097.13 DPWH
05.16.2025

Republic of the Philippines
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
OFFICE OF THE SECRETARY
Bonifacio Drive, Port Area Manila

BAGONG PILIPINAS

MAY 09 2025

DEPARTMENT ORDER)
)
No. 86)
Series of 2025)

dN 5/16/2025

SUBJECT: Standardization of Materials Testing Forms

In order to ensure compliance and align with the updated DPWH, ASTM and AASHTO Standards, these Revised Standard Forms are hereby issued to be utilized by all DPWH Implementing Offices in the preparation of Sample Cards, Worksheets, and Official Test Reports. Test reports using the prescribed formats shall be computer-generated.

These standard forms can be downloaded from the DPWH Intranet (http:dpwhnet) under Sample Card, Worksheet and Test Report Forms. Attached are the guidelines for filling out Materials Testing Forms to ensure uniformity and consistency.

This Order supersedes Department Order No. 22, Series of 2025 (Standardization of Materials Testing Forms) and shall take effect immediately.

MANUEL M. BONOAN
Secretary

Department of Public Works and Highways
Office of the Secretary
WIN5U02145

Encl: (1) Annex: Standardization of Materials Testing Forms
(2) Guidelines in the Filling-Out of Materials Testing Forms

14.1.3 JDV/AGC

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SERIES OF 2025

ANNEX

STANDARDIZATION OF MATERIALS TESTING FORMS

Document Title	Document Code
Sample Card	DPWH-QMSP-14-40-Rev01
Test Report for DPWH/Other Government Project	DPWH-QMSP-14-41-Rev01
Test Report for Informational/Research	DPWH-QMSP-14-42-Rev01
WORKSHEETS FOR SOIL&SOIL AGGREGATES, CONCRETE AND ASPHALT AGGREGATES	
Worksheet for Liquid Limit and Plastic Limit Tests	DPWH-QMSP-14-43-Rev01
Worksheet for Moisture Content Determination	DPWH-QMSP-14-44-Rev01
Worksheet for Shrinkage Limit of Soil	DPWH-QMSP-14-45-Rev01
Worksheet for Moisture Density Relations Test of Soils	DPWH-QMSP-14-46-Rev01
Worksheet for California Bearing Ratio	DPWH-QMSP-14-47-Rev01
Worksheet for Hydrometer Analysis	DPWH-QMSP-14-48-Rev01
Worksheet for Field Density Test	DPWH-QMSP-14-49-Rev01
Worksheet for Specific Gravity of Fine-Grained Soil	DPWH-QMSP-14-50-Rev01
Worksheet for Soundness Test	DPWH-QMSP-14-51-Rev01
Worksheet for Organic Impurities and Mortar Strength Test	DPWH-QMSP-14-52-Rev01
Worksheet for Unit Weight (Fine and Coarse Aggregates)	DPWH-QMSP-14-53-Rev01
Worksheet for Specific Gravity and Absorption of Aggregates	DPWH-QMSP-14-54-Rev01

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STANDARDIZATION OF MATERIALS TESTING FORMS

Document Title	Document Code
Worksheet for Sieve Analysis	DPWH-QMSP-14-55-Rev01
Worksheet for Abrasion Test	DPWH-QMSP-14-56-Rev01
WORKSHEETS FOR CEMENT	
Worksheet for Physical Test of Portland Cement - Fineness	DPWH-QMSP-14-57-Rev01
Worksheet for Physical Test of Cement - Normal Consistency, Time of Setting, Autoclave Expansion	DPWH-QMSP-14-58-Rev01
Worksheet for Mortar Strength Test of Cement	DPWH-QMSP-14-59-Rev01
Worksheet for Physical Test of Portland Cement – Air Content	DPWH-QMSP-14-60-Rev01
Worksheet for Specific Gravity of Cement	DPWH-QMSP-14-61-Rev01
Worksheet for Chemical Tests of Cement (by Wet Analysis)	DPWH-QMSP-14-62-Rev01
Worksheet for Chemical Tests of Cement (by XRF Method)	DPWH-QMSP-14-63-Rev01
WORKSHEETS FOR ASPHALTIC MATERIALS	
Worksheet for Testing of Asphalt Cement (Penetration-Graded)	DPWH-QMSP-14-64-Rev01
Worksheet for Testing of Asphalt Cement (Viscosity-Graded)	DPWH-QMSP-14-65-Rev01
Worksheet for Testing of Emulsified Asphalt	DPWH-QMSP-14-66-Rev01
Worksheet for Testing of Cutback Asphalt	DPWH-QMSP-14-67-Rev01
Worksheet for Testing of Concrete Joint Sealer	DPWH-QMSP-14-68-Rev01

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STANDARDIZATION OF MATERIALS TESTING FORMS

Document Title	Document Code
Worksheet for Testing of Elastomeric Binder (Thormajoint)	DPWH-QMSP-14-69-Rev01
Worksheet for Testing of Preformed Expansion Joint Filler	DPWH-QMSP-14-70-Rev01
Worksheet for Testing of Polymer Modified Bitumen (PMB)	DPWH-QMSP-14-71-Rev01
Worksheet for Testing of Hot Mix Asphalt	DPWH-QMSP-14-72-Rev01
Worksheet for Testing of Testing of Cold Mix Asphalt	DPWH-QMSP-14-73-Rev01
Worksheet for Testing of Bituminous Concrete Core	DPWH-QMSP-14-74-Rev01
WORKSHEETS FOR MISCELLANEOUS MATERIALS	
Worksheet for Testing of Flat Latex Paint	DPWH-QMSP-14-75-Rev01
Worksheet for Testing of Semi-Gloss Latex Paint	DPWH-QMSP-14-76-Rev01
Worksheet for Testing of Gloss Latex Paint	DPWH-QMSP-14-77-Rev01
Worksheet for Testing of Enamel Paint	DPWH-QMSP-14-78-Rev01
Worksheet for Testing of Semi-Gloss Enamel Paint	DPWH-QMSP-14-79-Rev01
Worksheet for Testing of Flat-Wall Enamel Paint	DPWH-QMSP-14-80-Rev01
Worksheet for Testing of Epoxy Enamel Paint	DPWH-QMSP-14-81-Rev01
Worksheet for Testing of Alkyd-Based Semi-Gloss Enamel Paint	DPWH-QMSP-14-82-Rev01
Worksheet for Testing of Alkyd-Based Gloss Enamel Paint	DPWH-QMSP-14-83-Rev01

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STANDARDIZATION OF MATERIALS TESTING FORMS

Document Title	Document Code
Worksheet for Testing of Alkyd-Based Flat-Wall Enamel Paint	DPWH-QMSP-14-84-Rev01
Worksheet for Testing of Alkyd-Based Metal Primer	DPWH-QMSP-14-85-Rev01
Worksheet for Testing of Epoxy Metal Primer	DPWH-QMSP-14-86-Rev01
Worksheet for Testing of Water-Based Gloss Roof Paint	DPWH-QMSP-14-87-Rev01
Worksheet for Testing of Elastomeric Wall Coating	DPWH-QMSP-14-88-Rev01
Worksheet for Testing of Thermoplastic Traffic Paints (White and Yellow)	DPWH-QMSP-14-89-Rev01
Worksheet for Testing of Reflectorized Traffic Paints	DPWH-QMSP-14-90-Rev01
Worksheet for Testing of Galvanized Sheet	DPWH-QMSP-14-91-Rev01
Worksheet for Testing of Galvanized Iron Pipe	DPWH-QMSP-14-92-Rev01
Worksheet for Testing of Guard Rail	DPWH-QMSP-14-93-Rev01
Worksheet for Testing of Gabion & Mattress Wires	DPWH-QMSP-14-94-Rev01
Worksheet for Testing of Tie Wire	DPWH-QMSP-14-95-Rev01
Worksheet for Testing of High Tensile Wire	DPWH-QMSP-14-96-Rev01
Worksheet for Testing of Wire	DPWH-QMSP-14-97-Rev01
Worksheet for Testing of Wire Rope	DPWH-QMSP-14-98-Rev01
Worksheet for Testing of Steel Plate	DPWH-QMSP-14-99-Rev01

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STANDARDIZATION OF MATERIALS TESTING FORMS

Document Title	Document Code
Worksheet for Testing of Soil Nail	DPWH-QMSP-14-100-Rev01
Worksheet for Testing of Reinforcing Steel Bars	DPWH-QMSP-14-101-Rev01
Worksheet for Phosphorus Content Determination of Steel Bars	DPWH-QMSP-14-102-Rev01
Worksheet for Phosphorus Content Determination of Steel Bars (by Spectrometer)	DPWH-QMSP-14-103-Rev01
Worksheet for Testing of Miscellaneous Steel Products	DPWH-QMSP-14-104-Rev01
Worksheet for Testing of Concrete Masonry Unit	DPWH-QMSP-14-105-Rev01
Worksheet for Testing of Concrete Pipe	DPWH-QMSP-14-106-Rev01
Worksheet for Compressive Strength Test of Concrete Cylinders (Molded and Cored Specimens)	DPWH-QMSP-14-107-Rev01
Worksheet for Flexural Strength Test of Concrete Beam	DPWH-QMSP-14-108-Rev01
Worksheet for Concrete Core Thickness Determination	DPWH-QMSP-14-109-Rev01
Worksheet for Testing of Water for Concreting	DPWH-QMSP-14-110-Rev01
Worksheet for Testing of Curing Compound	DPWH-QMSP-14-111-Rev01
Worksheet for Testing of Mineral Filler	DPWH-QMSP-14-112-Rev01
Worksheet for Testing of Hydrated Lime	DPWH-QMSP-14-113-Rev01
Worksheet for Testing of Fly Ash	DPWH-QMSP-14-114-Rev01
Worksheet for Testing of Reflective Sheeting	DPWH-QMSP-14-115-Rev01

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STANDARDIZATION OF MATERIALS TESTING FORMS

Document Title	Document Code
Worksheet for Testing of Ceramic and Glass Tiles	DPWH-QMSP-14-116-Rev01
Worksheet for Testing of Geotextiles	DPWH-QMSP-14-117-Rev01
Worksheet for Testing of Seven Wire Strand	DPWH-QMSP-14-118-Rev01
Worksheet for Testing of Carbon Fiber Sheet/Plate	DPWH-QMSP-14-119-Rev01
Worksheet for Testing of Hydraulic Cement Grout	DPWH-QMSP-14-120-Rev01
Worksheet for Testing of Erosion Mat	DPWH-QMSP-14-121-Rev01
Worksheet for Testing of Epoxy Resin	DPWH-QMSP-14-122-Rev01
Worksheet for Testing of Shotcrete	DPWH-QMSP-14-123-Rev01
Worksheet for Pigments - Integrally Colored Concrete	DPWH-QMSP-14-124-Rev01
Worksheet for Tensile Strength of Plastics	DPWH-QMSP-14-125-Rev01
Worksheet for Flexural Strength of Plastics	DPWH-QMSP-14-126-Rev01
Worksheet for Accelerated Weathering	DPWH-QMSP-14-127-Rev01

SAMPLE CARD

(Use Paper Size: 8.5" x 13")

1. The **DPWH Materials In-Charge** (*i.e., DPWH Project Engineer, Materials Engineer, or Provisional Materials Engineer*) **and** the **Supplier's/Contractor's Authorized Representative** (*e.g. Contractor's Materials Engineer*) shall legibly, completely and accurately accomplish the Requesting Office, Sample Information and Test Information fields of the Sample Cards and both of them shall affix their signatures as well as the date of sampling (under Test Information).

2. The **Materials Testing Section/Unit Head** (i.e., Engineer IV for MTD, Engineer III for QAHD or Engineer II for QAS) shall check the information provided by the DPWH Materials In-Charge and the Contractor's/Supplier's Authorized Representative as to completeness and accuracy thereof. The Sample Card shall then be submitted to the MTD/QAHD/QAS Chief for review.

3. The Sample Card shall be neat, legible and without any erasures/alterations. If there are any erasures/alterations, the Sample Card shall be returned to the DPWH Materials In-Charge to be filled out anew.

4. If there are no more corrections on the Sample Card, the **Materials Testing Section/Unit Head** shall fill out the 'Checked by/Date'.

5. Issuance of Order of Payment (OP). Proceed to payment.

6. After payment, the materials sample together with the OR shall be received by a **non-technical personnel who is not involved in testing of the materials sample**. He shall fill out the following data:

    - Received by/Date:
    - O.R. No./Amount/Date:
    - Lab. No.

    [NOTE: The assigned Lab. No. shall also be indicated on the actual sample submitted]

7. The Sample Card shall be returned to **Materials Testing Section/Unit Head** to fill out the 'Target Date of Release'. He shall then detach the Claim Stub before submitting the Sample Card to the **MTD/QAHD/QAS Chief**.

8. The **MTD/QAHD/QAS Chief** shall affix his signature and date of signing on the space provided (under 'Recommending Approval') then submit for approval by the **Head of Office**.

9. The **Head of Office** shall affix his signature and the date of signing on the space provided (under 'Approved by'). After signing, the Sample Card shall be returned to the MTD/QAHD/QAS Chief.

WORKSHEET

1. The **Laboratory Technician/Engineer** (or **Chemists** if chemical tests are performed) who performed the test shall immediately record (handwritten) the raw data obtained from the tests conducted on the material sample(s) and shall affix his signature and date of signing on the space provided (under 'Tested by/Date'). They shall also affix their signature and date of signing after computation of the results (under 'Computed by/Date').

2. For Chemical Tests, the **Chemist** shall certify the same by affixing his signature, date of signing and PRC License No. on the space provided.

3. The **Materials Testing Section/Unit Head** shall check and review the worksheet. The Materials Testing Section/Unit Head shall affix his/her signature and date of signing on the space provided (under 'Checked and Reviewed by").

4. The Worksheet shall then be forwarded to the **Designated Personnel** for the preparation of the Test Report.

TEST REPORT

1. The **designated personnel** (*i.e., personnel not directly involved in the testing of material samples*) shall prepare draft of the Test Report by filling out the Test Report information obtained from the Sample Card.

   NOTE: a. Format of Test Report depends on the materials tested and the required data.
   b. Fixed data for columns must include 'Date Tested', 'Test Method', 'Requirement' and 'Results' and other data deemed necessary and applicable.

2. The **Registered Chemist** shall certify the Test Report if chemical tests are involved by affixing his signature and his PRC License Number on the space provided.

   NOTE: If the materials tested do not involve chemical testing, the space to be certified by the Chemist may be deleted.

3. The **Materials Testing Section/Unit Head** shall evaluate the Test Report. It shall be neat, legible and without any erasures/alterations. The Test Report shall then be submitted to the **MTD/QAHD/QAS Chief** for review. If there are any corrections, the Test Report shall be returned to the designated personnel for correction.

4. If there are no more corrections on the Test Report, the same shall be finalized and assigned with a serial Laboratory Report Number by the **designated personnel**.

5. The **Materials Testing Section/Unit Head** shall affix **his initial** on the duplicate copy (**not on the original Test Report**)* under the name of the MTD/QAHD/QAS Chief. The **MTD/QAHD/QAS Chief** shall then affix his signature and date of signing under 'Checked by'.

6. The **Head of Office** shall affix his signature together with the date of signing under 'Attested by'.

* Pursuant to Section 9, Item d of R.A. No. 11032 (Anti-Red Tape Act) and Memorandum Circular No. 2024-05, Series of 2024 from ARTA, requiring that any principal document shall have a **maximum of three (3) signatories**. As such, the initials of those who conducted the tests, as well as the Materials Testing Section/Unit Head, shall only be reflected on the duplicate copy and NOT on the original Test Report.

Department of Public Works and Highways

Construction Materials Testing

SAMPLE CARD

DPWH OFFICE:

REQUESTING OFFICE:

To be filled out by the DPWH Materials In-Charge and Supplier's/Contractor's Authorized Representative

For DPWH/other Government Project:

Project Name : _____

_____

_____

Contract I.D. : _____

Implementing Office : _____

Contractor / Address : _____

_____

Supplier / Address : _____

_____

Bill Charge To : _____

Address : _____

_____

TIN : _____

Contact No/s : _____

To be filled out by the Authorized Representative

For Informational/Research:

Company/Requesting Entity : _____

_____

Supplier/Address : _____

_____

_____

Bill Charge To : _____

_____

Address : _____

_____

_____

TIN : _____

Contact No/s. : _____

SAMPLE INFORMATION:

Kind of Material : _____ Original Source : _____

Brand : _____ Type/Grade/Class : _____

Sample Identification : _____ Quantity Represented : _____

Sampled at/ Address : _____

Manufacturer/ Address : _____

Manufacturing Date : _____ Batch Identification No. : _____

TEST INFORMATION:

Test Desired : _____

Proposed Use : _____

Governing Spec's. : _____

Sampled by : _____ / _____ /

(DPWH Materials In-Charge and Supplier's/Contractor's Authorized Representative) (Signature)

_____ / _____ / _____

(Designation) (Office) (Date)

Submitted by : _____ / _____ /

(DPWH Materials In-Charge and Supplier's/Contractor's Authorized Representative) (Signature)

_____ / _____

(Designation) (Office)

Remarks : _____

To be filled out by a Non-Technical Personnel

Received by/Date : _____

OR No./Amount/Date : _____

Laboratory No. : _____

To be filled out by the Materials Testing Section/Unit Head

(i.e. Engineer IV for MTD, Engineer III for QAHD or Engineer II for QAS)

Checked by/Date : _____

Target Date of Release : _____

Recommending Approval:

_____

Chief of MTD/QAHD/QAS / Date

Approved by:

_____

Head of Office / Date

Lab. No. and OR No. : _____

Target Date of Release : _____

Contact No/s. : _____ *(Office's Contact Nos.)*

Note: You will be notified accordingly should there be a delay in the release of the Test Report

_____

Materials Testing Section/Unit Head / Date

(Office)

DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

TEST REPORT FOR DPWH/OTHER GOVERNMENT PROJECT

Lab. Report No. : _____

_____
Issued Date

TEST REPORT ON

Name of the Laboratory	**:**	
Address of the Laboratory	**:**	
Project Name/ID/Contract No.	**:**	
Implementing Office	**:**	
Kind of Material/s	**:**	
Original Source	**:**	
Sampled at/Address	**:**	
Sample Identification	**:**	
Type/Grade/Class	**:**	
Quantity Represented	**:**	
Brand	**:**	
Supplier/Address	**:**	
Contractor/Address	**:**	
Proposed Use	**:**	
Governing Specification	**:**	
Sampled by	**:**	/
		(DPWH Materials In-Charge and Supplier/Contractor's Authorized Representative)
	:	/ /
		Designation **(Office)** **(Date Sampled)**
Submitted by	**:**	/
		(DPWH Materials In-Charge and Supplier/Contractor's Authorized Representative)
	:	/ /
		Designation **(Office)** **(Date Received)**

Lab. No. : _____ (Paid under OR # _____)

REMARKS:

1. The results relate only to the sample tested.
2.

Tested by:

Chemical Test/s Certified by:
(if applicable)

_____
Chemist
PRC Lic. No.: _____

Checked by:

MTD / QAHD / QAS Chief

Attested by:

Head of Office

DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

TEST REPORT FOR INFORMATIONAL/RESEARCH

Lab. Report No. : _____

Issued Date

TEST REPORT ON _____

Name of the Laboratory	**:**	
Address of the Laboratory	**:**	
Requesting Entity/Address	**:**	
Kind of Material/s	**:**	
Original Source	**:**	
Sampled at/Address	**:**	
Sample Identification	**:**	
Type/Grade/Class	**:**	
Brand	**:**	
Manufactured by/Address	**:**	
Manufacturing Date	**:**	
Batch Identification No.	**:**	
Supplier/Address	**:**	
Proposed Use	**:**	
Governing Specification	**:**	
Sampled by	**:**	/
		(Name / Designation) **(Office)** **(Date Sampled)**
Submitted by	**:**	/
		(Name / Designation) **(Office)** **(Date Received)**

Lab. No. : _____ **(Paid under OR #** _____**)**

REMARKS:

1. The results relate only to the sample tested.
2. This report cannot be used as basis for payment for DPWH projects.
3.

Tested by:

Chemical Test/s Certified by:
(if applicable)

_____
Chemist
PRC Lic. No.: _____

Checked by:

MTD / QAHD / QAS Chief

Attested by:

Head of Office

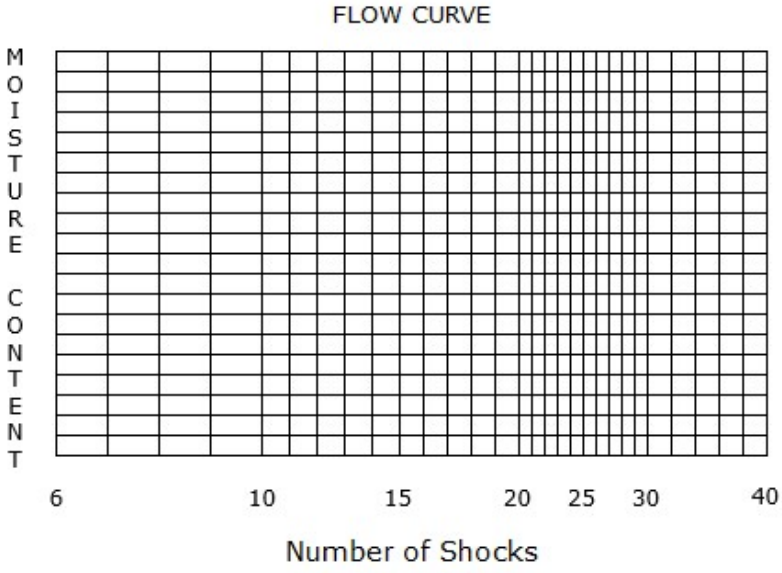
WORKSHEET FOR LIQUID LIMIT AND PLASTIC LIMIT TESTS

AASHTO T89, T90 & M145

Laboratory No. : _____

Sample Identification : _____

Trial Number	LIQUID LIMIT			PLASTIC LIMIT	
	1 (25-35)	**2 (20-30)**	**3 (15-25)**	**1**	**2**
1. Container ID					
2. Container, g					
3. Container + Wet Soil, g					
4. Container + Dry Soil, g					
5. Moisture, g, (3) – (4)					
6. Dry Soil, g, (4) – (2)					
7. Moisture Content, %, (5) / (6) x 100					
8. Number of Shocks				Average :	



9. Liquid Limit _____
10. Plastic Limit _____
11. Plasticity Index [(9)-(10)] _____

Sieve Analysis under lab No:	
% Passing No. 10	
% Passing No. 40	
% Passing No. 200	

12. Group Index, GI (M145) _____
13. Soil Classification (M145) _____

Tested by / Date

_____

_____

_____

_____

Computed by / Date

_____

_____

_____

_____

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR MOISTURE CONTENT DETERMINATION
AASHTO T265

Lab. No. : _____

Sample Identification : _____

1. Container + Wet soil, g = _____
2. Container + Oven-dried soil, g = _____
3. Water, g, [(1) – (2)] = _____
4. Container, g = _____
5. Dry soil, g, [(2) – (4)] = _____
6. Moisture Content, %, [(3) / (5) x 100] = _____

Tested by / Date

_____

Computed by / Date

_____

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR SHRINKAGE LIMIT OF SOIL

AASHTO T92

Lab. No. : _____

Sample Identification : _____

	Trial 1	Trial 2
1. Mass of dish + wet soil, g		
2. Mass of empty dish, g		
3. Mass of initial wet soil, g, (1) – (2)		
4. Mass of dish + dry soil, g		
5. Mass of dry soil, g, (4) – (2)		
6. Initial water content of soil (percentage of dry mass), %, $\left[\frac{(3)-(5)}{(5)}\right] x\ 100$		
7. Volume of wet soil, cm^3		
8. Volume of dry soil, cm^3		
9. Density of water, g/cm^3		
10. Shrinkage Limit, $\left\{(6) - \frac{[(7)-(8)]\ x\ (9)}{(5)}\right\} x\ 100$		

Tested by / Date :

Computed by / Date :

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR MOISTURE DENSITY RELATIONS OF SOILS

AASHTO T99 & T180

Lab. No. : _____

Sample Identification : _____

Trial Number	1	2	3	4	5
Total Water added in mL					
1. Volume of Mold, m^3					
2. Mold, kg					
3. Mold + wet soil, kg					
4. Wet soil, kg, (3) - (2)					
5. Wet Density, kg/m^3, (4) / (1)					
Moisture Content Determination					
6. Container ID					
7. Container, g					
8. Container + wet soil, g					
9. Container + dry soil, g					
10. Moisture, g, (8) - (9)					
11. Dry Soil, g, (9) - (7)					
12. MOISTURE CONTENT, % (10) / (11) x 100					
13. DRY DENSITY, kg/m^3 (5) / [1 + (12)/100]					

Method Used	:	A ( )	B ( )	C ( ) D ( )
AASHTO Standard	:	T99 ( )		T180 ( )
Rammer, kg	:	2.5 ( )		4.54 ( )
Number of Layers	:	3 ( )		5 ( )
No. of Blows/Layer	:	25 ( )		56 ( )
Diameter of Mold, mm	:	101.6 ( )		152.4 ( )

Maximum Dry Density (MDD), kg/m^3 : _____

Optimum Moisture Content (OMC), % : _____

Tested by / Date

_____

_____

_____

_____

Computed by / Date

_____

_____

_____

_____

Checked and Reviewed by / Date : _____

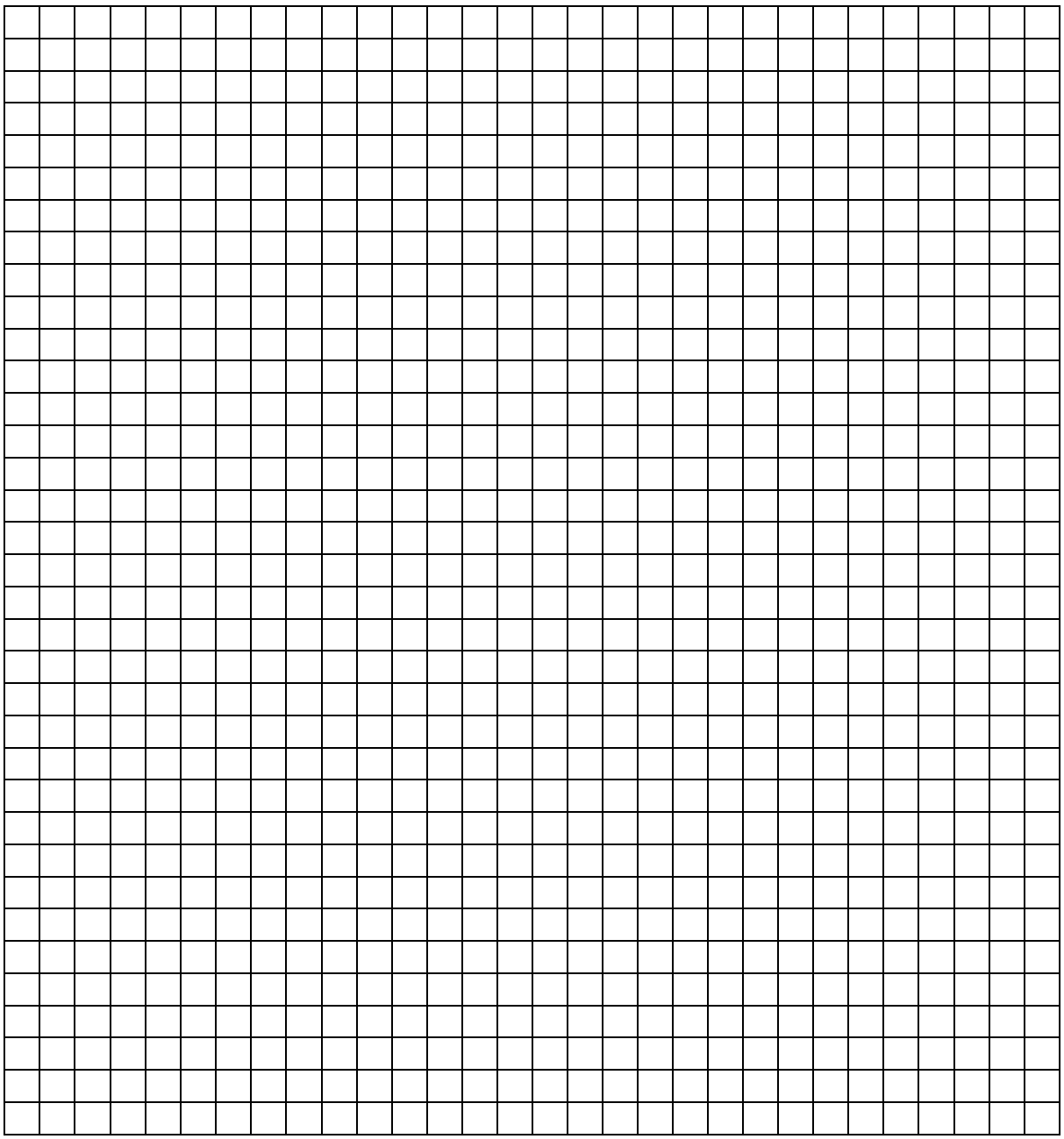
(Head of Materials Testing Section/Unit)

WORKSHEET FOR MOISTURE DENSITY RELATIONS TEST OF SOILS

AASHTO T99 & T180

Lab. No. : _____

Sample Identification : _____



WORKSHEET FOR CALIFORNIA BEARING RATIO
AASHTO T193

Lab. No. : _____
Sample Identification : _____

PREPARATION OF SPECIMENS										
Moisture Content Determination							*Density Determination*			
Number of Blows	10		30		65			10	30	65
Container ID							9. Mold, kg			
1. Container, g							10. Mold + Sample, kg			
2. Wet Sample + Container, g							11. Sample (10) - (9), kg			
3. Oven Dry Sample + Container, g							12. Volume of Mold, m^3			
4. Dry Soil (3) - (1) , g							13. Wet Unit Weight (11) / (12), kg/m^3			
5. Moisture (2) - (3) , g							14. Dry Unit Weight [(13) / 1 + (7)/100]			
6. Moisture Content (5) / (4) x 100, %										
7. Average MC, %										
8. MC after penetration, %										

SOAKED COMPACTED VALUES										
Calibration Factor:		*Mixing Water, kg:*			*Calibration Factor:*		*Mixing Water, kg:*			
Penetration mm	*No. of Blows*		10 Blows		*Penetration mm*	*No. of Blows*		30 Blows		
	Date & Time Molded:					Date & Time Molded:				
	Date & Time Tested:					Date & Time Tested:				
	Load					*Load*				
	Dial Reading	*Total, kg*	*kg/sq.cm*	*Corrected kg/sq.cm*		*Dial Reading*	*Total, kg*	*kg/sq.cm*	*Corrected kg/sq.cm*
0.64					0.64				
1.27					1.27				
1.91					1.91				
2.54					2.54				
3.81					3.81				
5.08					5.08				
7.62					7.62				
10.16					10.16				
12.7					12.7				

CBR Value at 10 Blows	**CBR Value at 30 Blows**
CBR at 2.54 = $\frac{\text{Corrected kg/sq.cm}}{70.36}$ x 100 =	CBR at 2.54 = $\frac{\text{Corrected kg/sq.cm}}{70.36}$ x 100 =
CBR at 5.08 = $\frac{\text{Corrected kg/sq.cm}}{105.03}$ x 100 =	CBR at 5.08 = $\frac{\text{Corrected kg/sq.cm}}{105.03}$ x 100 =

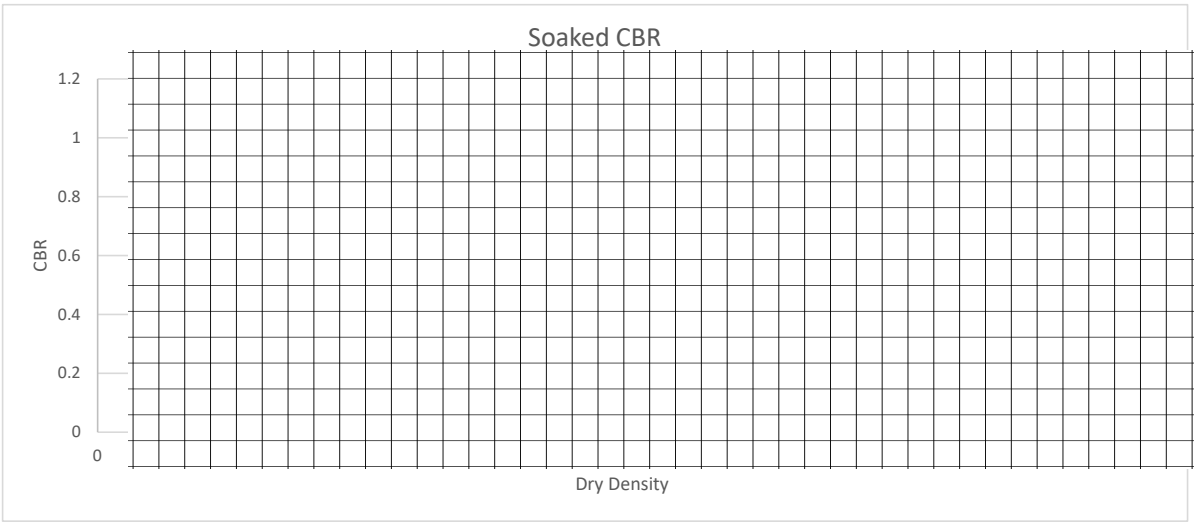
WORKSHEET FOR CALIFORNIA BEARING RATIO
AASHTO T193

SOAKED COMPACTED VALUES					**CBR Value at 65 Blows**
Calibration Factor:		*Mixing Water, kg:*			CBR at 2.54 = Corrected kg/sq.cm / 70.36 x 100 =
Penetration, mm	*No. of Blows*		65 Blows		
	Date & Time Molded:				CBR at 5.08 = Corrected kg/sq.cm / 105.03 x 100 =
	Date & Time Tested:				
	Load				
	Dial Reading	*Total, kg*	*kg/sq.cm*	*Corrected kg/sq.cm*	
0.64					
1.27					**Moisture Density Relations of Soils**
1.91					Under Laboratory No. =
2.54					Maximum Dry Density, kg/cu.m =
3.81					Optimum Moisture Content, % =
5.08					Note :Allowable variation from optimum is plus or minus 0.5%. If variation exceeds allowable, discard specimen and mold another to meet requirements.
7.62					
10.16					
12.7					

SWELL VALUES

Dial Reading, mm (96 h)						
No. of Blows	Initial	Day 1	Day 2	Day 3	Day 4	Swell, %
10						
30						
65						

% Swell = Change in Length in mm during soaking / 116.434 mm x 100 =



CBR @ MDD:

Tested by / Date :

Computed by / Date :

Checked and Reviewed by / Date :

(Head of Materials Testing Section/Unit)

WORKSHEET FOR CALIFORNIA BEARING RATIO

AASHTO T193

10 BLOWS

L O A D

PENETRATION

WORKSHEET FOR CALIFORNIA BEARING RATIO

AASHTO T193

30 BLOWS

L O A D

PENETRATION

WORKSHEET FOR CALIFORNIA BEARING RATIO

AASHTO T193

65 BLOWS

L
O
A
D

PENETRATION

WORKSHEET FOR HYDROMETER ANALYSIS

AASHTO T88

Lab. No. : _____

Sample Identification : _____

Air-dry sample dispersed, g	_____	Deflocculating agent, ml	_____
Hygroscopic Moisture, %	_____	Specific gravity	_____
Dry sample dispersed, g	_____	Constant, a1/	_____
Dry washed sample, g	_____	Original time	_____
Dispersing agent, ml	_____	Hydrometer No.	_____

A	B	C	D	E	F	G	H	I			J	K
								K_L	K_G	K_N		
	2						.040					
	5						.026					
	15						.015					
	30						.010					
	60						.0074					
	250						.0036					
	1440						.0015					

A - Time
B - Elapsed Time (min.)
C - Hydrometer Reading
D - Temperature (°C)
E - Temperature Correction
F - Corrected Hydrometer Reading, R
G - % Passing, P'
H - Max. Grain Dia., d' (mm)
Assumed Conditions
I - Dia. Correction Factor (Refer to AASHTO T88)
J - Corrected Grain Dia., d (mm)
K - Corrected % Passing, P

Gravel, (+) 2 mm	_____	%
Sand, (-) 2 mm to (+) 0.075 mm	_____	%
Silt, (-) 0.075 mm to (+) 0.002 mm	_____	%
Clay, (-) 0.002 mm	_____	%

1. $a = \frac{2.65 - 1.00}{2.65} \times \frac{G}{G - 1.00}$

   G = Specific gravity of the soil

2. $d = d' \times K_L \times K_G \times K_N$

3. P = P' x % Passing 2 mm of total material

Tested by / Date

Computed by / Date

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR FIELD DENSITY TEST

AASHTO T191

Lab. No. : _____

Test Hole Depth : _____

Location : _____
(Station and Reference to Center Line)

Representing : _____
(Layer No.) (Depth) (Station to Station) (Width)

Cone Correction

1. Mass of Jar + Sand, kg _____
2. Mass of Jar + Sand (After Pouring), kg _____
3. Cone Correction (CC), kg (1) – (2) _____

Calibration of Sand

8. Mass of Jar + Sand, kg _____
9. Mass of Jar + Sand (After Pouring), kg _____
10. Mass of Sand to fill the container, kg (8) – (9) – (3) _____
11. Unit Weight of Sand, kg/m^3 (10) / (7) _____

Volume of Container

4. Mass of Container, kg _____
5. Mass of Container + Water, kg _____
6. Mass of Water, kg (5) – (4) _____
7. Volume of Container, m^3 (6)/Density of Water (Based on Table 1) _____

In-situ Moisture Content

	Trial I	Trial II
12. Container ID	_____	_____
13. Container + wet soil, g	_____	_____
14. Container + dry soil, g	_____	_____
15. Moisture, g	_____	_____
16. Container, g	_____	_____
17. Dry Soil, g	_____	_____
18. In-situ Moisture Content, % (15) / (17) x 100	_____	_____

19. Average In-situ Moisture Content, % _____

*Note: In-situ Moisture Content samples shall be taken after the weight of all the material taken from hole has been recorded. Additional trial for In-situ Moisture Content Determination may be conducted.

WORKSHEET FOR FIELD DENSITY TEST

AASHTO T191

Lab. No. : _____

Field Density

20. Total material taken from hole, kg _____
21. Mass of Jar + Sand, kg _____
22. Mass of Jar + Sand (after pouring), kg _____
23. Sand to fill hole, kg (21) – (22) – (3) _____
24. Volume of hole, m^3, (23) / (11) _____
25. Wet unit weight, kg/m^3, (20) / (24) _____
26. Dry unit weight, kg/m^3 _____
    (25) / [1 + ((19) / 100)]

Compaction Test Laboratory No. _____

27. Lab. compaction test data
    a. Maximum dry density, kg/m^3 _____
    b. Optimum moisture content, % _____
28. Degree of compaction, % _____
    (26) / (27a) X 100

Table 1

Temperature			
°C	°F	kg/m^3	lb/ft^3
15.6	60	999.01	62.366
18.3	65	998.54	62.336
21.1	70	997.97	62.301
(23.0)	(73.4)	(997.54)	(62.274)
23.9	75	997.32	62.261
26.7	80	996.59	62.216
29.4	85	995.83	62.166

Tested by / Date

_____
_____
_____
_____

Computed by / Date

_____
_____
_____
_____

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR SPECIFIC GRAVITY OF FINE-GRAINED SOIL

AASHTO T100

Lab. No. : _____

Sample Identification : _____

STANDARDIZATION OF PYCNOMETER

1. Pycnometer + water at Temperature T_x, W_a, g	
2. Pycnometer + water at Temperature T_i, W_i, g	
3. Pycnometer, W_f, g	
4. Relative density of water at Temperature T_i, D_i	
5. Relative density of water at Temperature T_x, D_x	
6. Observed Temperature of water, T_i, °C	
7. Temperature of water after boiling, T_x, °C	

Computation:

$$W_a = \left[\left(\frac{D_x}{D_i}\right)(W_i - W_f)\right] + W_f$$

SPECIFIC GRAVITY OF SOIL

	Trial 1	**Trial 2**
1. Container Identification		
2. Container, g		
3. Container + Dry soil, g		
4. Dry soil (3) – (2), W_o, g		
5. Pycnometer + Water at Temperature T_x, W_a, g		
6. Pycnometer + Soil + Water at Temperature T_x, W_b, g		
9. Specific Gravity of Soil, S_x		
Average		

Computation:

$$S_x = \frac{W_o}{W_o + (W_a - W_b)}$$

WORKSHEET FOR SPECIFIC GRAVITY OF FINE-GRAINED SOIL

AASHTO T100

Lab. No. : _____

Sample Identification : _____

Temperatures, °C	Relative Density of Water
18	0.9986244
19	0.9984347
20	0.9982343
21	0.9980233
22	0.9978019
23	0.9975702
24	0.9973286
25	0.9970770
26	0.9968156
27	0.9965451
28	0.9962652
29	0.9959761
30	0.9956780

Tested by / Date :

_____

_____

_____

_____

Computed by / Date :

_____

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_____

_____

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR SOUNDNESS TEST

AASHTO T104

Lab. No. : _____

Sample Identification : _____

FINE AGGREGATES

Sieve size, mm		(1) Grading of original sample, % Retained	(2) Mass of test fraction before test, g	(3) Mass of test fraction after test, g	(4) Loss in Mass, g [(2)-(3)]	(5) % passing sieve after test (actual & loss) [(4)/(2)x100]	(6) Mass average (corrected & loss) [(5)x(1)]
Passing on	Retained on						
0.150	-						
0.300	0.15						
0.600	0.300						
1.18	0.600						
2.36	1.18						
4.75	2.36						
9.5	4.75						
Total							

Date Tested : _____

Lab. No. : _____

Sample Identification : _____

COARSE AGGREGATES

Sieve size, mm		(1) Grading of original sample, % Retained	(2) Mass of test fraction before test, g	(3) Mass of test fraction after test, g	(4) Loss in Mass, g [(2)-(3)]	(5) % passing sieve after test (actual & loss) [(4)/(2)x100]	(6) Mass average (corrected & loss) [(5)x(1)]
Passing on	Retained on						
63.0	37.5						
37.5	19.0						
19.0	9.5						
9.5	4.75						
Total							

Date Tested : _____

Tested by / Date :

_____

_____

_____

_____

Computed by / Date :

_____

_____

_____

_____

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR ORGANIC IMPURITIES AND MORTAR STRENGTH TEST

AASHTO T21, AASHTO T71

Lab. No. : _____

Sample Identification : _____

ORGANIC IMPURITIES (PRELIMINARY)

AASHTO T21

Mass of sodium hydroxide (NaOH), g _____
Mass of water, g _____
Mass of NaOH Solution, g _____
Color Level after 24 hrs *(indicate whether lighter, darker, or equal color to that of the reference standard)* _____

Date Tested : _____

MORTAR STRENGTH TEST

AASHTO T71

	Unwashed	Washed
Mass of cement, g		
Mass of sand (SSD), g		
Volume of water used, ml		
Flow, %		
Cross-sectional area, mm^2		

Sample ID	Age in days	Unwashed Fine Aggregate (FA)		Washed Fine Aggregate (FA)	
		Load	Strength	Load	Strength
	7				
	7				
	7				
	28				
	28				
	28				

1. Average Strength for Unwashed FA (7 Days) = _____
2. Average Strength for Washed FA (7 Days) = _____
3. Average Strength for Unwashed FA (28 Days) = _____
4. Average Strength for Washed FA (28 Days) = _____
5. Relative Strength (7 Days), %, (1) / (2) x 100 = _____
6. Relative Strength (28 Days), %, (3) / (4) x 100 = _____

Date Tested : _____

Tested by / Date

_____

_____

_____

_____

Computed by / Date

_____

_____

_____

_____

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR UNIT WEIGHT (COARSE & FINE AGGREGATES)

AASHTO T19

Lab. No. : _____

Sample Identification : _____

Coarse Aggregates	Loose	Rodded
1. Container + sample, kg	_____	_____
2. Container, kg	_____	_____
3. Sample, kg, (1) - (2)	_____	_____
4. Vol. of Container, m^3	_____	_____
5. Unit weight, kg/m^3, (3) / (4)	_____	_____

Date Tested : _____

Lab. No. : _____

Sample Identification : _____

Fine Aggregates	Loose	Rodded
1. Container + sample, kg	_____	_____
2. Container, kg	_____	_____
3. Sample, kg, (1) - (2)	_____	_____
4. Vol. of Container, m^3	_____	_____
5. Unit weight, kg/m^3, (3) / (4)	_____	_____

Date Tested : _____

Tested by / Date

_____

_____

_____

_____

Computed by / Date

_____

_____

_____

_____

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR SPECIFIC GRAVITY AND ABSORPTION OF AGGREGATES

AASHTO T85, AASHTO T84

Lab. No. : _____

Sample Identification : _____

COARSE AGGREGATES (AASHTO T85)

1. Saturated Surface Dry (SSD) Sample, g = _____

2. Oven-dried soil Sample, g = _____

3. Sample in Water, g = _____

4. Absorption, % = $\left[\frac{(1)-(2)}{(2)}\right] x\ 100$ = _____

5. Bulk Specific Gravity (SSD) = (1) / [(1) - (3)] = _____

Date Tested: _____

Lab. No. : _____

Sample Identification : _____

FINE AGGREGATES (AASHTO T84)

1. Saturated Surface Dry Sample (SSD), g = _____

2. Oven-dried soil Sample, g = _____

3. Pycnometer filled with water, g = _____

4. Pycnometer + water + sample, g = _____

5. Absorption, % = $\left[\frac{(1)-(2)}{(2)}\right] x\ 100$ = _____

6. Bulk Specific Gravity (SSD) = (1) / [(1) + (3) – (4)] = _____

Date Tested: _____

Tested by / Date

_____

_____

_____

_____

Computed by / Date

_____

_____

_____

_____

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR SIEVE ANALYSIS
AASHTO T11, T27 & T311

Lab. No. : _____

Sample Identification : _____

Weight of samples in grams:
1. Original . . . . . _____
2. Oven Dry . . . . . _____
3. Wash Oven Dry . . . . . _____

4. Wash Loss, g, (2) - (3) . . . . . _____
5. Fineness Modulus . . . . . _____

Sieve size mm.	(in)	Wt retained	Cumulative			Governing Specs: % passing:	Remarks
			Wt passing	% passing	% retained		
75.00	(3")						
63.00	(2 1/2")						
50.00	(2")						
37.50	(1 1/2")						
25.00	(1")						
19.00	(3/4")						
12.50	(1/2")						
9.50	(3/8")						
6.30	(1/4")						
4.75	(No. 4)						
2.36	(No. 8)						
2.00	(No. 10)						
1.18	(No. 16)						
0.60	(No. 30)						
0.425	(No. 40)						
0.300	(No. 50)						
0.150	(No. 100)						
0.075	(No. 200)						
Pan							
Wash passing No. 0.075 (Wash Loss)							

Tested by / Date :

_____
_____
_____
_____

Computed by / Date :

_____
_____
_____
_____

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR LOS ANGELES ABRASION TEST

AASHTO T96 / ASTM C131

Lab. No. : _____

Sample Identification : _____

1. Washed Oven-dried sample, g. = _____

2. Washed Oven-dried sample retained on No. 1.70 mm sieve (after Abrasion Test), g. = _____

3. Percent Wear, % = $\frac{(1) - (2)}{(1)} \times 100$ = _____

Tested by / Date :

_____

_____

_____

_____

Computed by / Date :

_____

_____

_____

_____

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR FINENESS TEST OF CEMENT

ASTM C204, ASTM C184, ASTM C430

Lab. No. : _____

Sample Identification : _____

Type : _____

Room Temp. (°C) = _____ (*must be 23 ± 4 °C)*

Room R.H. (%) = _____ (*shall not be less than 50%*)

I. FINENESS: Air-Permeability Method (ASTM C204)

a. Density of test sample (from Density of Cement Test)	-		_____	
b. Specific Surface of SRM No. 114 or 46h, cm^2/g (S_s) (from CoA)	-		_____	
Cell No.		_____	_____	_____
c. Time interval of manometer drop for SRM No. 114 or 46h, s (T_s) (from calibration)	-	_____	_____	_____
d. Bulk volume of bed of cement, cm^3 (from calibration)	-	_____	_____	_____
e. Theoretical weight of sample, g = a x d (1 - ε); ε = desired porosity of cement bed (0.500±0.005)	-	_____	_____	_____
f. Actual weight of sample, g	-	_____	_____	_____
g. Time Interval of manometer drop for test sample, s (T)	-	_____	_____	_____
h. Specific Surface of test sample, S (cm^2/g) $= \frac{b\sqrt{g}}{\sqrt{c}}$	-	_____	_____	_____
Average Specific Surface of test sample, S	-		_____	

Tested by / Date

_____

_____

_____

Computed by / Date

_____

_____

_____

II. FINENESS: by the 75-µm (No. 200) Sieve (ASTM C184)

a. Weight of sample, g - _____

b. Weight of sample retained, g - _____

Fineness of Cement, % Passing on No. 200 Sieve $= 100 - \left(\frac{b}{a} \times 100 \right) =$ _____

Tested by / Date

_____

_____

_____

Computed by / Date

_____

_____

_____

WORKSHEET FOR FINENESS TEST OF CEMENT

ASTM C204, ASTM C184, ASTM C430

Lab. No. : _____

Sample Identification : _____

Type : _____

III. FINENESS: by the 45-µm (No. 325) Sieve (ASTM C430)

			Trial 1	Trial 2
a.	Sieve ID/Serial No.	-	_____	_____
b.	Sieve Correction Factor (from calibration) $= \frac{Residue_{1\text{-g SRM}} - Residue_{Sieve\ being\ Calibrated}}{Residue_{Sieve\ being\ Calibrated}}$	-	_____	_____
c.	Weight of sample, g	-	_____	_____
d.	Weight of sample retained at the Sieve, g	-	_____	_____
e.	Corrected Residue, % $= \frac{d}{c} \times (100 \pm b)$	-	_____	_____
		AVE:	_____	
	Fineness $= 100 - e_{AVE}$	-	_____	

Tested by / Date	Computed by / Date
_____	_____
_____	_____
_____	_____

Checked and Reviewed by / Date: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR NORMAL CONSISTENCY, TIME OF SETTING, AUTOCLAVE EXPANSION TESTS OF CEMENT

ASTM C187, C191, C266 & C151

Lab. No. : _____

Sample Identification : _____

Type : _____

I. NORMAL CONSISTENCY : (ASTM C187)

Temp,^{0}C = _____ RH, % = _____

a. Mass of sample, g - - - - - - - - - - - - - - - - - - _____

b. Vol. H_2O used, ml - - - - - - - - - - - - - - - - - - _____

% Normal Consistency = (b/a x 100) - - - - - - _____

Tested by / Date	Computed by / Date
_____	_____
_____	_____
_____	_____

II. TIME OF SETTING :

a. Vicat Needle: (ASTM C191)

Temp,^{0}C = _____ RH, % = _____

a. Time made - - - - _____ _____ _____

b. Initial set *(@ 25 mm)* - _____ _____ _____

c. Final Set - - - - - - - _____ _____ _____

Tested by / Date	Computed by / Date
_____	_____
_____	_____
_____	_____

WORKSHEET FOR NORMAL CONSISTENCY, TIME OF SETTING, AUTOCLAVE EXPANSION TESTS OF CEMENT

ASTM C187, C191, C266 & C151

Lab. No. : _____

Sample Identification : _____

Type : _____

b. Gillmore Needle: (ASTM C266)

Temp,^{0}C = _____ RH, % = _____

a.	Time made - - - -	_____	_____	_____
b.	Initial set - - - -	_____	_____	_____
c.	Final Set - - - -	_____	_____	_____

Tested by / Date

_____

_____

_____

Computed by / Date

_____

_____

_____

III. AUTOCLAVE EXPANSION : (ASTM C151)

Temp,^{0}C = _____ RH, % = _____

1. Length comparator reading of specimen before Autoclaving, mm - - - - - - - _____
2. Length comparator reading of specimen after Autoclaving, mm - - - - - - - _____
3. Gauge length, mm - - - - - - - _____

$$\text{Autoclave Expansion, \%} = \frac{2 - 1}{3} \times 100 = \text{_____}$$

Tested by / Date

_____

_____

_____

Computed by / Date

_____

_____

_____

Checked/ Reviewed by/Date: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR MORTAR STRENGTH TEST OF CEMENT

ASTM C109

Lab. No. : _____

Sample Identification : _____

Type : _____

Mortar Composition Cement, g : _____ Sand, g : _____ Water : _____

Specimen Area, sq. m: _____ W/C : _____ Flow, % : _____

(for Portland Cement) (*for Blended Cement*)

Date Molded: _____ Temp., ^{0}C: _____ % RH: _____

Sample I.D.	Age in Days	Temp., ^{0}C	RH, %	Date	Compressive Strength, MPa
Average					

Tested by / Date

_____

_____

_____

Computed by / Date

_____

_____

_____

Sample I.D.	Age in Days	Temp., ^{0}C	RH, %	Date	Compressive Strength, MPa
Average					

Tested by / Date

_____

_____

_____

Computed by / Date

_____

_____

_____

WORKSHEET FOR MORTAR STRENGTH TEST OF CEMENT

ASTM C109

Sample I.D.	Age in Days	Temp., ^{0}C	RH, %	Date	Compressive Strength, MPa
Average					

Tested by / Date

_____

_____

_____

Computed by / Date

_____

_____

_____

Checked/Reviewed by/Date: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR AIR CONTENT TEST OF CEMENT

ASTM C185

Lab. No. : _____

Sample Identification : _____

Type : _____

AIR CONTENT

Temp, ^{0}C = _____ RH, % = _____

a.	Mass of sand, g	- - - - - - - - - -	
b.	Mass of cement, g	- - - - - - - - - -	
c.	Volume of water, ml	- - - - - - - - - -	
d.	Volume of container, ml	- - - - - - - - - -	
e.	Mass of container empty, g	- - - - - - - - - -	
f.	Mass of container + mortar, g	- - - - - - - - - -	
g.	Mass of mortar (W), g	- - - - - - - - - -	
h.	Specific Gravity of cement, C_G	- - - - - - - - - -	
i.	Specific Gravity of sand. S_G	- - - - - - - - - -	**2.65**

COMPUTATION:

1. Wa – Actual Mass per unit volume

$$Wa = \frac{g}{d} = \text{- - - - - - - - - -}$$

2. P – Percent of Mixing Water Based on Mass of Cement

$$P = \frac{\text{Volume of water}}{\text{Mass of cement}} = \frac{c}{b} \times 100 = \text{- - - - - - - - - -}$$

3. W_T – Theoretical mass per unit, volume

$$W_T = \frac{350 + 1400 + (350 \times P \times 0.01)}{\frac{350}{C_G} + \frac{1400}{S_G} + \frac{350 \times P \times 0.01}{1}} = \text{- - - - - - - - - -}$$

4. Air Content, volume per cent = $100\ [1 - (Wa/W_T)]$ - - - - - - - -

If Specific Gravity of Cement = 3.15

5. Air Content, volume per cent = $100 - W[(182.7 + P)/(2000+4P)]$ - - - - - - - -

Tested by / Date

_____

_____

_____

Computed by / Date

_____

_____

_____

Checked/Reviewed by/Date: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR SPECIFIC GRAVITY OF CEMENT
ASTM C188

Lab. No. : _____

Sample Identification : _____

Type : _____

Room Temp. (°C) = _____ (*must be 23 ± 4 °C)*

Room R.H. (%) = _____ (*shall not be less than 50%*)

SPECIFIC GRAVITY:

a. Weight of Le Chatelier Flask & Kerosene, g - _____

b. Initial volume reading, mL - _____

c. Bath Temperature at initial volume recording, °C - _____

d. Weight of Le Chatelier Flask, Kerosene & sample, g - _____

e. Final volume reading, mL - _____

f. Bath Temperature at final volume recording, °C (temp. variation with $c \leq 0.2$ °C) - _____

Specific Gravity = $\frac{d - a}{e - b}$ - _____

Tested by / Date

_____

(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date

_____

Chemical Test/s Certified by : _____

(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR CHEMICAL TESTS OF CEMENT (by Wet Analysis)

ASTM C114

Lab. No. : _____

Sample Identification : _____

Type : _____

Sampling Ambient Temp. (°C) = _____ Sampling Ambient R.H. (%) = _____

I. LOSS ON IGNITION (LOI)

			Trial 1	Trial 2
a.	Mass of empty crucible, g	-	_____	_____
			_____	_____
			_____	_____
			_____	_____
b.	Average of *a* comprising the constant weight, g	-	_____	_____
c.	Mass of sample, g	-	_____	_____
d.	Mass of crucible and sample before ignition, g	-	_____	_____
e.	Mass of crucible and sample after ignition, g	-	_____	_____
			_____	_____
			_____	_____
			_____	_____
f.	Average of *e* comprising the constant weight, g	-	_____	_____
g.	% LOI = $\left(\frac{d-f}{c}\right)$ x 100	-	_____	_____
	Average % LOI	-	_____	

Tested by / Date

_____

(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date

_____

II. INSOLUBLE RESIDUE (IR)

			Trial 1	Trial 2	Blank
a.	Mass of empty crucible, g	-	_____	_____	_____
			_____	_____	_____
			_____	_____	_____
			_____	_____	_____
b.	Average of *a* comprising the constant weight, g	-	_____	_____	_____
c.	Mass of sample, g	-	_____	_____	_____
d.	Mass of ignited crucible and residue, g	-	_____	_____	_____
e.	Mass of ignited residue, g = *d* – *b*	-	_____	_____	_____
f.	% IR = $\frac{e}{c}$ x 100	-	_____	_____	_____
g.	Corrected % IR = *f* – % Blank	-	_____	_____	
	Average % IR	-	_____		

Tested by / Date

_____

(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date

_____

WORKSHEET FOR CHEMICAL TESTS OF CEMENT (by Wet Analysis)

ASTM C114

Lab. No. : _____

Sample Identification : _____

Type : _____

Sampling Ambient Temp. (°C) = _____ Sampling Ambient R.H. (%) = _____

III. SULFUR TRIOXIDE (SO_3)

		Trial 1	Trial 2	Blank
a. Mass of empty crucible, g	-	_____	_____	_____
		_____	_____	_____
		_____	_____	_____
		_____	_____	_____
b. Average of *a* comprising the constant weight, g	-	_____	_____	_____
c. Mass of sample, g	-	_____	_____	_____
d. Mass of ignited crucible and residue, g	-	_____	_____	_____
e. Mass of ignited residue, g = *d* – *b*	-	_____	_____	_____
f. % SO_3 = *e* x 34.3	-	_____	_____	_____
g. Corrected % SO_3 = *f* – % Blank	-	_____	_____	

Average % SO_3 - _____

Tested by / Date _____ Computed by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

IV. MAGNESIUM OXIDE (MgO)

		Trial 1	Trial 2	Blank
a. Mass of empty crucible, g	-	_____	_____	_____
		_____	_____	_____
		_____	_____	_____
		_____	_____	_____
b. Average of *a* comprising the constant weight, g	-	_____	_____	_____
c. Mass of sample, g	-	_____	_____	_____
d. Mass of ignited crucible and residue, g	-	_____	_____	_____
e. Mass of ignited residue, g = *d* – *b*	-	_____	_____	_____
f. % MgO = *e* x 72.4	-	_____	_____	_____
g. Corrected % MgO = *f* – % Blank	-	_____	_____	

Average % MgO - _____

Tested by / Date _____ Computed by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

Chemical Test/s Certified by : _____

(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR CHEMICAL TESTS OF CEMENT (using X-Ray Fluorescence Spectrometer/XRF)
ASTM C114

Lab. No. : _____

Sample Identification : _____

Type : _____

Sampling Ambient Temp. (°C) = _____ Sampling Ambient R.H. (%) = _____

Sample Preparation:
☐ Fusion/Fused Bead Method ☐ Pressed Pellet Method

		MAGNESIUM OXIDE (MgO) (*ANALYTE*)		**SULFUR TRIOXIDE (SO_3)** (*ANALYTE*)	
		Trial 1	Trial 2	Trial 1	Trial 2
a.	Mass of sample, g -				
b.	Mass of flux (if used), g -				
c.	Instrument Readout, % -				
d.	Blank, % -				
e.	Composition, % = ($c - d$) -				
	Average % Composition -				
f.	Quality Control, CRM ID -				
g.	Quality Control, CRM Instrument Readout, % -				
h.	Quality Control, CRM Certified Value, % -				
i.	Quality Control, CRM Accuracy, % = $\frac{g}{h}$ x 100 -				

Tested by / Date
_____
(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date
_____

Chemical Test/s Certified by : _____
(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF ASPHALT CEMENT (PENETRATION-GRADED)

AASHTO T44/ASTM D2042, AASHTO T48/ASTM D92, AASHTO T49/ASTM D5, AASHTO T51/ASTM D113
AASHTO T102, AASHTO T179/ASTM D1754, AASHTO T228/ASTM D70, ASTM D36

Lab. No. : _____
Sample Identification : _____
Grade : _____

1. Specific Gravity (AASHTO T228/ASTM D70)

a. Mass of pycnometer, empty, g - - - - - - - - - - - - _____
b. Mass of pycnometer filled with water, g - - - - - - - - - - - - _____
c. Mass of pycnometer ¾ filled w/ sample, g - - - - - - - - - - - - _____
d. Mass of pycnometer + sample + water, g - - - - - - - - - - - - _____

Specific Gravity = $\dfrac{c-a}{(b-a)-(d-c)}$ = _____

Tested by / Date
_____
_____
_____

Computed by / Date
_____
_____
_____

2. Thin-Film Oven Test (AASHTO T179/ASTM D1754)

		#1	#2
a. Mass of container empty, g	- - - - - - -	_____	_____
b. Mass of sample, g	- - - - - - -	_____	_____
c. Mass of container + sample, g	- - - - - - -	_____	_____
d. Mass of container + sample after heating, g	- - - - - - -	_____	_____
e. Mass Loss or Mass Gain (+ or -), g	- - - - - - -	_____	_____
	AVERAGE =	_____	
Mass Loss or Mass Gain, % = $\frac{e}{b}\ x\ 100$	- - - - - - -	_____	_____
	AVERAGE =	_____	

Tested by / Date
_____
_____
_____

Computed by / Date
_____
_____
_____

3. Solubility and Ash Content (AASHTO T44/ASTM D2042)

a. Mass of sample, g - - - - - - - - - - - - _____
b. Mass of crucible + filter paper, g - - - - - - - - - - - - _____
c. Mass of crucible + filter paper + residue, g - - - - - - - - - - - - _____

% Solubility = $100 - \left[\left(\dfrac{c-b}{a}\right) \times 100\right]$ = _____

Tested by / Date
_____
(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date
_____

4. Spot Test (AASHTO T102)

Spot Test = _____

Tested by / Date
_____
(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date
_____

WORKSHEET FOR TESTING OF ASPHALT CEMENT (PENETRATION-GRADED)

AASHTO T44/ASTM D2042, AASHTO T48/ASTM D92, AASHTO T49/ASTM D5, AASHTO T51/ASTM D113
AASHTO T102, AASHTO T179/ASTM D1754, AASHTO T228/ASTM D70, ASTM D36

Lab. No. : _____
Sample Identification : _____
Grade : _____

5. Penetration (AASHTO T49/ASTM D5)

	1	2	3	**Average**
a. Penetration (Original), 25 °C, 100g, 5s	_____	_____	_____	_____
b. Penetration (After Oven Test), 25 °C, 100g, 5s	_____	_____	_____	_____

Penetration, % of Original = $\frac{b_{ave.}}{a_{ave.}}$ x 100 = _____

Tested by / Date
_____
_____
_____

Computed by / Date
_____
_____
_____

6. Ductility (AASHTO T51/ASTM D113)

	1	2	3	**Average**
a. Ductility (Original) 25°C, 5 cm/min., cm	_____	_____	_____	_____
b. Ductility (After Oven Test) 25°C, 5 cm/min., cm	_____	_____	_____	_____

Tested by / Date
_____
_____
_____

Computed by / Date
_____
_____
_____

7. Flash Point (AASHTO T48/ASTM D92)

Flash Point, °C = _____

Tested by / Date
_____
_____
_____

Computed by/ Date
_____
_____
_____

8. Softening Point (ASTM D36)

1	2	**Average, °C**
_____	_____	_____

Tested by / Date
_____
_____
_____

Computed by/ Date
_____
_____
_____

Chemical Test/s Certified by : _____
(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR ASPHALT CEMENT (VISCOSITY-GRADED)

AASHTO T44/ASTM D2042, AASHTO T47/ASTM D6, AASHTO T48/ASTM D92, AASHTO T51/ASTM D113, AASHTO T102, AASHTO T202/ASTM D2171, AASHTO T228/ASTM D70, ASTM D36

Lab. No. : _____
Sample Identification : _____
Grade : _____

1. Specific Gravity (AASHTO T228/ASTM D70)

a. Mass of pycnometer, empty, g - - - - - - - - - - - - _____
b. Mass of pycnometer filled with water, g - - - - - - - - - - - - _____
c. Mass of pycnometer ¾ filled w/ sample, g - - - - - - - - - - - - _____
d. Mass of pycnometer + sample + water, g - - - - - - - - - - - - _____

Specific Gravity = $\dfrac{c - a}{(b - a) - (d - c)}$ = _____

Tested by / Date _____

Computed by / Date _____

2. Thin-Film Oven Test (AASHTO T179/ASTM D1754)

		#1	#2
a. Mass of container empty, g	- - - - - - -	_____	_____
b. Mass of sample, g	- - - - - - -	_____	_____
c. Mass of container + sample, g	- - - - - - -	_____	_____
d. Mass of container + sample after heating, g	- - - - - - -	_____	_____
e. Mass Loss or Mass Gain (+ or -), g	- - - - - - -	_____	_____
	AVERAGE =	_____	
Mass Loss or Mass Gain , % = $\frac{e}{b}\ x\ 100$	- - - - - - -	_____	_____
	AVERAGE =	_____	

Tested by / Date _____

Computed by / Date _____

3. Solubility and Ash Content (AASHTO T44/ASTM D2042)

a. Mass of sample, g - - - - - - - - - - - - _____
b. Mass of crucible + filter paper, g - - - - - - - - - - - - _____
c. Mass of crucible + filter paper + residue, g - - - - - - - - - - - - _____

% Solubility = $100 - \left[\left(\dfrac{c - b}{a}\right) \times 100\right]$ = _____

Tested by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date _____

4. Spot Test (AASHTO T102)

Spot Test = _____

Tested by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date _____

WORKSHEET FOR ASPHALT CEMENT (VISCOSITY-GRADED)

AASHTO T44/ASTM D2042, AASHTO T47/ASTM D6, AASHTO T48/ASTM D92, AASHTO T51/ASTM D113, AASHTO T102, AASHTO T202/ASTM D2171, AASHTO T228/ASTM D70, ASTM D36

Lab. No. : _____
Sample Identification : _____
Grade : _____

5. Viscosity (AASHTO T202/ASTM D2171)

	Temperature, ^{0}C	Calibration Factor, Pa•s/s	Flow Time, s	**Viscosity, Pa • s**
a. Viscosity (Original), Pa • s	_____	_____	_____	_____
b. Viscosity (After Oven Test), Pa • s	_____	_____	_____	_____

Tested by / Date

_____
_____
_____

Computed by / Date

_____
_____
_____

6. Ductility (AASHTO T51/ASTM D113)

	1	2	3	**Average**
a. Ductility (Original) 25^{o}C, 5 cm/min., cm	_____	_____	_____	_____
b. Ductility (After Oven Test) 25^{o}C, 5 cm/min., cm	_____	_____	_____	_____

Tested by / Date

_____
_____
_____

Computed by / Date

_____
_____
_____

7. Flash Point (AASHTO T48/ASTM D92)

Flash Point, ^{o}C = _____

8. Softening Point (ASTM D36)

1	2	**Average, ^{o}C**
_____	_____	_____

Tested by / Date

_____
_____
_____

Computed by/ Date

_____
_____
_____

Chemical Test/s Certified by : _____
(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF EMULSIFIED ASPHALT

AASHTO T49/ASTM D5, AASHTO T51/ASTMD113, AASHTO T59, AASHTO T72, AASHTO T111

Lab. No. : _____
Sample Identification : _____
Grade : _____

1. Specific Gravity (AASHTO T59)

a. Mass of pycnometer, empty, g - - - - - - - - - - - - _____
b. Mass of pycnometer filled with water, g - - - - - - - - - - - - _____
c. Mass of pycnometer filled with sample, g - - - - - - - - - - - - _____

$$\textbf{Specific Gravity} = \frac{c - a}{b - a} = \_\_\_\_\_$$

Tested by / Date _____ _____ _____

Computed by / Date _____ _____ _____

2. Storage Stability (AASHTO T59)

		Top	Bottom
a. Mass of beaker, empty, g	- - - - - -	_____	_____
b. Mass of beaker + sample, g	- - - - - -	_____	_____
c. Mass of beaker + residue, g	- - - - - -	_____	_____
% Residue $= \frac{c - a}{b - a} \times 100$	- - - - - - -	_____	_____

$$\textbf{\% Residue}_{\textbf{BOTTOM}} - \textbf{\% Residue}_{\textbf{TOP}} = \_\_\_\_\_$$

Tested by / Date _____ _____ _____

Computed by / Date _____ _____ _____

3. Sieve Test (AASHTO T59)

a. Mass of sample, g - - - - - - - - - - - _____
b. Mass of sieve + pan, g - - - - - - - - - - - _____
c. Mass of sieve + pan + residue, g - - - - - - - - - - - _____

$$\textbf{\% Residue} = \frac{c - b}{a} \times 100 = \_\_\_\_\_$$

Tested by / Date _____ _____ _____

Computed by / Date _____ _____ _____

4. Viscosity (AASHTO T72)

Viscosity (Saybolt-Furol), sec = _____

Tested by / Date _____ _____ _____

Computed by / Date _____ _____ _____

WORKSHEET FOR TESTING OF EMULSIFIED ASPHALT

AASHTO T49/ASTM D5, AASHTO T51/ASTMD113, AASHTO T59, AASHTO T72, AASHTO T111

Lab. No. : _____
Sample Identification : _____
Grade : _____

5. Distillation (AASHTO T59)

a. Mass of Iron Still, g - - - - - - - - - - - _____
b. Mass of sample, g - - - - - - - - - - - _____
c. Mass of Iron Still + sample after heating, g - - - - - - - - - - - _____

% Residue = $\frac{c - a}{b}$ x 100 = _____

Tested by / Date _____ _____

Computed by / Date _____ _____

---

6. Cement Mixing (AASHTO T59)

a. Mass of sieve + pan, g - - - - - - - - - - - _____
b. Mass of sieve + pan + residue, g - - - - - - - - - - - _____

Cement Mixing = ($b - a$) = _____

Tested by / Date _____ _____

Computed by / Date _____ _____

---

7. Tests on Residue:

1. Penetration at 25°C, 100 g, 5 s - - - (AASHTO T49/ASTM D5)

1	2	3	
_____	_____	_____	**AVE:** _____

Tested by / Date _____

Computed by / Date _____

2. Ductility at 25°C, 5 cm/min, cm - - - (AASHTO T51/ASTM D113)

1	2	3	
_____	_____	_____	**AVE:** _____

Tested by / Date _____

Computed by / Date _____

3. Mineral Matter or Ash (AASHTO T111)
   a. Mass of crucible, g - - - - - - _____
   b. Mass of sample, g - - - - - - _____
   c. Mass of crucible + sample, g - - - - - - _____
   d. Mass of crucible + ash, g - - - - - - _____
   e. Mass of ash, g - - - - - - _____

% Ash Content = $\frac{e}{b}$ x 100 = _____

Tested by / Date _____
(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date _____

Chemical Test/s Certified by : _____
(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF CUTBACK ASPHALT

AASHTO T44, AASHTO T78, AASHTO T79, AASHTO T201, ASTM D5, ASTM D70, ASTM D113, ASTM D2170

Lab. No. : _____
Sample Identification : _____
Grade : _____

1. Viscosity (AASHTO T201)

a. Time Elapsed, sec - - - - - - _____
b. Glass Capillary Constant, cSt/sec - - - - - - _____
Viscosity (Kinematic) at 60 °C, cSt = *a* x *b* = _____

Tested by / Date	Computed by / Date
_____	_____
_____	_____
_____	_____

2. Flash Point (AASHTO T79)

Flash Point (Tag Open Cup), °C = _____

Tested by / Date	Computed by / Date
_____	_____
_____	_____
_____	_____

3. Specific Gravity (AASHTO T228/ASTM D70)

a. Mass of pycnometer, g - - - - - - - - - - _____
b. Mass of pycnometer filled with water, g - - - - - - - - - - _____
c. Mass of pycnometer filled with sample, g - - - - - - - - - - _____

$$\textbf{Specific Gravity} = \frac{c - a}{b - a} = \text{_____}$$

Tested by / Date	Computed by / Date
_____	_____
_____	_____
_____	_____

---

4. **Distillation (AASHTO T78)**

Volume of Sample = 200 mL

Mass of Sample, g = *Specific Gravity* x *Volume of Sample (mL)*

Temperature	Volume of Distillates	% by Volume = $\frac{\text{volume}_{\text{distillate @ temp}}}{\text{volume}_{\text{distillate @ 360 C}}} \times 100$
190 °C (374 °F)	_____	_____
225 °C (437 °F)	_____	_____
260 °C (500 °F)	_____	_____
315 °C (600 °F)	_____	_____
360 °C (680 °F)	_____	_____

Residue, % by Volume = $\frac{\text{volume}_{\text{sample}} - \text{volume}_{\text{distillate @ 360 C}}}{\text{volume}_{\text{sample}}} \times 100$ = _____

Tested by / Date	Computed by / Date
_____	_____
_____	_____
_____	_____

WORKSHEET FOR TESTING OF CUTBACK ASPHALT

AASHTO T44, AASHTO T78, AASHTO T79, AASHTO T201, ASTM D5, ASTM D70, ASTM D113, ASTM D2170

Lab. No. : _____
Sample Identification : _____
Grade : _____

5. Tests on Residue:

1. Penetration at 25°C, 100 g, 5 s - - - (AASHTO T49/ASTM D5)

1	2	3	
_____	_____	_____	**AVE:** _____

Tested by / Date _____ Computed by / Date _____

2. Ductility at 25°C, 5 cm/min, cm - - - (AASHTO T51/ASTM D113)

1	2	3	
_____	_____	_____	**AVE:** _____

Tested by / Date _____ Computed by / Date _____

3. Solubility in Trichloroethylene (AASHTO T44/ASTM D2042)
   a. Mass of sample, g - - - - - - _____
   b. Mass of crucible, empty, g - - - - - - _____
   c. Mass of crucible + Residue, g - - - - - - _____

$$\% \text{ Solubility} = 100 - \left[\left(\frac{c - b}{a} \right) \times 100 \right] = \_\_\_\_\_$$

Tested by / Date _____ Computed by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

4. Spot Test (AASHTO T102)

Spot Test = _____

Tested by / Date _____ Computed by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

Chemical Test/s Certified by : _____
(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF CONCRETE JOINT SEALER

ASTM D5329

Lab. No. : _____

Sample Identification : _____

1. Safe Heating Temperature, °C - - - - - - - - _____

Tested by / Date	Computed by / Date
_____	_____
_____	_____

2. Pour Point Temperature, °C - - - - - - - - _____

Tested by / Date	Computed by / Date
_____	_____
_____	_____

3. Flow at 60°C, mm - - - - - - - - _____

_____

_____

AVERAGE = _____

Tested by / Date	Computed by / Date
_____	_____
_____	_____

4. Cone Penetration @ 25°C, 150 gm, 5 sec. - - - - - - - - _____

_____

_____

AVERAGE = _____

Tested by / Date	Computed by / Date
_____	_____
_____	_____

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF ELASTOMERIC BINDER (THORMAJOINT)

ASTM D36, ASTM D5329

Lab. No. : _____

Sample Identification : _____

1. Safe Heating Temperature, °C - - - - - - - - _____

Tested by / Date	Computed by / Date
_____	_____
_____	_____

2. Pour Point Temperature, °C - - - - - - - - _____

Tested by / Date	Computed by / Date
_____	_____
_____	_____

3. Flow at 60°C, mm - - - - - - - - _____

_____

_____

AVERAGE = _____

Tested by / Date	Computed by / Date
_____	_____
_____	_____

4. Penetration @ 25°C, 150 gm, 5 sec. - - - - - - - - _____

_____

_____

AVERAGE = _____

Tested by / Date	Computed by / Date
_____	_____
_____	_____

5. Softening Point, °C

Trial 1	Trial 2	AVERAGE
_____	_____	_____

Tested by / Date	Computed by / Date
_____	_____
_____	_____

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF PREFORMED EXPANSION JOINT FILLER

AASHTO T42 / ASTM D545

Lab. No. : _____
Sample Identification : _____
Thickness : _____

1. ABSORPTION:

			#1	#2	#3
a.	Thickness of sample, mm	- - - - -			
		Ave: - - - - -			
		AVERAGE:			
b.	Mass of sample before immersion, g	- - - - -			
c.	Mass of sample after immersion, g	- - - - -			
d.	Absorption, % by volume	- - - - -			
		AVERAGE:			

Computation:

$$\text{Absorption, \% by volume} = \frac{c - b}{10.4\,a} \times 100$$

Tested by / Date	Computed by / Date
_____	_____
_____	_____

2. DENSITY

			#1	#2	#3
a.	Thickness of sample before drying, mm	- - - - -			
		Ave. - - - - -			
		AVERAGE:			
b.	Thickness of sample after drying, mm	- - - - -			
		Ave. - - - - -			
		AVERAGE:			
c.	Mass of sample before drying, g	- - - - -			
d.	Mass of sample after drying, g	- - - - -			
e.	Density, kg/m^3	- - - - -			
		AVERAGE:			

Computation:

$$\text{Density, kg/m}^3 = \frac{96.117\,d}{b}$$

Tested by / Date	Computed by / Date
_____	_____
_____	_____

WORKSHEET FOR TESTING OF PREFORMED EXPANSION JOINT FILLER

AASHTO T42 / ASTM D545

Lab. No. : _____
Sample Identification : _____
Thickness : _____

3. COMPRESSION AND RECOVERY:

a. Thickness of sample before compression, mm - - - - -

_____ _____ _____
_____ _____ _____
_____ _____ _____
_____ _____ _____
_____ _____ _____

Ave. - - - - - _____ _____ _____

AVERAGE: _____

$\left[\frac{a_{ave}}{2}\right]$ - - - - - _____ _____ _____

b. Thickness of sample after compression, mm - - - - -

_____ _____ _____
_____ _____ _____
_____ _____ _____
_____ _____ _____
_____ _____ _____

Ave. - - - - - _____ _____ _____

AVERAGE: _____

c. Compression (Machine reading), tonnes - - - - - _____ _____ _____

AVERAGE: _____

d. Compression, kN/m^2 - - - - - _____

Computation:

$$\text{Compression, kN/m}^2 = \frac{c \times 9.807}{0.01033}$$

e. Recovery, % - - - - - - _____

Computation:

$$\text{Recovery, \%} = \frac{b_{ave}}{a_{ave}} \times 100$$

Tested by / Date	Computed by / Date
_____	_____
_____	_____

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF POLYMER MODIFIED BITUMEN (PMB)

AASHTO T44/ASTM D2042, AASHTO T48/ASTM D92, AASHTO T49/ASTM D5, AASHTO T51/ASTM D113, ASTM D36

Lab. No. : _____

Sample Identification : _____

Grade : _____

1. Penetration @ 25 ^{0}C, 100 g, 5 s (AASHTO T49/ASTM D5)

1	2	3	AVERAGE
_____	_____	_____	_____

Tested by / Date: _____ _____

Computed by / Date: _____ _____

2. Flash Point, ^{o}C (AASHTO T48/ASTM D92) - - - - - - - - _____

Tested by / Date: _____ _____

Computed by / Date: _____ _____

3. Softening Point, ^{o}C (ASTM D36)

Trial 1	Trial 2	AVERAGE
_____	_____	_____

Tested by / Date: _____ _____

Computed by / Date: _____ _____

4. Ductility, @ 25 ^{o}C, 5 cm/min., cm (AASHTO T51/ASTM D113)

1	2	3	AVERAGE
_____	_____	_____	_____

Tested by / Date: _____ _____

Computed by / Date: _____ _____

5. Solubility in Trichloroethylene (AASHTO T44/ASTM D2042):

a. Mass of sample, g - - - - - - - - _____

b. Mass of crucible + filter paper, g - - - - - - - - _____

c. Mass of crucible + filter paper + residue, g - - - - - - - - _____

$$\% \text{ Solubility} = 100 - \left[\left(\frac{c - b}{a} \right) \times 100 \right]$$ - - - - - - - - _____

Tested by / Date: _____

(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date: _____

Chemical Test/s Certified by : _____

(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF HOT MIX ASPHALT

ASTM D1074, ASTM D2726/AASHTO T166, ASTM D2172/AASHTO T164, ASTM D5444/ AASHTO T30

Lab. No. : _____
Sample Identification : _____
Gradation : _____

A. BITUMEN CONTENT (ASTM D2172/AASHTO T164)

1. Orig. mass of sample - - - - - - - - - _____
2. Mass of sample after extraction - - _____
3. Bitumen Extracted, g (1) – (2) - - _____
4. Bitumen Content, % by mass of

agg. $\frac{3}{2}$ x 100 - - - - - - - - - _____

mix $\frac{3}{1}$ x 100 - - - - - - - - - _____

B. GRADING (ASTM D5444/AASHTO T30)

5. Mass of washed oven-dried sample,g = _____
6. Wash Loss, g, = 2 – 5 = _____

Sieve Size	Mass Retained, g	Mass Passing, g	% Passing

Tested by / Date

_____
_____
_____

Computed by / Date

_____
_____
_____

C. BULK SPECIFIC GRAVITY (ASTM D2726/AASHTO T166)

	Specimen	1	2	3	4	5	6
1. Mass in air, g	- - - - - - -						
2. Mass in SSD, g	- - - - - - -						
3. Mass in water, g	- - - - - - -						
4. Specific Gravity $\frac{1}{(2-3)}$	- - - - - - -						

Average = _____

Tested by / Date

_____
_____
_____

Computed by / Date

_____
_____
_____

WORKSHEET FOR TESTING OF HOT MIX ASPHALT

ASTM D1074, ASTM D2726/AASHTO T166, ASTM D2172/AASHTO T164, ASTM D5444/ AASHTO T30

Lab. No. : _____
Sample Identification : _____
Gradation : _____

D. FOR HOT MIX:

COMPRESSIVE STRENGTH: (ASTM D1074)
Cross-sectional area, 8107.32 sq. mm.

1.	Dry Specimen:	**Specimen**	_____	_____	_____	**Average**
	Unit Load (Dry), N	- - - - - - -	_____	_____	_____	_____
	Compressive Strength, MPa	- - - - - - -	_____	_____	_____	_____
2.	Immersed Specimen:	**Specimen**	_____	_____	_____	**Average**
	Unit Load (Wet), N	- - - - - - -	_____	_____	_____	_____
	Compressive Strength, MPa	- - - - - - -	_____	_____	_____	_____

Index of Retained Strength (IRS), % , $\frac{2}{1}$ x 100 - - - - - - - _____

Tested by / Date	Computed by / Date
_____	_____
_____	_____
_____	_____

Checked/ Reviewed by/Date: _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF COLD MIX ASPHALT

ASTM D2172/AASHTO T164, ASTM D5444/AASHTO T30, ASTM D2726/AASHTO T166, MS-14

Lab. No. : _____
Sample Identification : _____
Gradation : _____

A. BITUMEN CONTENT (ASTM D2172/AASHTO T164)

1. Orig. mass of sample - - - - - - - - - _____
2. Mass of sample after extraction - - _____
3. Bitumen Extracted, g (1) – (2) - - _____
4. Bitumen Content, % by mass of
   agg. $\frac{3}{2}$ x 100 - - - - - - - - - _____
   mix $\frac{3}{1}$ x 100 - - - - - - - - - _____

B. GRADING (ASTM D5444/AASHTO T30)

5. Mass of washed oven-dried sample,g = _____
6. Wash Loss, g, = 2 – 5 = _____

Sieve Size	Mass Retained, g	Mass Passing, g	% Passing

Tested by / Date

_____
_____
_____

Computed by / Date

_____
_____
_____

C. BULK SPECIFIC GRAVITY (ASTM D2726/AASHTO T166)

Specimen	1	2	3	4	5	6
1. Mass in air, g - - - - - - -						
2. Mass in SSD, g - - - - - - -						
3. Mass in water, g - - - - - - -						
4. Specific Gravity $\frac{1}{(2-3)}$ - - - - - - -						

Average = _____

Tested by / Date

_____
_____
_____

Computed by / Date

_____
_____
_____

WORKSHEET FOR TESTING OF COLD MIX ASPHALT

ASTM D2172/AASHTO T164, ASTM D5444/AASHTO T30, ASTM D2726/AASHTO T166, MS-14

Lab. No. : _____
Sample Identification : _____
Gradation : _____

D.1. FOR COLD MIX USING EMULSIFIED ASPHALT: STABILITY (MARSHALL): (MS-14)

Group 1. (Dry Specimen)

	Specimen No.				Average
a. Stability, lbs.	- - - - - - -				
b. Height of Specimen, mm	- - - - - - -				
c. Correlation Ratio *(refers to Asphalt Cold Mix Manual Appendix F Page 119 Table F-2)*	- - - - - - -				
d. Corrected Stability, lbs.	- - - - - - -				
e. Corrected Stability, N = lbs. x 4.448	- - - - - - -				

Group 2. (Samples Subjected in Vacuum Saturation and Immersion)

	Specimen No.				Average
f. Stability, lbs. (After VSI)	- - - - - - -				
g. Height of Specimen, mm	- - - - - - -				
h. Correlation Ratio *(refers to Asphalt Cold Mix Manual Appendix F Page 119 Table F-2)*	- - - - - - -				
i. Corrected Stability, lbs.	- - - - - - -				
j. Corrected Stability, N = lbs. x 4.448	- - - - - - -				

Stability Loss After Vacuum Saturation and Immersion, % = $\frac{e - j}{e}$ x 100 - - - - - - - _____

Tested by / Date

_____
_____
_____

Computed by / Date

_____
_____
_____

D.2. FOR COLD MIX USING CUTBACK ASPHALT: STABILITY (MARSHALL): (MS-14)

Group1. (Dry Specimen)

	Specimen No.				Average
a. Stability, lbs.	- - - - - - -				
b. Height of Specimen, mm	- - - - - - -				
c. Correlation Ratio *(refers to Asphalt Cold Mix Manual Appendix F Page 119 Table F-2)*	- - - - - - -				
d. Corrected Stability, lbs.	- - - - - - -				
e. Corrected Stability, N = lbs. x 4.448	- - - - - - -				

WORKSHEET FOR TESTING OF COLD MIX ASPHALT

ASTM D2172/AASHTO T164, ASTM D5444/AASHTO T30, ASTM D2726/AASHTO T166, MS-14

Lab. No. : _____
Sample Identification : _____
Gradation : _____

Group 2. (Samples immersed in water for 4 days)

		Specimen No.			Average
f.	Stability, lbs. (After 4 days in water @ 25^{0}C) - - - - - - -				
g.	Height of Specimen, mm - - - - - - -				
h.	Correlation Ratio - - - - - - - *(refers to Asphalt Cold Mix Manual Appendix F Page 119 Table F-2)*				
i.	Corrected Stability, lbs. - - - - - - -				
j.	Corrected Stability, N = lbs. x 4.448 - - - - - - -				

Stability Retention After 4 days in Water @ 25 ^{0}C, % = $\frac{j}{e}$ x 100 - - - - - - - _____

Tested by / Date	Computed by / Date
_____	_____
_____	_____
_____	_____

Checked/Reviewed by/Date: _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF BITUMINOUS CONCRETE CORE

ASTM D3549, ASTM D2726

Lab. No. : _____

Sample Identification : _____

Lab. Nos.	I.D.	S t a t i o n	Thickness (ASTM D3549) mm					Bulk Specific Gravity (ASTM D2726)			
			1	2	3	4	Ave.	Wt. in Air, g (a)	Wt. in Water, g (b)	Wt. SSD, g (c)	Bulk Sp. Gravity (a/(c-b))

Tested by / Date

_____

_____

_____

Computed by / Date

_____

_____

_____

Checked/Reviewed by/ Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF FLAT LATEX PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

I. Total Solids by Weight (PNS ISO 3251)

		Trial 1	Trial 2	Trial 3
a.	Mass of dish, g			
b.	Mass of sample, g			
c.	Mass of dish + sample (after heating), g			
d.	Mass of sample (after heating), g			
e.	Total Solids (by weight), % = $\frac{d}{b} \times 100$			
	$\text{Total Solids}_{\text{average}}$, %	- - - - - - - - -		

Tested by / Date _____

Computed by / Date _____

II. Storage Stability (ASTM D1849)

		Trial 1	Trial 2	Trial 3
a.	Start of storage date			
b.	Sample weight at start of storage			
c.	End of storage date			
d.	Sample weight at end of storage			
e.	Temperature of storage			
f.	Skinning			
g.	Pressure			
h.	Corrosion of the container			
i.	Odor of spoilage			
j.	Rigidity of the lower layer (ASTM D 869)			
k.	Consistency (ASTM D 562)			
l.	Grains, lumps, or streaks in the brushed film			

Tested by / Date _____

Computed by / Date _____

III. Density (ASTM D1475)

	Trial 1	Trial 2	Trial 3
a. Mass of density cup, g			
b. Mass of density cup + water, g			
c. Mass of water, g			
d. Temperature of water, ˚C			
e. Absolute Density of Water at specified temperature (see Standard Table)			
f. Volume of density cup, mL $f = \frac{c}{e}$			
$\text{AVERAGE}_{\text{vol. of density cup}}$, mL:			

	Trial 1	Trial 2	Trial 3
g. Mass of density cup filled with sample, g			
h. Mass of sample, g			
i. Density, g/mL or kg/L $i = \frac{h}{f}$			
$\text{AVERAGE}_{\text{density, kg/L}}$:			

Tested by / Date _____

Computed by / Date _____

WORKSHEET FOR TESTING OF FLAT LATEX PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

IV. Viscosity (ASTM D562)

a. Temperature of the sample, ˚C - - - - - - - - - _____
b. Viscosity, KU - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

V. Fineness of Grind (ASTM D1210)

a. Tapered Gage used - - - - - - - - - _____
b. Cleanliness (texture) method - - - - - - - - - _____
(*not applicable* for Two Parallel Paths)
c. Cleanliness (texture) rating, - - - - - - - - - _____
A (0 to 8 specks),
B (9 to 15 specks), and
C (16 or more specks)
(*not applicable* for Two Parallel Paths)
d. Scanning Direction of the Tapered Gage - - - - - - - - - _____
Tapered Gage

	Trial 1	Trial 2	AVERAGE
e. Fineness of Grind, Hegman reading	_____	_____	_____

Tested by / Date _____ Computed by / Date _____

VI. Wet Edge Time (ASTM D7488)

a. Time Elapsed when the edges of the first coat become visible (wet edge time), min. - - - - - - - - - _____
b. Time Elapsed when the X-marks become visible, min. - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

VII. Volatile Organic Compounds (ASTM D3960) Date Tested: _____

a. Weight of Total Volatiles, % - - - - - - - - - _____
b. Weight of Water, % - - - - - - - - - _____
c. Weight of Exempt Volatile Compound, % - - - - - - - - - _____
d. Density of Coating at 25^0C, g/L - - - - - - - - - _____
e. Density of Water at 25^0C, g/L - - - - - - - - - _____
f. Density of Exempt Volatile Compound at 25^0C, g/L - - - - - _____

VOLATILE ORGANIC COMPOUND (VOC) - - - - - - - - - _____

$$VOC = \frac{(a - b - c)(d)}{100\% - (b)(d/e) - (c)(d/f)}$$

Tested by / Date _____ Computed by / Date _____
(Chemist/Chem. Tech. / PRC Lic. No.)

VIII. Lead Content (ASTM E1613 / ASTM F2853) Date Tested: _____

LEAD CONTENT, mg/kg - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____
(Chemist/Chem. Tech. / PRC Lic. No.)

Chemical Test/s Certified by : _____
(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF SEMI-GLOSS LATEX PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

I. Total Solids by Weight (PNS ISO 3251)

		Trial 1	Trial 2	Trial 3
a.	Mass of dish, g			
b.	Mass of sample, g			
c.	Mass of dish + sample (after heating), g			
d.	Mass of sample (after heating), g			
e.	Total Solids (by weight), % = $\frac{d}{b} \times 100$			
	$\text{Total Solids}_{\text{average}}$, %	- - - - - - - - -		

Tested by / Date _____

Computed by / Date _____

II. Storage Stability (ASTM D1849)

		Trial 1	Trial 2	Trial 3
a.	Start of storage date			
b.	Sample weight at start of storage			
c.	End of storage date			
d.	Sample weight at end of storage			
e.	Temperature of storage			
f.	Skinning			
g.	Pressure			
h.	Corrosion of the container			
i.	Odor of spoilage			
j.	Rigidity of the lower layer (ASTM D 869)			
k.	Consistency (ASTM D 562)			
l.	Grains, lumps, or streaks in the brushed film			

Tested by / Date _____

Computed by / Date _____

III. Density (ASTM D1475)

	Trial 1	Trial 2	Trial 3
a. Mass of density cup, g			
b. Mass of density cup + water, g			
c. Mass of water, g			
d. Temperature of water, ˚C			
e. Absolute Density of Water at specified temperature (see Standard Table)			
f. Volume of density cup, mL $f = \frac{c}{e}$			
$\text{AVERAGE}_{\text{vol. of density cup}}$, mL:			

	Trial 1	Trial 2	Trial 3
g. Mass of density cup filled with sample, g			
h. Mass of sample, g			
i. Density, g/mL or kg/L $i = \frac{h}{f}$			
$\text{AVERAGE}_{\text{density, kg/L}}$:			

Tested by / Date _____

Computed by / Date _____

WORKSHEET FOR TESTING OF SEMI-GLOSS LATEX PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

IV. Viscosity (ASTM D562)

a. Temperature of the sample, ˚C - - - - - - - - - _____
b. Viscosity, KU - - - - - - - - - _____

Tested by / Date _____

Computed by / Date _____

V. Fineness of Grind (ASTM D1210)

a. Tapered Gage used - - - - - - - - - _____
b. Cleanliness (texture) method - - - - - - - - - _____
(*not applicable* for Two Parallel Paths)
c. Cleanliness (texture) rating, - - - - - - - - - _____
A (0 to 8 specks),
B (9 to 15 specks), and
C (16 or more specks)
(*not applicable* for Two Parallel Paths)
d. Scanning Direction of the Tapered Gage - - - - - - - - - _____
Tapered Gage

	Trial 1	Trial 2	AVERAGE
e. Fineness of Grind, Hegman reading	_____	_____	_____

Tested by / Date _____

Computed by / Date _____

VI. Wet Edge Time (ASTM D7488)

a. Time Elapsed when the edges of the first coat become visible (wet edge time), min. - - - - - - - - - _____
b. Time Elapsed when the X-marks become visible, min. - - - - - - - - - _____

Tested by / Date _____

Computed by / Date _____

VII. Drying Time (ASTM D1640)

a. Set-to-Touch, minutes - - - - - - - - - _____
b. Recoat Time, minutes - - - - - - - - - _____

Tested by / Date _____

Computed by / Date _____

VIII. Levelling (ASTM D4062)

Levelling of Test Paint (from 0 to 10) - - - - - - - - - - _____

Tested by / Date _____

Computed by / Date _____

IX. Contrast Ratio (PNS ISO 6504)

CONTRAST RATIO, %, min 75 µm, 24 hours dry - - - - - - - - - _____

Tested by / Date _____

Computed by / Date _____

X. Specular Gloss (PNS ISO 2813)

SPECULAR GLOSS 60^0, 75 µm, 24 hours dry, GU min - - - - - _____

Tested by / Date _____

Computed by / Date _____

WORKSHEET FOR TESTING OF SEMI-GLOSS LATEX PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

XI. Wet Abrasion (ASTM D2486)

a. Test Method used - - - - - - - - - _____
b. Reference Paint used - - - - - - - - - _____
c. Cycles for Test Paint - - - - - - - - - _____
d. Cycles for Reference Paint - - - - - - - - - _____

WET ABRASION, cycles, min. 7 days dry - - - - - - - - - _____

Tested by / Date: _____ Computed by / Date: _____

XII. Adhesion by Tape Test (ASTM D3359)

a. Test Method Used - - - - - - - - - _____
b. Substrate Employed - - - - - - - - - _____
c. Type of Coating - - - - - - - - - _____
d. Method of Cure - - - - - - - - - _____
e. Number of Tests - - - - - - - - - _____
   Mean - - - - - - - - - _____
   Range - - - - - - - - - _____
f. Adhesion Strength of the Pressure-Sensitive Tape - - - - - - _____
g. Specific Product Name of the Tape Used - - - - - - - - - _____
   Manufacturer - - - - - - - - - _____
   Lot Number - - - - - - - - - _____
h. Estimate of the Interface at which the Coating Failure Occurred - - - - - - - - - _____
i. Immersion Conditions - - - - - - - - - _____
   Time between Immersion and Testing - - - - - _____
   Method of Sample Preparation - - - - - - - - - _____

Tested by / Date: _____ Computed by / Date: _____

XIII. Volatile Organic Compounds (ASTM D3960)

a. Weight of Total Volatiles, % - - - - - - - - - _____
b. Weight of Water, % - - - - - - - - - _____
c. Weight of Exempt Volatile Compound, % - - - - - - - - - _____
d. Density of Coating at 25^0C, g/L - - - - - - - - - _____
e. Density of Water at 25^0C, g/L - - - - - - - - - _____
f. Density of Exempt Volatile Compound at 25^0C, g/L - - - - - _____

VOLATILE ORGANIC COMPOUND (VOC) - - - - - - - - - _____

$$VOC = \frac{(a-b-c)(d)}{100\% - (b)(d/e) - (c)(d/f)}$$

Tested by / Date: _____ Computed by / Date: _____

(Chemist/Chem. Tech. / PRC Lic. No.)

XIV. Lead Content (ASTM E1613 / ASTM F2853)

LEAD CONTENT, mg/kg - - - - - - - - - _____

Tested by / Date: _____ Computed by / Date: _____

(Chemist/Chem. Tech. / PRC Lic. No.)

Chemical Test/s Certified by : _____
(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF GLOSS LATEX PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

I. Total Solids by Weight (PNS ISO 3251)

		Trial 1	Trial 2	Trial 3
a.	Mass of dish, g			
b.	Mass of sample, g			
c.	Mass of dish + sample (after heating), g			
d.	Mass of sample (after heating), g			
e.	Total Solids (by weight), % = $\frac{d}{b} \times 100$			
	$\text{Total Solids}_{\text{average}}$, %	- - - - - - - - -		

Tested by / Date _____

Computed by / Date _____

II. Storage Stability (ASTM D1849)

		Trial 1	Trial 2	Trial 3
a.	Start of storage date			
b.	Sample weight at start of storage			
c.	End of storage date			
d.	Sample weight at end of storage			
e.	Temperature of storage			
f.	Skinning			
g.	Pressure			
h.	Corrosion of the container			
i.	Odor of spoilage			
j.	Rigidity of the lower layer (ASTM D 869)			
k.	Consistency (ASTM D 562)			
l.	Grains, lumps, or streaks in the brushed film			

Tested by / Date _____

Computed by / Date _____

III. Density (ASTM D1475)

	Trial 1	Trial 2	Trial 3
a. Mass of density cup, g			
b. Mass of density cup + water, g			
c. Mass of water, g			
d. Temperature of water, ˚C			
e. Absolute Density of Water at specified temperature (see Table 1)			
f. Volume of density cup, mL $f = \frac{c}{e}$			
$\text{AVERAGE}_{\text{vol. of density cup}}$, mL:			

	Trial 1	Trial 2	Trial 3
g. Mass of density cup filled with sample, g			
h. Mass of sample, g			
i. Density, g/mL or kg/L $i = \frac{h}{f}$			
$\text{AVERAGE}_{\text{density, kg/L}}$:			

Tested by / Date _____

Computed by / Date _____

WORKSHEET FOR TESTING OF GLOSS LATEX PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

IV. Viscosity (ASTM D562)

a. Temperature of the sample, ˚C - - - - - - - - - _____
b. Viscosity, KU - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

V. Fineness of Grind (ASTM D1210)

a. Tapered Gage used - - - - - - - - - _____
b. Cleanliness (texture) method - - - - - - - - - _____
(*not applicable* for Two Parallel Paths)
c. Cleanliness (texture) rating, - - - - - - - - - _____
A (0 to 8 specks),
B (9 to 15 specks), and
C (16 or more specks)
(*not applicable* for Two Parallel Paths)
d. Scanning Direction of the Tapered Gage - - - - - - - - - _____
Tapered Gage

	Trial 1	Trial 2	AVERAGE
e. Fineness of Grind, Hegman reading	_____	_____	_____

Tested by / Date _____ Computed by / Date _____

VI. Wet Edge Time (ASTM D7488)

a. Time Elapsed when the edges of the first coat become visible (wet edge time), min. - - - - - - - - - _____
b. Time Elapsed when the X-marks become visible, min. - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

VII. Drying Time (ASTM D1640)

a. Set-to-Touch, minutes - - - - - - - - - _____
b. Recoat Time, minutes - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

VIII. Levelling (ASTM D4062)

Levelling of Test Paint (from 0 to 10) - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

IX. Contrast Ratio (PNS ISO 6504)

CONTRAST RATIO, %, min 75 µm, 24 hours dry - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

X. Specular Gloss (PNS ISO 2813)

SPECULAR GLOSS 60^0, 75 µm, 24 hours dry, GU min - - - - - _____

Tested by / Date _____ Computed by / Date _____

WORKSHEET FOR TESTING OF GLOSS LATEX PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

XI. Wet Abrasion (ASTM D2486)

a. Test Method used - - - - - - - - - _____
b. Reference Paint used - - - - - - - - - _____
c. Cycles for Test Paint - - - - - - - - - _____
d. Cycles for Reference Paint - - - - - - - - - _____

WET ABRASION, cycles, min. 7 days dry - - - - - - - - - _____

Tested by / Date: _____ Computed by / Date: _____

XII. Adhesion by Tape Test (ASTM D3359)

a. Test Method Used - - - - - - - - - _____
b. Substrate Employed - - - - - - - - - _____
c. Type of Coating - - - - - - - - - _____
d. Method of Cure - - - - - - - - - _____
e. Number of Tests - - - - - - - - - _____
   Mean - - - - - - - - - _____
   Range - - - - - - - - - _____
f. Adhesion Strength of the Pressure-Sensitive Tape - - - - - - _____
g. Specific Product Name of the Tape Used - - - - - - - - - _____
   Manufacturer - - - - - - - - - _____
   Lot Number - - - - - - - - - _____
h. Estimate of the Interface at which the Coating Failure Occurred - - - - - - - - - _____
i. Immersion Conditions - - - - - - - - - _____
   Time between Immersion and Testing - - - - - _____
   Method of Sample Preparation - - - - - - - - - _____

Tested by / Date: _____ Computed by / Date: _____

XIII. Volatile Organic Compounds (ASTM D3960)

a. Weight of Total Volatiles, % - - - - - - - - - _____
b. Weight of Water, % - - - - - - - - - _____
c. Weight of Exempt Volatile Compound, % - - - - - - - - - _____
d. Density of Coating at 25^0C, g/L - - - - - - - - - _____
e. Density of Water at 25^0C, g/L - - - - - - - - - _____
f. Density of Exempt Volatile Compound at 25^0C, g/L - - - - - _____

VOLATILE ORGANIC COMPOUND (VOC) - - - - - - - - - _____

$$VOC = \frac{(a-b-c)(d)}{100\% - (b)(d/e) - (c)(d/f)}$$

Tested by / Date: _____ Computed by / Date: _____

(Chemist/Chem. Tech. / PRC Lic. No.)

XIV. Lead Content (ASTM E1613 / ASTM F2853)

LEAD CONTENT, mg/kg - - - - - - - - - _____

Tested by / Date: _____ Computed by / Date: _____

(Chemist/Chem. Tech. / PRC Lic. No.)

Chemical Test/s Certified by : _____
(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

I. Total Solids by Weight (PNS ISO 3251)

		Trial 1	Trial 2	Trial 3
a.	Mass of dish, g			
b.	Mass of sample, g			
c.	Mass of dish + sample (after heating), g			
d.	Mass of sample (after heating), g			
e.	Total Solids (by weight), % = $\frac{d}{b} \times 100$			
	$\text{Total Solids}_{\text{average}}$, %	- - - - - - - - -		

Tested by / Date _____

Computed by / Date _____

II. Storage Stability (ASTM D1849)

		Trial 1	Trial 2	Trial 3
a.	Start of storage date			
b.	Sample weight at start of storage			
c.	End of storage date			
d.	Sample weight at end of storage			
e.	Temperature of storage			
f.	Skinning			
g.	Pressure			
h.	Corrosion of the container			
i.	Odor of spoilage			
j.	Rigidity of the lower layer (ASTM D 869)			
k.	Consistency (ASTM D 562)			
l.	Grains, lumps, or streaks in the brushed film			

Tested by / Date _____

Computed by / Date _____

III. Density (ASTM D1475)

	Trial 1	Trial 2	Trial 3
a. Mass of density cup, g			
b. Mass of density cup + water, g			
c. Mass of water, g			
d. Temperature of water, ˚C			
e. Absolute Density of Water at specified temperature (see Table 1)			
f. Volume of density cup, mL $f = \frac{c}{e}$			
$\text{AVERAGE}_{\text{vol. of density cup}}$, mL:			

	Trial 1	Trial 2	Trial 3
g. Mass of density cup filled with sample, g			
h. Mass of sample, g			
i. Density, g/mL or kg/L $i = \frac{h}{f}$			
$\text{AVERAGE}_{\text{density, kg/L}}$:			

Tested by / Date _____

Computed by / Date _____

WORKSHEET FOR TESTING OF ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

IV. Viscosity (ASTM D562)

a. Temperature of the sample, ˚C - - - - - - - - - _____
b. Viscosity, KU - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

V. Fineness of Grind (ASTM D1210)

a. Tapered Gage used - - - - - - - - - _____
b. Cleanliness (texture) method - - - - - - - - - _____
(*not applicable* for Two Parallel Paths)
c. Cleanliness (texture) rating, - - - - - - - - - _____
A (0 to 8 specks),
B (9 to 15 specks), and
C (16 or more specks)
(*not applicable* for Two Parallel Paths)
d. Scanning Direction of the Tapered Gage - - - - - - - - - _____
Tapered Gage

	Trial 1	Trial 2	AVERAGE
e. Fineness of Grind, Hegman reading	_____	_____	_____

Tested by / Date _____ Computed by / Date _____

VI. Wet Edge Time (ASTM D7488)

a. Time Elapsed when the edges of the first coat become visible (wet edge time), min. - - - - - - - - - _____
b. Time Elapsed when the X-marks become visible, min. - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

VII. Drying Time (ASTM D1640)

a. Set-to-Touch, minutes - - - - - - - - - _____
b. Recoat Time, minutes - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

VIII. Levelling (ASTM D4062)

Levelling of Test Paint (from 0 to 10) - - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

IX. Contrast Ratio (PNS ISO 6504)

CONTRAST RATIO, %, min 75 µm, 24 hours dry - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

X. Specular Gloss (PNS ISO 2813)

SPECULAR GLOSS 60^0, 75 µm, 24 hours dry, GU min - - - - - _____

Tested by / Date _____ Computed by / Date _____

WORKSHEET FOR TESTING OF ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

XI. Wet Abrasion (ASTM D2486)

a. Test Method used - - - - - - - - - _____
b. Reference Paint used - - - - - - - - - _____
c. Cycles for Test Paint - - - - - - - - - _____
d. Cycles for Reference Paint - - - - - - - - - _____

WET ABRASION, cycles, min. 7 days dry - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

XII. Adhesion by Tape Test (ASTM D3359)

a. Test Method Used - - - - - - - - - _____
b. Substrate Employed - - - - - - - - - _____
c. Type of Coating - - - - - - - - - _____
d. Method of Cure - - - - - - - - - _____
e. Number of Tests - - - - - - - - - _____
Mean - - - - - - - - - _____
Range - - - - - - - - - _____
f. Adhesion Strength of the Pressure-Sensitive Tape - - - - - - _____
g. Specific Product Name of the Tape Used - - - - - - - - - _____
Manufacturer - - - - - - - - - _____
Lot Number - - - - - - - - - _____
h. Estimate of the Interface at which the Coating Failure Occurred - - - - - - - - - _____
i. Immersion Conditions - - - - - - - - - _____
Time between Immersion and Testing - - - - - _____
Method of Sample Preparation - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

XIII. Volatile Organic Compounds (ASTM D3960)

a. Weight of Total Volatiles, % - - - - - - - - - _____
b. Weight of Water, % - - - - - - - - - _____
c. Weight of Exempt Volatile Compound, % - - - - - - - - - _____
d. Density of Coating at 25^0C, g/L - - - - - - - - - _____
e. Density of Water at 25^0C, g/L - - - - - - - - - _____
f. Density of Exempt Volatile Compound at 25^0C, g/L - - - - - _____

VOLATILE ORGANIC COMPOUND (VOC) - - - - - - - - - _____

$$VOC = \frac{(a-b-c)(d)}{100\% - (b)(d/e) - (c)(d/f)}$$

Tested by / Date _____ Computed by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

XIV. Lead Content (ASTM E1613 / ASTM F2853)

LEAD CONTENT, mg/kg - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

Chemical Test/s Certified by : _____
(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF SEMI-GLOSS ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

I. Total Solids by Weight (PNS ISO 3251)

		Trial 1	Trial 2	Trial 3
a.	Mass of dish, g			
b.	Mass of sample, g			
c.	Mass of dish + sample (after heating), g			
d.	Mass of sample (after heating), g			
e.	Total Solids (by weight), % = $\frac{d}{b} \times 100$			
	Total Solids$_{average}$, %	- - - - - - - - -		

Tested by / Date _____

Computed by / Date _____

II. Storage Stability (ASTM D1849)

		Trial 1	Trial 2	Trial 3
a.	Start of storage date			
b.	Sample weight at start of storage			
c.	End of storage date			
d.	Sample weight at end of storage			
e.	Temperature of storage			
f.	Skinning			
g.	Pressure			
h.	Corrosion of the container			
i.	Odor of spoilage			
j.	Rigidity of the lower layer (ASTM D 869)			
k.	Consistency (ASTM D 562)			
l.	Grains, lumps, or streaks in the brushed film			

Tested by / Date _____

Computed by / Date _____

III. Density (ASTM D1475)

	Trial 1	Trial 2	Trial 3
a. Mass of density cup, g			
b. Mass of density cup + water, g			
c. Mass of water, g			
d. Temperature of water, ˚C			
e. Absolute Density of Water at specified temperature (see Standard Table)			
f. Volume of density cup, mL $f = \frac{c}{e}$			
AVERAGE$_{vol. of density cup}$, mL:			

	Trial 1	Trial 2	Trial 3
g. Mass of density cup filled with sample, g			
h. Mass of sample, g			
i. Density, g/mL or kg/L $i = \frac{h}{f}$			
AVERAGE$_{density, kg/L}$:			

Tested by / Date _____

Computed by / Date _____

WORKSHEET FOR TESTING OF SEMI-GLOSS ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

IV. Viscosity (ASTM D562)

a. Temperature of the sample, ˚C - - - - - - - - - _____
b. Viscosity, KU - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

V. Fineness of Grind (ASTM D1210)

a. Tapered Gage used - - - - - - - - - _____
b. Cleanliness (texture) method - - - - - - - - - _____
(*not applicable* for Two Parallel Paths)
c. Cleanliness (texture) rating, - - - - - - - - - _____
A (0 to 8 specks),
B (9 to 15 specks), and
C (16 or more specks)
(*not applicable* for Two Parallel Paths)
d. Scanning Direction of the Tapered Gage - - - - - - - - - _____
Tapered Gage

	Trial 1	Trial 2	AVERAGE
e. Fineness of Grind, Hegman reading	_____	_____	_____

Tested by / Date _____ Computed by / Date _____

VI. Wet Edge Time (ASTM D7488)

a. Time Elapsed when the edges of the first coat become visible (wet edge time), min. - - - - - - - - - _____
b. Time Elapsed when the X-marks become visible, min. - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

VII. Drying Time (ASTM D1640):

a. Set-to-Touch, minutes - - - - - - - - - _____
b. Recoat Time, minutes - - - - - - - - - _____
c. Dry Hard, minutes - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

VIII. Levelling (ASTM D4062)

Levelling of Test Paint (from 0 to 10) - - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

IX. Contrast Ratio (PNS ISO 6504)

CONTRAST RATIO, %, min 75 µm, 24 hours dry - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

X. Specular Gloss (PNS ISO 2813)

SPECULAR GLOSS 60^0, 75 µm, 24 hours dry, GU min - - - - - _____

Tested by / Date _____ Computed by / Date _____

WORKSHEET FOR TESTING OF SEMI-GLOSS ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

XI. Adhesion by Tape Test (ASTM D3359)

a. Test Method Used - - - - - - - - - _____
b. Substrate Employed - - - - - - - - - _____
c. Type of Coating - - - - - - - - - _____
d. Method of Cure - - - - - - - - - _____
e. Number of Tests - - - - - - - - - _____
Mean - - - - - - - - - _____
Range - - - - - - - - - _____
f. Adhesion Strength of the Pressure-Sensitive Tape - - - - - - _____
g. Specific Product Name of the Tape Used - - - - - - - - - _____
Manufacturer - - - - - - - - - _____
Lot Number - - - - - - - - - _____
h. Estimate of the Interface at which the Coating Failure Occurred - - - - - - - - - _____
i. Immersion Conditions - - - - - - - - - _____
Time between Immersion and Testing - - - - - _____
Method of Sample Preparation - - - - - - - - - _____

Tested by / Date _____

Computed by / Date _____

XII. Volatile Organic Compounds (ASTM D3960)

a. Weight of Total Volatiles, % - - - - - - - - - _____
b. Weight of Water, % - - - - - - - - - _____
c. Weight of Exempt Volatile Compound, % - - - - - - - - - _____
d. Density of Coating at 25^0C, g/L - - - - - - - - - _____
e. Density of Water at 25^0C, g/L - - - - - - - - - _____
f. Density of Exempt Volatile Compound at 25^0C, g/L - - - - - _____

VOLATILE ORGANIC COMPOUND (VOC) - - - - - - - - - _____

$$VOC = \frac{(a - b - c)(d)}{100\% - (b)(d/e) - (c)(d/f)}$$

Tested by / Date _____

Computed by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

XIII. Lead Content (ASTM E1613 / ASTM F2853)

LEAD CONTENT, mg/kg - - - - - - - - - _____

Tested by / Date _____

Computed by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

Chemical Test/s Certified by : _____
(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF FLAT-WALL ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

I. Total Solids by Weight (PNS ISO 3251)

		Trial 1	Trial 2	Trial 3
a.	Mass of dish, g			
b.	Mass of sample, g			
c.	Mass of dish + sample (after heating), g			
d.	Mass of sample (after heating), g			
e.	Total Solids (by weight), % = $\frac{d}{b} \times 100$			
	$\text{Total Solids}_{\text{average}}$, %	- - - - - - - - -		

Tested by / Date _____

Computed by / Date _____

II. Storage Stability (ASTM D1849)

		Trial 1	Trial 2	Trial 3
a.	Start of storage date			
b.	Sample weight at start of storage			
c.	End of storage date			
d.	Sample weight at end of storage			
e.	Temperature of storage			
f.	Skinning			
g.	Pressure			
h.	Corrosion of the container			
i.	Odor of spoilage			
j.	Rigidity of the lower layer (ASTM D 869)			
k.	Consistency (ASTM D 562)			
l.	Grains, lumps, or streaks in the brushed film			

Tested by / Date _____

Computed by / Date _____

III. Density (ASTM D1475)

	Trial 1	Trial 2	Trial 3
a. Mass of density cup, g			
b. Mass of density cup + water, g			
c. Mass of water, g			
d. Temperature of water, ˚C			
e. Absolute Density of Water at specified temperature (see standard Table)			
f. Volume of density cup, mL $f = \frac{c}{e}$			
$\text{AVERAGE}_{\text{vol. of density cup}}$, mL:			

	Trial 1	Trial 2	Trial 3
g. Mass of density cup filled with sample, g			
h. Mass of sample, g			
i. Density, g/mL or kg/L $i = \frac{h}{f}$			
$\text{AVERAGE}_{\text{density, kg/L}}$:			

Tested by / Date _____

Computed by / Date _____

WORKSHEET FOR TESTING OF FLATWALL ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

IV. Viscosity (ASTM D562)

a. Temperature of the sample, ˚C - - - - - - - - - _____
b. Viscosity, KU - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

V. Fineness of Grind (ASTM D1210)

a. Tapered Gage used - - - - - - - - - _____
b. Cleanliness (texture) method - - - - - - - - - _____
(*not applicable* for Two Parallel Paths)
c. Cleanliness (texture) rating, - - - - - - - - - _____
A (0 to 8 specks),
B (9 to 15 specks), and
C (16 or more specks)
(*not applicable* for Two Parallel Paths)
d. Scanning Direction of the Tapered Gage - - - - - - - - - _____
Tapered Gage

	Trial 1	Trial 2	AVERAGE
e. Fineness of Grind, Hegman reading	_____	_____	_____

Tested by / Date _____ Computed by / Date _____

VI. Wet Edge Time (ASTM D7488)

a. Time Elapsed when the edges of the first coat become visible (wet edge time), min. - - - - - - - - - _____
b. Time Elapsed when the X-marks become visible, min. - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

VII. Drying Time (ASTM D1640)

a. Set-to-Touch, minutes - - - - - - - - - _____
b. Recoat Time, minutes - - - - - - - - - _____
c. Dry Hard, minutes - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

VIII. Levelling (ASTM D4062):

Levelling of Test Paint (from 0 to 10) - - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

IX. Contrast Ratio (PNS ISO 6504)

CONTRAST RATIO, %, min 75 µm, 24 hours dry - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

X. Specular Gloss (PNS ISO 2813)

SPECULAR GLOSS 60^0, 75 µm, 24 hours dry, GU min - - - - - _____

Tested by / Date _____ Computed by / Date _____

WORKSHEET FOR TESTING OF FLATWALL ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

XI. Adhesion by Tape Test (ASTM D3359)

a.	Test Method Used	_____
b.	Substrate Employed	_____
c.	Type of Coating	_____
d.	Method of Cure	_____
e.	Number of Tests	_____
	Mean	_____
	Range	_____
f.	Adhesion Strength of the Pressure-Sensitive Tape	_____
g.	Specific Product Name of the Tape Used	_____
	Manufacturer	_____
	Lot Number	_____
h.	Estimate of the Interface at which the Coating Failure Occurred	_____
i.	Immersion Conditions	_____
	Time between Immersion and Testing	_____
	Method of Sample Preparation	_____

Tested by / Date _____

Computed by / Date _____

XII. Volatile Organic Compounds (ASTM D3960)

a.	Weight of Total Volatiles, %	_____
b.	Weight of Water, %	_____
c.	Weight of Exempt Volatile Compound, %	_____
d.	Density of Coating at 25^0C, g/L	_____
e.	Density of Water at 25^0C, g/L	_____
f.	Density of Exempt Volatile Compound at 25^0C, g/L	_____

VOLATILE ORGANIC COMPOUND (VOC) _____

$$VOC = \frac{(a-b-c)(d)}{100\% - (b)(d/e) - (c)(d/f)}$$

Tested by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date _____

XIII. Lead Content (ASTM E1613 / ASTM F2853)

LEAD CONTENT, mg/kg _____

Tested by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date _____

Chemical Test/s Certified by : _____

(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF EPOXY ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

I. Pencil Hardness (ASTM D3363)

a. Gouge Hardness - - - - - - - - - _____
b. Scratch Hardness - - - - - - - - - _____
c. Manufacturer of the Pencil Used - - - - - - - - - _____
d. Lot or Batch Number of the Pencil Used - - - - - - - - - _____
e. Grade of the Pencil Used - - - - - - - - - _____

Tested by / Date Computed by / Date

_____ _____

II. Adhesion by Tape Test (ASTM D3359)

a. Test Method Used - - - - - - - - - _____
b. Substrate Employed - - - - - - - - - _____
c. Type of Coating - - - - - - - - - _____
d. Method of Cure - - - - - - - - - _____
e. Number of Tests - - - - - - - - - _____
Mean - - - - - - - - - _____
Range - - - - - - - - - _____
f. Adhesion Strength of the Pressure-Sensitive Tape - - - - - - _____
g. Specific Product Name of the Tape Used - - - - - - - - - _____
Manufacturer - - - - - - - - - _____
Lot Number - - - - - - - - - _____
h. Estimate of the Interface at which the Coating Failure Occurred - - - - - - - - - _____
i. Immersion Conditions - - - - - - - - - _____
Time between Immersion and Testing - - - - - _____
Method of Sample Preparation - - - - - - - - - _____

Tested by / Date Computed by / Date

_____ _____

III. Impact Resistance (ASTM D2794)

IMPACT RESISTANCE, J (mm-kg) - - - - - - - - - _____

Tested by / Date Computed by / Date

_____ _____

IV. Flexibility (ASTM D522)

FLEXIBILITY, conical mandrel, 150 µm - - - - - - - - - _____

Tested by / Date Computed by / Date

_____ _____

V. Volatile Organic Compounds (ASTM D3960)

a. Weight of Total Volatiles, % - - - - - - - - - _____
b. Weight of Water, % - - - - - - - - - _____
c. Weight of Exempt Volatile Compound, % - - - - - - - - - _____
d. Density of Coating at 25^0C, g/L - - - - - - - - - _____
e. Density of Water at 25^0C, g/L - - - - - - - - - _____
f. Density of Exempt Volatile Compound at 25^0C, g/L - - - - - _____

VOLATILE ORGANIC COMPOUND (VOC) - - - - - - - - - _____

$$VOC = \frac{(a-b-c)(d)}{100\% - (b)(d/e) - (c)(d/f)}$$

Tested by / Date Computed by / Date

_____ _____

(Chemist/Chem. Tech. / PRC Lic. No.)

VI. Lead Content (ASTM E1613 / ASTM F2853)

LEAD CONTENT, mg/kg - - - - - - - - - _____

Tested by / Date Computed by / Date

_____ _____

(Chemist/Chem. Tech. / PRC Lic. No.)

Chemical Test/s Certified by : _____
(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF ALKYD-BASED SEMI-GLOSS ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

I. Total Solids by Weight (PNS ISO 3251)

		Trial 1	Trial 2	Trial 3
a.	Mass of dish, g			
b.	Mass of sample, g			
c.	Mass of dish + sample (after heating), g			
d.	Mass of sample (after heating), g			
e.	Total Solids (by weight), % = $\frac{d}{b} \times 100$			
	$\text{Total Solids}_{\text{average}}$, %	- - - - - - - - -		

Tested by / Date _____

Computed by / Date _____

II. Storage Stability (ASTM D1849)

		Trial 1	Trial 2	Trial 3
a.	Start of storage date			
b.	Sample weight at start of storage			
c.	End of storage date			
d.	Sample weight at end of storage			
e.	Temperature of storage			
f.	Skinning			
g.	Pressure			
h.	Corrosion of the container			
i.	Odor of spoilage			
j.	Rigidity of the lower layer (ASTM D 869)			
k.	Consistency (ASTM D 562)			
l.	Grains, lumps, or streaks in the brushed film			

Tested by / Date _____

Computed by / Date _____

III. Density (ASTM D1475)

	Trial 1	Trial 2	Trial 3
a. Mass of density cup, g			
b. Mass of density cup + water, g			
c. Mass of water, g			
d. Temperature of water, ˚C			
e. Absolute Density of Water at specified temperature (see standard Table)			
f. Volume of density cup, mL $f = \frac{c}{e}$			
$\text{AVERAGE}_{\text{vol. of density cup}}$, mL:			

	Trial 1	Trial 2	Trial 3
g. Mass of density cup filled with sample, g			
h. Mass of sample, g			
i. Density, g/mL or kg/L $i = \frac{h}{f}$			
$\text{AVERAGE}_{\text{density, kg/L}}$:			

Tested by / Date _____

Computed by / Date _____

WORKSHEET FOR TESTING OF ALKYD-BASED SEMI-GLOSS ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

IV. Viscosity (ASTM D562)

a. Temperature of the sample, ˚C - - - - - - - - - _____
b. Viscosity, KU - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

V. Fineness of Grind (ASTM D1210)

a. Tapered Gage used - - - - - - - - - _____
b. Cleanliness (texture) method - - - - - - - - - _____
(*not applicable* for Two Parallel Paths)
c. Cleanliness (texture) rating, - - - - - - - - - _____
A (0 to 8 specks),
B (9 to 15 specks), and
C (16 or more specks)
(*not applicable* for Two Parallel Paths)
d. Scanning Direction of the Tapered Gage - - - - - - - - - _____
Tapered Gage

	Trial 1	Trial 2	AVERAGE
e. Fineness of Grind, Hegman reading	_____	_____	_____

Tested by / Date _____ Computed by / Date _____

VI. Wet Edge Time (ASTM D7488)

a. Time Elapsed when the edges of the first coat become visible (wet edge time), min. - - - - - - - - - _____
b. Time Elapsed when the X-marks become visible, min. - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

VII. Drying Time (ASTM D1640)

a. Set-to-Touch, minutes - - - - - - - - - _____
b. Recoat Time, minutes - - - - - - - - - _____
c. Dry Hard, minutes - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

VIII. Levelling (ASTM D4062):

Levelling of Test Paint (from 0 to 10) - - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

IX. Contrast Ratio (PNS ISO 6504)

CONTRAST RATIO, %, min 75 µm, 24 hours dry - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

X. Specular Gloss (PNS ISO 2813)

SPECULAR GLOSS 60^0, 75 µm, 24 hours dry, GU min - - - - - _____

Tested by / Date _____ Computed by / Date _____

WORKSHEET FOR TESTING OF ALKYD-BASED SEMI-GLOSS ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

XI. Adhesion by Tape Test (ASTM D3359)

a. Test Method Used - - - - - - - - - _____
b. Substrate Employed - - - - - - - - - _____
c. Type of Coating - - - - - - - - - _____
d. Method of Cure - - - - - - - - - _____
e. Number of Tests - - - - - - - - - _____
Mean - - - - - - - - - _____
Range - - - - - - - - - _____
f. Adhesion Strength of the Pressure-Sensitive Tape - - - - - - _____
g. Specific Product Name of the Tape Used - - - - - - - - - _____
Manufacturer - - - - - - - - - _____
Lot Number - - - - - - - - - _____
h. Estimate of the Interface at which the Coating Failure Occurred - - - - - - - - - _____
i. Immersion Conditions - - - - - - - - - _____
Time between Immersion and Testing - - - - - _____
Method of Sample Preparation - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

XII. Volatile Organic Compounds (ASTM D3960)

a. Weight of Total Volatiles, % - - - - - - - - - _____
b. Weight of Water, % - - - - - - - - - _____
c. Weight of Exempt Volatile Compound, % - - - - - - - - - _____
d. Density of Coating at 25^0C, g/L - - - - - - - - - _____
e. Density of Water at 25^0C, g/L - - - - - - - - - _____
f. Density of Exempt Volatile Compound at 25^0C, g/L - - - - - _____

VOLATILE ORGANIC COMPOUND (VOC) - - - - - - - - - _____

$$VOC = \frac{(a-b-c)(d)}{100\% - (b)(d/e) - (c)(d/f)}$$

Tested by / Date _____ Computed by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

XIII. Lead Content (ASTM E1613 / ASTM F2853)

LEAD CONTENT, mg/kg - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

Chemical Test/s Certified by : _____
(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF ALKYD-BASED GLOSS ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

I. Total Solids by Weight (PNS ISO 3251)

		Trial 1	Trial 2	Trial 3
a.	Mass of dish, g			
b.	Mass of sample, g			
c.	Mass of dish + sample (after heating), g			
d.	Mass of sample (after heating), g			
e.	Total Solids (by weight), % = $\frac{d}{b} \times 100$			
	$\text{Total Solids}_{\text{average}}$, %	- - - - - - - - -		

Tested by / Date _____

Computed by / Date _____

II. Storage Stability (ASTM D1849)

		Trial 1	Trial 2	Trial 3
a.	Start of storage date			
b.	Sample weight at start of storage			
c.	End of storage date			
d.	Sample weight at end of storage			
e.	Temperature of storage			
f.	Skinning			
g.	Pressure			
h.	Corrosion of the container			
i.	Odor of spoilage			
j.	Rigidity of the lower layer (ASTM D 869)			
k.	Consistency (ASTM D 562)			
l.	Grains, lumps, or streaks in the brushed film			

Tested by / Date _____

Computed by / Date _____

III. Density (ASTM D1475)

	Trial 1	Trial 2	Trial 3
a. Mass of density cup, g			
b. Mass of density cup + water, g			
c. Mass of water, g			
d. Temperature of water, ˚C			
e. Absolute Density of Water at specified temperature (see Standard Table)			
f. Volume of density cup, mL $f = \frac{c}{e}$			
$\text{AVERAGE}_{\text{vol. of density cup}}$, mL:			

	Trial 1	Trial 2	Trial 3
g. Mass of density cup filled with sample, g			
h. Mass of sample, g			
i. Density, g/mL or kg/L $i = \frac{h}{f}$			
$\text{AVERAGE}_{\text{density, kg/L}}$:			

Tested by / Date _____

Computed by / Date _____

WORKSHEET FOR TESTING OF ALKYD-BASED GLOSS ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

IV. Viscosity (ASTM D562)

a. Temperature of the sample, ˚C - - - - - - - - - _____
b. Viscosity, KU - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

V. Fineness of Grind (ASTM D1210)

a. Tapered Gage used - - - - - - - - - _____
b. Cleanliness (texture) method - - - - - - - - - _____
(*not applicable* for Two Parallel Paths)
c. Cleanliness (texture) rating, - - - - - - - - - _____
A (0 to 8 specks),
B (9 to 15 specks), and
C (16 or more specks)
(*not applicable* for Two Parallel Paths)
d. Scanning Direction of the Tapered Gage - - - - - - - - - _____
Tapered Gage

	Trial 1	Trial 2	AVERAGE
e. Fineness of Grind, Hegman reading	_____	_____	_____

Tested by / Date _____ Computed by / Date _____

VI. Wet Edge Time (ASTM D7488)

a. Time Elapsed when the edges of the first coat become visible (wet edge time), min. - - - - - - - - - _____
b. Time Elapsed when the X-marks become visible, min. - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

VII. Drying Time (ASTM D1640)

a. Set-to-Touch, minutes - - - - - - - - - _____
b. Recoat Time, minutes - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

VIII. Levelling (ASTM D4062)

Levelling of Test Paint (from 0 to 10) - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

IX. Contrast Ratio (PNS ISO 6504)

CONTRAST RATIO, %, min 75 µm, 24 hours dry - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

X. Specular Gloss (PNS ISO 2813)

SPECULAR GLOSS 60^0, 75 µm, 24 hours dry, GU min - - - - - _____

Tested by / Date _____ Computed by / Date _____

WORKSHEET FOR TESTING OF ALKYD-BASED GLOSS ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

XI. Wet Abrasion (ASTM D2486)

a. Test Method used - - - - - - - - - _____
b. Reference Paint used - - - - - - - - - _____
c. Cycles for Test Paint - - - - - - - - - _____
d. Cycles for Reference Paint - - - - - - - - - _____

WET ABRASION, cycles, min. 7 days dry - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

XII. Adhesion by Tape Test (ASTM D3359)

a. Test Method Used - - - - - - - - - _____
b. Substrate Employed - - - - - - - - - _____
c. Type of Coating - - - - - - - - - _____
d. Method of Cure - - - - - - - - - _____
e. Number of Tests - - - - - - - - - _____
Mean - - - - - - - - - _____
Range - - - - - - - - - _____
f. Adhesion Strength of the Pressure-Sensitive Tape - - - - - - _____
g. Specific Product Name of the Tape Used - - - - - - - - - _____
Manufacturer - - - - - - - - - _____
Lot Number - - - - - - - - - _____
h. Estimate of the Interface at which the Coating Failure Occurred - - - - - - - - - _____
i. Immersion Conditions - - - - - - - - - _____
Time between Immersion and Testing - - - - - _____
Method of Sample Preparation - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

XIII. Volatile Organic Compounds (ASTM D3960)

a. Weight of Total Volatiles, % - - - - - - - - - _____
b. Weight of Water, % - - - - - - - - - _____
c. Weight of Exempt Volatile Compound, % - - - - - - - - - _____
d. Density of Coating at 25^0C, g/L - - - - - - - - - _____
e. Density of Water at 25^0C, g/L - - - - - - - - - _____
f. Density of Exempt Volatile Compound at 25^0C, g/L - - - - - _____

VOLATILE ORGANIC COMPOUND (VOC) - - - - - - - - - _____

$$VOC = \frac{(a-b-c)(d)}{100\% - (b)(d/e) - (c)(d/f)}$$

Tested by / Date _____ Computed by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

XIV. Lead Content (ASTM E1613 / ASTM F2853)

LEAD CONTENT, mg/kg - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

Chemical Test/s Certified by : _____
(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF ALKYD-BASED FLAT-WALL ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

I. Total Solids by Weight (PNS ISO 3251)

		Trial 1	Trial 2	Trial 3
a.	Mass of dish, g			
b.	Mass of sample, g			
c.	Mass of dish + sample (after heating), g			
d.	Mass of sample (after heating), g			
e.	Total Solids (by weight), % = $\frac{d}{b} \times 100$			
	$\text{Total Solids}_{\text{average}}$, %	- - - - - - - - -		

Tested by / Date _____

Computed by / Date _____

II. Storage Stability (ASTM D1849)

		Trial 1	Trial 2	Trial 3
a.	Start of storage date			
b.	Sample weight at start of storage			
c.	End of storage date			
d.	Sample weight at end of storage			
e.	Temperature of storage			
f.	Skinning			
g.	Pressure			
h.	Corrosion of the container			
i.	Odor of spoilage			
j.	Rigidity of the lower layer (ASTM D 869)			
k.	Consistency (ASTM D 562)			
l.	Grains, lumps, or streaks in the brushed film			

Tested by / Date _____

Computed by / Date _____

III. Density (ASTM D1475)

	Trial 1	Trial 2	Trial 3
a. Mass of density cup, g			
b. Mass of density cup + water, g			
c. Mass of water, g			
d. Temperature of water, ˚C			
e. Absolute Density of Water at specified temperature (see Table 1)			
f. Volume of density cup, mL $f = \frac{c}{e}$			
$\text{AVERAGE}_{\text{vol. of density cup}}$, mL:			

	Trial 1	Trial 2	Trial 3
g. Mass of density cup filled with sample, g			
h. Mass of sample, g			
i. Density, g/mL or kg/L $i = \frac{h}{f}$			
$\text{AVERAGE}_{\text{density, kg/L}}$:			

Tested by / Date _____

Computed by / Date _____

WORKSHEET FOR TESTING OF ALKYD-BASED FLATWALL ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

IV. Viscosity (ASTM D562)

a. Temperature of the sample, ˚C - - - - - - - - - _____
b. Viscosity, KU - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

V. Fineness of Grind (ASTM D1210)

a. Tapered Gage used - - - - - - - - - _____
b. Cleanliness (texture) method - - - - - - - - - _____
(*not applicable* for Two Parallel Paths)
c. Cleanliness (texture) rating, - - - - - - - - - _____
A (0 to 8 specks),
B (9 to 15 specks), and
C (16 or more specks)
(*not applicable* for Two Parallel Paths)
d. Scanning Direction of the Tapered Gage - - - - - - - - - _____
Tapered Gage

	Trial 1	Trial 2	AVERAGE
e. Fineness of Grind, Hegman reading	_____	_____	_____

Tested by / Date _____ Computed by / Date _____

VI. Wet Edge Time (ASTM D7488)

a. Time Elapsed when the edges of the first coat become visible (wet edge time), min. - - - - - - - - - _____
b. Time Elapsed when the X-marks become visible, min. - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

VII. Drying Time (ASTM D1640)

a. Set-to-Touch, minutes - - - - - - - - - _____
b. Recoat Time, minutes - - - - - - - - - _____
c. Dry Hard, minutes - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

VIII. Levelling (ASTM D4062)

Levelling of Test Paint (from 0 to 10) - - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

IX. Contrast Ratio (PNS ISO 6504)

CONTRAST RATIO, %, min 75 µm, 24 hours dry - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

X. Specular Gloss (PNS ISO 2813)

SPECULAR GLOSS 60^0, 75 µm, 24 hours dry, GU min - - - - - _____

Tested by / Date _____ Computed by / Date _____

WORKSHEET FOR TESTING OF ALKYD-BASED FLATWALL ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

XI. Adhesion by Tape Test (ASTM D3359)

a. Test Method Used - - - - - - - - - _____
b. Substrate Employed - - - - - - - - - _____
c. Type of Coating - - - - - - - - - _____
d. Method of Cure - - - - - - - - - _____
e. Number of Tests - - - - - - - - - _____
Mean - - - - - - - - - _____
Range - - - - - - - - - _____
f. Adhesion Strength of the Pressure-Sensitive Tape - - - - - - _____
g. Specific Product Name of the Tape Used - - - - - - - - - _____
Manufacturer - - - - - - - - - _____
Lot Number - - - - - - - - - _____
h. Estimate of the Interface at which the Coating Failure Occurred - - - - - - - - - _____
i. Immersion Conditions - - - - - - - - - _____
Time between Immersion and Testing - - - - - _____
Method of Sample Preparation - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

XII. Volatile Organic Compounds (ASTM D3960)

a. Weight of Total Volatiles, % - - - - - - - - - _____
b. Weight of Water, % - - - - - - - - - _____
c. Weight of Exempt Volatile Compound, % - - - - - - - - - _____
d. Density of Coating at 25^0C, g/L - - - - - - - - - _____
e. Density of Water at 25^0C, g/L - - - - - - - - - _____
f. Density of Exempt Volatile Compound at 25^0C, g/L - - - - - _____

VOLATILE ORGANIC COMPOUND (VOC) - - - - - - - - - _____

$$VOC = \frac{(a-b-c)(d)}{100\% - (b)(d/e) - (c)(d/f)}$$

Tested by / Date _____ Computed by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

XIII. Lead Content (ASTM E1613 / ASTM F2853)

LEAD CONTENT, mg/kg - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

Chemical Test/s Certified by : _____
(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF ALKYD-BASED METAL PRIMER

Lab. No.: _____ Sample Identification: _____ Color: _____

I. Total Solids by Weight (PNS ISO 3251)

		Trial 1	Trial 2	Trial 3
a.	Mass of dish, g			
b.	Mass of sample, g			
c.	Mass of dish + sample (after heating), g			
d.	Mass of sample (after heating), g			
e.	Total Solids (by weight), % = $\frac{d}{b} \times 100$			

Total $Solids_{average}$, % - - - - - - - - - _____

Tested by / Date _____

Computed by / Date _____

II. Storage Stability (ASTM D1849)

		Trial 1	Trial 2	Trial 3
a.	Start of storage date			
b.	Sample weight at start of storage			
c.	End of storage date			
d.	Sample weight at end of storage			
e.	Temperature of storage			
f.	Skinning			
g.	Pressure			
h.	Corrosion of the container			
i.	Odor of spoilage			
j.	Rigidity of the lower layer (ASTM D 869)			
k.	Consistency (ASTM D 562)			
l.	Grains, lumps, or streaks in the brushed film			

Tested by / Date _____

Computed by / Date _____

III. Density (ASTM D1475)

	Trial 1	Trial 2	Trial 3
a. Mass of density cup, g			
b. Mass of density cup + water, g			
c. Mass of water, g			
d. Temperature of water, ˚C			
e. Absolute Density of Water at specified temperature (see Table 1)			
f. Volume of density cup, mL $f = \frac{c}{e}$			
$AVERAGE_{vol.\ of\ density\ cup}$, mL:			

	Trial 1	Trial 2	Trial 3
g. Mass of density cup filled with sample, g			
h. Mass of sample, g			
i. Density, g/mL or kg/L $i = \frac{h}{f}$			
$AVERAGE_{density,\ kg/L}$:			

Tested by / Date _____

Computed by / Date _____

WORKSHEET FOR TESTING OF ALKYD-BASED METAL PRIMER

Lab. No.: _____ Sample Identification: _____ Color: _____

IV. Viscosity (ASTM D562)

a. Temperature of the sample, ˚C - - - - - - - - - _____
b. Viscosity, KU - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

V. Fineness of Grind (ASTM D1210)

a. Tapered Gage used - - - - - - - - - _____
b. Cleanliness (texture) method - - - - - - - - - _____
(*not applicable* for Two Parallel Paths)
c. Cleanliness (texture) rating, - - - - - - - - - _____
A (0 to 8 specks),
B (9 to 15 specks), and
C (16 or more specks)
(*not applicable* for Two Parallel Paths)
d. Scanning Direction of the Tapered Gage - - - - - - - - - _____
Tapered Gage

	Trial 1	Trial 2	AVERAGE
e. Fineness of Grind, Hegman reading	_____	_____	_____

Tested by / Date _____ Computed by / Date _____

VI. Drying Time (ASTM D1640)

a. Set-to-Touch, minutes - - - - - - - - - _____
b. Recoat Time, minutes - - - - - - - - - _____
c. Dry Hard, minutes - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

VII. Contrast Ratio (PNS ISO 6504)

CONTRAST RATIO, %, min 75 µm, 24 hours dry - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

VIII. Specular Gloss (PNS ISO 2813)

SPECULAR GLOSS 60^0, 75 µm, 24 hours dry, GU min - - - - - _____

Tested by / Date _____ Computed by / Date _____

WORKSHEET FOR TESTING OF ALKYD-BASED METAL PRIMER

Lab. No.: _____ Sample Identification: _____ Color: _____

IX. Adhesion by Tape Test (ASTM D3359)

a.	Test Method Used	_____
b.	Substrate Employed	_____
c.	Type of Coating	_____
d.	Method of Cure	_____
e.	Number of Tests	_____
	Mean	_____
	Range	_____
f.	Adhesion Strength of the Pressure-Sensitive Tape	_____
g.	Specific Product Name of the Tape Used	_____
	Manufacturer	_____
	Lot Number	_____
h.	Estimate of the Interface at which the Coating Failure Occurred	_____
i.	Immersion Conditions	_____
	Time between Immersion and Testing	_____
	Method of Sample Preparation	_____

Tested by / Date _____

Computed by / Date _____

X. Volatile Organic Compounds (ASTM D3960)

a.	Weight of Total Volatiles, %	_____
b.	Weight of Water, %	_____
c.	Weight of Exempt Volatile Compound, %	_____
d.	Density of Coating at 25^0C, g/L	_____
e.	Density of Water at 25^0C, g/L	_____
f.	Density of Exempt Volatile Compound at 25^0C, g/L	_____

VOLATILE ORGANIC COMPOUND (VOC) _____

$$VOC = \frac{(a-b-c)(d)}{100\% - (b)(d/e) - (c)(d/f)}$$

Tested by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date _____

XI. Lead Content (ASTM E1613 / ASTM F2853)

LEAD CONTENT, mg/kg _____

Tested by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date _____

Chemical Test/s Certified by : _____
(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF EPOXY METAL PRIMER

Lab. No.: _____ Sample Identification: _____ Color: _____

I. Total Solids by Weight (PNS ISO 3251)

		Trial 1	Trial 2	Trial 3
a.	Mass of dish, g			
b.	Mass of sample, g			
c.	Mass of dish + sample (after heating), g			
d.	Mass of sample (after heating), g			
e.	Total Solids (by weight), % = $\frac{d}{b} \times 100$			
	$\text{Total Solids}_{\text{average}}$, %	- - - - - - - - -		

Tested by / Date _____

Computed by / Date _____

II. Storage Stability (ASTM D1849)

		Trial 1	Trial 2	Trial 3
a.	Start of storage date			
b.	Sample weight at start of storage			
c.	End of storage date			
d.	Sample weight at end of storage			
e.	Temperature of storage			
f.	Skinning			
g.	Pressure			
h.	Corrosion of the container			
i.	Odor of spoilage			
j.	Rigidity of the lower layer (ASTM D 869)			
k.	Consistency (ASTM D 562)			
l.	Grains, lumps, or streaks in the brushed film			

Tested by / Date _____

Computed by / Date _____

III. Density (ASTM D1475)

	Trial 1	Trial 2	Trial 3
a. Mass of density cup, g			
b. Mass of density cup + water, g			
c. Mass of water, g			
d. Temperature of water, ˚C			
e. Absolute Density of Water at specified temperature (see Table 1)			
f. Volume of density cup, mL $f = \frac{c}{e}$			
$\text{AVERAGE}_{\text{vol. of density cup}}$, mL:			

	Trial 1	Trial 2	Trial 3
g. Mass of density cup filled with sample, g			
h. Mass of sample, g			
i. Density, g/mL or kg/L $i = \frac{h}{f}$			
$\text{AVERAGE}_{\text{density, kg/L}}$:			

Tested by / Date _____

Computed by / Date _____

WORKSHEET FOR TESTING OF EPOXY METAL PRIMER

Lab. No.: _____ Sample Identification: _____ Color: _____

IV. Viscosity Using a Stormer-Type Viscometer (ASTM D562)

a. Temperature of the sample, ˚C - - - - - - - - - _____
b. Viscosity, KU - - - - - - - - - _____

Tested by / Date Computed by / Date

_____ _____

V. Viscosity by Ford Viscosity Cup (ASTM D1200)

a. Temperature of the sample, ˚C - - - - - - - - - _____
b. Efflux Time with the Cup Orifice, seconds - - - - - - - - - _____

Tested by / Date Computed by / Date

_____ _____

VI. Fineness of Grind (ASTM D1210)

a. Tapered Gage used - - - - - - - - - _____
b. Cleanliness (texture) method - - - - - - - - - _____
(*not applicable* for Two Parallel Paths)
c. Cleanliness (texture) rating, - - - - - - - - - _____
A (0 to 8 specks),
B (9 to 15 specks), and
C (16 or more specks)
(*not applicable* for Two Parallel Paths)
d. Scanning Direction of the Tapered Gage - - - - - - - - - _____
Tapered Gage

	Trial 1	Trial 2	AVERAGE
e. Fineness of Grind, Hegman reading	_____	_____	_____

Tested by / Date Computed by / Date

_____ _____

VII. Volatile Organic Compounds (ASTM D3960)

a. Weight of Total Volatiles, % - - - - - - - - - _____
b. Weight of Water, % - - - - - - - - - _____
c. Weight of Exempt Volatile Compound, % - - - - - - - - - _____
d. Density of Coating at 25^0C, g/L - - - - - - - - - _____
e. Density of Water at 25^0C, g/L - - - - - - - - - _____
f. Density of Exempt Volatile Compound at 25^0C, g/L - - - - - _____

VOLATILE ORGANIC COMPOUND (VOC) - - - - - - - - - _____

$$VOC = \frac{(a-b-c)(d)}{100\% - (b)(d/e) - (c)(d/f)}$$

Tested by / Date Computed by / Date

_____ _____

(Chemist/Chem. Tech. / PRC Lic. No.)

VIII. Lead Content (ASTM E1613 / ASTM F2853)

LEAD CONTENT, mg/kg - - - - - - - - - _____

Tested by / Date Computed by / Date

_____ _____

(Chemist/Chem. Tech. / PRC Lic. No.)

Chemical Test/s Certified by : _____
(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF WATER-BASED GLOSS ROOF PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

I. Total Solids by Weight (PNS ISO 3251)

		Trial 1	Trial 2	Trial 3
a.	Mass of dish, g			
b.	Mass of sample, g			
c.	Mass of dish + sample (after heating), g			
d.	Mass of sample (after heating), g			
e.	Total Solids (by weight), % = $\frac{d}{b} \times 100$			

Total Solids$_{average}$, % - - - - - - - - - _____

Tested by / Date

_____

Computed by / Date

_____

II. Storage Stability (ASTM D1849)

		Trial 1	Trial 2	Trial 3
a.	Start of storage date			
b.	Sample weight at start of storage			
c.	End of storage date			
d.	Sample weight at end of storage			
e.	Temperature of storage			
f.	Skinning			
g.	Pressure			
h.	Corrosion of the container			
i.	Odor of spoilage			
j.	Rigidity of the lower layer (ASTM D 869)			
k.	Consistency (ASTM D 562)			
l.	Grains, lumps, or streaks in the brushed film			

Tested by / Date

_____

Computed by / Date

_____

III. Density (ASTM D1475)

	Trial 1	Trial 2	Trial 3
a. Mass of density cup, g			
b. Mass of density cup + water, g			
c. Mass of water, g			
d. Temperature of water, ˚C			
e. Absolute Density of Water at specified temperature (see Table 1)			
f. Volume of density cup, mL $f = \frac{c}{e}$			
AVERAGE$_{vol. of density cup}$, mL:			

	Trial 1	Trial 2	Trial 3
g. Mass of density cup filled with sample, g			
h. Mass of sample, g			
i. Density, g/mL or kg/L $i = \frac{h}{f}$			
AVERAGE$_{density, kg/L}$:			

Tested by / Date

_____

Computed by / Date

_____

WORKSHEET FOR TESTING OF WATER-BASED GLOSS ROOF PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

IV. Viscosity (ASTM D562)

a. Temperature of the sample, ˚C - - - - - - - - - _____
b. Viscosity, KU - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

V. Fineness of Grind (ASTM D1210)

a. Tapered Gage used - - - - - - - - - _____
b. Cleanliness (texture) method - - - - - - - - - _____
(*not applicable* for Two Parallel Paths)
c. Cleanliness (texture) rating, - - - - - - - - - _____
A (0 to 8 specks),
B (9 to 15 specks), and
C (16 or more specks)
(*not applicable* for Two Parallel Paths)
d. Scanning Direction of the Tapered Gage - - - - - - - - - _____
Tapered Gage

	Trial 1	Trial 2	AVERAGE
e. Fineness of Grind, Hegman reading	_____	_____	_____

Tested by / Date _____ Computed by / Date _____

VI. Wet Edge Time (ASTM D7488)

a. Time Elapsed when the edges of the first coat become visible (wet edge time), min. - - - - - - - - - _____
b. Time Elapsed when the X-marks become visible, min. - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

VII. Drying Time (ASTM D1640)

a. Set-to-Touch, minutes - - - - - - - - - _____
b. Recoat Time, minutes - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

VIII. Contrast Ratio (PNS ISO 6504)

CONTRAST RATIO, %, min 75 µm, 24 hours dry - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

IX. Specular Gloss (PNS ISO 2813)

SPECULAR GLOSS 60^0, 75 µm, 24 hours dry, GU min - - - - - _____

Tested by / Date _____ Computed by / Date _____

WORKSHEET FOR TESTING OF WATER-BASED GLOSS ROOF PAINT

Lab. No.: _____ Sample Identification: _____ Color: _____

X. Wet Abrasion (ASTM D2486)

a. Test Method used - - - - - - - - - _____
b. Reference Paint used - - - - - - - - - _____
c. Cycles for Test Paint - - - - - - - - - _____
d. Cycles for Reference Paint - - - - - - - - - _____

WET ABRASION, cycles, min. 7 days dry - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

XI. Adhesion by Tape Test (ASTM D3359)

a. Test Method Used - - - - - - - - - _____
b. Substrate Employed - - - - - - - - - _____
c. Type of Coating - - - - - - - - - _____
d. Method of Cure - - - - - - - - - _____
e. Number of Tests - - - - - - - - - _____
Mean - - - - - - - - - _____
Range - - - - - - - - - _____
f. Adhesion Strength of the Pressure-Sensitive Tape - - - - - - _____
g. Specific Product Name of the Tape Used - - - - - - - - - _____
Manufacturer - - - - - - - - - _____
Lot Number - - - - - - - - - _____
h. Estimate of the Interface at which the Coating Failure Occurred - - - - - - - - - _____
i. Immersion Conditions - - - - - - - - - _____
Time between Immersion and Testing - - - - - _____
Method of Sample Preparation - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

XII. Volatile Organic Compounds (ASTM D3960)

a. Weight of Total Volatiles, % - - - - - - - - - _____
b. Weight of Water, % - - - - - - - - - _____
c. Weight of Exempt Volatile Compound, % - - - - - - - - - _____
d. Density of Coating at 25^0C, g/L - - - - - - - - - _____
e. Density of Water at 25^0C, g/L - - - - - - - - - _____
f. Density of Exempt Volatile Compound at 25^0C, g/L - - - - - _____

VOLATILE ORGANIC COMPOUND (VOC) - - - - - - - - - _____

$$VOC = \frac{(a-b-c)(d)}{100\% - (b)(d/e) - (c)(d/f)}$$

Tested by / Date _____ Computed by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

XIII. Lead Content (ASTM E1613 / ASTM F2853)

LEAD CONTENT, mg/kg - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

Chemical Test/s Certified by : _____
(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF ELASTOMERIC WALL COATING

Lab. No.: _____ Sample Identification: _____ Color: _____

I. Total Solids by Weight (PNS ISO 3251)

		Trial 1	Trial 2	Trial 3
a.	Mass of dish, g			
b.	Mass of sample, g			
c.	Mass of dish + sample (after heating), g			
d.	Mass of sample (after heating), g			
e.	Total Solids (by weight), % = $\frac{d}{b} \times 100$			
	$\text{Total Solids}_{\text{average}}$, %	- - - - - - - - -		

Tested by / Date _____

Computed by / Date _____

II. Storage Stability (ASTM D1849)

		Trial 1	Trial 2	Trial 3
a.	Start of storage date			
b.	Sample weight at start of storage			
c.	End of storage date			
d.	Sample weight at end of storage			
e.	Temperature of storage			
f.	Skinning			
g.	Pressure			
h.	Corrosion of the container			
i.	Odor of spoilage			
j.	Rigidity of the lower layer (ASTM D 869)			
k.	Consistency (ASTM D 562)			
l.	Grains, lumps, or streaks in the brushed film			

Tested by / Date _____

Computed by / Date _____

III. Density (ASTM D1475)

	Trial 1	Trial 2	Trial 3
a. Mass of density cup, g			
b. Mass of density cup + water, g			
c. Mass of water, g			
d. Temperature of water, ˚C			
e. Absolute Density of Water at specified temperature (see Table 1)			
f. Volume of density cup, mL $f = \frac{c}{e}$			
$\text{AVERAGE}_{\text{vol. of density cup}}$, mL:			

	Trial 1	Trial 2	Trial 3
g. Mass of density cup filled with sample, g			
h. Mass of sample, g			
i. Density, g/mL or kg/L $i = \frac{h}{f}$			
$\text{AVERAGE}_{\text{density, kg/L}}$:			

Tested by / Date _____

Computed by / Date _____

WORKSHEET FOR TESTING OF ELASTOMERIC WALL COATING

Lab. No.: _____ Sample Identification: _____ Color: _____

IV. Viscosity (ASTM D562)

a. Temperature of the sample, ˚C - - - - - - - - - _____
b. Viscosity, KU - - - - - - - - - _____

Tested by / Date _____

Computed by / Date _____

V. Fineness of Grind (ASTM D1210)

a. Tapered Gage used - - - - - - - - - _____
b. Cleanliness (texture) method - - - - - - - - - _____
(*not applicable* for Two Parallel Paths)
c. Cleanliness (texture) rating, - - - - - - - - - _____
A (0 to 8 specks),
B (9 to 15 specks), and
C (16 or more specks)
(*not applicable* for Two Parallel Paths)
d. Scanning Direction of the Tapered Gage - - - - - - - - - _____
Tapered Gage

	Trial 1	Trial 2	AVERAGE
e. Fineness of Grind, Hegman reading	_____	_____	_____

Tested by / Date _____

Computed by / Date _____

VI. Wet Edge Time (ASTM D7488)

a. Time Elapsed when the edges of the first coat become visible (wet edge time), min. - - - - - - - - - _____
b. Time Elapsed when the X-marks become visible, min. - - - - - - - - - _____

Tested by / Date _____

Computed by / Date _____

VII. Drying Time (ASTM D1640)

a. Set-to-Touch, minutes - - - - - - - - - _____
b. Recoat Time, minutes - - - - - - - - - _____

Tested by / Date _____

Computed by / Date _____

VIII. Volatile Organic Compounds (ASTM D3960)

a. Weight of Total Volatiles, % - - - - - - - - - _____
b. Weight of Water, % - - - - - - - - - _____
c. Weight of Exempt Volatile Compound, % - - - - - - - - - _____
d. Density of Coating at 25^0C, g/L - - - - - - - - - _____
e. Density of Water at 25^0C, g/L - - - - - - - - - _____
f. Density of Exempt Volatile Compound at 25^0C, g/L - - - - - _____

VOLATILE ORGANIC COMPOUND (VOC) - - - - - - - - - _____

$$VOC = \frac{(a-b-c)(d)}{100\% - (b)(d/e) - (c)(d/f)}$$

Tested by / Date _____
(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date _____

WORKSHEET FOR TESTING OF ELASTOMERIC WALL COATING

Lab. No.: _____ Sample Identification: _____ Color: _____

IX. Lead Content (ASTM E1613 / ASTM F2853)

LEAD CONTENT, mg/kg - - - - - - - - - _____

Tested by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date _____

Chemical Test/s Certified by : _____

(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF THERMOPLASTIC TRAFFIC PAINT (Solid Form)

AASHTO M247, AASHTO M249

Lab. No. : _____

Sample Identification : _____

Type : _____

1. Condition in Container - - - - - - - - - _____

2. Specific Gravity

		Trial 1	Trial 2
a.	apparent mass of specimen, without wire or sinker, in air, g =	_____	_____
b.	apparent mass of specimen (and sinker, if used) completely immersed and the wire partially immersed in liquid, g =	_____	_____
c.	apparent mass of totally immersed sinker (if used) and of partially immersed wire, g =	_____	_____
	Specific Gravity, 23°C = $\frac{a}{(a - b)}$ =	_____	_____
	AVE:	_____	

Tested by / Date _____ Computed by / Date _____

3. Drying Time

a. Start, time - - - - - - - - - _____

b. No pick-up, time - - - - - - - - - _____

Drying Time, mins. = $(b - a)$ - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

4. Softening Point, ^{0}C

- - - - - - - - - _____ _____

AVE: _____

Tested by / Date _____ Computed by / Date _____

5. Total Dry Solid (Ash), % (Pigment + Filler + Glass Beads)

	Dish ID	_____	_____
a.	Mass of empty dish, g	_____	_____
b.	Mass of sample, g	_____	_____
c.	Mass of dish + sample, g	_____	_____
d.	Mass of dish + ash, g	_____	_____
e.	Mass of ash, g	_____	_____
	% Total Dry Solids (Ash) = $\frac{e}{b}$ x 100	_____	_____
	AVE:	_____	

Tested by / Date _____ Computed by / Date _____

6. Binder, % (100 - % Ash)

- - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

WORKSHEET FOR TESTING OF THERMOPLASTIC TRAFFIC PAINT (Solid Form)

AASHTO M247, AASHTO M249

Lab. No. : _____

Sample Identification : _____

Type : _____

7. Extender/Filler, %

(for White) % Extenders = % Ash – (% TiO_2 + % Glass Beads) - - - - - - _____

(for Yellow) % Extenders = % Ash – (% $PbCrO_4$ + % Glass Beads) - - - - - - _____

Tested by / Date _____ Computed by / Date _____

8. Color (D65/2, Daylight Reflectance)

Y (%) at 45^o - 0^o - - - - - - - - - - _____ _____

AVE: _____

Tested by / Date _____ Computed by / Date _____

9. Cracking Resistance @ Low Temp.

- - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

10. Impact Resistance, mm•kg or J

- - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

11. Bond Strength, MPa (N/mm^2)

a. Breaking Force (N) - - - - - - - - - _____

b. Loading Fixture Surface Area on sample, (mm^2) - - - - - - - - - _____

c. Bond Strength, MPa = $\frac{a}{b}$ - - - - - - - - - _____

Tested by / Date _____ Computed by / Date _____

12. Flowability

		Trial 1	Trial 2	**AVE:**
a. Mass of can, g	- - -	_____	_____	
b. Mass of can + residue, g	- - -	_____	_____	
c. Flowability, % Residue	- - -	_____	_____	_____

= $\left(\frac{b - a}{400}\right)$ x 100

Tested by / Date _____ Computed by / Date _____

WORKSHEET FOR TESTING OF THERMOPLASTIC TRAFFIC PAINT (Solid Form)

AASHTO M247, AASHTO M249

Lab. No. : _____

Sample Identification : _____

Type : _____

13. Flowability (Extended Heating)

		Trial 1	Trial 2	AVE:
a.	Mass of can, g - - -	_____	_____	
b.	Mass of can + residue, g - - -	_____	_____	
c.	Flowability, % Residue - - -	_____	_____	_____

$$= \left(\frac{b - a}{400} \right) \times 100$$

Tested by / Date

_____

Computed by / Date

_____

14. Yellowness Index

Trial 1	Trial 2	AVE:
_____	_____	_____

Tested by / Date

_____

Computed by / Date

_____

15. Pigment Analysis

For White:

Titanium Dioxide (TiO_2), % by wt. of Paint

a. Mass of empty crucible, g - - - - - - - - - - _____

b. Mass of sample (ash), g - - - - - - - - - - _____

c. Mass of crucible + ignited residue, g - - - - - - - - - - _____

d. Mass of ignited residue, g - - - - - - - - - - _____

$$\% TiO_2 = \frac{d}{b} \times \% Ash$$ - - - - - - - - - - _____

For Yellow:

Lead Chromate ($PbCrO_4$), % by wt. of Paint

		Trial 1	Trial 2
a.	Volume of Sodium Thiosulfate Solution used, ml - - -	_____	_____
b.	Normality of Sodium Thiosulfate Solution used, N - - -	_____	_____
c.	Mass of sample (ash), g - - -	_____	_____

$$\% PbCrO_4 = \frac{a \times b \times 0.033 \times 3.23}{c} \times \% Ash$$ - - - _____ _____

AVE: _____

Tested by / Date

_____

(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date

_____

WORKSHEET FOR TESTING OF THERMOPLASTIC TRAFFIC PAINT (Solid Form)

AASHTO M247, AASHTO M249

Lab. No. : _____

Sample Identification : _____

Type : _____

16. Glass Beads, %

a. Mass of sample (ash), g - - - - - - - - - _____

b. Mass of extracted glass beads, g - - - - - - - - - _____

% Glass Beads = $\frac{b}{a}$ x %Ash - - - - - - - - - _____

Tested by / Date _____

Computed by / Date _____

17. Grading (Glass Beads)

Mass of Glass Beads, g = _____

Sieve No.	Mass Retained, g	Mass Passing, g	% Passing
No. 16 (1.180 mm)	_____	_____	_____
No. 20 (0.850 mm)	_____	_____	_____
No. 30 (0.600 mm)	_____	_____	_____
No. 50 (0.300 mm)	_____	_____	_____
No. 80 (0.180 mm)	_____	_____	_____
No. 100 (0.150 mm)	_____	_____	_____
Pan	_____	_____	_____

Tested by / Date _____

Computed by / Date _____

18. Glass Beads, Refractive Index

- - - - - - - - - _____

Tested by / Date _____

Computed by / Date _____

19. Glass Beads, Roundness

	True Spheres	Irregular Spheres
a. Retained on Sieve No. 50 (300-µm)	_____	_____
b. Passed on Sieve No. 50 (300-µm)	_____	_____
c. Total Mass, g	_____	_____

% True Spheres

$= \frac{C_{\text{true spheres}}}{C_{\text{true spheres}} + C_{\textit{irregular}\ \text{spheres}}}$ - - - - - - - - - _____

Tested by / Date _____

Computed by / Date _____

Chemical Test/s Certified by : _____

(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF REFLECTORIZED TRAFFIC PAINT

ASTM D2205

Lab. No. : _____

Sample Identification : _____

Type : _____

1. SPECIFIC GRAVITY

a. Mass of pycnometer empty, g - - - - - - _____

b. Mass of pycnometer filled with water, g - - - - - - _____

c. Mass of pycnometer + half filled w/sample, g - - - - - - _____

d. Mass of pycnometer + sample + water, g - - - - - - _____

$$\text{Specific Gravity} = \frac{(c - a)}{(b - a) - (d - c)}$$ - - - - - - _____

Tested by / Date _____ Computed by / Date _____

2. DRYING TIME

a. Start, time - - - - - - _____

b. No pick-up, time - - - - - - _____

Drying Time, mins. = $(b - a)$ - - - - - - _____

Tested by / Date _____ Computed by / Date _____

3. EXTRACTION

a. Mass of empty container, g	- - - - - - - - - -	_____	_____
b. Mass of container + sample, g	- - - - - - - - - -	_____	_____
c. Mass of sample, g	- - - - - - - - - -	_____	_____
d. Mass of container + pigment, g	- - - - - - - - - -	_____	_____
e. Mass of pigment, g	- - - - - - - - - -	_____	_____
% Pigment = $\frac{e}{c} \times 100$	- - - - - - - - - -	_____	_____

AVERAGE - - - - - - _____

% Vehicle = 100 – % Pigment - - - - - - _____

Tested by / Date _____ Computed by / Date _____

4. NON-VOLATILE MATTER (Total Solids)

a. Container ID	- - - - - - - - - -	_____	_____
b. Mass of container, empty, g	- - - - - - - - - -	_____	_____
c. Mass of sample, g	- - - - - - - - - -	_____	_____
d. Mass of container + sample, g	- - - - - - - - - -	_____	_____
e. Mass of container + oven-dried residue, g	- - - - - -	_____	_____
f. Total Solids, % = $\frac{e - b}{c} \times 100$	- - - - - - - -	_____	_____

AVERAGE - - - - - - _____

Tested by / Date _____ Computed by / Date _____

WORKSHEET FOR TESTING OF REFLECTORIZED TRAFFIC PAINT

ASTM D2205

Lab. No. : _____

Sample Identification : _____

Type : _____

5. NON-VOLATILE VEHICLE

$$\text{Non-Volatile Vehicle (\% by weight of vehicle)} = \frac{\text{\% Total Solids} - \text{\% Pigment}}{\text{\% Vehicle}} \times 100 \text{ - - - - } \_\_\_\_\_$$

Tested by / Date _____

Computed by / Date _____

6. EXTENDERS/FILLERS

(for White) % Extenders = % Pigment – (% TiO_2 + % Glass Beads) - - - _____

(for Yellow) % Extenders = % Pigment – (% $PbCrO_4$ + % Glass Beads) - - - _____

Tested by / Date _____

Computed by / Date _____

7. CONSISTENCY AT 20°C

Viscosity, KU - - - - - - _____

Tested by / Date _____

Computed by / Date _____

8. PIGMENT ANALYSIS

For White:

Titanium Dioxide (TiO_2), % by wt. of Paint

a. Mass of empty crucible, g - - - - - - - - - - _____

b. Mass of sample (pigment), g - - - - - - - - - - _____

c. Mass of crucible + ignited residue, g - - - - - - - - - - _____

d. Mass of ignited residue, g - - - - - - - - - - _____

$$\text{\% } TiO_2 = \frac{d}{b} \times \text{\% Pigment} \quad \text{- - - - - - - - - -} \quad \_\_\_\_\_$$

For Yellow:

Lead Chromate ($PbCrO_4$), % by wt. of Paint

		Trial 1	Trial 2
a.	Volume of Sodium Thiosulfate Solution used, ml - - -	_____	_____
b.	Normality of Sodium Thiosulfate Solution used, N - - -	_____	_____
c.	Mass of sample (ash), g - - -	_____	_____
	$\text{\% } PbCrO_4 = \frac{a \times b \times 0.033 \times 3.23}{c} \times \text{\% Total Solids}$ - - -	_____	_____

AVE: _____

Tested by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date _____

WORKSHEET FOR TESTING OF REFLECTORIZED TRAFFIC PAINT

ASTM D2205

Lab. No. : _____

Sample Identification : _____

Type : _____

9. GLASS BEADS:

1. Glass Beads, %

   a. Mass of sample (paint), g - - - - - - _____

   b. Mass of extracted beads, g - - - - - - _____

% Beads (by mass of paint) = $\frac{b}{a}$ x 100 - - - - - - _____

   a. Mass of sample (pigment), g - - - - - - _____

   b. Mass of extracted beads, g - - - - - - _____

% Beads (by mass of pigment)= $\frac{b}{a}$ x % Pigment - - - - - - _____

Mass of Beads, g/L = (% beads x mass/liter) - - - - - - _____

Tested by / Date _____ Computed by / Date _____

2. Grading:

Sieve Sizes	Mass Retained, g	Mass Passing, g	% Passing
No. 70 (0.210 mm)	_____	_____	_____
No. 80 (0.180 mm)	_____	_____	_____
No. 230 (0.063 mm)	_____	_____	_____
Pan	_____	_____	_____

Tested by / Date _____ Computed by / Date _____

3. Refractive Index

- - - - - - _____

Tested by / Date _____ Computed by / Date _____

Chemical Test/s Certified by : _____

(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF GALVANIZED IRON SHEET

ASTM A90

Lab. No. : _____
Sample Identification : _____
Type/Grade/Class : _____

1. Weight of Coating

		R	C	L
a.	Original weight of sheet, g	_____	_____	_____
b.	Thickness of sheet, mm	_____	_____	_____
		_____	_____	_____
		_____	_____	_____
		_____	_____	_____
	AVERAGE =	_____	_____	_____
c.	Weight of stripped sheet, g	_____	_____	_____
d.	Thickness of stripped sheet, mm	_____	_____	_____
		_____	_____	_____
		_____	_____	_____
		_____	_____	_____
	AVERAGE =	_____	_____	_____
e.	Weight of Coating, g/m^2	_____	_____	_____

$$\text{Weight of Coating, g/m}^2 = \frac{a - c}{c} \times d \times K$$

where: K = 7830

f. Triple spot (average of *e*), g/m^2 - - - _____

g. Single spot (specimen with the lightest coating), g/m^2 - - - _____

Tested by / Date _____ *(Chemist/Chem. Tech. / PRC Lic. No.)*

Computed by / Date _____

2. Base Metal Thickness (*T*), mm

$$T = \frac{d_{R\,AVE} + d_{C\,AVE} + d_{L\,AVE}}{3}$$ - - - _____

Tested by / Date _____

Computed by / Date _____

3. Unit Weight of Sheet, kg/m^2 - - - _____

$$\text{Unit Weight of Sheet} = [\,7.83 \times T\,] + \left(\frac{100}{1000}\right)$$

Tested by / Date _____

Computed by / Date _____

Chemical Test/s Certified by : _____
(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF GALVANIZED IRON PIPE

ASTM A90

Lab. No. : _____
Sample Identification : _____
Inside Diameter/Size of Pipe : _____

1. Weight of Coating

		I	II
a.	Original weight of specimen, g	_____	_____
b.	Weight of stripped specimen, g	_____	_____
c.	Thickness of stripped specimen, mm	_____	_____
		_____	_____
		_____	_____
		_____	_____
	AVERAGE =	_____	_____
d.	Height of stripped specimen, mm	_____	_____
		_____	_____
		_____	_____
		_____	_____
	AVERAGE =	_____	_____
e.	Outside diameter of stripped specimen, mm	_____	_____
		_____	_____
		_____	_____
		_____	_____
	AVERAGE =	_____	_____
f.	Inside diameter of stripped specimen, mm	_____	_____
		_____	_____
		_____	_____
		_____	_____
	AVERAGE =	_____	_____
g.	Coated area of original specimen, mm^2	_____	_____
	Coated area of original specimen, m^2	_____	_____
	$A = Ao + Ai$		
	$Ao = 3.1416 \times e \times d$		
	$Ai = 3.1416 \times f \times d$		
h.	Weight of Coating, g/m^2	_____	_____
	Weight of Coating, kg/m^2	_____	_____

$$\text{Weight of Coating, } g/m^2 = \frac{a - b}{g} \times 1 \times 10^6$$

Tested by / Date

_____
(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date

_____

2. Wall Thickness

		I	II
a.	Wall Thickness, mm	_____	_____
		_____	_____
		_____	_____
		_____	_____
	AVERAGE =	_____	_____

Tested by / Date

_____

Computed by / Date

_____

Chemical Test/s Certified by : _____
(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF GUARD RAIL

PHYSICAL AND CHEMICAL TESTS
ASTM A370, ASTM A90

Lab. No. : _____

Sample Identification : _____

A. PHYSICAL TEST : ASTM A370

1. Thickness, mm - - - - - - - - - - - - - - - - - - _____
2. Width, mm - - - - - - - - - - - - - - - - - - _____
3. Area, mm^2 - - - - - - - - - - - - - - - - - - _____
4. Yield Point, kN - - - - - - - - - - - - - - - - - - _____
5. Tensile Load, kN - - - - - - - - - - - - - - - - - - _____
6. Elongation :
   a. Final Length, mm - - - - - - - - - - - - - - - - - - _____
   b. Gage Length, mm - - - - - - - - - - - - - - - - - - _____

Computation:

Yield Strength, MPa $= \frac{(4) \times 1000}{(3)} =$

Tensile Strength, MPa $= \frac{(5) \times 1000}{(3)} =$

Elongation, % $= \left[\frac{(6a) - (6b)}{(6b)}\right] \times 100 =$

Tested by / Date :

_____
_____
_____
_____

Computed by / Date :

_____
_____
_____
_____

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF GUARD RAIL
ASTM A90, ASTM A370, ASTM A856

Lab. No. : _____

Sample Identification : _____

B. CHEMICAL TEST (ASTM A90):

		#1	#2	#3
a.	Original weight of specimen, g	_____	_____	_____
b.	Thickness of specimen, mm	_____	_____	_____
		_____	_____	_____
		_____	_____	_____
		_____	_____	_____
	AVERAGE =	_____	_____	_____
c.	Weight of stripped specimen, g	_____	_____	_____
d.	Thickness of stripped specimen, mm	_____	_____	_____
		_____	_____	_____
		_____	_____	_____
		_____	_____	_____
	AVERAGE =	_____	_____	_____
e.	Weight of Coating, g/m^2	_____	_____	_____

$$\text{Weight of Coating, g/m}^2 = \frac{a - c}{c} \times d \times K$$

where: K = 7830

f. Triple spot (average of *e*), g/m^2 - - - _____

g. Single spot (specimen with the lightest coating), g/m^2 - - - _____

Tested by / Date
_____
(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date
_____

Chemical Test/s Certified by : _____
(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF GABION & MATTRESS WIRES

PHYSICAL AND CHEMICAL TESTS
ASTM A370, ASTM A90

Lab. No. : _____

Sample Identification : _____

A. PHYSICAL TEST : ASTM A370

		Body	Selvedge
1.	Diameter, mm - - - - - - - - - - - - - - - - -	_____	_____
2.	Area, mm^2 - - - - - - - - - - - - - - - - -	_____	_____
3.	Yield Point, kN - - - - - - - - - - - - - - - - -	_____	_____
4.	Tensile Load, kN - - - - - - - - - - - - - - - - -	_____	_____
5.	Elongation :		
	a. Final Length, mm - - - - - - - - - - - - - - - - -	_____	_____
	b. Gage Length, mm - - - - - - - - - - - - - - - - -	_____	_____

Computation:

Yield Strength, MPa $= \frac{(3) \times 1000}{(2)} =$

Tensile Strength, MPa $= \frac{(4) \times 1000}{(2)} =$

Elongation, % $= \left[\frac{(5a) - (5b)}{(5b)}\right] \times 100 =$

Tested by / Date : _____

Computed by / Date : _____

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF GABION/MATTRESS

ASTM A90, ASTM A370

Lab. No. : _____

Sample Identification : _____

B. CHEMICAL TEST (ASTM A90):

		Body	Selvedge
a.	Original weight of wire, g	_____	_____
b.	Diameter of original wire, mm	_____	_____
		_____	_____
		_____	_____
		_____	_____
	AVERAGE =	_____	_____
c.	Weight of stripped wire, g	_____	_____
d.	Diameter of stripped wire, mm	_____	_____
		_____	_____
		_____	_____
		_____	_____
	AVERAGE =	_____	_____
e.	Weight of Coating, g/m^2	_____	_____

COMPUTATION:

$$\text{Weight of Coating, } g/m^2 = \frac{a - c}{c} \times d \times K$$

where: K = 1960

Tested by / Date

_____

(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date

_____

Chemical Test/s Certified by : _____

(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF TIE WIRE

PHYSICAL AND CHEMICAL TESTS
ASTM A370, ASTM A90M

Lab. No. : _____

Sample Identification : _____

A. PHYSICAL TEST : ASTM A370

1. Diameter, mm - - - - - - - - - - - - - - - - - - _____
2. Area, mm^2 - - - - - - - - - - - - - - - - - - _____
3. Yield Point, kN - - - - - - - - - - - - - - - - - - _____
4. Tensile Load, kN - - - - - - - - - - - - - - - - - - _____
5. Elongation :
   a. Final Length, mm - - - - - - - - - - - - - - - - - - _____
   b. Gage Length, mm - - - - - - - - - - - - - - - - - - _____

Computation:

Yield Strength, MPa $= \dfrac{(3) \times 1000}{(2)} =$

Tensile Strength, MPa $= \dfrac{(4) \times 1000}{(2)} =$

Elongation, % $= \left[\dfrac{(5a) - (5b)}{(5b)}\right] \times 100 =$

Tested by / Date : _____

Computed by / Date : _____

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF TIE WIRE

ASTM A90, ASTM A370

Lab. No. : _____

Sample Identification : _____

B. CHEMICAL TEST (ASTM A90):

a. Original weight of wire, g - - - - - _____
b. Diameter of original wire, mm - - - - - _____
_____
_____
_____

AVERAGE = _____

c. Weight of stripped wire, g - - - - - _____
d. Diameter of stripped wire, mm - - - - - _____
_____
_____
_____

AVERAGE = _____

e. Weight of Coating, g/m^2 - - - - - _____

COMPUTATION:

Weight of Coating, g/m^2 = $\frac{a - c}{c} \times d \times K$

where: K = 1960

Tested by / Date

_____

(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date

_____

Chemical Test/s Certified by : _____

(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF HIGH TENSILE WIRE

PHYSICAL AND CHEMICAL TESTS
ASTM A370, ASTM A90

Lab. No. : _____

Sample Identification : _____

A. PHYSICAL TEST : ASTM A370

1. Diameter, mm - - - - - - - - - - - - - - - - - - _____
2. Area, mm^2 - - - - - - - - - - - - - - - - - - _____
3. Yield Point, kN - - - - - - - - - - - - - - - - - - _____
4. Tensile Load, kN - - - - - - - - - - - - - - - - - - _____
5. Elongation :
   a. Final Length, mm - - - - - - - - - - - - - - - - - - _____
   b. Gage Length, mm - - - - - - - - - - - - - - - - - - _____

Computation:

Yield Strength, MPa $= \frac{(3) \times 1000}{(2)} =$

Tensile Strength, MPa $= \frac{(4) \times 1000}{(2)} =$

Elongation, % $= \left[\frac{(5a) - (5b)}{(5b)}\right] \times 100 =$

Tested by / Date : _____

Computed by / Date : _____

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF HIGH TENSILE WIRE

ASTM A90, ASTM A370

Lab. No. : _____

Sample Identification : _____

B. CHEMICAL TEST (ASTM A90):

a. Original weight of wire, g - - - - - _____
b. Diameter of original wire, mm - - - - - _____
_____
_____
_____

AVERAGE = _____

c. Weight of stripped wire, g - - - - - _____
d. Diameter of stripped wire, mm - - - - - _____
_____
_____
_____

AVERAGE = _____

e. Weight of Coating, g/m^2 - - - - - _____

COMPUTATION:

Weight of Coating, g/m^2 = $\frac{a - c}{c}$ x d x K

where: K = 1960

Tested by / Date

_____

(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date

_____

Chemical Test/s Certified by : _____

(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF WIRE

ASTM A370M

Lab. No. : _____

Sample Identification : _____

1. Diameter, mm - - - - - - - - - - - - - - - - - - _____
2. Area, mm^2 - - - - - - - - - - - - - - - - - - _____
3. Tensile Load, kN - - - - - - - - - - - - - - - - - - _____
4. Elongation, mm:
   (a) Final - - - - - - - - - - - - - - - - - - _____
   (b) Gage length - - - - - - - - - - - - - - - - - - _____

Computation:

$$\text{Tensile Strength, MPa} = \frac{(3) \times 1000}{(2)}$$

$$\text{Elongation, \%} = \left[\frac{(4a) - (4b)}{(4b)}\right] \times 100$$

Tested by / Date:

_____

_____

_____

_____

Computed by / Date:

_____

_____

_____

_____

Checked / Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF WIRE

ASTM A90, ASTM A370

Lab. No. : _____

Sample Identification : _____

B. CHEMICAL TEST (ASTM A90):

a. Original weight of wire, g - - - - - _____
b. Diameter of original wire, mm - - - - - _____
_____
_____
_____

AVERAGE = _____

c. Weight of stripped wire, g - - - - - _____
d. Diameter of stripped wire, mm - - - - - _____
_____
_____
_____

AVERAGE = _____

e. Weight of Coating, g/m^2 - - - - - _____

COMPUTATION:

Weight of Coating, g/m^2 = $\frac{a - c}{c} \times d \times K$

where: K = 1960

Tested by / Date _____
(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date _____

Chemical Test/s Certified by : _____
(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF WIRE ROPE

ASTM A931

Lab. No. : _____

Sample Identification : _____

1. Diameter, mm - - - - - - - - - - - - - - - - - - _____

2. Area, mm^2 - - - - - - - - - - - - - - - - - - _____

3. Breaking Force, kN - - - - - - - - - - - - - - - - - - _____

Tested by / Date:

_____

_____

_____

_____

Computed by / Date:

_____

_____

_____

_____

Checked / Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF WIRE ROPE

ASTM A90, ASTM A370

Lab. No. : _____

Sample Identification : _____

B. CHEMICAL TEST (ASTM A90):

a. Original weight of wire, g - - - - - _____
b. Diameter of original wire, mm - - - - - _____
_____
_____
_____

AVERAGE = _____

c. Weight of stripped wire, g - - - - - _____
d. Diameter of stripped wire, mm - - - - - _____
_____
_____
_____

AVERAGE = _____

e. Weight of Coating, g/m^2 - - - - - _____

COMPUTATION:

Weight of Coating, g/m^2 = $\frac{a - c}{c} \times d \times K$

where: K = 1960

Tested by / Date

_____
(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date

_____

Chemical Test/s Certified by : _____
(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF STEEL PLATE

ASTM A370M

Lab. No. : _____

Sample Identification : _____

1. Thickness, mm - - - - - - - - - - - - - - - - - - _____
2. Width, mm - - - - - - - - - - - - - - - - - - _____
3. Area, mm^2 - - - - - - - - - - - - - - - - - - _____
4. Yield Point, kN - - - - - - - - - - - - - - - - - - _____
5. Tensile Load, kN - - - - - - - - - - - - - - - - - - _____
6. Elongation, mm:
   (a) Final - - - - - - - - - - - - - - - - - - _____
   (b) Gage length - - - - - - - - - - - - - - - - - - _____

Computation:

$$\text{Yield Strength, MPa} = \frac{(4) \times 1000}{(3)}$$

$$\text{Tensile Strength, MPa} = \frac{(5) \times 1000}{(3)}$$

$$\text{Elongation, \%} = \left[\frac{(6a) - (6b)}{(6b)}\right] \times 100$$

Tested by / Date:

_____
_____
_____
_____

Computed by / Date:

_____
_____
_____
_____

Checked / Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF STEEL PLATE

ASTM A90

Lab. No. : _____

Sample Identification : _____

B. CHEMICAL TEST (ASTM A90):

		#1	#2	#3
a.	Original weight of plate, g	_____	_____	_____
b.	Thickness of plate, mm	_____	_____	_____
		_____	_____	_____
		_____	_____	_____
		_____	_____	_____
	AVERAGE =	_____	_____	_____
c.	Weight of stripped plate, g	_____	_____	_____
d.	Thickness of stripped plate, mm	_____	_____	_____
		_____	_____	_____
		_____	_____	_____
		_____	_____	_____
	AVERAGE =	_____	_____	_____
e.	Weight of Coating, g/m^2	_____	_____	_____

$$\text{Weight of Coating, g/m}^2 = \frac{a - c}{c} \times d \times K$$

where: K = 7830

f. Triple spot (average of *e*), g/m^2 - - - _____

g. Single spot (specimen with the lightest coating), g/m^2 - - - _____

Tested by / Date

_____

(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date

_____

Chemical Test/s Certified by : _____

(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF SOIL NAIL

ASTM A370M

Lab. No. : _____

Sample Identification : _____

(1) Nominal Size, mm - - - - - - - - - - _____
(2) Nominal Area, mm^2 (Table) - - - - _____
(3) Nominal Mass, kg/m (Table) - - - _____
(4) Diameter, mm (Plain) - - - - - - - - _____
(5) Length of Specimen, mm - - - - - - _____
(6) Mass of Specimen, kg (actual) - - - _____
(7) Tensile Load at:
  (a) Yield point, kN - - - - - - - - - - _____
  (b) Maximum, kN - - - - - - - - - - - _____
(8) Elongation, mm
  (a) Final - - - - - - - - - - _____
  (b) Gage length - - - - - _____
  (c) Difference - - - - - - - _____
(9) Deformation:
  (a) Avg. spacing, mm - - - _____
  (b) Avg. height, mm - - - _____
  (c) Gap, mm - - - - - - - - _____
(10) Weight of Coating, % - - _____
  (Report content from Chemical Unit)

Computation:

(11) Area (Table)
  (a) Plain: (mm^2) - _____
  (b) Deformed: (mm^2) - _____
(12) Specimen Unit Mass, kg/m

$$\frac{(6)}{(5)} \times 1000$$ - _____

(13) Variation in Mass, %

$$\frac{(12) - (3)}{(3)} \times 100$$ - - - - - - - - - - - - - - - - - _____

(14) Yield Point, MPa

$$\frac{(7a)}{(11)} \times 1000$$ - _____

(15) Tensile Strength, MPa

$$\frac{(7b)}{(11)} \times 1000$$ - _____

(16) Ratio of Tensile / Yield

$$\frac{(15)}{(14)}$$ - _____

(17) Elongation, %

$$\frac{(8c)}{(8b)} \times 100$$ - _____

Tested by / Date:

_____
_____
_____
_____

Computed by / Date:

_____
_____
_____
_____

Checked / Reviewed by: _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF SOIL NAIL

ASTM A90

Lab. No. : _____

Sample Identification : _____

B. CHEMICAL TEST (ASTM A90):

a. Original weight of specimen, g - - - - - _____

b. Weight of stripped specimen, g - - - - - _____

c. Nominal Area (from Table 1 of ASTM A615), m^2 - - - - - _____

d. Weight of coating, g/m^2 - - - - - _____

COMPUTATION:

$$\text{Weight of Coating, } g/m^2 = \frac{a - b}{c}$$

Tested by / Date

_____

(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date

_____

Chemical Test/s Certified by : _____

(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF REINFORCING STEEL BARS

ASTM A370, E290

Lab. No. : _____

Sample Identification : _____

LABORATORY DATA

(1) Class: ( ) Plain ( ) Deformed

(2) Nominal Size, mm - - - - - - - - - - _____
(3) Nominal Area, mm^2 (Table) - - - - _____
(4) Nominal Mass, kg/m (Table) - - - _____
(5) Diameter, mm (Plain) - - - - - - - - _____
(6) Length of Specimen, mm - - - - - - _____
(7) Mass of Specimen, kg (actual) - - - _____
(8) Tensile Load at:
(a) Yield point, kN - - - - - - - - - - _____
(b) Maximum, kN - - - - - - - - - - - _____

(9) Elongation, mm
(a) Final - - - - - - - - - - _____
(b) Gage length - - - - - _____
(c) Difference - - - - - - - _____
(10) Deformation:
(a) Avg. spacing, mm - - - _____
(b) Avg. height, mm - - - _____
(c) G a p - - - - - - - - - - _____
(11) Phosphorus Content, % - - _____
(Report content from Chemical Unit)
(12) Bending:
Degrees of bend - - - - - _____
Pin diameter - - - - - - - - _____
Bend - - - - - - - - - - - - - _____

COMPUTATION:

(13) Area (Table)
(a) Plain: (mm^2) - _____
(b) Deformed: (mm^2) - _____

(14) Specimen Unit Mass, kg/m

$$\frac{(7)}{(6)} \times 1000$$ - _____

(15) Variation in Mass, %

$$\frac{(14) - (4)}{(4)} \times 1000$$ - - - - - - - - - - - - - - - - - _____

(16) Yield Point, MPa

$$\frac{(8a)}{(13)} \times 100$$ - _____

(17) Tensile Strength, MPa

$$\frac{(8b)}{(13)} \times 1000$$ - _____

(18) Ratio of Tensile / Yield

$$\frac{(17)}{(16)}$$ - _____

(19) Elongation, %

$$\frac{(9c)}{(9b)} \times 100$$ - _____

Tested/Computed by: Date Tested:

_____

_____ _____

_____

_____

Checked and Reviewed by: _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR PHOSPHORUS CONTENT DETERMINATION OF STEEL BARS

ASTM E350

Lab. No. : _____

Sample Identification : _____

I. Standardization of Sodium Hydroxide (NaOH) Solution:

		Trial 1	Trial 2
A. Mass of Potassium Acid Phthalate, g	=	_____	_____
B. Volume of NaOH Solution, mL	=	_____	_____
C. Phosphorus Equivalent, g P/mL	=	_____	_____
AVERAGE	=	_____	

Calculation:

$$\text{Phosphorus Equivalent, g P/mL} = \frac{A \times 0.001347}{B \times 0.2042}$$

II. Standardization of Nitric Acid (HNO_3) Solution:

		Trial 1	Trial 2
A. Volume of NaOH Solution, mL	=	_____	_____
B. Phosphorus Equivalent of NaOH Solution, g P/mL	=	_____	_____
C. Volume of HNO_3 Solution, mL	=	_____	_____
D. Phosphorus Equivalent, g P/mL	=	_____	_____
AVERAGE	=	_____	

Calculation:

$$\text{Phosphorus Equivalent, g P/mL} = \frac{A \times B}{C}$$

III. Phosphorus Content

		Trial 1	Trial 2
A. Volume of NaOH Solution used for the sample, mL	=	_____	_____
B. Phosphorus Equivalent of the NaOH Solution, g P/mL	=	_____	_____
C. Volume of HNO_3 Solution used for the sample, mL	=	_____	_____
D. Phosphorus Equivalent of the HNO_3 Solution, g P/mL	=	_____	_____
E. Volume of NaOH Solution used for the blank, mL	=	_____	_____
F. Volume of HNO_3 Solution used for the blank, mL	=	_____	_____
G. Mass of the sample, g	=	_____	_____
H. Phosphorus Content, %	=	_____	_____
AVERAGE	=	_____	

Calculation:

$$\text{Phosphorus, \%} = \frac{(AB - CD) - (EB - FD)}{G} \times 100$$

Tested by / Date

_____

(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date

_____

Chemical Test/s Certified by : _____

(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR PHOSPHORUS CONTENT DETERMINATION OF STEEL BARS
(By Spectrometer)
ASTM E415

Lab. No. : _____

Sample Identification : _____

A. RESULTS, %:

Trial 1 = _____

Trial 2 = _____

Trial 3 = _____

AVERAGE, % = _____

B. QUALITY CONTROL (QC):

QC, CRM ID = _____

QC, CRM, Actual Value (AV), % = _____

QC, CRM, Certified Value (CV), % = _____

% Accuracy = _____

$$\frac{\%\ AV}{\%\ CV} \times 100$$

Tested by / Date

_____
(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date

_____

Chemical Test/s Certified by : _____
(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF MISCELLANEOUS STEEL PRODUCTS

PHYSICAL AND CHEMICAL TESTS
ASTM A370, ASTM A90

Lab. No. : _____

Sample Identification : _____

A. PHYSICAL TEST : ASTM A370

1. Thickness, mm - - - - - - - - - - - - - - - - - - _____
2. Width, mm - - - - - - - - - - - - - - - - - - _____
3. Area, mm^2 - - - - - - - - - - - - - - - - - - _____
4. Yield Point, kN - - - - - - - - - - - - - - - - - - _____
5. Tensile Load, kN - - - - - - - - - - - - - - - - - - _____
6. Elongation :
   - a. Final Length, mm - - - - - - - - - - - - - - - - - - _____
   - b. Gage Length, mm - - - - - - - - - - - - - - - - - - _____

Computation:

Yield Strength, MPa $= \frac{(4) \times 1000}{(3)} =$

Tensile Strength, MPa $= \frac{(5) \times 1000}{(3)} =$

Elongation, % $= \left[\frac{(6a) - (6b)}{(6b)}\right] \times 100 =$

Tested by / Date : _____

Computed by / Date : _____

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF CONCRETE MASONRY UNIT

ASTM C140

Lab. No. : _____

Sample Identification : _____

		Specimen #1	Specimen #2	Specimen #3
a.	Width (W), mm			
b.	Length (L), mm			
c.	Height (H), mm			
d.	Net Cross-Sectional Area, mm^2			
f.	Ultimate Load, N			
g.	Net Compressive Strength, MPa			
h.	Average Net Compressive Strength, MPa			
i.	Moisture Content, %			
j.	Water Absorption, kg/m^3			
k.	Dry Density, kg/m^3			
l.	Average Dry Density, kg/m^3			

Specimen	As Received Mass (1) kg	Oven-Dry Mass (2) kg	Saturated Mass (3) kg	Immersed Mass (4) kg
1				
2				
3				

Computation:

$$\text{Moisture Content, \%} = \frac{(1)-(2)}{(3)-(2)} \times 100$$

$$\text{Water Absorption, kg/m}^3 = \frac{(3)-(2)}{(3)-(4)} \times 1000$$

$$\text{Net Cross-Sectional Area, mm}^2 = \frac{(3)-(4)}{(c)} \times (1000)^2$$

$$\text{Dry Density, kg/m}^3 = \frac{(2)}{(3)-(4)} \times 1000$$

Tested by / Date :

_____

_____

_____

_____

Computed by / Date :

_____

_____

_____

_____

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF REINFORCED CONCRETE CULVERT PIPE (RCCP)

AASHTO T280

Lab. No. : _____

Sample Identification : _____

Dimensions:

1. Actual Internal Diameter, mm - - - - - - - - _____
2. Thickness of Wall, mm - - - - - - - - _____
3. Laying Length, mm - - - - - - - - _____
   3a. Laying Length, m - - - - - - - - _____

Strength Test:

4. Load to Produce 0.3 mm crack, kN - - - - - - - - _____
5. Ultimate load, kN - - - - - - - - _____

Reinforcement:

6. Diameter, mm - - - - - - - - _____
7. Number of lines - - - - - - - - _____
8. Number of Inner Hoops - - - - - - - - _____
9. Number of Outer Hoops - - - - - - - - _____
10. Inner Spacing, mm - - - - - - - - _____
11. Outer Spacing, mm - - - - - - - - _____
12. Inner Net protective covering, mm - - - - - - - - _____
13. Outer Net protective covering, mm - - - - - - - - _____

Absorption Test:

14. Oven dry mass, g - - - - - - - - _____
15. Wet mass, g - - - - - - - - _____

WORKSHEET FOR TESTING OF REINFORCED CONCRETE CULVERT PIPE (RCCP)

AASHTO T280

Computation:

Load to produce 0.3 mm crack, N/m/mm $= \dfrac{(4) \times 1000}{(3a) \times (1)}$

Ultimate load, N/m/mm $= \dfrac{(5) \times 1000}{(3a) \times (1)}$

Total Area of Inner Reinforcement, mm^2/m $= \dfrac{(6)^2 \times 0.7854 \times (8)}{(3a)}$

Total Area of Outer Reinforcement, mm^2/m $= \dfrac{(6)^2 \times 0.7854 \times (9)}{(3a)}$

Absorption, % $= \dfrac{(15) - (14)}{(14)} \times 100$

Tested by / Date :

Computed by / Date :

Checked and Reviewed by / Date :

(Head of Materials Testing Section/Unit)

WORKSHEET FOR COMPRESSIVE STRENGTH TEST
OF CONCRETE CYLINDERS (MOLDED AND CORED SPECIMENS)
ASTM C39, AASHTO T24

Lab. No.: _____
Type : ☐ Molded ☐ Cored

Specimen No.	Age, days	Sample ID	For Molded / Cored Specimens					For Cored Specimens				
			Diameter, mm	Cross Sectional Area (A), sq.mm	Max Load (F), kN	Compressive Strength (CS=F/A), MPa	Compressive Strength (CSx145.038), psi	Length, mm (For Core)	L/D Ratio (For Core)	Correction Factor (CF) (For Core)	Corrected Strength (CSxCF), MPa (For Core)	Corrected Strength (CSxCFx 145.038), psi (For Core)

Tested by / Date :

_____
_____
_____
_____

Computed by / Date :

_____
_____
_____
_____

Checked and Reviewed by / Date: _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR FLEXURAL STRENGTH TEST OF CONCRETE BEAM

ASTM C78, C293

Loading Method: ☐ Third Point Loading ☐ Mid-Point Loading

Laboratory No.	Sample Identification	Age at date of test, days	Span Length (L), mm	Width (b), mm	Depth (d), mm	Max. Load (P), kN	Flexural Strength, MPa	Flexural Strength, psi

Formulas for Computation:

Third Point Loading Method = $\frac{PL}{bd^2}$

Mid-Point Loading Method = $\frac{3PL}{2bd^2}$

Tested by / Date :

Computed by / Date :

Checked and Reviewed by / Date :

(Head of Materials Testing Section/Unit)

WORKSHEET FOR CONCRETE CORE THICKNESS DETERMINATION

ASTM C42, ASTM C174

Lab. No. : _____

Sample Identification : _____

Specimen No.	Station	Thickness (t), mm									Avg. Thickness, mm	Corrected Thickness, mm
		1	2	3	4	5	6	7	8	9 (Center)		

Computation:

Corrected Average Thickness = $\frac{t1+t2+\ldots+t9}{9}$

Tested by / Date :

_____

_____

_____

_____

Computed by / Date :

_____

_____

_____

_____

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF WATER FOR CONCRETING

AASHTO T26

Lab. No. : _____

Sample Identification : _____

I. APPEARANCE = _____

COLOR = _____

ODOR = _____

Tested by / Date

_____

_____

Computed by / Date

_____

_____

II. TOTAL SOLIDS

Trial No.	Container ID	Mass of Sample, g	Mass of Empty Container, g	Mass of Container + Residue, g	TOTAL SOLIDS, %
1					
2					
				AVERAGE:	

Calculation:

$$\text{TOTAL SOLIDS, \%} = \frac{(\text{Mass}_{\text{container + residue}} - \text{Mass}_{\text{empty container}})}{\text{Mass}_{\text{sample}}} \times 100$$

Tested by / Date

_____

_____

Computed by / Date

_____

_____

III. pH VALUE

Trial No.	Temperature, ^{0}C	pH
1		
2		
AVERAGE:		

Tested by / Date

_____

(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date

_____

IV. TIME OF SETTING

Room Temp. (°C) = _____
(*must be 23 ± 4 °C)*

Room R.H. (%) = _____
(*shall not be less than 50%*)

	TIME OF SETTING	
	Control	Sample
a. Time Made		
b. Initial Set		
c. Final Set		

Tested by / Date

_____

_____

Computed by / Date

_____

_____

WORKSHEET FOR TESTING OF WATER FOR CONCRETING

AASHTO T26

Lab. No. : _____

Sample Identification : _____

V. AUTOCLAVE EXPANSION

Room Temp. (°C) = _____ (*must be 23 ± 4 °C)*

Room R.H. (%) = _____ (*shall not be less than 50%*)

	AUTOCLAVE EXPANSION, %	
	Control	Sample
a. Length comparator reading of specimen before Autoclaving, mm		
b. Length comparator reading of specimen after Autoclaving, mm		
c. Gauge length, mm		

Calculation:

$$\text{Autoclave Expansion, \%} = \frac{b - a}{c} \times 100$$

Tested by / Date

_____

_____

Computed by / Date

_____

_____

VI. COMPRESSIVE STRENGTH

Room Temp. (°C) = _____ (*must be 23 ± 4 °C)*

Room R.H. (%) = _____ (*shall not be less than 50%*)

Date Molded: _____

Age in Days	Date	Trial No.	Compressive Strength, MPa	
			Control	Sample
7 days		1		
		2		
		3		
		AVERAGE:		

$$\text{\% Control, @ 7 days} = \frac{\text{Compressive Strength}_{sample}}{\text{Compressive Strength}_{control}} \times 100 = \_\_\_\_\_$$

Tested by / Date

_____

_____

Computed by / Date

_____

_____

Chemical Test/s Certified by : _____

(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF CURING COMPOUND

ASTM C309, C156, D1644, ASTM D1475

Lab. No. : _____

Sample Identification : _____

CEMENT: _____
WATER : _____
SAND : _____

A. SPECIFIC GRAVITY: (ASTM D1475)

a. Mass of pycnometer, g - - - - - - - - - - - - _____
b. Mass of pycnometer filled with water, g - - - - - - - - - - - - _____
c. Mass of pycnometer filled with sample, g - - - - - - - - - - - - _____
Unit Mass, g/cc = $\frac{c - a}{b - a}$ - - - - - - - - - - - - _____

Tested by / Date	Computed by / Date
_____	_____
_____	_____
_____	_____

B. DRYING TIME: (ASTM C309)

Application Time, h - - - - - - - - - - - - _____
Dry to touch, h - - - - - - - - - - - - _____

Tested by / Date	Computed by / Date
_____	_____
_____	_____
_____	_____

C. WATER RETENTION: (ASTM C156)

ML = Mass loss of the sample, g - - - - - - - - - - - - _____

M1 = Mass of the sealed sample, g - - - - - - - - - - - - _____

M2 = Mass of the sample after applying curing compound, g - - - - - - - - - - - - _____

M3 = Mass of the sample at the conclusion of the test, g - - - - - - - - - - - - _____

NV = proportion of non-volatile matter in the curing, g - - - - - - - - - - - - _____

MA = mass of the curing compound applied (M2 – M1), g - - - - - - - - - - - - _____

ML = M1 + (NV x MA) – M3 - - - - - - - - - - - - _____

L = Mass loss per unit Area

L = 1000 x (ML/A), kg/m2 - - - - - - - - - - - - _____

WORKSHEET FOR TESTING OF CURING COMPOUND

ASTM C309, C156, D1644, ASTM D1475

NON-VOLATILE (ASTM D1644)

A = weight of dish, g	- - - - - - - - - - - -	_____
S = weight of specimen used, g	- - - - - - - - - - - -	_____
C = weight of dish and contents after heating, g	- - - - - - - - - - - -	_____
NV = [(C – A)/S] X 100	- - - - - - - - - - - -	_____

Tested by / Date	Computed by / Date
_____	_____
_____	_____
_____	_____

Checked/Reviewed by/Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR MINERAL FILLER

ASTM D546, ASTM C311, ASTM D4318

Lab. No. : _____

Sample Identification : _____

I. GRADING (ASTM D546 / AASHTO T37)

Sieve No.	Wt. Retained	Wt. Passing	% Passing
1. No. 16 (1.18 mm)			
2. No. 30 (0.60 mm)			
3. No. 50 (0.30 mm)			
4. No. 200 (0.075 mm)			

Date Tested: _____

II. PLASTICITY INDEX (ASTM D4318 / AAHTO T90)

Plasticity Index **=** Liquid Limit – Plastic Limit = _____

Date Tested: _____

III. LOSS ON IGNITION (LOI) (ASTM C311 / AASHTO T127)

Weight of sample, g = _____

Weight of empty crucible, g = _____

Weight of crucible + sample, g (before ignition) = _____

Weight of crucible + sample, g (after ignition, to constant weight) = _____

% LOI = _____

Date Tested: _____

Tested by / Date

_____

_____

_____

_____

Computed by / Date

_____

_____

_____

_____

Certified by / Date

_____

Chemist

PRC Lic. No. : _____

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF HYDRATED LIME

ASTM C25, ASTM C110

Lab. No. : _____

Sample Identification : _____

I. PHYSICAL TESTS (ASTM C110)

A. Grading:

Weight of Sample, g = _____

Sieve Sizes	Weight Retained, g	Weight Passing, g	Percent Passing (by Mass)
1.			
2.			
3.			
4.			
5.			

Tested by / Date

_____

_____

_____

Computed by / Date

_____

_____

_____

II. CHEMICAL TESTS (ASTM C25)

A. Calcium Oxide (CaO)

			Trial 1	Trial 2	Blank
a.	Mass of empty crucible, g	-	_____	_____	_____
			_____	_____	_____
			_____	_____	_____
			_____	_____	_____
b.	Average of *a* comprising the constant weight, g	-	_____	_____	_____
c.	Mass of sample, g	-	_____	_____	_____
d.	Mass of ignited crucible and residue, g	-	_____	_____	_____
e.	Mass of ignited residue, g $= d - b$	-	_____	_____	_____
f.	% CaO = $\frac{e}{c}$ x 100	-	_____	_____	_____
g.	Corrected % CaO = f − % Blank	-	_____	_____	

Average % CaO - _____

Tested by / Date

_____

(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date

_____

WORKSHEET FOR TESTING OF HYDRATED LIME

ASTM C25, ASTM C110

Lab. No. : _____

Sample Identification : _____

B. Magnesium Oxide (MgO)

			Trial 1	Trial 2	Blank
a.	Mass of empty crucible, g	-	_____	_____	_____
			_____	_____	_____
			_____	_____	_____
			_____	_____	_____
b.	Average of *a* comprising the constant weight, g	-	_____	_____	_____
c.	Mass of sample, g	-	_____	_____	_____
d.	Mass of ignited crucible and residue, g	-	_____	_____	_____
e.	Mass of ignited residue, g $= d - b$	-	_____	_____	_____
f.	% MgO = e x 72.4	-	_____	_____	_____
g.	Corrected % MgO = f – % Blank	-	_____	_____	
	Average % MgO	-	_____		

Tested by / Date

_____

(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date

_____

Chemical Test/s Certified by : _____

(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF FLY ASH

ASTM C311

Lab. No. : _____

Sample Identification : _____

I. Moisture Content

a. Mass of empty container, g - _____
_____
_____
_____

b. Average of *a* comprising the constant weight, g - _____

c. Mass of sample (as received), g - _____

d. Mass of container + sample before drying = $b + c$, g - _____

e. Mass of container + sample after drying at 110 ± 5 ^{0}C, g - _____
_____
_____
_____

f. Average of *e* comprising the constant weight, g - _____

% Moisture Content = $\frac{f - b}{c}$ x 100 = _____

Tested by / Date _____ Computed by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

II. Loss on Ignition (LOI)

a. Mass of empty crucible, g - _____
_____
_____
_____

b. Average of *a* comprising the constant weight, g - _____

c. Mass of moisture-free sample (between 0.5 to 4 g), g - _____

d. Mass of crucible + sample before ignition, g = $b + c$ - _____

e. Mass of crucible + sample after ignition at 750 ± 50 ^{0}C, g - _____
_____
_____
_____

f. Average of *e* comprising the constant weight, g - _____

% LOI = $\frac{d - f}{c}$ x 100 = _____

Tested by / Date _____ Computed by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

WORKSHEET FOR TESTING OF FLY ASH

ASTM C311

Lab. No. : _____

Sample Identification : _____

III. Density

Room Temp. (°C) = _____ (*must be 23 ± 4 °C*)

Room R.H. (%) = _____ (*shall not be less than 50%*)

a. Weight of Le Chatelier Flask & Kerosene, g - _____

b. Initial volume reading, mL - _____

c. Bath Temperature at initial volume recording, °C - _____

d. Weight of sample (about 50 g), g - _____

e. Weight of Le Chatelier Flask, Kerosene & sample, g - _____

f. Final volume reading, mL - _____

g. Bath Temperature at final volume recording, °C (temp. variation with $c \leq 0.2$ °C) - _____

$$\textbf{Density} = \frac{e - a}{f - b} = \_\_\_\_\_$$

Tested by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

Computed by / Date _____

IV. Fineness by the 45-µm (No. 325) Sieve

Room Temp. (°C) = _____ (*must be 23 ± 4 °C*)

Room R.H. (%) = _____ (*shall not be less than 50%*)

a. Sieve ID/Serial No. - _____

b. Sieve Correction Factor (from Calibration), % (+ or -) = % Residue $\text{Value}_{\text{CERTIFIED}}$ − % Residue $\text{Value}_{\text{OBSERVED}}$ - _____

c. Weight of sample, g - _____

d. Weight of sample retained at the Sieve, g - _____

e. Corrected Residue = $\frac{d}{c} \times (100 \pm b)$, % - _____

Fineness = $100 - e$ - _____

Tested by / Date _____

_____

Computed by / Date _____

_____

WORKSHEET FOR TESTING OF FLY ASH

ASTM C311

Lab. No. : _____

Sample Identification : _____

V. Autoclave Expansion

Room Temp. (°C) = _____ Room R.H. (%) = _____
(*must be 23 ± 4 °C*) (*shall not be less than 50%*)

La - Length comparator reading of specimen before Autoclaving, mm = _____
Lb - Length comparator reading of specimen before Autoclaving, mm = _____
G - Gauge length, mm = _____

$$\text{Autoclave Expansion, \%} = \frac{Lb - La}{G} \times 100 = \_\_\_\_\_$$

Tested by / Date Computed by / Date

_____ _____

_____ _____

VI. Compressive Strength

Room Temp. (°C) = _____ Room R.H. (%) = _____
(*must be 23 ± 4 °C*) (*shall not be less than 50%*)

Date Molded: _____

Age in Days	Date	Trial No.	Compressive Strength, mPa	
			Control	Sample
7 days		1		
		2		
		3		
		AVERAGE:		

$$\text{\% Control, @ 7 days} = \frac{\text{Compressive Strength}_{sample}}{\text{Compressive Strength}_{control}} \times 100 = \_\_\_\_\_$$

Tested by / Date Computed by / Date

_____ _____

_____ _____

VII. Water Requirement

Y = Water required for the test mixture to be ± 5 of control flow

$$\text{Water requirement, percentage of control} = \frac{Y}{242} \times 100 = \_\_\_\_\_$$

Tested by / Date Computed by / Date

_____ _____

_____ _____

Chemical Test/s Certified by : _____
(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR RETROREFLECTIVE SHEETING

ASTM 4956

Lab. No. : _____

Sample Identification : _____

I. Adhesion (ASTM D4956):

Adhesion **=** _____

Tested by / Date	Computed by / Date
_____	_____
_____	_____

II. Shrinkage (ASTM D4956):

1. After 10 minutes, mm **=** _____
2. After 24 hours, mm = _____

Tested by / Date	Computed by / Date
_____	_____
_____	_____

III. Flexibility (ASTM D4956):

Flexibility **=** _____

Tested by / Date	Computed by / Date
_____	_____
_____	_____

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF CERAMIC AND GLASS TILES

ASTM C1505

Laboratory No.: _____

Sample Identification: _____

Specimen No.	Span Length (L), mm	Width (b), mm	Thickness (h), mm	Breaking Load (P), N	Breaking Strength (B), N (B=PL/b)	Modulus of Rupture (R), N/mm^2 $R = \frac{3B}{2h^2}$
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

Tested/Computed by: Date Tested:

_____

_____ _____

_____

_____

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF GEOTEXTILE

ASTM D4632, D6241, D4833, D4533

Lab. No. : _____

Sample Identification : _____

GRAB TENSILE STRENGTH

(ASTM D4632)

Machine Direction	
Sample No.	Maximum Load, N
Average	
Cross-Machine Direction	
Sample No.	Maximum Load, N
Average	

SEAM STRENGTH

(ASTM D4632)

Sample No.	Maximum Load, N
Average	

ELONGATION

(ASTM D4632)

Sample No.	Increase in Length, %
Average	

WORKSHEET FOR TESTING OF GEOTEXTILE

ASTM D4632, D6241, D4833, D4533

Lab. No. : _____

Sample Identification : _____

TRAPEZOID TEAR

(ASTM D4533)

Sample No.	Maximum Load, N
Average	

PUNCTURE TEST

(ASTM D6241 / ASTM D4833)

Sample No.	Maximum Load, N
Average	

Tested by / Date:

_____

_____

_____

_____

Computed by / Date:

_____

_____

_____

_____

Checked / Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF SEVEN WIRE STRAND

ASTM A416

Lab. No. : _____

Sample Identification : _____

LABORATORY DATA

1. Diameter, mm - - - - - - - - - - - - - - - - - - _____
2. Area, mm^2 - - - - - - - - - - - - - - - - - - _____
3. Yield Strength, kN - - - - - - - - - - - - - - - - - - _____
4. Breaking Strength, kN - - - - - - - - - - - - - - - - - - _____
5. Elongation, mm:
   (a) Final - - - - - - - - - - - - - - - - - - _____
   (b) Gage Length - - - - - - - - - - - - - - - - - - _____

COMPUTATION:

$$\text{Elongation, \%} = \frac{(5a) - (5b)}{(5b)} \times 100$$

Tested/Computed by: Date Tested:

_____ _____

_____

_____

_____

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF CARBON FIBER SHEET / PLATE

ASTM D3039

Lab. No. : _____

Sample Identification : _____

LABORATORY DATA

Sample No.	Thickness, mm	Width, mm	Area, mm^2	Breaking Load, N	Tensile Strength (Breaking Load/Area)
1					
2					
3					
4					
5					

Average Tensile Strength =

Tested/Computed by:

_____

_____

_____

_____

Date Tested:

_____

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)

COMPRESSIVE STRENGTH TEST OF HYDRAULIC CEMENT GROUT (NON-SHRINK)

ASTM C109

Lab. No. : _____

Sample Identification : _____

Compressive Strength: (ASTM C109)

Sample I.D.	Age in Days	Temp., ^{0}C	RH, %	Date	Compressive Strength, MPa
Average					

Tested by / Date

_____

_____

_____

Computed by / Date

_____

_____

_____

Checked/Reviewed by / Date: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF EROSION MAT

ASTM D5035

Lab. No. : _____

Sample Identification : _____

LABORATORY DATA

Type : _____

Strip Width, m : _____

MACHINE DIRECTION

Specimen No.	Breaking Force (N)	Elongation (%)
AVERAGE		

Breaking Force per linear meter = Average Breaking Force / Strip Width

CROSS-MACHINE DIRECTION

Specimen No.	Breaking Force (N)	Elongation (%)
AVERAGE		

Breaking Force per linear meter = Average Breaking Force / Strip Width

Tested/Computed by: Date Tested:

_____ _____

_____

_____

_____

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF EPOXY RESIN

ASTM D695

Lab. No. : _____

Sample Identification : _____

1. Length, mm - - - - - - - - - - - - - - - - - - _____
2. Width, mm - - - - - - - - - - - - - - - - - - _____
3. Area, mm^2 - - - - - - - - - - - - - - - - - - _____
4. Compressive Load, kN - - - - - - - - - - - - - - - - - - _____

COMPUTATION:

$$\text{Compressive Strength, MPa} = \frac{(4) \times 1000}{(3)}$$

Tested/Computed by:

_____

_____

_____

_____

Date Tested:

_____

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF SHOTCRETE

EN 14488-5

Lab. No. : _____

Sample Identification : _____

Sample's Age (Days) : _____

Material : _____

Deflection, mm (d)	Load, kN (F)	Energy Absorption, J (E)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		

WORKSHEET FOR SHOTCRETE

EN 14488-5

26		
27		
28		
29		
30		

*Note: In determining the Energy Absorption Capacity, the Energy Absorption at deflection 25mm will be used

FORMULA:

$$\textit{Energy Absorption, J} = \frac{1}{2}\ x\ \left(F_i + F_f\right)\ x\ \left(d_f - d_i\right) + E_i$$

Tested/Computed by:

_____

_____

_____

_____

Date Tested:

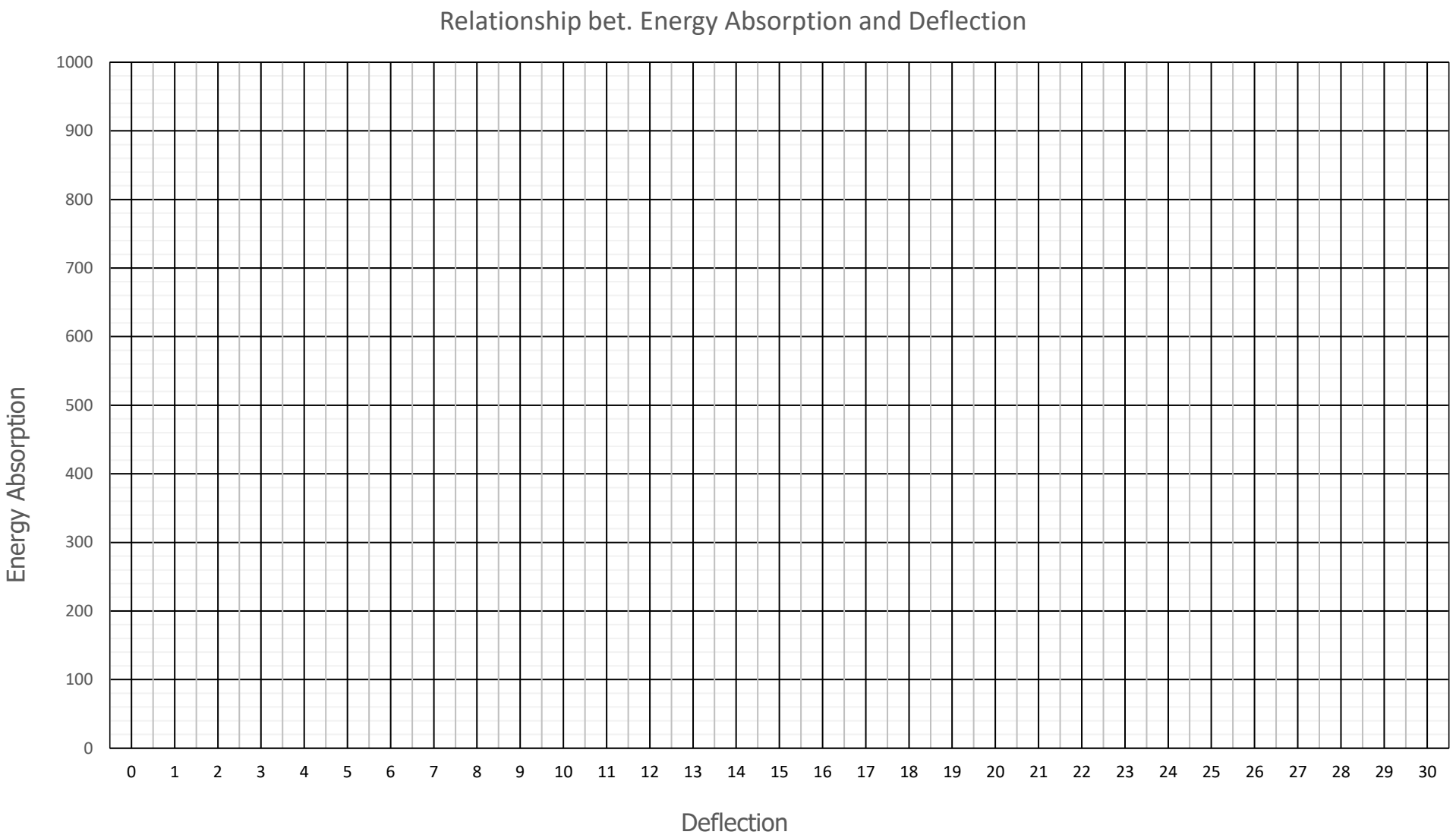
_____

Checked and Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR SHOTCRETE

EN 14488-5



WORKSHEET FOR PIGMENTS - INTEGRALLY COLORED CONCRETE

ASTM C979

Lab. No. : _____

Sample Identification : _____

I. Water Wettability (ASTM C979/C979M) = _____

Tested by / Date _____ Computed by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

II. Alkali Resistance (ASTM C979/C979M) = _____

Tested by / Date _____ Computed by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

III. Sulfates Soluble in Hydrochloric Acid (ASTM D50):

a. Mass of Sample, g = _____

b. Mass of Empty Crucible, g = _____

c. Mass of Crucible + Ignited Residue, g = _____

d. Mass of Ignited Residue, g = _____

e. SO_3 , % = _____

CALCULATION:

$$SO_3, \% = \frac{d \times 0.343}{a} \times 100$$

Tested by / Date _____ Computed by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

IV. Matter Soluble in Water (ASTM D1208):

a. Mass of Sample, g = _____

b. Mass of Empty Container, g = _____

c. Mass of Container + Residue, g = _____

d. Mass of Residue, g = _____

e. Matter Soluble in Water, % = _____

CALCULATION:

$$\text{Matter Soluble in Water}, \% = \frac{d \times 2.5}{a} \times 100$$

Tested by / Date _____ Computed by / Date _____

(Chemist/Chem. Tech. / PRC Lic. No.)

Chemical Test/s Certified by : _____

(Chemist / PRC Lic. No.)

Checked and Reviewed by / Date : _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TENSILE STRENGTH OF PLASTICS

ASTM D638

Lab. No. : _____

Sample Identification : _____

Sample No.	Thickness, mm	Width, mm	Area, mm^2	Breaking Load, N	Tensile Strength (Breaking Load/Area), MPa
1					
2					
3					
4					
5					

Average Tensile Strength = _____

Tested by / Date:

_____

_____

_____

_____

Computed by / Date:

_____

_____

_____

_____

Checked / Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR FLEXURAL STRENGTH OF PLASTICS

ASTM D790

Lab. No. : _____

Sample Identification : _____

Sample No.	Width (b), mm	Depth (d), mm	Span Length (L), mm	Maximum Load (P), N	Flexural Strength $= \frac{3PL}{2bd^2}$, MPa
1					
2					
3					
4					
5					

Average Flexural Strength = _____

Tested by / Date:

_____

_____

_____

_____

Computed by / Date:

_____

_____

_____

_____

Checked / Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR ACCELERATED WEATHERING TEST

ASTM A370, B117

Lab. No. : _____

Sample Identification : _____

I. Pre-Accelerated Weathering Test (Salt-Spray Test)

1. Diameter, mm - - - - - - - - - - - - - - - - - - _____
2. Area, mm^2 - - - - - - - - - - - - - - - - - - _____
3. Initial Tensile Load, kN - - - - - - - - - - - - - - - - - - _____
4. Initial Tensile Strength, MPa - - - - - - - - - - - - - - - - - - _____

II. Post-Accelerated Weathering Test (Salt-Spray Test)

1. Diameter, mm - - - - - - - - - - - - - - - - - - _____
2. Area, mm^2 - - - - - - - - - - - - - - - - - - _____
3. Final Tensile Load, kN - - - - - - - - - - - - - - - - - - _____
4. Final Tensile Strength, MPa - - - - - - - - - - - - - - - - - - _____
5. Strength Retained, % - - - - - - - - - - - - - - - - - - _____

COMPUTATION:

$$\text{Tensile Strength, MPa} = \frac{\text{Tensile Load} \times 1000}{\text{Area}}$$

$$\text{Strength Retained, \%} = \frac{\text{Final Tensile Strength}}{\text{Initial Tensile Strength}} \times 100$$

Tested/Computed by: Date Tested:

_____ _____

_____

_____

_____

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)