



VIPAC ENGINEERS & SCIENTISTS

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3 June, 1997

ASTECS PAINTS

24 Pinn St. St Marys SA 5042

Attention: Mr Mark Waters

Dear Sir,

RE: Rain Noise Assessment of ASTEC EC-100 Paint

Following acoustic measurements of the test rig with and without the application of ASTEC EC-100 paint on Wednesday the 28th of May 1997, we are pleased to present the following report.

1. INTRODUCTION

On, Wednesday, the 28th of May 1997, Vipac Engineers and Scientist measured the noise produced from 3 different flow rates of water as showered onto the test rig before and after the treatment of the 0.4 mm Corrugated Galv. Roof section surface with ASTEC EC-100 (as shown in Figure 1-1).

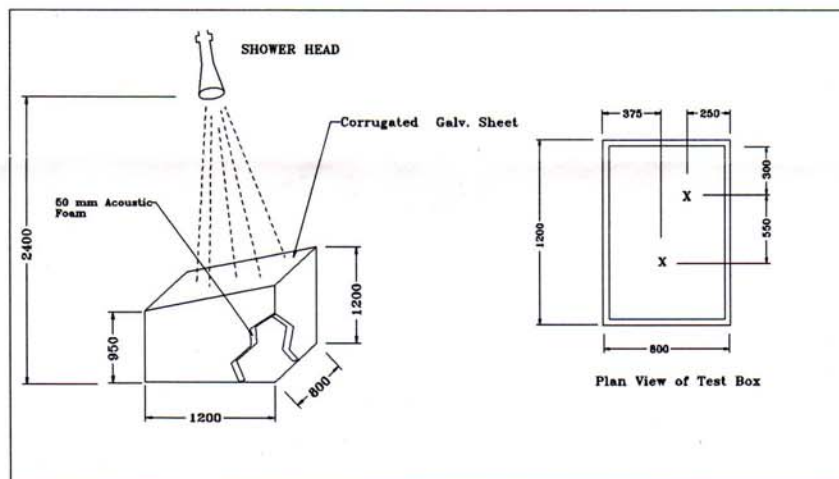


Figure 1-1 : Test Article Layout Showing the Test Box and Microphone Positions Marked X.



2. MEASUREMENT TECHNIQUE

2.1 Instrumentation

The following instrumentation was used to perform the measurements :

- Larson Davis LD220 C Amplifier and Voltage Supply
- Larson Davis 2541 ½" microphone
- CSI 2110 Frequency Analyser
- Larson Davis CA250 Pistonphone Calibrator (NATA Calibration. Due June 97)

The entire measurement system was calibrated before and after the measurements with less than 0.1 dB error.

2.2 Method

The following methodology was used for the test :

- The shower head was set up above the test box such that the area of the spray covered approximately 80% of roof surface. It was ensured that the shower head distributed the water as droplets and as evenly as possible.
- All interior surfaces of the test box (except the roof) was treated with 50 mm acoustic foam to reduce the internal acoustic reflections to a minimum.
- 3 measurements were taken each of the two measurement positions for water spray flow rates of 3, 14 and 21 l/min. This was repeated upon fitting the treated roof panel to the test box.
- The measurement set was repeated upon replacing the test box roof with an identical roof painted with EC-100 and cured according to ASTEC standard recommendations. The treated roof was identical to the untreated roof in dimensions, material type and mounting detail.
- The background level was checked and noted to be 40.1 dB(A) without the water flowing.

3. RESULTS

An average of the measured Overall Sound Pressure Levels (A-weighted) for each of the tests can be seen in Table 3-1.

Typical frequency spectra as measured at 3 l/min can be seen in Figure 3-1.

4. COMMENTS

- The sample coated with EC-100 showed a reduction in noise over the non-treated sample.
- The noise reduction occurred over most frequencies between 63 Hz and 10 kHz for all of the flow rates tested.

Position	Untreated			Treated EC-100		
Flow rate (l/min)	3	14	21	3	14	21
1	70.8	83.2	87.3	68.4	79.4	80.7
2	74	83.6	87.2	69	78.4	80.4

Table 3-1 : Average A-weighted Sound Pressure Levels in dB(A) re 20 μ Pa as Measured in Test Box.

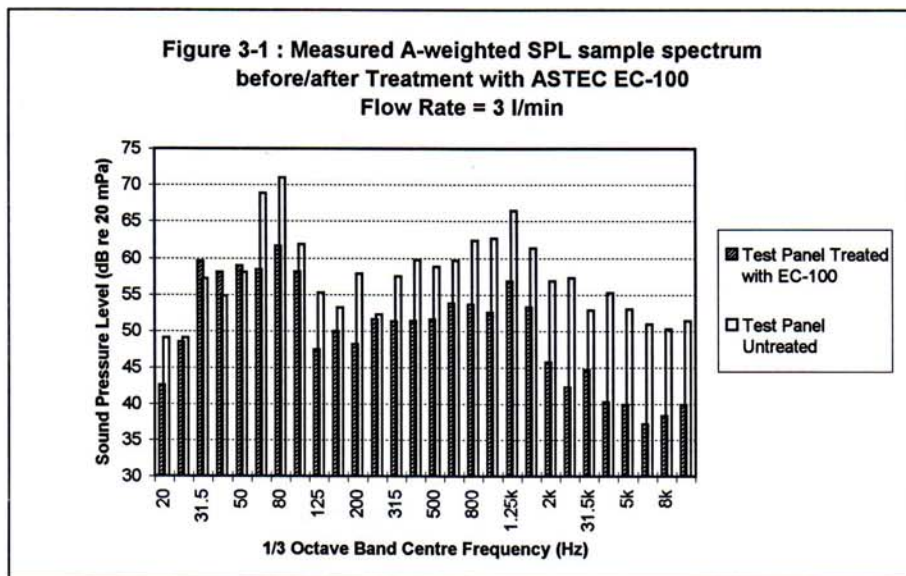


Figure 3-1 : Measured A-weighted SPL sample spectrum before/after treatment with ASTEC EC-100. Water sprayed onto test box roof at a Flow Rate of 3 l/min.

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