Queens Road, Penkhull, Stoke-on-Trent,
Staffordshire ST4 7LQ, United Kingdom

tel: +44 (0)845 026 0902
fax: +44 (0)1782 412331
email: enquiries@ceram.com
web: www.ceram.com

LOAD TESTING OF ALUMINIUM CAPPING SYSTEM

Guttermaster Ltd Healey Works Shawclough Trading Estate Shawclough road Rochdale OL12 6ND	**Contact:**	Adrian Stannard
	Job Number:	093499
	Date of Test:	22nd June 2009
	Date of Issue:	24th August 2009

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 Although CP3 has been replaced by BS6399 this is still a good guide as to the required performance of the capping system under extreme load.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

Joanne Booth, **Manager, Structures Group**