



University of Technology, Sydney

ALSYNITE ROOFING PRODUCTS  
PTY LIMITED  
Vent tests.  
20.7.05

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## 1.0 INTRODUCTION

I have been asked by Alsynite Roofing Products Pty Ltd to test the ventilation performance of 3 ventilators being: 1) a Spinaway 300mm diameter. 2) an Industrial vertical blade 300mm diameter. 3) a Spinaway 500mm diameter.(refer to photographs 1-3 below). This took place in the aerodynamic laboratories, UTS.



**Photograph No.1 Spinaway 300 mm throat**



**Photograph No.2 Industrial vertical blade 300 mm throat.**



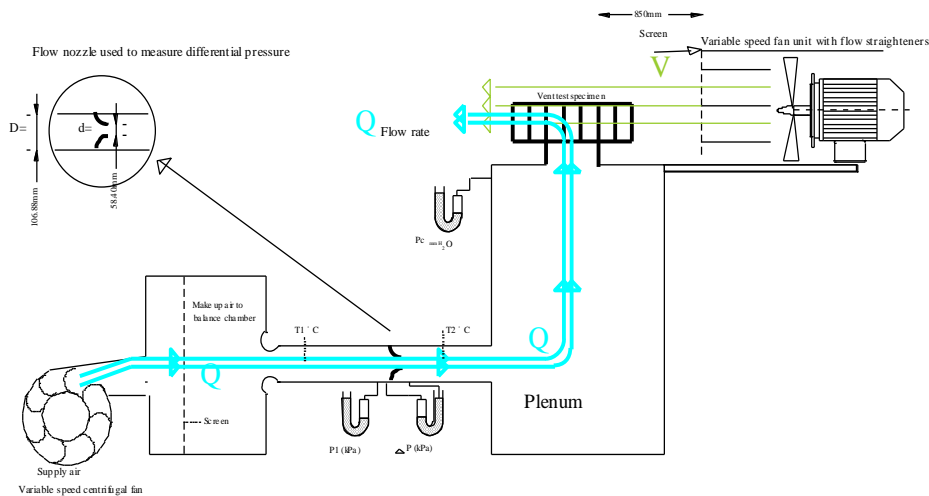
**Photograph No.3 Spinaway 500mm throat**

## 2.0) TASK .

A comparative analysis is to be conducted between the 3 vents to determine their relative exhaust flow rate performance at 12km/hr wind speed (Sydney's average).

## 3.0) TESTING PROCEDURE

All tests were conducted in the aerodynamic laboratory at the University of Technology, Sydney. The vents were tested on a pressure differential test rig (refer to Figure No.4) similar to that described in Australian/ New Zealand Standard 4740: 2000 *Natural ventilators- Classification and performance*. appendix E-determination of Flow Coefficient.



UTS pressure differential ventilation test rig

**Figure No 4. Ventilation test rig used to establish wind siphonage rates.**

Testing involved a comprehensive comparison of vents all evaluated to an open stack all with a 300mm and 500mm throat diameters and the comparative tests measured the relative performance of the vents at 12 km/hr wind speed.

#### **4) RESULTS**

**The Spinaway 300mm throat (21 blade) recorded an exhaust flow rate of 3,077 Litres / min at 12 km/hr.**

**The Vertical blade industrial 300mm throat recorded an exhaust flow rate of 3,335 Litres / min at 12 km/hr.**

#### **5) CONCLUSION**

**The inability to provide sufficient make up air to the larger 500mm throat meant that we were unable to balance the plenum chamber and thus arrive at the flow rate for the larger vent. When a larger supply fan is able to be fitted, balancing will be able to take place.**

**The 300mm throat vents were able to be measured and the exhaust rates at 12km/hr are as stipulated in results.**

#### **6) Experts Code of Conduct.**

I have read and acknowledge the experts code of conduct. I am a Senior University Consultant in with over 25 years experience.

Yours sincerely,

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