CERAM BUILDING TECHNOLOGY

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TEST REPORT

Title	:	**Performance Testing of Raised Access Flooring System – M14 Pedestal with P1 Panel**
Laboratory Number	:	**SW277/03**
Client	:	**Formmetal Ltd. Sti. Organize Sanayi Bolgesi Babursah Cad. No: 18 Sincan 06930 Ankara Turkey**
For the Attention of	:	**Sedat Tekgül**
Date Received	:	**4th July 2003**
Date Tested	:	**July – October 2003**
Authorised by	:	**Mr.D.Dix**
Date of Issue	:	**8th December 2003**
Our Reference	:	**DD/H/SW277.03 Formmetal**

CONTENTS

TESTS ON RAISED ACCESS FLOOR SYSTEM

1. INTRODUCTION

Access Floor panels, pedestals and adhesives were provided by the client for use in the test programme. The required panels and pedestals were selected at random from those provided and subjected to testing in accordance with the relevant tests specified in the "PSA MOB PF2 PS/SPU : March 1992 Specification".

2. DESCRIPTION OF PANELS AND PEDESTALS

The panel consisted of a particleboard core 599mm x 599mm by 30mm thick with chamfered edges. A 598mm x 598mm by 0.5mm thick steel sheet was glued to the top surface, and a 590mm x 590mm by 0.5mm thick galvanised steel sheet was glued to the underside. The chamfered edge of the panel was covered on all four sides by a 30mm wide strip of 0.5mm thick PVC. The overall panel dimensions were 599.5mm x 599.5mm x 31.5mm. Each panel weighed approximately 9.46kg, therefore the nominal panel density was 845kgm^{-3}. Figure 1 shows the general construction of the panel.

The pedestals consisted of a 90mm diameter base unit manufactured from 3mm thick mild steel. A 90mm long by 13mm diameter threaded stud fitted with an adjusting nut was centrally riveted to the base unit. The head consisted of a 90mm diameter by 3mm thick pressed steel plate slotted to accept stringers and containing eight 5mm diameter holes equally spaced around the diameter of the head and centred 8mm in from the rim of the head to accept panel and stringer screws. A 230mm long by 26mm outside diameter tube with a wall thickness of 1.5mm swaged to the head. An unthreaded plastic bush was located inside the bottom of this tube which then located onto the top of the base stud. The design of the pedestal components is shown in Figures 2 to 6. It should be noted that the base plate of this pedestal does not comply with the requirements of Clause P4.06 of the PSA specification as its area at 6362mm^2 is less than the required area of 10000mm^2.

The single component polyurethane adhesive used to affix the pedestals to the substrate was manufactured by Conica Technik AG under the trade name "Conibond Dach 1624".

3. TEST METHOD

The tests were carried out in accordance with the methods stated in "PSA MOB PF2 PS/SPU : March 1992 Specification" for a medium grade system.

4. RESULTS

A summary of the results of the tests is as follows:-

T5.00	Free Play in Pedestal	Fail
T7.00	300mm Square Point Load Test	Pass
T8.00	25mm Square Point Load Test	Fail
T10.00	Uniformly Distributed Load Test	Pass
T15.00	Pedestal Strength : Horizontal Load	Fail
T16.00	Pedestal Strength : Vertical Load	Fail

The full results for all tests are given in Tables 1 to 5. The average environmental conditions (i.e. ambient temperature and relative humidity) during the period of the tests are included in the table where required by the specification.

The results apply only to the samples tested as supplied by the client.

Authorised by:

Mr. D. Dix

(End of Written Report)

TABLES

Table 1
Pedestal Deflection Results
(PSA Specification Test T5.00)

Test No.	Property	Test Value		Specified Limit
T5.00	Test for Free Play in Pedestal*	Pedestal 1	Pedestal 2	1.00mm per 100mm max
	Height of Pedestal (mm)	300	300	
	Total Movement (mm)	15.16	14.57	
	Movement per 100mm Height	5.05	4.86	

* Note : Application of Lateral Load of 5N (± 0.2%)

Table 2
Panel Load Tests & Safety Factor
(T7.00 + T11.00)

Test No.	Property	Test Value			Specified Limit
T7.00	300mm Square Point Load Test 17.6°C 77% RH Load 4.5kN	Centre of Panel	Centre of Edge	Centre of Adjacent Edge	
	Deflection after 23h (mm)	1.58	1.83	1.86	
	Deflection after 24h (mm)	1.59	1.84	1.88	2.40mm max
	Stability (mm)	0.01	0.01	0.02	0.02mm max
	Residual Deflection (mm)	0.16	0.18	0.20	0.50mm max
	Permanent Indentation (mm)	0.04	0.05	0.07	0.15mm max
	Other Deformation	None	None	None	
(T11.00)	Safety Factor Load Test	No failure. Indentation of top surface of panel.			No failure at 3x working load

Table 3
Load Tests on Panels & Pedestals & Safety Factor Tests
(T8.00 + T11.00)

Test No.	Property	Test Value				Specified Limit
T8.00	25mm Square Point Load Test 17.6°C 77% RH Load 3kN	Centre of Panel	Centre of Edge	Centre of Adjacent Edge	70mm Along Diagonal from Pedestal Edge	
	Deflection after 23h (mm)	1.56	2.50	2.53	1.36	
	Deflection after 24h (mm)	1.58	2.52	2.52	1.38	2.40mm max
	Stability (mm)	0.02	0.02	0.02	0.02	0.02mm max
	Residual Deflection (mm)	0.22	0.22	0.28	0.20	0.50mm max
	Permanent Indentation (mm)	0.04	0.08	0.08	0.07	0.15mm max
	Other Deformation	None	None	None	None	
(T11.00)	Safety Factor Load Test	Severe indentation of top surface of panel.				No Failure at 3x working load

Table 4
Panel deflection Tests & Safety Factor Tests
(T10.00 + T11.00)

Test No.	Property	Test Value					Specified Limit
T10.00	Uniformly Distributed Load Test 17.6°C 77% RH Load 8kNm^{-2} (2.88kN)	Centre of Edge 1	Centre of Edge 2	Centre of Edge 3	Centre of Edge 4	Centre of Panel	
	Deflection after 23h (mm)	1.27	1.30	1.34	1.29	1.10	
	Deflection after 24h (mm)	1.28	1.31	1.36	1.29	1.11	2.40mm max
	Stability (mm)	0.04	0.01	0.02	0.00	0.01	0.02mm max
	Residual Deflection (mm)	0.15	0.11	0.12	0.13	0.12	0.50mm max
	Permanent Indentation (mm)	Nil	Nil	Nil	Nil	Nil	0.15mm max
	Other Deformation	None	None	None	None	None	
(T11.00)	Safety Factor Load Test	No damage to panel or pedestals.					No Failure at 3x working load

Table 5
Pedestal Tests
(PSA Specification Tests T15.00 + T16.00)

Test No.	Property	Test Value		Specified Limit
T15.00	Pedestal Strength - Horizontal Load 16.8°C 81% RH Load kg	Pedestal 1	Pedestal 2	
	Pedestal Height (mm)	300	300	
	Permanent Deformation (mm)	5.05	4.37	
	Permanent Deformation per 100mm Height (mm)	1.68	1.46	1.00mm per 100mm max
T16.00	Pedestal Strength - Vertical Load			
	At Centre of Pedestal Head (Load 18kN)	No failure. Slight compression of panel corner. Slight indentation of top surface of panel.		No Failure
	Other Deformation	None		
	Over One Quadrant of Pedestal Head (Load 13.5kN)	Failed at 11.81kN. Severe permanent deformation of		No Failure
	Other Deformation			