

Normalized impact noise level on heavy weight reference floor with overlay, L_n STANDAR LVS EN ISO 10140-3
 Building element sound insulation measurements in laboratory. Part 3: impact sound insulation measurement.

Customer: "Tycroc" OÜ	Measurement date: 12.12.2018
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Object identification and description:

Mass of the sample area	105	kg/m ²
Withstand time	>3	h
Volume receiver chamber	69,5	m ³
Total area	21,1	m ²
Samples area	1,1	m ²
Temperature:	15,0	°C
Relative air humidity:	63,0	%

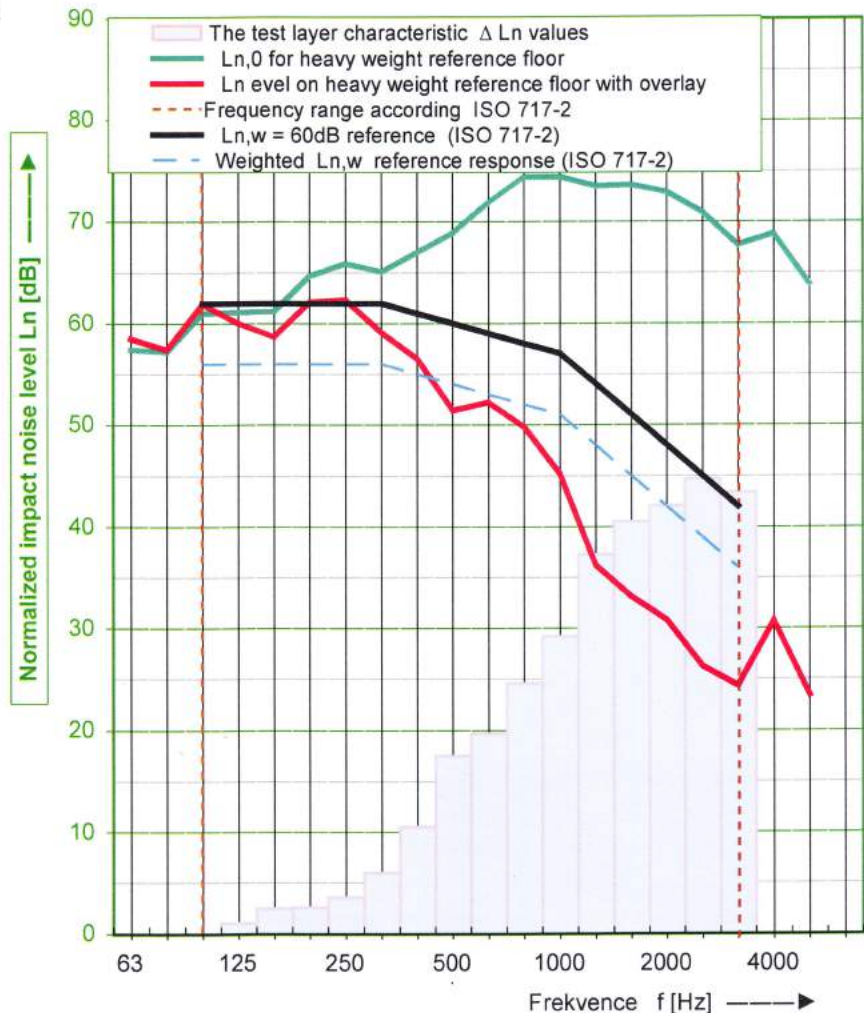
 Reference floor : 220 mm hollow reinforced concrete panel
 + 20 mm concret floor.

Sample Nr. 859-5:

Test layer:

 6 mm. thick laminate floor on
 2.9 mm. thick underlay "Karelia Typlex" on
 25 mm. thick "Tycroc UHP" with Ø 16 mm. pipes.

Freq. f	$L_{n,0}$ Ref.fl. 1/3 oct	L_n sample 1/3 oct	ΔL_n 1/3 oct.
[Hz]	[dB]	[dB]	[dB]
50	58,8	59,2	
63	57,4	58,5	
80	57,2	57,4	
100	61	61,9	-0,9
125	61,1	60,0	1,1
160	61,2	58,7	2,5
200	64,7	62,1	2,6
250	65,9	62,3	3,6
315	65,1	59,1	6,0
400	67	56,5	10,5
500	68,9	51,4	17,5
630	71,9	52,2	19,7
800	74,4	49,8	24,6
1000	74,4	45,2	29,2
1250	73,5	36,2	37,3
1600	73,6	33,1	40,5
2000	72,9	30,8	42,1
2500	70,9	26,2	44,7
3150	67,7	24,3	43,4
4000	68,8	30,7	
5000	63,9	23,4	


 Reduced impact noise level, $L_{n,w}$ (C1), weighted accordance with LVS ISO 717-2:2013 requirements:

$$L_{n,w} (C1) = 54 (0) \text{ dB}$$

$$C1_{50-2500} = 1 \text{ dB}$$

$$L_{n,o,w} = 78 \text{ dB}$$

$$C1_{\Delta} = -10 \text{ dB}$$

$$\Delta L_w = 24 \text{ dB}$$

$$\Delta L_{lin} = 14 \text{ dB}$$

Estimated based on the results of engineering measurements 1/3 octave bands in the laboratory

Identification Test room: room No.304, No.204

Date of issue: 19/12/2018

Measurements are performed: "R&D Akustika" Ltd., laboratory T-282



Normalized impact noise level on heavy weight reference floor with overlay, L_n STANDAR LVS EN ISO 10140-3
 Building element sound insulation measurements in laboratory. Part 3: impact sound insulation measurement.

Customer: "Tycroc" OÜ	Measurement date: 12.12.2018
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Object identification and description:

Mass of the sample area	105	kg/m ²
Withstand time	>3	h
Volume receiver chamber	69,5	m ³
Total area	21,1	m ²
Samples area	1,1	m ²
Temperature:	15,0	°C
Relative air humidity:	63,0	%

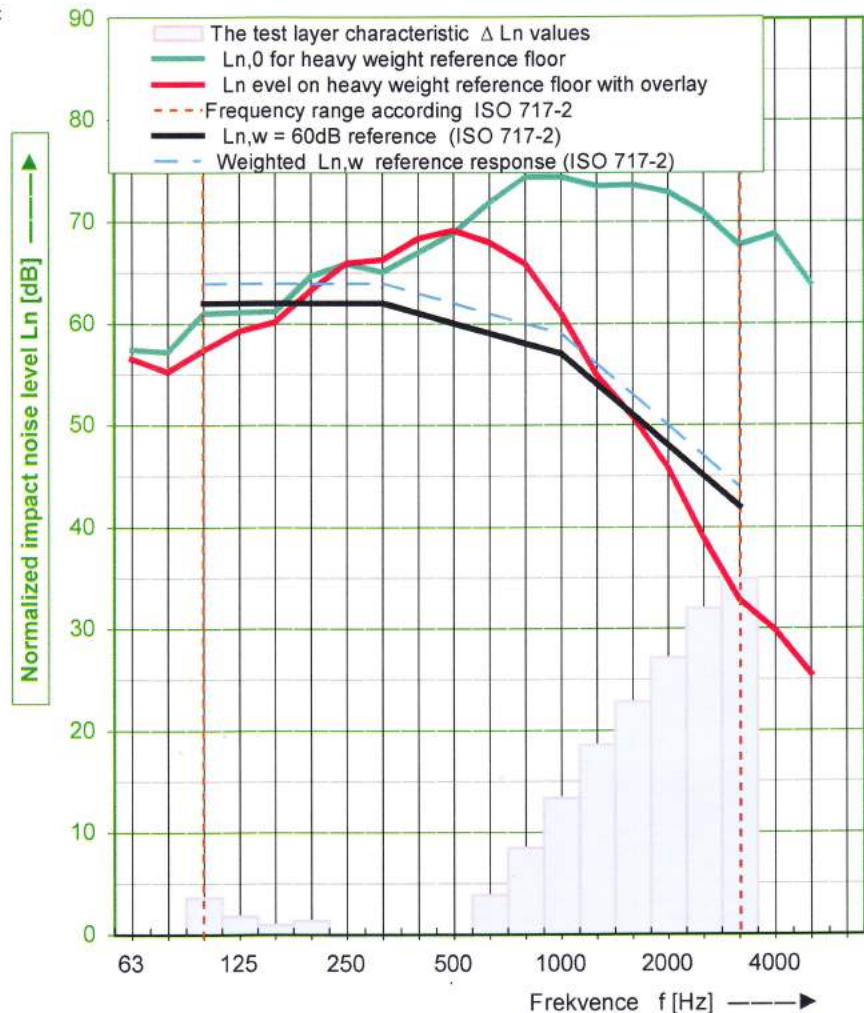
 Reference floor : 220 mm hollow reinforced concrete panel
 + 20 mm concret floor.

Sample Nr. 859-4:

Test layer:

 9 mm. thick Tiles floor glued to the
 25 mm. thick "Tycroc UHP" with Ø 16 mm. pipes.

Freq. f	$L_{n,0}$ Ref.fl. 1/3 oct	L_n sample 1/3 oct	ΔL_n 1/3 oct.
[Hz]	[dB]	[dB]	[dB]
50	58,8	56,8	
63	57,4	56,6	
80	57,2	55,3	
100	61	57,4	3,6
125	61,1	59,3	1,8
160	61,2	60,2	1,0
200	64,7	63,3	1,4
250	65,9	66,0	-0,1
315	65,1	66,3	-1,2
400	67	68,4	-1,4
500	68,9	69,2	-0,3
630	71,9	68,0	3,9
800	74,4	65,9	8,5
1000	74,4	61,0	13,4
1250	73,5	54,9	18,6
1600	73,6	50,8	22,8
2000	72,9	45,8	27,1
2500	70,9	38,9	32,0
3150	67,7	32,8	34,9
4000	68,8	29,8	
5000	63,9	25,5	


 Reduced impact noise level, $L_{n,w}$ (CI), weighted accordance with LVS ISO 717-2:2013 requirements:

$$L_{n,w}(CI) = 62 (-1) \text{ dB}$$

$$CI_{50-2500} = -1 \text{ dB}$$

$$L_{n,o,w} = 78 \text{ dB}$$

$$CI, \Delta = -9 \text{ dB}$$

$$\Delta L_w = 16 \text{ dB}$$

$$\Delta L_{lin} = 7 \text{ dB}$$

Estimated based on the results of engineering measurements 1/3 octave bands in the laboratory

Identification Test room: room No.304, No.204

Date of issue: 19/12/2018

Measurements are performed: "R&D Akustika" Ltd., laboratory T-282



Normalized impact noise level on heavy weight reference floor with overlay, L_n STANDAR LVS EN ISO 10140-3
 Building element sound insulation measurements in laboratory. Part 3: impact sound insulation measurement.

Customer: "Tycroc" OÜ	Measurement date: 12.12.2018
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Object identification and description:

Mass of the sample area	105	kg/m ²
Withstand time	>3	h
Volume receiver chamber	69,5	m ³
Total area	21,1	m ²
Samples area	1,1	m ²
Temperature:	15,0	°C
Relative air humidity:	63,0	%

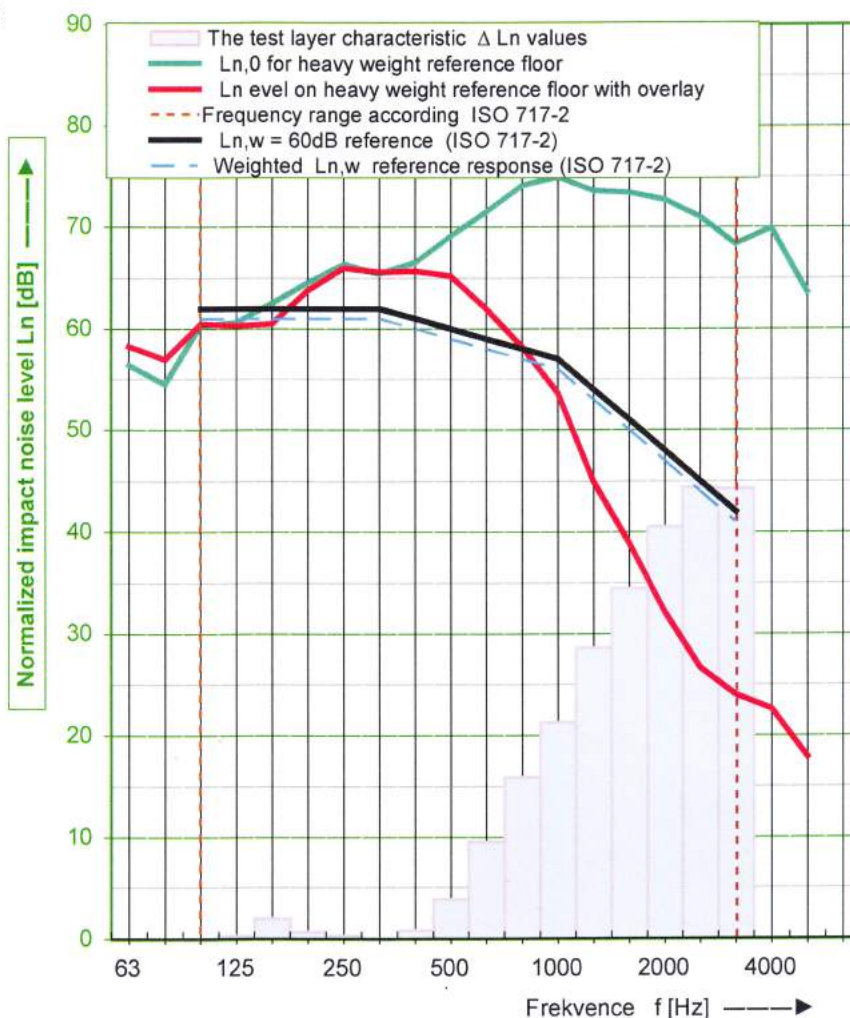
Reference floor : 220 mm hollow reinforced concrete panel + 20 mm concret floor.

Sample Nr. 859-6:

Test layer:

 13 mm. thick wood parquet floor on
 2.9 mm. thick underlay "Karelia Typlex" on
 25 mm. thick "Tycroc UHP" with Ø 16 mm. pipes.

Freq. f	$L_{n,0}$ Ref.fl. 1/3 oct [dB]	L_n sample 1/3 oct [dB]	ΔL_n 1/3 oct. [dB]
[Hz]	[dB]	[dB]	[dB]
50	54,1	57,7	
63	56,4	58,3	
80	54,5	57,0	
100	60,3	60,5	-0,2
125	60,6	60,3	0,3
160	62,5	60,5	2,0
200	64,5	63,8	0,7
250	66,3	66,0	0,3
315	65,4	65,6	-0,2
400	66,5	65,7	0,8
500	69,1	65,2	3,9
630	71,5	62,0	9,5
800	74,1	58,2	15,9
1000	74,9	53,6	21,3
1250	73,6	45,0	28,6
1600	73,4	38,9	34,5
2000	72,7	32,1	40,6
2500	71	26,6	44,4
3150	68,3	24,0	44,3
4000	69,9	22,6	
5000	63,6	17,9	


 Reduced impact noise level, $L_{n,w}$ (C1), weighted accordance with LVS ISO 717-2:2013 requirements:

$L_{n,w}$ (C1) = 59 (0) dB	; C1 50-2500 = 0 dB	$L_{n,o,w}$ = 78 dB	C1, Δ = -10 dB
		ΔL_w = 19 dB	ΔL_{lin} = 9 dB

Estimated based on the results of engineering measurements 1/3 octave bands in the laboratory

Identification Test room: room No.304, No.204

Date of issue: 19/12/2018

Measurements are performed: "R&D Akustika" Ltd., laboratory T-282



Normalized impact noise level on heavy weight reference floor with overlay, L_n STANDAR LVS EN ISO 10140-3
Building element sound insulation measurements in laboratory. Part 3: impact sound insulation measurement.

Customer: "Tycroc" OÜ **Measurement date:** 12.12.2018

Object identification and description:

Mass of the sample area **105 kg/m²**
 Withstand time **>3 h**
 Volume receiver chamber **69,5 m³**
 Total area **21,1 m²**
 Samples area **1,1 m²**
 Temperature: **15,0 °C**
 Relative air humidity: **63,0 %**

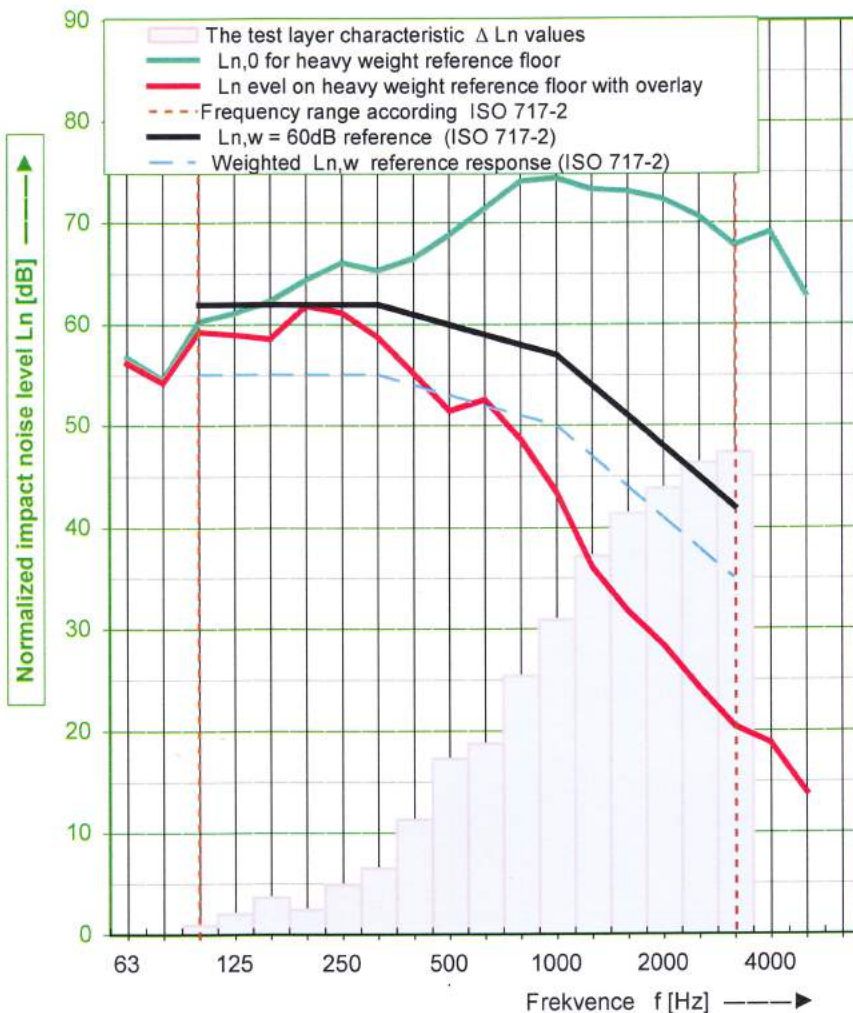
Reference floor : 220 mm hollow reinforced concrete panel + 20 mm concrete floor.

Sample Nr. 859-2:

Test layer:

6 mm. thick laminate floor on
 2.9 mm. thick underlay "Karelia Typlex" on
 30 mm. thick "Tycroc UHP" with Ø 20 mm. pipes.

Freq. f	$L_{n,0}$ Ref.fl. 1/3 oct	L_n sample 1/3 oct	ΔL_n 1/3 oct.
[Hz]	[dB]	[dB]	[dB]
50	53,7	55,4	
63	56,7	56,2	
80	54,5	54,3	
100	60,3	59,3	1,0
125	61,1	59,0	2,1
160	62,3	58,6	3,7
200	64,4	61,9	2,5
250	66,1	61,2	4,9
315	65,3	58,8	6,5
400	66,5	55,2	11,3
500	68,8	51,5	17,3
630	71,4	52,6	18,8
800	74,1	48,7	25,4
1000	74,4	43,5	30,9
1250	73,3	36,1	37,2
1600	73,1	31,7	41,4
2000	72,3	28,4	43,9
2500	70,6	24,2	46,4
3150	67,8	20,4	47,4
4000	69,1	18,8	
5000	62,9	13,9	



Reduced impact noise level, $L_{n,w}$ (C1), weighted accordance with LVS ISO 717-2:2013 requirements:

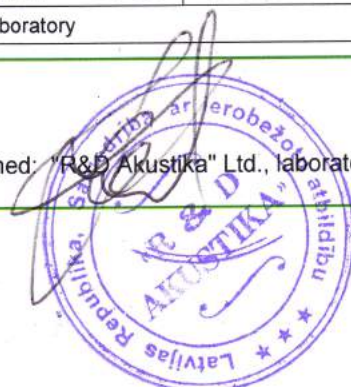
$L_{n,w}$ (C1) = **53 (0) dB** ; C1 50-2500 = **1 dB** $L_{n,o,w}$ = **78 dB** C1, Δ = **-11 dB**
 ΔL_w = **25 dB** ΔL_{lin} = **14 dB**

Estimated based on the results of engineering measurements 1/3 octave bands in the laboratory

Identification Test room: room No.304, No.204

Date of issue: 19/12/2018

Measurements are performed: "R&D Akustika" Ltd., laboratory T-282



Normalized impact noise level on heavy weight reference floor with overlay, L_n STANDAR LVS EN ISO 10140-3
Building element sound insulation measurements in laboratory. Part 3: impact sound insulation measurement.

Customer: "Tycroc" OÜ **Measurement date:** 12.12.2018

Object identification and description:

Mass of the sample area **105 kg/m²**
 Withstand time **>3 h**
 Volume receiver chamber **69,5 m³**
 Total area **21,1 m²**
 Samples area **1,1 m²**
 Temperature: **15,0 °C**
 Relative air humidity: **63,0 %**

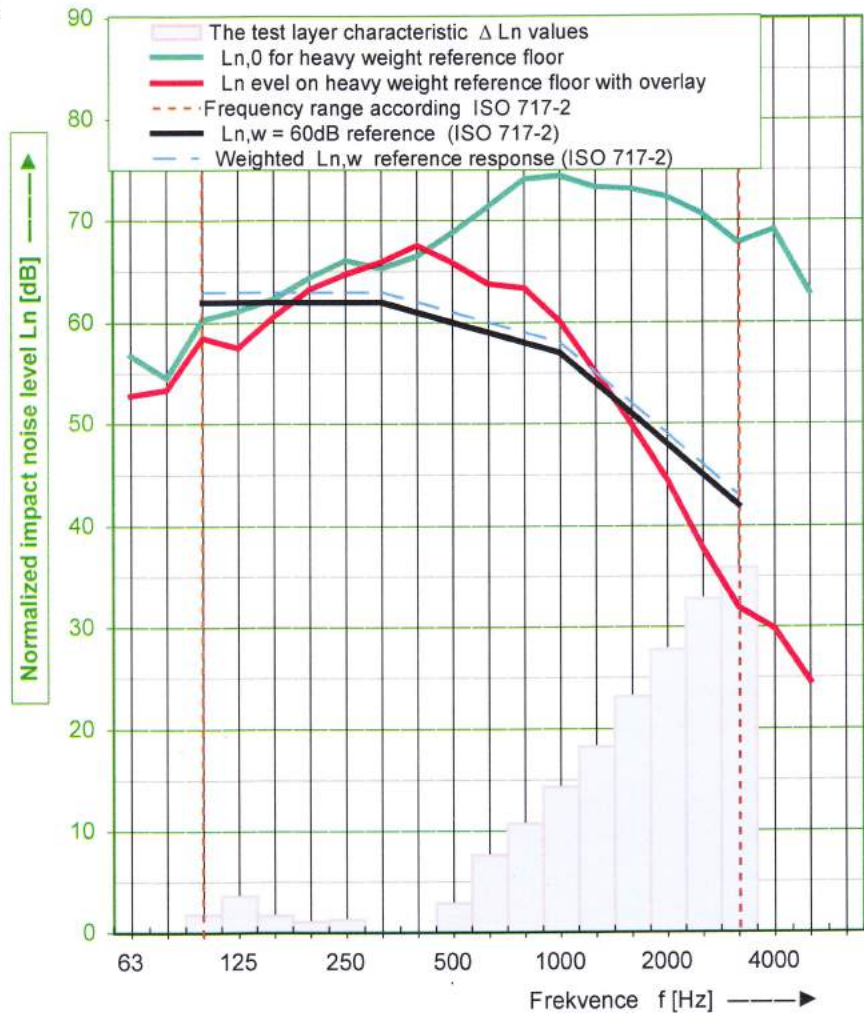
Reference floor : 220 mm hollow reinforced concrete panel + 20 mm concrete floor.

Sample Nr. 859-1:

Test layer:

9 mm. thick Tiles floor glued to the
 30 mm. thick "Tycroc UHP" with Ø 20 mm. pipes.

Freq. f	$L_{n,0}$ Ref.fl. $\frac{1}{3}$ oct	L_n sample $\frac{1}{3}$ oct	ΔL_n $\frac{1}{3}$ oct.
[Hz]	[dB]	[dB]	[dB]
50	53,7	50,8	
63	56,7	52,8	
80	54,5	53,4	
100	60,3	58,5	1,8
125	61,1	57,5	3,6
160	62,3	60,6	1,7
200	64,4	63,3	1,1
250	66,1	64,8	1,3
315	65,3	66,0	-0,7
400	66,5	67,6	-1,1
500	68,8	65,9	2,9
630	71,4	63,8	7,6
800	74,1	63,4	10,7
1000	74,4	60,1	14,3
1250	73,3	55,0	18,3
1600	73,1	49,9	23,2
2000	72,3	44,5	27,8
2500	70,6	37,8	32,8
3150	67,8	31,9	35,9
4000	69,1	29,8	
5000	62,9	24,6	



Reduced impact noise level, $L_{n,w}$ (C1), weighted accordance with LVS ISO 717-2:2013 requirements:

$L_{n,w}$ (C1) =	61 (-2) dB	;	C1 50-2500 = -2 dB	$L_{n,o,w}$ = 78 dB	C1, Δ = -9 dB
				ΔL_w = 17 dB	ΔL_{lin} = 8 dB

Estimated based on the results of engineering measurements $\frac{1}{3}$ octave bands in the laboratory

Identification Test room: room No.304, No.204

Date of issue: 19/12/2018

Measurements are performed: "R&D Akustika" Ltd., laboratory T-282



Normalized impact noise level on heavy weight reference floor with overlay, L_n STANDAR LVS EN ISO 10140-3
Building element sound insulation measurements in laboratory. Part 3: impact sound insulation measurement.

Customer: "Tycroc" OÜ **Measurement date:** 12.12.2018

Object identification and description:

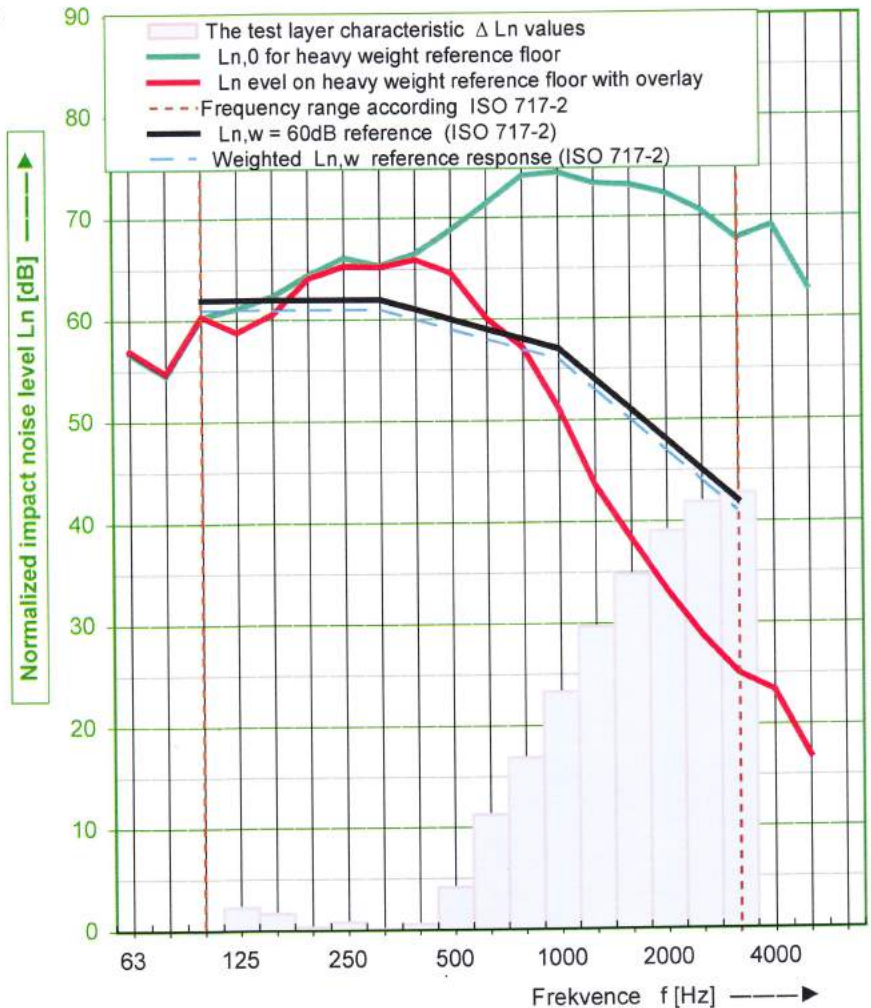
Mass of the sample area **105 kg/m²**
 Withstand time **>3 h**
 Volume receiver chamber **69,5 m³**
 Total area **21,1 m²**
 Samples area **1,1 m²**
 Temperature: **15,0 °C**
 Relative air humidity: **63,0 %**

Reference floor : 220 mm hollow reinforced concrete panel + 20 mm concret floor.

Sample Nr. 858-3:

Test layer:
 13 mm. thick wood parquet floor on
 2.9 mm. thick underlay "Karelia Typlex" on
 30 mm. thick "Tycroc UHP" with Ø 20 mm. pipes.

Freq. f	$L_{n,0}$ Ref.fl. 1/3 oct	L_n sample 1/3 oct	ΔL_n 1/3 oct.
[Hz]	[dB]	[dB]	[dB]
50	53,7	53,0	
63	56,7	57,0	
80	54,5	54,8	
100	60,3	60,4	-0,1
125	61,1	58,8	2,3
160	62,3	60,6	1,7
200	64,4	64,1	0,3
250	66,1	65,3	0,8
315	65,3	65,2	0,1
400	66,5	65,9	0,6
500	68,8	64,6	4,2
630	71,4	60,1	11,3
800	74,1	57,2	16,9
1000	74,4	51,1	23,3
1250	73,3	43,6	29,7
1600	73,1	38,3	34,8
2000	72,3	33,2	39,1
2500	70,6	28,7	41,9
3150	67,8	25,0	42,8
4000	69,1	23,3	
5000	62,9	16,9	



Reduced impact noise level, $L_{n,w}$ (CI), weighted accordance with LVS ISO 717-2:2013 requirements:

$L_{n,w}$ (CI) = **59 (-1) dB** ; $CI_{50-2500} = -1$ dB $L_{n,o,w} = 78$ dB $CI_{\Delta} = -10$ dB
 $\Delta L_w = 19$ dB $\Delta L_{lin} = 9$ dB

Estimated based on the results of engineering measurements 1/3 octave bands in the laboratory

Identification Test room: room No.304, No.204

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