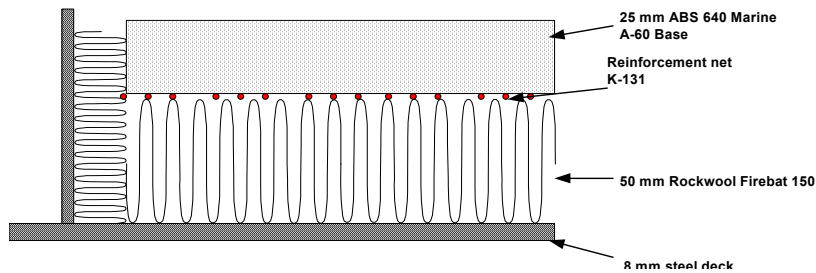
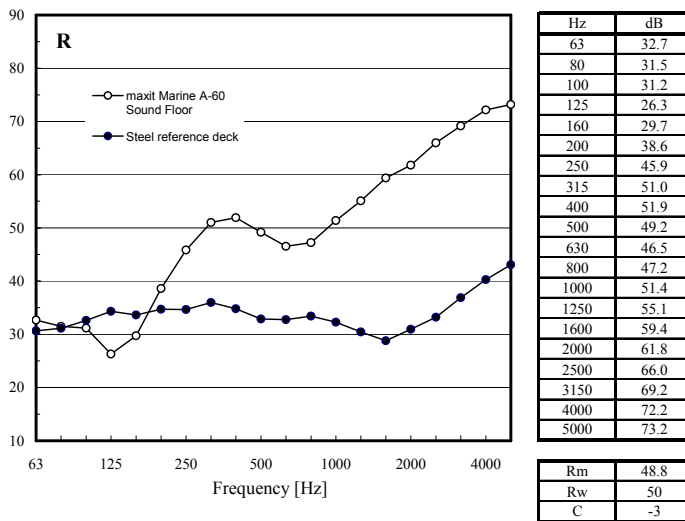


maxit Marine A-60 Sound Floor



Airborne Sound Insulation Properties



Sound Reduction Index, R

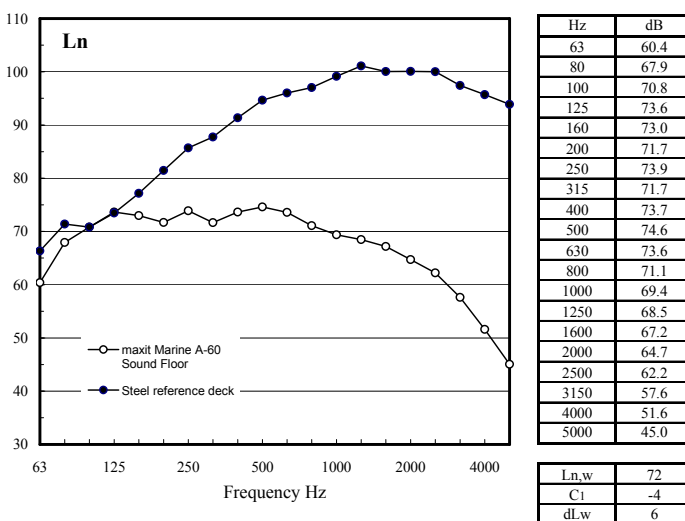
Measuring standard:
ISO 140/3, Laboratory measurements of airborne sound insulation of building elements.

R describes the sound insulation of the floor and is used for evaluating the noise reduction between adjoining rooms. From the calculated values of R the weighted sound reduction index R_w and the spectrum adaptation terms C was calculated following the procedure in ISO R717/1.

Typical marine applications, where the value of R is important, are

- Sound reduction between the engine rooms and the cabins just above.
- Sound reduction between noisy rooms, e.g. discotheques, show lounges etc. and the cabins just below or above.

Impact Sound Insulation Properties



Normalized Impact Sound Pressure Level, L_n

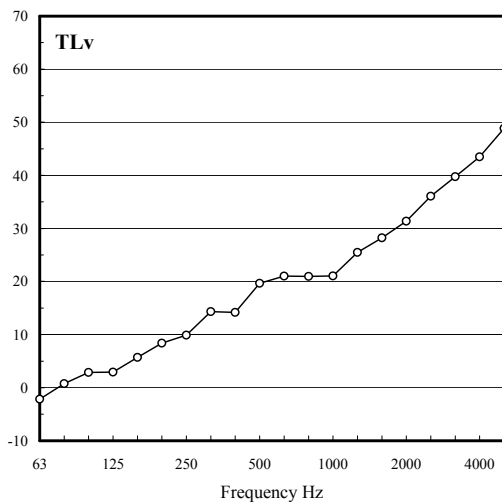
Measuring standard:
ISO 140/6, Laboratory measurements of impact sound insulation of floors.

L_n describes the impact sound pressure level in a reverberant room below the deck and is used for evaluating the reduction of noise caused by people walking and other human activities. From the measured values the weighted normalized impact sound $L_{n,w}$ and the spectrum adaptation term C_1 was calculated as outlined in ISO 717/2.

Typical marine applications, where the value of L_n is important, are

- Decks covered with hard floors like in corridors and on open deck on passenger ships with accommodation cabins located below.
- Decks used for dancing with accommodation cabins below.

Structure-borne Sound Insulation properties



Hz	dB
63	-2.2
80	0.8
100	2.9
125	2.9
160	5.7
200	8.4
250	9.9
315	14.3
400	14.2
500	19.7
630	21.0
800	21.0
1000	21.0
1250	25.5
1600	28.2
2000	31.4
2500	36.1
3150	39.8
4000	43.5
5000	48.9

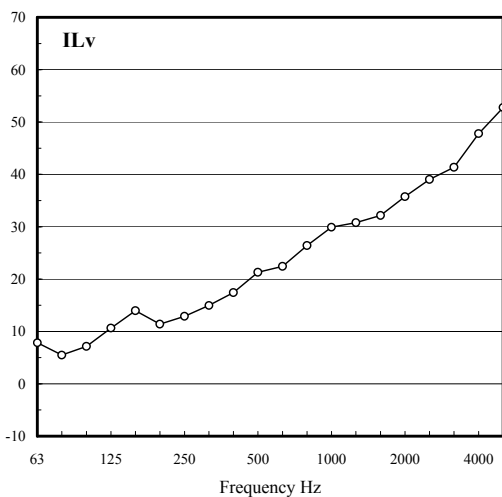
Transmission Loss, TL_v

TL_v describes the difference between the velocity level measured on the bare steel deck after installation of the floor covering and the velocity level measured on top of the applied floor covering.

The Transmission loss is used for evaluating the structure borne velocity level caused on the floor covering.

Typical marine applications, where the Transmission Loss is important are

- Evaluation of the radiated noise level from the floor covering.
- Evaluation of the structure-borne sound transmitted to the bulkheads mounted on the floor covering.



Hz	dB
63	7.8
80	5.5
100	7.2
125	10.6
160	14.0
200	11.4
250	12.9
315	15.0
400	17.4
500	21.3
630	22.5
800	26.4
1000	29.9
1250	30.8
1600	32.2
2000	35.7
2500	39.1
3150	41.3
4000	47.8
5000	52.8

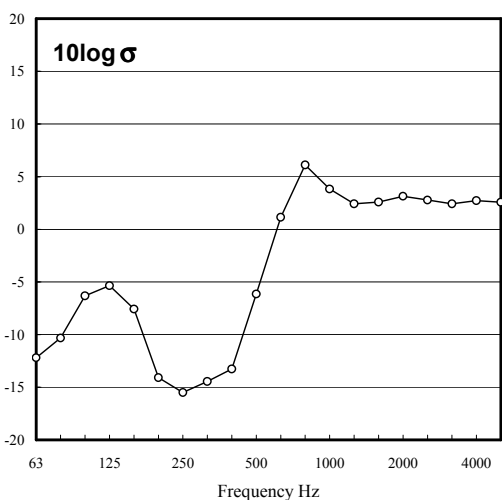
Insertion Loss, IL_v

IL_v describes the difference between the velocity level measured on the bare steel deck before installation of the floor covering and the velocity level measured on top of the applied floor covering.

The insertion loss is used for evaluating the reduction of the structure borne velocity level caused by the floor covering. Popularly speaking the insertion loss describes the improvement achieved by using the floor covering.

Typical marine applications, where the Insertion Loss is important are

- Evaluation of the radiated noise level from the floor covering.
- Evaluation of the structure borne sound transmitted to the bulkheads mounted on the floor covering.



Hz	dB
63	-12.2
80	-10.3
100	-6.3
125	-5.4
160	-7.6
200	-14.1
250	-15.5
315	-14.4
400	-13.3
500	-6.1
630	1.1
800	6.1
1000	3.8
1250	2.4
1600	2.6
2000	3.1
2500	2.8
3150	2.4
4000	2.7
5000	2.6

Radiation Index, $10 \log \sigma$

Measured according to its equation of definition using an electrodynamic vibration exciter.

The radiation index describes the ability of a vibrating floor to radiate sound. Thus, a high radiation index - in general terms - means a high noise level and vice versa. In practice, however, the noise level is determined by a combination of the velocity level and the radiation index.

No standard exist for measuring structure-borne sound insulation. The methods applied when measuring insertion loss and radiation index have been developed by Ødegaard & Danneskiold-Samsøe A/S.

Investigation and measurements performed by



Ødegaard & Danneskiold-Samsøe A/S

Consulting Engineers - Noise and Vibration Control, Titangade 15, DK-2200 Copenhagen N, Denmark
Phone: +45 35 31 10 00, Fax: +45 35 31 10 01, E-mail: ods@oedan.dk, www.odegaard.dk



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