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# LOAD TESTING OF ALUMINIUM CAPPING SYSTEM

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## 1.0 INTRODUCTION

Two styles of aluminium wall capping system were tested under simulated wind suction load when fixed over a 3m length with a corner detail.

## 2.0 SAMPLE DESCRIPTION

Aluminium capping system 1.9mm thick x 650mm wide x 100mm deep at a straight length of 3000mm, with a corner section of 1.9mm thick x 750mmx750mm. These were supplied to be clip-fixed onto aluminium brackets positioned at 1500mm centres. The brackets were supplied 2.9mm thick x 150mm wide.

Aluminium capping system for use on a $2.5^{O}$ pitch, 1.9mm thick x 650mm wide x 100mm deep leg on one side and 72mm deep leg on the other at a straight length of 3000mm, with a corner section of 1.9mm thick x 750mmx750mm. These were supplied to be clip-fixed onto aluminium wall brackets positioned at 1500mm centres.

## 3.0 TEST METHOD

A series of air bags attached to a common manifold, were placed below the capping system, the reaction was taken by the laboratory strong floor. A uniformly distributed load was applied to the capping system in 0.2kN/m2 increments to $1.68kN/m^2$, then released. This load was applied twice more before increasing the load to failure A deflection reading was taken at each load increment.

## 4.0 RESULTS

| Test | Maximum Load ($kN/m^2$) | Wind Speed (m/sec) | Wind Speed (Miles per hour) | Mode of Failure |
|---|---|---|---|---|
| No pitch | 27.8 | 213 | 477 | Capping did not fail. Test stopped due to extreme deflection. Capping did not detach from brackets |
| $2.5^{o}$ pitch | 10.8 | 130 | 291 | Capping did not fail. Test stopped due to extreme deflection. Capping did not detach from brackets |

## 5.0 CONCLUSION

The capping system with no pitch achieved a simulated wind suction load of $27.8kN/m^2$ and the capping system on a cantilevered bracket on a $2.5^{o}$ pitch achieved $10.8kN/m^2$. According to CP3 Chapter V, $1.68kN/m^2$ is the maximum wind load expected in the Outer Hebrides once every 10 years at 10m above sea level. Although CP3 has been replaced by BS6399 this is still a good guide as to the required performance of the capping system under extreme load.

Authorised by, Joanne Booth

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