



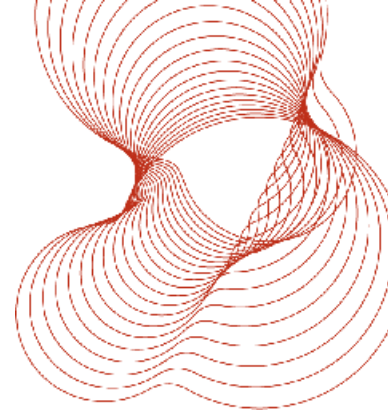
**bre**global

**Assessment of 'Smart  
Wall' single leaf  
bidirectional doorset to  
LPS 1175: Issue 7**

Prepared for:  
Smart Systems Limited  
Arnolds Way  
Yatton  
North Somerset BS49 4QN

28 September 2010

Test report number 264827b



**Prepared on behalf of BRE Global by**

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Name Richard Flint

Position Physical Security Scheme Manager

Signature

**Authorised on behalf of BRE Global by**

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Name Paul Dillon

Position Physical Security Scheme Manager

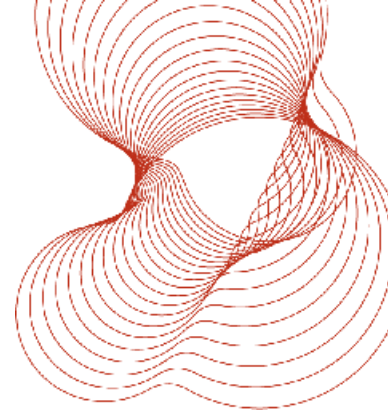
Date 28 September 2010

Signature

BRE Global  
Bucknalls Lane  
Watford  
Herts  
WD25 9XX  
T + 44 (0) 1923 664100  
F + 44 (0) 1923 664994  
E [enquiries@breglobal.com](mailto:enquiries@breglobal.com)  
[www.breglobal.com](http://www.breglobal.com)

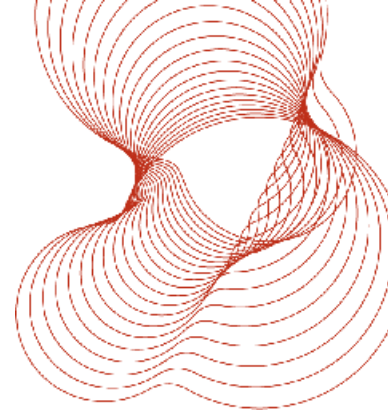
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## 1 Introduction

### 1.1 Background

In February 2010, Smart Systems Limited requested BRE Global Limited to evaluate their 'Smart Wall' single leaf bidirectional glazed aluminium doorsets to the following standards:

- LPS 1175: Issue 7<sup>1</sup>; and
- prEN 1627: May 2009<sup>2</sup>.

The results of the tests conducted on a series of specimen 'Smart Wall' single leaf bidirectional glazed aluminium doorsets in accordance with the performance requirements contained within LPS 1175: Issue 7<sup>1</sup> are detailed in BRE Global Limited report 264827a<sup>3</sup>.

The results of the tests conducted on a series of specimen 'Smart Wall' single leaf bidirectional glazed aluminium doorsets in accordance with the requirements contained within prEN 1627: May 2009<sup>2</sup> are detailed in BRE Global Limited report 264828<sup>4</sup>.

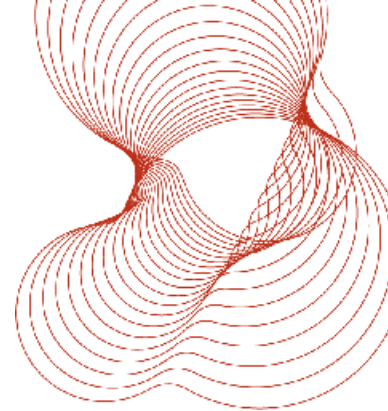
Smart Systems Limited subsequently requested the range of 'Smart Wall' single leaf bidirectional glazed aluminium doorsets detailed in Table 1 to Table 4, defined on the documents listed in Table 5, be assessed in accordance with the requirements contained in LPS 1175: Issue 7<sup>1</sup> for a Security Rating 2 classification. The assessment was based on the results of the tests detailed in BRE Global Limited report 264827a<sup>3</sup>.

**Table 1** Doorset configurations

Trade Name	Type	Minimum Doorset Height (m)	Maximum Doorset Height (m)	Minimum Doorset Width (m)	Maximum Doorset Width (m)	Target Security Rating
'Smart Wall'	Glazed <sup>i</sup> single leaf bidirectional aluminium doorset with anti-finger trap hinges and two deadlocks on the leading edge	1.9	2.5	0.75	1.2	2

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<sup>i</sup> 'Fully glazed' or with rails running horizontally across the leaf to form a series of glazed panels.



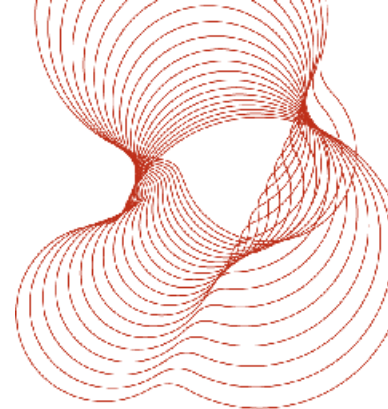
**Table 2** Locking options

Lock Positions	Manufacturer	Model	Type	Compatible Cylinders		
				Manufacturer	Model	Type
Upper and lower locks on leading edge <sup>ii</sup>	Adams Rite	Sentinel 6 hooked deadlock	Hook lock fitted with the Adams Rite Sentinel security escutcheon and lock face plate	Yale	KM3535-NP G35x35	Double europrofile cylinder (key:key)

**Table 3** Other hardware

Type	Manufacturer	Model	Description
Closer/pivot hinge	Adams Rite	ARC-51N	Overhead door closer for end load anti-finger trap applications and an end load bottom pivot assembly. These were formed from the following components: <ul style="list-style-type: none"> <li>• Cast iron body (Part. No. FC20)</li> <li>• Steel top arm (Part No. S20C)</li> <li>• Steel top channel (Part No. SC20C)</li> <li>• Aluminium bottom pivot (Part. No. ADC10).</li> </ul>
Escutcheon kit	Adams Rite	Adams Rite Sentinel 6 (ACIM440B)	Cylinder escutcheon.  This was formed from the following components: <ul style="list-style-type: none"> <li>• EN36 steel external escutcheon</li> <li>• Mild steel sandwich plate</li> <li>• Mild steel internal plate</li> <li>• 75 mm long M5 pozi countersunk stainless steel machine screws.</li> </ul>
Keep	Smart systems	ACIM012	Strike plate assembly.
Pull handles	Smart systems	ACVL123	Set of PVC 'D' shaped pull handles, one internal and one external.

<sup>ii</sup> The top lock was orientated such that the tip of the hook shaped bolt and the bible of the cylinder both pointed upwards while the bottom lock was orientated such that the tip of the hook shaped bolt and the bible of the cylinder both pointed downwards.



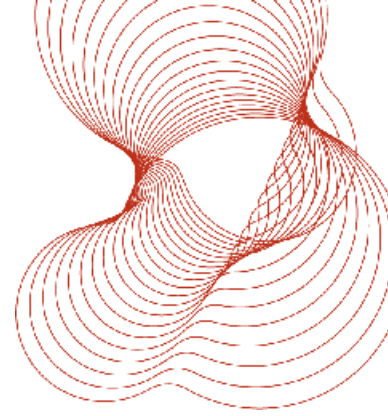
**Table 4** Compatible glazing materials

Type	Manufacturer	Model	Description
37 mm thick sealed glazing unit	Essex Safety Glass Limited	ESG Secure LPS 1270 Level 1.1.2	<p>37 mm<sup>iii</sup> thick sealed glazing unit configured as follows:</p> <ul style="list-style-type: none"> <li>• 17 mm<sup>iii</sup> thick composite glazing panel on the attack face, formed from: <ul style="list-style-type: none"> <li>- 4 mm thick toughened glass on the attack side.</li> <li>- 1.52 mm thick PTU interlayer</li> <li>- 6 mm thick polycarbonate interlayer</li> <li>- 1.52 mm thick PTU interlayer</li> <li>- 4 mm thick float glass inner face.</li> </ul> </li> <li>• 16 mm wide cavity.</li> <li>• 4 mm thick toughened glass inner pane.</li> </ul>

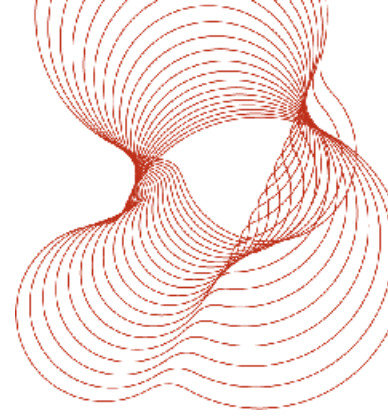
**Table 5** Documentation submitted by Smart Systems Limited following completion of the test programme detailed in BRE Global Limited report 264827a<sup>3</sup>

Document Reference	Title / Contents	Revision / Issue
F415.9	Complete application for certification and Red Book listing	Signed 23/7/10
-	Smart Wall Accessories ( <i>List of Smart item codes</i> )	Rec'd 13/7/10
-	Smart Wall Extrusions ( <i>List of Smart extrusion codes</i> )	Rec'd 13/7/10
-	Specification sheet for Adams Rite Sentinel 6 deadlock ( <i>2 sides</i> )	8/2/09
-	Yale cylinder order code sheet	Rec'd 13/7/10
ACIM001	Top rail cleat	A 3/8/10
ACIM002	Bottom rail cleat	A 3/8/10
ACIM003	Midrail cleat	A 3/8/10

<sup>iii</sup> This is the nominal thickness due to slight variances in thicknesses of each layer and methods by which they are bonded.



Document Reference	Title / Contents	Revision / Issue
ACIM005A	Bottom bracket	A 16/7/09
ACIM006A	Top bracket	B 3/8/10
ACIM009	Anti-finger trap end cap	27/4/09
ACIM010	Master stile end cap	27/4/09
ACIM012	Hook bolt keep for IMP212/213	May 2009
ACIM018	Pre drilled closer plate	A 3/8/10
ACIM021	Foam infill block	A 3/8/10
ACIM024	Fixing plate	Nov 2009
ARC-51 N	Specification sheet for Adams Rite 'ARC-51 N' overhead concealed closer and springless pivot' (2 sides)	8/4/09
CFC152MFZ	Shopline door transom fixing bracket	Aug 2000
IMP	Smart Wall technical manual (106 pages)	December 2009
SWL1608	Extrusion XIMP213	4/2/09
SWL1614	Extrusion XIMP120A	3/2/09
SWL1615	Extrusion XIMP120B	3/2/09
SWL1616	Extrusion XIMP027A	3/2/09
SWL1617	Extrusion XIMP027B	3/2/09
SWL1618	Extrusion XIMP039	3/2/09
SWL1620	Extrusion XIMP010	12/2/09
SWL1624	Extrusion XIMP035	3/2/09
SWL1625	Extrusion XIMP034A	3/2/09
SWL1626	Extrusion XIMP034B	3/2/09
SWL1635	Extrusion XIMP036	3/2/09
SWL1637	Extrusion XIMP011	3/2/09
SWL1638	Extrusion XIMP411A	4/2/09
SWL1639	Extrusion XIMP411B	4/2/09
SW-LPS/ENV C02 (Page 02)	Elevations - LPS 1175 Level 2 & ENV 1627 Level 3	July 10
SW-LPS/ENV C03 (Page 03)	Elevations - Detail 1 (Vertical cross-section through header jamb and transom)	July 10 (Rec'd 8/9/10)
SW-LPS/ENV C04 (Page C04)	Elevations - Detail 2 (Vertical cross-section through midrail)	July 10 (Rec'd 8/9/10)
SW-LPS/ENV C05 (Page 05)	Elevations - Detail 3 (Vertical cross-section through bottom of leaf and low level threshold)	July 10 (Rec'd 8/9/10)
SW-LPS/ENV 06 (Page 06)	Elevations - Detail 4 (Horizontal cross-section through lock stile and jamb)	July 10
SW-LPS/ENV C07 (Page 07)	Elevations - Detail 5 (Horizontal cross-section through anti-finger trap trailing edge stile and jamb)	July 10 (Rec'd 8/9/10)
SW-LPS/ENV E01 (Page E01)	Construction drawing - LPS1175 & ENV1627 single door lock prep	July 10



Document Reference	Title / Contents	Revision / Issue
SW-LPS/ENV E02 (Page E02)	Construction drawing - Closer preparation	July 10 (Rec'd 8/9/10)
SW-LPS/ENV E01 (Page 03)	Installation guide	Aug 10
SW-LPS/ENV Poly	Smart Wall Polyamide	4/2/09
UTL039	15 x 15 mm 'L' shaped channel	8/7/97
XVL72	Aliplast extrusion VL72	B 18/8/06
XVL562	Maxibel extrusion VCL562	B 24/5/05
-	Email from G Gunn at ESG containing details of the construction of the '112' double glazing unit used.	24/9/10

## 1.2 Objective

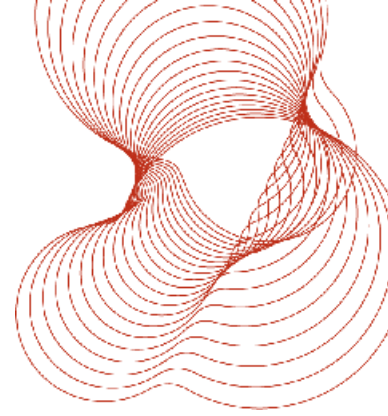
The objective of the assessment was to determine whether the 'Smart Wall' single leaf bidirectional glazed aluminium doorsets falling within the scope detailed in Table 1 to Table 4, met the requirements of a Security Rating 2 classification defined in LPS 1175: Issue 7<sup>1</sup> when manufactured and installed in accordance with the documents listed in Table 5.

## 1.3 Origin of assessment request

The assessment of the 'Smart Wall' single leaf doorsets in accordance with the requirements contained in LPS 1175: Issue 7<sup>1</sup> was covered by quotation Q4506 issued on 29 July 2010. The quotation was accepted by Mr Anthony Murray of Smart Systems Limited on 3 August 2010.

The assessment was completed under BRE Global Limited's project number 264827 and BRE Global Limited's Standard Terms and Conditions (PN101/13)<sup>5</sup>.





## 2 Assessment Method

The documents submitted by Smart Systems Limited, listed in Table 5, were firstly checked to confirm whether they met the requirements contained within the following clauses of LPS 1175: Issue 7<sup>1</sup>:

- Clause 3.1 - Documentation requirements.
- Clause 3.3 - Design requirements.

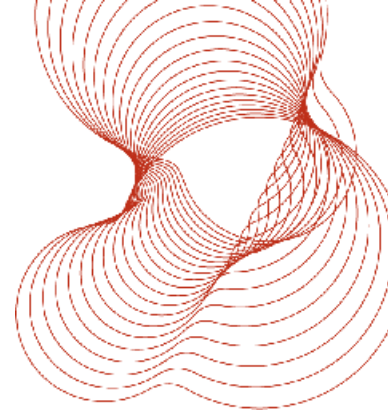
The content of the documents listed in Table 5 was then compared with that of the documents defining the construction of the specimens tested, listed in Table 6, together with the specimens themselves. The purpose of that comparison was to determine whether:

- The documents accurately defined the construction of the doorsets tested.
- Any modifications to the doorsets' construction had been implemented following the completion of the test programme.

Differences in construction noted during that comparison were then reviewed using the results of the tests detailed in BRE Global Limited report 264827a<sup>3</sup> to determine whether the doorsets defined on the documents listed in Table 5; falling within the scope defined in Table 1 to Table 4; would offer resistance to forced entry commensurate with the requirements of Security Rating 2 defined in LPS 1175: Issue 7<sup>1</sup>.

**Table 6** Documentation submitted by Smart Systems Limited in advance of the test programme detailed in BRE Global Limited report 264827a<sup>3</sup>.

Document Reference	Title / Contents	Revision / Issue
LPS-1L	Smart Wall sample for LPS1175 level 2 security test <i>General arrangement and cross-sections of 1200 mm wide by 2500 mm high thermally broken fully glazed commercial doorset</i>	Feb 2010
LPS-2S	Smart Wall sample for LPS1175 level 2 security test <i>General arrangement and cross-sections of 750 mm wide by 1900 mm high thermally broken commercial doorset with two mid-rails</i>	Feb 2010
ENV-1	Smart Wall sample for LPS1175 level 2 security test <i>General arrangement and cross-sections of 1200 mm wide by 2500 mm high thermally broken commercial doorset with two mid-rails</i>	Feb 2010
ENV-2	Smart Wall sample for LPS1175 level 2 security test <i>General arrangement and cross-sections of 1200 mm wide by 2500 mm high thermally broken fully glazed commercial doorset</i>	Feb 2010
TC 115-08	Assa Abloy Limited test report <i>Tests conducted on Adams Rite Sentinel 6 deadlock to EN 12209: 2003</i>	18/10/08
KM532920	BSI Kitemark licence <i>Certificate covering various cylinders to EN 1303: 2005</i>	13/8/08
TC090-09	Assa Abloy Limited test report <i>Tests conducted on Adams Rite Sentinel escutcheon and Wah Yeut kitemarked cylinders to clauses 5.9.2 and 5.9.3 of EN 1303: 2005</i>	20/7/09



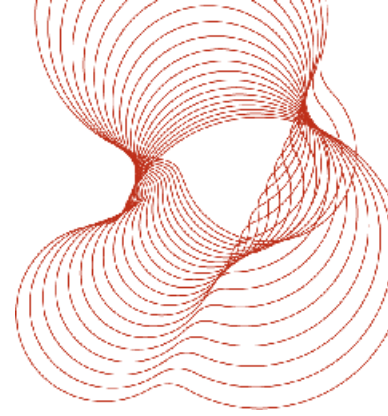
### 3 Assessment results

#### 3.1 Documentation requirements

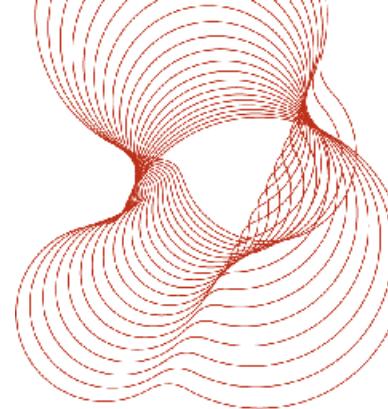
The results of the review of the documents listed in Table 5 against the documentation requirements defined in clause 3.1 of LPS 1175: Issue 7<sup>1</sup> are detailed in Table 7.

**Table 7** Results of the review of documents defining the 'Smart Wall' doorsets against the requirements contained in clause 3.1 of LPS 1175: Issue 7<sup>1</sup>

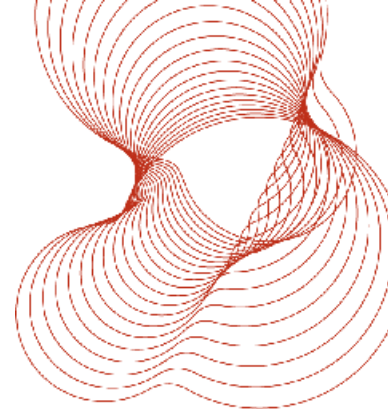
Clause	Requirement	Assessment	Compliant?
3.1a)	The documentation shall include details of the applicant and, if different, the manufacturer of the product(s)/systems(s), including: <ul style="list-style-type: none"> <li>i) Name of manufacturer.</li> <li>ii) Place of manufacture.</li> <li>iii) Year of manufacture.</li> <li>iv) Relationship of applicant to manufacturer.</li> <li>v) Company responsible for design and quality assurance.</li> </ul>	This information was provided on the application form (F415/9) signed on 23 July 2010.	Yes
3.1b)	Drawings shall include:		
3.1b)i)	Cross sections	The documents contained cross sections of the primary extrusions used to construct the doorsets together with horizontal and vertical sections through the doorset.	Yes



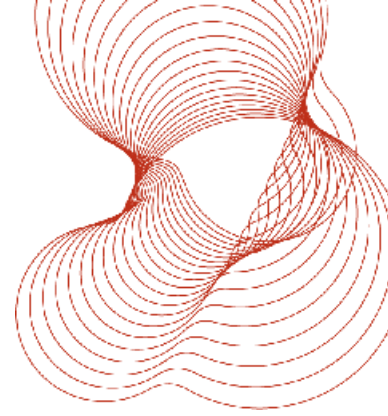
Clause	Requirement	Assessment	Compliant?
3.1b)ii)	General assembly	<p>The general arrangement of the doorset was detailed on drawing 'SW-LPS/ENV C02 (Page 02)' dated July 2010.</p> <p>These were supplemented by exploded view assembly drawings of the lockset, bottom pivot and closer detailed on the following drawings:</p> <ul style="list-style-type: none"><li>- SW-LPS/ENV E01 (Page E01) dated July 2010.</li><li>- SW-LPS/ENV E02 (Page E02) dated July 2010.</li></ul>	Yes



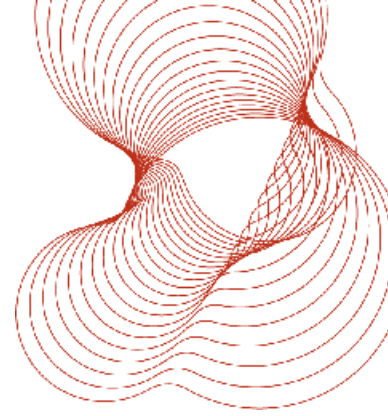
Clause	Requirement	Assessment	Compliant?
3.1b)iii)	Location and areas of special protection	<p>The method of installing the bead reinforcement angles (UTL039) was indicated on the following cross-sectional drawings:</p> <ul style="list-style-type: none"> <li>- SW-LPS/ENV C03 (<i>Page 03</i>) dated July 2010.</li> <li>- SW-LPS/ENV C04 (<i>Page 04</i>) dated July 2010.</li> <li>- SW-LPS/ENV C05 (<i>Page 05</i>) dated July 2010.</li> </ul> <p>The versions of these documents received on 8 September 2010 also defined the length of the bead reinforcement angles (UTL039) relative to the size of the glazing panel and the positions of the fixings used to attach them to the door leaf.</p> <p>The four nuts placed on the bottom pivot to prevent it being cut during attacks such as that attempted during attack tests 8 and 9 (BRE report 264827a<sup>3</sup>), were shown on the following drawings:</p> <ul style="list-style-type: none"> <li>- SW-LPS/ENV C05 (<i>Page 05</i>) dated July 2010.</li> <li>- SW-LPS/ENV E02 (<i>Page E02</i>) dated July 2010.</li> </ul> <p>The lock protection was detailed on document SW-LPS/ENV E01 (<i>Page E01</i>) dated July 2010.</p>	<b>No</b>
3.1b)iv)	Details of other elements relevant to physical security	All aspects of the systems' construction that were relevant to its physical security performance were detailed on the documents listed in Table 5.	Yes



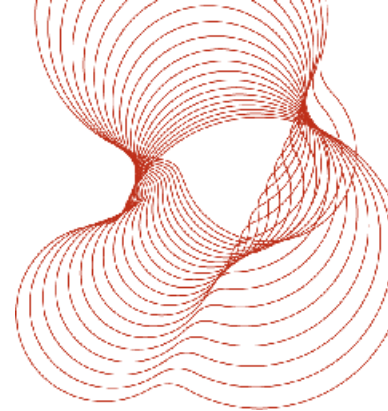
Clause	Requirement	Assessment	Compliant?
3.1b)v)	Locations of all hardware, protection and local reinforcement.	<p>The method of installing the bead reinforcement angles (UTL039) was indicated on the following cross-sectional drawings:</p> <ul style="list-style-type: none"> <li>- SW-LPS/ENV C03 (<i>Page 03</i>) dated July 2010.</li> <li>- SW-LPS/ENV C04 (<i>Page 04</i>) dated July 2010.</li> <li>- SW-LPS/ENV C05 (<i>Page 05</i>) dated July 2010.</li> </ul> <p>The versions of these documents received on 8 September 2010 also defined the length of the bead reinforcement angles (UTL039) relative to the size of the glazing panel and the positions of the fixings used to attach them to the door leaf.</p> <p>The lock protection was detailed on document SW-LPS/ENV E01 (<i>Page E01</i>) dated July 2010.</p>	<b>No</b>
3.1b)vi)	Type/locations of all welds and mechanical fasteners used to assemble the product.	This information was provided on the drawings listed in Table 5.	Yes
3.1c)	A description of the materials used to construct the product if not shown on the drawings. This shall include material thicknesses and full details of any special finishes/processes applied, e.g. hardening.	The materials used to construct the system were defined on the die and component drawings listed in Table 5.	Yes
3.1d)	Details of any materials or device(s) fitted to, or incorporated within, the product that may harm those testing/using/attacking the product together with associated material safety data sheets.	Not applicable.	-



Clause	Requirement	Assessment	Compliant?
3.1e)	Manufacturer's specification sheets defining the hardware used on the product, including locks, strike plates, hinges and dog bolts.	Specification documents were submitted for the following items of hardware: <ul style="list-style-type: none"> <li>• Adams Rite ARC-51N closer/pivot hinge.</li> <li>• Adams Rite Sentinel 6 deadlock.</li> <li>• Yale 'KM3535-NP G35x35' double europrofile cylinder (key:key).</li> </ul>	Yes
3.1f)	Evidence that any lock cylinders accessible from the attack side of products, for which the applicant seeks a '+' cylinder manipulation classification in accordance with clause 5.2 meet the requirements for cylinders defined within Annex A of BS 3621:2007 <sup>6</sup> .	The Yale 'KM3535-NP G35x35' double europrofile cylinder (key:key), which was also marketed under the 'Wah Yuet' trade name, was covered by BSI Kitemark licence KM 532920 dated 13 August 2008. That licence confirmed the cylinder met the requirements of class 16010C52 defined in EN 1303: 2005 <sup>7</sup> and the general vulnerability requirements contained in Annex A of BS 3621:2007 <sup>6</sup> . The cylinder fitted to the doorset was therefore conducive with the doorset being granted a '+' security rating.	Yes
3.1g)	Manufacturer's specification sheets/drawings defining any optional features/accessories (e.g. vision panels or louver panels). These shall also define how and where they will be fitted to the product.	The documents defined how alternative glazing layouts could be achieved through the use of mid rails and lay bars.	Yes



Clause	Requirement	Assessment	Compliant?
3.1h)	Instructions and specification for secure installation, use and maintenance.	<p>Document 'SW-LPS/ENV E01' dated August 2010, received on 8 September 2010, confirmed the fixings used to install the doorsets and the locations of those fixings.</p> <p>Document 'SW-LPS/ENV C03' dated August 2010, received on 8 September 2010, confirmed the maximum gap permitted between the top of the leaf and the underside of the header jamb.</p> <p>Document 'SW-LPS/ENV C05' dated August 2010, received on 8 September 2010, confirmed the maximum gap permitted between the bottom of the leaf and the top of the cill was 5 mm.</p> <p>Document 'SW-LPS/ENV C07' dated August 2010, received on 8 September 2010, confirmed the maximum gap permitted between the leading edge of the leaf and the jamb was 4 mm.</p> <p>Document 'SW-LPS/ENV E01' (page 03) dated August 2010, received on 8 September 2010, confirmed the type and location of the fixings used to install the doorsets into the surrounding substrate.</p>	Yes
3.1i)	Whether the product or hardware are prototypes or in series production.	This information was provided on the application form (F415/9) signed on 23 July 2010.	Yes



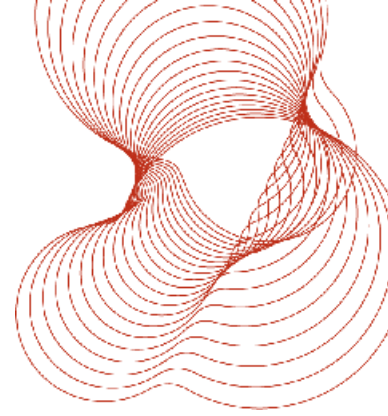
Clause	Requirement	Assessment	Compliant?
3.1j)	The face(s) of the product designed to resist attack.	The attack face was not specifically defined on the documents submitted. None the less, drawing 'SW-LPS/ENV C05 (Page 05)' dated July 2010 indicated the side of the door that the weather bar would be fitted on at the rear of the door. That would clearly be the external (attack) face and as such the orientation of the beading shown higher up on that drawing confirmed the doorset was to be internally beaded. Applying that conclusion to the other drawings would therefore enable the fabricator to determine the orientation of other aspects of the doorsets' assembly.	Yes <sup>iv</sup>
3.1k)	The applicant's security rating expectation.	This information was provided on the application form (F415/9) signed on 23 July 2010. That is, the applicant expected a Security Rating 2 classification.	Yes

The documents listed in Table 5 therefore complied with the requirements contained within clauses 3.1 of LPS 1175: Issue 7<sup>1</sup>.

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<sup>iv</sup> It is recommended Smart Systems Limited add notes to the installation document and other relevant assembly documents confirming which side of the doorset is designed to be presented to the attacker.



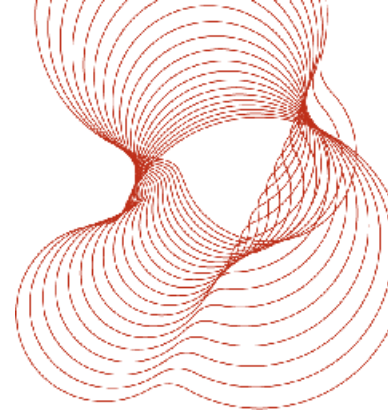


### 3.2 Design requirements

The review of the doorsets defined on the documents listed in Table 5 against the design requirements defined in clause 3.3 of LPS 1175: Issue 7<sup>1</sup> confirmed the following:

**Table 8** Results of the review of documents defining the 'Smart Wall' doorsets against the requirements contained in clause 3.3 of LPS 1175: Issue 7<sup>1</sup>

Clause	Title	Assessment	Compliant?
3.3.1	User instructions	Document 'SW-LPS/ENV E01' dated August 2010 confirmed the fixings used to install the doorsets and the locations of those fixings.	Yes
3.3.2	Locking	<p>The following locked conditions were possible on the doorset:</p> <ul style="list-style-type: none"> <li>• Minimum locked condition - One deadbolt engaged and the key removed.</li> <li>• Optimum locked condition - Both deadbolts engaged and the keys removed.</li> </ul> <p>The Yale 'KM3535-NP G35x35' double europrofile cylinder (key:key), which was also marketed under the 'Wah Yuet' trade name, was covered by BSI Kitemark licence KM 532920 dated 13 August 2008. That licence confirmed the cylinder met:</p> <ul style="list-style-type: none"> <li>• The requirements of class 16010C52 defined in EN 1303: 2005<sup>7</sup>. The cylinder therefore met key security class 5, which equated to having at least 30000 differs. That exceeded the minimum requirements (i.e. 5000 differs) defined in Table 2 of LPS 1175: Issue 7<sup>1</sup> for a Security Rating 2 classification.</li> <li>• The general vulnerability requirements contained in Annex A of BS 3621:2007<sup>6</sup>. The cylinder fitted to the doorset was therefore conducive with the doorset being granted a '+' security rating classification.</li> </ul>	Yes
3.3.3	Potable water access covers	The product submitted for evaluation was not a potable water access cover. The requirements of this clause therefore did not apply.	Not applicable
3.3.4	Free-standing barriers	The product submitted for evaluation was not a free-standing barrier. The requirements of this clause therefore did not apply.	Not applicable



Clause	Title	Assessment	Compliant?
3.3.5	Security containers	The product submitted for evaluation was not a security enclosure. The requirements of this clause therefore did not apply.	Not applicable

The 'Smart Wall' doorsets defined in the documents listed in Table 5; falling within the scope detailed in Table 1 to Table 4; therefore met the design requirements contained in clause 3.3 of LPS 1175: Issue 7<sup>1</sup>.

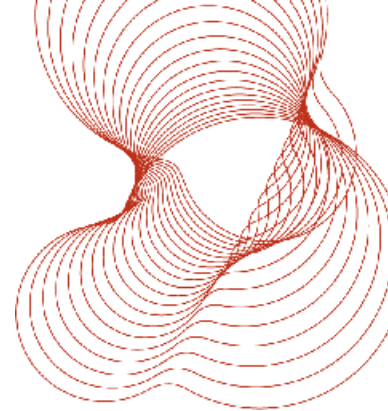
### 3.3 Performance requirements

The specimens tested were the largest and smallest doorsets in the range detailed in Table 1. The largest doorset in the range was tested because it was considered it would be most vulnerable to levering attacks due to the greatest distances between blocking points (locks and pivots). The smallest in the range was tested because it was considered it would be the most vulnerable to attempts at removing glazed infill panels due to the minimum perimeter of those fitted to any doorsets in the range. Furthermore, the smallest represented the stiffest leaves of all doorsets in the range owing to the span between blocking points.

Furthermore, the documents listed in Table 5 confirmed local aspects of the doorsets construction and the materials used to form the doorsets were consistent across the range defined in Table 1 to Table 4.

It was therefore considered all doorsets falling within the scope defined in Table 1 to Table 4 would meet the performance requirements of the following classifications when manufactured and installed in accordance with the documents listed in Table 5:

- Minimum locked condition - Security Rating 1+.
- Optimum locked condition - Security Rating 2+.



## 4 Conclusion

The 'Smart Wall' single leaf bidirectional glazed aluminium doorsets, falling within the scope defined in Table 1 to Table 4, met requirements of a Security Rating 2+ classification defined in LPS 1175: Issue 7<sup>1</sup> in the optimum locked condition and a Security Rating 1+ classification in the minimum locked condition, when manufactured and installed in accordance with the documents listed in Table 5.

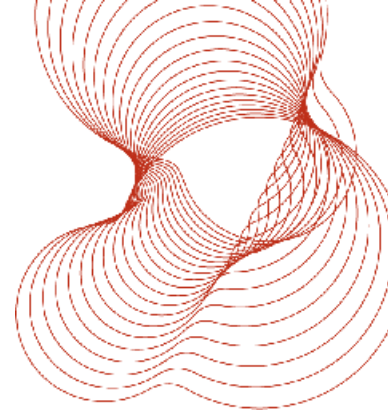
Whilst every effort was made to expose the minimum resistance of the product to manual attack during the test programme, the catalogue of tests and sequence of events was not exhaustive. Other modus operandi may exist that give different results.

The assessments contained within this report have been based on test data and information to hand at the time of issue. The assessment is invalidated if the assessed construction is subsequently tested since actual test data is deemed to take precedence over an expressed opinion. Any changes in the specification of the product will also invalidate the assessments contained within this report unless they are themselves covered by a valid assessment report issued by BRE Global Limited.

The assessments detailed within this report only apply to the designs assessed and may not be applicable to other constructions not specifically defined within the report.

The assessments detailed within this report relate to the manual attack performance of the product and do not cover aspects of quality, durability, maintenance or service requirements. Furthermore, the assessments relate only to the documents and/or specimen(s) assessed. They do not in themselves infer that the product or system assessed is approved by the Loss Prevention Certification Board or any other endorsements, approval or certification scheme.

This report should not be used to convey or infer approval or certification of the product by LPCB unless it is supported by a valid certificate for the product issued by LPCB and a Red Book listing. Copies of this report shall only be distributed in full without any abridgement or amendment.



## 5 References

1. LPS 1175: Issue 7 Requirements and testing procedures for the LPCB approval and listing of intruder resistant building components, strongpoints, security enclosures and free-standing barriers. BRE Global Limited, 2010.
2. prEN 1627: May 2010 Pedestrian doorsets, windows, curtain walling, grilles and shutters - Burglar resistance - Requirements and classification. CEN, 2009.
3. 264827a Testing of 'Smart Wall' single leaf bidirectional doorset to LPS 1175: Issue 7. BRE Global Limited, 2010.
4. 264828 Evaluation of 'Smart Wall' single leaf bidirectional doorset to the requirements contained in prEN 1627: May 2009. BRE Global Limited, 2010.
5. BRE Global Limited's Standard Terms and Conditions (PN101/13). BRE Global Limited, 2009.
6. BS 3621: 2007 Thief resistant lock assembly - Key egress. BSI, 2007.
7. BS EN 1303: 2005 Building hardware - Cylinders for locks - Requirements and test methods. BSI, 2005.

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=====REPORT ENDS=====