

CalmMat ACOUSTIC RUBBER UNDERLAY 5mm & 3mm by calm walk

Eliminating Noise And Vibration Building Elements





SUMMARY OF TEST RESULTS

4.5mm Click Vinyl Planks	CalmMate 5 mm			CalmMate 3 mm		
Flooring Reference Guide	LnTw	FIIC	Page number	LnTw	FIIC	Page number
Sub Base	61	43	8-9	-	-	-
Sub Base & Floor	46	65	8-9	-	-	-
Sub Base, Floor & Underlay	42	66	8-9	-	-	-

5mm(5+1.5mm IXPE) Hybrid Vinyl	CalmMate 5 mm			CalmMate 3 mm		
Flooring Reference Guide	LnTw	FIIC	Page number	LnTw	FIIC	Page number
Sub Base	61	43	10	64	35	11
Sub Base & Floor	42	68	10	42	63	11
Sub Base, Floor & Underlay	41	66	10	42	63	11

8mm Laminated Timber	CalmMate 5 mm			CalmMate 3 mm		
Flooring Reference Guide	LnTw	FIIC	Page number	LnTw	FIIC	Page number
Sub Base	64	35	12	64	35	13
Sub Base & Floor	43	61	12	43	61	13
Sub Base, Floor & Underlay	45	61	12	44	62	13

12mm Laminated Timber	CalmMate 5 mm			CalmMate 3 mm		
Flooring Reference Guide	LnTw	FIIC	Page number	LnTw	FIIC	Page number
Sub Base	61	43	14	64	35	15
Sub Base & Floor	47	64	14	46	60	15
Sub Base, Floor & Underlay	45	65	14	46	60	15

14mm Engineered Timber	CalmMate 5 mm			CalmMate 3 mm		
Flooring Reference Guide	LnTw	FIIC	Page number	LnTw	FIIC	Page number
Sub Base	61	35	16	64	35	17
Sub Base & Floor	46	61	16	43	61	17
Sub Base, Floor & Underlay	45	66	16	44	62	17

15mm Engineered Timber	CalmMate 5 mm			CalmMate 3 mm		
Flooring Reference Guide	LnTw	FIIC	Page number	LnTw	FIIC	Page number
Sub Base	64	35	18	64	35	19
Sub Base & Floor	43	61	18	46	60	19
Sub Base, Floor & Underlay	44	66	18	45	61	19

14mm Engineered Timber Glued to Underlay	CalmMate 5 mm			CalmMate 3 mm		
Flooring Reference Guide	LnTw	FIIC	Page number	LnTw	FIIC	Page number
Sub Base	64	35	20-21	-	-	-
Sub Base & Floor	43	61	20-21	-	-	-
Sub Base, Floor & Underlay	48	55	20-21	-	-	-

DESCRIPTION



CalmMat Acoustic Rubber Underlay is a fully recycled rubber designed for use with hard floorings, such as Engineered timber, Laminate, stone flooring, designed to absorb footfall noise and increase living standards within the construction, whether in residential or commercial applications. The material also has a Zero OPD (Ozone Depleting Potential) and Zero GWP (Global Warming Potential). The specially selected Rubber particles are designed to give excellent resilience yet upmost compressive strength.

Reasons for Acoustic Underlay

1.Sound Insulation

Acoustic underlay limits its transmission of sound and general footfall.

2.Subfloor Leveling

The decoration floors may bridge if the subfloor is not perfectly flat. Soft underlayment helps to prevent from damage.

3.Flooring System Optimization

With the right underlay, it optimizes the entire laminate flooring system and thus extends its service life.

4.Thermal insulation

Another key benefit and a potential money-saver is the increase of thermal insulation as a result of underlay installation. The multiple layers beneath the floorboards keep the cold from escaping whilst also serving as an extra insulation layer. Less heat is lost through the floorboards and temperatures can be regulated more easily.

5.Dust reduction and moisture absorber

For household members that suffer from allergies, underlay is a great investment as it acts as an obstacle for dust particles. Underlay reduces air flow, which consequently reduces the buildup of dust and grime. In relation to liquid spills, underlay also has moisture resistant qualities, protecting your underflooring from early decay.



INSTALLATION



CalmMat Acousic Rubber underlay is easy to install, but take care to ensure the following:

1. Substrate must be level, clean, dust free and free of hydrostatic pressure
2. Loose lay underlay for 24 hours to acclimatise and relax in its environment
3. Ensure no overlaps of CalmMat Acousic Rubber underlay and no gaps via joining sheets
4. Because CalmMat Acousic Rubber underlay is porous and will allow the passage of liquid over time , it is recommended that a moisture barrier is installed in wet areas
5. Allow extra CalmMat Acousic Rubber underlay to be laid up againts walls, for trimming once the CalmMat Acousic Rubber underlay is floated or glued into position

SPECIFICATION



Description	Acoustic Underlay
Density	700kg/m ³
Type	Sheet
length	1100mm
Width	1000mm
Thickness	5mm & 3mm
Base colour	Black
Service Temp	-25-80°c
Material Composition	recycled rubber
Compression recovery	90% minimum at 1 hour

TEST RESULT OF 5MM & 3MM CalmMat Acoustic Rubber Underlay, OVER 200MM CONCRETE SLAB

		CalmMat Acoustic Rubber Underlay 5mm			CalmMat Acoustic Rubber Underlay 3mm		
Flooring System	CalmMat	LnTw+Ci	FIIC	AAAC Rating	LnTw+Ci	FIIC	AAAC Rating
4.5mm Click Vinyl Planks	FULL COVER	42	66	★★★★★	-	-	-
6.5mm Hybrid Vinyl	FULL COVER	41	66	★★★★★	42	63	★★★★★
8mm Laminated Timber	FULL COVER	45	61	★★★★★	44	62	★★★★★
12mm Laminated Timber	FULL COVER	45	65	★★★★★	46	60	★★★★★
14mm Engineered Timber	FULL COVER	45	66	★★★★★	44	62	★★★★★
15mm Engineered Timber	FULL COVER	44	66	★★★★★	45	61	★★★★★
14mm Engineered Glued to Underlay	FULL COVER	48	55	★★★★★	-	-	-

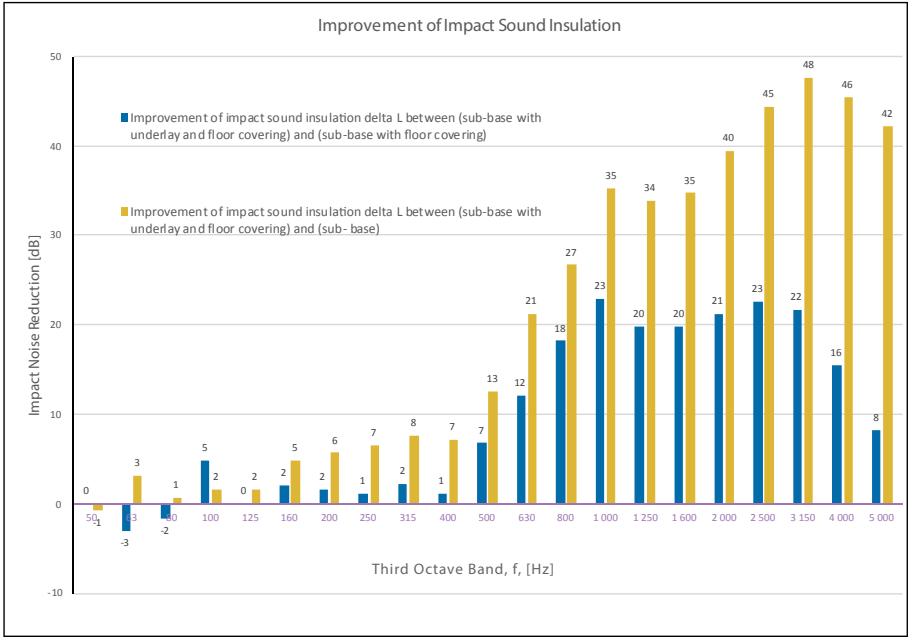
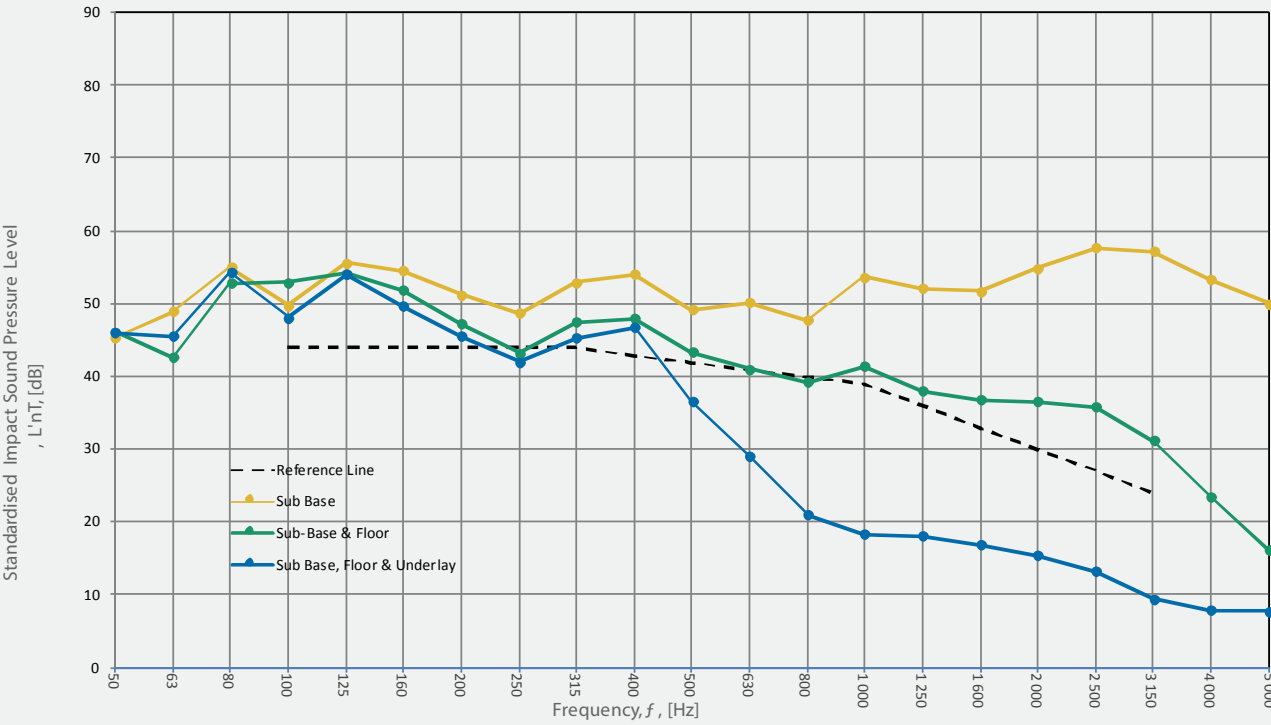


Products CalmMat tested with



FIELD MEASUREMENTS OF CalmMat WITH VINYL PLANKS 4.5MM

	Name				Thickness (mm)	Density (SI)
Description of Floor System	4.5 mm Click Vinyl Planks				4.5	--
	Flooring Acoustic Rubber Underlay				5	700
	200 mm reinforced concrete slab				200	2540
	80~120 mm suspended ceiling cavity + 10~13 mm plasterboard ceiling				80~120 + 10~13	--
Room Floor Dimensions	Width :	3.2	m			
	Length :	3.2	m			
	Area :	10.24	m ²			
Sample Dimensions	Width :	1	m			
	Length :	1	m			
	Area :	1	m ²			
	Location	Width	Length	Area	Height	Volume
Receiver Rm	Bedroom	3.2	3.2	10.24	2.7	27.648
	Room Surfaces					
Walls	Masonry/plasterboard					
Floor	Concrete					
Ceiling	Plasterboard					



AAACStar R.	2	3	4	5	6
L'nT , w	65	55	50	45	40
FIIC	45	55	60	65	70
Comments	Below BCA 62	Clearly Audible	Audible	Barely Inaudible	Normally Inaudible

Definitions of Noise Metrics

FIIC:
Field Impact Insulation Class is a single-number rating of how well a floor system attenuates impact type sounds, such as footsteps. Calculated from third-octave band normalised impact sound pressure level data and referenced to 10 m² as described in ASTM E989. The higher the single-number rating, the better its impact insulation performance.

L'nT,w:
The Weighted Standardised Impact Sound ressure Level when measured in situ referenced to a reverberation time (RT60) of 0.5 seconds. Used by the AAAC to determine their respective Star Rating.

Ci:
Spectrum adaption term is a low frequency correction factor. Typically for massive floors such as concrete, the values are about zero while for timber joist floors Ci is positive because of the low resonant frequencies. Considers frequency range between 100-and 2500 Hz.

Ci(50-2500):
Same as above, but for the frequency range 50 -2500 Hz.

Ci(125-2000):
Same as above, but for the frequency range 125 -2000 Hz.

Frequency f Hz	L'nT (one-third octave) dB		
	Sub Base	Sub Base Floor	Sub Base Floor Underlay
50	45.4	46.2	46.1
63	48.9	42.7	45.7
80	55.2	52.9	54.5
100	49.9	53.0	48.2
125	55.7	54.2	54.1
160	54.6	51.9	49.8
200	51.3	47.3	45.6
250	48.8	43.3	42.1
315	53.1	47.6	45.4
400	54.1	48.1	46.9
500	49.2	43.5	36.7
630	50.2	41.1	29.0
800	47.9	39.4	21.1
1 000	53.8	41.5	18.5
1 250	52.1	38.1	18.1
1 600	51.8	36.9	17.0
2 000	55.0	36.7	15.5
2 500	57.7	35.9	13.2
3 150	57.2	31.2	9.5
4 000	53.5	23.4	7.9
5 000	50.1	16.1	7.8

Sub Base (Test 00)		
L'nT,w	61	AS ISO 717.2 - 2004
Ci	-11	AS ISO 717.2 - 2004
Ci(50-2500)	-10	AS ISO 717.2 - 2004
Ci(63-2000)	-11	AS ISO 717.2 - 2004
AAAC ★	2 Star	AAAC Guidleline
FIIC	43	ASTM E1007-14

Sub Base & Floor		
L'nT,w	46	AS ISO 717.2 - 2004
Ci	-1	AS ISO 717.2 - 2004
Ci(50-2500)	0	AS ISO 717.2 - 2004
Ci(63-2000)	-1	AS ISO 717.2 - 2004
AAAC ★	4 Star	AAAC Guidleline
FIIC	65	ASTM E1007-14

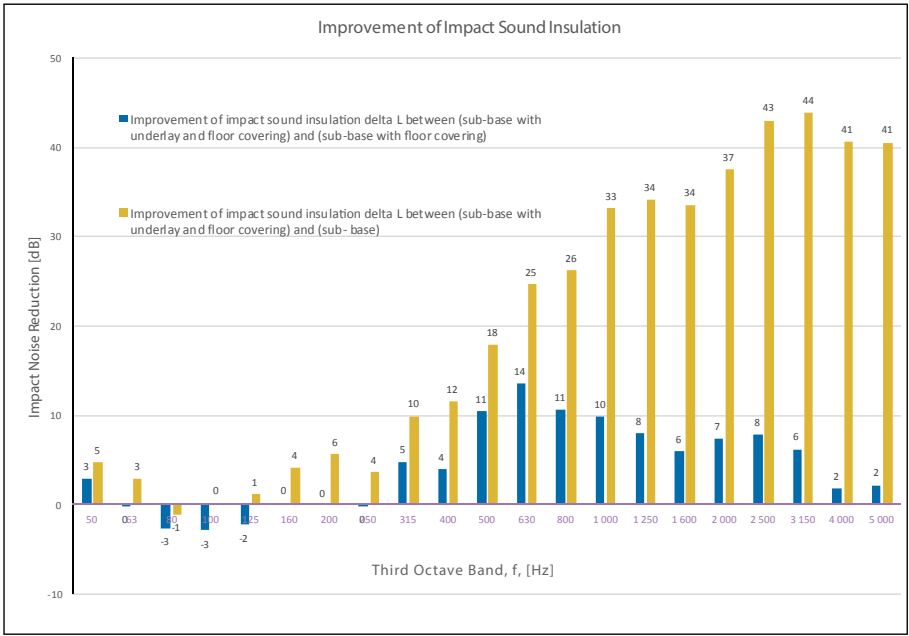
Sub Base, Floor & Underlay (Test 01)		
L'nT,w	42	AS ISO 717.2 - 2004
Ci	0	AS ISO 717.2 - 2004
Ci(50-2500)	3	AS ISO 717.2 - 2004
Ci(63-2000)	2	AS ISO 717.2 - 2004
AAAC ★	5 Star	AAAC Guidleline
FIIC	66	ASTM E1007-14

FIELD MEASUREMENTS OF CalmMat WITH HYBRID 5MM(5+1.5MM IXPE)

	Name	Thickness (mm)	Density (SI)
Description of Floor System	5mm (5+1.5mm IXPE) Hybrid Flooring Acoustic Rubber Underlay	5mm (5+1.5mm IXPE)	--
	200 mm reinforced concrete slab	5	700
	80~120 mm suspended ceiling cavity + 10~13 mm plasterboard ceiling	200	2540
		80~120 + 10~13	--
Room Dimensions	Width : 3.2 m		
	Length : 3.2 m		
	Area : 10.24 m ²		
Sample Dimensions	Width : 1 m		
	Length : 1 m		
	Area : 1 m ²		

	Location	Width	Length	Area	Height	Volume
Receiver Rm	Bedroom	3.2	3.2	10.24	2.7	27.648

	Room Surfaces
Walls	Masonry/plasterboard
Floor	Concrete
Ceiling	Plasterboard



AAACStar R.	2	3	4	5	6
L'nT, w	65	55	50	45	40
FIIC	45	55	60	65	70
Comments	Below 62 BCA	Clearly Audible	Audible	Barely Inaudible	Normally Inaudible

Definitions of Noise Metrics

FIIC:
Field Impact Insulation Class is a single-number rating of how well a floor system attenuates impact type sounds, such as footsteps. Calculated from third-octave band normalised impact sound pressure level data and referenced to 10 m² as described in ASTM E989. The higher the single-number rating, the better its impact insulation performance.

L'nT,w:
The Weighted Standardised Impact Sound ressure Level when measured in situ referenced to a reverberation time (RT60) of 0.5 seconds. Used by the AAAC to determine their respective Star Rating.

Ci:
Spectrum adaption term is a low frequency correction factor. Typically for massive floors such as concrete, the values are about zero while for timber joist floors Ci is positive because of the low resonant frequencies. Considers frequency range between 100-and 2500 Hz.

Ci(50-2500):
Same as above, but for the frequency range 50 -2500 Hz.

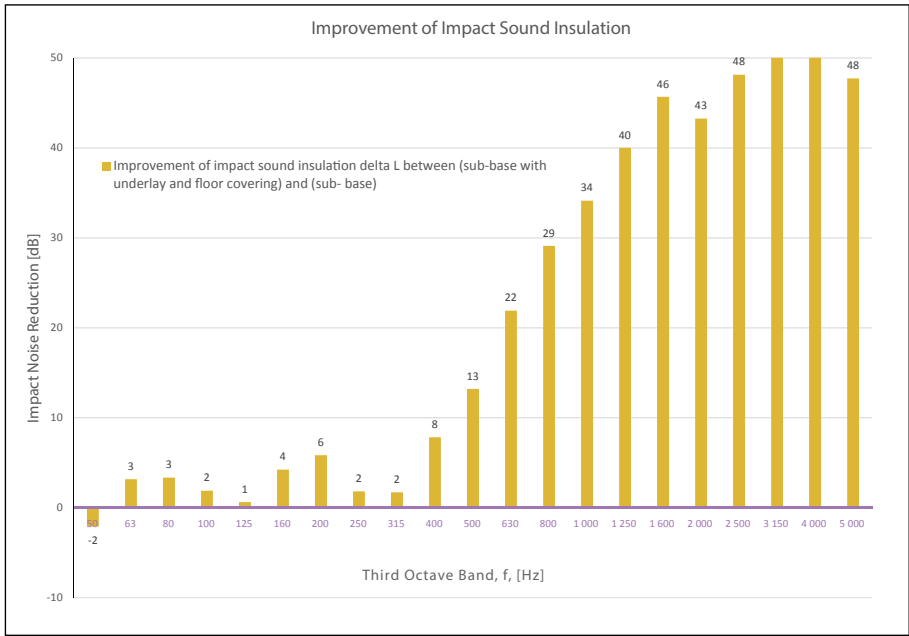
Ci(125-2000):
Same as above, but for the frequency range 125 -2000 Hz.

FIELD MEASUREMENTS OF CalmMat WITH HYBRID 5MM(5+1.5MM IXPE)

	Name	Thickness (mm)	Density (SI)
Description of Floor System	5mm (5+1.5mm IXPE) Hybrid 3 mm Uniroll RF700	5mm (5+1.5mm IXPE)	--
	200 mm reinforced concrete slab	3	700
	100 mm suspended ceiling cavity + 13 mm plasterboard ceiling	200	2540
		100 + 13	--
Room Dimensions	Width : 7 m		
	Length : 4.5 m		
	Area : 31.5 m ²		
Sample Dimensions	Width : 1 m		
	Length : 1 m		
	Area : 1 m ²		

	Location	Width	Length	Area	Height	Volume
Receiver Rm	Bedroom	7	4.5	31.5	2.7	85.08

	Room Surfaces
Walls	Plasterboard
Floor	Concrete
Ceiling	Plasterboard



AAACStar R.	2	3	4	5	6
L'nT, w	65	55	50	45	40
FIIC	45	55	60	65	70
Comments	Below 62 BCA	Clearly Audible	Audible	Barely Inaudible	Normally Inaudible

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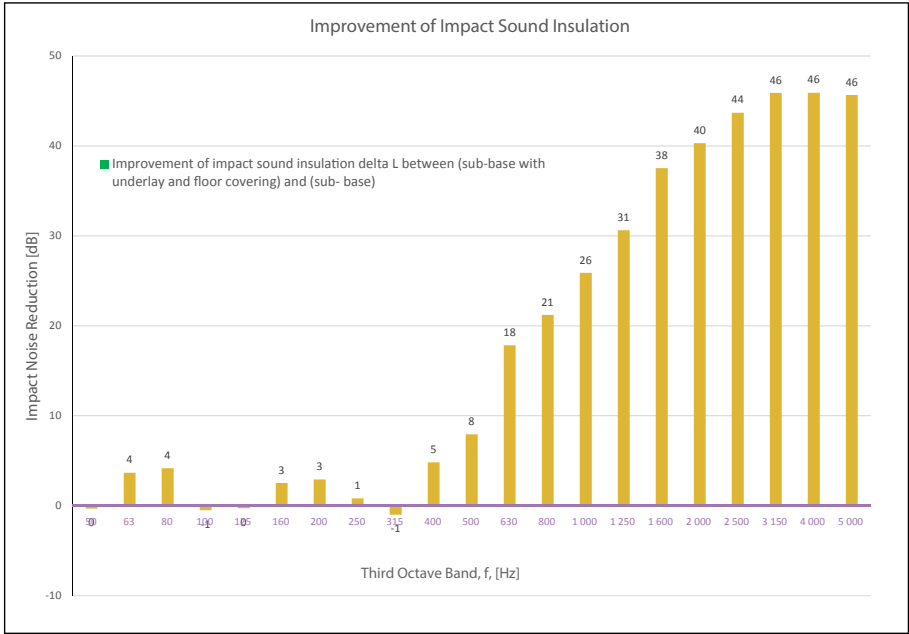
Ci(125-2000):
Same as above, but for the frequency range 125 -2000 Hz.

FIELD MEASUREMENTS OF CalmMat WITH LAMINATE 8MM

	Name	Thickness (mm)	Density (SI)
Description of Floor System	8 mm laminated timber	8	--
	CalmMat 5 mm	5	--
	200~220 mm reinforced concrete slab	200~220	2540
	80~120 mm suspended ceiling cavity + 13 mm plasterboard ceiling	80~120 + 13	--
Room Dimensions	Width : 7 m		
Floor	Length : 4.5 m		
	Area : 31.5 m ²		
Sample Dimensions	Width : 1 m		
	Length : 1 m		
	Area : 1 m ²		

	Location	Width	Length	Area	Height	Volume
Receiver Rm	Bedroom	7	4.5	31.5	2.7	85.08

	Room Surfaces
Walls	Plasterboard
Floor	Concrete
Ceiling	Plasterboard



AAACStar R.	2	3	4	5	6
L'nT, w	65	55	50	45	40
FIIC	45	55	60	65	70
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Ci(50-2500):
Same as above, but for the frequency range 50 -2500 Hz.

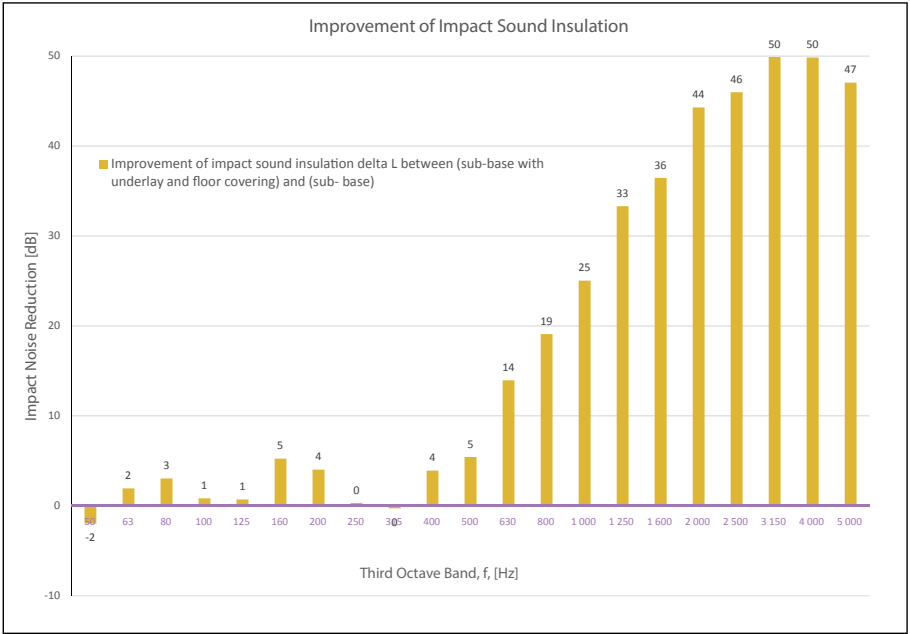
Ci(125-2000):
Same as above, but for the frequency range 125 -2000 Hz.

FIELD MEASUREMENTS OF CalmMat WITH LAMINATE 8MM

	Name	Thickness (mm)	Density (SI)
Description of Floor System	8 mm laminated timber	8	--
	CalmMat 3 mm	3	--
	200~220 mm reinforced concrete slab	200~220	2540
	80~120 mm suspended ceiling caivty + 13 mm plasterboard ceiling	80~120 + 13	--
Room Dimensions	Width : 7 m		
Floor	Length : 4.5 m		
	Area : 31.5 m ²		
Sample Dimensions	Width : 1 m		
	Length : 1 m		
	Area : 1 m ²		

	Location	Width	Length	Area	Height	Volume
Receiver Rm	Bedroom	7	4.5	31.5	2.7	85.08

	Room Surfaces
Walls	Plasterboard
Floor	Concrete
Ceiling	Plasterboard



AAACStar R.	2	3	4	5	6
L'nT, w	65	55	50	45	40
FIIC	45	55	60	65	70
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Ci:
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Ci(50-2500):
Same as above, but for the frequency range 50 -2500 Hz.

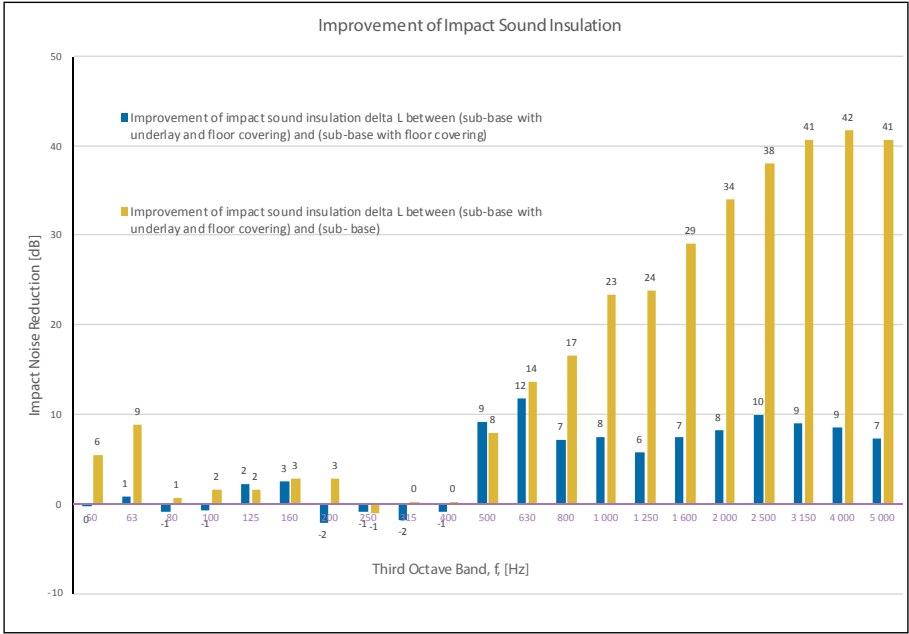
Ci(125-2000):
Same as above, but for the frequency range 125 -2000 Hz.

FIELD MEASUREMENTS OF CalmMat WITH LAMINATE 12MM

	Name	Thickness (mm)	Density (SI)
Description of Floor System	12 mm laminated timber	12	--
	Flooring Acoustic Rubber Underlay	5	700
	200 mm reinforced concrete slab	200	2540
	80~120 mm suspended ceiling cavity + 10~13 mm plasterboard ceiling	80~120 + 10~13	--
Room Floor Dimensions	Width :	3.2	m
	Length :	3.2	m
	Area :	10.24	m ²
Sample Dimensions	Width :	1	m
	Length :	1	m
	Area :	1	m ²

	Location	Width	Length	Area	Height	Volume
Receiver Rm	Bedroom	3.2	3.2	10.24	2.7	27.648

	Room Surfaces
Walls	Masonry/plasterboard
Floor	Concrete
Ceiling	Plasterboard



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L'nT , w	65	55	50	45	40
FIIC	45	55	60	65	70
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L'nT,w:
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Ci:
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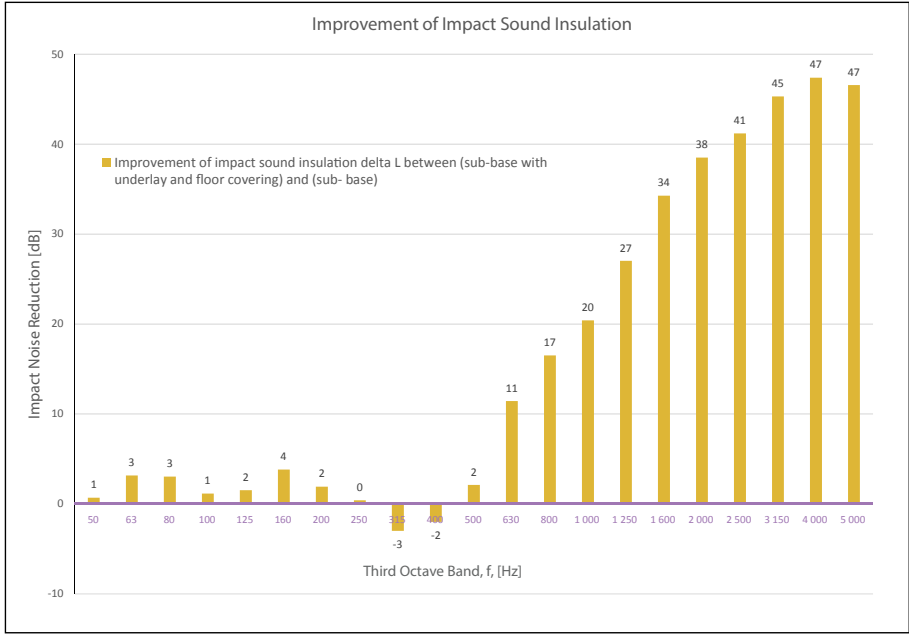
Ci(125-2000):
Same as above, but for the frequency range 125 -2000 Hz.

FIELD MEASUREMENTS OF CalmMat WITH 4.5MM LAMINATE 12MM

	Name	Thickness (mm)	Density (SI)
Description of Floor System	12 mm laminated timber	12	--
	CalmMat 3 mm	3	--
	200~220 mm reinforced concrete slab	200~220	2540
	80~120 mm suspended ceiling caivty + 13 mm plasterboard ceiling	80~120 + 13	--
Room Floor Dimensions	Width :	7	m
	Length :	4.5	m
	Area :	31.5	m ²
Sample Dimensions	Width :	1	m
	Length :	1	m
	Area :	1	m ²

	Location	Width	Length	Area	Height	Volume
Receiver Rm	Bedroom	7	4.5	31.5	2.7	85.08

	Room Surfaces
Walls	Plasterboard
Floor	Concrete
Ceiling	Plasterboard



AAACStar R.	2	3	4	5	6
L'nT , w	65	55	50	45	40
FIIC	45	55	60	65	70
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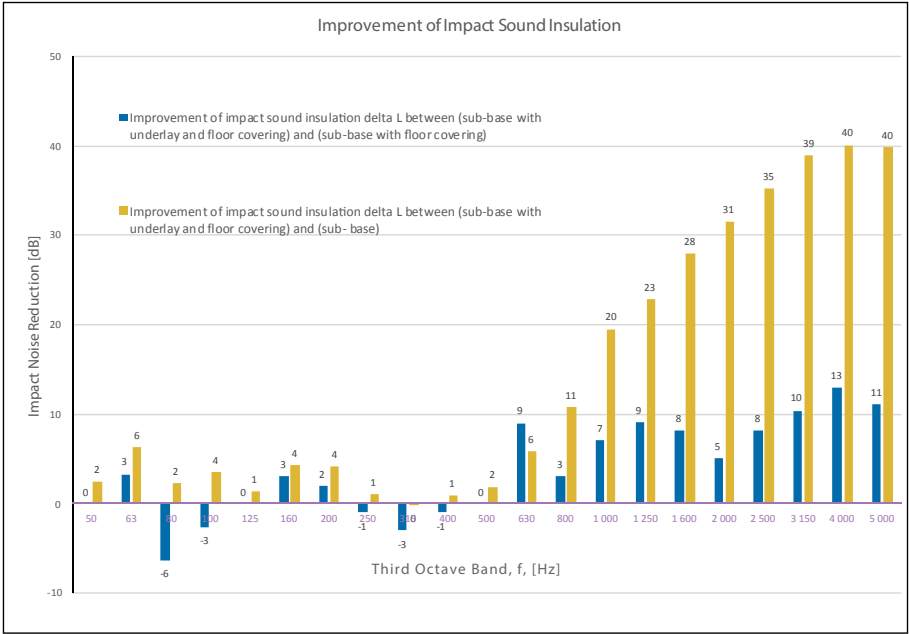
Ci(125-2000):
Same as above, but for the frequency range 125 -2000 Hz.

FIELD MEASUREMENTS OF CalmMat WITH ENGINEERED TIMBER 14MM

	Name			Thickness (mm)	Density (SI)
Description of Floor System	14 mm engineered timber			14	--
	Flooring Acoustic Rubber Underlay			5	700
	200 mm reinforced concrete slab			200	2540
	80~120 mm suspended ceiling cavity + 10~13 mm plasterboard ceiling			80~120 + 10~13	--
Room Floor Dimensions	Width :	3.2	m		
	Length :	3.2	m		
	Area :	10.24	m ²		
Sample Dimensions	Width :	1	m		
	Length :	1	m		
	Area :	1	m ²		

	Location	Width	Length	Area	Height	Volume
Receiver Rm	Bedroom	3.2	3.2	10.24	2.7	27.648

	Room Surfaces
Walls	Masonry/plasterboard
Floor	Concrete
Ceiling	Plasterboard



AAACStar R.	2	3	4	5	6
L'nT , w	65	55	50	45	40
FIIC	45	55	60	65	70
Comments	Below 62 BCA	Clearly Audible	Audible	Barely Inaudible	Normally Inaudible

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L'nT,w:
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Ci:
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Ci(50-2500):
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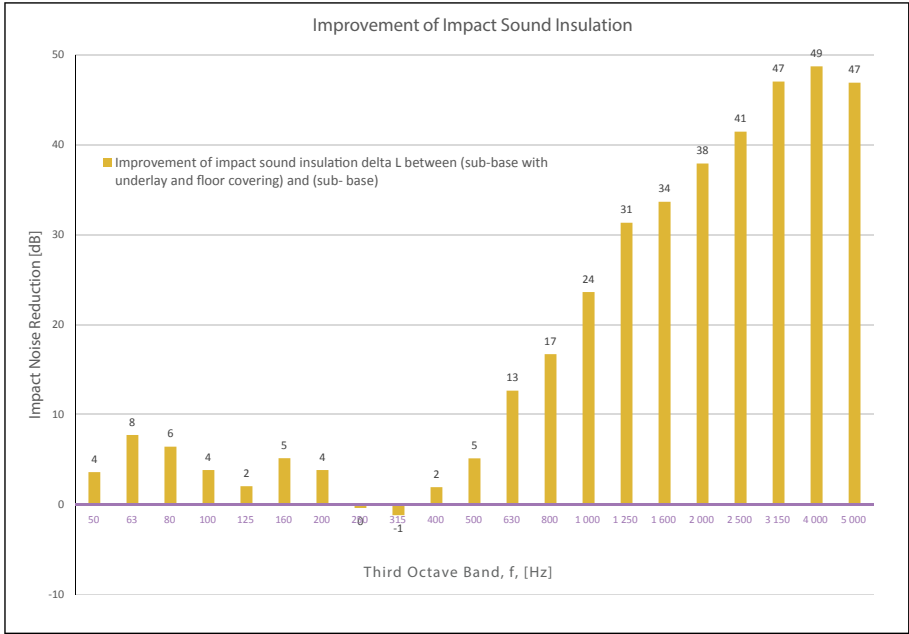
Ci(125-2000):
Same as above, but for the frequency range 125 -2000 Hz.

FIELD MEASUREMENTS OF CalmMat WITH ENGINEERED TIMBER 14MM

	Name			Thickness (mm)	Density (SI)
Description of Floor System	14 mm engineered timber			14	--
	CalmMat 3 mm			3	--
	200~220 mm reinforced concrete slab			200~220	2540
	80~120 mm suspended ceiling cavity + 13 mm plasterboard ceiling			80~120 + 13	--
Room Floor Dimensions	Width :	7	m		
	Length :	4.5	m		
	Area :	31.5	m ²		
Sample Dimensions	Width :	1	m		
	Length :	1	m		
	Area :	1	m ²		

	Location	Width	Length	Area	Height	Volume
Receiver Rm	Bedroom	7	4.5	31.5	2.7	85.08

	Room Surfaces
Walls	Plasterboard
Floor	Concrete
Ceiling	Plasterboard



AAACStar R.	2	3	4	5	6
L'nT , w	65	55	50	45	40
FIIC	45	55	60	65	70
Comments	Below 62 BCA	Clearly Audible	Audible	Barely Inaudible	Normally Inaudible

Definitions of Noise Metrics

FIIC:
Field Impact Insulation Class is a single-number rating of how well a floor system attenuates impact type sounds, such as footsteps. Calculated from third-octave band normalised impact sound pressure level data and referenced to 10 m² as described in ASTM E989. The higher the single-number rating, the better its impact insulation performance.

L'nT,w:
The Weighted Standardised Impact Sound ressure Level when measured in situ referenced to a reverberation time (RT60) of 0.5 seconds. Used by the AAAC to determine their respective Star Rating.

Ci:
Spectrum adaption term is a low frequency correction factor. Typically for massive floors such as concrete, the values are about zero while for timber joist floors Ci is positive because of the low resonant frequencies. Considers frequency range between 100-and 2500 Hz.

Ci(50-2500):
Same as above, but for the frequency range 50 -2500 Hz.

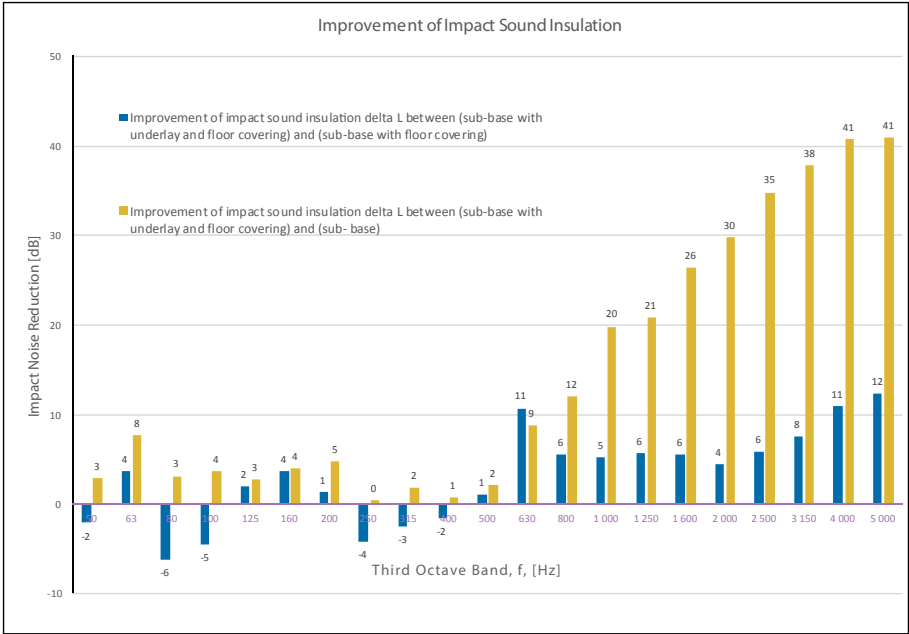
Ci(125-2000):
Same as above, but for the frequency range 125 -2000 Hz.

FIELD MEASUREMENTS OF CalmMat WITH ENGINEERED TIMBER 15MM

	Name			Thickness (mm)	Density (SI)
Description of Floor System	15 mm engineered timber flooring			15	--
	Flooring Acoustic Rubber Underlay			5	700
	200 mm reinforced concrete slab			200	2540
	80~120 mm suspended ceiling cavity + 10~13 mm plasterboard ceiling			80~120 + 10~13	--
Room Floor Dimensions	Width :	3.2	m		
	Length :	3.2	m		
	Area :	10.24	m ²		
Sample Dimensions	Width :	1	m		
	Length :	1	m		
	Area :	1	m ²		

	Location	Width	Length	Area	Height	Volume
Receiver Rm	Bedroom	3.2	3.2	10.24	2.7	27.648

	Room Surfaces
Walls	Masonry/plasterboard
Floor	Concrete
Ceiling	Plasterboard



AAACStar R.	2	3	4	5	6
L'nT , w	65	55	50	45	40
FIIC	45	55	60	65	70
Comments	Below BCA 62	Clearly Audible	Audible	Barely Inaudible	Normally Inaudible

Definitions of Noise Metrics

FIIC:
Field Impact Insulation Class is a single-number rating of how well a floor system attenuates impact type sounds, such as footsteps. Calculated from third-octave band normalised impact sound pressure level data and referenced to 10 m² as described in ASTM E989. The higher the single-number rating, the better its impact insulation performance.

L'nT,w:
The Weighted Standardised Impact Sound ressure Level when measured in situ referenced to a reverberation time (RT60) of 0.5 seconds. Used by the AAAC to determine their respective Star Rating.

Ci:
Spectrum adaption term is a low frequency correction factor. Typically for massive floors such as concrete, the values are about zero while for timber joist floors Ci is positive because of the low resonant frequencies. Considers frequency range between 100-and 2500 Hz.

Ci(50-2500):
Same as above, but for the frequency range 50 -2500 Hz.

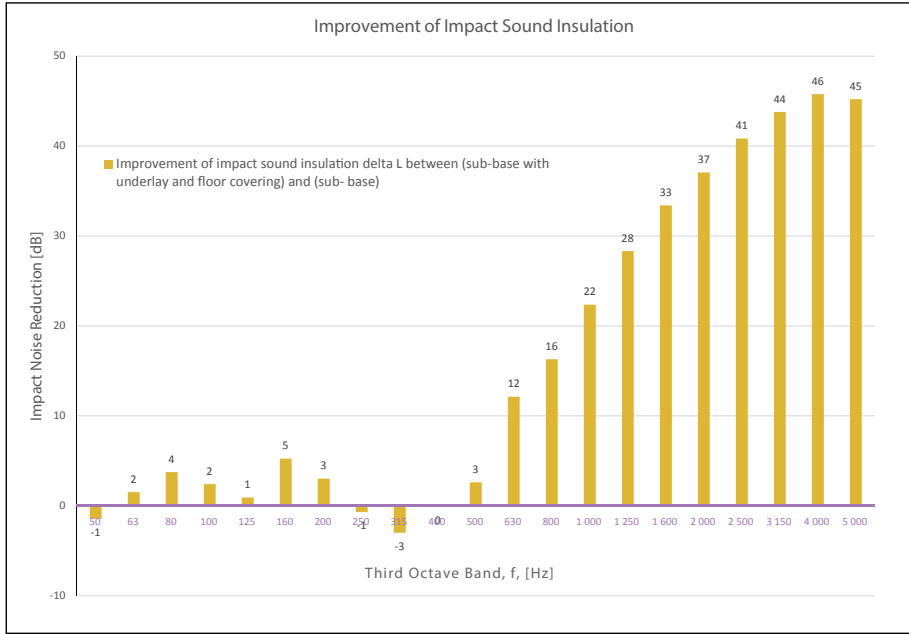
Ci(125-2000):
Same as above, but for the frequency range 125 -2000 Hz.

FIELD MEASUREMENTS OF CalmMat WITH ENGINEERED TIMBER 15MM

	Name			Thickness (mm)	Density (SI)
Description of Floor System	15 mm engineered timber flooring			15	--
	CalmMat 3 mm			3	--
	200~220 mm reinforced concrete slab			200~220	2540
	80~120 mm suspended ceiling cavity + 13 mm plasterboard ceiling			80~120 + 13	--
Room Floor Dimensions	Width :	7	m		
	Length :	4.5	m		
	Area :	31.5	m ²		
Sample Dimensions	Width :	1	m		
	Length :	1	m		
	Area :	1	m ²		

	Location	Width	Length	Area	Height	Volume
Receiver Rm	Bedroom	7	4.5	31.5	2.7	85.08

	Room Surfaces
Walls	Plasterboard
Floor	Concrete
Ceiling	Plasterboard



AAACStar R.	2	3	4	5	6
L'nT , w	65	55	50	45	40
FIIC	45	55	60	65	70
Comments	Below BCA 62	Clearly Audible	Audible	Barely Inaudible	Normally Inaudible

Definitions of Noise Metrics

FIIC:
Field Impact Insulation Class is a single-number rating of how well a floor system attenuates impact type sounds, such as footsteps. Calculated from third-octave band normalised impact sound pressure level data and referenced to 10 m² as described in ASTM E989. The higher the single-number rating, the better its impact insulation performance.

L'nT,w:
The Weighted Standardised Impact Sound ressure Level when measured in situ referenced to a reverberation time (RT60) of 0.5 seconds. Used by the AAAC to determine their respective Star Rating.

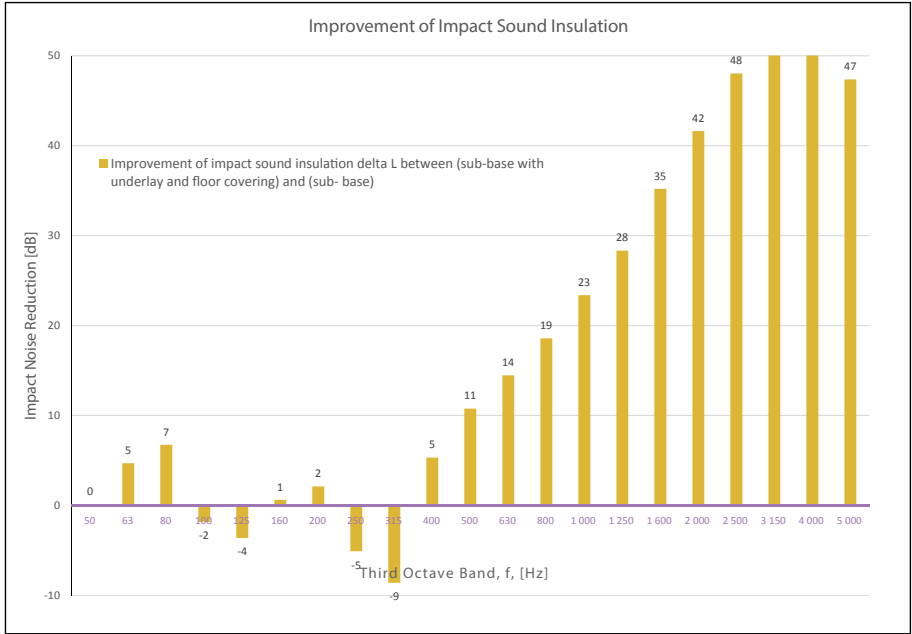
Ci:
Spectrum adaption term is a low frequency correction factor. Typically for massive floors such as concrete, the values are about zero while for timber joist floors Ci is positive because of the low resonant frequencies. Considers frequency range between 100-and 2500 Hz.

Ci(50-2500):
Same as above, but for the frequency range 50 -2500 Hz.

Ci(125-2000):
Same as above, but for the frequency range 125 -2000 Hz.

FIELD MEASUREMENTS OF CalmMat WITH ENGINEERED TIMBER 14MM GLUED TO UNDERLAY

	Name				Thickness (mm)	Density (SI)
Description of Floor System	14 mm engineered timber glued to				14	--
	CalmMat 5 mm				5	--
	200~220 mm reinforced concrete slab				200~220	2540
	80~120 mm suspended ceiling cavity + 13 mm plasterboard ceiling				80~120 + 13	--
Room Floor Dimensions	Width :	7	m			
	Length :	4.5	m			
	Area :	31.5	m ²			
Sample Dimensions	Width :	1	m			
	Length :	1	m			
	Area :	1	m ²			
	Location	Width	Length	Area	Height	Volume
Receiver Rm	Bedroom	7	4.5	31.5	2.7	85.08
	Room Surfaces					
Walls	Plasterboard					
Floor	Concrete					
Ceiling	Plasterboard					



AAACStar R.	2	3	4	5	6
L'nT , w	65	55	50	45	40
FIIC	45	55	60	65	70
Comments	Below BCA 62	Clearly Audible	Audible	Barely Inaudible	Normally Inaudible

Definitions of Noise Metrics

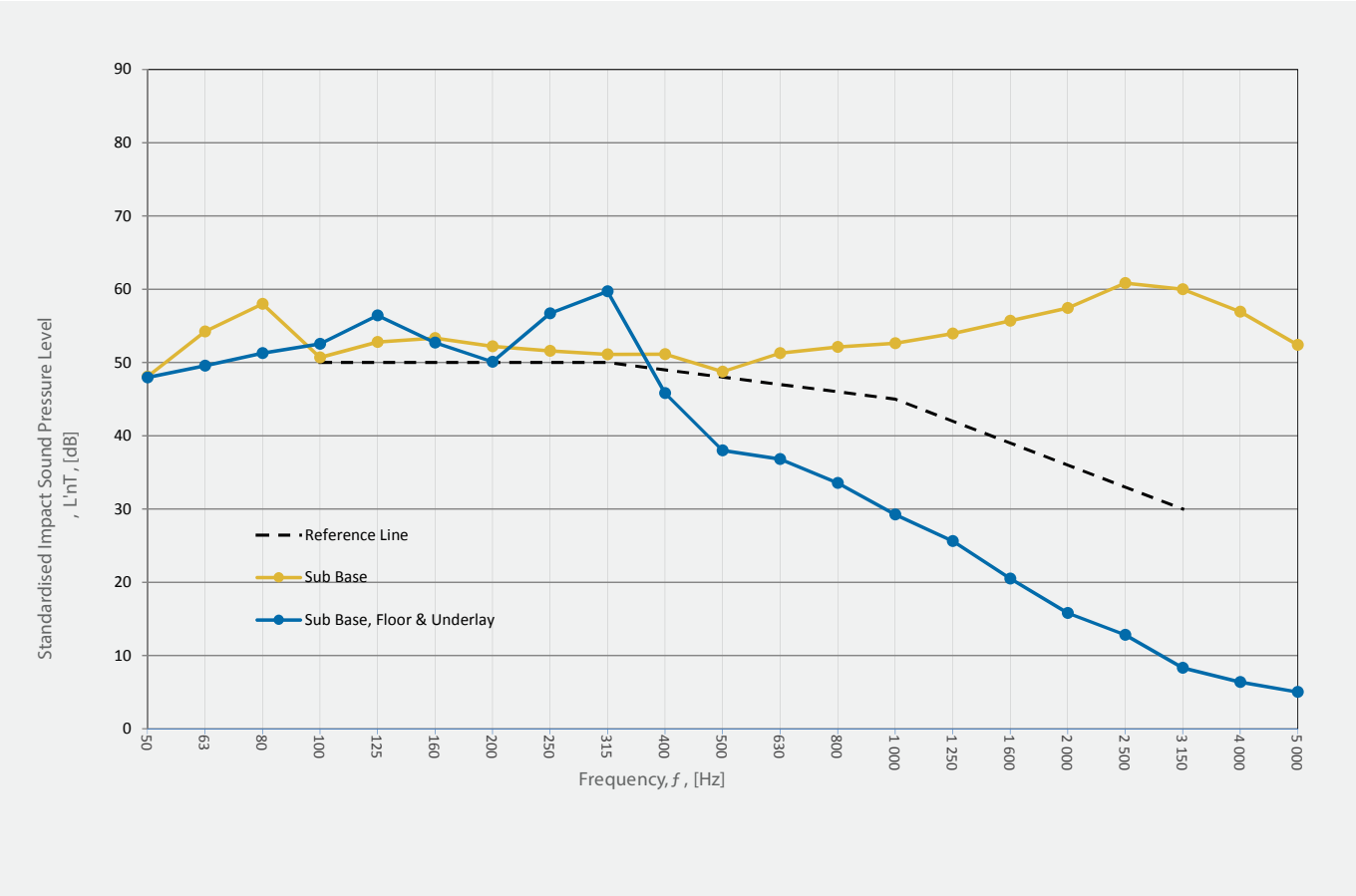
FIIC:
Field Impact Insulation Class is a single-number rating of how well a floor system attenuates impact type sounds, such as footsteps. Calculated from third-octave band normalised impact sound pressure level data and referenced to 10 m² as described in ASTM E989. The higher the single-number rating, the better its impact insulation performance.

L'nT,w:
The Weighted Standardised Impact Sound ressure Level when measured in situ referenced to a reverberation time (RT60) of 0.5 seconds. Used by the AAAC to determine their respective Star Rating.

Ci:
Spectrum adaption term is a low frequency correction factor. Typically for massive floors such as concrete, the values are about zero while for timber joist floors Ci is positive because of the low resonant frequencies. Considers frequency range between 100-and 2500 Hz.

Ci(50~2500):
Same as above, but for the frequency range 50 -2500 Hz.

Ci(125~2000):
Same as above, but for the frequency range 125 -2000 Hz.



Frequency f Hz	L'nT (one-third octave) dB		
	Sub Base	Sub Base Floor	Sub Base Floor Underlay
50	48.1	38.0	47.9
63	54.2	48.4	49.5
80	58.0	50.4	51.3
100	50.7	46.4	52.5
125	52.8	54.1	56.4
160	53.3	49.2	52.7
200	52.2	43.3	50.1
250	51.6	49.6	56.7
315	51.1	49.3	59.7
400	51.1	45.1	45.8
500	48.8	45.8	38.0
630	51.3	43.6	36.8
800	52.1	39.4	33.6
1 000	52.6	33.7	29.2
1 250	53.9	31.8	25.6
1 600	55.7	28.9	20.5
2 000	57.4	26.7	15.8
2 500	60.8	28.3	12.8
3 150	60.0	24.2	8.3
4 000	56.9	16.6	6.4
5 000	52.4	10.9	5.0

Sub Base (Test 00)		
L'nT,w	64	AS ISO 717.2 - 2004
Ci	-13	AS ISO 717.2 - 2004
Ci(50-2500)	-12	AS ISO 717.2 - 2004
Ci(63-2000)	-13	AS ISO 717.2 - 2004
AAAC ★	2 Star	AAAC Guidleline
FIIC	35	ASTM E1007-14

Sub Base & Floor		
L'nT,w	43	AS ISO 717.2 - 2004
Ci	0	AS ISO 717.2 - 2004
Ci(50-2500)	1	AS ISO 717.2 - 2004
Ci(63-2000)	1	AS ISO 717.2 - 2004
AAAC ★	5 Star	AAAC Guidleline
FIIC	61	ASTM E1007-14

Sub Base, Floor & Underlay (Test 01)		
L'nT,w	48	AS ISO 717.2 - 2004
Ci	1	AS ISO 717.2 - 2004
Ci(50-2500)	1	AS ISO 717.2 - 2004
Ci(63-2000)	1	AS ISO 717.2 - 2004
AAAC ★	4 Star	AAAC Guidleline
FIIC	55	ASTM E1007-14



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