



A Tata Steel Enterprise

RAUMAKUSTIK ACOUSTIQUE ACUSTICA ACOUSTICS

Technische Dokumentation.
Documentazione tecnica.

Documentation technique.
Technical documentation.



SWISS MADE⁺

INHALT

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ALLGEMEINE HINWEISE

MESSUNG

Durchgeführt nach ISO 354

Datum: 19. Juni 1998

Ort: Swisscom Technisches Zentrum in CH – Bern

Institution: Eggenberger Institut für Bau-
physik AG in CH – Burgdorf

Prüffläche: 12 m²

Temperatur: 20 °C

Relative Luftfeuchtigkeit: 55 %

Hallraum-Volumen: 214.3 m³

Tieftonbereich: 100 – 315 Hz

Mitteltonbereich: 400 – 1250 Hz

Hochtonbereich: 1600 – 5000 Hz

INDICATIONS GÉNÉRALES

MESURE

Effectuée selon ISO 354

Date: 19 juin 1998

Lieu: Swisscom Technisches Zentrum à CH – Bern

Institution: Eggenberger Institut für Bau-
physik AG in CH – Burgdorf

Surface: 12 m²

Température: 20 °C

Humidité relative: 55 %

Volume chambre d'écho: 214.3 m³

Zone de basses fréquences: 100 – 315 Hz

Zone de moyennes fréquences: 400 – 1250 Hz

Zone de hautes fréquences: 1600 – 5000 Hz

INDICAZIONI GENERALI

MISURAZIONE

Eseguita secondo ISO 354

Data: 19 giugno 1998

Luogo: Swisscom Technisches Zentrum a
CH – Berna

Istituzione: Eggenberger Institut für Bau-
physik AG a CH – Burgdorf

Superficie: 12 m²

Temperatura: 20 °C

Umidità relativa: 55 %

Volume camera riverberante: 214.3 m³

Basse frequenze: 100 – 315 Hz

Medie frequenze: 400 – 1250 Hz

Alte frequenze: 1600 – 5000 Hz

GENERAL INFORMATION

MEASURE

Executed according to ISO 354

Date: 19th of June 1998

Location: Swisscom Technisches Zentrum in
CH – Bern

Institution: Eggenberger Institut für Bau-
physik AG in CH – Burgdorf

Test surface: 12 m²

Temperature: 20 °C

Relative air moisture: 55 %

Capacity reverberation room: 214.3 m³

Low frequency range: 100 – 315 Hz

Medium frequency range: 400 – 1250 Hz

High frequency range: 1600 – 5000 Hz

AKUSTIKEINLAGEN ISOLAZIONE ACUSTICA

ISOLATION ACOUSTIQUE ACOUSTIC ISOLATION

TECHNISCHE ANGABEN

Material:
Mineralwolle grau-schwarz eingefärbt
Raumgewicht:
Streifen ca. 20 kg/m³, Keile ca. 40 kg/m³

Verpackung in Säcken

Die Akustikeinlagen sind im Querschnitt rechteckig zugeschnitten und werden auf Montage durch das 'Eindrücken' passend in die gelochten Trapezprofilrippen verlegt.
Bei Wohnungsbauten und Gastronomiegebäuden ist immer eine zusätzliche Rieselschutzeinlage oder Vliesbeschichtung empfehlenswert.

INDICATIONS TECHNIQUES

Matériau:
laine minérale teintée gris-noir
Poids volumique:
Bande env. 20 kg/m³, Trapèze env. 40 kg/m³

Emballage en sacs

Les éléments acoustiques ont une section rectangulaire et sont comprimés dans les ondes lors de la pose.
Pour les immeubles d'habitation et les restaurants il faut prévoir la pose d'un voile ou d'éléments avec feutre noir sur les deux faces.

INFORMAZIONI TECNICHE

Materiale:
lana minerale inchiostata grigia-nera
Massa volumetrica:
Strisce ca. 20 kg/m³, Cunei ca. 40 kg/m³

Emballaggio in sacchi

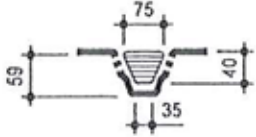
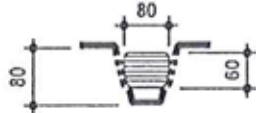
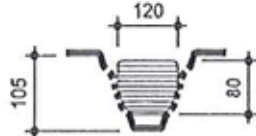
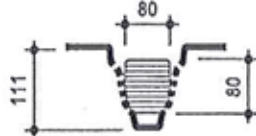
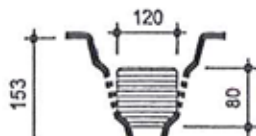
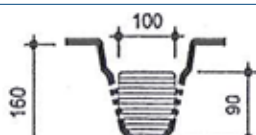
Gli inserti acustici hanno la sezione rettangolare; sono da inserire al montaggio mediante pressione nel profilo grecato forato.
Per l'applicazione nell'abitativo e nella gastronomia sono da prevedere un tessuto non tessuto continuo o un trattamento con feltro nero sui due lati.

TECHNICAL INFORMATION

Material:
mineral wool coloured grey-black
Density:
Strips around 20 kg/m³, Wedge around ca. 40 kg/m³

Packaged in sacks

The acoustic isolations are cutted in a rectangular form and are installed on site in the perforated profile ribs by pressing.
It is recommended to use a supplementary trickle protection or felt coating for residential or gastronomical buildings.

Profil Profil Profilo Profile	Querschnitt Section Sezione Section	Breite x Höhe Largeur x hauteur Larghezza x altezza Width x height	Länge / Stk. Longueur / pièce Lunghezza / pezzo Length / piece	Menge / m ² Quantité / m ² Quantità / m ² Quantity / m ²	Menge / Sack Quantité / sac Quantità / sacco Quantity / sack
SP 45 A SP 59 A		75/35 x 40 mm (Keil / Trapèze / Cuneo / Wedge)	1.00 m	7.00 m 4.50 m	150 m
SP 80 A		80 x 60 mm	6.50 m	3.60 m	130 m
SP 105 A		120 x 80 mm	5.00 m	2.90 m	75 m
SP 111 A		80 x 80 mm	6.50 m	3.20 m	97.5 m
SP 135 A SP 153 A		120 x 80 mm	5.00 m	3.30 m 3.60 m	75 m
SP 160 A		100 x 90 mm	5.80 m	4.00 m	75.4 m

SWISS PANEL SP 45 A

STEGLOCHUNG

Ø 5 mm / Tg 8 | Lochanteil 12.3% / m²

PERFORATION DANS L'ÂME

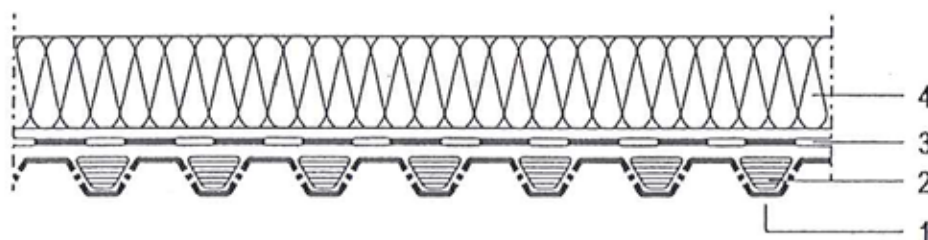
Ø 5 mm / Tg 8 | Perforation 12.3% / m²

PERFORAZIONE NELLE COSTOLATURE

Ø 5 mm / Tg 8 | Parte perforata 12.3% / m²

PERFORATION ON THE WEB

Ø 5 mm / Tg 8 | Open Area 12.3% / m²



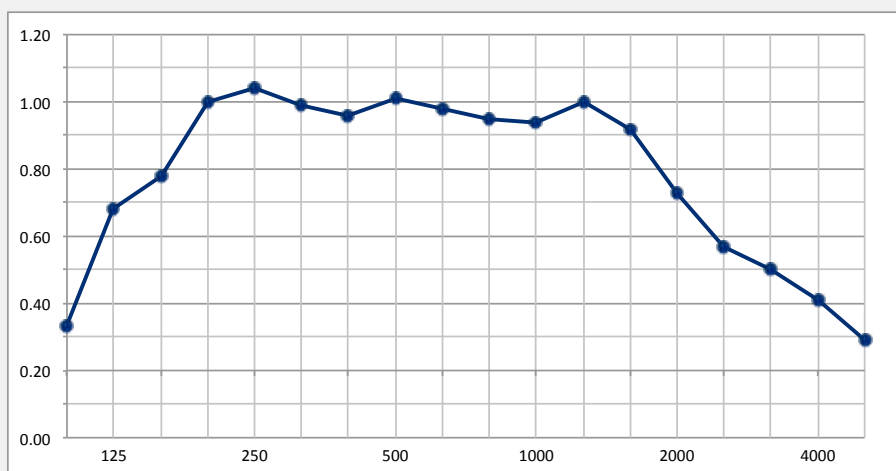
- 1 SWISS PANEL® SP 45 A
- 2 Akustikkeil zum SP 45 A
- 3 Dampfsperre Sarnafil 1000 E
- 4 Dämmung Isover
Stärke 100 mm
Rohdichte 125 kg/m³
BKZ 6q.3

- 1 SWISS PANEL® SP 45 A
- 2 Trapèze acoustique pour SP 45 A
- 3 Pare-vapeur Sarnafil 1000 E
- 4 Isolation Isover
Épaisseur 100 mm
Masse volumique 125 kg/m³
BKZ 6q.3

- 1 SWISS PANEL® SP 45 A
- 2 Riempimento acustico per SP 45 A
- 3 Freno vapore Sarnafil 1000 E
- 4 Isolazione Isover
Spessore 100 mm
Densità apparente 125 kg/m³
BKZ 6q.3

- 1 SWISS PANEL® SP 45 A
- 2 Acoustic wedge for SP 45 A
- 3 Vapour barrier Sarnafil 1000 E
- 4 Insulation Isover
Thickness 100 mm
Density 125 kg/m³
BKZ 6q.3

Freq. [Hz]	T1	T2	Alpha α	
			Terz	Oktav
100	20.98	6.19	0.33	
125	18.06	3.41	0.68	0.63
160	15.55	2.97	0.78	
200	12.87	2.36	1.00	
250	11.53	2.23	1.04	1.01
315	10.08	2.25	0.99	
400	8.07	2.18	0.96	
500	8.70	2.15	1.01	0.98
630	8.05	2.15	0.98	
800	7.94	2.20	0.95	
1000	7.17	2.15	0.94	0.96
1250	6.17	1.96	1.00	
1600	5.56	2.00	0.92	
2000	4.89	2.19	0.73	0.75
2500	4.36	2.34	0.57	
3150	3.73	2.27	0.50	
4000	3.05	2.13	0.41	0.41
5000	2.41	1.94	0.29	



MITTELWERTE DER SCHALLABSORPTION

Tiefenbereich	0.80
Mittelnbereich	0.97
Hochbereich	0.57

VALEURS MOYENNES DE L'ABSORPTION PHONIQUE

Zone de basses fréquences	0.80
Zone de moyennes fréquences	0.97
Zone de hautes fréquences	0.57

VALORE MEDIO D'ASSORBIMENTO ACUSTICO

Basse frequenza	0.80
Medie frequenza	0.97
Alte frequenza	0.57

AVERAGE VALUE OF ACOUSTICAL ABSORPTION

Low frequency range	0.80
Medium frequency range	0.97
High frequency range	0.57

SWISS PANEL SP 45 A

VOLLOCHUNG

Ø 5 mm / Tg 8 | Lochanteil 48.8% / m²

PERFORATION TOTALE

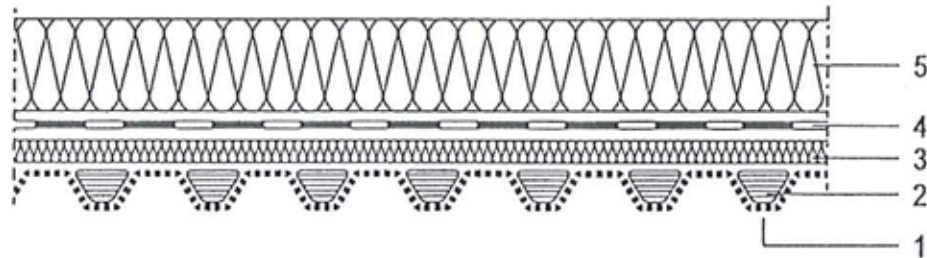
Ø 5 mm / Tg 8 | Perforation 48.8% / m²

PERFORAZIONE TOTALE

Ø 5 mm / Tg 8 | Parte perforata 48.8% / m²

FULL PERFORATION

Ø 5 mm / Tg 8 | Open Area 48.8% / m²



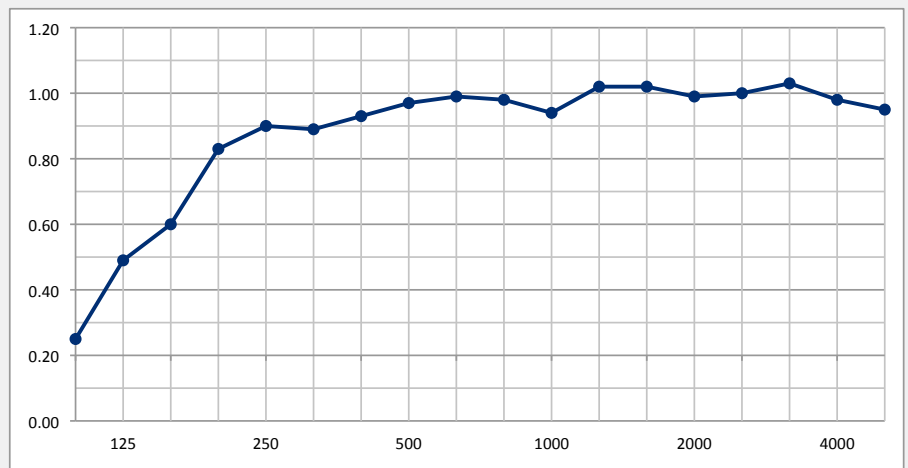
1 SWISS PANEL® SP 45 A
2 Akustikkeil zum SP 45 A
3 Absorberdämmung Iover
Typ PS 81 / Stärke 20 mm
4 Dampfsperre Sarnafil 1000 E
5 Dämmung Iover
Stärke 100 mm
Rohdichte 125 kg/m³
BKZ 6q.3

1 SWISS PANEL® SP 45 A
2 Trapèze acoustique pour SP 45 A
3 Isolation phonique Iover
Type PS 81 / Épaisseur 20 mm
4 Pare-vapeur Sarnafil 1000 E
5 Isolation Iover
Épaisseur 100 mm
Masse volumique 125 kg/m³
BKZ 6q.3

1 SWISS PANEL® SP 45 A
2 Riempimento acustico per SP 45 A
3 Isolante fonoassorbente Iover
Tipo PS 81 / Spessore 20 mm
4 Freno vapore Sarnafil 1000 E
5 Isolazione Iover
Spessore 100 mm
Densità apparente 125 kg/m³
BKZ 6q.3

1 SWISS PANEL® SP 45 A
2 Acoustic wedge for SP 45 A
3 Absorber insulating Iover
Type PS 81 / Thickness 20 mm
4 Vapour barrier Sarnafil 1000 E
5 Insulation Iover
Thickness 100 mm
Density 125 kg/m³
BKZ 6q.3

Freq.	T1	T2	Alpha α	
[Hz]			Terz	Oktav
100	20.98	7.49	0.25	
125	18.06	4.43	0.49	0.47
160	15.55	3.67	0.60	
200	12.87	2.72	0.83	
250	11.53	2.50	0.90	0.87
315	10.08	2.45	0.89	
400	8.07	2.23	0.93	
500	8.70	2.22	0.97	0.96
630	8.05	2.14	0.99	
800	7.94	2.15	0.98	
1000	7.17	2.14	0.94	0.98
1250	6.17	1.94	1.02	
1600	5.56	1.87	1.02	
2000	4.89	1.82	0.99	1.00
2500	4.36	1.73	1.00	
3150	3.73	1.60	1.03	
4000	3.05	1.50	0.98	0.99
5000	2.41	1.34	0.95	



MITTELWERTE DER SCHALLABSORPTION

Tieftonbereich 0.66
Mitteltonbereich 0.97
Hochtonbereich 0.99

VALEURS MOYENNES DE L'ABSORPTION PHONIQUE

Zone de basses fréquences 0.66
Zone de moyennes fréquences 0.97
Zone de hautes fréquences 0.99

VALORE MEDIO D'ASSORBIMENTO ACUSTICO

Basse frequenza 0.66
Medie frequenza 0.97
Alte frequenza 0.99

AVERAGE VALUE OF ACOUSTICAL ABSORPTION

Low frequency range 0.66
Medium frequency range 0.97
High frequency range 0.99

SWISS PANEL SP 45 A

OHNE AKUSTIKKEILE
SANS TRAPÈZE ACOUSTIQUE
SENZA RIEMPIMENTO ACUSTICO
WITHOUT ACOUSTIC WEDGE

VOLLOCHUNG

Ø 5 mm / Tg 8 | Lochanteil 48.8% / m²

PERFORATION TOTALE

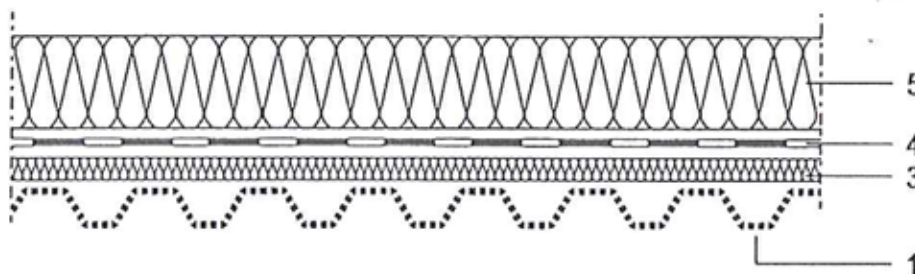
Ø 5 mm / Tg 8 | Perforation 48.8% / m²

PERFORAZIONE TOTALE

Ø 5 mm / Tg 8 | Parte perforata 48.8% / m²

FULL PERFORATION

Ø 5 mm / Tg 8 | Open Area 48.8% / m²



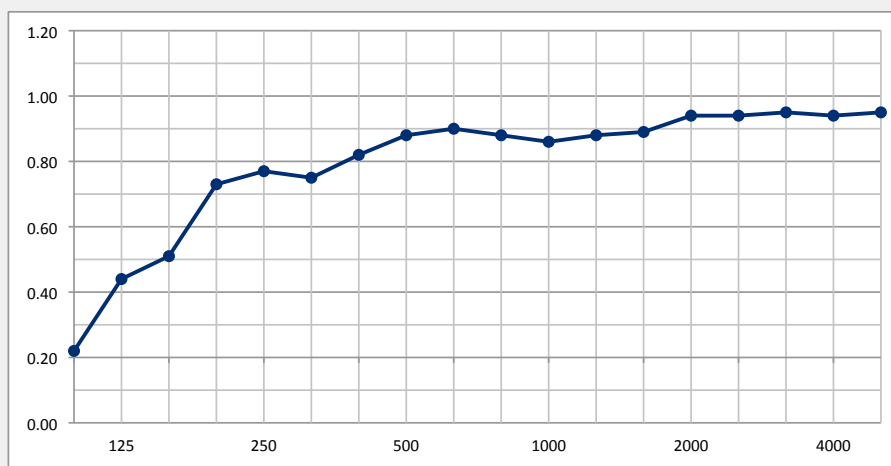
- 1 SWISS PANEL® SP 45 A
- 3 Absorberdämmung Iover
Typ PS 81 / Stärke 20 mm
- 4 Dampfsperre Sarnafil 1000 E
- 5 Dämmung Iover
Stärke 100 mm
Rohdichte 125 kg/m³
BKZ 6q.3

- 1 SWISS PANEL® SP 45 A
- 3 Isolation phonique Iover
Type PS 81 / Épaisseur 20 mm
- 4 Pare-vapeur Sarnafil 1000 E
- 5 Isolation Iover
Épaisseur 100 mm
Masse volumique 125 kg/m³
BKZ 6q.3

- 1 SWISS PANEL® SP 45 A
- 3 Isolante fonoassorbente Iover
Tipo PS 81 / Spessore 20 mm
- 4 Freno vapore Sarnafil 1000 E
- 5 Isolazione Iover
Spessore 100 mm
Densità apparente 125 kg/m³
BKZ 6q.3

- 1 SWISS PANEL® SP 45 A
- 3 Absorber insulation Iover
Typ PS 81 / Stärke 20 mm
- 4 Vapour barrier Sarnafil 1000 E
- 5 Insulation Iover
Thickness 100 mm
Density 125 kg/m³
BKZ 6q.3

Freq. [Hz]	T1	T2	Alpha α	
			Terz	Oktav
100	20.98	8.04	0.22	
125	18.06	4.80	0.44	0.41
160	15.55	4.12	0.51	
200	12.87	3.03	0.73	
250	11.53	2.83	0.77	0.75
315	10.08	2.78	0.75	
400	8.07	2.44	0.82	
500	8.70	2.37	0.88	0.87
630	8.05	2.29	0.90	
800	7.94	2.32	0.88	
1000	7.17	2.29	0.86	0.87
1250	6.17	2.14	0.88	
1600	5.56	2.05	0.89	
2000	4.89	1.88	0.94	0.92
2500	4.36	1.80	0.94	
3150	3.73	1.67	0.95	
4000	3.05	1.53	0.94	0.95
5000	2.41	1.34	0.95	



MITTELWERTE DER SCHALLABSORPTION

Tieftonbereich	0.57
Mitteltonbereich	0.87
Hochtonbereich	0.93

VALEURS MOYENNES DE L'ABSORPTION PHONIQUE

Zone de basses fréquences	0.57
Zone de moyennes fréquences	0.87
Zone de hautes fréquences	0.93

VALORE MEDIO D'ASSORBIMENTO ACUSTICO

Basse frequenza	0.57
Medie frequenze	0.87
Alte frequenze	0.93

AVERAGE VALUE OF ACOUSTICAL ABSORPTION

Low frequency range	0.57
Medium frequency range	0.87
High frequency range	0.93

SWISS PANEL SP 59 A

STEGLOCHUNG

Ø 5 mm / Tg 8 | Lochanteil 10.4% / m²

PERFORATION DANS L'ÂME

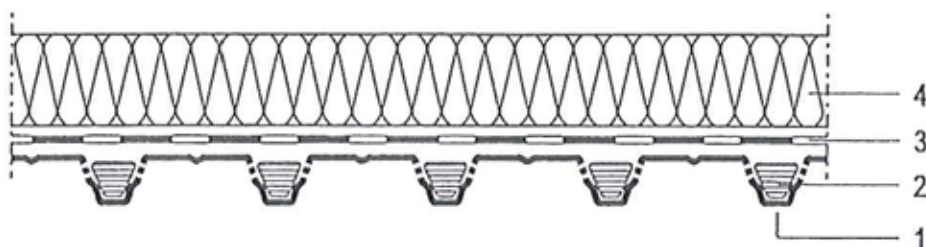
Ø 5 mm / Tg 8 | Perforation 10.4% / m²

PERFORAZIONE NELLE COSTOLATURE

Ø 5 mm / Tg 8 | Parte perforata 10.4% / m²

PERFORATION ON THE WEB

Ø 5 mm / Tg 8 | Open Area 10.4% / m²



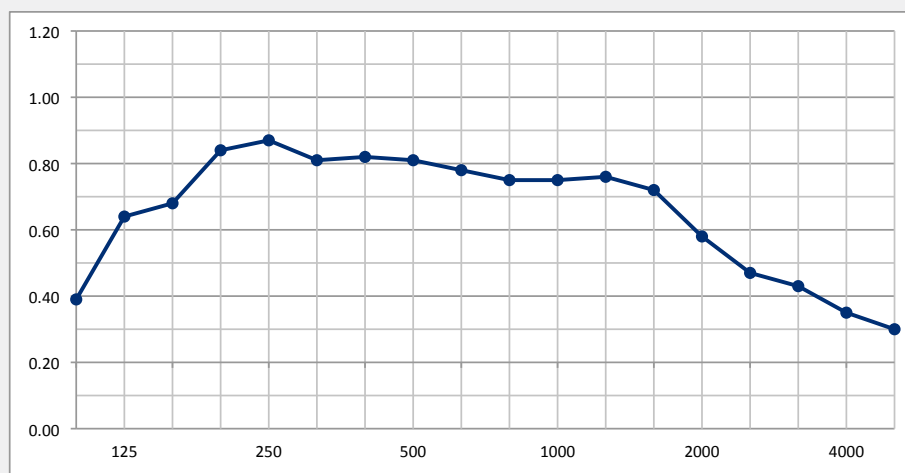
- 1 SWISS PANEL® SP 59 A
- 2 Akustikkeil zum SP 59 A
- 3 Dampfsperre Sarnafil 1000 E
- 4 Dämmung Isover
Stärke 100 mm
Rohdichte 125 kg/m³
BKZ 6q.3

- 1 SWISS PANEL® SP 59 A
- 2 Trapèze acoustique pour SP 59 A
- 3 Pare-vapeur Sarnafil 1000 E
- 4 Isolation Isover
Épaisseur 100 mm
Masse volumique 125 kg/m³
BKZ 6q.3

- 1 SWISS PANEL® SP 59 A
- 2 Riempimento acustico per SP 59 A
- 3 Freno vapore Sarnafil 1000 E
- 4 Isolazione Isover
Spessore 100 mm
Densità apparente 125 kg/m³
BKZ 6q.3

- 1 SWISS PANEL® SP 59 A
- 2 Acoustic wedge for SP 59 A
- 3 Vapour barrier Sarnafil 1000 E
- 4 Insulation Isover
Thickness 100 mm
Density 125 kg/m³
BKZ 6q.3

Freq. [Hz]	T1	T2	Alpha α	
			Terz	Oktav
100	20.98	5.48	0.39	
125	18.06	3.59	0.64	0.58
160	15.55	3.31	0.68	
200	12.87	2.71	0.84	
250	11.53	2.57	0.87	0.84
315	10.08	2.63	0.81	
400	8.07	2.44	0.82	
500	8.70	2.53	0.81	0.80
630	8.05	2.54	0.78	
800	7.94	2.59	0.75	
1000	7.17	2.49	0.75	0.75
1250	6.17	2.34	0.76	
1600	5.56	2.32	0.72	
2000	4.89	2.46	0.58	0.60
2500	4.36	2.55	0.47	
3150	3.73	2.40	0.43	
4000	3.05	2.23	0.35	0.36
5000	2.41	1.93	0.30	



MITTELWERTE DER SCHALLABSORPTION

Tieftonbereich	0.71
Mitteltonbereich	0.78
Hochtonbereich	0.48

VALEURS MOYENNES DE L'ABSORPTION PHONIQUE

Zone de basses fréquences	0.71
Zone de moyennes fréquences	0.78
Zone de hautes fréquences	0.48

VALORE MEDIO D'ASSORBIMENTO AUSTICO

Basse frequenza	0.71
Medie frequenza	0.78
Alte frequenza	0.48

AVERAGE VALUE OF ACOUSTICAL ABSORPTION

Low frequency range	0.71
Medium frequency range	0.78
High frequency range	0.48

SWISS PANEL SP 59 A

VOLLOCHUNG

Ø 5 mm / Tg 8 | Lochanteil 48.8% / m²

PERFORATION TOTALE

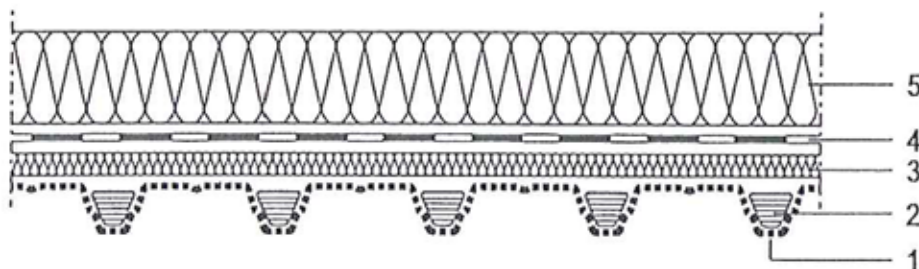
Ø 5 mm / Tg 8 | Perforation 48.8% / m²

PERFORAZIONE TOTALE

Ø 5 mm / Tg 8 | Parte perforata 48.8% / m²

FULL PERFORATION

Ø 5 mm / Tg 8 | Open Area 48.8% / m²



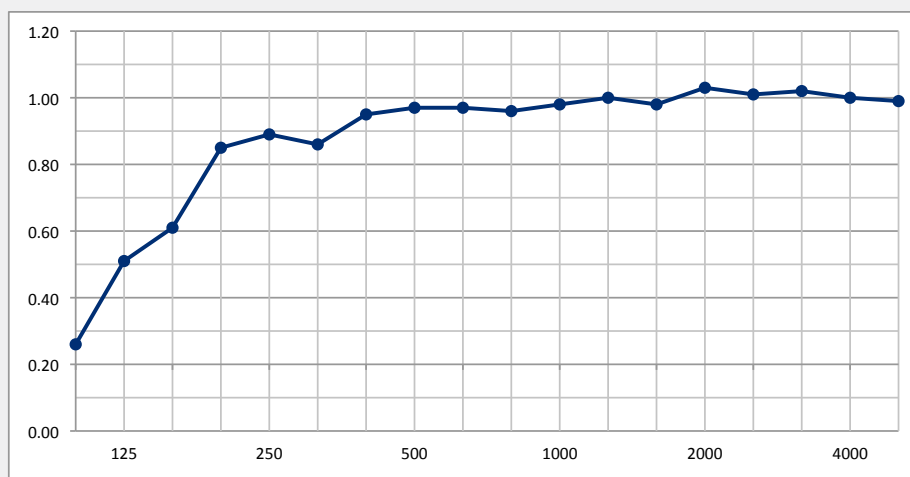
- 1 SWISS PANEL® SP 59 A
- 2 Akustikteil zum SP 59 A
- 3 Absorberdämmung Iover
Typ PS 81 / Stärke 20 mm
- 4 Dampfsperre Sarnafil 1000 E
- 5 Dämmung Iover
Stärke 100 mm
Rohdichte 125 kg/m³
BKZ 6q.3

- 1 SWISS PANEL® SP 59 A
- 2 Trapèze acoustique pour SP 59 A
- 3 Isolation phonique Iover
Type PS 81 / Épaisseur 20 mm
- 4 Pare-vapeur Sarnafil 1000 E
- 5 Isolation Iover
Épaisseur 100 mm
Masse volumique 125 kg/m³
BKZ 6q.3

- 1 SWISS PANEL® SP 59 A
- 2 Riempimento acustico per SP 59 A
- 3 Isolante fonoassorbente Iover
Tipo PS 81 / Spessore 20 mm
- 4 Freno vapore Sarnafil 1000 E
- 5 Isolazione Iover
Spessore 100 mm
Densità apparente 125 kg/m³
BKZ 6q.3

- 1 SWISS PANEL® SP 59 A
- 2 Acoustic wedge for SP 59 A
- 3 Absorber insulation Iover
Type PS 81 / Thickness 20 mm
- 4 Vapour barrier Sarnafil 1000 E
- 5 Insulation Iover
Thickness 100 mm
Density 125 kg/m³
BKZ 6q.3

Freq. [Hz]	T1	T2	Alpha α	
			Terz	Oktav
100	20.98	7.23	0.26	
125	18.06	4.30	0.51	0.48
160	15.55	3.61	0.61	
200	12.87	2.68	0.85	
250	11.53	2.52	0.89	0.87
315	10.08	2.51	0.86	
400	8.07	2.21	0.95	
500	8.70	2.21	0.97	0.96
630	8.05	2.17	0.97	
800	7.94	2.17	0.96	
1000	7.17	2.09	0.98	0.98
1250	6.17	1.96	1.00	
1600	5.56	1.92	0.98	
2000	4.89	1.78	1.03	1.01
2500	4.36	1.72	1.01	
3150	3.73	1.61	1.02	
4000	3.05	1.48	1.00	1.00
5000	2.41	1.32	0.99	



MITTELWERTE DER SCHALLABSORPTION

Tiefenbereich	0.66
Mittelfrequenzbereich	0.97
Hochfrequenzbereich	1.01

VALEURS MOYENNES DE L'ABSORPTION PHONIQUE

Zone de basses fréquences	0.66
Zone de moyennes fréquences	0.97
Zone de hautes fréquences	1.01

VALORE MEDIO D'ASSORBIMENTO ACUSTICO

Basse frequenza	0.66
Medie frequenze	0.97
Alte frequenze	1.01

AVERAGE VALUE OF ACOUSTICAL ABSORPTION

Low frequency range	0.66
Medium frequency range	0.97
High frequency range	1.01

SWISS PANEL SP 59 A

OHNE AKUSTIKKEILE
SANS TRAPÈZE ACOUSTIQUE
SENZA RIPIIMENTO ACUSTICO
WITHOUT ACOUSTIC WEDGE

VOLLOCHUNG

Ø 5 mm / Tg 8 | Lochanteil 48.8% / m²

PERFORATION TOTALE

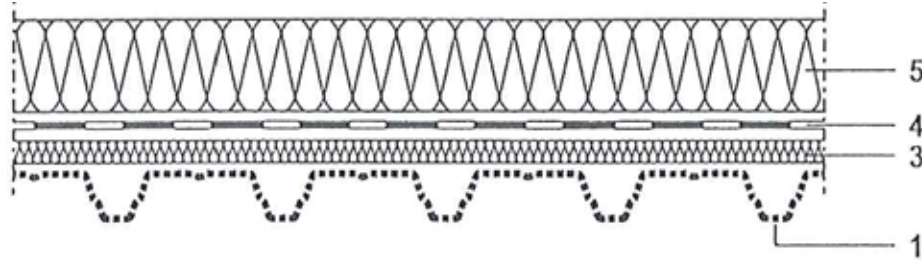
Ø 5 mm / Tg 8 | Perforation 48.8% / m²

PERFORAZIONE TOTALE

Ø 5 mm / Tg 8 | Parte perforata 48.8% / m²

FULL PERFORATION

Ø 5 mm / Tg 8 | Open Area 48.8% / m²



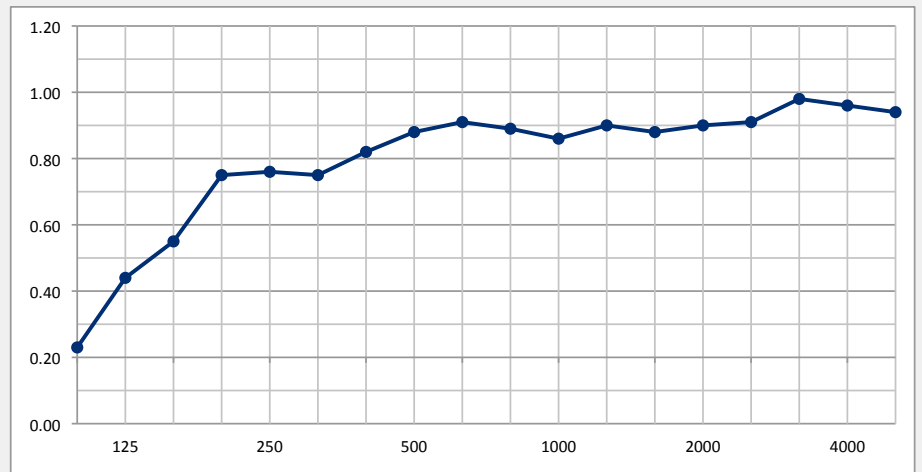
- 1 SWISS PANEL® SP 59 A
- 3 Absorberdämmung Isover
Typ PS 81 / Stärke 20 mm
- 4 Dampfsperre Sarnafil 1000 E
- 5 Dämmung Isover
Stärke 100 mm
Rohdichte 125 kg/m³
BKZ 6q.3

- 1 SWISS PANEL® SP 59 A
- 3 Isolation phonique Isover
Type PS 81 / Épaisseur 20 mm
- 4 Pare-vapeur Sarnafil 1000 E
- 5 Isolation Isover
Épaisseur 100 mm
Masse volumique 125 kg/m³
BKZ 6q.3

- 1 SWISS PANEL® SP 59 A
- 3 Isolante fonoassorbente Isover
Tipo PS 81 / Spessore 20 mm
- 4 Freno vapore Sarnafil 1000 E
- 5 Isolazione Isover
Spessore 100 mm
Densità apparente 125 kg/m³
BKZ 6q.3

- 1 SWISS PANEL® SP 59 A
- 3 Absorber insulation Isover
Type PS 81 / Thickness 20 mm
- 4 Vapour barrier Sarnafil 1000 E
- 5 Insulation Isover
Thickness 100 mm
Density 125 kg/m³
BKZ 6q.3

Freq. [Hz]	T1	T2	Alpha α	
			Terz	Oktav
100	20.98	7.86	0.23	
125	18.06	4.80	0.44	0.43
160	15.55	3.92	0.55	
200	12.87	2.95	0.75	
250	11.53	2.85	0.76	0.75
315	10.08	2.79	0.75	
400	8.07	2.45	0.82	
500	8.70	2.37	0.88	0.87
630	8.05	2.28	0.91	
800	7.94	2.30	0.89	
1000	7.17	2.28	0.86	0.88
1250	6.17	2.11	0.90	
1600	5.56	2.06	0.88	
2000	4.89	1.93	0.90	0.90
2500	4.36	1.83	0.91	
3150	3.73	1.64	0.98	
4000	3.05	1.51	0.96	0.96
5000	2.41	1.35	0.94	



MITTELWERTE DER SCHALLABSORPTION

Tieftonbereich	0.58
Mitteltonbereich	0.88
Hochtonbereich	0.93

VALEURS MOYENNES DE L'ABSORPTION PHONIQUE

Zone de basses fréquences	0.58
Zone de moyennes fréquences	0.88
Zone de hautes fréquences	0.93

VALORE MEDIO D'ASSORBIMENTO ACUSTICO

Basse frequenza	0.58
Medie frequenze	0.88
Alte frequenze	0.93

AVERAGE VALUE OF ACOUSTICAL ABSORPTION

Low frequency range	0.58
Medium frequency range	0.88
High frequency range	0.93

SWISS PANEL SP 80 A

STEGLOCHUNG

Ø 5 mm / Tg 8 | Lochanteil 12.0% / m²

PERFORATION DANS L'ÂME

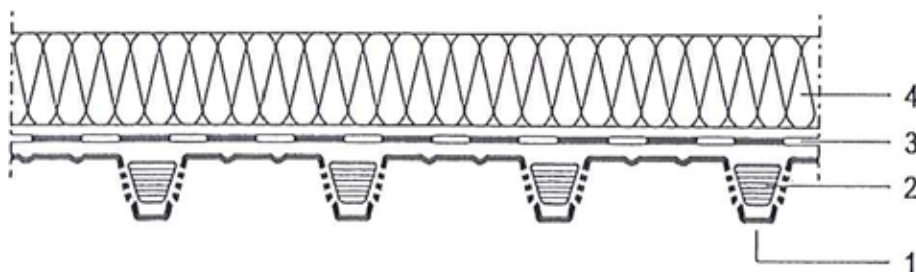
Ø 5 mm / Tg 8 | Perforation 12.0% / m²

PERFORAZIONE NELLE COSTOLATURE

Ø 5 mm / Tg 8 | Parte perforata 12.0% / m²

PERFORATION ON THE WEB

Ø 5 mm / Tg 8 | Open Area 12.0% / m²



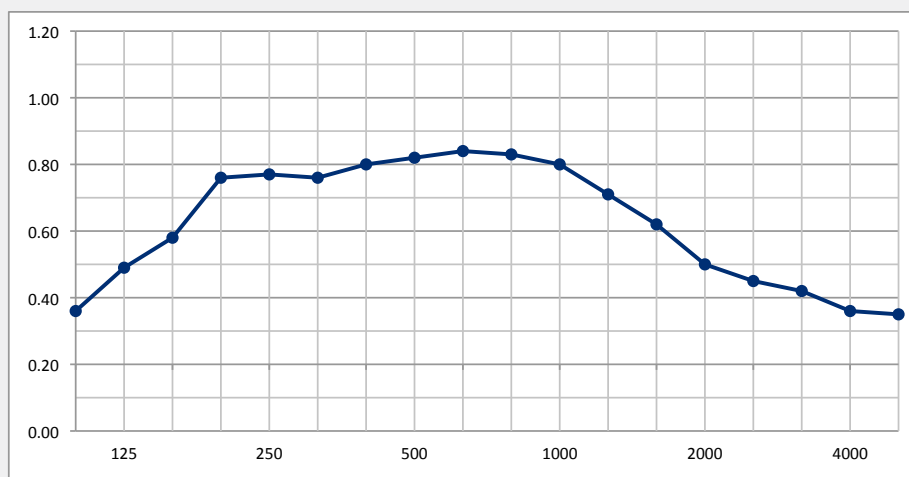
- 1 SWISS PANEL® SP 80 A
- 2 Akustikstreifen zum SP 80 A
- 3 Dampfsperre Sarnafil 1000 E
- 4 Dämmung Isover
Stärke 100 mm
Rohdichte 125 kg/m³
BKZ 6q.3

- 1 SWISS PANEL® SP 80 A
- 2 Isolation acoustique pour SP 80 A
- 3 Pare-vapeur Sarnafil 1000 E
- 4 Isolation Isover
Épaisseur 100 mm
Masse volumique 125 kg/m³
BKZ 6q.3

- 1 SWISS PANEL® SP 80 A
- 2 Riempimento acustico per SP 80 A
- 3 Freno vapore Sarnafil 1000 E
- 4 Isolazione Isover
Spessore 100 mm
Densità apparente 125 kg/m³
BKZ 6q.3

- 1 SWISS PANEL® SP 80 A
- 2 Acoustic strip for SP 80 A
- 3 Vapour barrier Sarnafil 1000 E
- 4 Insulation Isover
Thickness 100 mm
Density 125 kg/m³
BKZ 6q.3

Freq. [Hz]	T1	T2	Alpha α	
			Terz	Oktav
100	20.98	5.80	0.36	
125	18.06	4.44	0.49	0.49
160	15.55	3.75	0.58	
200	12.87	2.94	0.76	
250	11.53	2.81	0.77	0.76
315	10.08	2.75	0.76	
400	8.07	2.49	0.80	
500	8.70	2.51	0.82	0.82
630	8.05	2.41	0.84	
800	7.94	2.41	0.83	
1000	7.17	2.40	0.80	0.78
1250	6.17	2.44	0.71	
1600	5.56	2.53	0.62	
2000	4.89	2.64	0.50	0.53
2500	4.36	2.59	0.45	
3150	3.73	2.42	0.42	
4000	3.05	2.20	0.36	0.38
5000	2.41	1.86	0.35	



MITTELWERTE DER SCHALLABSORPTION

Tiefenbereich	0.62
Mittelnbereich	0.80
Hochbereich	0.45

VALEURS MOYENNES DE L'ABSORPTION PHONIQUE

Zone de basses fréquences	0.62
Zone de moyennes fréquences	0.80
Zone de hautes fréquences	0.45

VALORE MEDIO D'ASSORBIMENTO ACUSTICO

Basse frequenza	0.62
Medie frequenza	0.80
Alte frequenza	0.45

AVERAGE VALUE OF ACOUSTICAL ABSORPTION

Low frequency range	0.62
Medium frequency range	0.80
High frequency range	0.45

SWISS PANEL SP 105 A

STEGLOCHUNG

Ø 5 mm / Tg 8 | Lochanteil 16.8% / m²

PERFORATION DANS L'ÂME

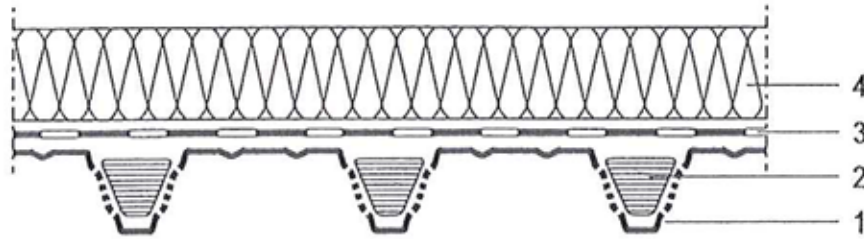
Ø 5 mm / Tg 8 | Perforation 16.8% / m²

PERFORAZIONE NELLE COSTOLATURE

Ø 5 mm / Tg 8 | Parte perforata 16.8% / m²

PERFORATION ON THE WEB

Ø 5 mm / Tg 8 | Open Area 16.8% / m²



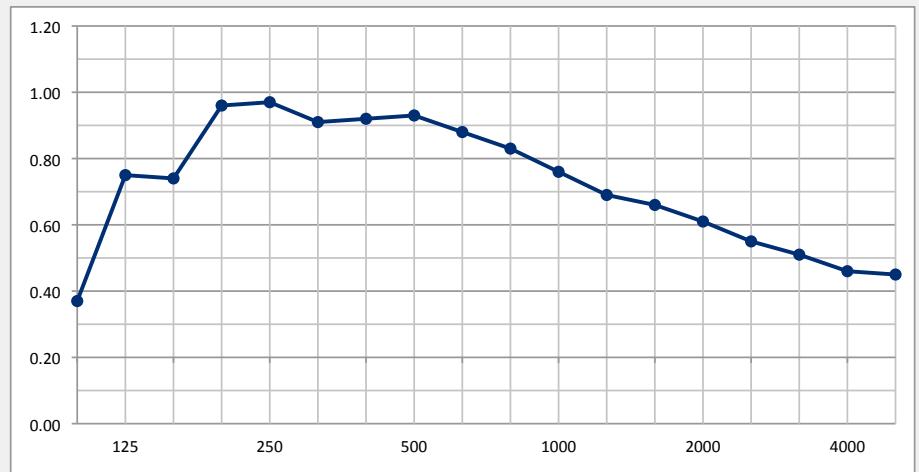
- 1 SWISS PANEL® SP 105 A
- 2 Akustikstreifen zum SP 105 A
- 3 Dampfsperre Sarnafil 1000 E
- 4 Dämmung Isover
Stärke 100 mm
Rohdichte 125 kg/m³
BKZ 6q.3

- 1 SWISS PANEL® SP 105 A
- 2 Isolation acoustique pour SP 105 A
- 3 Pare-vapeur Sarnafil 1000 E
- 4 Isolation Isover
Épaisseur 100 mm
Masse volumique 125 kg/m³
BKZ 6q.3

- 1 SWISS PANEL® SP 105 A
- 2 Riempimento acustico per SP 105 A
- 3 Freno vapore Sarnafil 1000 E
- 4 Isolazione Isover
Spessore 100 mm
Densità apparente 125 kg/m³
BKZ 6q.3

- 1 SWISS PANEL® SP 105 A
- 2 Acoustic strip for SP 105 A
- 3 Vapour barrier Sarnafil 1000 E
- 4 Insulation Isover
Thickness 100 mm
Density 125 kg/m³
BKZ 6q.3

Freq. [Hz]	T1	T2	Alpha α	
			Terz	Oktav
100	20.98	5.70	0.37	
125	18.06	3.18	0.75	0.64
160	15.55	3.12	0.74	
200	12.87	2.44	0.96	
250	11.53	2.36	0.97	0.95
315	10.08	2.41	0.91	
400	8.07	2.26	0.92	
500	8.70	2.28	0.93	0.91
630	8.05	2.33	0.88	
800	7.94	2.41	0.83	
1000	7.17	2.47	0.76	0.76
1250	6.17	2.48	0.69	
1600	5.56	2.45	0.66	
2000	4.89	2.40	0.61	0.61
2500	4.36	2.37	0.55	
3150	3.73	2.25	0.51	
4000	3.05	2.05	0.46	0.47
5000	2.41	1.75	0.45	



MITTELWERTE DER SCHALLABSORPTION

Tieftonbereich	0.78
Mitteltonbereich	0.84
Hochtonbereich	0.54

VALEURS MOYENNES DE L'ABSORPTION PHONIQUE

Zone de basses fréquences	0.78
Zone de moyennes fréquences	0.84
Zone de hautes fréquences	0.54

VALORE MEDIO D'ASSORBIMENTO ACUSTICO

Basse frequenza	0.78
Medie frequenza	0.84
Alte frequenza	0.54

AVERAGE VALUE OF ACOUSTICAL ABSORPTION

Low frequency range	0.78
Medium frequency range	0.84
High frequency range	0.54

SWISS PANEL SP 111 A

STEGLOCHUNG

Ø 5 mm / Tg 8 | Lochanteil 18.7% / m²

PERFORATION DANS L'ÂME

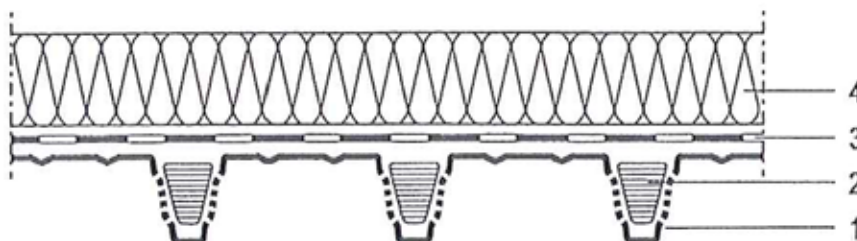
Ø 5 mm / Tg 8 | Perforation 18.7% / m²

PERFORAZIONE NELLE COSTOLATURE

Ø 5 mm / Tg 8 | Parte perforata 18.7% / m²

PERFORATION ON THE WEB

Ø 5 mm / Tg 8 | Open Area 18.7% / m²



1 SWISS PANEL® SP 111 A

2 Akustikstreifen zum SP 111 A

3 Dampfsperre Sarnafil 1000 E

4 Dämmung Isover

Stärke 100 mm

Rohdichte 125 kg/m³

BKZ 6q.3

1 SWISS PANEL® SP 111 A

2 Isolation acoustique pour SP 111 A

3 Pare-vapeur Sarnafil 1000 E

4 Isolation Isover

Épaisseur 100 mm

Masse volumique 125 kg/m³

BKZ 6q.3

1 SWISS PANEL® SP 111 A

2 Riempimento acustico per SP 111 A

3 Freno vapore Sarnafil 1000 E

4 Isolazione Isover

Spessore 100 mm

Densità apparente 125 kg/m³

BKZ 6q.3

1 SWISS PANEL® SP 111 A

2 Acoustic strip for SP 111 A

3 Vapour barrier Sarnafil 1000 E

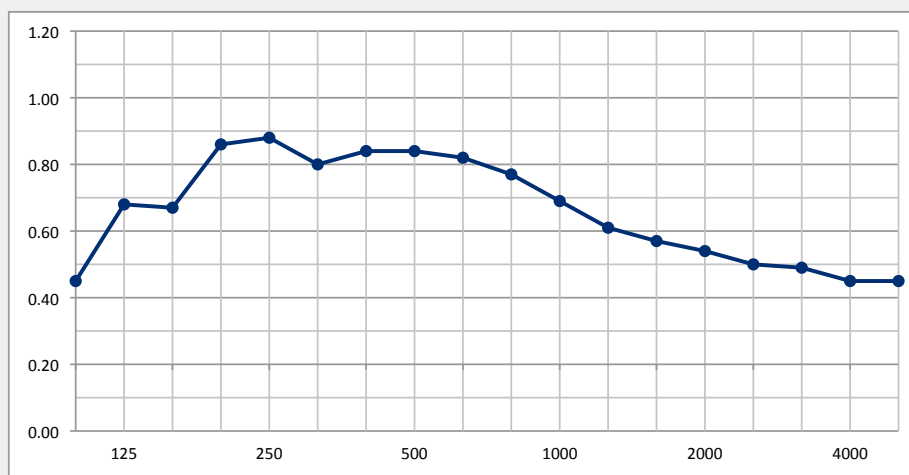
4 Insulation Isover

Thickness 100 mm

Density 125 kg/m³

BKZ 6q.3

Freq. [Hz]	T1	T2	Alpha α	
			Terz	Oktav
100	20.98	4.93	0.45	
125	18.06	3.44	0.68	0.61
160	15.55	3.35	0.67	
200	12.87	2.66	0.86	
250	11.53	2.55	0.88	0.85
315	10.08	2.66	0.80	
400	8.07	2.40	0.84	
500	8.70	2.45	0.84	0.83
630	8.05	2.45	0.82	
800	7.94	2.54	0.77	
1000	7.17	2.63	0.69	0.69
1250	6.17	2.68	0.61	
1600	5.56	2.64	0.57	
2000	4.89	2.55	0.54	0.54
2500	4.36	2.48	0.50	
3150	3.73	2.29	0.49	
4000	3.05	2.06	0.45	0.46
5000	2.41	1.75	0.45	



MITTELWERTE DER SCHALLABSORPTION

Tiefenbereich	0.72
Mittelnbereich	0.76
Hochbereich	0.50

VALEURS MOYENNES DE L'ABSORPTION PHONIQUE

Zone de basses fréquences	0.72
Zone de moyennes fréquences	0.76
Zone de hautes fréquences	0.50

VALORE MEDIO D'ASSORBIMENTO ACUSTICO

Basse frequenza	0.72
Medie frequenza	0.76
Alte frequenza	0.50

AVERAGE VALUE OF ACOUSTICAL ABSORPTION

Low frequency range	0.72
Medium frequency range	0.76
High frequency range	0.50

SWISS PANEL SP 153 A

STEGLOCHUNG

Ø 5 mm / Tg 8 | Lochanteil 15.4% / m²

PERFORATION DANS L'ÂME

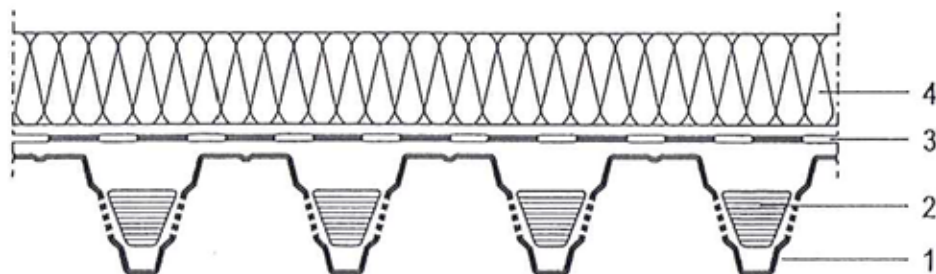
Ø 5 mm / Tg 8 | Perforation 15.4% / m²

PERFORAZIONE NELLE COSTOLATURE

Ø 5 mm / Tg 8 | Parte perforata 15.4% / m²

PERFORATION ON THE WEB

Ø 5 mm / Tg 8 | Open Area 15.4% / m²



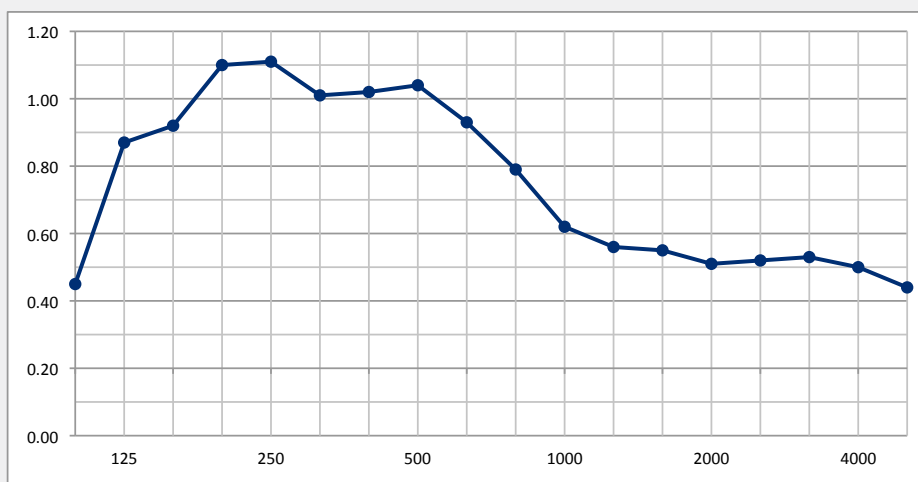
- 1 SWISS PANEL® SP 153 A
- 2 Akustikstreifen zum SP 153 A
- 3 Dampfsperre Sarnafil 1000 E
- 4 Dämmung Isover
Stärke 100 mm
Rohdichte 125 kg/m³
BKZ 6q.3

- 1 SWISS PANEL® SP 153 A
- 2 Isolation acoustique pour SP 153 A
- 3 Pare-vapeur Sarnafil 1000 E
- 4 Isolation Isover
Épaisseur 100 mm
Masse volumique 125 kg/m³
BKZ 6q.3

- 1 SWISS PANEL® SP 153 A
- 2 Riempimento acustico per SP 153 A
- 3 Freno vapore Sarnafil 1000 E
- 4 Isolazione Isover
Spessore 100 mm
Densità apparente 125 kg/m³
BKZ 6q.3

- 1 SWISS PANEL® SP 153 A
- 2 Acoustic strip for SP 153 A
- 3 Vapour barrier Sarnafil 1000 E
- 4 Insulation Isover
Thickness 100 mm
Density 125 kg/m³
BKZ 6q.3

Freq. [Hz]	T1	T2	Alpha α	
			Terz	Oktav
100	20.98	4.88	0.45	
125	18.06	2.80	0.87	0.78
160	15.55	2.61	0.92	
200	12.87	2.17	1.10	
250	11.53	2.12	1.11	1.07
315	10.08	2.22	1.01	
400	8.07	2.09	1.02	
500	8.70	2.10	1.04	1.00
630	8.05	2.23	0.93	
800	7.94	2.50	0.79	
1000	7.17	2.83	0.62	0.66
1250	6.17	2.80	0.56	
1600	5.56	2.69	0.55	
2000	4.89	2.61	0.51	0.53
2500	4.36	2.43	0.52	
3150	3.73	2.22	0.53	
4000	3.05	1.99	0.50	0.49
5000	2.41	1.76	0.44	



MITTELWERTE DER SCHALLABSORPTION

Tieftonbereich	0.91
Mitteltonbereich	0.83
Hochtonbereich	0.51

VALEURS MOYENNES DE L'ABSORPTION PHONIQUE

Zone de basses fréquences	0.91
Zone de moyennes fréquences	0.83
Zone de hautes fréquences	0.51

VALORE MEDIO D'ASSORBIMENTO ACUSTICO

Basse frequenza	0.91
Medie frequenza	0.83
Alte frequenza	0.51

AVERAGE VALUE OF ACOUSTICAL ABSORPTION

Low frequency range	0.91
Medium frequency range	0.83
High frequency range	0.51

SWISS PANEL SP 160 A

STEGLOCHUNG

Ø 5 mm / Tg 8 | Lochanteil 17.3% / m²

PERFORATION DANS L'ÂME

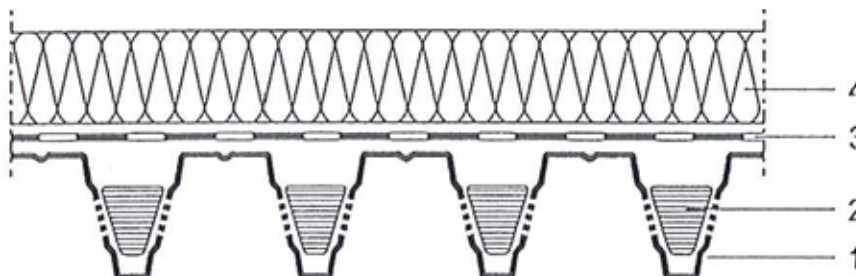
Ø 5 mm / Tg 8 | Perforation 17.3% / m²

PERFORAZIONE NELLE COSTOLATURE

Ø 5 mm / Tg 8 | Parte perforata 17.3% / m²

PERFORATION ON THE WEB

Ø 5 mm / Tg 8 | Open Area 17.3% / m²



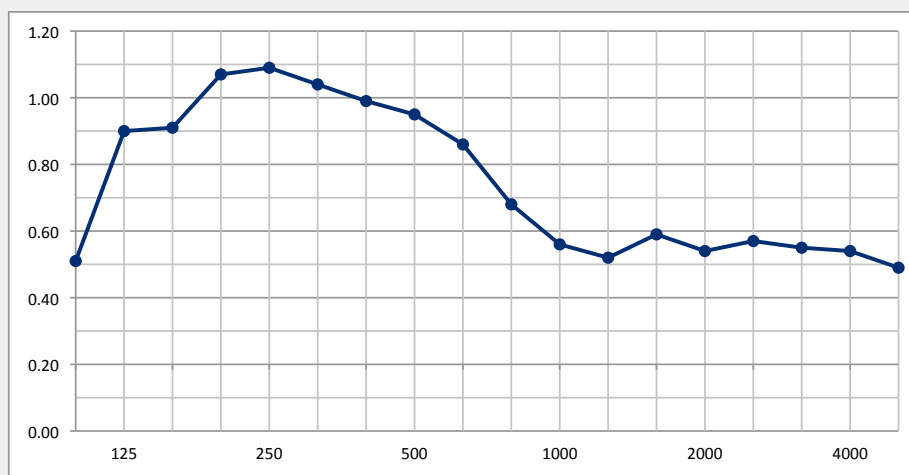
- 1 SWISS PANEL® SP 160 A
- 2 Akustikstreifen zum SP 160 A
- 3 Dampfsperre Sarnafil 1000 E
- 4 Dämmung Isover
Stärke 100 mm
Rohdichte 125 kg/m³
BKZ 6q.3

- 1 SWISS PANEL® SP 160 A
- 2 Isolation acoustique pour SP 160 A
- 3 Pare-vapeur Sarnafil 1000 E
- 4 Isolation Isover
Épaisseur 100 mm
Masse volumique 125 kg/m³
BKZ 6q.3

- 1 SWISS PANEL® SP 160 A
- 2 Riempimento acustico per SP 160 A
- 3 Freno vapore Sarnafil 1000 E
- 4 Isolazione Isover
Spessore 100 mm
Densità apparente 125 kg/m³
BKZ 6q.3

- 1 SWISS PANEL® SP 160 A
- 2 Acoustic strip for SP 160 A
- 3 Vapour barrier Sarnafil 1000 E
- 4 Insulation Isover
Thickness 100 mm
Density 125 kg/m³
BKZ 6q.3

Freq. [Hz]	T1	T2	Alpha α	
			Terz	Oktav
100	20.98	4.48	0.51	
125	18.06	2.71	0.90	0.80
160	15.55	2.63	0.91	
200	12.87	2.23	1.07	
250	11.53	2.15	1.09	1.07
315	10.08	2.17	1.04	
400	8.07	2.13	0.99	
500	8.70	2.24	0.95	0.93
630	8.05	2.37	0.86	
800	7.94	2.75	0.68	
1000	7.17	2.99	0.56	0.59
1250	6.17	2.92	0.52	
1600	5.56	2.59	0.59	
2000	4.89	2.55	0.54	0.57
2500	4.36	2.34	0.57	
3150	3.73	2.17	0.55	
4000	3.05	1.94	0.54	0.53
5000	2.41	1.71	0.49	



MITTELWERTE DER SCHALLABSORPTION

Tiefenbereich	0.92
Mittelnbereich	0.76
Hochbereich	0.55

VALEURS MOYENNES DE L'ABSORPTION PHONIQUE

Zone de basses fréquences	0.92
Zone de moyennes fréquences	0.76
Zone de hautes fréquences	0.55

VALORE MEDIO D'ASSORBIMENTO ACUSTICO

Basse frequenza	0.92
Medie frequenza	0.76
Alte frequenza	0.55

AVERAGE VALUE OF ACOUSTICAL ABSORPTION

Low frequency range	0.92
Medium frequency range	0.76
High frequency range	0.55

FASSADE
FACCIATA

FAÇADE
FACADE

GURTLOCHUNG

Ø 4 mm / Tg 7 | Lochanteil 25.2% / m²

PERFORATION DANS L'AILE

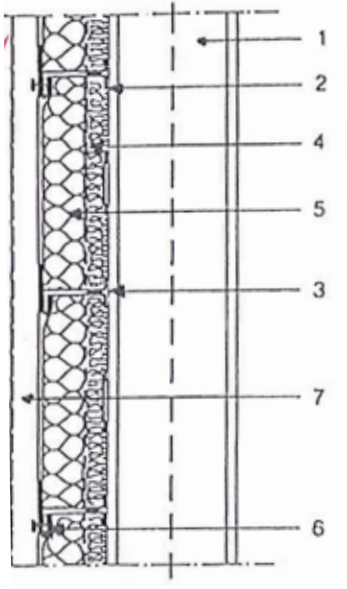
Ø 4 mm / Tg 7 | Perforation 25.2% / m²

PERFORAZIONE NELLE FLANGIE

Ø 4 mm / Tg 7 | Parte perforata 25.2% / m²

PERFORATION ON FLANGES

Ø 4 mm / Tg 7 | Open Area 25.2% / m²



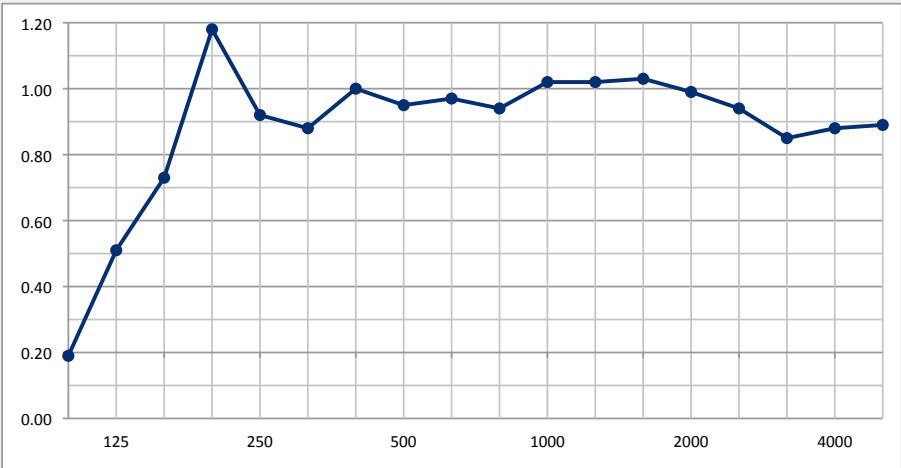
- 1 Stahlstütze
- 2 MONTAWALL® MK 100/333 A, 1.00 mm
- 3 Dichtband G410
- 4 Mineralfaserplatte Isover 25/23 mm
Typ PS 81
mit Aludampfsperre 0.05 mm
- 5 Wärmedämmplatte Flumroc
Typ 1 / 80 mm
- 6 PVC Aufsteckprofil
- 7 SWISS PANEL® SP 41, 0.70 mm

- 1 Pilier métallique
- 2 MONTAWALL® MK 100/333 A, 1.00 mm
- 3 Bande d'étanchéité G410
- 4 Laine minérale Isover 25/23 mm
Type PS 81
avec pare-vapeur aluminium 0.05 mm
- 5 Isolation thermique Flumroc
Type 1 / 80 mm
- 6 Profil coupe-froid
- 7 SWISS PANEL® SP 41, 0.70 mm

- 1 Pilastro in acciaio
- 2 MONTAWALL® MK 100/333 A, 1.00 mm
- 3 Nastro isolante G410
- 4 Pannelli rigidi Isover 25/23 mm
Tipo PS 81
con freno vapore in alluminio 0.05 mm
- 5 Isolante termico Flumroc
Tipo 1 / 80 mm
- 6 Profilo ad innesto
- 7 SWISS PANEL® SP 41, 0.70 mm

- 1 Steel support
- 2 MONTAWALL® MK 100/333 A, 1.00 mm
- 3 Sealing tape G410
- 4 Mineral fiber Isover 25/23 mm
Type PS 81
with vapour barrier in aluminium 0.05 mm
- 5 Heat insulation Flumroc
Type 1 / 80 mm
- 6 Push-on profile
- 7 SWISS PANEL® SP 41, 0.70 mm

Freq.	Alpha
[Hz]	α
100	0.19
125	0.51
160	0.73
200	1.18
250	0.92
315	0.88
400	1.00
500	0.95
630	0.97
800	0.94
1000	1.02
1250	1.02
1600	1.03
2000	0.99
2500	0.94
3150	0.85
4000	0.88
5000	0.89



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