MOVIT plastic barricade

ENVIRONMENTAL TEST REPORT

20110110468 Nov. 2011

Prepared: _____ Date: Nov. 2011

Approved: _____ Date: Nov. 2011

This Verification of Compliance is based on evaluation of a sample ofthe above mentioned product. Technical Report and documentation are at the Licence Holdr's disposal. The holder of the certificate is authorized to use this certificate in connection with the EC declaration of conformity.

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1. GENERAL

1. 1. This Verification of Compliance is based on evaluation of a sample ofthe above mentioned product. Technical Report and documentation are at the Licence Holdr's disposal. The holder of the certificate is authorized to use this certificate in connection with the EC declaration of conformity, on MOVIT Plastic Barricade.

1. 2. The test plan was issued by the customer-Mr.YanChen-C.M(China) Road Safety Industrial Co.

2. APPLICABLE DOCUMENTS

2. 1. Test order, C.M(China) Road Safety Industrial Co., Dated: 17st Oct. 2011.

2. 2. Working order No: 20110110468.

3. DEFINITION OF PRODUCT

3. 1. MOVIT plastic barricade.

3. 2. A total of three (3) items were tested.

4. TYPE OF TESTS

4. 1. Low temperature test.

4. 2. High temperature test.

4. 3. Drop test.

4. 4. Compression test point

4. 5. Bending test

4. 6. Water absorption

5. DESCRIPTION OF TESTS

5. 1. Low Temperature test

5.1.1. Test Specifications

a. Standard: MIL STD 810C

b. Method: 502.1.

c. Procedure: I .

d. Test Conditions:

1. Test temperature: -20 ℃.
2. Test duration: 24 hours.
3. The item was tested unpacked.

5.1.2. Test Facility

a. Thermotron Temperature chamber.

5.1.3. Item under test

One (1) MOVIT plastic barricade, that had not undergone previous tests.

5.1.4. Test Performance

a. The test was commenced on Oct. 17th 2011 and completed on Oct. 18th 2011.

b. The test was performed in accordance with paragraph 5.1.1. above.

Photo No. 1 MOVIT plastic barricade in Low temperature chamber

5.1.5. Test Results

No visible damage was observed during the test and at its completion.

5.1.6. Appendix

The temperature curve is shown in appendix A .

5. 2. High Temperature test

5.2.1. Test Specifications

a. Standard: MIL STD 810C

b. Method: 501.1.

c. Procedure: I .

d. Test Conditions:

1. Test temperature: +55 ℃, constant temperature.
2. Test duration: 24 hours.
3. The item was tested unpacked.

5.2.2. Test Facility

a. Tenney Engineering Temperature chamber.

5.2.3. Item under test

One (1) MOVIT plastic barricade, that had not undergone previous tests.

5.2.4. Test Performance

a. The test was commenced on Oct. 17th 2011 and completed on Oct. 18th 2011.

b. The test was performed in accordance with paragraph 5.2.1. above.

Photo No. 2: MOVIT plastic barricade in High temperature chamber

5.2.5. Test Results

No visible damage was observed during the test and at its completion.

5.2.6. Appendix

The temperature curves shown in appendix B .

5. 3. Droptest

5.3.1. Test Specifications

a. Test Conditions:

1. Drop height: 76 cm.
2. Drop orientation: On base.
3. Item was tested unpacked.

5.3.2. Test Facility

L.A.B. Drop tester.

5.3.3. Item under test

One (1) MOVIT plastic barricade, that had undergone Low temperature test.

5.3.4. Test Performance

a. The test was performed on Oct. 17th 2011.

b. The test was performed in accordance with paragraph 5.3.1 above.

5.3.5. Test Results

No visible damage was observed during the test and at its completion.

Photo No. 3: MOVIT plastic barricade, on Drop tester.

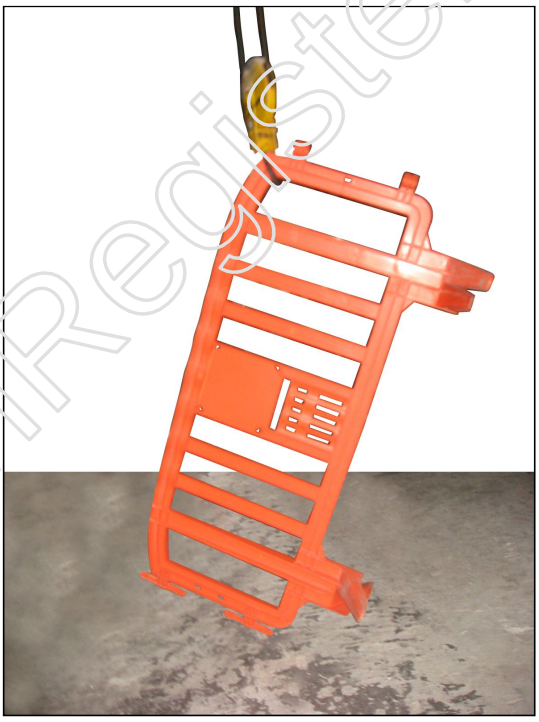


Photo No. 4: MOVIT plastic barricade, on Drop tester.

The free-fall vertical impact test was carried out using barrier section under ambient conditions (23℃/73 ° F 50% R.H.) and after having been conditioned for 4 hours in a "CLIMATEST" climate-controlled chamber at a temperature of -10℃/14 ° F. The drop was performed with the barrier section in a tilted position, i.e., impact first occurred on one of the two legs of the railing, as seen in the photo.The drop was repeated with the other leg, and finally against each one of the two feet of each individual leg. A total of five drops for railing at ambient conditions and five drops for the railing conditioned at -10℃/14 ° F were made. The drop height was one metre at all times.Drop test results: SATISFACTORY:No breaks, cracks or deformation were observed in the railing or its legs.

5. 4. Compression test Point

Compression test Point

4.1.2 of ANSI A10.18 states that "the structure of the railing must withstand a load of at least 90.7kg/200 pounds applied in any direction at any point of the top". The test was conducted with an "IBERTEST" press, EMIB60 model. A load of 500kp (much higher than the minimum required by the above standard) was applied vertically. The test duration was 4 hours.

Photo No. 5: Compression test point

Compression test results:

SATISFACTORY: No breaks, cracks or deformation were observed in the railing.

5. 5. Bending test

At the middle of the top part of the railing, a compressive force of 61kp was applied at the side for one hour and the deformation experienced at this point was measured at the same time. When the force was released at the end of the test, the deformation was 9mm/0.354inch, with a residual deformation of 4mm/0.157inch after one hour.

Photo No. 6: Bending test

Test Certificate

Proof Vertical Loading Test of MOVIT

(In-house Method)

Details as supplied by the elient:

Client:C.M.(CHINA) ROAD SAFETY INDUSTRIAL CO.

Job title:--

Client's ref.no.:--

Description of test specimen:2000x1000x12mm thk.

Equipment used for test:

1. Hydraulic Hand Pump:Castco I.D. No.:SL2/13/14
   Load cell:Castco I.D. No.:NDTC-LC-01
   Hydraulic Cylinder:Castco I.D. No.:BD-30T-05
2. Testing frame

Laboratory test results:

Date sample received:25-10-2011

Date of test:17-10-2011

Span of test specimen:2000mm

Specimen no.20100110359	Vertical loading(kg)	Deflection(mm)	Observation
Stage	21	4	N/A
Stage	41	7	N/A
Stage	61	9	N/A
Failure load	-	-	-

Remarks: 1. Test rexults relate only to the specimen tested.
2. Before and after test photos attached with this report.

Checked by: _____

Certified by: _____

5. 6. Water obwsrption

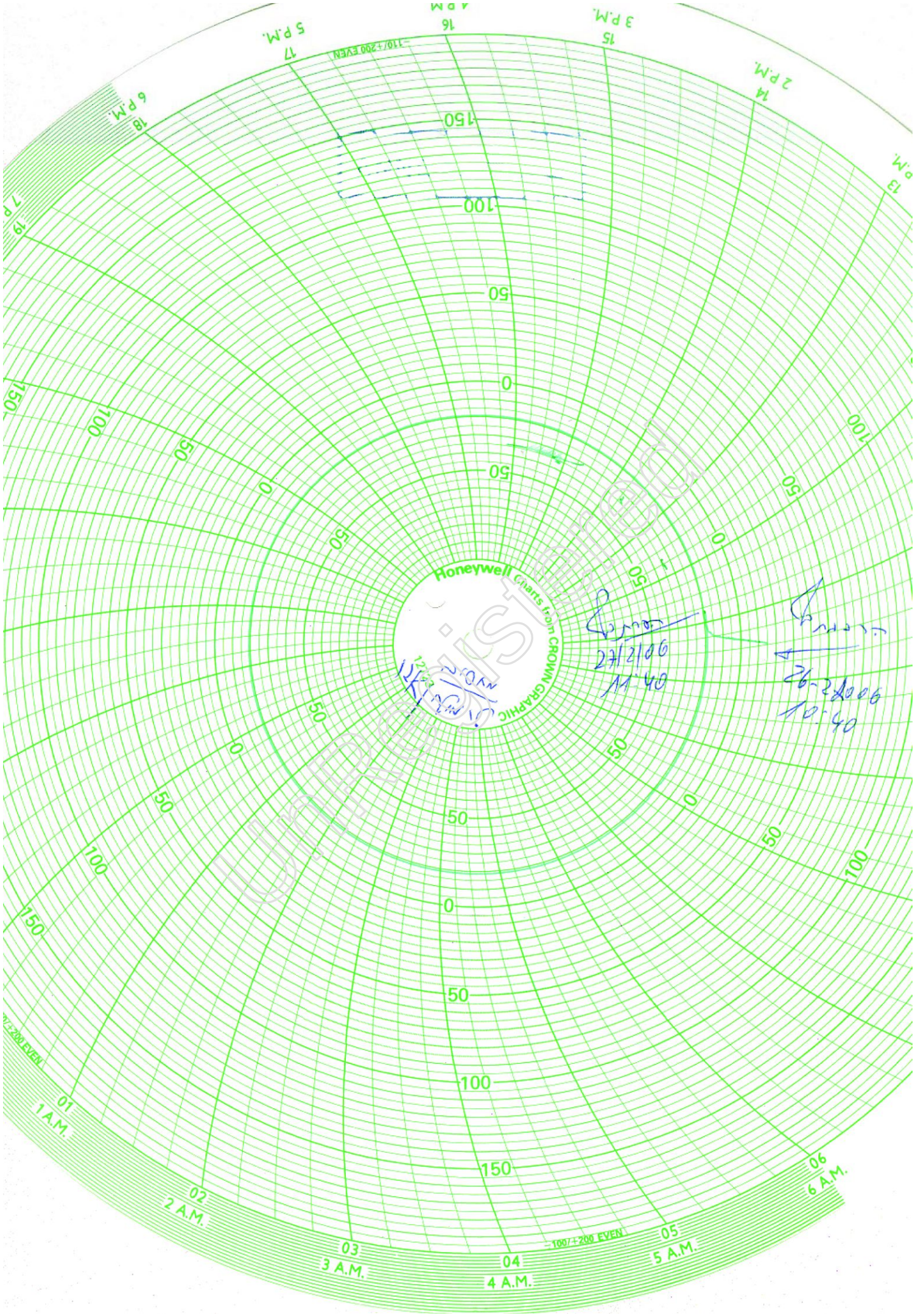
The test was conducted as per UNE 53-028-90. Water absorption by a plastic material may lead to swelling and cause alterations in the dimensions and/or physical properties of the material. Several samples of the railing were cut, then weighed before and after being immersed in distilled water at 23℃/73 ° F for 24 hours. Several other samples were placed in boiling water for 30 minutes. The weight difference represents the increased mass due to absorption.

Photo No. 7: Water absorption

Water absorption results: SATISFACTORY: Samples at23℃/73 ° F for 24 hours: 0.009% Samples at 100℃/212 ° F for 30 minutes: 0.022%

APPENDIX A

Low Temperature test Curve


Honeywell Charts from CROWN GRAPHIC
150
100
50
0
50
100
150
01
1 A.M.
02
2 A.M.
03
3 A.M.
04
4 A.M.
05
5 A.M.
06
6 A.M.
13
14
2 P.M.
15
3 P.M.
16
4 P.M.
17
5 P.M.
18
6 P.M.
19
7 P.M.
27/2/06
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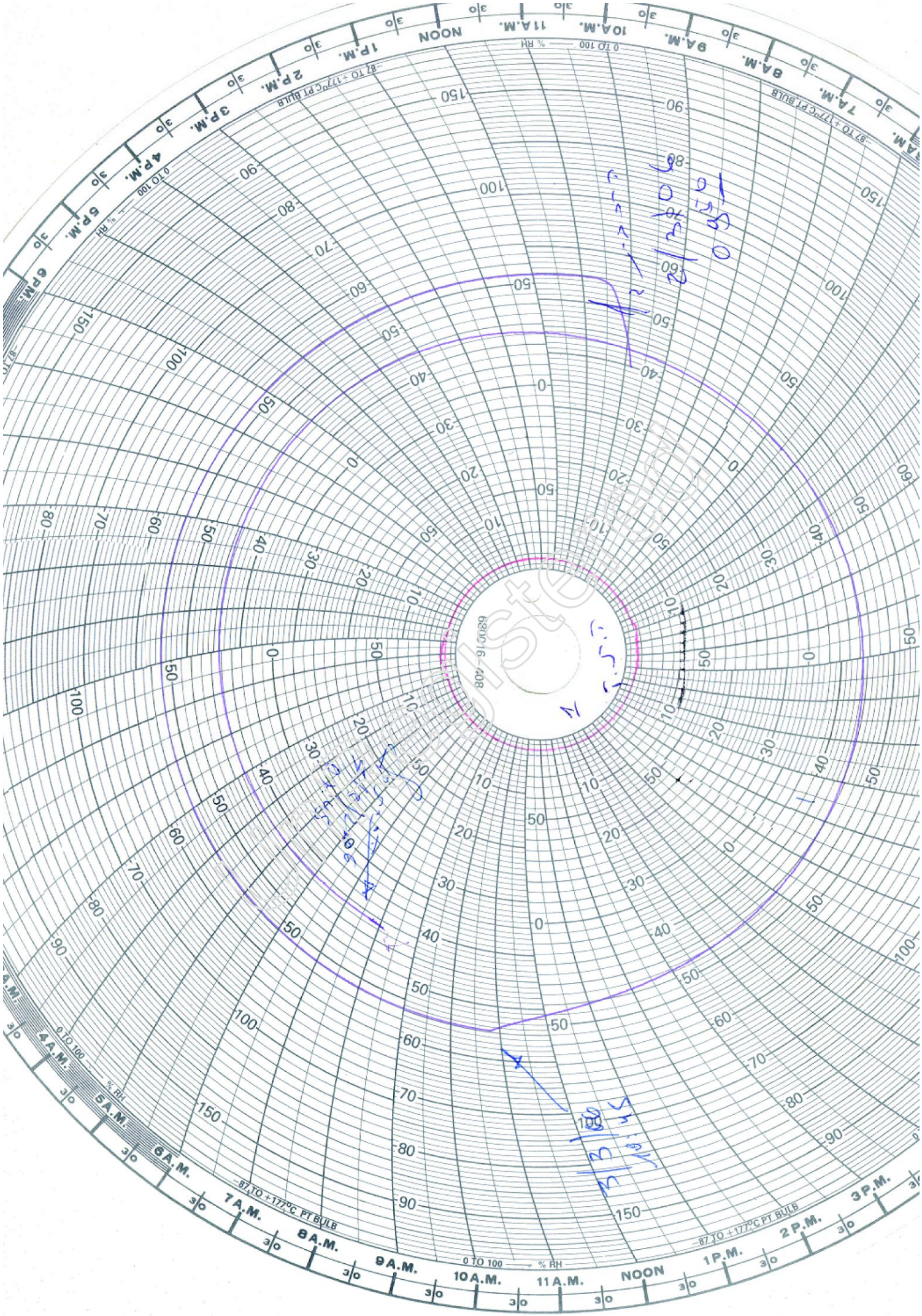
26-2-2006
10.40

APPENDIX B

High temperature test Curve


4 A.M.
5 A.M.
6 A.M.
7 A.M.
8 A.M.
9 A.M.
10 A.M.
11 A.M.
NOON
1 P.M.
2 P.M.
3 P.M.
0 TO 100 % RH
87 TO +177°C PT BULB