



TEST
REPORT No.5091
[Rev B]

ASSESSMENT OF DCS WALLING SYSTEM

Industrial Research Services

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Product Manufacturer: Dincel Construction System Pty. Ltd

Product Description: DCS Walling System

Sample details:
Where: Constructed at CSIRO MSE Highett
Date: October 2009

Report author: David Weeks
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Date of Report: 22 March 2010

Project objective: To confirm the waterproofness of the Dincel Walling System, refer .Dincel Test Diagram DCS-WTD-01D.

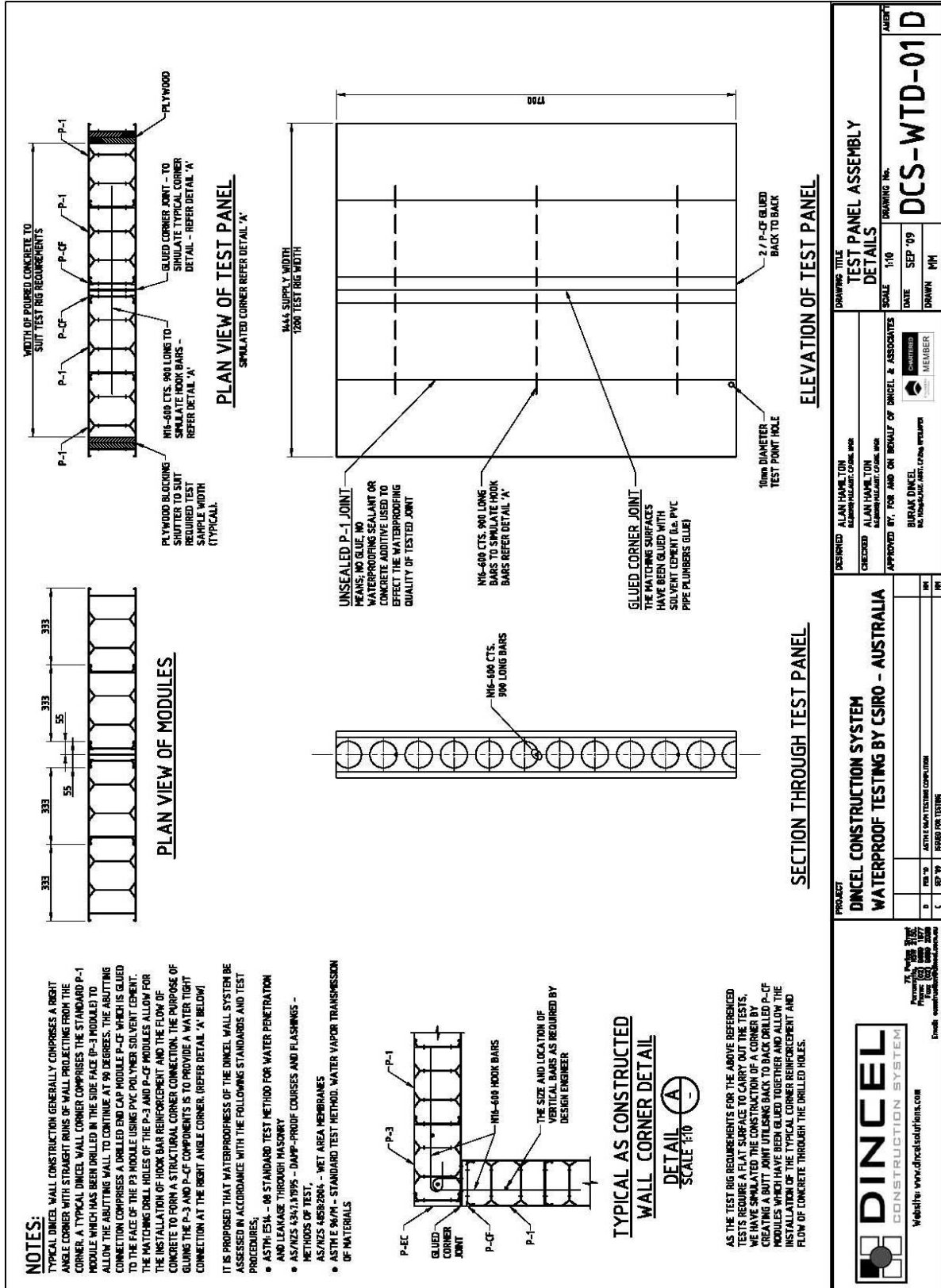
SUMMARY OF TESTS PERFORMED:

		Result
ASTM E 514 – 03	Standard test Method Water Penetration & Leakage Through Masonry	PASS
AS/NZS 2904:1995	Damp Proof Courses and Flashings Clause 6.2: Impermeability to water	
	AS/NZS 4347: Method 1: Determination of water permeability	PASS
ASTM E 96/M	Standard test Method Water Vapor Transmission of Materials	
	Water Vapor Transmission:	0.044 g/m ² /day
	Permeance:	0.685 Perms (in/lbs)
		3.9129 E-05 µg/N.s
	Resistance	25556.73 MN.s/g

The results reported relate only to the sample(s) tested and the information received. No responsibility is taken for the accuracy of the sampling unless it is done under our supervision. CSIRO cannot accept responsibility for deviations in the manufactured quality and performance of the product. While CSIRO takes care in preparing the reports it provides to clients, it does not warrant that the information in this particular report will be free of errors or omissions or that it will be suitable for the client's purposes. CSIRO will not be responsible for the results or any actions taken by the client or any other person on the basis of the information contained in the report or any opinions expressed in it.

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DINCEL Construction System Pty. Ltd Test Diagram DCS-WTD-01D



STATEMENT

The tests conducted by CSIRO, as outlined in our Report No 5091 RevB confirm;

Dintel Construction System when installed in accordance with the Dintel Construction Manual will satisfy the performance requirements of Clause FP 1.4 and FP 1.7 (Volume 1 – Class 2 to Class 9 Buildings) and P 2.4.1 (Volume 2 – Class 1 and Class 10 Buildings) Housing Provisions of the Building Code of Australia as the Dintel Wall meets the waterproofing requirements of AS3740 and the following test methods;

1. ASTM E 514-08 Standard Test Method for Water Penetration and Leakage Through Masonry.
2. AS/NZS 4347.1:1995 Damp-proof courses and flashings – Methods of test – Method 1: Determination of Water Permeability.
3. ASTM E 96/M 96M-05 Standard Test Method for Water Vapor Transmission of Materials

Date and Place 22 March 2010, Highett, Vic

Name, Title and Digital Signature:



David Weeks
Senior Technical Officer
INDUSTRIAL RESEARCH SERVICES

CSIRO

APPENDIX A

TEST RESULTS

ISSUE DATE: 22 March 2010
 MANUFACTURER: Dincel Construction System Pty. Ltd
 PRODUCT DESC: DINCEL®-WALL

TEST CARRIED OUT IN ACCORDANCE WITH Test Date: 24 November 2009
ASTM E514-05c
Standard test Method for Water Penetration & Leakage Through Masonry

RESULTS: Location: Building 32 External
 Test Panel: DINCEL®-WALL
 Concrete Fill: 25 MPa, Max Aggregate size 10mm, Slump 110-120mm
 Curing time: 32 days
 Test Rig size: 1600mm x 1100mm
 Meter: Protimeter Surveymaster
 Water Rate: 138 L/m²/Hr
 Internal Pressure: 500 Pa
 Test duration: 4 hours

Water Penetration

Time	Surface status	Reference	Test Points	
			Unsealed P-1 joint	10mm hole at base of P-1 joint
0	Dry	11.3	11.2	11.4
1.0	Dry	11.4	11.3	11.4
2.0	Dry	11.7	11.8	11.9
3.0	Dry	11.4	11.5	11.7
4.0	Dry	11.6	11.8	11.7

Definition: **Unsealed P1 Joint**
 No glue, no waterproofing sealant or concrete additive used to effect the waterproofing quality of the tested joint.

Requirement: Nil water detected on back of panel.

Result: Water did not penetrate the unsealed Dincel panel joints and sealed corner joint.
PASS



Appendix A
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ISSUE DATE: 22 March 2010
MANUFACTURER: Dincel Construction System Pty. Ltd
PRODUCT DESC: DINCEL®-WALL

Test Date: 10 December 2009

TEST CARRIED OUT IN ACCORDANCE WITH

Based on:

AS/NZS 4347.1 - Damp-proof courses and flashings-

Methods of test: Method 1: Determination of water permeability

RESULTS: Location: Building 32 External
Test Panel: DINCEL®-WALL
Concrete Fill: 25 MPa, Max Aggregate size 10mm, Slump 110-120mm
Equivalent pressure: 6 kN – representing 6 metre water head
Sample size: 200mm diameter
Test area: 1964 mm²
Time with head: 100 hours

Requirement: No moisture evident on rear of wall.

Result: No loss of water.
Water did not penetrate the unsealed Dincel panels joint and sealed corner joint.
PASS

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ISSUE DATE: 22 March 2010
MANUFACTURER: Dincel Construction System Pty. Ltd
PRODUCT DESC: DINCEL®-WALL

TEST CARRIED OUT IN ACCORDANCE WITH
ASTM E96/M
Water Vapour Transmission of Materials

Test Date: 15 February 2010

RESULTS: Location: Ceramic Tile Laboratory
Sample Thickness: 40mm
Sample size: 300x150mm
Test Period: 720 hours
Conditions: 24°C / RH 60%
Membrane to dish sealant: wax
Desiccant: Silica gel

Desiccant Method (Procedure A)

Start date: 11 Jan 2010
Finish date: 15 Feb 2010
Weight gain / loss: 0.2 g
Water vapour transmission 0.044 g/m²/day
Permeance: 0.685 Perms (in/lbs)
3.9129 E-05 µg/N.s
Resistance 25556.73 MN.s/g

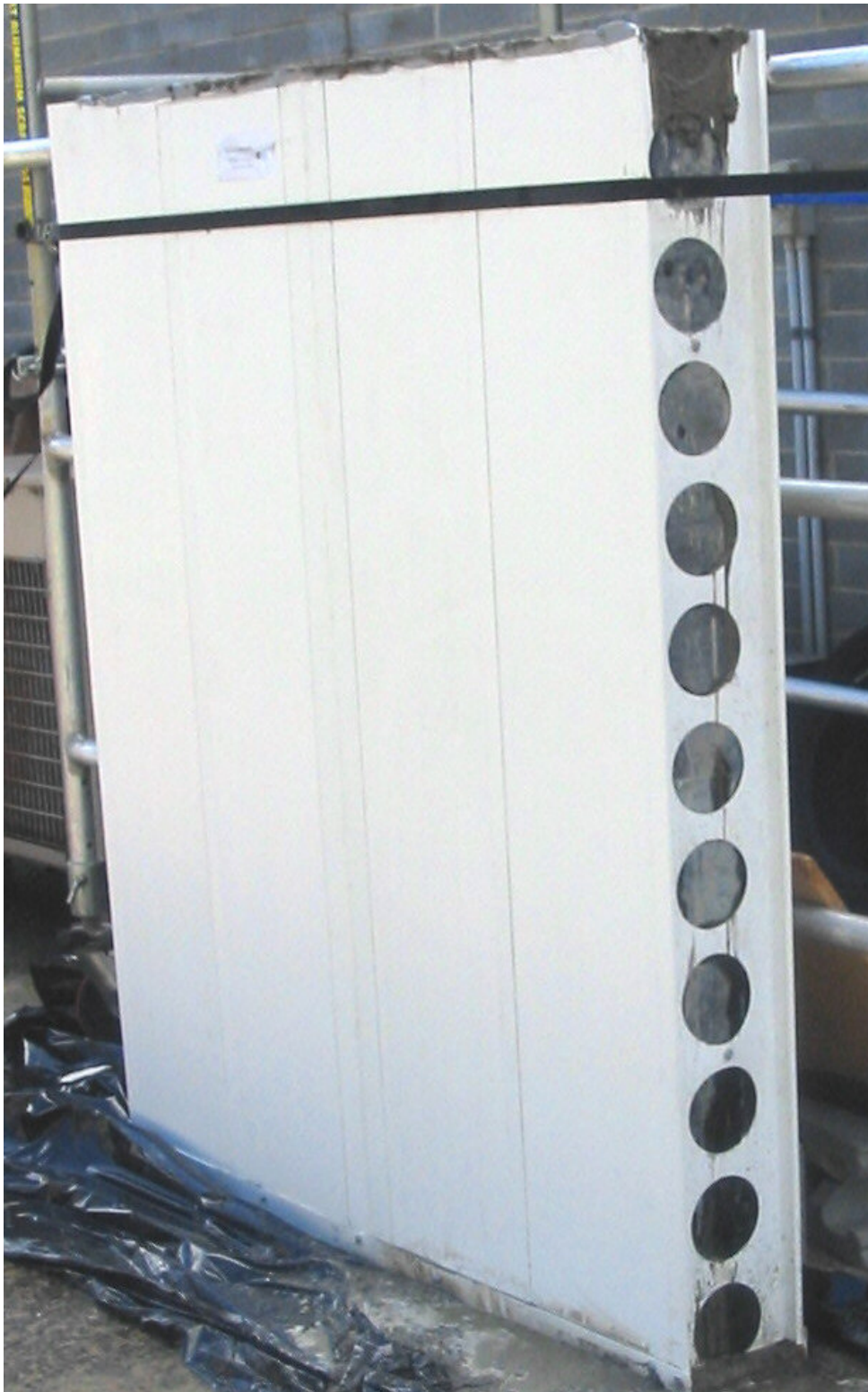
Requirement: There are no specific requirements.
The maximum WVT for waterproofing membrane is 8 g/m²/day.

Conclusion: The assessed WVT of 0.044 g/m²/day can be deemed an insignificant water vapour transmission.

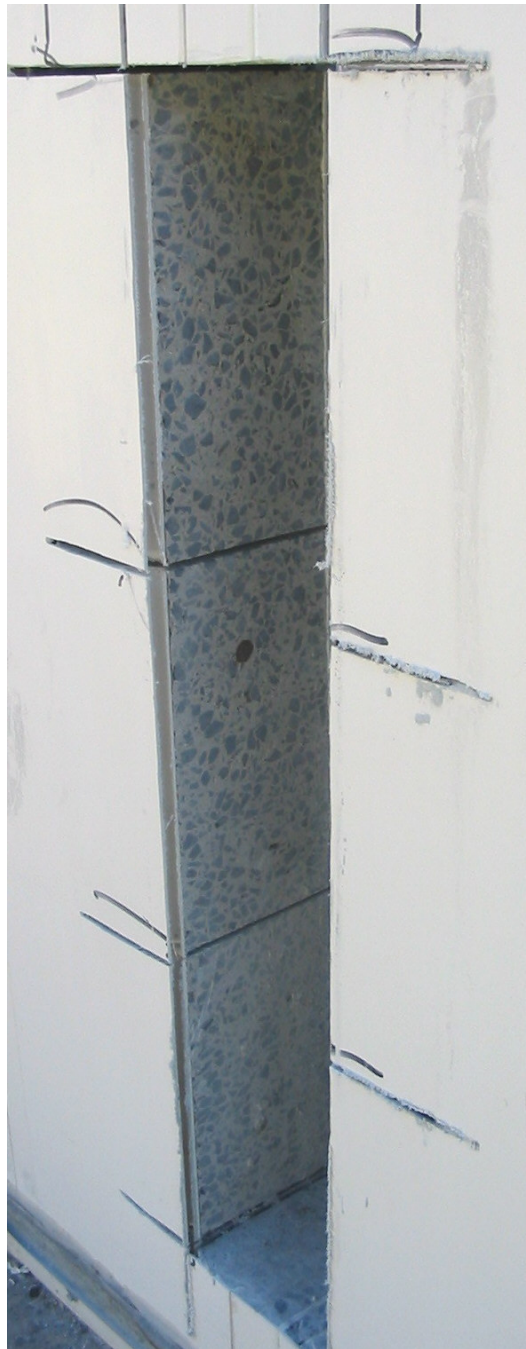
APPENDIX B

IMAGES

PRODUCT IMAGES



DINCEL DCS Walling Sample



Cross Section removed from DINCEL DCS Wall



Cross Section of DINCEL DCS Wall