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Our re: 1124-3
Date: November 1, 2010

Acoustic insulation TECSOUND FT 55PP

Acoustic insulation for Pipes Valves and Flanges
Standard: ISO 15665

Test report : 1124-3E

Client	Devtec Technological Adhesives Ltd.
Address	19 Alexander Yanai St., Petach Tikva, Israel
Laboratory engineer	Eng. David Frid
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2 pages	Annex A
2 pages	Annex B
2 pages	Annex C





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1. Task

- 1.1 On behalf of the company Devtec Technological Adhesives Ltd., the level of acoustic sound insulation of the material type **TECSOUND FT 55PP**, product of **TEXSA** co.(SPAIN) is to be determined according to **ISO 15665** in the reverberation room.

2. Test equipment.

A list of the equipment used for the measurements is detailed in Appendix C, page1.

Equipment calibration is done according to the equipment manufacturer recommendations and ISO/IEC 17025 procedures.

3. Test object and conditions of measurements

3.1 Date and place of measurements.

The measurements took place at in the Izosound Laboratories facility, located at Or Yehuda on 01 November 2010.

3.2 Description of the measurements conditions

The measurements took place in the Reverberation Room, according to ISO 3741 standard as requested in ISO 15665 standard, for the insulation material type **TECSOUND FT 55PP**, which has been installed in the testing stand of the Laboratory facility, in accordance to the manufacturers directions.

3.3 Ambient conditions of measurements.

Temperature: 24.7C;
Relative Humidity: 50%;
Barometric Pressure: 1015 hPa.

3.4 Description of the test system

- 3.4.1 The tested insulation material has been installed on a steel pipe connected to an isolated noise source, located outside the reverberation room.

- 3.4.2 The test pipe penetrates to the reverberation room walls without any rigid connections. The penetrations were sealed adequately.





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- 3.4.3 The test pipe has been resiliently mounted at its connection to the noise source and in both mounting points on the room floor.
- 3.4.4 The signal used for the measurements, was “White Noise” generated by a Pulse system through a loudspeaker located inside a totally isolated metal box.
- 3.4.5 The test pipe and the loudspeakers box were installed in such a way that sound contribution due to the other sound transmission paths (flanking sound transmission), can be neglected in comparison with the sound transmission measured through the test specimen.
- 3.4.6 The pipe dimensions used in the test system were according to ISO 15665 standard as follows:

Pipe diameter: 100 mm; Pipe Length: 4.32m; Pipe wall thickness: 4.2mm.

3.5 Description of the Test Specimen

3.5.1 Type: Soundproofing complex **TECSOUND FT 55PP** which includes:

- Tecsound layer , thickness 3.5 mm; weight 5.0 Kg/m² ;
- Tecsound porous felt layer, thickness 10.0 mm;
- Upper coating – cloth;
- Manufacturer: TEXSA Co.
- Supplied by: Devtec Technological Adhesives Ltd. Co.
- Total weight 5.5 Kg/m² ;
- The total thickness of the tested specimen was: 12.6 mm.

4. Description of the Installation.

- 4.1 On October 31, 2010, the test specimen has been installed in the reverberation room of “IZOSOUND” Laboratories Ltd. by the personal of the Devtec Technological Adhesives Ltd. Co.
- 4.2 The test specimen has been installed according to the technical Instructions and standards of Devtec Technological Adhesives Ltd. company.
- 4.3 The installation included a 7cm overlap of the tested specimen and gluing the specimens joints by using sticky strips.
The specimen has been tightened to the metal pipe by using Nylon restraints.





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4.4 The materials used for installation were without any defects or damages.

4.5 Drawings and photographs re detailed in Appendix B, Pages 1-2.

5. Standards Compatibility

5.1 The Reverberation Room corresponds to the requirements listed in ISO 15665 and ISO 3741 standards.

5.2 The measurements were effected and evaluated according to the Norms and Standards indicated in appendix C, page 2.

6. Test Results

6.1 Evaluation has been done according to ISO 15665 Standard.

Measurements, results of the sound insulation of the tested Sample, D_w -insertion loss are indicated in graphical and tabulated forms as detailed in appendix A pages 1,2.

6.2 Following are the Test results obtained in octave band:

Hz	125	250	500	1000	2000	4000	8000
D_w Insertion loss	- 0.6	- 1.2	2.6	12.4	18.2	27.5	34.6





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7. Remarks

This test report may only be published and copied as a whole including all of its appendixes. The publishing of extracts requires the prior written consent of Izosound Laboratories Ltd.

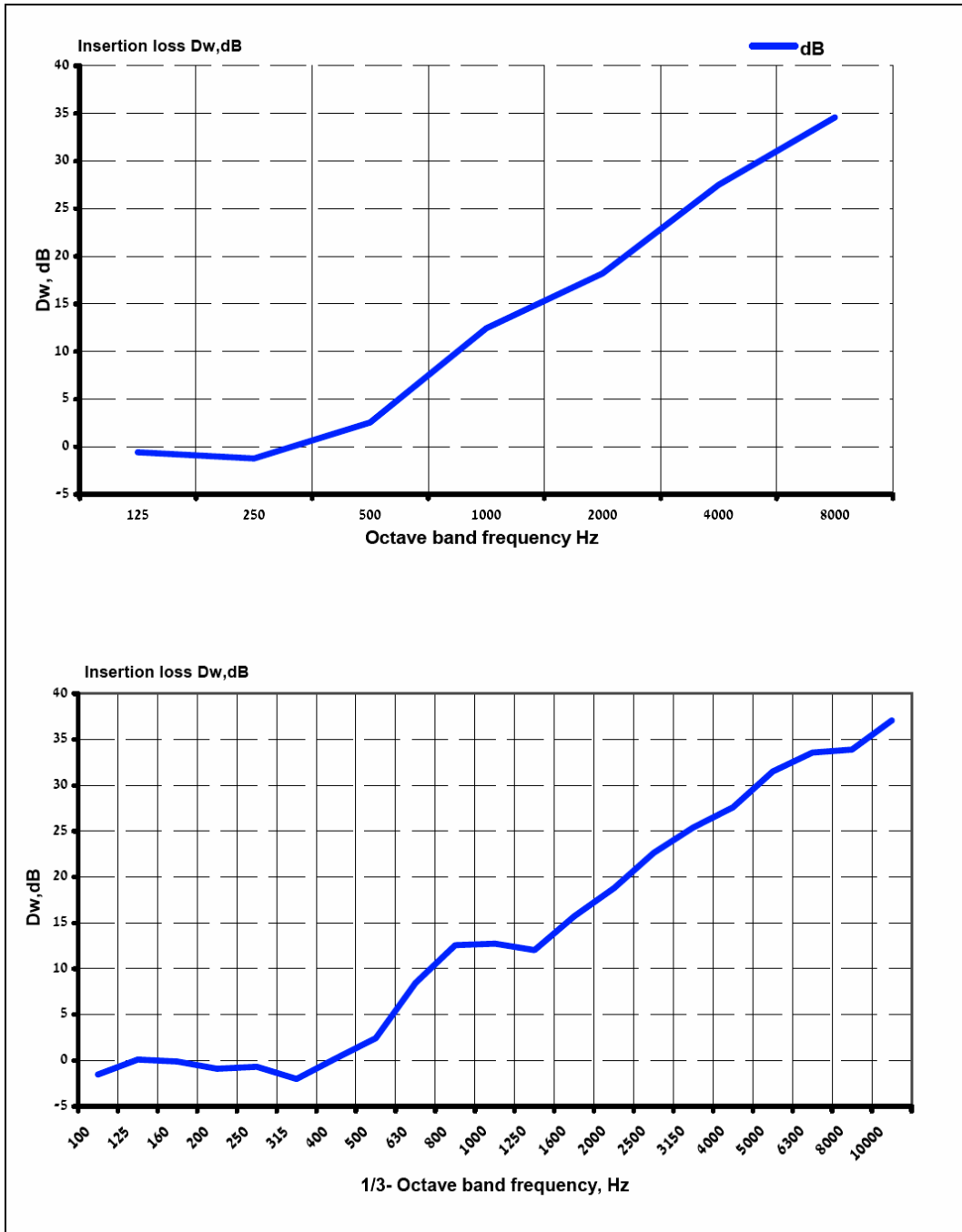
Eng. David Frid
IZOSOUND laboratories Ltd.





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Appendix A, page1





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Appendix A, page 2

Test Results accordance to ISO 15665 : Tecsound FT 55PP . Devtec Technological Adhesives Ltd

N%	Freq. Hz	Background Noise		Average reverberant sound pressure level: dB						1/3 Octave Band Insertion loss, Dw, dB	Notes, accordance to	Octave Band Insertion loss, Dw, dB
		Level, dB (bare pipe)	Background Noise	Lb, (bare pipe)	Lb, (bare pipe), correct. value	Lc, (insul. pipe)	Lc, (insul. pipe), correct. value	Lbr (reference sound source bare pipe)	Lcr (reference sound source insulat. pipe)			
1	100	40.6	40.7	51.2	50.8	52.8	52.5	64.6	64.9	-1.5	Real level	-0.6
2	125	35.5	40.0	47.9	47.7	48.2	47.5	67.2	67.1	0.1	Real level	
3	160	31.9	32.2	45.1	44.9	44.9	44.7	67.0	66.7	-0.1	Real level	
4	200	27.3	25.8	46.8	46.8	47.0	47.0	69.8	69.1	-0.9	Real level	
5	250	27.1	23.4	49.1	49.1	49.9	49.9	69.4	69.5	-0.7	Real level	-1.2
6	315	23.9	21.3	48.5	48.4	50.5	50.5	70.3	70.4	-2.0	Real level	
7	400	18.8	18.6	55.2	55.2	54.8	54.8	70.6	70.5	0.2	Real level	
8	500	16.8	15.7	55.8	55.7	53.3	53.3	71.1	71.0	2.4	Real level	2.6
9	630	13.0	12.8	55.9	55.9	47.5	47.5	71.9	72.0	8.5	Real level	
10	800	10.4	10.3	55.4	55.4	42.9	42.9	73.6	73.6	12.6	Real level	
11	1000	10.5	8.9	60.6	60.6	47.9	47.9	74.5	74.5	12.7	Real level	12.4
12	1250	7.0	6.0	62.0	62.0	49.9	49.9	76.6	76.5	12.0	Real level	
13	1600	5.6	4.7	53.2	53.2	37.5	37.5	77.2	77.2	15.7	Real level	
14	2000	5.7	4.7	54.8	54.8	36.1	36.1	77.3	77.3	18.8	Real level	18.2
15	2500	5.2	4.7	54.2	54.2	31.5	31.5	75.5	75.4	22.6	Real level	
16	3150	5.5	5.4	57.0	57.0	31.6	31.6	74.5	74.5	25.4	Real level	
17	4000	6.2	6.2	57.1	57.1	29.5	29.5	74.2	74.2	27.6	Real level	27.5
18	5000	7.0	7.1	54.5	54.5	23.2	23.1	72.7	72.8	31.5	Real level	
19	6300	8.4	8.2	61.7	61.7	28.2	28.2	71.0	71.1	33.6	Real level	
20	8000	8.6	8.6	52.8	52.8	19.3	18.9	68.2	68.2	33.9	Real level	34.6
21	10000	8.4	8.4	55.6	55.6	19.0	18.6	64.3	64.3	37.1	Real level	





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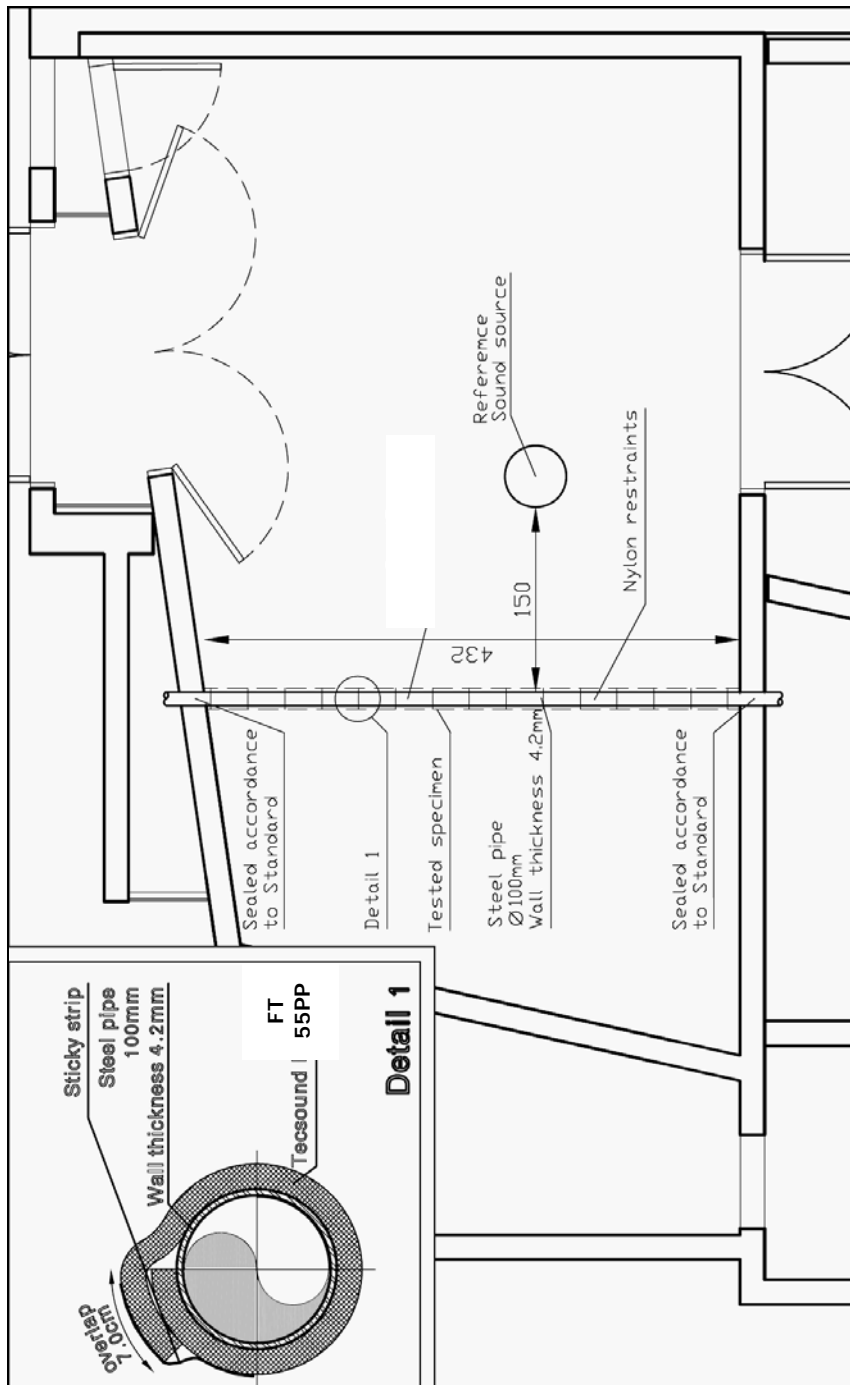


Appendix B, page 1





Appendix B, page 2





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Appendix C, page 1

List of test equipment for the measurements.

Name	Manufacturer	Type	Serial No.
Pulse system	Bruel & Kjaer	3560C E04	02607110
Pulse CPB Analysis software	Bruel & Kjaer	7771	
1/2" Diffuse field microphone Preamplifier 2669L with TEDS (6 in receiving room)	Bruel & Kjaer	4943	2379084 2379088 2379087 2379085 2379083 2379086
Reference sound source	Bruel & Kjaer	4204	02602295
Sound level calibrator	Bruel & Kjaer	4231	2545796
4 Co axial 12" loudspeakers 1 center Tweeter	KILIMTECH		0007
Power Amplifier	Phonic	MAX 2500 Plus	
Composer limiter		MDX2000	
Relative humidity transmitter For reverberation room	ACI	ACI/RH3-D	0002
Thermistor temperature sensor	ACI	ACI/10K- CP-D-8"	0004
Digital Barometer	LUTRON	PHB-318	89983





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Appendix C, page 2

List of Norms

No.	Name	Title	Edition
1	ISO 15665	Acoustics – Acoustic insulation for pipes, valves and flanges.	First edition 2003-08-15
2	ISO 3741	Acoustics – Determination of sound power levels of noise sources using sound pressure – Precision methods for reverberation rooms.	Third edition 1999-08-01

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