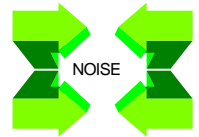


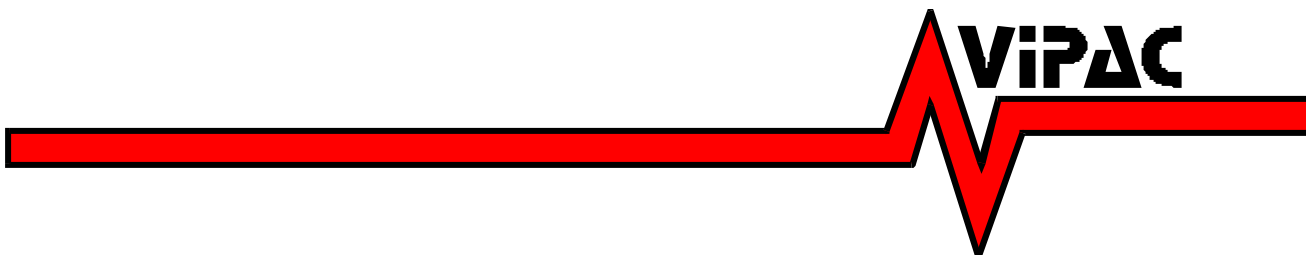
Westaflex Australia Pty. Ltd.

Static Insertion Loss of Flexible Ducting: Estimation of Performance of Non-Tested Sizes by Interpolation



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Prepared by
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DOCUMENT CONTROL FORM

Static Insertion Loss of Flexible Ducting: Estimation of Performance of Non-Tested Sizes by Interpolation	
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TABLE OF CONTENTS

DOCUMENT CONTROL FORM.....	2
1.0 INTRODUCTION.....	4
2.0 DATA INTERPOLATION FOR "UNILOK FR1 R1".....	5
3.0 COMPARISON OF "UNILOK FR1 R1" TEST DATA WITH "UNILOK S R1" TEST DATA.....	6
4.0 DATA INTERPOLATION FOR "UNILOK FR1 R1 AI"	7
5.0 COMPARISON OF "UNILOK FR1 R1 AI" TEST DATA WITH "UNILOK S R1 AI" TEST DATA.....	8
6.0 DISCUSSION AND CONCLUSION	9

1.0 INTRODUCTION

This report presents the static insertion loss performance of various sizes of flexible duct, determined by interpolation based on tested sizes. Refer to Vipac NATA Report No. 302343-1 for test results. The two products for which interpolated data have been determined are detailed in Table 1 below.

Table 1: Flexible Duct Samples for Data Interpolation

Sample	Description	Tested Sizes, Inner Diameter in mm	Sizes Interpolated
UNILOK FR1 R1	Black plastic inner and outer, interlocked spiral duct, R1 insulation	150, 300, 400	200, 250 350
UNILOK FR1 R1 AI	Black plastic <u>perforated</u> inner, black plastic outer, interlocked spiral duct, R1 insulation	150, 300, 400	200, 250 350

In addition, alternative product has been tested for Westaflex identical to the above samples except the outer sleeve is made of foil instead of black plastic. A comparison is made to determine if the data for the above samples can be generally applied to these alternative products, to enable a reduced testing schedule.

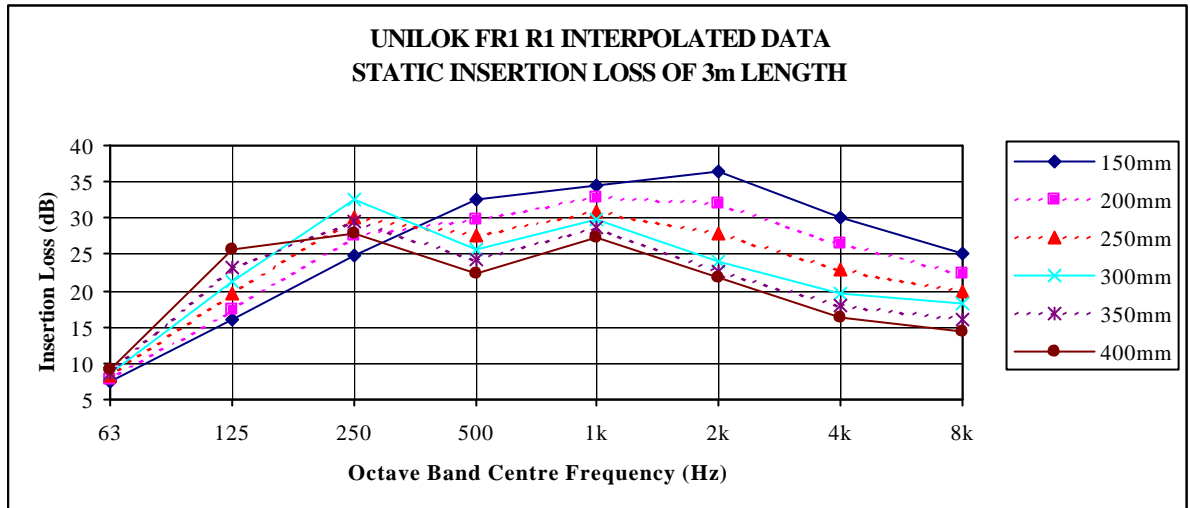
The alternative product and tested sizes are detailed in Table 2 below.

Table 2: Alternative Flexible Duct Samples

Name	Description	Tested Sizes, Inner Diameter in mm
UNILOK S R1	Black plastic inner, foil outer, interlocked spiral duct, R1 insulation	150, 300
UNILOK S R1 AI	Black plastic <u>perforated</u> inner, foil outer, interlocked spiral duct, R1 insulation	150, 300

2.0 DATA INTERPOLATION FOR "UNILOK FR1 R1"

The below graph and table summarise the interpolation results for the UNILOK FR1 R1 product. Note that the test data are shown as solid lines, and the interpolated data are shown as broken lines.

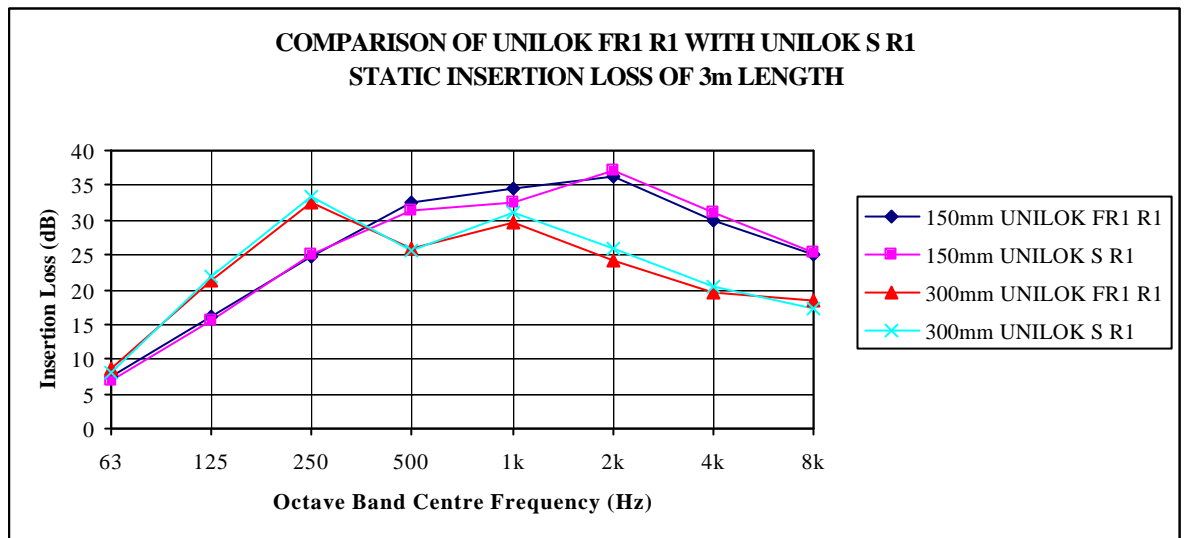


UNILOK FR1 R1 INTERPOLATED INSERTION LOSS DATA (3m LENGTH)

Size / Frequency	63Hz	125	250	500	1k	2k	4k	8k
150mm	7.5	16.0	24.8	32.5	34.6	36.3	30.0	25.0
200mm	7.8	17.5	27.5	29.8	32.9	32.1	26.5	22.5
250mm	8.2	19.5	30.2	27.5	31.0	27.8	23.0	20.0
300mm	8.5	21.3	32.6	25.8	29.7	24.1	19.6	18.3
350mm	8.7	23.3	29.5	24.2	28.6	22.6	18.0	16.0
400mm	9.0	25.8	27.8	22.4	27.3	21.7	16.3	14.4

3.0 COMPARISON OF "UNILOK FR1 R1" TEST DATA WITH "UNILOK S R1" TEST DATA

The below graph and table compare the test data for the UNILOK FR1 R1 product with the test data for the UNILOK S R1 product.

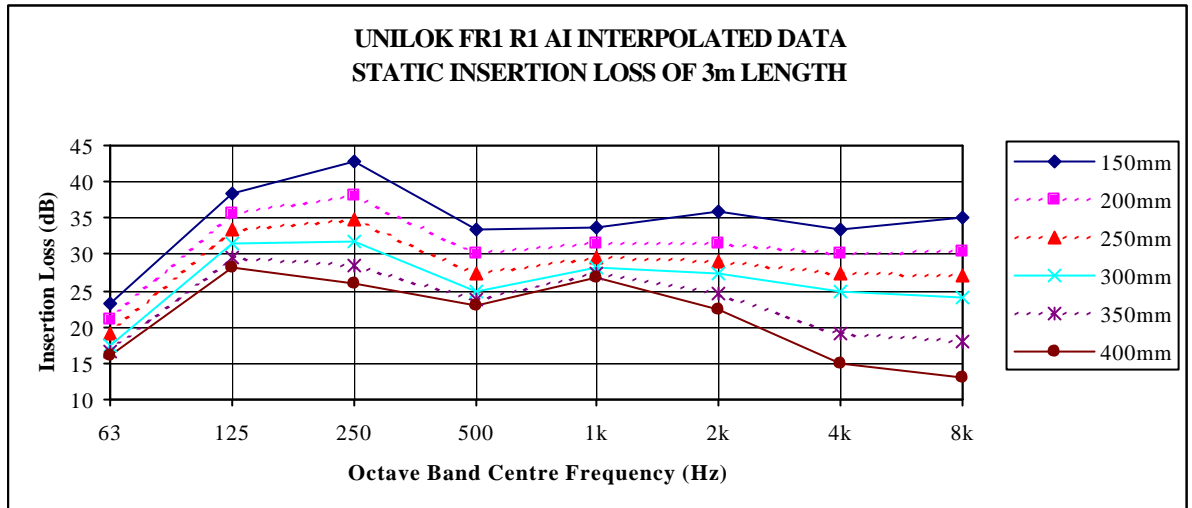


UNILOK FR1 R1 INTERPOLATED INSERTION LOSS DATA (3m LENGTH)

Name	63Hz	125	250	500	1k	2k	4k	8k
150mm UNILOK FR1 R1	7.5	16.0	24.8	32.5	34.6	36.3	30.0	25.0
150mm UNILOK S R1	7	15.5	25.0	31.5	32.4	37.0	31.2	25.2
Difference	0.5	0.5	-0.2	1.0	2.2	-0.7	-1.2	-0.2
300mm UNILOK FR1 R1	8.5	21.3	32.6	25.8	29.7	24.1	19.6	18.3
300mm UNILOK S R1	8.1	22.0	33.5	25.5	31.0	25.9	20.5	17.4
Difference	0.4	-0.7	-0.9	0.3	-1.3	-1.8	-0.9	0.9

4.0 DATA INTERPOLATION FOR "UNILOK FR1 R1 AI"

The below graph and table summarise the interpolation results for the UNILOK FR1 R1 AI product. Note that the test data are shown as solid lines, and the interpolated data are shown as broken lines.

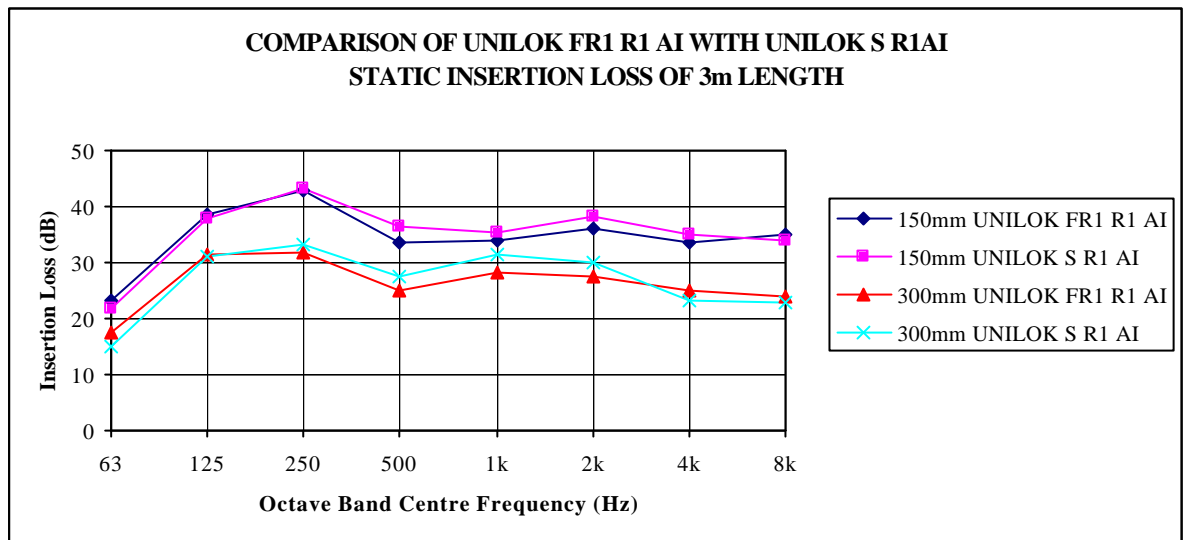


UNILOK FR1 R1 AI INTERPOLATED INSERTION LOSS DATA (3m LENGTH)

Size / Frequency	63Hz	125	250	500	1k	2k	4k	8k
150mm	23.3	38.4	42.8	33.5	33.8	35.9	33.5	35.0
200mm	21.0	35.6	38.0	30.2	31.5	31.5	30.0	30.5
250mm	19.0	33.5	34.8	27.5	29.5	29.0	27.5	27.0
300mm	17.5	31.6	31.8	25.0	28.1	27.5	25.0	24.0
350mm	16.7	29.7	28.4	23.8	27.3	24.6	19.0	18.0
400mm	16.0	28.1	26.1	23.0	26.7	22.5	15.0	13.0

5.0 COMPARISON OF "UNILOK FR1 R1 AI" TEST DATA WITH "UNILOK S R1 AI" TEST DATA

The below graph and table compare the test data for the UNILOK FR1 R1 AI product with the test data for the UNILOK S R1 AI product.



UNILOK FR1 R1 AI INTERPOLATED INSERTION LOSS DATA (3m LENGTH)

Name	63Hz	125	250	500	1k	2k	4k	8k
150mm UNILOK FR1 R1 AI	23.3	38.4	42.8	33.5	33.8	35.9	33.5	35.0
150mm UNILOK S R1 AI	21.8	37.9	43.1	36.5	35.3	38.1	35.0	34.0
Difference	1.5	0.5	-0.3	-3.0	-1.5	-2.2	-1.5	1.0
300mm UNILOK FR1 R1 AI	17.5	31.6	31.8	25.0	28.1	27.5	25.0	24.0
300mm UNILOK S R1 AI	15	30.9	33.1	27.5	31.6	30.0	23.2	23.0
Difference	2.5	0.7	-1.3	-2.5	-3.5	-2.5	1.8	1.0

6.0 DISCUSSION & CONCLUSION

The compared data in Sections 3 and 5 agree within measurement accuracy. Based on these comparisons, the data for the UNILOK FR1 R1 can be applied to the UNILOK S R1 product range, and the data for the UNILOK FR1 R1 AI can be applied to the UNILOK S R1 AI product range.

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