or other spaces) is greater than 85 dB(A), entrances to such spaces shall carry a warning notice comprising symbol and supplementary sign in the working language of the vessel, corresponding to the example of warning notice and signs of this section.
(2) The areas in question shall also be delimited and access to them restricted where this is technically feasible and the risk of exposure so justifies.

Signs at the entrance to noisy rooms (example in English)	
80–85 dB(A)	HIGH NOISE LEVEL – USE HEARING PROTECTORS
85-110 dB(A)	DANGEROUS NOISE – USE OF HEARING PROTECTORS MANDATORY
110-115 dB(A)	CAUTION: DANGEROUS NOISE – USE OF HEARING PROTECTORS MANDATORY – SHORT STAY ONLY
>115 dB(A)	CAUTION: EXCESSIVELY HIGH NOISE LEVEL – USE OF HEARING PROTECTORS MANDATORY – NO STAY LONGER THAN 10 MINUTES



Section 15-24 *Health surveillance and hearing examination*
(1) Any person working on board whose exposure to noise exceeds the upper exposure action values set out in section 15-18 third paragraph (a), has the right to have his or her hearing checked. The hearing examination shall be conducted by a doctor or by another suitable qualified person under the responsibility of a doctor.
(2) Any person working on board whose exposure to noise exceeds the lower exposure action values set out in section 15-18 third paragraph (b) shall be offered preventive hearing examination where the risk assessments and measurements to be carried out pursuant to section 15-3 indicate a risk to health.

Section 15-25 *Follow-up of health surveillance*
(1) Where, as a result of the health surveillance, a person working on board is found to have identifiable hearing damage, a doctor, or a specialist if the doctor considers it necessary, shall assess whether the damage is likely to be the result of exposure to noise at work.
(2) Where the hearing damage is the result of exposure to noise at work, the company shall:
a) see to that the person suffering from the hearing damage is informed by the doctor or other suitably qualified person of the result which relates to him or her personally;
b) review the risk assessment carried out pursuant to section 15-3;
c) review the measures provided to eliminate or reduce risks pursuant to sections 15-2, 15-21 and 15-22;

d) take into account the advice of the occupational healthcare professional or other suitably qualified person or the competent authority in implementing any measures required to eliminate or reduce risk in accordance with sections 15-2, 15-21 and 15-22, including the possibility of assigning the person suffering from the hearing damage to alternative work where there is no risk of further exposure; and
e) arrange systematic health surveillance and provide for a review of the health status of any other persons working on board who has been similarly exposed.

Section 15-26 *Information and training*

(1) Where the noise level on board entails that some of the persons working on board are exposed to noise at work at or above the lower exposure action values, the company shall ensure that information and training is provided for the persons working on board, and, if applicable, their safety representatives, relating to risks resulting from exposure to noise.

(2) The information and training pursuant to the first paragraph shall in particular include:
a) the nature of such risks;
b) the measures taken pursuant to this chapter in order to eliminate or reduce to a minimum the risks from noise, including the circumstances in which the measures apply;
c) the exposure limit values and the exposure action values laid down in section 15-18;
d) the results of the assessments and measurements of the noise carried out in accordance with section 15-3 together with an explanation of their significance and potential risks;
e) the correct use of hearing protectors;
f) why and how to detect and report signs of hearing damage;
g) the circumstances in which persons working on board are entitled to health surveillance and the purpose of health surveillance, cf. section 15-24; and
h) safe working practices to minimise exposure to noise.

Section 15-27 *Acoustic insulation between accommodation spaces*

(1) Consideration shall be given to the acoustic insulation between accommodation spaces in order to make rest and recreation possible even if activities are going on in adjacent spaces, e.g. music, talking, cargo handling.

(2) The airborne sound insulation properties for bulkheads and decks within the accommodation shall comply at least with the following weighted sound reduction index (R_w) according to ISO Standard 717-1:1996 as amended (1:2006), part 1:

Cabin to cabin	$R_w = 35$
Messrooms, recreation rooms, public spaces and entertainment areas to cabins and hospitals	$R_w = 45$
Corridor to cabin	$R_w = 30$
Cabin to cabin with communicating door	$R_w = 30$

(3) The airborne sound insulation properties shall be determined by laboratory tests in accordance with ISO 10140-2:2010.

(4) The following vessels are exempt from the requirements of this section:
a) vessels the keel of which is laid or which are at a similar stage of construction before 1 July 2014;
b) vessels of less than 1,600 gross tonnage;
c) high-speed craft;
d) fishing vessels;
e) dynamically supported craft;
f) manned barges;
g) mobile offshore units;
h) ships belonging to the Norwegian Armed Forces and ships used in such service;
i) pile driving vessels;
j) dredgers; and
k) ships not propelled by mechanical means.

Section 15-28 *Survey report*

(1) A noise survey report shall always be carried on board and be accessible for the persons working on board.

(2) The report shall comprise information on the noise levels in the various spaces on board, and shall show the reading at each specified measuring point. The points shall be marked on a general arrangement plan, or on accommodation drawings attached to the report, or shall otherwise be identified.

Section 15-29 *Exemptions*

(1) The Norwegian Maritime Authority may upon application grant exemptions from one or more of the requirements of this chapter when it is acceptable in terms of health and protection, and it is documented that compliance with the requirement(s) will not be possible despite applicable and reasonable technical noise reductions measures. The Norwegian Maritime Authority may demand that the company submits a statement from a competent person or body in connection with the application, and may impose specific conditions for the exemption. Before such exemption is granted, the company shall document that:

a) the need for speech communication and for hearing audible alarms has been ensured;
b) the noise level does not hinder concentration when clear-headed decisions are to be made in control stations, navigation and radio spaces and manned machinery spaces;
c) the persons working on board are protected from excessive noise levels which may give rise to noise-induced hearing loss;
d) there is an acceptable degree of comfort in rest, recreation and other spaces;
e) appropriate conditions for recuperation from the effects of exposure to high noise levels have been provided; and
f) exposure limit values and exposure action values pursuant to section 15-18 are not exceeded.

(2) In exceptional cases, the Norwegian Maritime Authority may upon application grant exemptions from sections 15-16 and 15-21, where, because of the nature of the work, the full and proper use of hearing protectors would be likely to cause greater risk to health or safety than not using such protectors. Such exemptions may only be granted after consultation with the employers' and employees' organisations, and with Norwegian health authorities if applicable. The exemption shall include conditions ensuring that the health risks are reduced to a minimum, and that the persons affected by the exemption receive increased health surveillance. Such exemption shall furthermore be reviewed every four years, and shall be withdrawn if the justifying conditions for the exemption are no longer present.

II

This Regulation enters into force on 1 July 2014.

UCSL/CC/SER/T/175-185/284/2026 DT: 20TH AUGUST 2026

TENDER FOR ONBOARD NOISE & VIBRATION MEASUREMENT TEST OF 6300DWT GENERAL CARGO VESSEL

PRICE BID

SL NO	WORK DESCRIPRTION	UOM	QTY	RATE PER DAY	TOTAL AMOUNT (INR)
1	Charges for Onboard Noise & Vibration Measurement Test as per Scope of Work for the stipulated two (02) days.	LS	01		
2	Additional Day Rate beyond the stipulated 02 days (if required)[2]	DAY	01		
3				**IGST/GST..... %:**	
4				**GRAND TOTAL AMOUNT (INR):**	
AMOUNT IN WORDS:					

Note,

1. The Price Bid is applicable for one (01) vessel, and the quoted rates shall remain applicable for all eight (08) vessels throughout the contract period without escalation.
2. The rate quoted against Sl. No. 2 shall apply for each additional day beyond the stipulated two (02) days, where such extension is attributable to UCSL/Vessel. Payment shall be based on actual additional days utilized, subject to certification by UCSL.
3. L1 shall be determined based on the Grand Total Amount at Sl. No. 4, including one (01) additional day under Sl. No. 2 and applicable GST. The one (01) additional day is considered for evaluation purposes only; payment shall be based on actual utilization.

Signature:

Address of the contractor:

Seal:

Indicative Quantum of Work:

SL NO	WORK DESCRIPRTION	UOM	Approx. Qty.
1	Onboard Noise Testing as per scope of work	Nos	31
2	Onboard Vibration Testing as per scope of work	Nos	52

Note: The above quantities are tentative and indicative only. An increase of up to 10% over the indicated quantities shall be deemed included within the scope of work and shall be carried out without any additional cost to UCSL.