



**INITIAL TYPE TEST (ITT) REPORT**

**EN14351-1:2006+A1:2010**

**Windows and doors —Product standard, performance characteristics —  
Part 1: Windows and external pedestrian doorsets without resistance to fire and/or  
smoke leakage characteristics**

**Report**

Report reference No.....: SCC2014500-6-4-10

Tested by (+signature).....: *Jia Jinchun*

Reviewed by (+signature).....: *Zengtao*

Approved by (+ signature).....: *Heris*

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Testing location .....: Same as above

**Client**

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Address .....: No.3 Jiangbin South Road, Yongkang City, Zhejiang Province, P.R. China



**Test specification**

Standard.....: EN 14351-1:2006+A1:2010

Test procedure .....: Commission

Procedure deviation.....: N.A.

Non-standard test method.....: N.A.

**Test report form/blank test report**

Test report form No.....: SCC14351.1

TRF modified by.....: CHINA CEPREI (SICHUAN) LABORATORY

Master TRF.....: SCC/ITD

Copyright blank test report.....: This report is based on a blank test report prepared by CEPREISC using information obtained from the TRF originator.

**Test item**

Type of test object .....: Steel Door  
 Trademark .....: /  
 Model and/or type reference.....: MLF-S261,MLF-S262, MLF-S263, MLF-S264, MLF-S265, MLF-S266  
 Applicant.....: Zhejiang Yongkang Foreign Economy And Trade Corp.

**Testing**

Date of receipt of test item.....: May 4, 2014  
 Date(s) of performance of test.....: May 4, 2014 to May 13, 2014

**Possible test case verdicts**

Test case does not apply to the test object.....: N(.A.)  
 Test object does meet the requirement .....: P(ass)  
 Test object does not meet the requirement .....: F(ail)

**General remarks**

“(see remark #)” refers to a remark appended to the report.

“(see appended table)” refers to a table appended to the report.

Throughout this report a comma is used as the decimal separator.

The test results presented in this report relate only to the object tested.

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Brief description of the tested sample(s):

Ambient temperature :22℃ humidity:65%.

MLF-S261,MLF-S262, MLF-S263, MLF-S264, MLF-S265, MLF-S266 are family products.

**SAMPLE RECORDS**

| Sample   | Quantity | Description                | Date Received |
|----------|----------|----------------------------|---------------|
| MLF-S261 | 3        | Complete ,Well for testing | May 3, 2014   |
| MLF-S262 | 3        | Complete ,Well for testing | May 3, 2014   |
| MLF-S263 | 3        | Complete ,Well for testing | May 3, 2014   |
| MLF-S264 | 3        | Complete ,Well for testing | May 3, 2014   |
| MLF-S265 | 3        | Complete ,Well for testing | May 3, 2014   |
| MLF-S266 | 3        | Complete ,Well for testing | May 3, 2014   |

| Clause       | Requirement-Test  | Result-Remark                    | Verdict  |
|--------------|---|----------------------------------|----------|
| <b>4</b>     | <b>Performance characteristics and special requirements</b>   |                                  |          |
| <b>4.1</b>   | <b>General</b>  |                                  | <b>P</b> |
|              | <p>NOTE 1 Not all these characteristics are applicable to every product or every intended end use situation.</p> <p>Where characteristics are required this European Standard identifies the means of determination and the ways to express the results as well as the evaluation of conformity.</p> <p>NOTE 2 The order in which the performance characteristics are identified does not imply an order of priority or a test sequence.</p> <p>NOTE 3 Special requirements for certain products, see 4.24.</p>   | Has complied with                | P        |
| <b>4.2</b>   | <b>Resistance to wind load</b>  |                                  | <b>P</b> |
|              | <p>Tests on windows and external pedestrian doorsets shall be carried out in accordance with EN 12211. The deflection of frame elements (e.g. transoms and mullions) shall be determined by calculation or by test (reference method).</p> <p>The results shall be expressed in accordance with EN 12210. The air permeability tests and classification referred to in EN 12210 shall be in accordance with 4.14.</p> <p>The manufacturer shall provide sufficient information on the infill to enable the determination of the load-bearing capacity of the infill, e.g. information on the thickness and type of glass.</p> | Has complied with<br>See Table 1 | P        |
| <b>4.3</b>   | <b>Resistance to snow and permanent load</b>  | Has complied with                | <b>P</b> |
|              | The manufacturer shall provide sufficient information on the infill to enable the determination of the load-bearing capacity of the infill, e.g. information on the thickness and type of glass.  |                                  | P        |
| <b>4.4</b>   | <b>Fire characteristics</b>   |                                  | <b>N</b> |
| <b>4.4.1</b> | <b>Reaction to fire</b>   |                                  | <b>N</b> |
|              | The (materials used in) roof windows shall be tested and classified in accordance with EN 13501-1.  |                                  | N        |
| <b>4.4.2</b> | <b>External fire performance</b>  |                                  | <b>N</b> |
|              | Roof windows shall be tested and classified in accordance with EN 13501-5.  |                                  | N        |
| <b>4.5</b>   | <b>Watertightness</b>   |                                  | <b>P</b> |
|              | <p>A watertightness test shall be carried out in accordance with EN 1027.</p> <p>The results shall be expressed in accordance with EN 12208.</p> <p>The test for watertightness of screens shall be carried out on the screen or on its individual parts. In the latter case the designation of the screen shall be determined by the part(s) with the most unfavourable performance.</p>   | Has complied with<br>See Table 2 | P        |
| <b>4.6</b>   | <b>Dangerous substances</b>   |                                  | <b>P</b> |

| Clause | Requirement-Test  | Result-Remark                    | Verdict |
|--------|---|----------------------------------|---------|
|        | In so far as the state of the art permits, the manufacturer shall establish those materials in the product which are liable to emission or migration during normal intended use and for which emission or migration into the environment is potentially dangerous to hygiene, health or the environment. The manufacturer shall establish and make the appropriate declaration of content according to the legal requirements in the intended country of destination.   | Has complied with                | P       |
| 4.7    | <b>Impact resistance</b>  |                                  | P       |
|        | Windows and external pedestrian doorsets fitted with glass or other fragmental material shall be tested and the results shall be expressed in accordance with EN 13049. Where relevant, the test shall be carried out from both sides.  | Has complied with                | P       |
| 4.8    | <b>Load-bearing capacity of safety devices</b>  |                                  | P       |
|        | Safety devices (e.g. retaining and reversing catches, restrictors, and fixing devices for cleaning procedures), if provided and engaged in accordance with the manufacturer's published instructions, shall be able to hold the leaf, casement or sash in place for 60 s when 350 N are applied to the leaf, sement or sash in the most unfavourable way (i.e. position, direction). This threshold strength shall be demonstrated by means of tests carried out as described in EN 14609 or EN 948 (reference methods), or by calculation. | Has complied with                | P       |
| 4.9    | <b>Height and width of doorsets and French windows</b>  |                                  | P       |
|        | The clear opening height and width of external pedestrian doorsets and French windows (see EN 12519:2004, 3.1) shall be expressed in mm. Where the threshold and the head/transom are not parallel, the maximum and minimum height shall be stated.   | Height:200mm<br>width:80mm       | P       |
| 4.10   | <b>Ability to release</b>   |                                  | P       |
|        | Emergency exit devices and panic devices installed on external pedestrian doorsets in escape routes shall comply with EN 179, EN 1125, prEN 13633 or prEN 13637. Doorsets intended for escape routes shall be identified as such with the appropriate class according to Table 2.   | Has complied with                | P       |
| 4.11   | <b>Acoustic performance</b>   |                                  | P       |
|        | The sound insulation shall be determined in accordance with EN ISO 140-3 (reference method) or for specific window types in accordance with Annex B. The test results shall be evaluated in accordance with EN ISO 717-1.   | Has complied with<br>See Table 3 | P       |
| 4.12   | <b>Thermal transmittance</b>  |                                  | P       |

| Clause        | Requirement-Test  | Result-Remark                            | Verdict  |
|---------------|---|--|----------|
|               | <p>The thermal transmittance for windows and external pedestrian doorsets shall be determined by using:</p> <ul style="list-style-type: none"> <li>- EN ISO 10077-1:2000, Table F.1</li> </ul> <p>or by calculation using:</p> <ul style="list-style-type: none"> <li>- EN ISO 10077-1 or</li> <li>- EN ISO 10077-1 and EN ISO 10077-2</li> </ul> <p>or by hot box method using:</p> <ul style="list-style-type: none"> <li>- EN ISO 12567-1 or</li> <li>- EN ISO 12567-2</li> </ul> <p>as appropriate.</p> <p>EN ISO 12567-1 shall be used as reference method for windows and doorsets, EN ISO 12567-2 as reference method for roof windows.</p> <p>The collective symbols for thermal transmittance are <math>U_w</math> for windows and <math>U_D</math> for doorsets, i.e. the symbol <math>U_{st}</math> used in EN ISO 12567-1 is equivalent to <math>U_w</math> or <math>U_D</math> and the symbol <math>U_m</math> used in EN ISO 12567-2 is equivalent to <math>U_w</math>.</p> | <p>Has complied with<br/>See Table 4</p> | <p>P</p> |
| <b>4.13</b>   | <b>Radiation properties</b>   |  | <b>P</b> |
|               | <p>The determination of the total solar energy transmittance (solar factor, g-value) and light transmittance of translucent glazings shall be carried out in accordance with EN 410, or if relevant, with EN 13363-1 or EN 13363-2 (reference method).</p>  | <p>Has complied with</p>                 | <p>P</p> |
| <b>4.14</b>   | <b>Air permeability</b>   |  | <b>P</b> |
|               | <p>Two air permeability tests shall be carried out in accordance with EN 1026, one with positive test pressures and one with negative test pressures.</p> <p>The tests for air permeability of screens shall be carried out on the screen or on its individual parts including joints between the individual parts. In the latter case the air permeability of the screen shall be calculated as the sum of the air permeability of the individual parts and the joints.</p> <p>The test result, defined as the numerical average of the two air permeability values (m<sup>3</sup>/h) at each pressure step shall be expressed in accordance with EN 12207:1999, 4.6.</p>  | <p>Has complied with<br/>See Table 5</p> | <p>P</p> |
| <b>4.15</b>   | <b>Durability</b>   |  | <b>P</b> |
| <b>4.15.1</b> | <b>General</b>  |  | <b>P</b> |
|               | <p>The manufacturer shall provide information about maintenance and the replaceable parts.</p> <p>The manufacturer shall declare the material(s) from which the product is manufactured including any applied coating and/or protection. This shall apply to all components that have an effect on the durability of the product in intended use except those components that comply with individual product standards (hardware, weather stripping). Where possible this shall be done by reference to European Standards.</p> <p>By means of adequate choice of materials (including coatings, preservations, composition and thickness), components and assembly methods, the manufacturer shall ensure the durability of his product(s) for an economically reasonable working life taking into account his published maintenance recommendations.</p>  | <p>Has complied with</p>                 | <p>P</p> |

| Clause        | Requirement-Test   | Result-Remark                            | Verdict  |
|---------------|--|--|----------|
| <b>4.15.2</b> | <b>Durability of certain characteristics</b>   |  | <b>P</b> |
|               | <p>The durability of certain characteristics shall be ensured as follows:</p> <ul style="list-style-type: none"> <li>— watertightness and air permeability: The durability of these characteristics depends mainly on the weather strippings which shall be replaceable.</li> <li>— thermal transmittance: The durability of this characteristic is mainly linked to the long-term performance of the glazing (especially the Insulated Glass Units (IGU)). Glass meeting the requirements of the standards identified in Annex C shall be deemed to meet the durability requirements.</li> <li>— ability to release (only for locked The durability of this characteristic shall be ensured by doorsets in escape routes): compliance with 4.10.</li> <li>— operating forces: The durability of this characteristic is covered by 4.24.2.2. (only for automatic devices)</li> </ul> | Has complied with                        | P        |
| <b>4.16</b>   | <b>Operating forces</b>  |  | <b>P</b> |
|               | <p>Manually operated windows shall be tested in accordance with EN 12046-1. The results shall be expressed in accordance with EN 13115.</p> <p>Manually operated external pedestrian doorsets shall be tested in accordance with EN 12046-2. The results shall be expressed in accordance with EN 12217.</p>   | <p>Has complied with<br/>See Table 6</p> | P        |
| <b>4.17</b>   | <b>Mechanical strength</b>   |  | <b>P</b> |
|               | <p>Windows shall be tested in accordance with EN 14608 and EN 14609. Prior to and after those tests manually operated windows shall be tested in accordance with EN 12046-1. The results shall be expressed in accordance with EN 13115.</p> <p>External pedestrian doorsets shall be tested in accordance with EN 947, EN 948, EN 949 and EN 950. The results shall be expressed in accordance with EN 1192.</p>  | <p>Has complied with<br/>See Table 7</p> | P        |
| <b>4.18</b>   | <b>Ventilation</b>   |  | <b>N</b> |
|               | <p>Air transfer devices integrated in a window or an external pedestrian doorset shall be tested and evaluated in accordance with EN 13141-1:2004, 4.1. Joints and openings not subject to testing shall be taped over.</p> <p>The results shall include:</p> <ul style="list-style-type: none"> <li>- air flow characteristics (<math>K</math>) and flow exponent (<math>n</math>);</li> <li>- air flow rate at (4, 8, 10 and 20) Pa pressure difference.</li> </ul> <p>NOTE 1 Additional pressure differences may be stated.</p> <p>The volume air flow rate <math>qv</math> shall be determined as follows:</p> $qv = K (\Delta p)^n$ <p>where</p> <ul style="list-style-type: none"> <li><math>K</math> is the air flow characteristic of the device;</li> <li><math>n</math> is the flow exponent;</li> <li><math>\Delta p</math> is the pressure difference.</li> </ul>        |  | N        |
| <b>4.19</b>   | <b>Bullet resistance</b>   |  | <b>N</b> |

| Clause          | Requirement-Test   | Result-Remark                    | Verdict  |
|-----------------|--|----------------------------------|----------|
|                 | After testing in accordance with EN 1523 the bullet resistant characteristics of windows and external pedestrian doorsets shall be expressed in accordance with EN 1522.           |                                  | N        |
| <b>4.20</b>     | <b>Explosion resistance</b>  |                                  | <b>N</b> |
| <b>4.20.1</b>   | <b>Shock tube</b>  |                                  | <b>N</b> |
|                 | After testing in accordance with EN 13124-1 the explosion resistance characteristics of windows and external pedestrian doorsets shall be expressed in accordance with EN 13123-1. |                                  | N        |
| <b>4.20.2</b>   | <b>Range test</b>  |                                  | <b>N</b> |
|                 | After testing in accordance with EN 13124-2 the explosion resistance characteristics of windows and external pedestrian doorsets shall be expressed in accordance with EN 13123-2. |                                  | N        |
| <b>4.21</b>     | <b>Resistance to repeated opening and closing</b>  |                                  | <b>P</b> |
|                 | A repeated opening and closing test shall be carried out in accordance with EN 1191. The results shall be expressed in accordance with EN 12400.                                   | Has complied with<br>See Table 8 | P        |
| <b>4.22</b>     | <b>Behaviour between different climates</b>  |                                  | <b>P</b> |
|                 | A climate test on windows with frames manufactured from a combination of materials shall be carried out in accordance with ENV 13420.  | Has complied with                | P        |
|                 | A climate test on external pedestrian doorsets shall be carried out in accordance with EN 1121. The results shall be expressed in accordance with EN 12219.                        | Has complied with                | P        |
| <b>4.23</b>     | <b>Burglar resistance</b>  |                                  | <b>P</b> |
|                 | After testing in accordance with ENV 1628, ENV 1629 and ENV 1630 the results shall be expressed in accordance with ENV 1627.   | Has complied with<br>See Table 9 | P        |
| <b>4.24</b>     | <b>Special requirements</b>  | No special requirements          | <b>N</b> |
| <b>4.24.1</b>   | <b>Unframed glass doorsets</b>   |                                  | <b>N</b> |
|                 | Glass in unframed glass doorsets shall comply with EN 1863-2, EN 12150-2, EN ISO 12543-2, EN 14179-2 or EN 14321-2.  |                                  | N        |
| <b>4.24.2</b>   | <b>Power operated external pedestrian doorsets</b>   |                                  | <b>N</b> |
| <b>4.24.2.1</b> | <b>Safety in use</b>   |                                  | <b>N</b> |
|                 | Power operated external pedestrian doorsets shall comply with prEN 12650-1 and prEN 12650-2.   |                                  | N        |
| <b>4.24.2.2</b> | <b>Other requirements</b>  |                                  | <b>N</b> |
|                 | Drive units and other hardware/electrical components installed on power operated external pedestrian doorsets shall comply with prEN 12650-1.                                      |                                  | N        |
| <b>4.24.3</b>   | <b>Power operated windows</b>  |                                  | <b>N</b> |
| <b>4.24.3.1</b> | <b>Safety in use</b>   |                                  | <b>N</b> |

| Clause          | Requirement-Test   | Result-Remark     | Verdict  |
|-----------------|--|-------------------|----------|
|                 | Drive units and other hardware/electrical components installed on electrically driven windows shall be designed, tested and controlled in accordance with EN 60335-2-103. Pneumatically and hydraulically driven hardware for windows shall additionally be designed, tested and controlled in accordance with EN 12453:2000, 5.2.3 and 5.2.4.   |                   | N        |
| <b>4.24.3.2</b> | <b>Other requirements</b>  |                   | <b>N</b> |
|                 | Electrical drives shall be designed, tested and controlled in accordance with EN 61000-6-3 and EN 61000-6-1.   |                   | N        |
| <b>5</b>        | <b>Classification and designation</b>  |                   | <b>P</b> |
|                 | A summary of the classification of the characteristics covered by this European Standard is given in Tables 1 and 2.   | Has complied with | P        |
|                 | The manufacturer shall identify which characteristics have been determined and the level of performance declared. The characteristic shall be identified either by its title or by the reference number given in the first column of the appropriate table. In order to enable the specifier to determine whether or not a product is fit for a given intended use, the manufacturer shall provide the necessary product descriptions, e.g. intended use, product range, range of application, information on durability.  | Has complied with | P        |
|                 | Each of the specified requirements shall be fulfilled, i.e. the "performance profile" of the product shall cover or be more favourable than the "requirement profile". Otherwise, the product is not fit for that given specific end use, e.g. if a characteristic has not been stated and national regulations are in force which require a value as part of regulatory marking for that/those characteristic(s) for that building.   | Has complied with | P        |
| <b>6</b>        | <b>Handling, installation, maintenance and care</b>  |                   | <b>P</b> |
|                 | The manufacturer shall provide information on the following:<br><ul style="list-style-type: none"> <li>- storage and handling, if the manufacturer is not responsible for installation of the product;</li> <li>- installation requirements and techniques (on site), if the manufacturer is not responsible for installation of the product;</li> <li>- maintenance and cleaning;</li> <li>- end use instructions including instructions on component replacement;</li> <li>- safety in use instructions (see 4.8, 4.24.2.1 and 4.24.3.1).</li> </ul> Noise emission of power operated windows and doorsets is not a significant hazard for the users of these products. It is a comfort aspect. The instructions for use shall give the A-weighted emission sound pressure level in the vicinity of these products when it is more than 70 dB or, which will generally be the case, shall indicate that this level is less than or equal to 70 dB. | Has complied with | P        |
| <b>7</b>        | <b>Evaluation of conformity</b>  |                   | <b>P</b> |
| <b>7.1</b>      | <b>General</b>   |                   | <b>P</b> |



| Clause       | Requirement-Test  | Result-Remark     | Verdict  |
|--------------|---|-------------------|----------|
|              | <p>The compliance of windows and external pedestrian doorsets with the requirements of this European Standard and with the stated values (including classes) shall be demonstrated by:</p> <ul style="list-style-type: none"> <li>- initial type testing (ITT);</li> <li>- factory production control (FPC).</li> </ul>   | Has complied with | P        |
| <b>7.2</b>   | <b>Type testing</b>   |                   | <b>P</b> |
| <b>7.2.1</b> | <b>Initial type testing (ITT)</b>   |                   | <b>P</b> |
|              | <p>Initial type testing (ITT) shall be performed to show conformity with this European Standard. Tests previously performed in accordance with the provisions of this European Standard (same product, same characteristic(s), test method, sampling procedure, system of attestation of conformity, etc.) may be taken into account. For the purposes of testing (including FPC testing), windows and external pedestrian doorsets may be grouped into families where it is considered that the selected characteristic is common to all windows and external pedestrian doorsets within that family (a product may be in different families for different characteristics).</p> <p>In addition, ITT shall be performed at the beginning of the production of a new window and external pedestrian doorset type (unless a member of the same family) or at the beginning of a new method of production (where this may affect the stated characteristics).</p> <p>Where components are used whose characteristics have already been determined by the component manufacturer on the basis of conformity with other product standards (e.g. thermal transmittance of glazings), these characteristics need not be reassessed (see 7.3.3).</p> | Has complied with | P        |

| Clause       | Requirement-Test  | Result-Remark     | Verdict  |
|--------------|---|-------------------|----------|
|              | <p>Only one ITT is required where different manufacturing units are producing the same product for the same manufacturer using the same materials and documented production and process control. It may not be necessary for the manufacturer to re-test characteristics for which he can provide documentary evidence, provided that:</p> <ul style="list-style-type: none"> <li>- all documentation and tests performed by the supplier or others are in accordance with this European Standard or other non contradicting European Standards and that the manufacturer has an agreement with the owner for the use of the test results and supporting documentation;</li> <li>- the supplier's or other's test specimen on which the test reports are based, are representative of those used in the manufacturer's product range or part of it (see 7.2.5.1);</li> <li>- the components are assembled by the manufacturer in accordance with the specifications supplied by the owner of the test results and supporting documentation, ensuring that there is no reduction in the stated performance values.</li> </ul> <p>Where the manufacturer relies upon test results from a supplier or others, he shall not be absolved from his responsibilities with regard to the product performance.</p> <p>All characteristics in Clause 4 for which the manufacturer is stating a value shall be subject to ITT by tests and/or calculation and/or tabulated values in accordance with the relevant subclauses of Clause 4, with the following exceptions:</p> <ul style="list-style-type: none"> <li>- Release of dangerous substances may be assessed indirectly by controlling the content of the substance concerned.</li> </ul> | Has complied with | P        |
| <b>7.2.2</b> | <b>Further type testing</b>   |                   | <b>P</b> |
|              | Whenever a change occurs in the window and external pedestrian doorset design, the raw material or supplier of the components, or the production process (subject to the definition of a family), which would change significantly one or more of the characteristics (i.e. the design becomes dissimilar; see 3.4), the type tests shall be repeated for the appropriate characteristic(s).  | Has complied with | P        |
| <b>8</b>     | <b>Labelling and marking</b>  |                   | <b>P</b> |
|              | The manufacturer shall provide sufficient information to ensure the traceability of his product (e.g. by means of product codes) giving the link between the product, the manufacturer and the production. This information shall either be contained on a product label or detailed in accompanying documents or in the manufacturer's published technical specification(s). Relevant designations of characteristics (see Clause 5) as well as information about intended use, handling, installation, maintenance and care (see Clause 6) shall either be contained on a product label or detailed in accompanying documents or in the manufacturer's published technical specification(s).  | Has complied with | P        |

| Model           | Pressure | Class   | result |
|-----------------|----------|---------|--------|
| <b>MLF-S261</b> | 1600 Pa  | Class 4 | Pass   |
| <b>MLF-S262</b> | 1600 Pa  | Class 4 | Pass   |
| <b>MLF-S263</b> | 1600 Pa  | Class 4 | Pass   |
| <b>MLF-S264</b> | 1600 Pa  | Class 4 | Pass   |
| <b>MLF-S265</b> | 1600 Pa  | Class 4 | Pass   |
| <b>MLF-S266</b> | 1600 Pa  | Class 4 | Pass   |

| Model           | Pressure(7A) | Pressure(8A) | Pressure (class E900) | result |
|-----------------|--------------|--------------|-----------------------|--------|
| <b>MLF-S261</b> | 300 Pa       | 450 Pa       | 900Pa                 | Pass   |
| <b>MLF-S262</b> | 300 Pa       | 450 Pa       | 900Pa                 | Pass   |
| <b>MLF-S263</b> | 1 300 Pa     | 450 Pa       | 900Pa                 | Pass   |
| <b>MLF-S264</b> | 300 Pa       | 450 Pa       | 900Pa                 | Pass   |
| <b>MLF-S265</b> | 300 Pa       | 450 Pa       | 900Pa                 | Pass   |
| <b>MLF-S266</b> | 300 Pa       | 450 Pa       | 900Pa                 | Pass   |

| Model           | Area      | Window Rw [dB] | Window Rw + Ctr [dB] | Ctr [dB] | C [dB] | result |
|-----------------|-----------|----------------|----------------------|----------|--------|--------|
| <b>MLF-S261</b> | 1.5m*1.5m | 33             | 28                   | -5       | -1     | Pass   |
| <b>MLF-S262</b> | 1.5m*1.5m | 33             | 28                   | -5       | -1     | Pass   |
| <b>MLF-S263</b> | 1.5m*1.5m | 33             | 28                   | -5       | -1     | Pass   |
| <b>MLF-S264</b> | 1.5m*1.5m | 33             | 28                   | -5       | -1     | Pass   |
| <b>MLF-S265</b> | 1.5m*1.5m | 33             | 28                   | -5       | -1     | Pass   |
| <b>MLF-S266</b> | 1.5m*1.5m | 33             | 28                   | -5       | -1     | Pass   |

| <b>Table 4: A Thermal transmittance (Test Standards: EN 1026, EN 12207:1999)</b> |           |                          |        |
|--|-----------|--------------------------|--------|
| Model  | Area      | Uf<br>W/m <sup>2</sup> K | result |
| <b>MLF-S261</b>  | 1.5m*1.5m | 2.546                    | Pass   |
| <b>MLF-S262</b>  | 1.5m*1.5m | 2.578                    | Pass   |
| <b>MLF-S263</b>  | 1.5m*1.5m | 2.589                    | Pass   |
| <b>MLF-S264</b>  | 1.5m*1.5m | 2.342                    | Pass   |
| <b>MLF-S265</b>  | 1.5m*1.5m | 2.345                    | Pass   |
| <b>MLF-S266</b>  | 1.5m*1.5m | 2.452                    | Pass   |

| <b>Table 5: Air permeability (Test Standards: EN ISO 10077-1:2000)</b> |             |             |       |        |
|--|-------------|-------------|-------|--------|
| Model  | Pressure(+) | Pressure(-) | class | result |
| <b>MLF-S261</b>  | 600 Pa      | -600 Pa     | 4     | Pass   |
| <b>MLF-S262</b>  | 600 Pa      | -600 Pa     | 4     | Pass   |
| <b>MLF-S263</b>  | 600 Pa      | -600 Pa     | 4     | Pass   |
| <b>MLF-S264</b>  | 600 Pa      | -600 Pa     | 4     | Pass   |
| <b>MLF-S265</b>  | 600 Pa      | -600 Pa     | 4     | Pass   |
| <b>MLF-S266</b>  | 600 Pa      | -600 Pa     | 4     | Pass   |

| <b>Table 6: Operating forces (Test Standards: EN 12046-1. EN 13115)</b> |                   |                    |        |
|---|-------------------|--------------------|--------|
| Model   | Open force<br>(N) | Close force<br>(N) | result |
| <b>MLF-S261</b>   | 54                | 53                 | Pass   |
| <b>MLF-S262</b>   | 51                | 49                 | Pass   |
| <b>MLF-S263</b>   | 46                | 48                 | Pass   |
| <b>MLF-S264</b>   | 49                | 51                 | Pass   |
| <b>MLF-S265</b>   | 53                | 51                 | Pass   |
| <b>MLF-S266</b>   | 55                | 53                 | Pass   |

| <b>Table 7: Mechanical strength (Test Standards: EN 14608 ,EN 14609)</b> |             |                      |        |
|--|-------------|----------------------|--------|
| Model  | RACKING (N) | static torsion (N.m) | result |
| MLF-S261   | 1000        | N/A                  | Pass   |
| MLF-S262   | 1000        | N/A                  | Pass   |
| MLF-S263   | 1000        | N/A                  | Pass   |
| MLF-S264   | 1000        | N/A                  | Pass   |
| MLF-S265   | 1000        | N/A                  | Pass   |
| MLF-S266   | 1000        | N/A                  | Pass   |

| <b>Table 8: Resistance to repeated opening and closing (Test Standards: EN 1191., EN 12400)</b> |       |          |        |
|---|-------|----------|--------|
| Model   | Time  | Function | result |
| MLF-S261  | 10000 | Well     | Pass   |
| MLF-S262  | 10000 | Well     | Pass   |
| MLF-S263  | 10000 | Well     | Pass   |
| MLF-S264  | 10000 | Well     | Pass   |
| MLF-S265  | 10000 | Well     | Pass   |
| MLF-S266  | 10000 | Well     | Pass   |

| <b>Table 9: Burglar resistance (Test Standards: ENV 1627, ENV 1630)</b> |      |          |        |
|---|------|----------|--------|
| Model   | Type | Function | result |
| MLF-S261  | WK2  | Well     | Pass   |
| MLF-S262  | WK2  | Well     | Pass   |
| MLF-S263  | WK2  | Well     | Pass   |
| MLF-S264  | WK2  | Well     | Pass   |
| MLF-S265  | WK2  | Well     | Pass   |
| MLF-S266  | WK2  | Well     | Pass   |

**Photos of the sample**



**MLF-S261**



**MLF-S262**

**Photos of the sample**



**MLF-S263**



**MLF-S264**

**Photos of the sample**



**MLF-S265**



**MLF-S266**



## *Notice*

1. This test report shall be invalidation without the cachet of the testing laboratory.
2. This copied report shall be invalidation without sealed the cachet of the testing laboratory.
3. This report shall be invalidation without tester signature, reviewer signature and approver signature.
4. This altered report shall be invalidation.
5. Client shall put forward demurrer within 15days after received report. The testing laboratory shall refuse disposal if exceeded the time limit.
6. The test results presented in this report relate only to the object tested.

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