



SIRIM QAS International Sdn. Bhd.  
(Company No.: 199601037981 (410334-X))  
No.1, Persiaran Dato' Menteri, P.O.BOX 7035, Section 2,  
40700 Shah Alam, Selangor Darul Ehsan, Malaysia  
Tel: 013-580 6671  
www.sirim-qas.com.my

## TEST REPORT

REPORT NO : 2025CE1501-S1

PAGE : 1 OF 7

Unless otherwise stated, the results shown in this Test Report shall be valid exclusively for the specific sample either provided by the Applicant or sampled by the qualified officer and tested by SIRIM QAS International Sdn. Bhd. In deriving the results of this Test Report, SIRIM QAS International Sdn. Bhd. has relied solely on the sample and data information provided by the Applicant, in accordance with the applicable standards requested by the Applicant in the Application Form. This Test Report shall not be reproduced, except in full, without written approval from the Head of Quality, Occupational Safety and Health & Environment (QOSHE) of SIRIM QAS International Sdn. Bhd. Kindly refer to the last page of this Test Report for the 'Conditions Relating to the Use of SIRIM QAS International Test Report'.

Applicant : VIRGO LAMINATES SDN BHD  
10, Jalan Ekoperniagaan 1/27,  
Taman Ekoperniagaan,  
81100, Johor Bahru, Johor, Malaysia

Manufacturer : VIRGO LAMINATES LTD  
Block No. 363, Taluka Matar, Sokhada Village,  
N.H. 48, District Kheda, Gujrat, 387570, India

Product : Phenolic Board/Compact Laminates

Reference Standard / Method of Test : BS EN 438-4: 2016 – Title: High-pressure decorative laminates (HPL) –  
Sheets based on thermosetting resins (usually called laminates) – Part 4:  
Classification and specifications for compact laminate of thickness 2 mm  
and greater

Description of sample/ Description of Test Specimen : Received one (1) sample of Phenolic Board/Compact Laminates for testing  
which was identified on page 2

*Disclaimer: All the information stated above has been provided/agreed by the Applicant. SIRIM QAS International Sdn. Bhd. shall not be held responsible for the accuracy, completeness, or validity of the information provided by the Applicant which may affect the validity of the test results. The accuracy and reliability of the test results are contingent upon the integrity and accuracy of the information provided by the Applicant.*

Date Received of Complete Application : 07 March 2025

Job No. : J20253670514

Description of Test Results/ Overall Test Result : This test report covers only test clauses as requested by Applicant to SIRIM QAS International Sdn. Bhd. The test results for the submitted test samples as described in this test report complied with the requirements of the above reference standard in the respective clauses tested

Issued Date : 01 May 2025

Approved Signatory;

(Ts. SORAYA NANIS BINTI HAMDAN)  
Testing Engineer



(DALHA BIN KATNI @ RAHMAT)  
Head  
Chemical, Polymer and Composite Section  
Testing Services Department

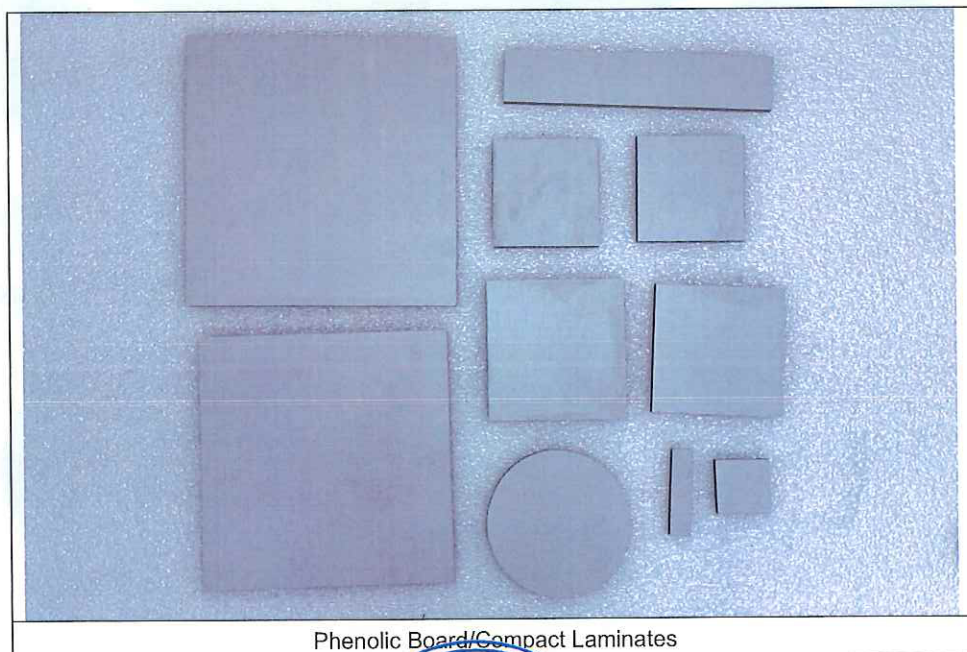
Unless otherwise stated, the results shown in this Test Report shall be valid exclusively for the specific sample either provided by the Applicant or sampled by the qualified officer and tested by SIRIM QAS International Sdn. Bhd. In deriving the results of this Test Report, SIRIM QAS International Sdn. Bhd. has relied solely on the sample and data information provided by the Applicant, in accordance with the applicable standards requested by the Applicant in the Application Form. This Test Report shall not be reproduced, except in full, without written approval from the Head of Quality, Occupational Safety and Health & Environment (QOSHE) of SIRIM QAS International Sdn. Bhd. Kindly refer to the last page of this Test Report for the 'Conditions Relating to the Use of SIRIM QAS International Test Report'.

**Notes :**

- 1) This is a Supplementary Test Report.
- 2) The SIRIM Report No. 2025CE1501-S1 was issued to cancel and replace the SIRIM Report No. 2025CE1501 dated 29<sup>th</sup> April 2025
- 3) This Supplementary Test Report is issued due to a typographical error in the applicant and manufacturer details on the first page of this test report.

**Description of sample:**

**Product** : Phenolic Board/Compact Laminates  
**Brand** : Virgo Laminates  
**Type** : Compact  
**Model** : SF140011  
**Product Description** : Phenolic Board/Compact Laminates  
**Test Location** : Chemical, Polymer & Composite Section,  
Building 16, SIRIM Complex, No. 1 Persiaran Dato' Menteri,  
Section 2, 40700 Shah Alam, Selangor, Darul Ehsan, Malaysia  
**Test Duration** : 6<sup>th</sup> April 2025 to 23<sup>rd</sup> April 2025

**Photo of sample received:**

Unless otherwise stated, the results shown in this Test Report shall be valid exclusively for the specific sample either provided by the Applicant or sampled by the qualified officer and tested by SIRIM QAS International Sdn. Bhd. In deriving the results of this Test Report, SIRIM QAS International Sdn. Bhd. has relied solely on the sample and data information provided by the Applicant, in accordance with the applicable standards requested by the Applicant in the Application Form. This Test Report shall not be reproduced, except in full, without written approval from the Head of Quality, Occupational Safety and Health & Environment (QOSHE) of SIRIM QAS International Sdn. Bhd. Kindly refer to the last page of this Test Report for the 'Conditions Relating to the Use of SIRIM QAS International Test Report'.

### Test Results:

**Product** : Phenolic Board/Compact Laminates  
**Brand** : Virgo Laminates  
**Type** : Compact  
**Model** : SF140011  
**Product Description** : Phenolic Board/Compact Laminates

| No. | Type of tests                                                                               | Requirements<br>BS EN 438-4:2016<br>Table 3 – General Requirements<br>Laminate grade: CGS | Results | Remarks |
|-----|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------|---------|
| 1.  | Resistance to Surface Wear, Revolutions<br>(EN 438-2: 2016 + A1: 2018 Clause 10)            | Min. 150                                                                                  | > 150   | Pass    |
| 2.  | Resistance to immersion in boiling water<br>(BS EN 438-2:2016 Clause 12)                    |                                                                                           |         |         |
| 2.1 | Mass increase, %                                                                            | $t \geq 5\text{mm}$ : Max. 2.0                                                            | 0.3     | Pass    |
| 2.2 | Thickness increase, %                                                                       | $t \geq 5\text{mm}$ : Max. 2.0                                                            | 0.2     | Pass    |
| 2.3 | Appearance                                                                                  | Surface rating (Other finishes) <sup>(1)</sup> : Min. 4                                   | 5       | Pass    |
|     |                                                                                             | Edge rating <sup>(2)</sup> : Min. 3                                                       | 5       | Pass    |
| 3.  | Resistance to Water Vapour, Rating<br>(EN 438-2: 2016 + A1: 2018 Clause 14 and Clause 14.5) | Surface rating (Other finishes) <sup>(1)</sup> : Min. 4                                   | 5       | Pass    |

Note:

<sup>(1)</sup>Surface Rating – For Resistance to boiling and Resistance to water vapour:

| Rating scale | Description                                                                  |
|--------------|------------------------------------------------------------------------------|
| 5            | No visible change                                                            |
| 4            | Slight change of gloss and/ or color, only visible at certain viewing angles |
| 3            | Moderate change of gloss and/ or color                                       |
| 2            | Marked change of gloss and/ or color                                         |
| 1            | Blistering and/or delamination                                               |

<sup>(2)</sup>Resistance to boiling – Edge Rating:

| Rating scale | Description                                           |
|--------------|-------------------------------------------------------|
| 5            | No visible change                                     |
| 4            | Slight hairline edge cracks visible to the naked eyes |
| 3            | Moderate edge cracks                                  |
| 2            | Severe edge cracks                                    |
| 1            | Core layer delamination                               |



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| REPORT NO : 2025CE1501-S1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | PAGE : 4 OF 7 |
| <p>Unless otherwise stated, the results shown in this Test Report shall be valid exclusively for the specific sample either provided by the Applicant or sampled by the qualified officer and tested by SIRIM QAS International Sdn. Bhd. In deriving the results of this Test Report, SIRIM QAS International Sdn. Bhd. has relied solely on the sample and data information provided by the Applicant, in accordance with the applicable standards requested by the Applicant in the Application Form. This Test Report shall not be reproduced, except in full, without written approval from the Head of Quality, Occupational Safety and Health &amp; Environment (QOSHE) of SIRIM QAS International Sdn. Bhd. Kindly refer to the last page of this Test Report for the 'Conditions Relating to the Use of SIRIM QAS International Test Report'.</p> |               |

### Test Results:

**Product** : Phenolic Board/Compact Laminates  
**Brand** : Virgo Laminates  
**Type** : Compact  
**Model** : SF140011  
**Product Description** : Phenolic Board/Compact Laminates

| No. | Type of tests                                                                                                                            | Requirements<br>BS EN 438-4:2016<br>Table 3 – General Requirements<br>Laminate grade: CGS | Results                | Remarks      |
|-----|------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|------------------------|--------------|
| 4.  | Resistance to Dry Heat (160 °C),<br>Rating<br>(EN 438-2: 2016 + A1: 2018 Clause 16<br>and Table 1) <sup>(3)</sup>                        | Surface rating (Other finishes): Min. 4                                                   | 5                      | Pass         |
| 5.  | Dimensional Stability at elevated<br>temperature<br>(EN 438-2: 2016 + A1: 2018 Clause<br>17)                                             | t ≥ 5mm , L: Max. 0.3<br>t ≥ 5mm, T: Max. 0.6                                             |                        |              |
| 5.1 | Oven (Dry Heat)<br><u>Test Conditions:</u><br>Test temperature: 70°C<br>Duration : 24 hours                                              |                                                                                           | L: 0.04<br>T: 0.08     | Pass<br>Pass |
| 5.2 | Conditioning chamber (high humidity)<br><u>Test Conditions:</u><br>Test temperature : 40°C<br>Test humidity : 95%<br>Duration : 96 hours |                                                                                           | L : -0.18<br>T : -0.02 | Pass<br>Pass |
| 6.  | Resistance to Wet Heat, Rating<br>(EN 438-2: 2016 + A1: 2018 Clause 18<br>and Table 3) <sup>(3)</sup>                                    | Surface rating (Other finishes): Min. 4                                                   | 5                      | Pass         |

Note:

L: in the longitudinal (or machine) direction, T: in the cross-longitudinal (cross-machine) direction

<sup>(3)</sup> Table 1 – Resistance to dry heat, Resistance to wet heat and Resistance to staining rating scale

| Rating scale | Description                                                                                                                                                                                                                                                           |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5            | No change<br>Test area indistinguishable from adjacent surrounding area                                                                                                                                                                                               |
| 4            | Minor Change<br>Test area are distinguishable from adjacent surrounding area, only when the light source is mirrored on the test surface, and is reflected towards the observer's eye, e.g. discoloration, change in gloss and colour                                 |
| 3            | Moderate Change<br>Test area are distinguishable from adjacent surrounding area, visible in several viewing directions, e.g. discoloration, change in gloss and colour, no change in the surface structure, e.g. deformation, cracking, blistering                    |
| 2            | Significant Change<br>Test area clearly distinguishable from adjacent surrounding area, visible in all viewing direction, e.g. discoloration, change in gloss and colour, and / or structure of the surface slightly changed, e.g. slight cracking, slight blistering |
| 1            | Strong Change<br>The structure of the surface being distinctly changed e.g. strong cracking, strong blistering and / or discoloration, change in gloss and colour, and / or surface material being totally or partially delaminated                                   |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| REPORT NO : 2025CE1501-S1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | PAGE : 5 OF 7 |
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## Test Results:

**Product** : Phenolic Board/Compact Laminates  
**Brand** : Virgo Laminates  
**Type** : Compact  
**Model** : SF140011  
**Product Description** : Phenolic Board/Compact Laminates

| No. | Type of tests                                                                                                                                                                           | Requirements<br>BS EN 438-4:2016<br>Table 3 – General Requirements<br>Laminate grade: CGS | Results | Remarks |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------|---------|
| 7.  | Resistance to impact by large diameter ball, mm<br>(EN 438-2: 2016 + A1: 2018 Clause 21)<br><i>Test Conditions:</i><br><i>Ball diameter : 42.8 mm</i><br><i>Impact distance: 1.80 m</i> | $t \geq 6\text{mm}$ , Min. 1800                                                           | >1800   | Pass    |
| 8.  | Resistance to crazing, Rating<br>(EN 438-2: 2016 + A1: 2018 Clause 24 and Clause 24.5) <sup>(4)</sup>                                                                                   | Min. Grade 4                                                                              | 5       | Pass    |
| 9.  | Resistance to staining, Rating<br>(EN 438-2: 2016 + A1: 2018 Clause 26 and Table 1) <sup>(3)</sup>                                                                                      | Group 1 & 2: Min. 5<br>Group 3: Min. 4                                                    |         |         |
| 9.1 | Group 1: Acetone                                                                                                                                                                        |                                                                                           | 5       | Pass    |
| 9.2 | Group 2: Coffee                                                                                                                                                                         |                                                                                           | 5       | Pass    |
| 9.3 | Group 3: Sodium Hydroxide 25%                                                                                                                                                           |                                                                                           | 5       | Pass    |
| 9.4 | Group 3: Hydrogen Peroxide 30%                                                                                                                                                          |                                                                                           | 5       | Pass    |
| 9.5 | Group 3: Shoe Polish                                                                                                                                                                    |                                                                                           | 5       | Pass    |

Note:

<sup>(4)</sup> Resistance to crazing rating scale

| Rating scale | Description                                                                  |
|--------------|------------------------------------------------------------------------------|
| 5            | Surfaces and edges unchanged form 'as received' condition                    |
| 4            | Surfaces unchanged with slight hairline edge cracks visible to the naked eye |
| 3            | Surface cracks visible to the naked eye, and/or moderate edge cracks         |
| 2            | Moderate surface cracks and/or severe edge cracks                            |
| 1            | Severe surface cracks and/or delamination                                    |



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| REPORT NO : 2025CE1501-S1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | PAGE : 6 OF 7 |
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## Test Results:

**Product** : Phenolic Board/Compact Laminates  
**Brand** : Virgo Laminates  
**Type** : Compact  
**Model** : SF140011  
**Product Description** : Phenolic Board/Compact Laminates

| No.  | Type of tests                                                                                     | Requirements<br>BS EN 438-4:2016<br>Table 3 – General<br>Requirements<br>Laminate grade: CGS | Results | Remarks |
|------|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|---------|---------|
| 10.  | Flexural Modulus, MPa<br>(EN ISO 178: 2019)                                                       | Min. 9000                                                                                    | 11975   | Pass    |
| 11.  | Flexural Strength, MPa<br>(EN ISO 178: 2019)                                                      | Min. 80                                                                                      | 136     | Pass    |
| 12.  | Density, g/cm <sup>3</sup><br>(EN ISO 1183-1: 2019)                                               | Min. 1.35                                                                                    | 1.46    | Pass    |
| 13.  | Resistance to cigarette burn, Rating <sup>(5)</sup><br>(EN 438-2: 2005 Clause 30 and Clause 30.6) | -                                                                                            |         |         |
| 13.1 | Cigarette Brand: John D Blend Red                                                                 |                                                                                              | 4       | *       |

Note:

\* No requirements stated in BS EN 438-4: 2016

<sup>(5)</sup> Resistance to cigarette rating scale:

| Rating scale | Description                                                                             |
|--------------|-----------------------------------------------------------------------------------------|
| 5            | No visible change                                                                       |
| 4            | Slight change of gloss only visible at certain viewing angles and/or slight brown stain |
| 3            | Moderate change of gloss and/or moderate brown stain                                    |
| 2            | Severe brown mark, but no destruction of the surface                                    |
| 1            | Blistering and/or cracks                                                                |



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#### CONDITIONS RELATING TO THE USE OF SIRIM QAS INTERNATIONAL TEST REPORT

1. A Test Report will be issued in respect of the Testing Services conducted and shall relate only to the sample actually tested by SIRIM QAS International. The results in the Test Report will be based on all the information provided by the Applicant, unless otherwise stated. SIRIM QAS International makes no warranties whatsoever, and the Applicant shall not represent in any manner that any duplication or mass production of the Product is identical to the Sample actually tested, or that SIRIM QAS International has tested any duplicated or mass-produced Product. Measurement uncertainty shall be included in the Test Report when no statement of conformity is required.
2. For quantitative test results (with values), when a statement of conformity to a specification or standard is applied, the Simple Acceptance Rule shall be used. Unless otherwise stated, the Acceptance Rule with Guard Band will be applied, and an additional charge will be incurred accordingly.
3. For qualitative test results (visual observation), when requested by the applicant, a statement of conformity shall be included in the Test Report. If there is no request by the Applicant, a statement of conformity can be included in the Test Report based on SIRIM QAS International Sdn. Bhd.'s discretion.
4. The Applicant shall not at any time misrepresent the content of any Test Report provided by SIRIM QAS International Sdn. Bhd., nor shall the Test Report be misused, amended, changed, varied, or modified in any manner whatsoever by the Applicant or otherwise.
5. The Test Report shall not be reproduced, except in full, without the written approval from the Head of Quality, Occupational Safety and Health & Environment (QOSHE) of SIRIM QAS International of No. 1, Block 8, Persiaran Dato' Menteri, Section 2, P.O. Box 7035, 40700 Shah Alam, Selangor Darul Ehsan.
6. The Applicant is not permitted to use any SIRIM QAS International Sdn. Bhd., SIRIM Berhad or other SIRIM subsidiaries logos or words on packaging, sample manuals, technical specifications, items and products.
7. Subject to consent and written approval from the Head of Quality, Occupational Safety and Health & Environment (QOSHE) of SIRIM QAS International Sdn. Bhd., the Applicant may use the SIRIM QAS International Sdn. Bhd. logo or word on promotional materials. The Applicant shall only include the phrase, "A sample of this product has been tested by SIRIM QAS International Sdn. Bhd. (Test Report No) ... (dated) ... (for what test) ... (to which standard)", or similar words emphasizing that only the sample was tested. This phrase shall only be used for product advertisements or promotions (e.g.: brochures, flyers, official website). For clarity, the statement shall not be used on the sample, packaging, items or products.
8. In the event there is an investigation from a Government Regulatory Agency concerning the Applicant's Test Report, SIRIM QAS International Sdn. Bhd. may disclose the information pertaining to the Test Report for the purposes of such investigation.
9. In the event that the Applicant is found in breach of this provision, SIRIM QAS International Sdn. Bhd., SIRIM Berhad and/or other SIRIM subsidiaries may, without prejudice to any other rights and remedies, take whatever actions are necessary including but not limited to:
  - a) Informing and placing a notice in the media;
  - b) Obtaining an injunction from the Court (costs on a solicitor-client basis to be borne by the Applicant);
  - c) Refusing to accept any further Products for Testing Services from the Applicant or whosoever related to the Applicant, whether subsidiary or otherwise;
  - d) Instructing the Applicant to withdraw and recall the advertisement, statement, or document in question and to publish a clarification and apology to SIRIM QAS International, SIRIM and/or other SIRIM subsidiaries twice in a national publication of SIRIM QAS International's choice at the Applicant's sole cost; and
  - e) Informing or lodging a report pertaining to the Applicant's Test Report with the relevant authorities.
10. SIRIM QAS International is committed to supporting environmentally friendly business practices by reducing paper consumption. Therefore, we do not issue any hard copies of the Test Report to the Applicant. However, additional certified true copies or softcopies of the Test Report may be issued upon request by the Applicant, subject to payment of the relevant fee. Certified true copies or softcopies of the Test Report shall only be provided for Test Reports issued not more than **three (3) years** from the date of issuance.
11. The Issuance of an Amendment Report due to the following reasons is chargeable to the Applicant:
  - a) Typo or change1 in details of the Applicant's name and/or address; or
  - b) Typo or change1 in details of the Manufacturer's name and/or address; or
  - c) Typo or change1 in details of the Factory location name and/or address; or
  - d) Typo or change1 in details of the brand, size, model and/or type designation; or
  - e) Typo in details of the description of sample.

Note: <sup>1</sup>Applicable only for electrical and electronic products based on IECCE OD-2020.
12. Any corrections and/or changes to the Report requested by the Applicant shall only be allowed if the date of issuance of the original Test Report has not exceeded six (6) months and shall be limited to a maximum of three (3) times. After either of these conditions is met, no further amendments to the Test Report shall be issued.
13. However, the issuance of a Supplementary Report due to the following reasons is free of charge (FOC):
  - a) Misprints and typographical errors;
  - b) Missing technical information as agreed in the PP1 form;
  - c) Test data not reported; or
  - d) Mistakes in the reporting of test data.