



SunTek[®] | **CIR70**

WINDOW FILMS | TEST REPORT

BENEFITS OF PRODUCT CERTIFICATION SCHEME

- Provide assurances of safety and reliability to users of your products.
- Provide independent assurance that your products manufactured are under an effective system of testing, supervision and control. Thus, there is improved production efficiency and reduced wastage and rejects.
- Demonstrate product compliance with national or international standards.
- Enhance your reputation and extend your market by using the Product Certification Mark on your certified products as a marketing tool.
- Have your locally manufactured products automatically listed in the “Senarai Bahan/Barang Buatan Tempatan” (Treasury Listing) at no additional cost.



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(Company No.: 199601037981 (410334-X))
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TEST REPORT

REPORT NO : 2020CB0347

PAGE : 1 OF 4

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Applicant : SUN-GARD (M) SDN. BHD.
No. 17 A-D, Jalan PJS 1/27, 7th Miles, Jalan Klang Lama,
46000 Petaling Jaya, Selangor, Malaysia.

Manufacturer : EASTMAN PERFORMANCE FILMS LLC
575 Maryville Centre Drive, St. Louis MO 63141-5813,
United States of America.

Product : Suntek Tinted Film

Reference Standard / Method of Test : MS 2669:2017 (AMD. 1:2018)
Tint film on glazing of road vehicles – Methods and requirements of light transmittance, ultraviolet transmittance, total solar energy transmittance, and other related factors
(Details description of clauses tested – Refer Page 2)

Description of sample : One piece of Suntek Tinted Film was received for testing.
(Details description of samples - Refer Page 2)

Date Received of Complete Application : 03 July 2020

Job No. : J20201430300

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

Issued Date : 15 July 2020

Approved Signatory;

(MUHAMMAD HAZMIE BIN OTHMAN)
Testing Executive



(RAJA HANAN NOR SIHA BINTI RAJA ABDUL HANAN)
Head
Civil & Construction Section
Testing Services Department

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Reference Standard / Method of Test

MS 2669:2017 (AMD. 1:2018)

Tint film on glazing road vehicles – Methods and requirements of light transmittance, ultraviolet transmittance, total solar energy transmittance, and other related factors

Clause 4.2: Solar Performance

Clause 4.3: Weathering Test

Clause 4.4.2: Bake Test

Description of Sample

Brand: SUNTEK

No.	Model	Original Name From Manufacturer	Nom. Thickness	Classification	Application
1	SUNTEK CIR 70	CIR 70 BLACK	50.8 µm	A1	Windscreen

Note: 1) Testing date/period 7th July 2020.

2) Testing was conducted at Block 22, SIRIM Complex.

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Table 1: Test specification for solar performance

Type of testing		Measurement range (nm)	Requirements
Visible light transmittance		380 - 780	Refer to Clause 4.2.1
Ultraviolet transmittance	Class A	300 - 380	≤ 0.5 %
	Class B		0.51 % - 1.5 %
	Class C		1.6 % - 2 %
Total solar energy transmittance (solar factor)	Class 1	300 – 2500	≤ 0.50
	Class 2		0.51 – 0.61
	Class 3		0.62 – 0.75

Clause 4.2.1 Visible light transmittance requirement

The requirement of visible light transmittance for tint film shall be calculated using the equation:

$$VLT_f = \frac{VLT_c \times 100}{VLT_g}$$

where

VLT_f is the value of visible light transmittance for tint film;

VLT_c is the value of visible light transmittance for combination of glass and tint film; and

VLT_g is the value of visible light transmittance for glass.

The VLT_f calculation shall consider the minimum VLT_g requirement of windscreen, front side windows and other windows as stipulated in the UN Regulation No. 43.

The requirement shall consider a possible tolerance up to -10 %.

Table 2: VLT_c requirement specified by Road Transport Act. 1987

Tint Film Application	VLT_c Requirements
Windscreen	Minimum 70 %
Front Side Windows	Minimum 50 %
Other Windows	-



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Sample : SUNTEK CIR 70
Nom. Thickness : 50.8 μm

Classification : A1
Application : Windscreen

Clause	Specifications / Requirements	Result	Remark
4.2	<p>Solar Performance Solar performance requirements shall be specified in Table 1.</p> <p>Solar performance shall include visible light transmittance, ultraviolet transmittance and total solar energy transmittance (solar factor).</p>	<p>Visible light transmittance for combination, VLT_c: 67.65 %</p> <p>Ultraviolet transmittance: 0.13 %</p> <p>Total solar energy transmittance (solar factor): 0.48</p>	<p>Pass (-10 % tolerance)</p> <p>Pass (Class A)</p> <p>Pass (Class 1)</p>
4.3	<p>Weathering Test There shall be no obvious colour changes when comparing exposed sample and control sample.</p> <p>The difference of visible light transmittance between before and after exposure shall be not more than 4 %.</p>	<p>Sample 1:</p> <ul style="list-style-type: none"> No obvious colour changes. VLT Difference: 0.46 %. <p>Sample 2:</p> <ul style="list-style-type: none"> No obvious colour changes. VLT Difference: 0.33 %. <p>Sample 3:</p> <ul style="list-style-type: none"> No obvious colour changes. VLT Difference: 0.39 %. 	<p>Pass</p> <p>Pass</p> <p>Pass</p> <p>Pass</p>
4.4.2	<p>Bake Test All test samples shall not have bubble or other defects produced (delamination and discoloration).</p>	<ul style="list-style-type: none"> Sample 1: No defect observed. Sample 2: No defect observed. Sample 3: No defect observed. 	<p>Pass</p> <p>Pass</p> <p>Pass</p>





SunTek[®] | **CIR50** WINDOW FILMS | TEST REPORT

BENEFITS OF PRODUCT CERTIFICATION SCHEME

- Provide assurances of safety and reliability to users of your products.
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- Demonstrate product compliance with national or international standards.
- Enhance your reputation and extend your market by using the Product Certification Mark on your certified products as a marketing tool.
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TEST REPORT

REPORT NO : 2020CB0348

PAGE : 1 OF 4

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Applicant : SUN-GARD (M) SDN. BHD.
No. 17 A-D, Jalan PJS 1/27, 7th Miles, Jalan Klang Lama,
46000 Petaling Jaya, Selangor, Malaysia.

Manufacturer : EASTMAN PERFORMANCE FILMS LLC
575 Maryville Centre Drive, St. Louis MO 63141-5813,
United States of America.

Product : Suntek Tinted Film

Reference Standard / Method of Test : MS 2669:2017 (AMD. 1:2018)
Tint film on glazing of road vehicles – Methods and requirements of light transmittance, ultraviolet transmittance, total solar energy transmittance, and other related factors
(Details description of clauses tested – Refer Page 2)

Description of sample : One piece of Suntek Tinted Film was received for testing.
(Details description of samples - Refer Page 2)

Date Received of Complete Application : 03 July 2020

Job No. : J20201430301

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

Issued Date : 15 July 2020

Approved Signatory;

(MUHAMMAD HAZMIE BIN OTHMAN)
Testing Executive



(RAJA NOR SIHA BINTI RAJA ABDUL HANAN)
Head
Civil & Construction Section
Testing Services Department

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Reference Standard / Method of Test

MS 2669:2017 (AMD. 1:2018)

Tint film on glazing road vehicles – Methods and requirements of light transmittance, ultraviolet transmittance, total solar energy transmittance, and other related factors

Clause 4.2: Solar Performance

Clause 4.3: Weathering Test

Clause 4.4.2: Bake Test

Description of Sample

Brand: SUNTEK

No.	Model	Original Name From Manufacturer	Nom. Thickness	Classification	Application
1	SUNTEK CIR 50	CIR 50 BLACK	50.8 μm	A1	Front Side Windows

Note: 1) Testing date/period 7th July 2020.

2) Testing was conducted at Block 22, SIRIM Complex.

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Table 1: Test specification for solar performance

Type of testing		Measurement range (nm)	Requirements
Visible light transmittance		380 - 780	Refer to Clause 4.2.1
Ultraviolet transmittance	Class A	300 - 380	≤ 0.5 %
	Class B		0.51 % - 1.5 %
	Class C		1.6 % - 2 %
Total solar energy transmittance (solar factor)	Class 1	300 – 2500	≤ 0.50
	Class 2		0.51 – 0.61
	Class 3		0.62 – 0.75

Clause 4.2.1 Visible light transmittance requirement

The requirement of visible light transmittance for tint film shall be calculated using the equation:

$$VLT_f = \frac{VLT_c \times 100}{VLT_g}$$

where

VLT_f is the value of visible light transmittance for tint film;

VLT_c is the value of visible light transmittance for combination of glass and tint film; and

VLT_g is the value of visible light transmittance for glass.

The VLT_f calculation shall consider the minimum VLT_g requirement of windscreen, front side windows and other windows as stipulated in the UN Regulation No. 43.

The requirement shall consider a possible tolerance up to -10 %.

Table 2: VLT_c requirement specified by Road Transport Act. 1987

Tint Film Application	VLT_c Requirements
Windscreen	Minimum 70 %
Front Side Windows	Minimum 50 %
Other Windows	-



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Sample No.1 : SUNTEK CIR 50
Nom. Thickness : 50.8 μm

Classification : A1
Application : Front Side Windows

Clause	Specifications / Requirements	Result	Remark
4.2	<p>Solar Performance Solar performance requirements shall be specified in Table 1.</p> <p>Solar performance shall include visible light transmittance, ultraviolet transmittance and total solar energy transmittance (solar factor).</p>	<p>Visible light transmittance for combination, VLT_c: 50.62 %</p> <p>Ultraviolet transmittance: 0.42 %</p> <p>Total solar energy transmittance (solar factor): 0.42</p>	<p>Pass (-10 % tolerance)</p> <p>Pass (Class A)</p> <p>Pass (Class 1)</p>
4.3	<p>Weathering Test There shall be no obvious colour changes when comparing exposed sample and control sample.</p> <p>The difference of visible light transmittance between before and after exposure shall be not more than 4 %.</p>	<p>Sample 1:</p> <ul style="list-style-type: none"> No obvious colour changes. VLT Difference: 1.65 %. <p>Sample 2:</p> <ul style="list-style-type: none"> No obvious colour changes. VLT Difference: 1.25 %. <p>Sample 3:</p> <ul style="list-style-type: none"> No obvious colour changes. VLT Difference: 1.94 %. 	<p>Pass</p> <p>Pass</p> <p>Pass</p> <p>Pass</p>
4.4.2	<p>Bake Test All test samples shall not have bubble or other defects produced (delamination and discoloration).</p>	<ul style="list-style-type: none"> Sample 1: No defect observed. Sample 2: No defect observed. Sample 3: No defect observed. 	<p>Pass</p> <p>Pass</p> <p>Pass</p>





SunTek[®] | **CIR30** WINDOW FILMS | TEST REPORT

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TEST REPORT

REPORT NO : 2020CB0359

PAGE : 1 OF 4

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Applicant : SUN-GARD (M) SDN. BHD.
No. 17 A-D, Jalan PJS 1/27, 7th Miles, Jalan Klang Lama,
46000 Petaling Jaya, Selangor, Malaysia.

Manufacturer : EASTMAN PERFORMANCE FILMS LLC
575 Maryville Centre Drive, St. Louis MO 63141-5813,
United States of America.

Product : Suntek Tinted Film

Reference Standard / Method of Test : MS 2669:2017 (AMD. 1:2018)
Tint film on glazing of road vehicles – Methods and requirements of light transmittance, ultraviolet transmittance, total solar energy transmittance, and other related factors
(Details description of clauses tested – Refer Page 2)

Description of sample : One piece of Suntek Tinted Film was received for testing.
(Details description of samples - Refer Page 2)

Date Received of Complete Application : 03 July 2020

Job No. : J20201430302

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

Issued Date : 14 July 2020

Approved Signatory;

(MUHAMMAD HAZMIE BIN OTHMAN)
Testing Executive



(RAJA NOR SIHA BINTI RAJA ABDUL HANAN)
Head
Civil & Construction Section
Testing Services Department

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Reference Standard / Method of Test

MS 2669:2017 (AMD. 1:2018)

Tint film on glazing road vehicles – Methods and requirements of light transmittance, ultraviolet transmittance, total solar energy transmittance, and other related factors

Clause 4.2: Solar Performance

Clause 4.3: Weathering Test

Clause 4.4.2: Bake Test

Description of Sample

Brand: SUNTEK

No.	Model	Original Name From Manufacturer	Nom. Thickness	Classification	Application
1	SUNTEK CIR 30	CIR 30 BLACK	50.8 µm	B1	Other Windows

Note: 1) Testing date/period 7th July 2020 to 8th July 2020.

2) Testing was conducted at Block 22, SIRIM Complex.

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Table 1: Test specification for solar performance

Type of testing		Measurement range (nm)	Requirements
Visible light transmittance		380 - 780	Refer to Clause 4.2.1
Ultraviolet transmittance	Class A	300 - 380	≤ 0.5 %
	Class B		0.51 % - 1.5 %
	Class C		1.6 % - 2 %
Total solar energy transmittance (solar factor)	Class 1	300 – 2500	≤ 0.50
	Class 2		0.51 – 0.61
	Class 3		0.62 – 0.75

Clause 4.2.1 Visible light transmittance requirement

The requirement of visible light transmittance for tint film shall be calculated using the equation:

$$VLT_f = \frac{VLT_c \times 100}{VLT_g}$$

where

VLT_f is the value of visible light transmittance for tint film;

VLT_c is the value of visible light transmittance for combination of glass and tint film; and

VLT_g is the value of visible light transmittance for glass.

The VLT_f calculation shall consider the minimum VLT_g requirement of windscreen, front side windows and other windows as stipulated in the UN Regulation No. 43.

The requirement shall consider a possible tolerance up to -10 %.

Table 2: VLT_c requirement specified by Road Transport Act. 1987

Tint Film Application	VLT_c Requirements
Windscreen	Minimum 70 %
Front Side Windows	Minimum 50 %
Other Windows	-



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Sample : SUNTEK CIR 30
Nom. Thickness : 50.8 μm

Classification : B1
Application : Other Windows

Clause	Specifications / Requirements	Result	Remark
4.2	<p>Solar Performance Solar performance requirements shall be specified in Table 1.</p> <p>Solar performance shall include visible light transmittance, ultraviolet transmittance and total solar energy transmittance (solar factor).</p>	<p>Visible light transmittance for combination, VLT_c: 31.94 %</p> <p>Ultraviolet transmittance: 0.51 %</p> <p>Total solar energy transmittance (solar factor): 0.35</p>	<p>Pass</p> <p>Pass (Class B)</p> <p>Pass (Class 1)</p>
4.3	<p>Weathering Test There shall be no obvious colour changes when comparing exposed sample and control sample.</p> <p>The difference of visible light transmittance between before and after exposure shall be not more than 4 %.</p>	<p>Sample 1:</p> <ul style="list-style-type: none"> No obvious colour changes. VLT Difference: 3.74 %. <p>Sample 2:</p> <ul style="list-style-type: none"> No obvious colour changes. VLT Difference: 1.57 %. <p>Sample 3:</p> <ul style="list-style-type: none"> No obvious colour changes. VLT Difference: 1.57 %. 	<p>Pass</p> <p>Pass</p> <p>Pass</p> <p>Pass</p> <p>Pass</p>
4.4.2	<p>Bake Test All test samples shall not have bubble or other defects produced (delamination and discoloration).</p>	<ul style="list-style-type: none"> Sample 1: No defect observed. Sample 2: No defect observed. Sample 3: No defect observed. 	<p>Pass</p> <p>Pass</p> <p>Pass</p>





SunTek[®] | **CXP80** WINDOW FILMS | TEST REPORT

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TEST REPORT

REPORT NO : 2020CB0362

PAGE : 1 OF 4

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Applicant : SUN-GARD (M) SDN. BHD.
No. 17 A-D, Jalan PJS 1/27, 7th Miles, Jalan Klang Lama,
46000 Petaling Jaya, Selangor, Malaysia.

Manufacturer : EASTMAN PERFORMANCE FILMS LLC
575 Maryville Centre Drive, St. Louis MO 63141-5813,
United States of America.

Product : Suntek Tinted Film

Reference Standard / Method of Test : MS 2669:2017 (AMD. 1:2018)
Tint film on glazing of road vehicles – Methods and requirements of light transmittance, ultraviolet transmittance, total solar energy transmittance, and other related factors
(Details description of clauses tested – Refer Page 2)

Description of sample : One piece of Suntek Tinted Film was received for testing.
(Details description of samples - Refer Page 2)

Date Received of Complete Application : 03 July 2020

Job No. : J20201430305

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

Issued Date : 14 July 2020

Approved Signatory;

(MUHAMMAD HAZMIE BIN OTHMAN)
Testing Executive



(RAJA HANAN NOR SIHA BINTI RAJA ABDUL HANAN)
Head
Civil & Construction Section
Testing Services Department

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Reference Standard / Method of Test

MS 2669:2017 (AMD. 1:2018)

Tint film on glazing road vehicles – Methods and requirements of light transmittance, ultraviolet transmittance, total solar energy transmittance, and other related factors

Clause 4.2: Solar Performance

Clause 4.3: Weathering Test

Clause 4.4.2: Bake Test

Description of Sample

Brand: SUNTEK

No.	Model	Original Name From Manufacturer	Nom. Thickness	Classification	Application
1	SUNTEK CXP 80	CXP 80	50.8 µm	A2	Windscreen

Note: 1) Testing date/period 7th July 2020 to 8th July 2020.

2) Testing was conducted at Block 22, SIRIM Complex.

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Table 1: Test specification for solar performance

Type of testing		Measurement range (nm)	Requirements
Visible light transmittance		380 - 780	Refer to Clause 4.2.1
Ultraviolet transmittance	Class A	300 - 380	≤ 0.5 %
	Class B		0.51 % - 1.5 %
	Class C		1.6 % - 2 %
Total solar energy transmittance (solar factor)	Class 1	300 – 2500	≤ 0.50
	Class 2		0.51 – 0.61
	Class 3		0.62 – 0.75

Clause 4.2.1 Visible light transmittance requirement

The requirement of visible light transmittance for tint film shall be calculated using the equation:

$$VLT_f = \frac{VLT_c \times 100}{VLT_g}$$

where

VLT_f is the value of visible light transmittance for tint film;

VLT_c is the value of visible light transmittance for combination of glass and tint film; and

VLT_g is the value of visible light transmittance for glass.

The VLT_f calculation shall consider the minimum VLT_g requirement of windscreen, front side windows and other windows as stipulated in the UN Regulation No. 43.

The requirement shall consider a possible tolerance up to -10 %.

Table 2: VLT_c requirement specified by Road Transport Act. 1987

Tint Film Application	VLT_c Requirements
Windscreen	Minimum 70 %
Front Side Windows	Minimum 50 %
Other Windows	-



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Sample : SUNTEK CXP 80
Nom. Thickness : 50.8 μm

Classification : A2
Application : Windscreen

Clause	Specifications / Requirements	Result	Remark
4.2	<p>Solar Performance Solar performance requirements shall be specified in Table 1.</p> <p>Solar performance shall include visible light transmittance, ultraviolet transmittance and total solar energy transmittance (solar factor).</p>	<p>Visible light transmittance for combination, VLT_c: 70.94 %</p> <p>Ultraviolet transmittance: 0.13 %</p> <p>Total solar energy transmittance (solar factor): 0.55</p>	<p>Pass</p> <p>Pass (Class A)</p> <p>Pass (Class 2)</p>
4.3	<p>Weathering Test There shall be no obvious colour changes when comparing exposed sample and control sample.</p> <p>The difference of visible light transmittance between before and after exposure shall be not more than 4 %.</p>	<p>Sample 1:</p> <ul style="list-style-type: none"> No obvious colour changes. VLT Difference: 0.30 %. <p>Sample 2:</p> <ul style="list-style-type: none"> No obvious colour changes. VLT Difference: 0.00 %. <p>Sample 3:</p> <ul style="list-style-type: none"> No obvious colour changes. VLT Difference: 0.14 %. 	<p>Pass</p> <p>Pass</p> <p>Pass</p> <p>Pass</p>
4.4.2	<p>Bake Test All test samples shall not have bubble or other defects produced (delamination and discoloration).</p>	<ul style="list-style-type: none"> Sample 1: No defect observed. Sample 2: No defect observed. Sample 3: No defect observed. 	<p>Pass</p> <p>Pass</p> <p>Pass</p>





SunTek[®] | **CXP45** WINDOW FILMS | TEST REPORT

BENEFITS OF PRODUCT CERTIFICATION SCHEME

- Provide assurances of safety and reliability to users of your products.
- Provide independent assurance that your products manufactured are under an effective system of testing, supervision and control. Thus, there is improved production efficiency and reduced wastage and rejects.
- Demonstrate product compliance with national or international standards.
- Enhance your reputation and extend your market by using the Product Certification Mark on your certified products as a marketing tool.
- Have your locally manufactured products automatically listed in the “Senarai Bahan/Barang Buatan Tempatan” (Treasury Listing) at no additional cost.



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TEST REPORT

REPORT NO : 2020CB0361	PAGE : 1 OF 4
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THIS TEST REPORT IS ISSUED IN SECURED PDF SOFTCOPY

Applicant : SUN-GARD (M) SDN. BHD.
 No. 17 A-D, Jalan PJS 1/27, 7th Miles, Jalan Klang Lama,
 46000 Petaling Jaya, Selangor, Malaysia.

Manufacturer : EASTMAN PERFORMANCE FILMS LLC
 575 Maryville Centre Drive, St. Louis MO 63141-5813,
 United States of America.

Product : Suntek Tinted Film

Reference Standard / Method of Test : MS 2669:2017 (AMD. 1:2018)
 Tint film on glazing of road vehicles – Methods and requirements of light transmittance, ultraviolet transmittance, total solar energy transmittance, and other related factors
 (Details description of clauses tested – Refer Page 2)

Description of sample : One piece of Suntek Tinted Film was received for testing.
 (Details description of samples - Refer Page 2)

Date Received of Complete Application : 03 July 2020

Job No. : J20201430304

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

Issued Date : 14 July 2020

Approved Signatory;

(MUHAMMAD HAZMIE BIN OTHMAN)
 Testing Executive



(RAJA NOR SIHA BINTI RAJA ABDUL HANAN)
 Head
 Civil & Construction Section
 Testing Services Department

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Reference Standard / Method of Test

MS 2669:2017 (AMD. 1:2018)

Tint film on glazing road vehicles – Methods and requirements of light transmittance, ultraviolet transmittance, total solar energy transmittance, and other related factors

Clause 4.2: Solar Performance

Clause 4.3: Weathering Test

Clause 4.4.2: Bake Test

Description of Sample

Brand: SUNTEK

No.	Model	Original Name From Manufacturer	Nom. Thickness	Classification	Application
1	SUNTEK CXP 45	CXP 45	50.8 µm	A2	Other Windows

Note: 1) Testing date/period 7th July 2020 to 8th July 2020.

2) Testing was conducted at Block 22, SIRIM Complex.

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Table 1: Test specification for solar performance

Type of testing		Measurement range (nm)	Requirements
Visible light transmittance		380 - 780	Refer to Clause 4.2.1
Ultraviolet transmittance	Class A	300 - 380	≤ 0.5 %
	Class B		0.51 % - 1.5 %
	Class C		1.6 % - 2 %
Total solar energy transmittance (solar factor)	Class 1	300 – 2500	≤ 0.50
	Class 2		0.51 – 0.61
	Class 3		0.62 – 0.75

Clause 4.2.1 Visible light transmittance requirement

The requirement of visible light transmittance for tint film shall be calculated using the equation:

$$VLT_f = \frac{VLT_c \times 100}{VLT_g}$$

where

VLT_f is the value of visible light transmittance for tint film;

VLT_c is the value of visible light transmittance for combination of glass and tint film; and

VLT_g is the value of visible light transmittance for glass.

The VLT_f calculation shall consider the minimum VLT_g requirement of windscreen, front side windows and other windows as stipulated in the UN Regulation No. 43.

The requirement shall consider a possible tolerance up to -10 %.

Table 2: VLT_c requirement specified by Road Transport Act. 1987

Tint Film Application	VLT_c Requirements
Windscreen	Minimum 70 %
Front Side Windows	Minimum 50 %
Other Windows	-



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Sample : SUNTEK CXP 45
Nom. Thickness : 50.8 μm

Classification : A2
Application : Other Windows

Clause	Specifications / Requirements	Result	Remark
4.2	<p>Solar Performance Solar performance requirements shall be specified in Table 1.</p> <p>Solar performance shall include visible light transmittance, ultraviolet transmittance and total solar energy transmittance (solar factor).</p>	<p>Visible light transmittance for combination, VLT_c: 40.77 %</p> <p>Ultraviolet transmittance: 0.48 %</p> <p>Total solar energy transmittance (solar factor): 0.51</p>	<p>Pass</p> <p>Pass (Class A)</p> <p>Pass (Class 2)</p>
4.3	<p>Weathering Test There shall be no obvious colour changes when comparing exposed sample and control sample.</p> <p>The difference of visible light transmittance between before and after exposure shall be not more than 4 %.</p>	<p>Sample 1:</p> <ul style="list-style-type: none"> No obvious colour changes. VLT Difference: 2.30 %. <p>Sample 2:</p> <ul style="list-style-type: none"> No obvious colour changes. VLT Difference: 2.23 %. <p>Sample 3:</p> <ul style="list-style-type: none"> No obvious colour changes. VLT Difference: 2.33 %. 	<p>Pass</p> <p>Pass</p> <p>Pass</p> <p>Pass</p>
4.4.2	<p>Bake Test All test samples shall not have bubble or other defects produced (delamination and discoloration).</p>	<ul style="list-style-type: none"> Sample 1: No defect observed. Sample 2: No defect observed. Sample 3: No defect observed. 	<p>Pass</p> <p>Pass</p> <p>Pass</p>





SunTek[®] | **INF50** WINDOW FILMS | TEST REPORT

BENEFITS OF PRODUCT CERTIFICATION SCHEME

- Provide assurances of safety and reliability to users of your products.
- Provide independent assurance that your products manufactured are under an effective system of testing, supervision and control. Thus, there is improved production efficiency and reduced wastage and rejects.
- Demonstrate product compliance with national or international standards.
- Enhance your reputation and extend your market by using the Product Certification Mark on your certified products as a marketing tool.
- Have your locally manufactured products automatically listed in the “Senarai Bahan/Barang Buatan Tempatan” (Treasury Listing) at no additional cost.



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TEST REPORT

REPORT NO : 2020CB0363-S1	PAGE : 1 OF 4
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THIS TEST REPORT IS ISSUED IN SECURED PDF SOFTCOPY

Applicant : SUN-GARD (M) SDN. BHD.
 No. 17 A-D, Jalan PJS 1/27, 7th Miles, Jalan Klang Lama,
 46000 Petaling Jaya, Selangor, Malaysia.

Manufacturer : EASTMAN PERFORMANCE FILMS LLC
 575 Maryville Centre Drive, St. Louis MO 63141-5813,
 United States of America.

Product : Suntek Tinted Film

Reference Standard / Method of Test : MS 2669:2017 (AMD. 1:2018)
 Tint film on glazing of road vehicles – Methods and requirements of light transmittance, ultraviolet transmittance, total solar energy transmittance, and other related factors
 (Details description of clauses tested – Refer Page 2)

Description of sample : One piece of Suntek Tinted Film was received for testing.
 (Details description of samples - Refer Page 2)

Date Received of Complete Application : 03 July 2020

Job No. : J20201430306

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

Issued Date : 22 July 2020

Approved Signatory;

(MUHAMMAD HAZMIE BIN OTHMAN)
 Testing Executive



(RAJA NOR SIHA BINTI RAJA ABDUL HANAN)
 Head
 Civil & Construction Section
 Testing Services Department

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Reference Standard / Method of Test

MS 2669:2017 (AMD. 1:2018)

Tint film on glazing road vehicles – Methods and requirements of light transmittance, ultraviolet transmittance, total solar energy transmittance, and other related factors

Clause 4.2: Solar Performance

Clause 4.3: Weathering Test

Clause 4.4.2: Bake Test

Description of Sample

Brand: SUNTEK

No.	Model	Original Name From Manufacturer	Nom. Thickness	Classification	Application
1	SUNTEK INF 50	INF 50	50.8 μm	B3	Front Side Windows

Note: 1) Testing date/period 7th July 2020 to 8th July 2020.

2) Testing was conducted at Block 22, SIRIM Complex.

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NOTES:

1. This is a supplementary test report.
2. This test report shall be read in conjunction with SIRIM Test Report No. 2020CB0363 and it is not valid without the original Test Report No. 2020CB0363.
3. This supplementary test report is issued due to revision of applicant and manufacturer descriptions in SIRIM Test Report No. 2020CB0363.

Page 3 of this test report shall replace page 2 of 4 of SIRIM Test Report No. 2020CB0363.

Page 4 of this test report shall replace page 4 of 4 of SIRIM Test Report No. 2020CB0363.

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Sample : SUNTEK INF 50
Nom. Thickness : 50.8 μ m

Classification : B3
Application : Front Side Windows

Clause	Specifications / Requirements	Result	Remark
4.2	<p>Solar Performance Solar performance requirements shall be specified in Table 1.</p> <p>Solar performance shall include visible light transmittance, ultraviolet transmittance and total solar energy transmittance (solar factor).</p>	<p>Visible light transmittance for combination, VLT_c: 53.72 %</p> <p>Ultraviolet transmittance: 0.68 %</p> <p>Total solar energy transmittance (solar factor): 0.65</p>	<p>Pass</p> <p>Pass (Class B)</p> <p>Pass (Class 3)</p>
4.3	<p>Weathering Test There shall be no obvious colour changes when comparing exposed sample and control sample.</p> <p>The difference of visible light transmittance between before and after exposure shall be not more than 4 %.</p>	<p>Sample 1:</p> <ul style="list-style-type: none"> No obvious colour changes. VLT Difference: 0.84 %. <p>Sample 2:</p> <ul style="list-style-type: none"> No obvious colour changes. VLT Difference: 0.97 %. <p>Sample 3:</p> <ul style="list-style-type: none"> No obvious colour changes. VLT Difference: 0.67 %. 	<p>Pass</p> <p>Pass</p> <p>Pass</p> <p>Pass</p> <p>Pass</p>
4.4.2	<p>Bake Test All test samples shall not have bubble or other defects produced (delamination and discoloration).</p>	<ul style="list-style-type: none"> Sample 1: No defect observed. Sample 2: No defect observed. Sample 3: No defect observed. 	<p>Pass</p> <p>Pass</p> <p>Pass</p>





SunTek[®] | **INF35** WINDOW FILMS | TEST REPORT

BENEFITS OF PRODUCT CERTIFICATION SCHEME

- Provide assurances of safety and reliability to users of your products.
- Provide independent assurance that your products manufactured are under an effective system of testing, supervision and control. Thus, there is improved production efficiency and reduced wastage and rejects.
- Demonstrate product compliance with national or international standards.
- Enhance your reputation and extend your market by using the Product Certification Mark on your certified products as a marketing tool.
- Have your locally manufactured products automatically listed in the “Senarai Bahan/Barang Buatan Tempatan” (Treasury Listing) at no additional cost.



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TEST REPORT

REPORT NO : 2020CB0360

PAGE : 1 OF 4

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Applicant : SUN-GARD (M) SDN. BHD.
No. 17 A-D, Jalan PJS 1/27, 7th Miles, Jalan Klang Lama,
46000 Petaling Jaya, Selangor, Malaysia.

Manufacturer : EASTMAN PERFORMANCE FILMS LLC
575 Maryville Centre Drive, St. Louis MO 63141-5813,
United States of America.

Product : Suntek Tinted Film

Reference Standard / Method of Test : MS 2669:2017 (AMD. 1:2018)
Tint film on glazing of road vehicles – Methods and requirements of light transmittance, ultraviolet transmittance, total solar energy transmittance, and other related factors
(Details description of clauses tested – Refer Page 2)

Description of sample : One piece of Suntek Tinted Film was received for testing.
(Details description of samples - Refer Page 2)

Date Received of Complete Application : 03 July 2020

Job No. : J20201430303

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

Issued Date : 14 July 2020

Approved Signatory;

(MUHAMMAD HAZMIE BIN OTHMAN)
Testing Executive



(RAJA NOR SIHA BINTI RAJA ABDUL HANAN)
Head
Civil & Construction Section
Testing Services Department

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Reference Standard / Method of Test

MS 2669:2017 (AMD. 1:2018)

Tint film on glazing road vehicles – Methods and requirements of light transmittance, ultraviolet transmittance, total solar energy transmittance, and other related factors

Clause 4.2: Solar Performance

Clause 4.3: Weathering Test

Clause 4.4.2: Bake Test

Description of Sample

Brand: SUNTEK

No.	Model	Original Name From Manufacturer	Nom. Thickness	Classification	Application
1	SUNTEK INF 35	INF 35	50.8 µm	B1	Other Windows

Note: 1) Testing date/period 7th July 2020 to 8th July 2020.

2) Testing was conducted at Block 22, SIRIM Complex.

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Table 1: Test specification for solar performance

Type of testing		Measurement range (nm)	Requirements
Visible light transmittance		380 - 780	Refer to Clause 4.2.1
Ultraviolet transmittance	Class A	300 - 380	≤ 0.5 %
	Class B		0.51 % - 1.5 %
	Class C		1.6 % - 2 %
Total solar energy transmittance (solar factor)	Class 1	300 – 2500	≤ 0.50
	Class 2		0.51 – 0.61
	Class 3		0.62 – 0.75

Clause 4.2.1 Visible light transmittance requirement

The requirement of visible light transmittance for tint film shall be calculated using the equation:

$$VLT_f = \frac{VLT_c \times 100}{VLT_g}$$

where

VLT_f is the value of visible light transmittance for tint film;

VLT_c is the value of visible light transmittance for combination of glass and tint film; and

VLT_g is the value of visible light transmittance for glass.

The VLT_f calculation shall consider the minimum VLT_g requirement of windscreen, front side windows and other windows as stipulated in the UN Regulation No. 43.

The requirement shall consider a possible tolerance up to -10 %.

Table 2: VLT_c requirement specified by Road Transport Act. 1987

Tint Film Application	VLT_c Requirements
Windscreen	Minimum 70 %
Front Side Windows	Minimum 50 %
Other Windows	-



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Sample : SUNTEK INF 35
Nom. Thickness : 50.8 μm

Classification : B1
Application : Other Windows

Clause	Specifications / Requirements	Result	Remark
4.2	<p>Solar Performance Solar performance requirements shall be specified in Table 1.</p> <p>Solar performance shall include visible light transmittance, ultraviolet transmittance and total solar energy transmittance (solar factor).</p>	<p>Visible light transmittance for combination, VLT_c: 30.78 %</p> <p>Ultraviolet transmittance: 0.99 %</p> <p>Total solar energy transmittance (solar factor): 0.40</p>	<p>Pass</p> <p>Pass (Class B)</p> <p>Pass (Class 1)</p>
4.3	<p>Weathering Test There shall be no obvious colour changes when comparing exposed sample and control sample.</p> <p>The difference of visible light transmittance between before and after exposure shall be not more than 4 %.</p>	<p>Sample 1:</p> <ul style="list-style-type: none"> No obvious colour changes. VLT Difference: 0.05 %. <p>Sample 2:</p> <ul style="list-style-type: none"> No obvious colour changes. VLT Difference: 0.11 %. <p>Sample 3:</p> <ul style="list-style-type: none"> No obvious colour changes. VLT Difference: 0.11 %. 	<p>Pass</p> <p>Pass</p> <p>Pass</p> <p>Pass</p> <p>Pass</p>
4.4.2	<p>Bake Test All test samples shall not have bubble or other defects produced (delamination and discoloration).</p>	<ul style="list-style-type: none"> Sample 1: No defect observed. Sample 2: No defect observed. Sample 3: No defect observed. 	<p>Pass</p> <p>Pass</p> <p>Pass</p>



CONDITIONS RELATING TO THE USE OF SIRIM QAS INTERNATIONAL TEST REPORT

1. A Test Report will be issued in respect of Testing Services conducted and shall relate only to the sample actually tested. SIRIM QAS International makes no warranty whatsoever and the Applicant shall not represent in any manner that any duplication or mass production of the Product is same as the sample actually tested or that SIRIM QAS International has tested any of the duplicated or mass-produced Product. When a statement of conformity to a specification or standard is applied, the Measurement Uncertainty of test has been considered.
2. The Test Report shall not be amended, changed, varied or modified in any manner whatsoever by the Applicant or otherwise.
3. If the Test Report is to be furnished to any third party or to the public, each such Test Report shall be furnished in full, legible and in its entirety.
4. The Test Report shall not be reproduced and shall not in any event be used for any advertising purposes or whatsoever without written approval from the Chief Executive Officer of SIRIM QAS International of No 1, Persiaran Dato' Menteri, Building 8, Section 2, P.O. Box 7035, 40700 Shah Alam, Selangor Darul Ehsan.
5. Customer (Applicant/Manufacture/Factory, etc.) is not permitted to use any SIRIM QAS International, SIRIM or other SIRIM's subsidiaries logo or words on packaging, sample's manual, technical specification, brochures/flyers or any other means without the prior written approval from the Chief Executive Officer of SIRIM QAS International.
6. If such approval is obtained from the Chief Executive Officer of SIRIM QAS International, the Applicant may only include the phrase, "A sample of this product has been tested by SIRIM QAS International (Test Report No) ... (dated) ... (for what test) ... (to which standard)" or such similar words which stress that only the Sample was actually tested. This phrase shall only be used for the purpose of product advertisement or product promotion (eg; brochures). For avoidance of doubt, the statement shall not be used on the sample and packaging of the sample.
7. In the event there is an investigation from a Government Regulatory Agency concerning the Applicant's Test Report, SIRIM QAS International may disclose the information pertaining to the Test Report for purposes of such investigation.
8. Further or in the alternative, it is strictly forbidden unless with prior written approval from the Chief Executive Officer of SIRIM QAS International, to represent in any manner whatsoever that SIRIM QAS International, SIRIM and/or other SIRIM's subsidiaries has endorsed, approved or validated the Product of the Applicant in any manner whatsoever.
9. In the event the Applicant is found in breach of this provision, SIRIM QAS International, SIRIM and/or other SIRIM's subsidiaries without prejudice to any other rights and remedies may take whatever action necessary including but not limited to:
 - a) Informing and placing a notice in the media;
 - b) Obtaining an injunction from Court (cost on a solicitor-client basis to be borne by the Applicant);
 - c) Refusing to accept any further Product 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 advertise a clarification and apology to SIRIM QAS International, SIRIM and/or other SIRIM's 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 the Applicant's Test Report with the relevant authorities.
10. SIRIM QAS International is committed in supporting an environmentally-friendly business practices by reducing paper consumption, therefore we do not issue any hard copy of Test Report to the Applicant. However, certified true copy(ies) of the Test Report may be issued upon request by the Applicant upon payment of the relevant fee.
11. Issuance of Amendment Report due to the following reasons are chargeable to the Applicant :
 - a) Changes in details of the Applicant name and/or address;
 - b) Changes in details of the Manufacturer's name and/or address;
 - c) Changes in details of the Factory location name and/or address;
 - d) Changes in details of the model and/or type designation
12. However, issuance of Supplementary Report due to the following reasons are FOC :
 - a) Misprints and typo errors;
 - b) Missing technical information as agreed in PP1 form;
 - c) Test data not reported;
 - d) Mistake in reporting of test data
13. Corrections to report shall only be allowed if the date of issuance of the original report has not exceeded 6 months and shall be limited to maximum 3 times, after either case whichever occurs earlier, an Amendment or a Supplementary Report shall not be issued.