

Airflow resistance in the sense* of EN 29053 (ISO 9053)

Measurement of airflow resistivity

A 01-Avg E

Test subject:

Name: TEMPELAN
 Description: insulating material - floccs of regenerated cellulose
 Manufacturer: - - -
 Client of measurement: TZUS - Technical and Test Institute for
 Construction Prague, CZ - 415 03 Teplice 3



Measurement conditions:

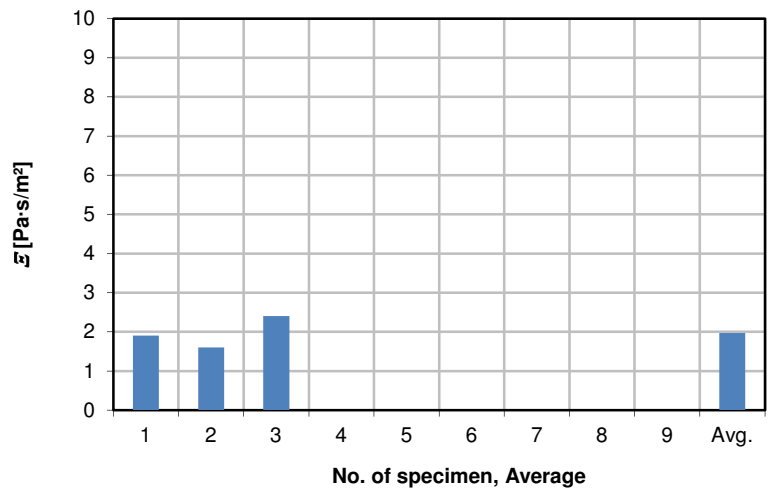
Standard: EN 29053: Materials for acoustical applications; Determination of airflow resistance (ISO 9053)
 Method: direct-airflow method, measurement at 10 different airflow velocities and extrapolation to an airflow velocity of 0,5 mm/s
 Specimen holder: round, diameter 100,0 mm
 Temperature: 18 °C
 Relative humidity: 64 %
 Date of measurement: 2012-11-08

Specimen:

Number of specimens: 3*
 Diameter of specimens: 100,0 mm
 Effective cross section: 78,54 cm²
 Thickness of specimens: 60 mm
 Measurement setup: fill of about 18,9 g floccs lightly compressed to a thickness of 60 mm (corresponds to density of 40 kg/m³)
 * required number of specimens according to EN 29053: 3 x 3 = 9

Measurement result:

	No.	Weighting	ε
Measurement values	1	1	1,9
	2	1	1,6
	3	1	2,4
	4	-	-
	5	-	-
	6	-	-
	7	-	-
	8	-	-
	9	-	-
Avg. ε_m (weighted)			2,0
$ \varepsilon - \varepsilon_m _{\max} / \varepsilon_m$ in %			22,0



Airflow resistivity ε in Pa·s/m²

Single value: **Airflow resistivity $\varepsilon_m = 2,0$ kPa·s/m²**

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Airflow resistance in the sense* of EN 29053 (ISO 9053)

Measurement of Airflow Resistivity

A 01-1 E

Test subject:

Name: TEMPELAN
 Description: insulating material - floccs of regenerated cellulose
 Manufacturer: - - -
 Client of measurement: TZUS - Technical and Test Institute for
 Construction Prague, CZ - 415 03 Teplice 3



Measurement conditions:

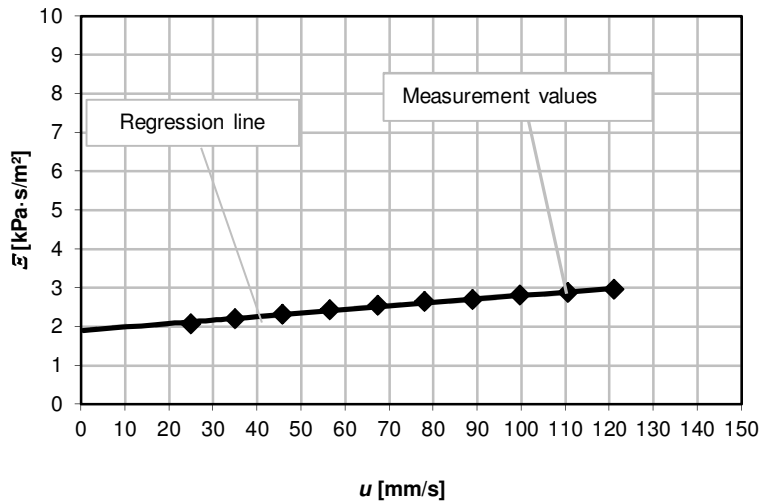
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 Method: direct-airflow method, measurement at 10 different airflow velocities and extrapolation to an airflow velocity of 0,5 mm/s
 Specimen holder: round, diameter 100,0 mm
 Temperature: 18 °C
 Relative humidity: 64 %
 Date of measurement: 2012-11-08

Specimen:

Number of specimen: 1 of 3
 Diameter of specimen: 100,0 mm
 Effective cross section: 78,54 cm²
 Thickness of specimen: 60 mm
 Measurement setup: fill of about 18,9 g floccs lightly compressed to a thickness of 60 mm (corresponds to density of 40 kg/m³)
 * required number of specimens according to EN 29053: 3 x 3 = 9

Measurement result:

	u	Δp	ε
Measurement values	121,1	21,5	3,0
	110,5	19,0	2,9
	99,7	16,8	2,8
	88,9	14,4	2,7
	78,0	12,4	2,6
	67,4	10,3	2,5
	56,5	8,3	2,4
	45,7	6,3	2,3
	35,0	4,6	2,2
	25,0	3,1	2,1
Extrapolation	0,5		1,9



Airflow velocity u in mm/s
 Pressure drop across the specimen Δp in Pa
 Airflow resistivity ε in kPa·s/m²

Single value: Airflow resistivity $\varepsilon = 1,9 \text{ kPa}\cdot\text{s}/\text{m}^2$

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Airflow resistance in the sense* of EN 29053 (ISO 9053)

Measurement of Airflow Resistivity

A 01-2 E

Test subject:

Name: TEMPELAN
 Description: insulating material - flocs of regenerated cellulose
 Manufacturer: - - -
 Client of measurement: TZUS - Technical and Test Institute for
 Construction Prague, CZ - 415 03 Teplice 3



Measurement conditions:

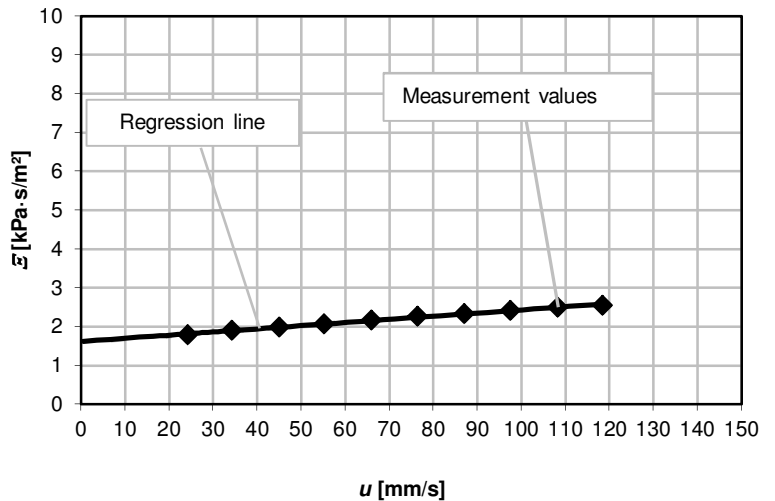
Standard: EN 29053: Materials for acoustical applications; Determination of airflow resistance (ISO 9053)
 Method: direct-airflow method, measurement at 10 different airflow velocities and extrapolation to an airflow velocity of 0,5 mm/s
 Specimen holder: round, diameter 100,0 mm
 Temperature: 18 °C
 Relative humidity: 64 %
 Date of measurement: 2012-11-08

Specimen:

Number of specimen: 2 of 3
 Diameter of specimen: 100,0 mm
 Effective cross section: 78,54 cm²
 Thickness of specimen: 60 mm
 Measurement setup: fill of about 18,9 g flocs lightly compressed to a thickness of 60 mm (corresponds to density of 40 kg / m³)
 * required number of specimens according to EN 29053: 3 x 3 = 9

Measurement result:

	u	Δp	ε
Measurement values	118,4	18,1	2,5
	108,2	16,2	2,5
	97,5	14,1	2,4
	87,0	12,2	2,3
	76,4	10,4	2,3
	65,9	8,6	2,2
	55,1	6,8	2,1
	44,9	5,3	2,0
	34,2	3,9	1,9
	24,2	2,6	1,8
Extrapolation	0,5		1,6



Airflow velocity u in mm/s
 Pressure drop across the specimen Δp in Pa
 Airflow resistivity ε in kPa·s/m²

Single value: Airflow resistivity ε = 1,6 kPa·s/m²

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Airflow resistance in the sense* of EN 29053 (ISO 9053)

Measurement of Airflow Resistivity

A 01-3 E

Test subject:

Name: TEMPELAN
 Description: insulating material - flocs of regenerated cellulose
 Manufacturer: - - -
 Client of measurement: TZUS - Technical and Test Institute for
 Construction Prague, CZ - 415 03 Teplice 3



Measurement conditions:

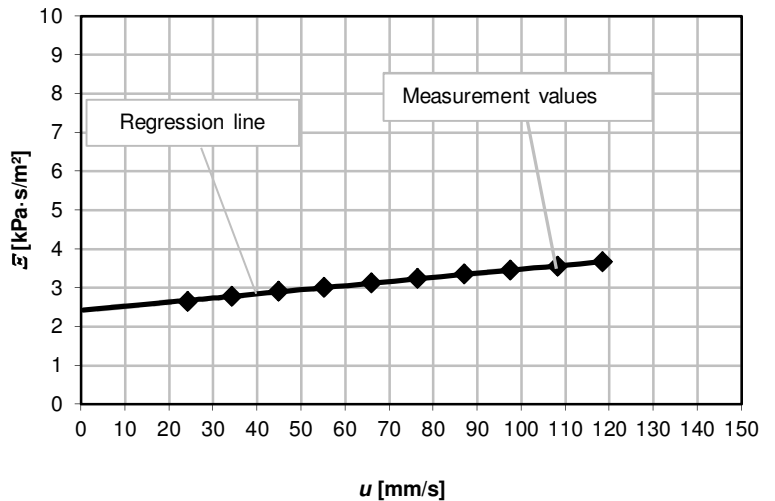
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 Method: direct-airflow method, measurement at 10 different airflow velocities and extrapolation to an airflow velocity of 0,5 mm/s
 Specimen holder: round, diameter 100,0 mm
 Temperature: 18 °C
 Relative humidity: 64 %
 Date of measurement: 2012-11-08

Specimen:

Number of specimen: 3 of 3
 Diameter of specimen: 100,0 mm
 Effective cross section: 78,54 cm²
 Thickness of specimen: 60 mm
 Measurement setup: fill of about 18,9 g flocs lightly compressed to a thickness of 60 mm (corresponds to density of 40 kg / m³)
 * required number of specimens according to EN 29053: 3 x 3 = 9

Measurement result:

	u	Δp	ε
Measurement values	118,5	26,1	3,7
	108,2	23,0	3,5
	97,5	20,2	3,5
	87,0	17,5	3,4
	76,4	14,9	3,2
	65,9	12,4	3,1
	55,2	10,0	3,0
	44,9	7,8	2,9
	34,2	5,7	2,8
	24,2	3,9	2,6
Extrapolation	0,5		2,4



Airflow velocity u in mm/s
 Pressure drop across the specimen Δp in Pa
 Airflow resistivity ε in kPa·s/m²

Single value: Airflow resistivity ε = 2,4 kPa·s/m²

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