PETROBRAS

N-2628	REV. A	ENGLISH	11 / 2012

CONTEC
Comissão de Normalização Técnica

SC-14
Paintwork and Anticorrosive Coatings

High Thickness Epoxy Polyamide Paint

3rd Amendment

This is the 3rd Amendment to PETROBRAS N-2628 REV. A, incorporated the 2nd Amendment, and it is used to alter the text of the Standard in the parts indicated below:

NOTE 1 The news pages with the performed amendments are placed in its corresponding positions.
NOTE 2 The amended pages, indicated the date of the amendment, are placed at the end of this standard, in chronological order, and shall not be used.

- Section 2:

Inclusion of ABNT NBR 15877:2010 **(2nd Amendment)**
Alteration of ASTM D4541 to ASTM D 4541:2009 **(2nd Amendment)**
Replacement of PETROBRAS N-1212 by ABNT NBR 9676 **(3rd Amendment)**
Replacement of PETROBRAS N-1363 by ABNT NBR 15742 **(3rd Amendment)**
Replacement of PETROBRAS N-1538 by ABNT NBR 8096 **(3rd Amendment)**
Replacement of PETROBRAS N-1810 by ABNT NBR 12103 **(3rd Amendment)**
Replacement of PETROBRAS N-1987 by N-13 **(3rd Amendment)**.

- Subsection 3.4.2: **(3rd Amendment)**

Alteration of reference.

- TABLE 1: **(3rd Amendment)**

Alteration of references in the Table

- TABLE 2:

Substitution of ASTM D 4541 A4 by ABNT NBR 15877:2010, Annex 2 or ASTM D 4541:2009, Method D - Equipment Type IV **(2nd Amendment)**
Replacement of PETROBRAS N-1538 by ABNT NBR 8096 **(3rd Amendment)**

- TABLE B-1: **(1st Amendment)**

Alteration of code relating to safety-yellow color from 2585 to 2586.

PETROBRAS

N-2628	REV. A	ENGLISH	DEC / 2003

CONTEC
Comissão de Normalização Técnica

SC-14
Paintwork and Anticorrosive Coatings

HIGH THICKNESS EPOXY POLYAMIDE PAINT

Revalidation

Revalidated in 06/2009, with the following change in the reference documents:

Substitution: PETROBRAS N-1987 by PETROBRAS N-0013.

PETROBRAS

N-2628	REV. A	ENGLISH	DEC / 2003

HIGH THICKNESS EPOXY POLYAMIDE PAINT

Specification

This Standard replaces and cancels its previous revision.

The CONTEC - Authoring Subcommittee provides guidance on the interpretation of this Standard when questions arise regarding its contents. The Department of PETROBRAS that uses this Standard is responsible for adopting and applying the clauses thereof.

Technical Requirement: a provision established as the most adequate and which shall be used strictly in accordance with this Standard. If a decision is taken not to follow the requirement ("non-conformity" to this Standard) it shall be based on well-founded economic and management reasons, and be approved and registered by the Department of PETROBRAS that uses this Standard. It is characterized by the verb forms "shall," "it is necessary...," "is required to...," "it is required that...," "is to...," "has to...," "only ... is permitted," and other equivalent expressions having an imperative nature.

Recommended Practice: a provision that may be adopted under the conditions of this Standard, but which admits (and draws attention to) the possibility of there being a more adequate alternative (not written in this Standard) to the particular application. The alternative adopted shall be approved and registered by the Department of PETROBRAS that uses this Standard. It is characterized by the verbal form "should" and equivalent expressions such as "it is recommended that..." and "ought to..." (verbs of a nonmandatory nature). It is indicated by the expression: **[Recommended Practice].**

Copies of the registered "non-conformities" to this Standard that may contribute to the improvement thereof shall be submitted to the CONTEC - Authoring Subcommittee.

Proposed revisions to this Standard shall be submitted to the CONTEC - Authoring Subcommittee, indicating the alphanumeric identification and revision of the Standard, the clause(s) to be revised, the proposed text, and technical/economic justification for revision. The proposals are evaluated during the work for alteration of this Standard.

CONTEC
Comissão de Normas Técnicas

SC - 14
Paintwork and Anticorrosive Coatings

Foreword

PETROBRAS Technical Standards are prepared by Working Groups – GTs (consisting of specialists from PETROBRAS and its Subsidiaries), are commented by PETROBRAS Units and PETROBRAS Subsidiaries, are approved by the Authoring Subcommittees - SCs (consisting of specialists from the same specialty, representing the various PETROBRAS Units and PETROBRAS Subsidiaries), and ratified by the CONTEC Plenary Assembly (consisting of representatives of the PETROBRAS Units and PETROBRAS Subsidiaries). A PETROBRAS Technical Standard is subject to revision at any time by its Authoring Subcommittee and shall be reviewed every 5 years to be revalidated, revised or cancelled. PETROBRAS Technical Standards are prepared in accordance with standard PETROBRAS N-1. For complete information about PETROBRAS Technical Standards see PETROBRAS Technical Standards Catalog.

FOREWORD

This Standard is the English version (issued in APR/2004) of Standard PETROBRAS N-2628 REV. A DEC/2003.

1 SCOPE

1.1 This Standard establishes the characteristics, verifiable in the laboratory, required for high thickness epoxy-polyamide paint with a low content of organic volatiles, supplied in 2 containers: one containing the epoxy resin and pigments (component A) and the other containing the amide-based curing agent (component B).

1.2 This Standard applies to services started after its date of issuance.

1.3 This Standard contains Technical Requirements and Recommended Practices.

2 SUPPLEMENTARY DOCUMENTS

The documents listed below are mentioned in the text and contain valid requirements for the present Standard.

PETROBRAS N-13	- Requisitos Técnicos para Serviços de Pintura;
PETROBRAS N-1219	- Cores;
PETROBRAS N-1288	- Inspeção de Recebimento de Recipientes Fechados;
PETROBRAS N-1358	- Sólidos por Volume - Determinação pelo Disco de Aço;
PETROBRAS N-1367	- Determinação do Teor de Sólidos por Massa em Tintas e Produtos Afins;
ABNT NBR 8094	- Material Metálico Revestido e Não Revestido - Corrosão por Exposição à Névoa Salina;
ABNT NBR 8096	- Material metálico revestido e não-revestido - Corrosão por exposição ao dióxido de enxofre - Método de ensaio;
ABNT NBR 9676	- Tintas - Determinação do poder de cobertura (opacidade) - Método de ensaio;
ABNT NBR 12103	- Tintas - Determinação do descaimento - Metodo de ensaio;
ABNT NBR 15742	- Tintas e vernizes - Determinação de vida útil da mistura (“pot-life”);
ABNT NBR 15877:2010	- Pintura Industrial - Ensaio de Aderência por Tração;
ISO 8501-1	- Preparation of Steel Substrates Before Application of Paints and Related Products;
ASTM D 523	- Standard Test Method for Specular Gloss;
ASTM D 562	- Standard Test Method for Consistency of Paints Using the Stormer Viscometer;
ASTM D 870	- Standard Practice for Testing Water Resistance of Coatings Using Water Immersion;
ASTM D 1210	- Standard Test Method for Fineness of Dispersion of Pigment-Vehicle Systems by Hegman-Type Gage;
ASTM D 1308	- Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes;
ASTM D 1475	- Standard Test Method For Density of Paint, Varnish, Lacquer and Related Products;
ASTM D 1640	- Standard Test Methods for Drying, Curing or Film Formation of Organic Coatings at Room Temperature;

ASTM D 2247 - Standard Practice for Testing Water Resistance of Coatings in 100 % Relative Humidity;

ASTM D 4541:2009 - Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers.

Note: For documents for which only the Portuguese version is available, the PETROBRAS department that uses this Standard should be consulted for any information required for the specific application.

3 GENERAL CONDITIONS

3.1 Appearance of Components A and B

Components A and B shall be homogeneous and show no skinning and thickening in a freshly-opened can.

Note: When paint is supplied in aluminum color (0170), the aluminum pigment in paste form may be supplied in a separate packaging (component C). It shall be of the leafing type. Upon receipt the paste shall be homogeneous and show no substantial separation between the pigment and the liquid, or drying or hardening in the container.

3.2 Packaging

3.2.1 Cans shall be straight circular cylindrical in shape.

3.2.2 For sealing packaging, any material capable of causing degradation or contamination of the paint shall not be used.

3.3 Conditions and Filling of Containers

3.3.1 The containers holding the components of this paint shall be in good conditions and duly labeled or marked on the side, in accordance with the requirements of this Standard and standard PETROBRAS N-1288.

3.3.2 The containers shall contain at least the quantity mentioned in the respective indication.

3.4 Storage Stability

3.4.1 Components A and B shall demonstrate stability during storage in a closed container at a temperature below 40 ºC, ensuring their use for at least 12 months from the date of manufacture.

3.4.2 This period of use may be extended for 2 additional periods of 6 months, through repetition and prior approval of the tests performed at the time of supply, in accordance with standard PETROBRAS N-13. **[Recommended Practice]**

3.5 Dilution

When necessary, this paint may be diluted according to the manufacturer's instructions in order to facilitate its application. **[Recommended Practice]**

3.6 Marking

The label or body of the containers shall bear at least the following information:

a) standard PETROBRAS N-2628;
b) high thickness epoxy polyamide paint;
c) identification of components: A or B;
d) thinner to be used;
e) quantity contained in container, in liters and in kg;
f) manufacturer's name and address;
g) lot number or identifying signal;
h) product expiration date;
i) mixing ratio by mass and volume.

4 SPECIFIC CONDITIONS

4.1 Requirements for Components A and B

4.1.1 Components A and B shall be homogeneous. Should they show any evidence of settling, it shall be capable of being easily homogenized (manually).

4.1.2 Identification of the resin of component A and of the curing agent shall be made by spectroscopy in the infrared region. The spectra obtained after evaporation of the solvents shall present the characteristic bands of the epoxy resin and curing agent, free from contaminants and in accordance with the spectra of ANNEX A.

4.2 Requirements for the Ready-to-Apply Product

4.2.1 The requirements for the ready-to-apply product, with components A and B duly mixed, are set out in TABLE 1.

TABLE 1 - REQUIREMENTS FOR THE READY-TO-APPLY PRODUCT

Tests	Dry Film Thickness (μm)	Requirements		Standards to be Used
		Min.	Max.	
Density	-	1.4	1.6	ASTM D 1475
Solids by Mass, %	-	85	-	PETROBRAS N-1367
Solids by Volume, %	-	80	-	PETROBRAS N-1358
Consistency (KU)	-		110	ASTM D 562
Sagging, μm (Dry Film)	-	240	-	PETROBRAS N-1810
Pot Life of Mixture, h	-	2	-	PETROBRAS N-1363
Dry to Touch, time in h	200 to 240	-	4	ASTM D 1640
Dry Through, time in h	200 to 240	-	16	ASTM D 1640
Dry to Recoat, time in h	200 to 240	16	48	ASTM D 1640
Fineness of Grind, μm	-	-	50	ASTM D 1210
Hiding Power	See TABLE 3			PETROBRAS N-1212

Note: For paint in aluminum color (code 0170) consider the following values:

a) density: 1.0 minimum and 1.4 maximum;
b) solids by mass: 80 % minimum;
c) solids by volume: 70 % minimum.

4.2.2 The final product, which is obtained after mixing the 2 paint components, shall show a uniform consistency.

4.3 Dry Film Characteristics

4.3.1 The dry film characteristics are given in TABLE 2 and in items 4.3.2, 4.3.3 and 4.3.4.

TABLE 2 - DRY FILM CHARACTERISTICS

Tests	Dry Film Thickness (μm)	Minimum Requirements	Standards to be used
Adhesion, MPa	200 to 240	10	ABNT NBR 15877:2010 or ASTM D 4541:2009, Method D - Equipment Type IV
Gloss at 60°, GU	200 to 240	60	ASTM D 523
Salt Spray Resistance, h	400 to 450	2 000	ABNT NBR 8094
Resistance in 100 % Relative Humidity, h	400 to 450	2 000	ASTM D 2247
SO_2 resistance, (2.0 L), cicles	400 to 450	5	ABNT NBR 8096
Xylene Immersion Resistance, h	400 to 450	1 000	ASTM D 1308
Distilled Water Immersion Resistance 40 ºC, h	400 to 450	2 000	ASTM D 870
Salt Water Immersion Resistance (3.5 % NaCl), 40 ºC, h	400 to 450	2 000	ASTM D 1308
NaOH Immersion Resistance, at 10 %, h	400 to 450	2 000	ASTM D 1308

Note: For aluminum-colored paint (code 0170) it is not necessary to carry out SO_2 and NaCl resistance tests.

4.3.2 When observing the panels, blisters or corrosion points shall not be found on the surface, neither shall penetration in the notch exceeding 3 mm be observed after 2 000 hours of salt spray testing have elapsed.

4.3.3 There shall be no corrosion points or blistering on the film after the respective time periods established for the following tests have elapsed: resistance to 100 % relative humidity, SO_2 resistance, distilled water immersion resistance, salt water immersion resistance and NaOH immersion resistance. Alteration in the film color after the SO_2 exposure and immersion and 100 % relative humidity tests is admitted.

4.3.4 After the immersion test, with regard to resistance to xylene, no blistering on the film or alteration in the color of the solvent used in the test shall be observed.

5 INSPECTION

5.1 Visual Inspection

Check if the conditions indicated in items 3.1, 3.2, 3.3 and 3.6 have been fulfilled and reject items supplied in disagreement therewith.

5.2 Tests

5.2.1 The tests to be performed are those contained in TABLES 1, 2 and in item 4.1.2.

5.2.2 For the performance of the tests indicated in TABLES 1 and 2, the conditions described in items 5.2.2.1 to 5.2.2.7 shall be observed.

5.2.2.1 Paint is to be applied on the test panels at least 15 minutes after mixing and homogenizing the components.

5.2.2.2 For the adhesion test the paint shall be applied directly on the AISI-1020 carbon steel plate, with a C rust grade, in accordance with standard ISO 8501-1. Surface preparation shall be performed by mechanical cleaning until grade CSt3 of the referenced standard is achieved. The panels shall be washed with running water (fresh and clean) and a nylon brush,before and after CSt3 treatment. Plate dimensions shall be 150 mm x 80 mm and at least 2.0 mm in thickness.

5.2.2.3 For the other tests, paint shall be applied directly on the AISI-1020 carbon steel plate. Surface preparation shall be performed by abrasive blasting to near white metal (minimum), grade Sa 2 1/2 of standard ISO 8501-1. The anchor profile shall be 30 μm to 70 μm. Plate dimensions shall be 150 mm x 80 mm and at least 2.0 mm thick.

5.2.2.4 The tests in TABLE 2 shall be performed 10 days after the paint is applied on the panels. During this period, the panels shall be kept at a temperature of 25 (± 2) °C and a relative humidity of 60 (± 5) %.

5.2.2.5 Panels should be painted by means of a gun. **[Recommended Practice]**

5.2.2.6 For the salt spray resistance test, a single notch shall be made at the center of the specimen, parallel to its largest dimension and 30 mm away from the top and bottom edges.

5.2.2.7 The edges of the test panels shall be suitably protected in order to prevent the premature appearance of a corrosive process at those points.

/ANNEX A

ANNEX A - FIGURES

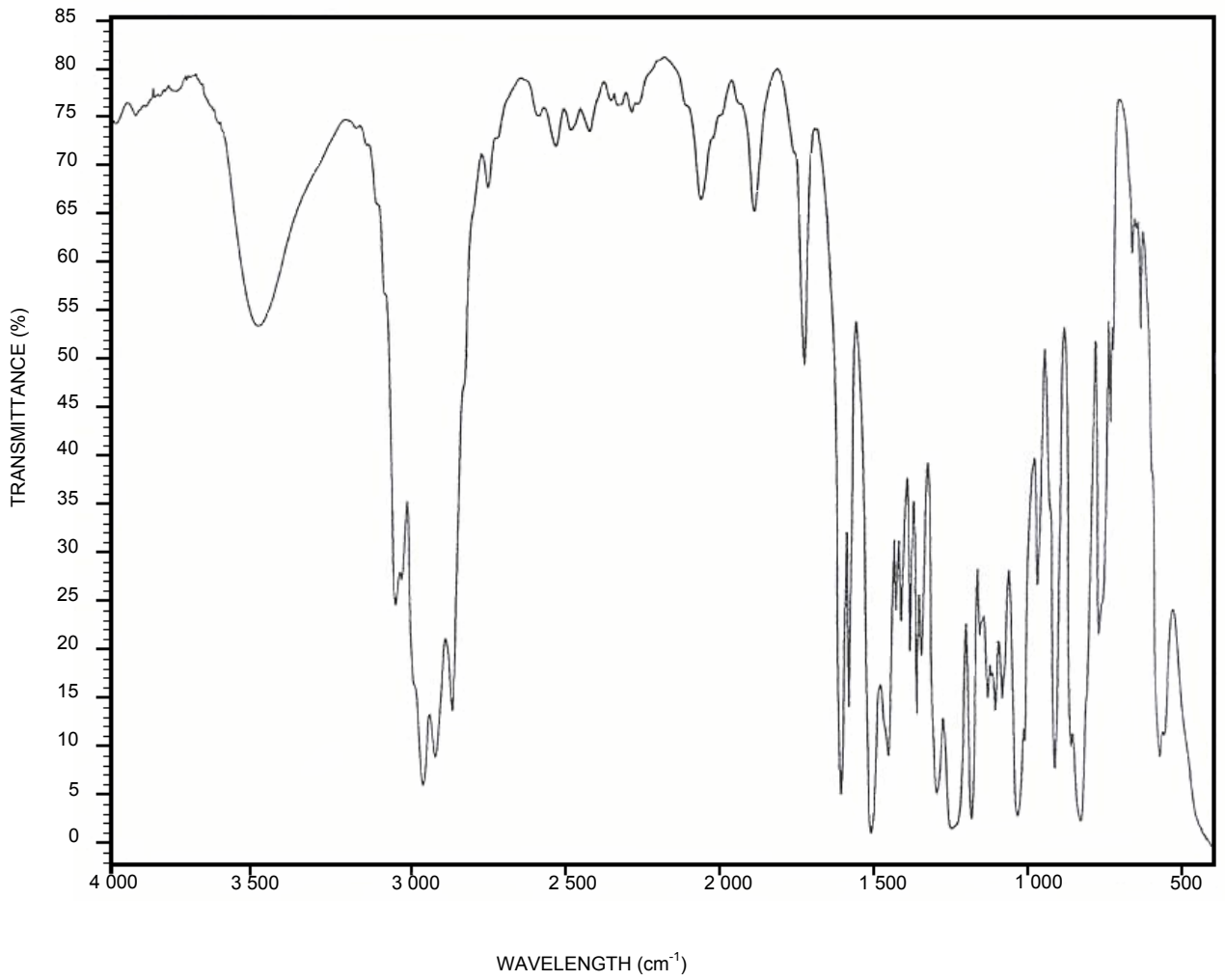

FIGURE A-1- SPECTROGRAM OF EPOXY RESIN - GRAPH 1

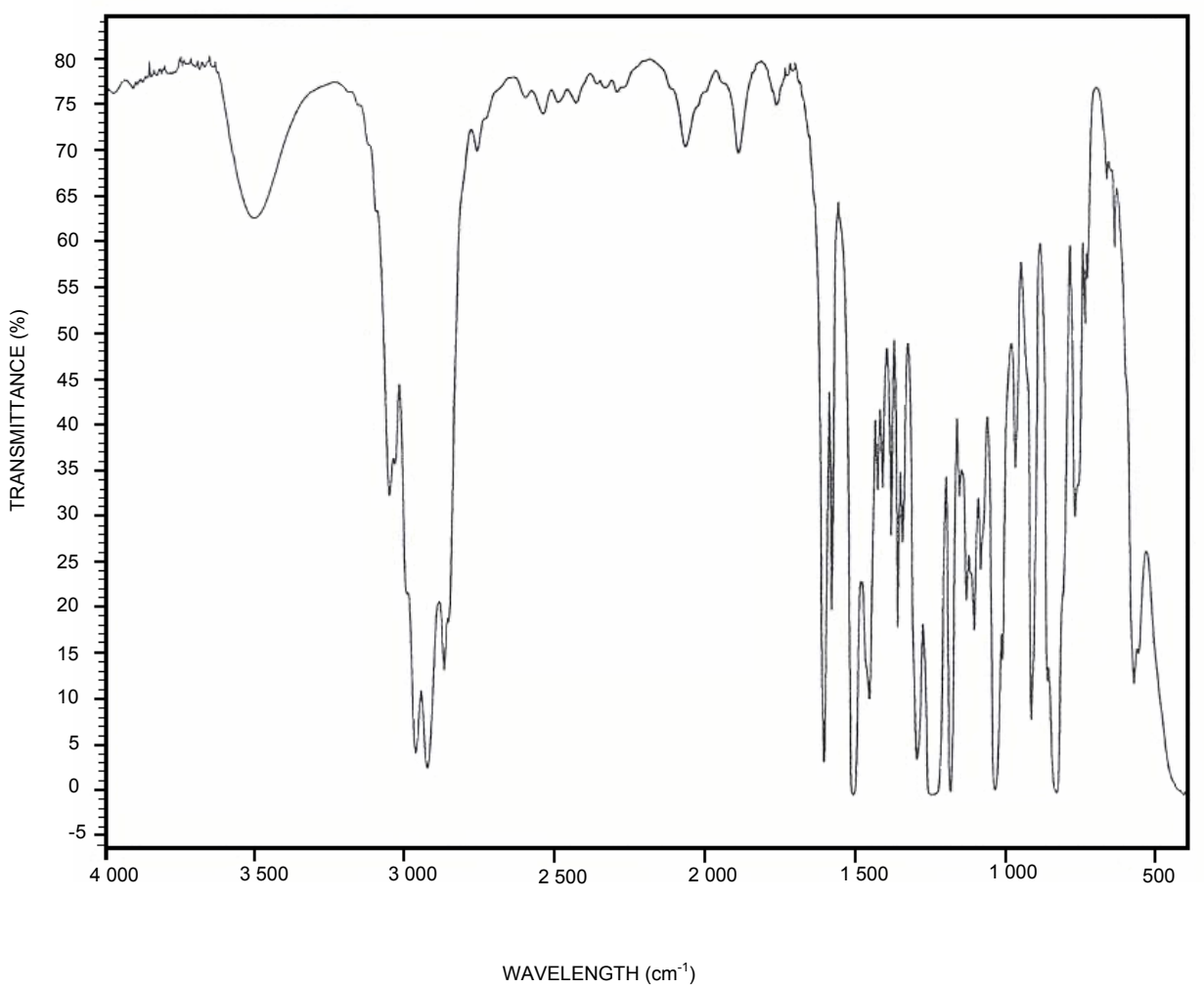

FIGURE A-2- SPECTROGRAM OF EPOXY RESIN - GRAPH 2

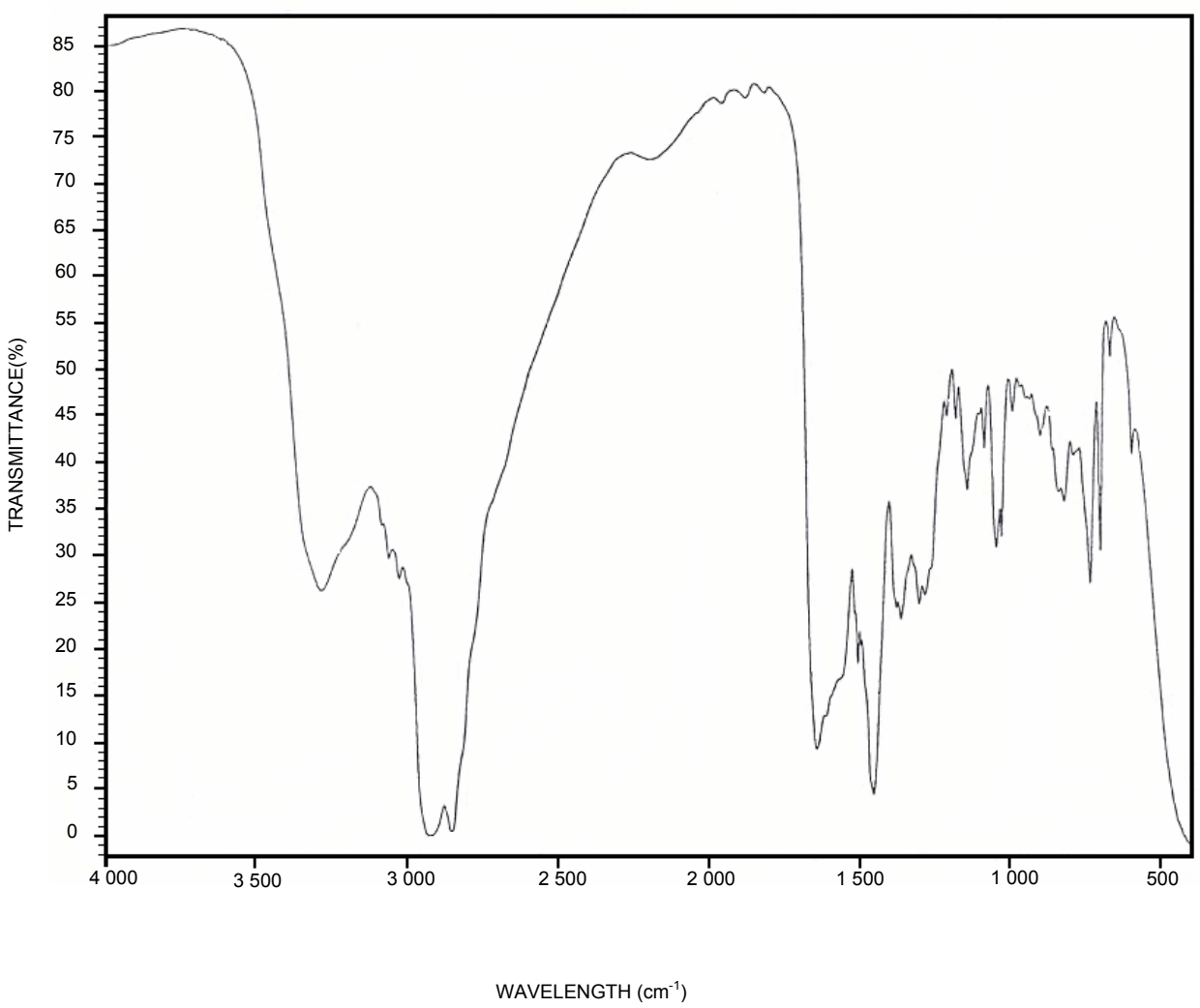

FIGURE A-3 - SPECTROGRAM OF POLYAMIDE RESIN - GRAPH 1

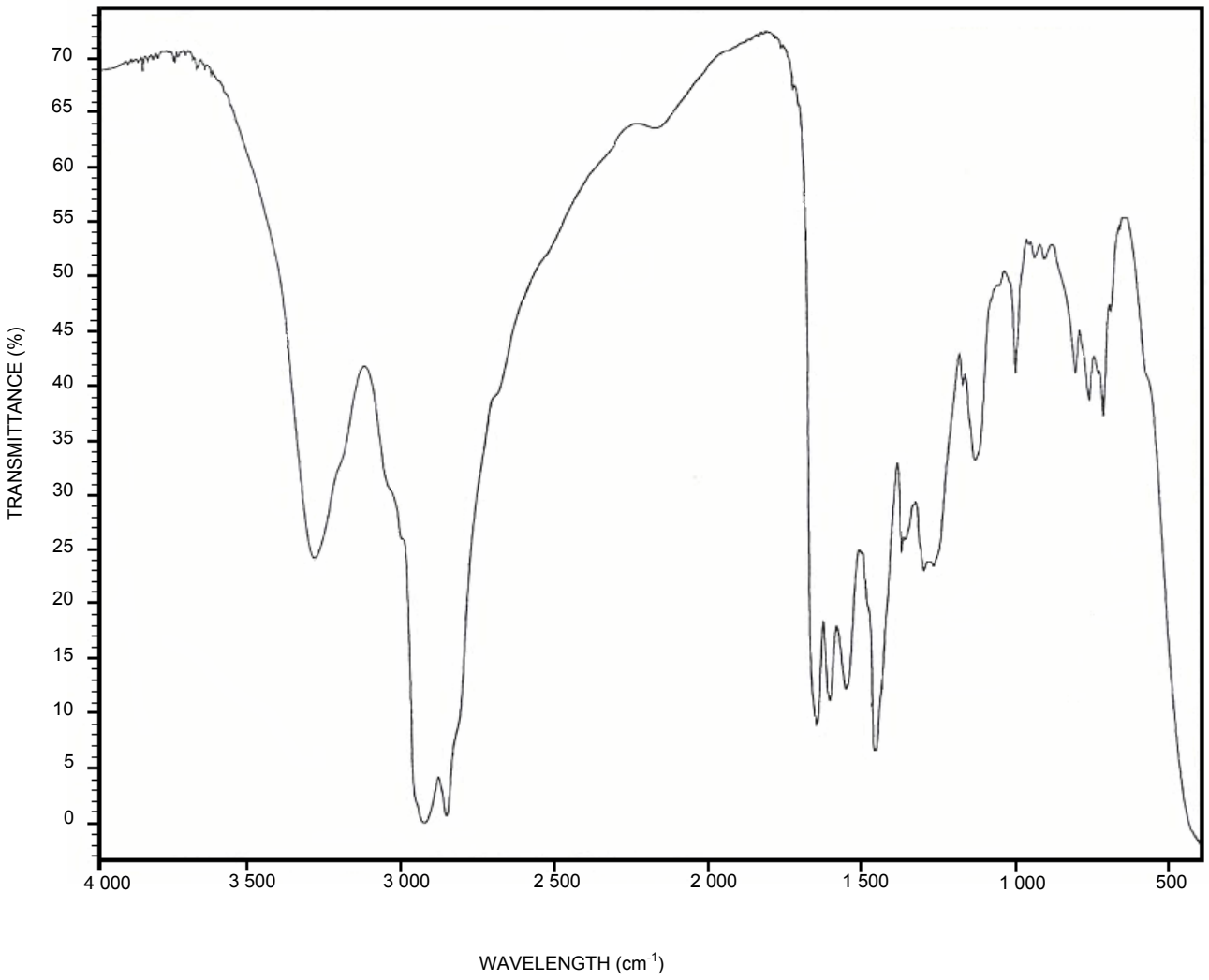

FIGURE A-4 - SPECTROGRAM OF POLYAMIDE RESIN - GRAPH 2

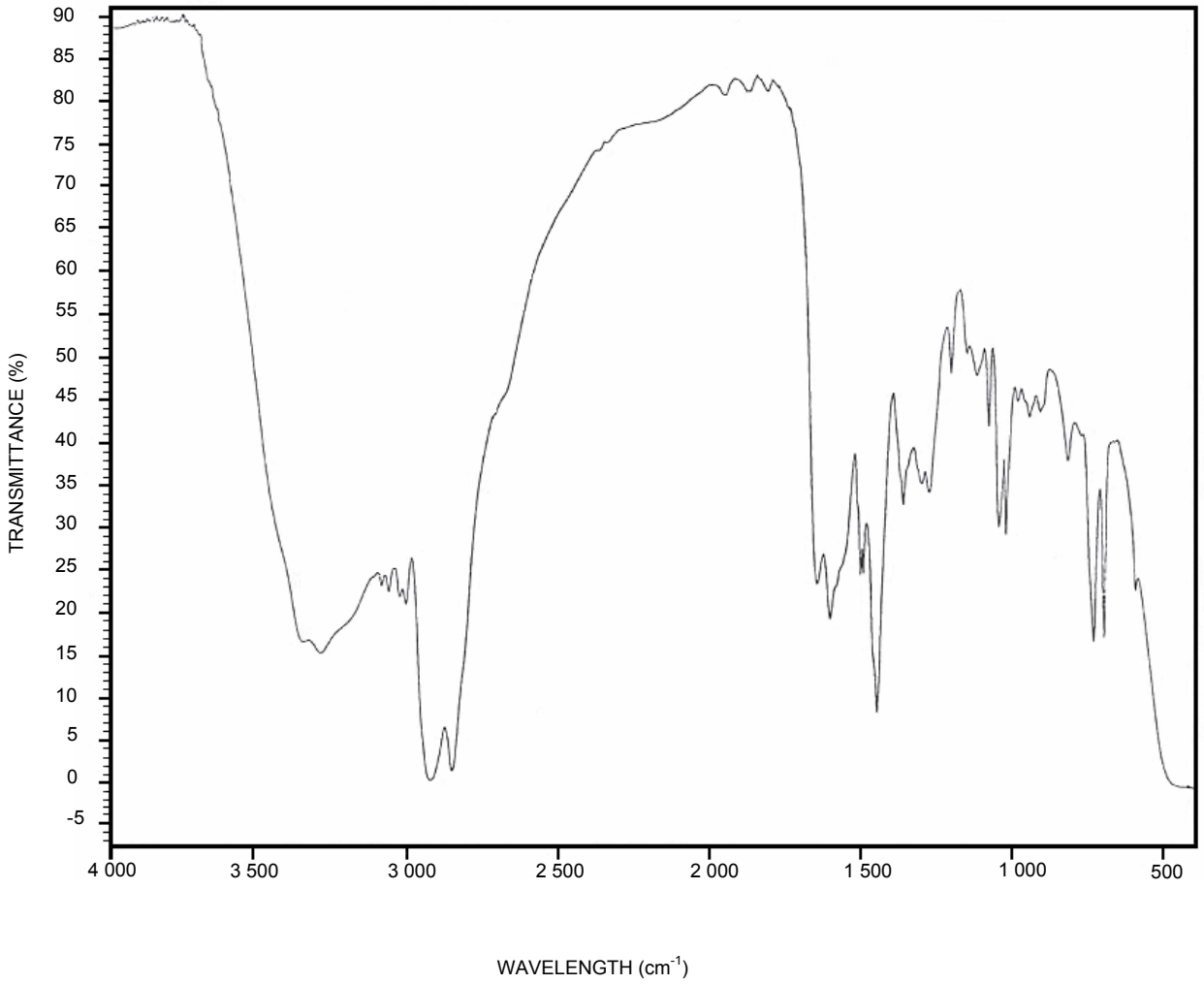

FIGURE A-5 - SPECTROGRAM OF POLYAMIDE RESIN - GRAPH 3

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/ANNEX B

TABLE B-1 - HIDING POWER FOR THE READY-TO-APPLY PRODUCT (PFUND CRYPTOMETER- PLATE No. 7)

Colors	Code per standard PETROBRAS N-1219	Maximum Values (mm)
Safety Orange	1867	
Gold Yellow	2287	
PETROBRAS Yellow	2386	20
Safety Yellow	2586	
Safety Red	1547	
Safety Orange	1867	
Gold Yellow	2287	
PETROBRAS Yellow	2386	20
Safety Yellow	2585	
Safety Red	1547	
Pastel Blue	4882	
White	0095	
Light Gray	0065	
Light Cream	2392	
Ice Gray	0080	15
Piping-Cream	2273	
Pastel Green	3582	
PETROBRAS Green	3355	
Safety Green	3263	
PETROBRAS Blue	5134	
Safety Blue	4845	
Dark Gray	0035	10
Piping-Brown	1822	
Iron Oxide	1733	
Black	0010	
Aluminum	0170	-

INDEX OF REVISIONS	
REV. A	
Affected Parts	**Description of Modification**
3.1	Revised
4.2.1	Revised

FOREWORD

This Standard is the English version (issued in APR/2004) of Standard PETROBRAS N-2628 REV. A DEC/2003.

1 SCOPE

1.1 This Standard establishes the characteristics, verifiable in the laboratory, required for high thickness epoxy-polyamide paint with a low content of organic volatiles, supplied in 2 containers: one containing the epoxy resin and pigments (component A) and the other containing the amide-based curing agent (component B).

1.2 This Standard applies to services started after its date of issuance.

1.3 This Standard contains Technical Requirements and Recommended Practices.

2 SUPPLEMENTARY DOCUMENTS

The documents listed below are mentioned in the text and contain valid requirements for the present Standard.

PETROBRAS N-1212 - Poder de Cobertura de Tinta pelo Criptômetro de Pfund;
PETROBRAS N-1219 - Cores;
PETROBRAS N-1288 - Inspeção de Recebimento de Recipientes Fechados;
PETROBRAS N-1358 - Sólidos por Volume - Determinação pelo Disco de Aço;
PETROBRAS N-1363 - Determinação de Vida Útil da Mistura, (“Pot-Life”) de Tintas e Vernizes;
PETROBRAS N-1367 - Determinação do Teor de Sólidos por Massa em Tintas e Produtos Afins;
PETROBRAS N-1538 - Resistência de Películas de Tinta ao Dióxido de Enxofre, pelo Aparelho de Kesternick;
PETROBRAS N-1810 - Ensaio de Descaimento em Películas de Tinta;
PETROBRAS N-1987 - Revalidação de Prazo de Validade de Tintas;
ABNT NBR 8094 - Material Metálico Revestido e Não Revestido - Corrosão por Exposição à Névoa Salina;
ABNT NBR 15877:2010 - Pintura Industrial - Ensaio de Aderência por Tração;
ISO 8501-1 - Preparation of Steel Substrates Before Application of Paints and Related Products;
ASTM D 523 - Standard Test Method for Specular Gloss;
ASTM D 562 - Standard Test Method for Consistency of Paints Using the Stormer Viscometer;
ASTM D 870 - Standard Practice for Testing Water Resistance of Coatings Using Water Immersion;
ASTM D 1210 - Standard Test Method for Fineness of Dispersion of Pigment-Vehicle Systems by Hegman-Type Gage;
ASTM D 1308 - Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes;
ASTM D 1475 - Standard Test Method For Density of Paint, Varnish, Lacquer and Related Products;
ASTM D 1640 - Standard Test Methods for Drying, Curing or Film Formation of Organic Coatings at Room Temperature;

ASTM D 2247 - Standard Practice for Testing Water Resistance of Coatings in 100 % Relative Humidity;

ASTM D 4541:2009 - Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers.

Note: For documents for which only the Portuguese version is available, the PETROBRAS department that uses this Standard should be consulted for any information required for the specific application.

3 GENERAL CONDITIONS

3.1 Appearance of Components A and B

Components A and B shall be homogeneous and show no skinning and thickening in a freshly-opened can.

Note: When paint is supplied in aluminum color (0170), the aluminum pigment in paste form may be supplied in a separate packaging (component C). It shall be of the leafing type. Upon receipt the paste shall be homogeneous and show no substantial separation between the pigment and the liquid, or drying or hardening in the container.

3.2 Packaging

3.2.1 Cans shall be straight circular cylindrical in shape.

3.2.2 For sealing packaging, any material capable of causing degradation or contamination of the paint shall not be used.

3.3 Conditions and Filling of Containers

3.3.1 The containers holding the components of this paint shall be in good conditions and duly labeled or marked on the side, in accordance with the requirements of this Standard and standard PETROBRAS N-1288.

3.3.2 The containers shall contain at least the quantity mentioned in the respective indication.

3.4 Storage Stability

3.4.1 Components A and B shall demonstrate stability during storage in a closed container at a temperature below 40 ºC, ensuring their use for at least 12 months from the date of manufacture.

3.4.2 This period of use may be extended for 2 additional periods of 6 months, through repetition and prior approval of the tests performed at the time of supply, in accordance with standard PETROBRAS N-1987. **[Recommended Practice]**

3.5 Dilution

When necessary, this paint may be diluted according to the manufacturer's instructions in order to facilitate its application. **[Recommended Practice]**

3.6 Marking

The label or body of the containers shall bear at least the following information:

a) standard PETROBRAS ;
b) high thickness epoxy polyamide paint;
c) identification of components: A or B;
d) thinner to be used;
e) quantity contained in container, in liters and in kg;
f) manufacturer's name and address;
g) lot number or identifying signal;
h) product expiration date;
i) mixing ratio by mass and volume.

4 SPECIFIC CONDITIONS

4.1 Requirements for Components A and B

4.1.1 Components A and B shall be homogeneous. Should they show any evidence of settling, it shall be capable of being easily homogenized (manually).

4.1.2 Identification of the resin of component A and of the curing agent shall be made by spectroscopy in the infrared region. The spectra obtained after evaporation of the solvents shall present the characteristic bands of the epoxy resin and curing agent, free from contaminants and in accordance with the spectra of ANNEX A.

4.2 Requirements for the Ready-to-Apply Product

4.2.1 The requirements for the ready-to-apply product, with components A and B duly mixed, are set out in TABLE 1.

TABLE 1 - REQUIREMENTS FOR THE READY-TO-APPLY PRODUCT

Tests	Dry Film Thickness (μm)	Requirements		Standards to be Used
		Min.	Max.	
Density	-	1.4	1.6	ASTM D 1475
Solids by Mass, %	-	85	-	PETROBRAS N-1367
Solids by Volume, %	-	80	-	PETROBRAS N-1358
Consistency (KU)	-		110	ASTM D 562
Sagging, μm (Dry Film)	-	240	-	PETROBRAS N-1810
Pot Life of Mixture, h	-	2	-	PETROBRAS N-1363
Dry to Touch, time in h	200 to 240	-	4	ASTM D 1640
Dry Through, time in h	200 to 240	-	16	ASTM D 1640
Dry to Recoat, time in h	200 to 240	16	48	ASTM D 1640
Fineness of Grind, μm	-	-	50	ASTM D 1210
Hiding Power	See TABLE 3			PETROBRAS N-1212

Note: For paint in aluminum color (code 0170) consider the following values:

a) density: 1.0 minimum and 1.4 maximum;
b) solids by mass: 80 % minimum;
c) solids by volume: 70 % minimum.

4.2.2 The final product, which is obtained after mixing the 2 paint components, shall show a uniform consistency.

4.3 Dry Film Characteristics

4.3.1 The dry film characteristics are given in TABLE 2 and in items 4.3.2, 4.3.3 and 4.3.4.

TABLE 2 - DRY FILM CHARACTERISTICS

Tests	Dry Film Thickness (μm)	Minimum Requirements	Standards to be used
Adhesion, MPa	200 to 240	10	ABNT NBR 15877:2010 or ASTM D 4541:2009, Method D - Equipment Type IV
Gloss at 60°, GU	200 to 240	60	ASTM D 523
Salt Spray Resistance, h	400 to 450	2 000	ABNT NBR 8094
Resistance in 100 % Relative Humidity, h	400 to 450	2 000	ASTM D 2247
SO_2 resistance, (2.0 L), cicles	400 to 450	5	PETROBRAS N-1538
Xylene Immersion Resistance, h	400 to 450	1 000	ASTM D 1308
Distilled Water Immersion Resistance 40 ºC, h	400 to 450	2 000	ASTM D 870
Salt Water Immersion Resistance (3.5 % NaCl), 40 ºC, h	400 to 450	2 000	ASTM D 1308
NaOH Immersion Resistance, at 10 %, h	400 to 450	2 000	ASTM D 1308

Note: For aluminum-colored paint (code 0170) it is not necessary to carry out SO_2 and NaCl resistance tests.

4.3.2 When observing the panels, blisters or corrosion points shall not be found on the surface, neither shall penetration in the notch exceeding 3 mm be observed after 2 000 hours of salt spray testing have elapsed.

4.3.3 There shall be no corrosion points or blistering on the film after the respective time periods established for the following tests have elapsed: resistance to 100 % relative humidity, SO_2 resistance, distilled water immersion resistance, salt water immersion resistance and NaOH immersion resistance. Alteration in the film color after the SO_2 exposure and immersion and 100 % relative humidity tests is admitted.

4.3.4 After the immersion test, with regard to resistance to xylene, no blistering on the film or alteration in the color of the solvent used in the test shall be observed.

5 INSPECTION

5.1 Visual Inspection

Check if the conditions indicated in items 3.1, 3.2, 3.3 and 3.6 have been fulfilled and reject items supplied in disagreement therewith.

ANNEX B - TABLE

TABLE B-1 - HIDING POWER FOR THE READY-TO-APPLY PRODUCT (PFUND CRYPTOMETER- PLATE No. 7)

Colors	Code per standard PETROBRAS N-1219	Maximum Values (mm)
Safety Orange	1867	
Gold Yellow	2287	
PETROBRAS Yellow	2386	20
Safety Yellow	2585	
Safety Red	1547	
Safety Orange	1867	
Gold Yellow	2287	
PETROBRAS Yellow	2386	20
Safety Yellow	2585	
Safety Red	1547	
Pastel Blue	4882	
White	0095	
Light Gray	0065	
Light Cream	2392	
Ice Gray	0080	15
Piping-Cream	2273	
Pastel Green	3582	
PETROBRAS Green	3355	
Safety Green	3263	
PETROBRAS Blue	5134	
Safety Blue	4845	
Dark Gray	0035	10
Piping-Brown	1822	
Iron Oxide	1733	
Black	0010	
Aluminum	0170	-

FOREWORD

This Standard is the English version (issued in APR/2004) of Standard PETROBRAS N-2628 REV. A DEC/2003.

1 SCOPE

1.1 This Standard establishes the characteristics, verifiable in the laboratory, required for high thickness epoxy-polyamide paint with a low content of organic volatiles, supplied in 2 containers: one containing the epoxy resin and pigments (component A) and the other containing the amide-based curing agent (component B).

1.2 This Standard applies to services started after its date of issuance.

1.3 This Standard contains Technical Requirements and Recommended Practices.

2 SUPPLEMENTARY DOCUMENTS

The documents listed below are mentioned in the text and contain valid requirements for the present Standard.

PETROBRAS N-1212 - Poder de Cobertura de Tinta pelo Criptômetro de Pfund;
PETROBRAS N-1219 - Cores;
PETROBRAS N-1288 - Inspeção de Recebimento de Recipientes Fechados;
PETROBRAS N-1358 - Sólidos por Volume - Determinação pelo Disco de Aço;
PETROBRAS N-1363 - Determinação de Vida Útil da Mistura, (“Pot-Life”) de Tintas e Vernizes;
PETROBRAS N-1367 - Determinação do Teor de Sólidos por Massa em Tintas e Produtos Afins;
PETROBRAS N-1538 - Resistência de Películas de Tinta ao Dióxido de Enxofre, pelo Aparelho de Kesternick;
PETROBRAS N-1810 - Ensaio de Descaimento em Películas de Tinta;
PETROBRAS N-1987 - Revalidação de Prazo de Validade de Tintas;
ABNT NBR 8094 - Material Metálico Revestido e Não Revestido - Corrosão por Exposição à Névoa Salina;
ISO 8501-1 - Preparation of Steel Substrates Before Application of Paints and Related Products;
ASTM D 523 - Standard Test Method for Specular Gloss;
ASTM D 562 - Standard Test Method for Consistency of Paints Using the Stormer Viscometer;
ASTM D 870 - Standard Practice for Testing Water Resistance of Coatings Using Water Immersion;
ASTM D 1210 - Standard Test Method for Fineness of Dispersion of Pigment-Vehicle Systems by Hegman-Type Gage;
ASTM D 1308 - Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes;
ASTM D 1475 - Standard Test Method For Density of Paint, Varnish, Lacquer and Related Products;
ASTM D 1640 - Standard Test Methods for Drying, Curing or Film Formation of Organic Coatings at Room Temperature;