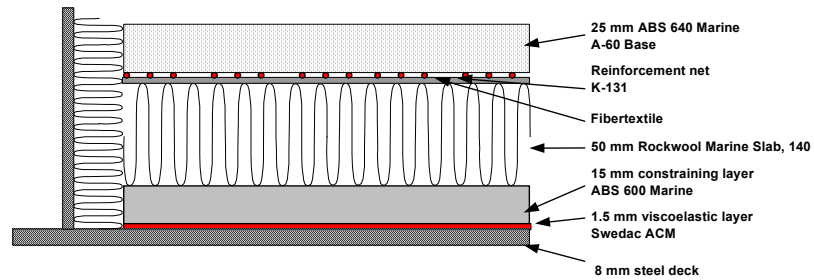
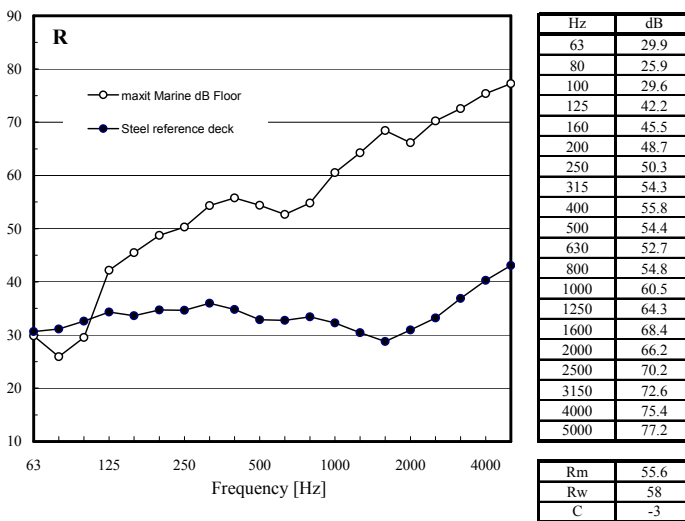


maxit Marine dB Floor



Airborne Sound Insulation Properties



Sound Reduction Index, R

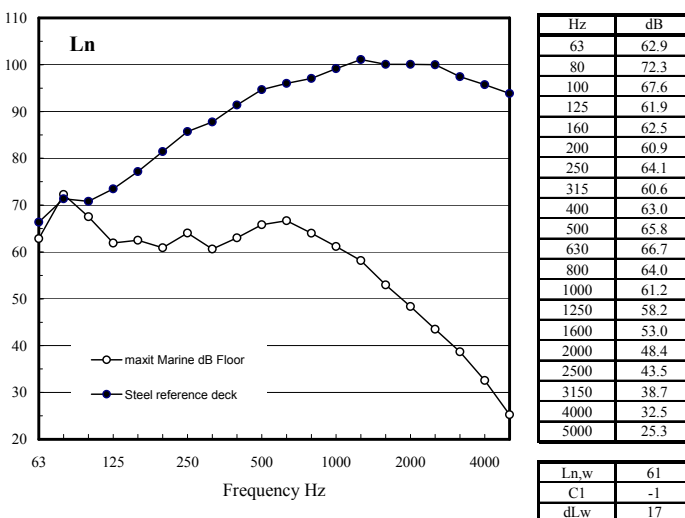
Measuring standard:
ISO 140/3, Laboratory measurements of airborne sound insulation of building elements.

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

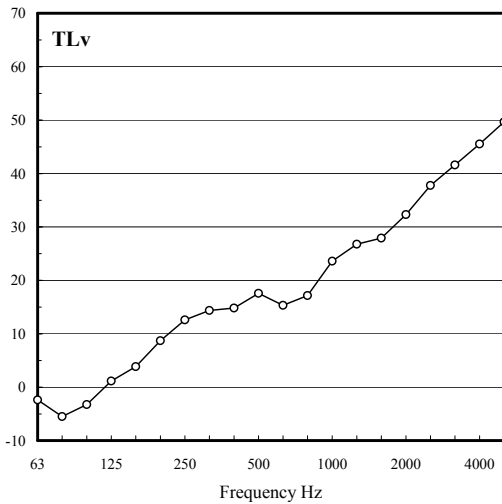
Measuring standard:
ISO 140/6, Laboratory measurements of impact sound insulation of floors.

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	-2.4
80	-5.5
100	-3.3
125	1.1
160	3.9
200	8.7
250	12.6
315	14.4
400	14.8
500	17.6
630	15.3
800	17.2
1000	23.6
1250	26.8
1600	27.9
2000	32.3
2500	37.8
3150	41.6
4000	45.6
5000	49.7

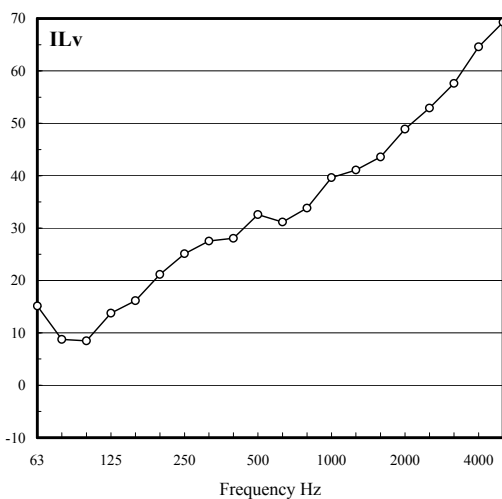
Transmission Loss, TL_v

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	15.1
80	8.8
100	8.5
125	13.8
160	16.1
200	21.2
250	25.1
315	27.5
400	28.1
500	32.6
630	31.2
800	33.8
1000	39.6
1250	41.1
1600	43.6
2000	48.9
2500	52.9
3150	57.6
4000	64.6
5000	69.3

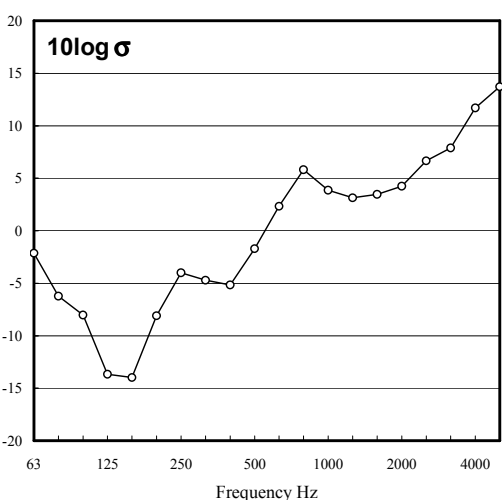
Insertion Loss, IL_v

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	-2.1
80	-6.2
100	-8.0
125	-13.7
160	-14.0
200	-8.1
250	-4.0
315	-4.7
400	-5.2
500	-1.7
630	2.3
800	5.8
1000	3.9
1250	3.1
1600	3.5
2000	4.3
2500	6.7
3150	7.9
4000	11.7
5000	13.7

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

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