

Screed construction basics:

	Impact of the screed thickness		
Screed thickness	30 mm	60 mm	120 mm
Predicted differences	-8db	0	+8db
Tested ΔL_w	18 dB	23 dB	not tested

→ Halving or doubling the screed thickness will prognostically decrease or increase the impact sound improvement by approximately 8 dB.

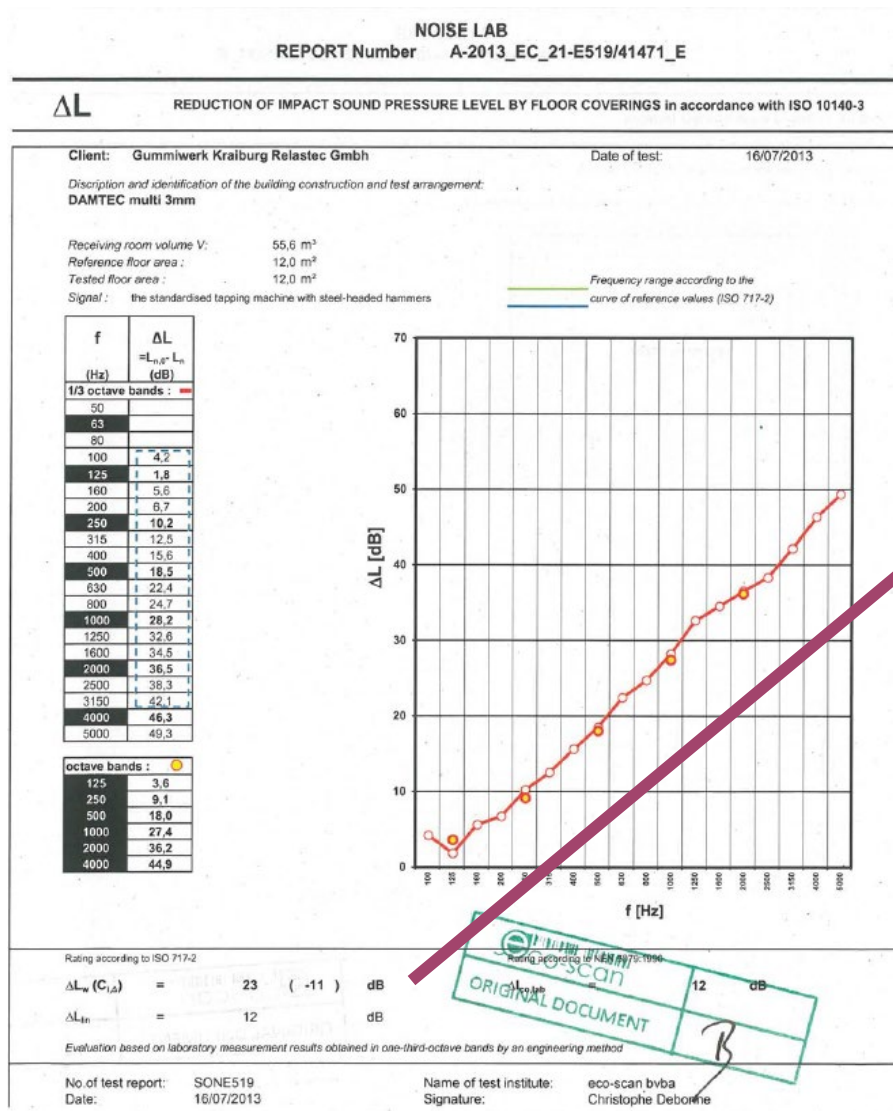
Massive ceiling constructions, predictions without top layers based on DIN 4109:

concrete slab 2300 kg/m ³			
weight in kg/m ²	Thickness in mm	$L_{n,w,eq,R}$	
135	60	86	
160	70	85	
190	85	84	
225	100	82	
250	110	81	
270	120	79	
295	130	78	
320	140	77	→ Standard ceiling, used for most tests
350	180	76	
380	165	74	
450	200	71	
490	210	70	
510	220	69	
530	230	69	→ increased reduction of ≈ 8dB

DAMTEC multi 3mm & 60 mm screed

-impact noise reduction on standard floor-

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



Ln _w (bare concrete ceilings)		
Weight in kg/m²	Thick-ness	Ln _{w,eq,r} (dB)
135	60	86
160	70	85
190	85	84
225	100	82
250	110	81
270	120	79
295	130	78
320	140	77
350	180	76
380	165	74
450	200	71
490	210	70
510	220	69
530	230	69

$$Ln_w = Ln_{w,eq,r} - \Delta L_w$$

60mm screed:

$$Ln_w (140\text{mm}) \approx 54 \text{ dB}$$

$$Ln_w (230\text{mm}) \approx 46 \text{ dB}$$

80mm screed:

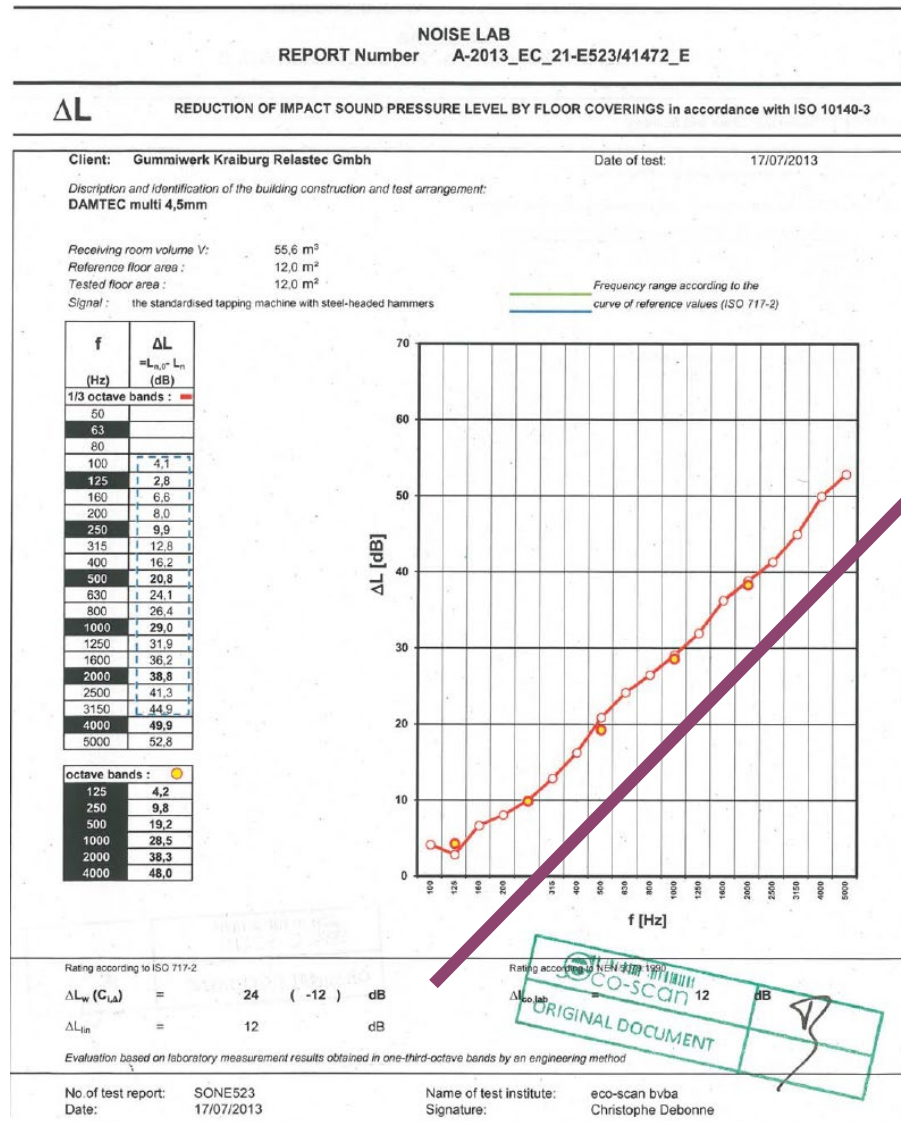
$$Ln_w (230\text{mm}) \approx 44-45 \text{ dB}$$

Based on the EN 12354-2 the impact sound reduction will be increased by aprox. 1-2dB when increasing the screed thickness from 60 to 80mm:

DAMTEC multi 4.5mm & 60 mm screed

-impact noise reduction on standard floor-

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



Ln _w (bare concrete ceilings)		
Weight in kg/m²	Thick-ness	Ln _{w,eq,r} (dB)
135	60	86
160	70	85
190	85	84
225	100	82
250	110	81
270	120	79
295	130	78
320	140	77
350	180	76
380	165	74
450	200	71
490	210	70
510	220	69
530	230	69

$$Ln_w = Ln_{w,eq,r} - \Delta L_w$$

60mm screed:

Ln_w (140mm) = 53dB

Ln_w (200mm) = 45dB

80mm screed:

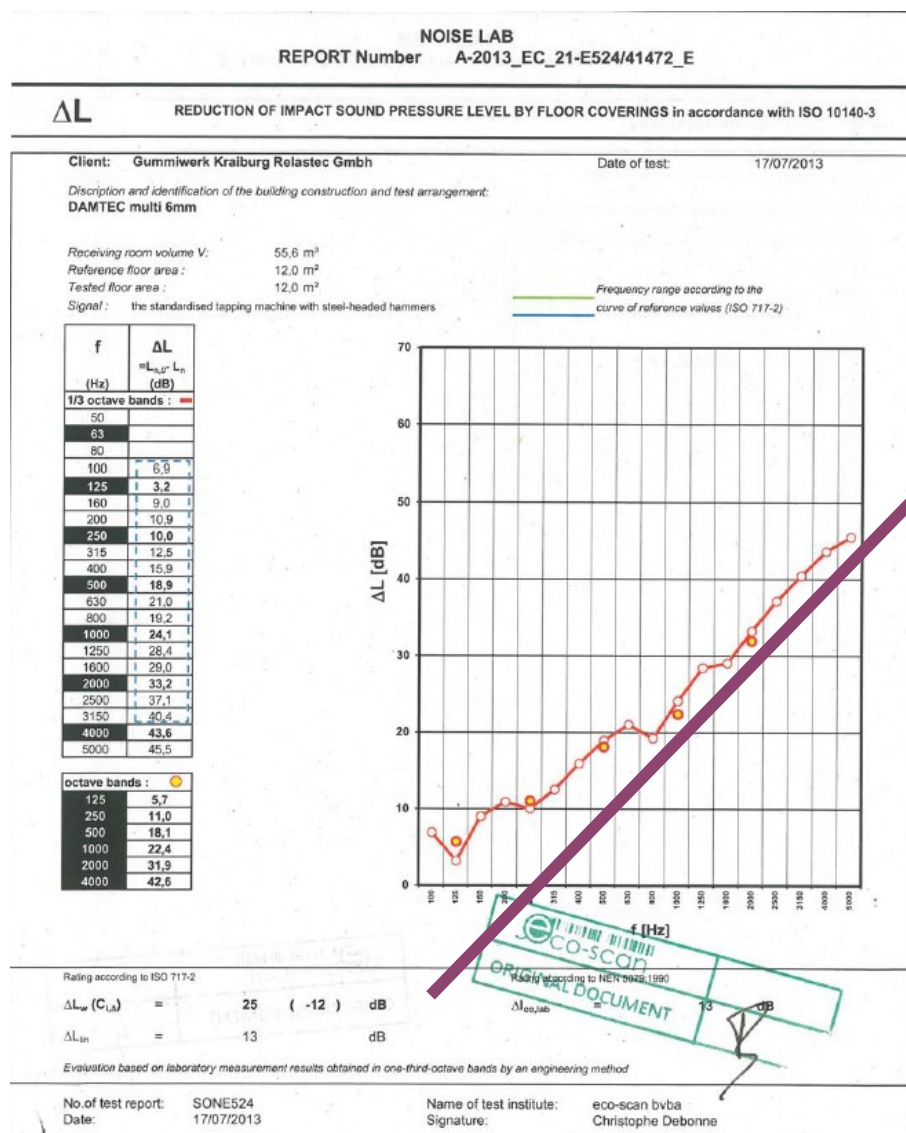
Ln_w (230mm) ≈ 43-44 dB

Based on the EN 12354-2 the impact sound reduction will be increased by aprox. 1-2dB when increasing the screed thickness from 60 to 80mm:

DAMTEC multi 6mm & 60 mm screed

-impact noise reduction on standard floor-

$\Delta L_w = 25$ dB



Ln _w (bare concrete ceilings)		
Weight in kg/m²	Thick-ness	Ln _{w,eq,r} (dB)
135	60	86
160	70	85
190	85	84
225	100	82
250	110	81
270	120	79
295	130	78
320	140	77
350	180	76
380	165	74
450	200	71
490	210	70
510	220	69
530	230	69



$$Ln_w = Ln_{w,eq,r} - \Delta L_w$$

60mm screed:

Ln_w (140mm) = 52dB

Ln_w (200mm) = 44dB

80mm screed:

Ln_w (230mm) ≈ 42-43 dB

Based on the EN 12354-2 the impact sound reduction will be increased by aprox. 1-2dB when increasing the screed thickness from 60 to 80mm: