097.13 DPWH
02.03.2025

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

BAGONG PILIPINAS

JAN 31 2025

DEPARTMENT ORDER)
)
No. 22)
Series of 2025)
dtd 2/3/2025

SUBJECT: Standardization of Materials Testing Forms

In order to further ensure uniformity and consistency in reporting the test results of samples of construction materials used in various DPWH infrastructure projects and to conform to the ISO 9001:2015 Quality Management System (QMS) requirements of the Department, 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. 177, Series of 1996 (Standardization of Materials Test Reports) and shall take effect immediately.

Department of Public Works and Highways
Office of the Secretary
WIN5U02101

MANUEL M. BONOAN
Secretary

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

14.1.3 JDV/AGC

DEPARTMENT ORDER NO. 22
SERIES OF 2025

ANNEX

STANDARDIZATION OF MATERIALS TESTING FORMS

Document Title	Document Code
Sample Card	DPWH-QMSP-14-40-Rev00
Test Report for DPWH Project	DPWH-QMSP-14-41-Rev00
Test Report for Research and Informational	DPWH-QMSP-14-42-Rev00
WORKSHEETS FOR SOIL&SOIL AGGREGATES, CONCRETE AND ASPHALT AGGREGATES	
Worksheet for Liquid Limit and Plastic Limit Tests	DPWH-QMSP-14-43-Rev00
Worksheet for Moisture Content	DPWH-QMSP-14-44-Rev00
Worksheet for Shrinkage Limit of Soil	DPWH-QMSP-14-45-Rev00
Worksheet for Moisture Density Relations Test of Soils	DPWH-QMSP-14-46-Rev00
Worksheet for California Bearing Ratio	DPWH-QMSP-14-47-Rev00
Worksheet for Hydrometer Analysis	DPWH-QMSP-14-48-Rev00
Worksheet for Field Density Test	DPWH-QMSP-14-49-Rev00
Worksheet for Specific Gravity of Fine-Grained Soil	DPWH-QMSP-14-50-Rev00
Worksheet for Soundness Test	DPWH-QMSP-14-51-Rev00
Worksheet for Organic Impurities and Mortar Strength Test	DPWH-QMSP-14-52-Rev00
Worksheet for Unit Weight (Fine and Coarse Aggregates)	DPWH-QMSP-14-53-Rev00
Worksheet for Specific Gravity and Absorption of Aggregates	DPWH-QMSP-14-54-Rev00

DEPARTMENT ORDER NO. 22
SERIES OF 2025

ANNEX

STANDARDIZATION OF MATERIALS TESTING FORMS

Document Title	Document Code
Worksheet for Sieve Analysis	DPWH-QMSP-14-55-Rev00
Worksheet for Abrasion Test	DPWH-QMSP-14-56-Rev00
WORKSHEETS FOR CEMENT	
Worksheet for Physical Test of Portland Cement - Fineness	DPWH-QMSP-14-57-Rev00
Worksheet for Physical Test of Cement - Normal Consistency, Time of Setting, Autoclave Expansion	DPWH-QMSP-14-58-Rev00
Worksheet for Mortar Strength Test of Cement	DPWH-QMSP-14-59-Rev00
Worksheet for Physical Test of Portland Cement – Air Content	DPWH-QMSP-14-60-Rev00
Worksheet for Specific Gravity of Cement	DPWH-QMSP-14-61-Rev00
Worksheet for Chemical Tests of Cement (by Wet Analysis)	DPWH-QMSP-14-62-Rev00
Worksheet for Chemical Tests of Cement (by XRF Method)	DPWH-QMSP-14-63-Rev00
WORKSHEETS FOR ASPHALTIC MATERIALS	
Worksheet for Testing of Asphalt Cement (Penetration-Graded)	DPWH-QMSP-14-64-Rev00
Worksheet for Testing of Asphalt Cement (Viscosity-Graded)	DPWH-QMSP-14-65-Rev00
Worksheet for Emulsified Asphalt	DPWH-QMSP-14-66-Rev00
Worksheet for Cutback Asphalt	DPWH-QMSP-14-67-Rev00
Worksheet for Concrete Joint Sealer	DPWH-QMSP-14-68-Rev00

DEPARTMENT ORDER NO. 22
SERIES OF 2025

ANNEX

STANDARDIZATION OF MATERIALS TESTING FORMS

Document Title	Document Code
Worksheet for Elastomeric Binder (Thormajoint)	DPWH-QMSP-14-69-Rev00
Worksheet for Preformed Expansion Joint Filler	DPWH-QMSP-14-70-Rev00
Worksheet for Polymer Modified Bitumen (PMB)	DPWH-QMSP-14-71-Rev00
Worksheet for Hot Mix Asphalt	DPWH-QMSP-14-72-Rev00
Worksheet for Cold Mix Asphalt	DPWH-QMSP-14-73-Rev00
Worksheet for Bituminous Concrete Core	DPWH-QMSP-14-74-Rev00
WORKSHEETS FOR MISCELLANEOUS MATERIALS	
Worksheet for Flat Latex Paint	DPWH-QMSP-14-75-Rev00
Worksheet for Semi-Gloss Latex Paint	DPWH-QMSP-14-76-Rev00
Worksheet for Gloss Latex Paint	DPWH-QMSP-14-77-Rev00
Worksheet for Enamel Paint	DPWH-QMSP-14-78-Rev00
Worksheet for Semi-Gloss Enamel Paint	DPWH-QMSP-14-79-Rev00
Worksheet for Flat-Wall Enamel Paint	DPWH-QMSP-14-80-Rev00
Worksheet for Epoxy Enamel Paint	DPWH-QMSP-14-81-Rev00
Worksheet for Alkyd-Based Semi-Gloss Enamel Paint	DPWH-QMSP-14-82-Rev00
Worksheet for Alkyd-Based Gloss Enamel Paint	DPWH-QMSP-14-83-Rev00

DEPARTMENT ORDER NO. 22
SERIES OF 2025

ANNEX

STANDARDIZATION OF MATERIALS TESTING FORMS

Document Title	Document Code
Worksheet for Alkyd-Based Flat-Wall Enamel Paint	DPWH-QMSP-14-84-Rev00
Worksheet for Alkyd-Based Metal Primer	DPWH-QMSP-14-85-Rev00
Worksheet for Epoxy Metal Primer	DPWH-QMSP-14-86-Rev00
Worksheet for Water-Based Gloss Roof Paint	DPWH-QMSP-14-87-Rev00
Worksheet for Elastomeric Wall Coating	DPWH-QMSP-14-88-Rev00
Worksheet for Thermoplastic Traffic Paints (White and Yellow)	DPWH-QMSP-14-89-Rev00
Worksheet for Reflectorized Traffic Paints	DPWH-QMSP-14-90-Rev00
Worksheet for Galvanized Sheet	DPWH-QMSP-14-91-Rev00
Worksheet for Galvanized Iron Pipe	DPWH-QMSP-14-92-Rev00
Worksheet for Guard Rail	DPWH-QMSP-14-93-Rev00
Worksheet for Gabion & Mattress	DPWH-QMSP-14-94-Rev00
Worksheet for Tie Wire	DPWH-QMSP-14-95-Rev00
Worksheet for High Tensile Wire	DPWH-QMSP-14-96-Rev00
Worksheet for Wire Mesh	DPWH-QMSP-14-97-Rev00
Worksheet for Wire Rope	DPWH-QMSP-14-98-Rev00
Worksheet for Spike Plate	DPWH-QMSP-14-99-Rev00

DEPARTMENT ORDER NO. 22
SERIES OF 2025

ANNEX

STANDARDIZATION OF MATERIALS TESTING FORMS

Document Title	Document Code
Worksheet for Anchor Nail	DPWH-QMSP-14-100-Rev00
Worksheet for Reinforcing Steel Bars	DPWH-QMSP-14-101-Rev00
Worksheet for Phosphorus Content Determination of Steel Bars	DPWH-QMSP-14-102-Rev00
Worksheet for Phosphorus Content Determination of Steel Bars (by Spectrometer)	DPWH-QMSP-14-103-Rev00
Worksheet for Miscellaneous Steel Products	DPWH-QMSP-14-104-Rev00
Worksheet for Concrete Masonry Unit	DPWH-QMSP-14-105-Rev00
Worksheet for Concrete Pipe	DPWH-QMSP-14-106-Rev00
Worksheet for Compressive Strength Test	DPWH-QMSP-14-107-Rev00
Worksheet for Flexural Strength Test	DPWH-QMSP-14-108-Rev00
Worksheet for Concrete Core Thickness Determination	DPWH-QMSP-14-109-Rev00
Worksheet on Water for Concreting	DPWH-QMSP-14-110-Rev00
Worksheet for Curing Compound	DPWH-QMSP-14-111-Rev00
Worksheet for Mineral Filler	DPWH-QMSP-14-112-Rev00
Worksheet for Hydrated Lime	DPWH-QMSP-14-113-Rev00
Worksheet for Fly Ash	DPWH-QMSP-14-114-Rev00
Worksheet for Reflective Sheeting	DPWH-QMSP-14-115-Rev00

DEPARTMENT ORDER NO. 22
SERIES OF 2025

ANNEX

STANDARDIZATION OF MATERIALS TESTING FORMS

Document Title	Document Code
Worksheet for Ceramic and Glass Tiles	DPWH-QMSP-14-116-Rev00
Worksheet for Geotextiles	DPWH-QMSP-14-117-Rev00
Worksheet for Seven Wire Strand	DPWH-QMSP-14-118-Rev00
Worksheet for Carbon Fiber Sheet/Plate	DPWH-QMSP-14-119-Rev00
Worksheet for Hydraulic Cement Grout	DPWH-QMSP-14-120-Rev00
Worksheet for Erosion Mat	DPWH-QMSP-14-121-Rev00
Worksheet for Epoxy Resin	DPWH-QMSP-14-122-Rev00
Worksheet for Shotcrete	DPWH-QMSP-14-123-Rev00
Worksheet for Pigments - Integrally Colored Concrete	DPWH-QMSP-14-124-Rev00
Worksheet for Tensile Strength of Plastics	DPWH-QMSP-14-125-Rev00
Worksheet for Flexural Strength of Plastics	DPWH-QMSP-14-126-Rev00
Worksheet for Accelerated Weathering	DPWH-QMSP-14-127-Rev00

GUIDELINES IN THE FILLING-OUT OF MATERIALS TESTING FORMS

SAMPLE CARD

1. The DWPH Project Materials-In-Charge or Contractor's/Supplier's Authorized Representative shall legibly, completely and accurately accomplish the Project Information, Sample Information and Test Information fields of the Sample Card and both of them shall affix their signature together with the date of their signing.
2. The QAHD/QAS Chief shall check/review the information, provided by the DPWH Project Materials-In-Charge or Contractor's/Supplier's Authorized Representative as to completeness and accuracy,
3. Sample Cards shall be neat, clean and without any crossed-out or voided portion therein. If there are corrections therein made by the QAHD/QAS Chief. The same shall be retuned to the DPWH Project Material-In-Charge for correction or replacement.
4. Should there be no longer corrections on the sample card, the QAHD/QAS Chief shall affix his signature together with the date of signing in the space provided. Thereafter, he shall recommend for the approval of the sample cars to the Head of Office.
5. Sample cards to be approved by the Head of Office shall be signed and the date of signing shall also be indicated.

WORK SHEET

1. The Laboratory Technician/Engineer shall immediately record (handwritten) in the corresponding/prescribed worksheet the raw data obtained from the tests conducted he shall affix his signature and the date of his signing in the space provided therein.
2. The Laboratory Technician shall compute the results from the recorded raw data.
3. The Laboratory Engineer shall review the computed results together with the date of his signing.
4. The Materials Testing Unit Head shall review the worksheet and shall affix his signature and the date of his signing in the space provided. If there are corrections, the same shall be returned to the Laboratory Engineer for corrections.
5. Should there no longer be corrections, the worksheet shall be submitted to the QAHD/QAS Chief for the preparation of Test Report.

TEST REPORT

1. The designated personnel shall assign serial Laboratory Report Number on the Test Report.
2. The Laboratory In-Charge shall prepare draft of the Test Report by filing out the Test Report information which can be obtained from the Sample Card, filling out the kind of tests conducted (1^{st} column), the date when the tests were conducted (2^{nd} column), the test methods used (3^{rd} column) the specification requirements (4^{th} column) and the consolidated test results (5^{th} column) obtained from the Work Sheets.
3. The Registered Chemist shall certify the Test Report if chemical tests are involved by affixing his signature together with the date of signing.
4. The Materials Testing Unit Head shall evaluate the Test Report. It shall be neat, clean and without any crossed-out or voided portion therein. If there are corrections made by the

Materials Testing Unit Head, the Test Report shall be retuned to the Laboratory-In-Charge for correction.

5. Should there be no longer corrections on the Test Report, the Materials Testing Unit Head shall affix his signature together with the date of signing.
6. The QAHD/QAS Chief shall review the Test Report, if there are corrections, the same shall be returned to the Laboratory-In-Charge for correction.
7. Should there be no longer corrections on the Test Report, the QAHD/QAS Chief shall affix his signature together with the date of signing.
8. The Head of Office shall affix his signature together with the date of signing to signify attestation of the Test Report.

Department of Public Works and Highways
(OFFICE)

Construction Materials Testing
SAMPLE CARD

REQUESTING ENTITY INFORMATION:

To be filled out by Project DPWH / Contractor's Materials Engineer

For DPWH/other Government Project:

Project Name : _____
_____
_____
Contract I.D. : _____
Implementing Office : _____
Contractor : _____
Supplier : _____
Bill Charge To : _____
Address : _____
_____
TIN : _____
Contact No/s. : _____

To be filled out by Authorized Representative

For Informational/Research:

Company/ Requesting Entity: _____
_____
Supplier : _____
_____
_____
Bill Charge To : _____
Address : _____
_____
_____
TIN : _____
Contact No/s. : _____

SAMPLE INFORMATION:

Kind of Material : _____
Brand : _____
Sample Identification : _____
Sampled at/ Address : _____
Manufacturer/ Address : _____
Manufacturing Date : _____
Original Source : _____
Type/Grade/Class : _____
Quantity Represented : _____
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)
_____
(Office) (Date)
Submitted by : _____
(DPWH Materials-In-Charge and Supplier's/Contractor's Authorized Representative) (Signature)
_____
(Office) (Date)

Remarks : _____

To be filled out by Head of Materials Testing Section/Unit.

Received by/Date : _____
OR No./Amount/Date : _____
Target Date of Release : _____
Checked by/Date : _____
Date (OR is presented): _____

Lab. No. : _____

Recommending Approval by:

_____
(Head of Laboratory)

Approved by:

_____
(Head of Office)

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 test report

_____
(Head of Laboratory)
(Office)

TEST REPORT FOR DPWH PROJECT

Lab. Report No. : _____

_____
Issued Date

TEST REPORT ON _____

Name of the Laboratory :
Address of the Laboratory :
Project Name/ID/Contract :
Implementing Office :
Kind of Material/s :
Sample Identification :
Type/Grade/Class :
Quantity Represented :
Original Source :
Sampled at/Address :
Manufactured by :
Brand :
Supplier/Address :
Contractor/Addre :
Proposed Use :
Governing Specification :
Sampled by :
: **(DPWH Materials-In-Charge and Contractor's Authorized** **(Office)** **(Date Sampled)**
Submitted by :
: **(DPWH Materials-In-Charge and Contractor's Authorized** **(Office)** **(Date Received)**

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

TESTS	@ Temp.,°C / % RH	DATE TESTED	TEST METHOD	REQUIREMENTS	RESULTS
	(applicable for Cement samples)				

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

Tested by:

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

Checked by:

QAHD / QAS Chief

Evaluated by:

Head of Materials Testing Section/Unit

ATTESTED :

Head of Office

TEST REPORT FOR RESEARCH AND INFORMATIONAL

Lab. Report No. : _____

Issued Date

TEST REPORT ON _____

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

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

TESTS	@ Temp.,°C / % RH	DATE TESTED	TEST METHOD	REQUIREMENTS	RESULTS

REMARKS:

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

Tested by:

Chemical Test/s Certified by: _____

Chemist

PRC Lic. No.: _____

Evaluated by:

Head of Materials Testing Section/Unit

Checked by:

QAHD / QAS Chief

ATTESTED :

Head of Office

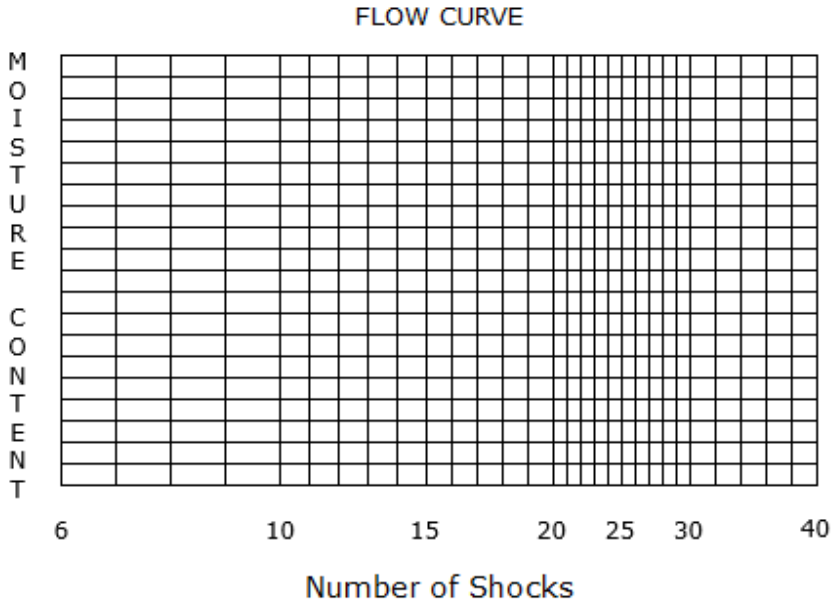
WORKSHEET FOR LIQUID LIMIT AND PLASTIC LIMIT TESTS

AASHTO T89 & T90

Laboratory No. : _____

Sample Identification : _____

Determination Number	LIQUID LIMIT			PLASTIC LIMIT	
	1 (25-35)	2 (20-30)	3 (15-25)	1	2
Container Number					
Container @ Wet Soil, g.					
Container @ Dry Soil, g.					
Moisture Loss, g.					
Container, g.					
Dry Soil, g.					
Moisture Content, %					
Number of Blows					



1. **Liquid Limit** _____
2. **Plastic Limit** _____
3. **Plasticity Index, [(1)-(2)]** _____

SIEVE ANALYSIS	
No. 10	
No. 40	
No. 200	

4. **Group Index, GI** _____
5. **Soil Classification** _____

SIEVE ANALYSIS	
No. 10	
No. 40	
No. 200	

Tested/Computed by: _____

Date Tested: _____

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR MOISTURE CONTENT

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, (2) – (4), g = _____
6. Moisture Content,% = (3/5) x 100 _____

Tested/Computed by: _____

Date Tested: _____

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR SHRINKAGE LIMIT OF SOIL

AASHTO T92

Lab. No. : _____

Sample Identification : _____

1. Can + wet soil pat, g		
2. Can + dry soil pat, g		
3. Moisture loss, g		
4. Can, g		
5. Dry soil pat, g, "V_o"		
6. Moisture content, %, "M"		
7. Can filled with mercury, g		
8. Mercury, g		
9. Unit wt. of mercury, g/cm^3		13.6
10. Volume of wet soil pat, cm^3, V		
11. Container + displaced mercury, g		
12. Container, g		
13. Displaced mercury, g		
14. Volume of dry soil pat, cm^3, "V_c"		
15. Shrinkage limit, S. L.		

Tested/Computed by: _____

Date Tested: _____

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR MOISTURE DENSITY RELATIONS TEST OF SOILS

AASHTO T99 & T180

Lab. No. : _____

Sample Identification : _____

Trial Number		1	2	3	4	5
Total Water added in ml						
Mass in g	Mold					
	Mold + wet soil					
	Wet soil					
WET DENSITY, kg/m^3						
Container						
Container + wet soil						
Mass in g	Container + dry soil					
	Water					
	Dry Soil					
MOISTURE CONTENT, %						
DRY DENSITY, kg/m^3						

Method Used : ( ) A ( ) B ( ) C ( ) D

Rammer	:	2.5 ( )	4.5 ( )
Number of Layers	:	3 ( )	5 ( )
No. of Blows/Layer	:	25 ( )	56 ( )
Volume of Mold, m^3	:	0.000943 ( )	0.002125 ( )
Maximum Dry Density (MDD), kg/m^3	:		
Optimum Moisture Content (OMC), %	:		

Tested/Computed by: _____

Date Tested: _____

Checked/Reviewed by: _____

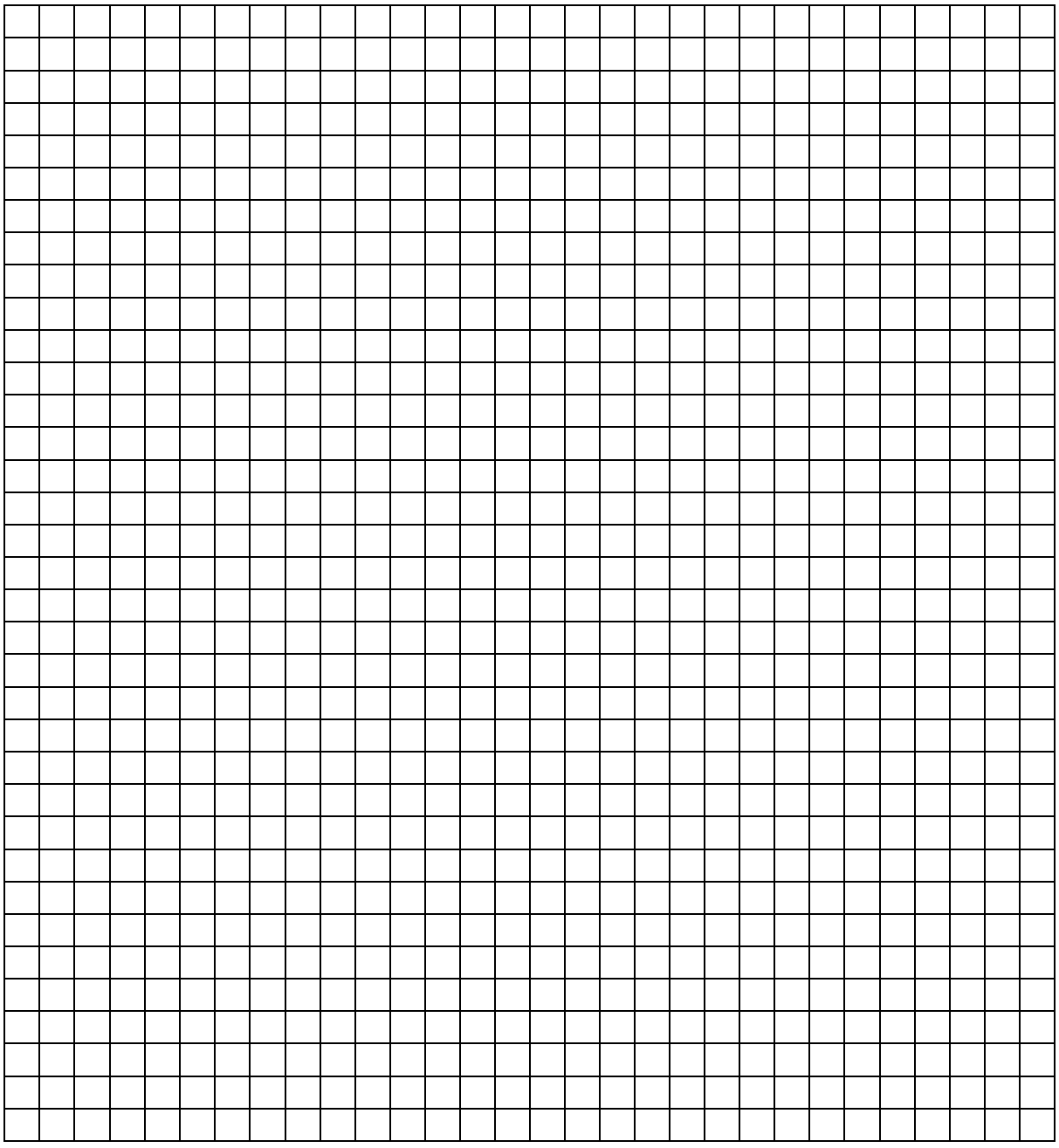
(Head of Materials Testing Section/Unit)

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	:	
Kind of Material	:	

PREPARATION OF SPECIMENS

Moisture Content Determination							*Density Determination*			
Number of Shocks	10		30		65			10	30	65
Test Sample Identification							Weight of Mold, g			
Weight of Can, g							Weight of Mold + Sample, g			
Wet Sample + Can, g							Weight of Sample, g			
Oven Dry Sample + Can, g							Wet Unit Weight, kg/cu.m			
Water Loss, g							Dry Unit Weight, kg/cu.m			
Moisture Content, %							Note :Allowable variation from optimum is plus or minus 0.5%. If variation exceeds allowable, discard specimen and mold another to meet requirements.			
Average MC, %										
MC after penetration, %										

SOAKED COMPACTED VALUES

Volume of Mold

Penetration, mm	*No. of Shocks*	10 Shocks		*Penetration, mm*	*No. of Shocks*	30 Shocks	
	Date & Time	*Molded*			*Date & Time*	*Molded*	
		Tested				*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								
1.27								
1.91								
2.54								
3.81								
5.08								
7.62								
10.16								
12.7								

CBR Value at 10 Shocks				CBR Value at 30 Shocks			
CBR at 2.54	=	Corrected kg/sq.cm / 70.36	x 100 =	CBR at 2.54	=	Corrected kg/sq.cm / 70.36	x 100 =
CBR at 5.08	=	Corrected kg/sq.cm / 105.03	x 100 =	CBR at 5.08	=	Corrected kg/sq.cm / 105.03	x 100 =

WORKSHEET FOR CALIFORNIA BEARING RATIO

AASHTO T193

Lab. No.	:	
Sample Identification	:	
Kind of Material	:	

SOAKED COMPACTED VALUES

Penetration, mm	*No. of Shocks* / *Date & Time*	65 Shocks	
		Molded	
		Tested	
	Load		
	Dial Reading	*Total, kg*	*kg/sq.cm*	*Corrected kg/sq.cm*
0.64				
1.27				
1.91				
2.54				
3.81				
5.08				
7.62				
10.16				
12.7				

CBR Value at 65 Shocks

CBR at 2.54	=	Corrected kg/sq.cm / 70.36	x 100 =
CBR at 5.08	=	Corrected kg/sq.cm / 105.03	x 100 =

LABORATORY COMPACTION

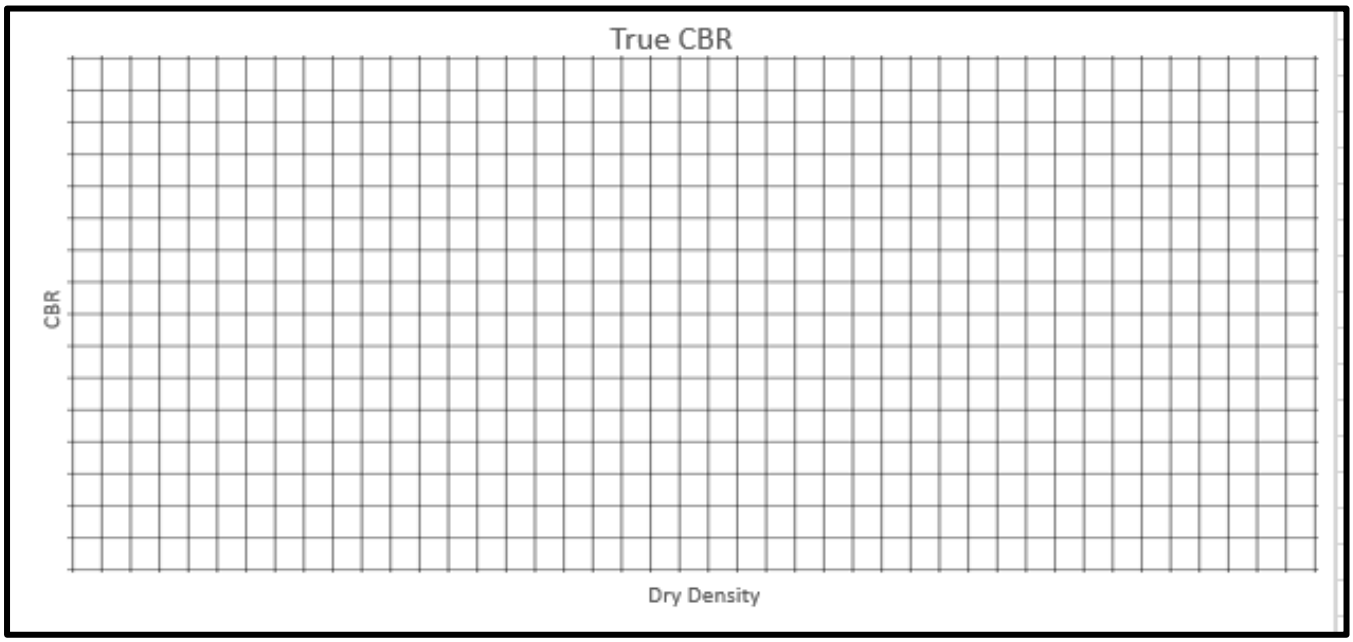
Under Laboratory No.	=	
Maximum Dry Density, kg/cu.m	=	
Optimum Moisture Content, %	=	

SWELL VALUES

Dial Reading, mm (96 h)

No. of Blows	Initial	Day 1	Day 2	Day 3	Day 4	Swell
10						
30						
65						

$$\% \text{ Swell} = \frac{\text{Change in Length in mm during soaking}}{116.434 \text{ mm}} \times 100 =$$



Tested/Computed by: _____

Date Tested: _____

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)

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	G	H	I			J	K
							K_L	K_G	K_N		
	2					.040					
	5					.026					
	15					.015					
	30					.010					
	60					.0074					
	250					.0036					
	440					.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
J - Corrected Grain Dia. d2/ (mm)
K - Corrected % Passing, p3

		%
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/Computed by: _____

Date Tested: _____

Checked/Reviewed by: _____

(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)

Unit weight of air-dry sand

1. Container full of water _____
2. Container, kg _____
3. Water, kg (1) – (2) _____
4. Volume of container, m^3 (3)/1000 _____
5. Container filled w/air dry sand, kg _____
6. Air-dry sand, kg (5) – (2) _____
7. Unit weight of dry sand, kg/m3 (6) / (4) _____

Actual moisture content

	Trial I	Trial II
11. Container + wet soil, g	_____	_____
12. Container + dry soil, g	_____	_____
13, Moisture, g (11) – (12)	_____	_____
14. Container, g	_____	_____
15. Dry soil, g (12) – (14)	_____	_____
16. Actual moisture content, % (13) / (15) x 100	_____	_____

17. Average actual moisture content, % _____

Mass of Sand to Fill Funnel

8. Mass of Jar + Sand, kg _____
9. Mass of Jar + Sand, kg (after pouring) _____
10. Sand in Funnel, kg (8) – (9) _____

Field Density

18. Total material taken from hole, kg _____
19. Mass of Jar + Sand, kg _____
20. Mass of Jar + Sand, kg (after pouring) _____
21. Sand to fill hole, kg (19) – (20) – (10) _____
22. Volume of hole, m^3 (21) / (7) _____
23. Wet unit weight, kg/m^3 (18) / (22) _____
24. Dry unit weight, kg/m^3 (23) / (17) / 100) + 1 _____
25. Lab. compaction test data
    a. Maximum dry density, kg/m^3 _____
    b. Optimum moisture content, % _____
26. Degree of compaction, % (24) / (25a) X 100 _____

Tested/Computed by : _____

Date Tested : _____

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

WORKSHEET FOR SPECIFIC GRAVITY OF FINE-GRAINED SOIL

AASHTO T100

Lab. No. : _____

Sample Identification : _____

Container + Dry soil, g		
Container, g		
Container number		
Dry soil, g		
Temp. after boiling (at room temp.), T_x		
Pycnometer + Soil + Water, g, W_b		
Pcynometer + Water (fr. Calibration curve), g, W_a		
Specific gravity of distilled water		
Specific gravity of soil		
Average		

Formula :

$$G_s = \frac{W_s G_{Tx}}{W_s + (W_a - W_b)}$$

where :

G_s = specific gravity of soil
W_s = weight/mass of dry soil
G_{Tx} = Specific gravity of distilled water @ T_x
W_b = Pcynometer + Soil + Water
W_a = Pcynometer + Water (from calibration curve)

WORKSHEET FOR SPECIFIC GRAVITY OF FINE-GRAINED SOIL

AASHTO T100

Lab. No. : _____

Sample Identification : _____

Table – Specific Gravity of Distilled Water

Temperature, °C		Temperature, °C	
20	0.9982	30	0.9957
21	0.9980	31	0.9954
22	0.9978	32	0.9951
23	0.9976	33	0.9947
24	0.9973	34	0.9944
25	0.9971	35	0.9941
26	0.9968	36	0.9937
27	0.9965	37	0.9934
28	0.9963	38	0.9930
29	0.9960	39	0.9926
		40	0.9922

Tested/Computed by: _____

Date Tested: _____

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

WORKSHEET FOR SOUNDNESS TEST

AASHTO T104

Lab. No. : _____

Sample Identification : _____

Sieve size, mm		(1)	(2)	(3)	(4)	(5)	(6)
Passing	Retained on	Grading of original sample, % Retained	Mass of test fraction before test, g	Mass of test fraction after test, g	Loss in Mass, g	% passing sieve after test (actual & loss)	Mass average (corrected & loss)

FINE AGGREGATE

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						
Totals							
					(2-3)	(4/2 X 100)	(5 X 1)

Lab. No. : _____

Sample Identification : _____

COARSE AGGREGATE

63.0	37.5						
37.5	19.0						
19.0	9.5						
9.5	4.75						
Totals							
					(2-3)	(4/2 X 100)	(5 X 1)

Tested/Computed by: _____

Date Tested: _____

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR ORGANIC IMPURITIES AND MORTAR STRENGTH TEST

Lab. No. : _____

Sample Identification : _____

ORGANIC IMPURITIES (PRELIMINARY)

AASHTO T21

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

MORTAR STRENGTH TEST

AASHTO T71

	Sample	Standard
Mass of cement, g		
Mass of sand, g		
Volume of water used, ml		
Flow, %		
Cross-sectional area, mm^2		

Sample	Age in days	Sample Fine Aggregate		Washed Fine Aggregate	
		Newton	MPa	Newton	MPa
1	7				
2	7				
3	7				
4	28				
5	28				
6	28				

Average = _____

% of Standard = _____

Tested/Computed by: _____

Date Tested: _____

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

WORKSHEET FOR UNIT WEIGHT (FINE & COARSE AGGREGATES)
AASHTO T19

Lab. No.: _____

Sample Identification: _____

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

Lab. No.: _____

Sample Identification: _____

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

Tested/Computed by: _____

Date Tested : _____

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

WORKSHEET FOR SPECIFIC GRAVITY AND ABSORPTION AGGREGATES

Lab. No.: _____

Sample Identification: _____

COARSE AGGREGATE

AASHTO T85

1. Weight in air of saturated surface-dry sample, g. - - - - - - - - - - - - -			
2. Weight in air of oven-dried sample g. - - - - - -			
3. Weight of sample in water, g			
4. Absorption, $\frac{(1) - (2)}{(2)} \times 100$ - - - - -			
		Average	
5. Specific gravity, bulk (SSD), $\frac{(1)}{(1) - (3)}$ - - - - -			
		Average	

Lab. No.: _____

Sample Identification: _____

FINE AGGREGATE

AASHTO T84

1. Weight in air of saturated surface-dry sample, g. - - - - - - - - - - - - -			
2. Weight in air of oven-dried sample g. - - - - - -			
3. Weight of pycnometer bottle filled with water, g. - - - - - - - - - - - - -			
4. Pycnometer bottle + water + sample in a bottle, g. - - - - - - - - - -			
5. Absorption, $\frac{(1) - (2)}{(2)} \times 100$			
		Average	
5. Specific gravity, bulk (SSD), $\frac{(1)}{(1) + (3) - (4)}$ - - - - -			
		Average	

Tested/Computed by: _____

Date Tested : _____

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

WORKSHEET FOR SIEVE ANALYSIS

AASHTO T11, T27 & T311

Lab. No.: _____

Sample Identification: _____

Weight of samples in grams:
Original . . . . . _____
Oven Dry . . . . . _____
Wash Oven dry . . . . . _____

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							
Recommendation:							

Tested/Computed by: _____

Date Tested : _____

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

WORKSHEET FOR ABRASION TEST

AASHTO T96

Lab. No.: _____

Sample Identification: _____

Kind of Material: _____

1. Original mass of sample, g.	
2. Sample retained on No. 1.70 mm sieve, g.	
3. Percentage of wear, % $\frac{(1) - (2)}{(1)} \times 100$	

Tested/Computed by: _____

Date Tested: _____

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR PHYSICAL TEST OF PORTLAND CEMENT – FINENESS
ASTM C204

Lab. No.:_____ Sample Identification: _____

Type : _____

Sampling Ambient Temp.(^{0}C)=_____ Sampling Ambient R.H.(%)= _____

Ambient Temp. (^{0}C) = _____ Ambient R.H. (%) = _____

I. FINENESS BY: Air Permeability Method

a. Specific Surface of SRM No. 114 or 46h, cm^2/g, (S_S), (from calibration) = _____
b. Time interval of manometer drop for SRM No. 114 or 46h, s, (T_s), (from calibration) = _____
c. Bulk volume of bed of cement, cm^3, (from calibration) = _____
d. Density of test sample (from SG of cement analysis) = _____
e. Theoretical weight of sample, g, Weight = c x d $(1 - \varepsilon)$ 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) = _____

Tested/Computed by: _____

Date Tested: _____

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

WORKSHEET FOR PHYSICAL TEST OF CEMENT – NORMAL CONSISTENCY, TIME OF SETTING, AUTOCLAVE EXPANSION

ASTM C187, C191 & C151

Lab. No. : _____

Sample Identification : _____

Type : _____

I. NORMAL CONSISTENCY : **Date Tested : _____**

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

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

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

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

II. TIME OF SETTING (Vicat Needle) : **Date Tested : _____**

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

a. Time made - - - - - - _____ _____ _____

b. Initial set - - - - - - _____ _____ _____

III. AUTOCLAVE EXPANSION : **Date Tested : _____**

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

La - Length comparator reading of specimen before Autoclaving, mm - - - - - - - - - - - - _____

Lb - Length comparator reading of specimen after Autoclaving, mm - - - - - - - - - - - - _____

G - Gauge length, mm - - - - - - - - - - - - _____

$$\text{Autoclave Expansion, \%} = \frac{Lb - La}{G} \times 100 = \_\_\_\_\_$$

Tested/Computed by: _____

Checked and Reviewed by: _____

(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, %	Compressive Strength, Date	Compressive Strength, MN/m^2
Average				

Sample I.D./Age in Days	Temp., ^{0}C	RH, %	Compressive Strength, Date	Compressive Strength, MN/m^2
Average				

Sample I.D./Age in Days	Temp., ^{0}C	RH, %	Compressive Strength, Date	Compressive Strength, MN/m^2
Average				

Tested/Computed by: _____

Date Tested: _____

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR PHYSICAL TEST OF PORTLAND CEMENT – AIR CONTENT

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

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

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

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

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 = $100\,[1 - (Wa/W_T)]$ - - - - - - - - - -

5. At Sp. Gr. = 3.15:
   Air Content, Volume % = $100 - W\left[\frac{(182.7 + P)}{(2000 + 4P)}\right]$

Tested/Computed by: _____

Date Tested: _____

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

WORKSHEET FOR SPECIFIC GRAVITY OF CEMENT

ASTM C188

Lab. No. : _____

Sample Identification : _____

Type : _____

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

SPECIFIC GRAVITY (Chemical Test):

Temperature of Bath, ^{0}C = _____

a. Mass of Le Chatelier Flask and Kerosene, g - - - - - - - _____

b. Intial volume, ml - - - - - - - _____

c. Mass of Le Chatelier Flask, Kerosene and sample, g - - - - - - - _____

d. Final volume, ml - - - - - - - _____

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

Date Tested: _____

Tested/Computed by: _____ Certified by: _____

Chemist Chemist

PRC Lic. No.:_____ PRC Lic. No.:_____

Checked and Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR CHEMICAL TESTS OF CEMENT (BY WET ANALYSIS)

ASTM C114

Lab. No. : _____

Sample Identification : _____

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

		Insoluble Residue Date Tested: _____	**Sulfur Trioxide Date Tested: _____**	**Magnesia Date Tested: _____**
Weight of sample, g	-			
Weight of crucible + Ignited Residue, g	-			
Weight of empty Crucible, g	-			
Weight of Ignited Residue, g	-			
Factor	-	-	34.3	72.4
Percentage, %	-			

LOSS ON IGNITION: **Date Tested : _____**

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	-	

Tested/Computed by: _____ Certified by: _____

Chemist Chemist

PRC Lic. No.:_____ PRC Lic. No.:_____

Checked and Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR CHEMICAL TESTS OF CEMENT (BY XRF METHOD)

ASTM C114

Lab. No. : _____

Sample Identification : _____

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

		Magnesium Oxide (MgO)		**Sulfur Trioxide (SO_3)**	
		Date Tested: _____		**Date Tested: _____**	
		Trial 1	Trial 2	Trial 1	Trial 2
Mass of Sample, g	-				
Mass of Flux, g	-				
Results, %	-				
Average, %	-				
BLANK, %	-				
QC, CRM ID	-				
QC, CRM Actual Value (AV), %	-				
QC, CRM Theoretical Value (TV), %	-				
QC, CRM, % Accuracy $\frac{\%\ AV}{\%\ TV} \times 100$	-				

Tested/Computed by: _____ Certified by: _____

Chemist Chemist

PRC Lic. No.:_____ PRC Lic. No.:_____

Checked and Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TESTING OF ASPHALT CEMENT (PENETRATION-GRADED)

ASTM D70, D6, D5, D113, D92, D36
AASHTO T44, T102

Lab. No. : _____

Sample Identification : _____

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 - - - - - - - - - - - - _____

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

2. Loss on Heating:

		#1	#2
a. Mass of container empty, g	- - - - - - -	_____	_____
b. Mass of container + sample, g	- - - - - - -	_____	_____
c. Mass of container + sample after heating, g	- - - - - - -	_____	_____
	% Loss =	_____	_____

$$\%\ \text{Loss} = \frac{b - c}{b - a} \times 100$$

$\%\ \text{Loss}_{AVERAGE}$ = _____

3. Solubility and Ash Content:
   a. Mass of sample, g - - - - - - - - - - - - _____
   b. Mass of crucible + filter paper, g - - - - - - - - - - - - _____
   c. Mass of crucible + filter paper + residue, g - - - - - - - - - - - - _____

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

4. Spot Test - - - - - - - - - - - _____

5. Penetration:

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

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

6. Ductility:

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

7. Flash Point, °C - - - - - - - - - - - _____

8. Softening Point, °C

1	2	Average
_____	_____	_____

Tested/Computed by: Date Tested:

_____ _____
_____ _____
_____ _____

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

WORKSHEET FOR ASPHALT CEMENT (VISCOCITY-GRADED)

ASTM D70, D6, D 2171, D113, D92, D36
AASHTO T44, T102

Lab. No. : _____

Sample Identification : _____

Penetration Grade : _____

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 - - - - - - - - - - - - _____

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

2. Loss on Heating:

		#1	#2
a. Mass of container empty, g	- - - - - - -	_____	_____
b. Mass of container + sample, g	- - - - - - -	_____	_____
c. Mass of container + sample after heating, g	- - - - - - -	_____	_____
	% Loss =	_____	_____

$$\%\ \text{Loss} = \frac{b - c}{b - a} \times 100$$

$\%\ \text{Loss}_{AVERAGE}$ = _____

3. Solubility and Ash Content:
   a. Mass of sample, g - - - - - - - - - - - - _____
   b. Mass of crucible + filter paper, g - - - - - - - - - - - - _____
   c. Mass of crucible + filter paper + residue, g - - - - - - - - - - - - _____

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

4. Spot Test - - - - - - - - - - - _____

5. Viscosity:

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

6. Ductility:

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

7. Flash Point, ^{o}C - - - - - - - - - - - _____

Tested/Computed by: _____

_____

_____

Date Tested: _____

_____

_____

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

WORKSHEET FOR EMULSIFIED ASPHALT

ASTM D70, D5, D113
AASHTO T59, T72, T111

Lab. No. : _____

Sample Identification : _____

I. Specific Gravity

a. Mass of pycnometer, empty, g	----------	_____
b. Mass of pycnometer filled with water, g	----------	_____
c. Mass of pycnometer filled with sample, g	----------	_____
Specific Gravity = $\frac{c - a}{b - a}$	----------	_____

II. Storage Stability

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

III. Sieve Test

a. Mass of sample, g	----------	_____
b. Mass of sieve + pan, g	----------	_____
c. Mass of sieve + pan + residue, g	----------	_____
% Residue = $\frac{c - b}{a}$ x 100	----------	_____

IV. Viscosity (Saybolt-furol)), sec. ---------- _____

V. Distillation

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	----------	_____

VI. Cement Mixing

a. Mass of sieve + pan, g	----------	_____
b. Mass of sieve + pan + residue, g	----------	_____
Cement Mixing = (b - a)	----------	_____

VII. Test on Residue

1. Penetration at 25 °C, 100g, 5g - - -	_____	_____	_____	_____
2. Ductility at 25 °C, 5cm/min, cm - - -	_____	_____	_____	_____

3. Mineral Matter or Ash:

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/Computed by: Date Tested:

_____ _____

_____ _____

_____ _____

Checked and Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR CUTBACK ASPHALT

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

Lab. No. : _____
Sample Identification : _____

I. **Viscosity** (Kinematic) at 60 °C, cSt ---------- _____
Time Elapsed, sec ---------- _____
Glass Capillary Constant, cSt/sec ---------- _____
Date Tested: _____

II. **Flash Point** (TOC), °C ---------- _____
Date Tested: _____

III. **Specific Gravity** **Date Tested:** _____

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

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

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

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

IV. **Distillation** **Date Tested:** _____

Volume of sample, ml = $\frac{\text{mass of sample}}{\text{Sp. Gravity}}$ ---------- _____

Temperature	**Volume of Distillate**	**% by volume**
190°C (374°F)	_____	_____
225°C (437°F)	_____	_____
260°C (500°F)	_____	_____
316°C (600°F)	_____	_____
360°C (680°F)	_____	_____

Residue, % by volume ---------- _____

V. **Test on Residue** **Date Tested:** _____

1. Penetration at 25 °C, 100g, 5 s _____ _____ _____ _____
2. Ductility at 25 °C, 5 cm/min, cm _____ _____ _____ _____
3. Solubility in Trichloroethylene
   a. Mass of sample, g ---------- _____
   b. Mass of crucible, empty, g ---------- _____
   c. Mass of crucible + Residue, g ---------- _____

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

4. Spot Test ---------- _____

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

WORKSHEET FOR CONCRETE JOINT SEALER

ASTM D5329

Lab. No. : _____

Sample Identification : _____

1. Safe heating temperature, °C	- - - - - - - -	_____
2. Pour point temperature, °C	- - - - - - - -	_____
3. Flow at 60°C, mm	- - - - - - - -	_____
4. Penetration @ 25°C, 150 gm, 5 sec.	- - - - - - - -	_____
		_____
		_____
	Average =	_____

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

Checked and Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR ELASTOMERIC BINDER (THORMAJOINT)
ASTM D5329, D36

Lab. No. : _____

Sample Identification : _____

1. Safe heating temperature, °C	- - - - - - - -	_____
2. Pour point temperature, °C	- - - - - - - -	_____
3. Flow at 60°C, mm	- - - - - - - -	_____
4. Penetration @ 25°C, 150 gm, 5 sec.	- - - - - - - -	_____
		_____
		_____
	Average:	_____
5. Softening Point, °C	- - - - - - - -	_____

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

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

WORKSHEET FOR PREFORMED EXPANSION JOINT FILLER

ASTM D545

Lab. No. : _____

Sample Identification : _____

Thickness: _____

1. ABSORPTION: **Date Tested: _____**

a. Thickness of sample, mm	- - - - -	_____	_____	_____	
		_____	_____	_____	
		_____	_____	_____	
		_____	_____	_____	
		_____	_____	_____	
Average:	- - - - -	_____	_____	_____	
				Average:	_____
b. Mass of sample before immersion, g	- - - - -	_____	_____	_____	
c. Mass of sample after immersion, g	- - - - -	_____	_____	_____	
d. Absorption, % by volume	- - - - -	_____	_____	_____	
				Average:	_____

Computation:

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

2. DENSITY **Date Tested: _____**

a. Thickness of sample before drying, mm	- - - - -	_____	_____	_____	
		_____	_____	_____	
		_____	_____	_____	
		_____	_____	_____	
		_____	_____	_____	
Average	- - - - -	_____	_____	_____	
				Average:	_____
b. Thickness of sample after drying, mm	- - - - -	_____	_____	_____	
		_____	_____	_____	
		_____	_____	_____	
		_____	_____	_____	
		_____	_____	_____	
Average	- - - - -	_____	_____	_____	
				Average:	_____
c. Mass of sample before drying, g	- - - - -	_____	_____	_____	
d. Mass of sample after drying, g	- - - - -	_____	_____	_____	
e. Density, kg/m^3	- - - - -	_____	_____	_____	
				Average:	_____

Computation:

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

WORKSHEET FOR PREFORMED EXPANSION JOINT FILLER

ASTM D545

3. COMPRESSION AND RECOVERY: **Date Tested: _____**

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

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

Average - - - - - _____ _____ _____

Average: _____

$\left[\frac{\text{a Ave.}}{2}\right]$ - - - - - _____ _____ _____

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

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

Average - - - - - _____ _____ _____

Average: _____

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

Average: _____

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

Computation:

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

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

Computation:

$$\text{Recovery, \%} = \frac{\text{b Average}}{\text{a Average}} \text{ X } 100$$

Tested/Computed by: _____

Checked and Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR POLYMER MODIFIED BITUMEN (PMB)

ASTM D5, D92, D36, D113
AASHTO T44

Lab. No. : _____

Sample Identification : _____

Grade : _____

	1	2	3	Average
1. Penetration @ 25 °C, 100 g, 5 s - - - - -	_____	_____	_____	_____
2. Flash Point, Cleveland Open Cup, °C	- - - - - - - -		_____	
3. Softening Point, °C	- - - - - - - -		_____	
4. Ductility, @ 25 °C, 5 cm/min., cm	- - - - - - - -		_____	
5. Solubility in Trichloroethylene:				
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/Computed by: Date Tested:

_____ _____
_____ _____
_____ _____

Chemical Test/s
Tested/Computed by: _____
Chemist
PRC Lic. No.: _____

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

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

WORKSHEET FOR HOT MIX ASPHALT

ASTM D6307

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

A. BITUMEN CONTENT
Date Tested: _____

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 **Date Tested: _____**

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

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

C. BULK SPECIFIC GRAVITY **Date Tested: _____**

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 = _____

D. FOR HOT MIX:

COMPRESSIVE STRENGTH: **Date Tested: _____**

Cross-sectional area, 0.008107 sq. m.

1. Dry Specimen: **Specimen** _____ _____ _____ **Average**
   Dry Load, tonnes - - - - - - - _____ _____ _____ _____
   KN/m^2: 9.807/0.008107
   KPa Load (tonnes) x kN/m^2 - - - - - - - _____ _____ _____ _____

2. Immersed Specimen: **Specimen** _____ _____ _____ _____
   Wet Load, tonnes - - - - - - - _____ _____ _____ _____
   KN/m^2: 9.807/0.008107
   KPa Load (tonnes) x kN/m^2 - - - - - - - _____ _____ _____ _____

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

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

WORKSHEET FOR COLD MIX ASPHALT

ASTM D4215

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

A. BITUMEN CONTENT
Date Tested: _____

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 **Date Tested:** _____

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

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

C. BULK SPECIFIC GRAVITY **Date Tested:** _____

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 = _____

D.1. <u>FOR COLD MIX USING EMULSIFIED ASPHALT</u>:
STABILITY (MARSHALL): **Date Tested:** _____

		Specimen No.				Average
a.	Stability, lbs.	- - - - - - -				
b.	Height of Specimen, mm	- - - - - - -				
c.	Correlation Ratio	- - - - - - -				
d.	Corrected Stability, lbs.	- - - - - - -				
e.	Corrected Stability, N = lbs. x 4.448	- - - - - - -				
		Specimen No.				**Average**
f.	Stability, lbs. (After VSI)	- - - - - - -				
g.	Height of Specimen, mm	- - - - - - -				
h.	Correlation Ratio	- - - - - - -				
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 - - - - - - - _____

WORKSHEET FOR COLD MIX ASPHALT

ASTM D4215

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

D.2. FOR COLD MIX USING CUTBACK ASPHALT:

STABILITY (MARSHALL): **Date Tested: _____**

		Specimen No.	_____	_____	_____	**Average**
a.	Stability, lbs.	- - - - - - -	_____	_____	_____	_____
b.	Height of Specimen, mm	- - - - - - -	_____	_____	_____	_____
c.	Correlation Ratio	- - - - - - -	_____	_____	_____	_____
d.	Corrected Stability, lbs.	- - - - - - -	_____	_____	_____	_____
e.	Corrected Stability, N = lbs. x 4.448	- - - - - - -	_____	_____	_____	_____
		Specimen No.	_____	_____	_____	**Average**
f.	Stability, lbs. (After 4 days in water @ 25^0C)	- - - - - - -	_____	_____	_____	_____
g.	Height of Specimen, mm	- - - - - - -	_____	_____	_____	_____
h.	Correlation Ratio	- - - - - - -	_____	_____	_____	_____
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/Computed by: _____
Checked and Reviewed by: _____
(Head of Materials Testing Section/Unit)

WORKSHEET FOR BITUMINOUS CONCRETE CORE

ASTM D2950

Lab. No. : _____

Sample Identification : _____

Lab. Nos.	I.D.	S t a t i o n	Thickness cm.					Bulk Specific Gravity			
			1	2	3	4	Ave.	Wt. in Air, g	Wt. in Water, g	Wt. SSD, g	Bulk Sp. Gravity

Tested/Computed by: _____

Date Tested: _____

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR FLAT LATEX PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

I. Total Solids by Weight (PNS ISO 3251) Date Tested: _____

		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$_{average}$, %	- - - - - - - - -		

II. Storage Stability (ASTM D1849) Date Tested: _____

		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			

III. Density (ASTM D1475) Date Tested: _____

	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$_{density, kg/L}$:			

IV. Viscosity (ASTM D562): Date Tested: _____

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

V. Fineness of Grind (ASTM D1210): Date Tested: _____

a.	Tapered Gage used	- - - - - - - - - _____
b.	Cleanliness (texture) method (*not applicable* for Two Parallel Paths)	- - - - - - - - - _____

WORKSHEET FOR FLAT LATEX PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

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	_____	_____	_____

VI. <u>Wet Edge Time (ASTM D7488)</u> Date Tested: _____

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. - - - - - - - - - _____

VII. <u>Volatile Organic Compounds</u> (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) - - - - - - - - - _____

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

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

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

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

Chemical Test/s
Tested/Computed by: _____
Chemist/Chem. Tech.
PRC Lic. No.: _____

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

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

WORKSHEET FOR SEMI-GLOSS LATEX PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

I. Total Solids by Weight (PNS ISO 3251)

Date Tested: _____

		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), % = $\frac{d}{b} \times 100$			
	$\text{Total Solids}_{\text{average}}$, %	- - - - - - - - -		

II. Storage Stability (ASTM D1849)

Date Tested: _____

		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			

III. Density (ASTM D1475)

Date Tested: _____

	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 $i = \frac{h}{f}$			
$\text{AVERAGE}_{\text{density, kg/L}}$:			

IV. Viscosity (ASTM D562):

Date Tested: _____

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

V. Fineness of Grind (ASTM D1210):

Date Tested: _____

a.	Tapered Gage used	- - - - - - - - - _____
b.	Cleanliness (texture) method	- - - - - - - - - _____

WORKSHEET FOR SEMI-GLOSS LATEX PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

(*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	_____	_____	_____

VI. Wet Edge Time (ASTM D7488) Date Tested: _____

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. - - - - - - - - - _____

VII. Drying Time (ASTM D1640): Date Tested: _____

a. Set-to-Touch, minutes - - - - - - - - - _____

b. Recoat Time, minutes - - - - - - - - - _____

VIII. Levelling (ASTM D4062): Date Tested: _____

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

IX. Contrast Ratio (PNS ISO 6504) Date Tested: _____

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

X. Specular Gloss (PNS ISO 2813) Date Tested: _____

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

XI. Wet Abrasion (ASTM D2486) Date Tested: _____

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 - - - - - - - - - _____

XII. Adhesion by Tape Test (ASTM D3359) Date Tested: _____

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 - - - - - - - - - _____

WORKSHEET FOR SEMI-GLOSS LATEX PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

XIII. 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) - - - - - - - - - _____

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

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

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

Tested/Computed by: Date Tested:

_____ _____
_____ _____
_____ _____

Chemical Test/s
Tested/Computed by: _____
Chemist/Chem. Tech.
PRC Lic. No.: _____

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

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

WORKSHEET FOR GLOSS LATEX PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

I. Total Solids by Weight (PNS ISO 3251) Date Tested: _____

		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$_{average}$, %	- - - - - - - - -		

II. Storage Stability (ASTM D1849) Date Tested: _____

		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			

III. Density (ASTM D1475) Date Tested: _____

	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$_{density,\ kg/L}$:			

IV. Viscosity (ASTM D562): Date Tested: _____

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

V. Fineness of Grind (ASTM D1210): Date Tested: _____

a.	Tapered Gage used	- - - - - - - - - _____
b.	Cleanliness (texture) method	- - - - - - - - - _____

WORKSHEET FOR GLOSS LATEX PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

(*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	_____	_____	_____

VI. Wet Edge Time (ASTM D7488) Date Tested: _____

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. - - - - - - - - - _____

VII. Drying Time (ASTM D1640): Date Tested: _____

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

VIII. Levelling (ASTM D4062): Date Tested: _____

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

IX. Contrast Ratio (PNS ISO 6504) Date Tested: _____

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

X. Specular Gloss (PNS ISO 2813) Date Tested: _____

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

XI. Wet Abrasion (ASTM D2486) Date Tested: _____

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 - - - - - - - - - _____

XII. Adhesion by Tape Test (ASTM D3359) Date Tested: _____

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 - - - - - - - - - _____

WORKSHEET FOR GLOSS LATEX PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

XIII. 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) - - - - - - - - - _____

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

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

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

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

Chemical Test/s
Tested/Computed by: _____
Chemist/Chem. Tech.
PRC Lic. No.: _____

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

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

WORKSHEET FOR ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

I. Total Solids by Weight (PNS ISO 3251)

Date Tested: _____

		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$_{average}$, %	- - - - - - - - -		

II. Storage Stability (ASTM D1849)

Date Tested: _____

		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			

III. Density (ASTM D1475)

Date Tested: _____

	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$_{density,\ kg/L}$:			

IV. Viscosity (ASTM D562):

Date Tested: _____

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

V. Fineness of Grind (ASTM D1210):

Date Tested: _____

a.	Tapered Gage used	- - - - - - - - - _____
b.	Cleanliness (texture) method (*not applicable* for Two Parallel Paths)	- - - - - - - - - _____

WORKSHEET FOR ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

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	_____	_____	_____

VI. Wet Edge Time (ASTM D7488) Date Tested: _____

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. - - - - - - - - - _____

VII. Drying Time (ASTM D1640): Date Tested: _____

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

VIII. Levelling (ASTM D4062): Date Tested: _____

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

IX. Contrast Ratio (PNS ISO 6504) Date Tested: _____

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

X. Specular Gloss (PNS ISO 2813) Date Tested: _____

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

XI. Wet Abrasion (ASTM D2486) Date Tested: _____

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 - - - - - - - - - _____

XII. Adhesion by Tape Test (ASTM D3359) Date Tested: _____

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 - - - - - - - - - _____

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

WORKSHEET FOR ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

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) - - - - - - - - - _____

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

XIV. <u>Lead Content (ASTM E1613 / ASTM F2853)</u> Date Tested: _____

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

Tested/Computed by: Date Tested:

_____ _____
_____ _____
_____ _____

Chemical Test/s
Tested/Computed by: _____
Chemist/Chem. Tech.
PRC Lic. No.: _____

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

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

WORKSHEET FOR SEMI-GLOSS ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

I. Total Solids by Weight (PNS ISO 3251)

Date Tested: _____

		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$_{average}$, %	- - - - - - - - -		

II. Storage Stability (ASTM D1849)

Date Tested: _____

		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			

III. Density (ASTM D1475)

Date Tested: _____

	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$_{density,\ kg/L}$:			

IV. Viscosity (ASTM D562):

Date Tested: _____

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

V. Fineness of Grind (ASTM D1210):

Date Tested: _____

a.	Tapered Gage used	- - - - - - - - - _____
b.	Cleanliness (texture) method (*not applicable* for Two Parallel Paths)	- - - - - - - - - _____

WORKSHEET FOR SEMI-GLOSS ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

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	_____	_____	_____

VI. Wet Edge Time (ASTM D7488) Date Tested: _____

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. - - - - - - - - - _____

VII. Drying Time (ASTM D1640): Date Tested: _____

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

VIII. Levelling (ASTM D4062): Date Tested: _____

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

IX. Contrast Ratio (PNS ISO 6504) Date Tested: _____

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

X. Specular Gloss (PNS ISO 2813) Date Tested: _____

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

XI. Adhesion by Tape Test (ASTM D3359) Date Tested: _____

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 - - - - - - - - - _____

XII. 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) - - - - - - - - - _____

WORKSHEET FOR SEMI-GLOSS ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

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

XIII. <u>Lead Content (ASTM E1613 / ASTM F2853)</u> Date Tested: _____

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

Tested/Computed by: Date Tested:

_____ _____
_____ _____
_____ _____

Chemical Test/s
Tested/Computed by**:** _____
Chemist/Chem. Tech.
PRC Lic. No.: _____

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

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

WORKSHEET FOR FLAT-WALL ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

I. Total Solids by Weight (PNS ISO 3251)

Date Tested: _____

		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$_{average}$, %	- - - - - - - - -		

II. Storage Stability (ASTM D1849)

Date Tested: _____

		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			

III. Density (ASTM D1475)

Date Tested: _____

	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$_{density, kg/L}$:			

IV. Viscosity (ASTM D562):

Date Tested: _____

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

V. Fineness of Grind (ASTM D1210):

Date Tested: _____

a.	Tapered Gage used	- - - - - - - - - _____

WORKSHEET FOR FLATWALL ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

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	_____	_____	_____

VI. Wet Edge Time (ASTM D7488) Date Tested: _____

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. - - - - - - - - - _____

VII. Drying Time (ASTM D1640): Date Tested: _____

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

VIII. Levelling (ASTM D4062): Date Tested: _____

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

IX. Contrast Ratio (PNS ISO 6504) Date Tested: _____

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

X. Specular Gloss (PNS ISO 2813) Date Tested: _____

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

XI. Adhesion by Tape Test (ASTM D3359) Date Tested: _____

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 - - - - - - - - - _____

XII. 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 - - - - - - - - - _____

WORKSHEET FOR FLATWALL ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

f. Density of Exempt Volatile Compound at 25^0C, g/L - - - - - _____

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

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

XIII. <u>Lead Content (ASTM E1613 / ASTM F2853)</u> Date Tested: _____

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

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

Chemical Test/s
Tested/Computed by**:** _____
Chemist/Chem. Tech.
PRC Lic. No.: _____

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

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

WORKSHEET FOR EPOXY ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

I. Pencil Hardness (ASTM D3363) Date Tested: _____

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 - - - - - - - - - _____

II. Adhesion by Tape Test (ASTM D3359) Date Tested: _____

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 - - - - - - - - - _____

III. Impact Resistance Date Tested: _____

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

IV. Flexibility Date Tested: _____

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

V. 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) - - - - - - - - - _____

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

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

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

Tested/Computed by: Date Tested:

_____ _____
_____ _____
_____ _____

Chemical Test/s
Tested/Computed by: _____
Chemist/Chem. Tech.
PRC Lic. No.: _____

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

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

WORKSHEET FOR ALKYD-BASED SEMI-GLOSS ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

I. Total Solids by Weight (PNS ISO 3251)

Date Tested: _____

		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), % = $\frac{d}{b} \times 100$			
	$\text{Total Solids}_{\text{average}}$, %	- - - - - - - - -		

II. Storage Stability (ASTM D1849)

Date Tested: _____

		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			

III. Density (ASTM D1475)

Date Tested: _____

	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 $i = \frac{h}{f}$			
$\text{AVERAGE}_{\text{density, kg/L}}$:			

IV. Viscosity (ASTM D562):

Date Tested: _____

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

V. Fineness of Grind (ASTM D1210):

Date Tested: _____

a.	Tapered Gage used	- - - - - - - - - _____
b.	Cleanliness (texture) method	- - - - - - - - - _____

WORKSHEET FOR ALKYD-BASED SEMI-GLOSS ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

(*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	_____	_____	_____

VI. <u>Wet Edge Time (ASTM D7488)</u> Date Tested: _____

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. - - - - - - - - - _____

VII. <u>Drying Time (ASTM D1640):</u> Date Tested: _____

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

VIII. <u>Levelling (ASTM D4062):</u> Date Tested: _____

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

IX. <u>Contrast Ratio (PNS ISO 6504)</u> Date Tested: _____

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

X. <u>Specular Gloss (PNS ISO 2813)</u> Date Tested: _____

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

XI. <u>Adhesion by Tape Test (ASTM D3359)</u> Date Tested: _____

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 - - - - - - - - - _____

XII. <u>Volatile Organic Compounds</u> (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 - - - - - _____

WORKSHEET FOR ALKYD-BASED SEMI-GLOSS ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

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

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

XIII. <u>Lead Content (ASTM E1613 / ASTM F2853)</u> Date Tested: _____

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

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

Chemical Test/s
Tested/Computed by**:** _____
Chemist/Chem. Tech.
PRC Lic. No.: _____

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

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

WORKSHEET FOR ALKYD-BASED GLOSS ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

I. Total Solids by Weight (PNS ISO 3251)

Date Tested: _____

		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), % = $\frac{d}{b} \times 100$			
	$\text{Total Solids}_{\text{average}}$, %	- - - - - - - - -		

II. Storage Stability (ASTM D1849)

Date Tested: _____

		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			

III. Density (ASTM D1475)

Date Tested: _____

	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 $i = \frac{h}{f}$			
$\text{AVERAGE}_{\text{density, kg/L}}$:			

IV. Viscosity (ASTM D562):

Date Tested: _____

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

V. Fineness of Grind (ASTM D1210):

Date Tested: _____

a.	Tapered Gage used	- - - - - - - - - _____
b.	Cleanliness (texture) method	- - - - - - - - - _____

WORKSHEET FOR ALKYD-BASED GLOSS ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

(*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	_____	_____	_____

VI. Wet Edge Time (ASTM D7488) Date Tested: _____

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. - - - - - - - - - _____

VII. Drying Time (ASTM D1640): Date Tested: _____

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

VIII. Levelling (ASTM D4062): Date Tested: _____

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

IX. Contrast Ratio (PNS ISO 6504) Date Tested: _____

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

X. Specular Gloss (PNS ISO 2813) Date Tested: _____

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

XI. Wet Abrasion (ASTM D2486) Date Tested: _____

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 - - - - - - - - - _____

XII. Adhesion by Tape Test (ASTM D3359) Date Tested: _____

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 - - - - - - - - - _____

WORKSHEET FOR ALKYD-BASED GLOSS ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

XIII. 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) - - - - - - - - - _____

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

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

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

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

Chemical Test/s
Tested/Computed by: _____
Chemist/Chem. Tech.
PRC Lic. No.: _____

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

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

WORKSHEET FOR ALKYD-BASED FLAT-WALL ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

I. Total Solids by Weight (PNS ISO 3251)

Date Tested: _____

		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), % = $\frac{d}{b} \times 100$			
	$\text{Total Solids}_{\text{average}}$, %	- - - - - - - - -		

II. Storage Stability (ASTM D1849)

Date Tested: _____

		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			

III. Density (ASTM D1475)

Date Tested: _____

	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 $i = \frac{h}{f}$			
$\text{AVERAGE}_{\text{density, kg/L}}$:			

IV. Viscosity (ASTM D562):

Date Tested: _____

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

V. Fineness of Grind (ASTM D1210):

Date Tested: _____

a.	Tapered Gage used	- - - - - - - - - _____
b.	Cleanliness (texture) method	- - - - - - - - - _____

WORKSHEET FOR ALKYD-BASED FLATWALL ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

(*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	_____	_____	_____

VI. <u>Wet Edge Time (ASTM D7488)</u> Date Tested: _____

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. - - - - - - - - - _____

VII. <u>Drying Time (ASTM D1640):</u> Date Tested: _____

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

VIII. <u>Levelling (ASTM D4062):</u> Date Tested: _____

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

IX. <u>Contrast Ratio (PNS ISO 6504)</u> Date Tested: _____

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

X. <u>Specular Gloss (PNS ISO 2813)</u> Date Tested: _____

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

XI. <u>Adhesion by Tape Test (ASTM D3359)</u> Date Tested: _____

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 - - - - - - - - - _____

XII. <u>Volatile Organic Compounds</u> (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 - - - - - _____

WORKSHEET FOR ALKYD-BASED FLATWALL ENAMEL PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

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

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

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

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

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

Chemical Test/s
Tested/Computed by: _____
Chemist/Chem. Tech.
PRC Lic. No.: _____

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

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

WORKSHEET FOR ALKYD-BASED METAL PRIMER

Lab. No.: _____ Sample Identification: _____ Type: _____

I. Total Solids by Weight (PNS ISO 3251) Date Tested: _____

		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$_{average}$, %	- - - - - - - - -		

II. Storage Stability (ASTM D1849) Date Tested: _____

		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			

III. Density (ASTM D1475) Date Tested: _____

	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$_{density, kg/L}$:			

IV. Viscosity (ASTM D562): Date Tested: _____

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

V. Fineness of Grind (ASTM D1210): Date Tested: _____

a.	Tapered Gage used	- - - - - - - - - _____
b.	Cleanliness (texture) method	- - - - - - - - - _____

WORKSHEET FOR ALKYD-BASED METAL PRIMER

Lab. No.: _____ Sample Identification: _____ Type: _____

(*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	_____	_____	_____

VI. <u>Drying Time (ASTM D1640):</u> Date Tested: _____

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

VII. <u>Contrast Ratio (PNS ISO 6504)</u> Date Tested: _____

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

VIII. <u>Specular Gloss (PNS ISO 2813)</u> Date Tested: _____

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

IX. <u>Adhesion by Tape Test (ASTM D3359)</u> Date Tested: _____

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 - - - - - - - - - _____

X. <u>Volatile Organic Compounds</u> (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) - - - - - - - - - _____

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

WORKSHEET FOR ALKYD-BASED METAL PRIMER

Lab. No.: _____ Sample Identification: _____ Type: _____

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

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

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

Chemical Test/s
Tested/Computed by**:** _____
Chemist/Chem. Tech.
PRC Lic. No.: _____

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

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

WORKSHEET FOR EPOXY METAL PRIMER

Lab. No.: _____ Sample Identification: _____ Type: _____

I. Total Solids by Weight (PNS ISO 3251) Date Tested: _____

		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$_{average}$, %	- - - - - - - - -		

II. Storage Stability (ASTM D1849) Date Tested: _____

		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			

III. Density (ASTM D1475) Date Tested: _____

	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$_{density, kg/L}$:			

IV. Viscosity Using a Stormer-Type Viscometer (ASTM D562): Date Tested: _____

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

V. Viscosity by Ford Viscosity Cup (ASTM D1200): Date Tested: _____

a. Temperature of the sample, ˚C - - - - - - - - - _____

WORKSHEET FOR EPOXY METAL PRIMER

Lab. No.: _____ Sample Identification: _____ Type: _____

b. Efflux Time with the Cup Orifice, seconds - - - - - - - - - _____

VI. Fineness of Grind (ASTM D1210): Date Tested: _____

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	_____	_____	_____

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) - - - - - - - - - _____

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

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

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

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

Chemical Test/s
Tested/Computed by: _____
Chemist/Chem. Tech.
PRC Lic. No.: _____

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

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

WORKSHEET FOR WATER-BASED GLOSS ROOF PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

I. Total Solids by Weight (PNS ISO 3251)

Date Tested: _____

		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$_{average}$, %	- - - - - - - - -		

II. Storage Stability (ASTM D1849)

Date Tested: _____

		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			

III. Density (ASTM D1475)

Date Tested: _____

	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$_{density,\ kg/L}$:			

IV. Viscosity (ASTM D562):

Date Tested: _____

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

V. Fineness of Grind (ASTM D1210):

Date Tested: _____

a. Tapered Gage used - - - - - - - - - _____
b. Cleanliness (texture) method - - - - - - - - - _____

WORKSHEET FOR WATER-BASED GLOSS ROOF PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

(*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	_____	_____	_____

VI. <u>Wet Edge Time (ASTM D7488)</u> Date Tested: _____

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. - - - - - - - - - _____

VII. <u>Drying Time (ASTM D1640):</u> Date Tested: _____

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

VIII. <u>Contrast Ratio (PNS ISO 6504)</u> Date Tested: _____

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

IX. <u>Specular Gloss (PNS ISO 2813)</u> Date Tested: _____

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

X. <u>Wet Abrasion (ASTM D2486)</u> Date Tested: _____

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 - - - - - - - - - _____

XI. <u>Adhesion by Tape Test (ASTM D3359)</u> Date Tested: _____

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 - - - - - - - - - _____

XII. <u>Volatile Organic Compounds</u> (ASTM D3960) Date Tested: _____

a. Weight of Total Volatiles, % - - - - - - - - - _____
b. Weight of Water, % - - - - - - - - - _____
c. Weight of Exempt Volatile Compound, % - - - - - - - - - _____

WORKSHEET FOR WATER-BASED GLOSS ROOF PAINT

Lab. No.: _____ Sample Identification: _____ Type: _____

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) - - - - - - - - - _____

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

XIII. <u>Lead Lead Content (ASTM E1613 / ASTM F2853)</u> Date Tested: _____

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

Tested/Computed by: Date Tested:

_____ _____
_____ _____
_____ _____

Chemical Test/s
Tested/Computed by**:** _____
Chemist/Chem. Tech.
PRC Lic. No.: _____

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

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

WORKSHEET FOR ELASTOMERIC WALL COATING

Lab. No.: _____ Sample Identification: _____ Type: _____

I. Total Solids by Weight (PNS ISO 3251) Date Tested: _____

		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), % = $\frac{d}{b} \times 100$			
	$\text{Total Solids}_{\text{average}}$, %	- - - - - - - - -		

II. Storage Stability (ASTM D1849) Date Tested: _____

		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			

III. Density (ASTM D1475) Date Tested: _____

	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 $i = \frac{h}{f}$			
$\text{AVERAGE}_{\text{density, kg/L}}$:			

IV. Viscosity (ASTM D562): Date Tested: _____

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

V. Fineness of Grind (ASTM D1210): Date Tested: _____

a.	Tapered Gage used	- - - - - - - - - _____
b.	Cleanliness (texture) method	- - - - - - - - - _____

WORKSHEET FOR ELASTOMERIC WALL COATING

Lab. No.: _____ Sample Identification: _____ Type: _____

(*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	_____	_____	_____

VI. <u>Wet Edge Time (ASTM D7488)</u> Date Tested: _____

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. - - - - - - - - - _____

VII. <u>Drying Time (ASTM D1640):</u> Date Tested: _____

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

VIII. <u>Volatile Organic Compounds</u> (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) - - - - - - - - - _____

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

IX. <u>Lead Lead Content (ASTM E1613 / ASTM F2853)</u> Date Tested: _____

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

Tested/Computed by: Date Tested:

_____ _____
_____ _____
_____ _____

Chemical Test/s
Tested/Computed by: _____
Chemist/Chem. Tech.
PRC Lic. No.: _____

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

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

WORKSHEET FOR THERMOPLASTIC TRAFFIC PAINT (WHITE & YELLOW)

AASHTO T249, T247

Lab. No. : _____

Sample Identification : _____

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

2. **Specific Gravity**
   a. apparent mass of specimen, without wire or sinker, in air, g - - - - - - - - - _____
   b. apparent mass of specimen (and of sinker, if used) completely immersed and of the wire partially immersed in liquid, g - - - - - - - - - _____
   c. apparent mass of totally immersed sinker (if used) and of partially immersed wire, g - - - - - - - - - _____

   $$\text{Specific Gravity, 23/23°C} = \frac{a}{(a - b)}$$ - - - - - - - - - _____

3. **Drying Time:**
   a. Start, min. - - - - - - - - - _____
   b. No pick-up time, mins. - - - - - - - - - _____
   Drying Time, mins., = (b – a) - - - - - - - - - _____

4. **Softening Point, ^{0}C** - - - - - - - - - _____

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

Dish ID	_____	_____
a. Mass of dish, empty, 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) = $\frac{e}{b} \times 100$	_____	_____
	AVE: _____	

6. **Binder, % (100 - % Ash)** - - - - - - - - - _____

7. **Glass Beads, %**
   a. Mass of sample (ash), g - - - - - - - - - _____
   b. Mass of extracted glass beads, g - - - - - - - - - _____
   % Glass Beads = $\frac{b}{A} \times 100$ - - - - - - - - - _____

8. **Extender/Filler, %**
   (for White) % Extenders = % Ash – (% TiO_2 + % Glass Beads) - - - - - - - - - _____
   (for Yellow) % Extenders = % Ash – (% $PbCrO_4$ + % Glass Beads) - - - - - - - - - _____

9. **Grading (Glass Beads):** **Wt. of Glass Beads =** _____

Sieve No.:	Mass Retained, g	Mass Passing, g	% Passing
No. 20 (0.850 mm)	_____	_____	_____
No. 30 (0.600 mm)	_____	_____	_____
No. 40 (0.425 mm)	_____	_____	_____
No. 50 (0.300 mm)	_____	_____	_____
No. 80 (0.180 mm)	_____	_____	_____
No. 100 (0.150 mm)	_____	_____	_____
Pan	_____	_____	_____

WORKSHEET FOR THERMOPLASTIC TRAFFIC PAINT (WHITE & YELLOW)

AASHTO T249, T247

Lab. No. : _____

Sample Identification : _____

10. **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

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

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

Tested/Computed by: Date Tested:

_____ _____
_____ _____
_____ _____

Chemical Test/s
Tested/Computed by: _____
Chemist
PRC Lic. No.:

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

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

WORKSHEET FOR REFLECTORIZED TRAFFIC PAINT

ASTM D2205

Lab. No. : _____

Sample Identification : _____

I. SPECIFIC GRAVITY **Date Tested:** _____

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 - - - - - - _____

$$\text{Unit Mass, kg/L} = \frac{(c - a)}{(b - a) - (d - c)}$$ - - - - - - _____

II. DRYING TIME **Date Tested:** _____

Time started - - - - - - _____

No Pick-up - - - - - - _____

III. EXTRACTION **Date Tested:** _____

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

IV. GLASS BEADS **Date Tested:** _____

1. a. Mass of sample (Paint), g - - - - - - _____

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

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

2. a. Mass of sample (Pigment), g - - - - - - _____

   b. Mass of Beads, g - - - - - - _____

   $\%\ \text{Beads (by mass of pigment)} = \frac{b}{a} \times 100$ - - - - - - _____

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

3. Grading:

Sieve Size	Mass Retained	Mass Passing	% Passing

WORKSHEET FOR REFLECTORIZED TRAFFIC PAINT

ASTM D2205

Lab. No. : _____

Sample Identification : _____

V. TOTAL SOLIDS **Date Tested: _____**

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	- - - - - -	_____	

VI. NON-VOLATILE VEHICLE **Date Tested: _____**

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

VII. EXTENDERS/FILLERS **Date Tested: _____**

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

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

VIII. PIGMENT ANALYSIS **Date Tested: _____**

For White:

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

a. Mass of empty crucible, g	- - - - - - - - -	_____
b. Mass of sample, g	- - - - - - - - -	_____
c. Mass of crucible + ignited residue, g	- - - - - - - - -	_____
$\% TiO_2 = \frac{c - a}{b} \times \%$ Pigment	- - - - - - - - -	_____

For Yellow:

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

a. Volume of Sodium Thiosulfate Solution used, ml	- - - - -	_____
b. Normality of Sodium Thiosulfate Solution used, N	- - - - -	_____
c. Mass of sample, g	- - - - - - - - -	_____
$\% PbCrO_4 = \frac{a \times b \times 0.033 \times 3.23}{c} \times \%$ Pigment	- - -	_____

Tested/Computed by: _____

Chemical Test/s

Tested/Computed by: _____ Certified by: _____

Chemist — PRC Lic. No.:_____

Chemist — PRC Lic. No.:_____

Checked and Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR GALVANIZED SHEET

ASTM A90

Lab. No. : _____

Sample Identification : _____

	R	C	L
a. Original weight of specimen, g	_____	_____	_____
b. Weight of stripped specimen, g	_____	_____	_____
c. Thickness of stripped sheet / specimen, mm	_____	_____	_____
	_____	_____	_____
	_____	_____	_____
	_____	_____	_____
Ave. =	_____	_____	_____

d. Base metal thickness, mm

$$t_{ave} = \frac{tR_{ave} + tC_{ave} + tL_{ave}}{3} = \_\_\_\_\_$$

e. Weight of coating, g/m^2	_____	_____	_____
f. Triple spot (average of e), g/m^2		_____	
g. Single spot (specimen w/ lightest coating), g/m^2		_____	
h. Unit weight of sheet, kg/m^2		_____	

$$\left(7.85 \times tave. + \frac{100}{1000} \right)$$

$t_{ave.}$ = Base metal thickness, mm

Computation:

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

where:

k – 7850 = constant

Date Tested: _____

Tested/Computed by: _____

Chemical Test/s

Tested/Computed by: _____ Certified by: _____

Chemist
PRC Lic. No.:_____

Chemist
PRC Lic. No.:_____

Checked and Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR GALVANIZED IRON PIPE

ASTM A53

Lab. No. : _____

Sample Identification : _____

Inside Diameter/Size of Pipe: _____

	I	II
a. Original weight of specimen, g	_____	_____
b. Weight of stripped specimen, g	_____	_____
c. Thickness of stripped sheet/specimen, mm	_____	_____
	_____	_____
	_____	_____
	_____	_____
Ave. :	_____	_____
d. Height of Specimen, mm	_____	_____
	_____	_____
	_____	_____
	_____	_____
Ave. :	_____	_____
e. Outside diameter of stripped	_____	_____
Specimen, mm	_____	_____
	_____	_____
	_____	_____
	_____	_____
f. Inside diameter of stripped	_____	_____
Specimen, mm	_____	_____
	_____	_____
	_____	_____
	_____	_____
g. Coated Area of Original	_____	_____
Specimen, mm^2		
A = Ao + Ai		
Ao = 3.1416 x e x d		
Ai = 3.1416 x f x d		
h. Weight of Zinc Coating, g/m^2	_____	_____

COMPUTATION:

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

Date Tested: _____

Tested/Computed by: _____

Chemical Test/s
Tested/Computed by**:** _____ Certified by: _____

Chemist
PRC Lic. No.:_____

Chemist
PRC Lic. No.:_____

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

WORKSHEET FOR GUARD RAIL

ASTM A370, A856

Lab. No. : _____

Sample Identification: _____

LABORATORY DATA

			Body	Selvedge
1.	Diameter, mm	- - - - - - - - - - - -	_____	_____
2.	Area, mm^2	- - - - - - - - - - - -	_____	_____
3.	Tensile Load, kN	- - - - - - - - - - - -	_____	_____
4.	Tensile Strength, MPa = $\frac{(3)\times 1000}{(2)}$	- - - - - - - - - - -	_____	_____

Tested/Computed by: Date Tested:

_____ _____

_____ _____

_____ _____

_____ _____

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR GUARD RAIL

ASTM A370, A856

Lab. No. : _____

Sample Identification : _____

Specimen	1	2	3
a. Original weight of specimen, g	_____	_____	_____
b. Weight of stripped specimen, g	_____	_____	_____
c. Thickness of stripped sheet / specimen, mm	_____	_____	_____
	_____	_____	_____
	_____	_____	_____
	_____	_____	_____
Ave. =	_____	_____	_____
d. Base metal thickness, mm			
$t_{ave} = \frac{t_1 + t_2 + t_3}{3} =$		_____	
e. Weight of coating, g/m^2	_____	_____	_____
f. Triple spot (average of e), g/m^2		_____	
g. Single spot (specimen w/ lightest coating), g/m^2		_____	
h. Unit weight of sheet, kg/m^2		_____	

$$\left(7.85 \times t_{ave.} + \frac{100}{1000} \right)$$

t_{ave} = Base metal thickness, mm

Computation:

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

where:

k – 7830 = constant

Date Tested: _____

Tested/Computed by: _____

Chemical Test/s

Tested/Computed by**:** _____ Certified by: _____

Chemist
PRC Lic. No.:_____

Chemist
PRC Lic. No.:_____

Checked and Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR GABION & MATTRESS

ASTM A975

Lab. No. : _____

Sample Identification: _____

LABORATORY DATA

			Body	Selvedge
1.	Diameter, mm	- - - - - - - - - - - -	_____	_____
2.	Area, mm^2	- - - - - - - - - - - -	_____	_____
3.	Tensile Load, kN	- - - - - - - - - - - -	_____	_____
4.	Tensile Strength, MPa = $\frac{(3)\times 1000}{(2)}$	- - - - - - - - - - - -	_____	_____

Tested/Computed by: Date Tested:

_____ _____

_____ _____

_____ _____

_____ _____

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR GABION & MATTRESS

ASTM A975

Lab. No. : _____

Sample Identification : _____

			Body	Selvage
a.	Original weight of specimen, g	- - - - - - - - -	_____	_____
b.	Weight of stripped specimen, g	- - - - - - - - -	_____	_____
c.	Diameter of original wire, mm	- - - - - - - - -	_____	_____
			_____	_____
			_____	_____
			_____	_____
		Average =	_____	_____
d.	Diameter of stripped wire, mm	- - - - - - - - -	_____	_____
			_____	_____
			_____	_____
			_____	_____
		Average =	_____	_____
e.	Weight of coating, g/m^2	- - - - - - - - -	_____	_____

COMPUTATION:

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

where: K = 1960 = constant

Date Tested: _____

Tested/Computed by: _____

Chemical Test/s
Tested/Computed by: _____ Certified by: _____

Chemist	Chemist
PRC Lic. No.:_____	PRC Lic. No.:_____

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

WORKSHEET FOR TIE WIRE

ASTM A641

Lab. No. : _____

Sample Identification : _____

LABORATORY DATA

1. Diameter, mm - _____
2. Area, mm^2 - _____
3. Tensile Load, kN - _____
4. Tensile Strength, MPa = $\frac{(3)\times 1000}{(2)}$ - _____

Tested/Computed by: Date Tested:

_____ _____

_____ _____

_____ _____

_____ _____

Checked and Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TIE WIRE

ASTM A641

Lab. No. : _____

Sample Identification : _____

a. Original weight of specimen, g - - - - - - - - - _____

b. Weight of stripped specimen, g - - - - - - - - - _____

c. Diameter of original wire, mm - - - - - - - - - _____

_____

_____

_____

Average = _____

d. Diameter of stripped wire, mm - - - - - - - - - _____

_____

_____

_____

Average = _____

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

COMPUTATION:

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

where: K = 1960 = constant

Date Tested: _____

Tested/Computed by: _____

Chemical Test/s
Tested/Computed by**:** _____ Certified by: _____

Chemist
PRC Lic. No.:_____

Chemist
PRC Lic. No.:_____

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

WORKSHEET FOR HIGH TENSILE WIRE

ASTM A370, A90

Lab. No. : _____

Sample Identification : _____

LABORATORY DATA

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

COMPUTATION:

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

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

Tested/Computed by: Date Tested:

_____ _____

_____ _____

_____ _____

_____ _____

Checked and Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR HIGH TENSILE WIRE

ASTM A370, A90

Lab. No. : _____

Sample Identification : _____

a. Original weight of specimen, g - - - - - - - - - _____

b. Weight of stripped specimen, g - - - - - - - - - _____

c. Diameter of original wire, mm - - - - - - - - - _____

_____

_____

_____

Average = _____

d. Diameter of stripped wire, mm - - - - - - - - - _____

_____

_____

_____

Average = _____

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

COMPUTATION:

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

where: K = 1960 = constant

Date Tested: _____

Tested/Computed by: _____

Chemical Test/s
Tested/Computed by**:** _____ Certified by: _____

Chemist
PRC Lic. No.:_____

Chemist
PRC Lic. No.:_____

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

WORKSHEET FOR WIRE MESH

ASTM A370, A90

Lab. No. : _____

Sample Identification : _____

LABORATORY DATA

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

COMPUTATION:

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

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

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

Checked and Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR WIRE MESH

ASTM A370, A90

Lab. No. : _____

Sample Identification : _____

a. Original weight of specimen, g - - - - - - - - - _____

b. Weight of stripped specimen, g - - - - - - - - - _____

c. Diameter of original wire, mm - - - - - - - - - _____

_____

_____

_____

Average = _____

d. Diameter of stripped wire, mm - - - - - - - - - _____

_____

_____

_____

Average = _____

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

COMPUTATION:

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

where: K = 1960 = constant

Date Tested: _____

Tested/Computed by: _____

Chemical Test/s
Tested/Computed by: _____ Certified by: _____

Chemist
PRC Lic. No.:_____

Chemist
PRC Lic. No.:_____

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

WORKSHEET FOR WIRE ROPE

ASTM A931

Lab. No. : _____

Sample Identification : _____

LABORATORY DATA

1. Diameter, mm - - - - - - - - - - - - - - - - - - _____
2. Area, mm^2 - - - - - - - - - - - - - - - - - - _____
3. Breaking Load, kN - - - - - - - - - - - - - - - - - - _____

Tested/Computed by: Date Tested:

_____ _____

_____ _____

_____ _____

Checked and Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR SPIKE PLATE

ASTM A370

Lab. No. : _____

Sample Identification : _____

LABORATORY DATA

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:

$$\text{Yield Strength, MPa} = \frac{(5) \times 1000}{(4)}$$

$$\text{Tensile Strength, MPa} = \frac{(6) \times 1000}{(4)}$$

$$\text{Elongation, \%} = \frac{(7a) - (7b)}{(7b)} \times 100$$

Tested/Computed by: Date Tested:

_____ _____

_____ _____

_____ _____

Checked and Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR ANCHOR NAIL

ASTM A370, E290

Lab. No. : _____

Sample Identification : _____

D A T A

(1) Class: ( ) Plain ( ) Deformed
( ) Round ( ) Square
(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 - - - - - - - - - - - - - _____

C O M P U T A T I O N

(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 REINFORCING STEEL BARS

ASTM A370, E290

Lab. No. : _____

Sample Identification : _____

D A T A

(1) Class: ( ) Plain ( ) Deformed
( ) Round ( ) Square
(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 - - - - - - - - - - - - - _____

C O M P U T A T I O N

(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:

Date Tested: _____

A. Mass of Potassium Acid Phthalate, g = _____
B. Volume of NaOH Solution, mL = _____

Calculation:

$$\text{Phosphorus Equivalent, g P/mL} = \frac{A \times 0.001347}{B \times 0.2042} = \_\_\_\_\_$$

II. Standardization of Nitric Acid (HNO_3) Solution:

Date Tested: _____

A. Volume of NaOH Solution, mL = _____
B. Phosphorus Equivalent of NaOH Solution, g P/mL = _____
C. Volume of HNO_3 Solution, mL = _____

Calculation:

$$\text{Phosphorus Equivalent, g P/mL} = \frac{A \times B}{C} = \_\_\_\_\_$$

III. Phosphorus Content

Date Tested: _____

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 = _____

Calculation:

$$\text{Phosphorus, \%} = \frac{(AB - CD) - (EB - FD)}{G} \times 100 = \_\_\_\_\_$$

Tested/Computed by: _____

Chemical Test/s
Tested/Computed by: _____ Certified by: _____

Chemist
PRC Lic. No.:_____

Chemist
PRC Lic. No.:_____

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

WORKSHEET FOR PHOSPHORUS CONTENT DETERMINATION OF STEEL BARS (BY SPECTROMETER)

ASTM E415

Lab. No. : _____

Sample Identification : _____

Type : _____

RESULTS, %:

Trial 1 = _____

Trial 2 = _____

Trial 3 = _____

AVERAGE, % = _____

QUALITY CONTROL (QC):

QC, CRM ID = _____

QC, CRM, Actual Value (AV), % = _____

QC, CRM, Certified Value (CV), % = _____

% Accuracy = _____

$$\frac{\%\ AV}{\%\ CV} \times 100$$

Date Tested: _____

Tested/Computed by: _____

Chemical Test/s
Tested/Computed by**:** _____ Certified by: _____

Chemist — PRC Lic. No.:_____

Chemist — PRC Lic. No.:_____

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

WORKSHEET FOR MISCELLANEOUS STEEL PRODUCTS

ASTM A370

Lab. No. : _____

Sample Identification : _____

LABORATORY DATA

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

COMPUTATION:

$$\text{Yield Strength, MPa} = \frac{(5) \times 1000}{(4)}$$

$$\text{Tensile Strength, MPa} = \frac{(6) \times 1000}{(4)}$$

$$\text{Elongation, \%} = \frac{(7a) - (7b)}{(7b)} \times 100$$

Tested/Computed by: Date Tested:

_____ _____

_____ _____

_____ _____

Checked and Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR CONCRETE MASONRY UNIT

ASTM C109, C140

Lab. No. : _____

Sample Identification : _____

		Specimen #1 CMU _____"	Specimen #2 CMU _____"	Specimen #3 CMU _____"
a.	Width,(W) mm			
b.	Length,(L) mm			
c.	Height,(H) mm			
d.	Net cross-sectional Area, mm^2			
e.	Compressive Strength:			
f.	Ultimate load, N			
g.	Net Compressive Strength, MPa (**f/d**)			
h.	Average Net Compressive Strength, MPa			
i.	Moisture content, %			
j.	Water absorption, kg/m^3			
k.	CMU Dry density, kg/m^3			
l.	Average CMU dry density, kg/m^3			

Sample I.D.	Mass received (1) kg	Dry Mass (2) kg	Wet Mass (3) kg	Immersed Mass (4) kg

Computation:

$$\text{Moisture content, \%} = \frac{(1)-(2)}{(3)-(2)} \times 100 = \_\_\_\_\_$$

$$\text{Water absorption, } kg/m^3 = \frac{(3)-(2)}{(2)} \times 1000 = \_\_\_\_\_$$

$$\text{Net cross-sectional Area, } mm^2 = \frac{(3)-(4)}{(c)} \times (1000)^2 = \_\_\_\_\_$$

$$\text{CMU (dry density), } kg/m^3 = \frac{(2)}{(3)-(4)} \times 1000 = \_\_\_\_\_$$

Tested/Computed by: Date Tested:

_____ _____

_____ _____

_____ _____

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR CONCRETE PIPE

AASHTO T280

Lab. No. : _____

Sample Identification : _____

Kind of Pipe: _____ Nominal Internal Diameter, mm: _____

Markings:

Trade Marks _____ Class _____

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, lbs. - - - - - - - - _____
5. Ultimate load, lbs. - - - - - - - - _____

Reinforcement:

Type of reinforcement: Circular _____ Elliptical _____

6. Diameter, mm - - - - - - - - _____
7. Number of lines - - - - - - - - _____
8. Number of hoops - - - - - - - - _____
9. Spacing, mm - - - - - - - - _____
10. Net protective covering, mm - - - - - - - - _____

Absorption Test:

11. Oven dry mass, g - - - - - - - - _____
12. Wet mass, g - - - - - - - - _____

WORKSHEET FOR CONCRETE PIPE

AASHTO T280

COMPUTATION: (Strength)

Load to produce 0.3 mm crack, N/m/mm $= \dfrac{(4) \times 4.448222}{(3a) \times (1)} =$ _____

Ultimate load, N/m/mm $= \dfrac{(5) \times 4.448222}{(3a) \times (1)} =$ _____

Total Area of reinforcement, $mm^2/m = \dfrac{(6)^2 \times 0.7854 \times (8)}{(3a)} =$ _____

Absorption, % $= \dfrac{(12) - (11)}{(11)} \times 100 =$ _____

Tested/Computed by: Date Tested:

_____ _____

_____ _____

_____ _____

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR COMPRESSIVE STRENGTH TEST

ASTM C39

Lab. No.: _____

Sample Identification: _____

Type of Specimen: _____

Lab. No.	Sample Identification	Date Sampled	P r o j e c t	Age at date of tests, days	Cross Sectional Area, sq. mm	Compressive Strength		
						Max. Load kN	psi	MPa

Tested/Computed by _____ Date Tested _____

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR FLEXURAL STRENGTH TEST

ASTM C78

Lab. No.: _____

Sample Identification: _____

Type of Specimen: _____

Lab. No.	Sample Identification	Date Sampled	P r o j e c t	Age at date of tests, days	Cross Sectional Area, sq. mm	Flexural Strength		
						Max. Load kN	psi	MPa

Tested/Computed by _____ Date Tested _____

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR CONCRETE CORE THICKNESS DETERMINATION

ASTM C42, C174

Lab. No. : _____

Sample Identification : _____

Design Thickness : _____

Lab. No.	I.D.	Station	1	2	3	4	5	6	7	8	Center	Avg. Thickness, cm	Corrected Thickness

Tested/Computed by: Date Tested:

_____ _____

_____ _____

_____ _____

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET ON WATER FOR CONCRETING

AASHTO T26

Lab. No. : _____

Sample Identification : _____

I. **APPEARANCE** = _____ **Date Tested:** _____
COLOR = _____
ODOR = _____

II. **TOTAL SOLIDS** **Date Tested:** _____

Trial No.	Container ID	Sample Volume, mL	Mass of Empty Container, g	Mass of Container + Residue, g	TOTAL SOLIDS, %
1					
2					
AVERAGE:					

Calculation:

$$\textbf{TOTAL SOLIDS, \%} = \frac{(\text{Mass}_{\text{container + residue}} - \text{Mass}_{\text{empty container}})}{5} = \_\_\_\_\_$$

III. **pH VALUE** **Date Tested:** _____

Trial No.	Temperature, ^{0}C	pH
1		
2		
AVERAGE:		

IV. **TIME OF SETTING** **Date Tested:** _____

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

	TIME OF SETTING	
	Control	**Sample**
a. Time Made		
b. Initial Set		
c. Final Set		

V. **AUTOCLAVE EXPANSION** **Date Tested:** _____

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

	AUTOCLAVE EXPANSION, %	
	Control	**Sample**
La - Length comparator reading of specimen before Autoclaving, mm		
Lb - Length comparator reading of specimen after Autoclaving, mm		
G - Gauge length, mm		

Calculation:

$$\textbf{Autoclave Expansion, \%} = \frac{Lb - La}{G} \times 100$$

WORKSHEET ON WATER FOR CONCRETING

AASHTO T26

VI. COMPRESSIVE STRENGTH **Date Tested: _____**

Date Molded: _____

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

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/Computed by: _____

Chemical Test/s
Tested/Computed by**:** _____ Certified by: _____

Chemist
PRC Lic. No.:_____

Chemist
PRC Lic. No.:_____

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

WORKSHEET FOR CURING COMPOUND

ASTM C309, C156, D1644

Lab. No. : _____

Sample Identification : _____

CEMENT: _____
WATER : _____
SAND : _____

A. SPECIFIC GRAVITY: **Date Tested: _____**

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 = $\frac{c - a}{b - a}$ - - - - - - - - - - - - _____

B. DRYING TIME: **Date Tested: _____**

Application Time - - - - - - - - - - - - _____
Dry to touch, h - - - - - - - - - - - - _____

C. WATER RETENTION: **Date Tested: _____**

Mass of empty mold, g - - - - - - - - - - - - _____
Mass of mold & specimen, g - - - - - - - - - - - - _____
Mass of mold & surface dry specimen, g - - - - - - - - - - - - _____
Mass of mold, specimen and seal, g - - - - - - - - - - - - _____
Surface Area of specimen, cm^2 - - - - - - - - - - - - _____
Mass of curing compound, g
= (Unit Mass x Surface Area x Rate of Application) - - - - - - - - - - - - _____

Mass of mold, specimen, seal and curing compound, g - - - - - - - - - - - - _____
Mass after: 3 hours, g - - - - - - - - - - - - _____
48 hours, g - - - - - - - - - - - - _____
72 hours, g - - - - - - - - - - - - _____

CORRECTION PAN:
Mass of correction pan, g
Mass of correction pan & curing compound, g
Mass after: 3 hours, g - - - - - - - - - - - - _____
48 hours, g - - - - - - - - - - - - _____
72 hours, g - - - - - - - - - - - - _____
Moisture loss, g - - - - - - - - - - - - _____
Correction - - - - - - - - - - - - _____
Mass of corrected moisture loss, g - - - - - - - - - - - - _____
Loss, g/cm^2 - - - - - - - - - - - - _____

Tested/Computed by: _____

Chemical Test/s
Tested/Computed by**:** _____ Certified by: _____
Chemist
PRC Lic. No.:_____

Chemist
PRC Lic. No.:_____

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

WORKSHEET FOR MINERAL FILLER

ASTM D546, C114

Lab. No. : _____

Sample Identification : _____

I. GRADING: **Date Tested: _____**

Sieve No.	Percent Passing (by Mass)
1. No. 16 (1.18 mm)	
2. No. 30 (600 µm)	
3. No. 50 (300 µm)	
4. No. 200 (75 µm)	

II. PLASTICITY INDEX: **Date Tested: _____**

Plasticity Index **=** Liquid Limit – Plastic Limit = _____

III. LOSS ON IGNITION (LOI): **Date Tested: _____**

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 = _____

Tested/Computed by: _____

Chemical Test/s
Tested/Computed by**:** _____ Certified by: _____
Chemist
PRC Lic. No.:_____

Chemist
PRC Lic. No.:_____

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

WORKSHEET FOR HYDRATED LIME

ASTM C25

Lab. No. : _____

Sample Identification : _____

I. PHYSICAL TEST/S:

A. Grading

Date Tested: _____

Sieve No.	Percent Passing (by Mass)
1.	
2.	
3.	
4.	
5.	

II. CHEMICAL TEST/S:

		A. Calcium Oxide (CaO)	B. Magnesium Oxide (MgO)
		Date Tested: _____	**Date Tested: _____**
Weight of sample, g	=	_____	_____
Weight of crucible + Ignited residue, g	=	_____	_____
Weight of empty crucible	=	_____	_____
Weight of ignited residue	=	_____	_____
Factor	=	_____-_____	_____72.4_____
Percentage, %	=	_____	_____

Tested/Computed by: _____

Chemical Test/s
Tested/Computed by**:** _____ Certified by: _____

Chemist
PRC Lic. No.:_____

Chemist
PRC Lic. No.:_____

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

WORKSHEET FOR FLY ASH

ASTM C311

Lab. No. : _____

Sample Identification : _____

Type : _____

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

I. Moisture Content

a. Mass of Container, g = _____

b. Mass of Sample, g = _____

c. Mass of Container + Sample (Before Heating), g = _____

d. Mass of Container + Sample (After Heating), g = _____

e. Moisture Content, % = _____

Calculation:

$$\text{MOISTURE CONTENT, \%} = \frac{c - d}{b} \times 100$$

II. Loss on Ignition (LOI)

a. Mass of Sample, g = _____

b. Mass of Empty Crucible, g = _____

c. Mass of Crucible + Sample (Before Ignition), g = _____

d. Mass of Crucible + Sample (After Ignition), g = _____

e. Loss on Ignition (LOI), % = _____

Calculation:

$$\text{LOI, \%} = \frac{c - d}{b} \times 100$$

WORKSHEET FOR FLY ASH

ASTM C311

Lab. No. : _____

Sample Identification : _____

Type : _____

III. Autoclave Expansion:

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

La - Length comparator reading of specimen before Autoclaving, mm = _____
Lb - Length comparator reading of specimen before Autoclaving, mm = _____
G - Gauge length, mm = _____

$$\text{Autoclave Expansion, \%} = \frac{Lb - La}{G} \times 100 = \_\_\_\_\_$$

IV. Compressive Strength Date Tested: _____

Date Molded: _____

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

Age in Days	Date	Trial No.	Compressive Strength, mPa	
			Control	Sample
7 days		1		
		2		
		3		
		AVERAGE:		

$$\text{\% Control, @ 7 days} = \frac{\text{Compressive Strength}_{sample}}{\text{Compressive Strength}_{control}} \times 100 = \_\_\_\_\_$$

V. 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/Computed by: Date Tested:

_____ _____

_____ _____

_____ _____

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR RETROREFLECTIVE SHEETING

ASTM 4956

Lab. No. : _____

Sample Identification : _____

I. Adhesion (ASTM D4956): Date Tested: _____

Adhesion **=** _____

II. Shrinkage (ASTM D4956): Date Tested: _____

1. After 10 minutes, mm **=** _____
2. After 24 hours, mm = _____

III. Flexibility (ASTM D4956): Date Tested: _____

Flexibility **=** _____

Tested/Computed by:

_____
_____
_____

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

WORKSHEET FOR CERAMIC AND GLASS TILES

ASTM C1505

1. Span Length, L (mm) _____
2. Overhang, l (mm) _____

Lab. No.	Length, mm	Width, mm	Thickness, mm	Breaking Load, N	Breaking Strength, N	Modulus of Rupture, N/mm^2

Computation:

$$\text{Breaking Strength (B)} = \frac{\text{Breaking Load (P) x Span Length (L)}}{\text{Width (b)}}$$

$$\text{Modulus of Rupture (R)} = \frac{3 \text{ x Breaking Strength (B)}}{2 \text{ x Thickness}^2 \text{ (h}^2\text{)}}$$

Tested/Computed by: Date Tested:

_____ _____

_____

_____

_____

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR GEOTEXTILE

ASTM D6241, D4632

Lab. No. : _____

Sample Identification : _____

MATERIAL: _____

GRAB TENSILE STRENGTH

Machine Direction	
1	
2	
3	
4	
5	
Average	
Cross-Machine Direction	
1	
2	
3	
4	
5	
Average	

PUNCTURE TEST

1	
2	
3	
4	
5	
Average	

Tested/Computed by:

_____

_____

_____

Date Tested:

_____

_____

_____

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR SEVEN WIRE STRAND

ASTM A416

Lab. No. : _____

Sample Identification : _____

LABORATORY DATA

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

COMPUTATION:

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

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

$$\text{Elongation, \%} = \frac{(5a) - (5b)}{(5b)} \times 100$$

Tested/Computed by: Date Tested:

_____ _____

_____ _____

_____ _____

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR CARBON FIBER SHEET / PLATE

ASTM D3039

Lab. No. : _____

Sample Identification : _____

Tensile:

Sample No.	Thickness, mm	Width, mm	Area, mm^2	Ultimate Load, KN
1				
2				
3				

COMPUTATION:

Average Ultimate Load, KN =

Tensile Strength, MPa =

Tested/Computed by: Date Tested:

_____ _____

_____ _____

_____ _____

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR HYDRAULIC CEMENT GROUT

ASTM C1107, C476

Lab. No.	Sample Identification	Age in days	Dimensions			Strength
			Length	Width	Area	Max Load, Kn

Lab. No.	Average Max. Strength	Compressive Strength, MPa	Compressive Strength, psi

Tested/Computed by: _____

Date Tested: _____

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR EROSION MAT

ASTM D6459

Lab. No. : _____

Sample Identification : _____

TENSILE STRENGTH

Type : _____

Strip Width, mm : _____

MACHINE DIRECTION

Specimen No.	Breaking Force (N)	Elongation (mm)
1		
2		
3		
AVERAGE		

Breaking Force Strength (N/m) =

CROSS-MACHINE DIRECTION

Specimen No.	Breaking Force (N)	Elongation (mm)
1		
2		
3		
AVERAGE		

Breaking Force Strength (N/m) =

Tested/Computed by: Date Tested:

_____ _____

_____ _____

_____ _____

_____ _____

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR EPOXY RESIN

ASTM D1763, D4142

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 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:

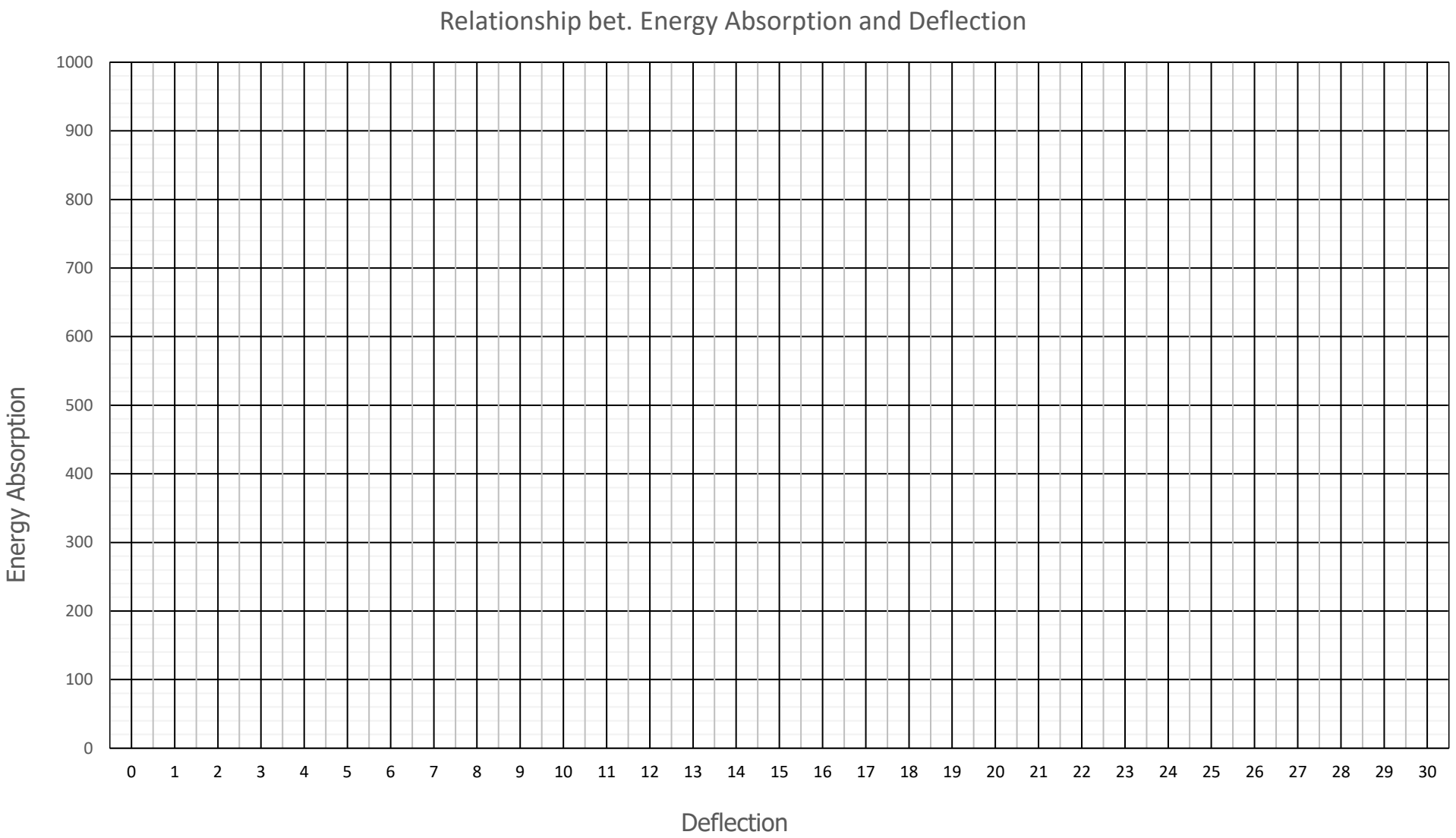
_____
_____
_____

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) = _____

Date Tested: _____

II. Alkali Resistance (ASTM C979/C979M) = _____

Date Tested: _____

III. Sulfates Soluble in Hydrochloric Acid (ASTM D50): Date Tested: _____

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:

$$SO_3, \% = \frac{d \times 0.343}{a} \times 100$$

IV. Matter Soluble in Water (ASTM D1208): Date Tested: _____

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/Computed by: _____ Certified by: _____

Chemist Chemist

PRC Lic. No.:_____ PRC Lic. No.:_____

Checked and Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR TENSILE STRENGTH OF PLASTICS

ASTM D638

Lab. No. : _____

Sample Identification : _____

LABORATORY DATA

1. Width, mm - - - - - - - - - - - - - - - - - - _____
2. Thickness, mm - - - - - - - - - - - - - - - - - - _____
3. Area, mm^2 - - - - - - - - - - - - - - - - - - _____
4. Breaking Load, kN - - - - - - - - - - - - - - - - - - _____

COMPUTATION:

6. Tensile Strength, MPa = $\frac{(4)\times 1000}{(3)}$ =

7. Modulus of Elasticity, MPa = $\frac{(6)\times(5c)}{(5b)}$ =

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

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR FLEXURAL STRENGTH OF PLASTICS

ASTM D790

Lab. No. : _____

Sample Identification : _____

LABORATORY DATA

1. Width, mm - - - - - - - - - - - - - - - - - - _____
2. Thickness, mm - - - - - - - - - - - - - - - - - - _____
3. Span Length, mm - - - - - - - - - - - - - - - - - - _____
4. Maximum Load, N - - - - - - - - - - - - - - - - - - _____

COMPUTATION:

5. Flexural Strength, MPa = $\frac{3}{2} \times \frac{(4)(3)}{(1)(2)^2}$ =

Tested/Computed by: Date Tested:

_____ _____

_____ _____

_____ _____

_____ _____

Checked/Reviewed by: _____

(Head of Materials Testing Section/Unit)

WORKSHEET FOR ACCELERATED WEATHERING

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)