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RC MONS : 130.828 - Registration : 08/02/01

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Accreditation N° : 032-Test
according to ISO 17025

TEST REPORT : N° 2014B SEC 22251-2a

Including 4 pages + 1 annex
Page 1/4

Mons, October 14th, 2014

REQUESTED BY :

SOVEP

Rue El Kasserine – ZI Mghira III Lot 97
Tunis
Tunisie

REFERENCE OF THE REQUESTED :

Pro forma invoice PF2/2014

CONCERNED MANUFACTURER:

SOVEP

Rue El Kasserine – ZI Mghira III Lot 97
Tunis
Tunisie

NUMBER OF SAMPLES AND IDENTIFICATION :

Thermally Toughened safety glass –Stopsol
supersilver dark blue - see page 2

PURPOSE OF THE REQUEST :

Test in compliance with the requirements of the EN 12150-2 Standard (fragmentation test*, 4 points bending test EN 1288-3 standard)

SAMPLES RECEIVED ON :

26/06/2014

TESTING DATE :

From 08/07/2014

COMMENTS :

*Test under accreditation

This report cancel and replace report 2014B SEC 22251-2



Notified body (Id.N°1174)

according to Regulation (EU) No 305/2011 - Construction products

DESCRIPTION OF THE SAMPLES

Manufacturer : **SOVEP**
Rue El Kasserine – ZI Mghira III Lot 97
Tunis
Tunisie

Production site : Tunisie
Commercial name of the product : /

Customer's references : **Thermally Toughened safety glass –Stopsol
supersilver dark blue**

Internal reference : SEC 22251

Sampling : Under responsibility of the manufacturer

Sampling information : Traceability of the samples is under responsibility
of the manufacturer.

Number of samples : 18 samples 6 mm (360 x 1100 mm)

Integration of an electronic system or alarm
component : None

Witness : None

TEST ON SAFETY GLASS IN COMPLIANCE WITH
THE REQUIREMENTS OF THE STANDARD EN 12150-2 (2005)

II FRAGMENTATION TEST

Fragmentation on thermally toughened safety glass according to the specifications of the EN 12150-1 (2000).

On 5 samples
Dimension : 360 x 1100 mm

Nominal thickness : 6.0 mm ± 0.2

Testing date : 10/07/2014
Temperature in the test room: 21°C

| Sample n ^r | Thickness (mm) | Number of particles into a square of 50 x 50 mm (*) | Long particles >100mm | |
|-----------------------|----------------|---|-----------------------|-------------|
| | | | Number | Length (mm) |
| 1 | 5.85 | 120 | 0 | - |
| 2 | 5.85 | 105 | 0 | - |
| 3 | 5.85 | 102 | 0 | - |
| 4 | 5.85 | 102 | 0 | - |
| 5 | 5.85 | 95 | 0 | - |

(*) limit of acceptance : 40 minimum

III MECHANICAL RESISTANCE TEST (see annex 1)

Mechanical resistance on thermally toughened safety glass according to the specifications of the EN 12150-1 (2000) bending strength (four points bending method following EN 1288-3)).

Test was performed at CSTC-WTCB

On 10 samples

Dimension : 360 x 1100 mm

Testing date : 30/07/2014

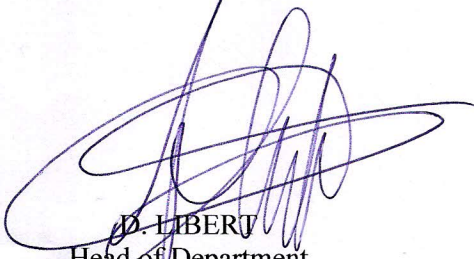
Tensile side : /

Nominal thickness : 6 mm

| Sample number | Thickness (mm) | Strength (N/mm ²) | Criteria |
|---------------|----------------|-------------------------------|-------------------------|
| 1 | 5.95 | 145 | > 120 N/mm ² |
| 2 | 5.94 | 172 | |
| 3 | 5.91 | 152 | |
| 4 | 5.94 | 169 | |
| 5 | 5.93 | 144 | |
| 6 | 5.94 | 156 | |
| 7 | 5.95 | 165 | |
| 8 | 5.94 | 163 | |
| 9 | 5.93 | 166 | |
| 10 | 5.96 | 159 | |

C. Conclusion

The tests carried out on the samples considered in this report are in compliance with the requirements of the **EN 12150-1 standard for the fragmentation test** and for the **mechanical resistance** (methodology according to EN 1288-3).



J. LIBERT
Head of Department

Glazing and Components - INISMa

Tableau 5 – Description et dimensions des éprouvettes – Verres réfléchissants Dark Blue

| Nr. sample BBRI | Length L [mm] | Width B | | | | Thickness h | | | | | Loading rate | |
|--------------------|------------------|------------|------------|------------|--------------|-------------|------------|------------|------------|--------------|--------------|----------|
| | | B1 [mm] | B2 [mm] | B3 [mm] | Bmoy [mm] | h1 [mm] | h2 [mm] | h3 [mm] | h4 [mm] | hmoy [mm] | [N/s] | [kN/min] |
| SC1425-3-1 | 1100 | 361.58 | 361.64 | 361.66 | 361.6 | 5.95 | 5.96 | 5.94 | 5.94 | 5.95 | 21 | 1.273 |
| SC1425-3-2 | 1100 | 361.38 | 361.45 | 361.54 | 361.5 | 5.94 | 5.93 | 5.94 | 5.94 | 5.94 | 21 | 1.269 |
| SC1425-3-3 | 1100 | 361.70 | 361.76 | 361.85 | 361.8 | 5.91 | 5.91 | 5.91 | 5.91 | 5.91 | 21 | 1.257 |
| SC1425-3-4 | 1100 | 361.53 | 361.93 | 361.82 | 361.8 | 5.93 | 5.94 | 5.94 | 5.94 | 5.94 | 21 | 1.269 |
| SC1425-3-5 | 1100 | 361.94 | 361.87 | 361.30 | 361.7 | 5.93 | 5.93 | 5.93 | 5.93 | 5.93 | 21 | 1.266 |
| SC1425-3-6 | 1100 | 362.10 | 362.17 | 362.15 | 362.1 | 5.95 | 5.93 | 5.93 | 5.95 | 5.94 | 21 | 1.270 |
| SC1425-3-7 | 1100 | 362.41 | 362.66 | 363.14 | 362.7 | 5.91 | 5.96 | 5.97 | 5.94 | 5.95 | 21 | 1.272 |
| SC1425-3-8 | 1100 | 361.57 | 361.74 | 361.94 | 361.8 | 5.93 | 5.93 | 5.94 | 5.94 | 5.94 | 21 | 1.268 |
| SC1425-3-9 | 1100 | 362.09 | 362.01 | 362.27 | 362.1 | 5.93 | 5.92 | 5.92 | 5.93 | 5.93 | 21 | 1.264 |
| SC1425-3-10 | 1100 | 362.16 | 362.47 | 362.13 | 362.3 | 5.96 | 5.97 | 5.96 | 5.96 | 5.96 | 21 | 1.280 |

Tableau 6 – Résultats des essais et calcul des contraintes de rupture – Verres réfléchissants Dark Blue

| Nr. sample BBRI | L [mm] | B [mm] | h [mm] | Loading rate [kN/min] | Date test | Pr [kN] | time [mm:ss] | Strength σ_{bb} [N/mm ²] | Deflection y/h [-] | k_e [-] | Edge strength σ_{eb} [N/mm ²] | Remarks (in / out bending rolls, |
|--------------------|-----------|-----------|-----------|--------------------------|------------|------------|-----------------|--|-----------------------|--------------|---|-------------------------------------|
| SC1425-3-1 | 1100 | 361.6 | 5.95 | 1.27 | 30/07/2014 | 1.50 | 01:09 | 144.5 | 11.2 | 1.090 | 157.5 | IN on edge |
| SC1425-3-2 | 1100 | 361.5 | 5.94 | 1.27 | 30/07/2014 | 1.78 | 01:21 | 171.5 | 13.4 | | 0.0 | IN 130mm from edge |
| SC1425-3-3 | 1100 | 361.8 | 5.91 | 1.26 | 30/07/2014 | 1.56 | 01:12 | 152.0 | 12.0 | 1.086 | 165.1 | IN on edge |
| SC1425-3-4 | 1100 | 361.8 | 5.94 | 1.27 | 30/07/2014 | 1.75 | 01:23 | 168.6 | 13.2 | 1.079 | 182.0 | IN on edge |
| SC1425-3-5 | 1100 | 361.7 | 5.93 | 1.27 | 30/07/2014 | 1.48 | 01:07 | 143.5 | 11.2 | 1.090 | 156.3 | IN on edge |
| SC1425-3-6 | 1100 | 362.1 | 5.94 | 1.27 | 30/07/2014 | 1.62 | 01:11 | 156.2 | 12.2 | 1.084 | 169.4 | IN on edge |
| SC1425-3-7 | 1100 | 362.7 | 5.95 | 1.27 | 30/07/2014 | 1.72 | 01:18 | 165.4 | 12.9 | | 0.0 | IN 30mm from edge |
| SC1425-3-8 | 1100 | 361.8 | 5.94 | 1.27 | 30/07/2014 | 1.69 | 01:17 | 163.1 | 12.8 | 1.081 | 176.4 | IN on edge |
| SC1425-3-9 | 1100 | 362.1 | 5.93 | 1.26 | 30/07/2014 | 1.71 | 01:18 | 165.5 | 13.0 | 1.080 | 178.8 | IN on edge |
| SC1425-3-10 | 1100 | 362.3 | 5.96 | 1.28 | 30/07/2014 | 1.66 | 01:14 | 158.8 | 12.3 | 1.084 | 172.1 | IN on edge |