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### TEST REPORT

REPORT NO : 2018CB2060

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#### THIS TEST REPORT IS ISSUED IN SECURED PDF SOFTCOPY

Applicant : ACCENTRIX SDN. BHD.  
No.12, Jalan Helang Hindik,  
Kepong Baru,  
51200 Kuala Lumpur,  
Wilayah Persekutuan Kuala Lumpur, Malaysia.

Manufacturer : ACCENTRIX SDN. BHD.

Product : Lead Glass  
Reference Standard / Method of Test : ISO 9050:2003  
Determination Of Light Transmittance, Solar Direct Transmittance, Total Solar Energy Transmittance, Ultraviolet Transmittance, And Related Glazing Factors

Description of sample / Description of Test Specimen : One piece of Lead Glass was received for testing.  
Brand: SHIELDEX  
Model: LG  
Nominal Thickness: 8 mm

Date Received of Complete Application : 18 October 2018  
Job No. : J20181431980  
Description of Test Results / Overall Test Result : The test results of the submitted test samples are described in page 3 of this test report.

Issued Date : 29 October 2018

Approved Signatories;

(MUHAMMAD HAZMIE BIN OTHMAN)  
Testing Executive



(RAJANOR SIHA BINTI RAJA ABDUL HANAN)  
Head  
Civil & Construction Section  
Testing Services Department

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- Test Method** : ISO 9050:2003  
Determination Of Light Transmittance, Solar Direct Transmittance, Total Solar Energy Transmittance, Ultraviolet Transmittance And Related Glazing Factors
- Instrument** : 1) Shimadzu UV3600 Plus  
2) Standard Sample Holder
- Test Conditions** : For the purpose of providing basic information on the performance of glazing units, following conventional conditions have been stated for simplicity; (clause 3.5.6.1)
- i) Positions of glazing materials : vertical
  - ii) Outside surface : wind velocity : approximately 4 m/s
  - iii) Hemispherical emissivity : 0.837
  - iv) Inside surface : natural convection, emissivity optional
  - v) Heat transfer coefficients towards the inside,  $h_i = 8 \text{ W/m}^2\text{K}$
  - vi) Heat transfer coefficients towards the outside,  $h_e = 23 \text{ W/m}^2\text{K}$
- Measurement Range** : For computing the visible light transmittance, visible light reflectance, solar direct transmittance, solar direct reflectance and ultra violet transmittance, the following parameters were taken into consideration:
- i) spectral range, 380 – 780 nm, (light transmittance and reflectance)
  - ii) spectral range, 300 – 2500 nm, (solar direct transmittance and reflectance)
  - iii) spectral range, 300 – 380 nm, (UV – transmittance)
- Calculations** : i) The solar & light direct absorption will be calculated using this formula:  
 $\tau + \rho + \alpha = 1$
- $\tau$  = Transmittance value
  - $\rho$  = Reflectance value
  - $\alpha$  = Absorption value
- ii) Secondary Heat Transfer Factor Towards the Inside for single glazing
- $$q_i = \alpha_e \left( \frac{h_i}{h_e + h_i} \right) \quad \text{where, } \alpha_e = \text{Solar direct absorption}$$
- Total Solar Energy Transmittance (Solar Factor)
- $$g = \tau_e + q_i \quad \text{where, } \tau_e = \text{Solar direct transmittance}$$
- The Solar Factor will be ranges from 0 to 1, a lower value of Solar Factor represent less heat gain.



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### Test Result

SAMPLE REFERENCE	ULTRAVIOLET (%) Transmittance	LIGHT DIRECT (%)			SOLAR DIRECT (%)			Total Solar Energy Transmittance (Solar Factor)
		Transmittance	Reflectance	Absorbance	Transmittance	Reflectance	Absorbance	
Lead Glass SHIELDDEX LG	4.86	91.38	6.85	1.77	86.11	7.82	6.06	0.87

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  - c) Refusing to accept any further Product for Testing Services from the Applicant or whosoever related to the Applicant, whether subsidiary or otherwise;
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  - e) Informing or lodging a report pertaining the Applicant's Test Report with the relevant authorities.
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11. Corrections to test report shall only be allowed within 6 months from issuance date of the test report and shall be limited to maximum 3 times, after either case whichever occurs earlier, a new test report shall be issued and replace the previous one (having error(s) or lack of information). Issuance of Supplementary Report to the original Test Report shall be for the followings;
  - a) Misprints and typo errors
  - b) Missing technical information
  - c) Test data not reported
  - d) Mistake in reporting of test data