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**TNO report**

**TC-RAP-06-23725/idl**

**EN 356**

**Glass in Building-Security glazing-Testing and  
classification of resistance against manual attack  
SaoSA UV – H Resin Laminated  
Glass (5-2-8-1.5-5)**

|                 |  |
|-----------------|--|
| Date            | September 15, 2006   |
| Author(s)       | J. van der Zwan  |
| Assignor        | SoaSA Technology International Ltd.<br>Unit E ,19/F, 2nd Wuhan Building<br>Jiahe Road,<br>Xiamen, Fujian<br>China 361012 |
| Project number  | 033.12242/01.01  |
| Number of pages | 9 (incl. appendices)   |

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# 1 Processor/manufacturer of the samples

Production plant of the samples : SaoSA glass lamination plant  
Sampling date : February 2006

Under responsibility of:  
SoaSA Technology International Ltd.  
Unit E ,19/F, 2nd Wuhan Building  
Jiahe Road,  
Xiamen, Fujian  
China 361012

## 2 Product description & results

|   |   |
|---|---|
| Not. Body number of testing laboratory          | : <b>1174 for CPD 89/106/EEC</b>          |
| Date of test                                    | : <b>10-07-2006</b>                       |
| Reference of test procedure                     | : <b>EN356: 1999</b>                      |
| Commercial product name                         | : <b>SaoSA UV-H Resin Laminated Glass</b> |
| Product configuration                           | : <b>5-2-8-1.5-5</b>                      |
| Side to present the impact                      | : <b>first component (5-2-8-1.5-5)</b>    |
| Nominal thickness of tested glass test specimen | : <b>20.84 mm, 20.77 mm, 20.80 mm</b>     |
| Product conforms to EN12543                     | : <b>YES</b>                              |
| Glass type                                      | : <b>Laminated safety glass</b>           |
| Glass substrate                                 | : <b>Floatglass (EN572)*</b>              |
| Intermediate layer                              | : <b>2 x SaoSA UV-H RESIN</b>             |
| Foil  | : <b>NA</b>                               |

*\* substrate float glass conforms to applicable standards from selected manufacturer or supplier*

Requested classification : **P7B**

### Test results:

| Test piece | Actual thickness (mm) | Number of impact Hammer | Number of impact Axe | Number of Impact Total | CLASS      |
|------------|-----------------------|-------------------------|----------------------|------------------------|------------|
| 1          | 20.8                  | 27                      | 32                   | 59                     | <b>P7B</b> |
| 2          | 20.8                  | 26                      | 28                   | 54                     | <b>P7B</b> |
| 3          | 20.8                  | 25                      | 30                   | 55                     | <b>P7B</b> |

### Conclusion:

The samples considered in this report **are** in compliance with the requirements of the EN 356 standard: **class P7B**.

### Remark :

In case of changes that may influence the validity of this ITT, the producer will take the appropriate actions.

### 3 Signature

Eindhoven, September 2006



J. van der Zwan, B.Sc.  
Author

TNO Science and Industry  
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Not. Lab. 1154

**Datum: 15-09-2006**

## EN 356:1999

# Beproeving en classificatie van de weerstand tegen manuele aanval

(Voor details, zie het testrapport)

|                                  |  |
|----------------------------------|--|
| Not. Body nummer                 | : 1174 voor 1989/106/EEC                           |
| Datum van uitvoering             | : 10-07-2006                                       |
| Referentie voor de testprocedure | : EN356: 1999                                      |
| Commerciële product naam         | : SaoSA UV - H Resin Laminated Glass (5-2-8-1.5-5) |
| Opdrachtgever                    | : SaoSA Technology International Ltd.              |
| Product configuratie             | : 5-2-8-1.5-5 gelamineerd glass                    |
| Beproefde classificatie          | : P7B  |

**Product:**

**SaoSA UV – H Resin Laminated Glass  
(5-2-8-1.5-5)**

**Testresultaat:**

**P7B**

De geteste monsters *voldoen* aan de gestelde eisen in de EN 356:1999. De sampling is onder verantwoordelijkheid van SaoSA Technology International uitgevoerd.

**Ondertekening:**

J. van der Zwan, B.Sc.  
Project Leader

A.J. Piers, B.Sc.  
Programme Leader



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Date: 15-09-2006

## EN 356: 1999

# Mise à essai et classification de la résistance à l'attaque manuelle

(Pour de plus amples détails, prière de se référer au rapport sur les essais).

|                                       |  |
|---------------------------------------|--|
| Numéro de notification de l'organisme | : 1174 pour CPD 89/106/EEC                         |
| Date d'exécution                      | : 10-07-2006                                       |
| Référence de la procédure des essais  | : EN356: 1999                                      |
| Nom commercial du produit :           | : SaoSA UV – H Resin Laminated Glass (5-2-8-1.5-5) |
| Maître de l'ouvrage :                 | : SaoSA Technology International Ltd.              |
| Configuration du produit              | : 5-2-8-1.5-5 verre feuilleté                      |
| Classification                        | : P7B  |

### Produit:

**SaoSA UV – H Resin Laminated Glass  
(5-2-8-1.5-5)**

### Résultat des essais:

**P7B**

Les échantillons mis à l'essai **remplissent** les conditions définies dans EN 356:1999. SaoSA Technology International sont responsable pour de prendre les échantillons et la production des échantillons.

### Signature:

J. van der Zwan, ingénieur  
Chef de project

A.J. Piers, ingénieur  
Chef de programme



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Date: 15-09-2006

## EN 356:1999 Testing and classification of resistance against manual attack

(For details, refer to the test report)

|   |  |
|---|--|
| Not. Body number                          | : 1174 for CPD 89/106/EEC                          |
| Date of test                              | : 10-07-2006                                       |
| Reference of test procedure               | : EN356: 1999                                      |
| Commercial product name                   | : SaoSA UV – H Resin Laminated Glass (5-2-8-1.5-5) |
| Company for which the tests has been done | : SaoSA Technology International Ltd.              |
| Product configuration                     | : 5-2-8-1.5-5 laminated glass                      |
| Obtained classification                   | : P7B  |

**Product:**

**SaoSA UV – H Resin Laminated Glass  
(5-2-8-1.5-5)**

**Test result:**

**P7B**

The tested samples are **complying** with the requirements of EN 356:1999. SaoSA Technology International is responsible for the production and selection of the samples.

**Signature:**

J. van der Zwan, B.Sc.  
Project Leader

A.J. Piers, B.Sc.  
Programme Leader





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**Datum: 15-09-2006**

## **EN 356:1999**

# **Prüfverfahren und Klasseneinteilung des Widerstandes gegen manuellen Angriff**

(Details sind im Testbericht beschrieben)

|                                |  |
|--------------------------------|--|
| Nummer Notified body           | : 1174, CPD 89/106/EEC                             |
| Ausführungsdatum des Tests     | : 10.07.2006                                       |
| Referenz für das Prüfverfahren | : EN356: 1999                                      |
| Kommerzieller Produktname      | : SaoSA UV – H Resin Laminated Glass (5-2-8-1.5-5) |
| Auftraggeber der Prüfung       | : SaoSA Technology International Ltd.              |
| Produktkonfiguration           | : 5-2-8-1.5-5 Verbundglas                          |
| Abgegebene Klassifikation      | : P7B  |

**Produkt:**

**SaoSA UV – H Resin Laminated Glass  
(5-2-8-1.5-5)**

**Testergebnis:**

**P7B**

Die getesteten Muster **entsprechen** den Anforderungen von EN 356:1999. SaoSA Technology International ist verantwortlich für die Probenahme.

**Unterschrift:**

Ing. J. van der Zwan  
Project Leiter

Ing. A.J. Piers  
Programm Leiter