# Test Report



Report No 2370/7782490 This Report consists of 18 pages

Client **Smart Systems Limited** Arnolds Way

Yatton **BS49 4QN** 

Request by client dated 20 December 2011 Authority & date

Items tested 4 off Aluminium windows, Smart Systems Alitherm 300 Internally Glazed Casement Window Systems

Specification BS 7950:1997 Specification for enhanced security performance of casement and tilt/turn windows for domestic applications

Results **Pass** 

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(Senior Engineer) Authorized by M Manito

Issue Date 08 February 2012

Conditions of issue



This Test Report is issued subject to the conditions stated in current issue of CPO322 'General conditions relating to acceptance of testing'. The results contained herein apply only to the particular sample/s tested and to the specific tests carried out, as detailed in this Test Report. The issuing of this Test Report does not indicate any measure of Approval, Certification, Supervision, Control or Surveillance by BSI of any product. No extract, abridgement or abstraction from a Test Report may be published or used to advertise a product without the written consent of the Managing Director, BSI, who reserves the absolute right to agree or reject all or any of the details of any items or publicity for which consent may be sought.

# TEST, EXAMINATION AND ASSESSMENT OF FOUR ALUMINIUM WINDOWS, SMART SYSTEMS ALITHERM 300

#### **INTRODUCTION**

At the request of the client the Aluminium windows, detailed below and described on pages 4 and 11, were tested and assessed to the requirements of BS 7950:1997 Specification for enhanced security performance of windows for domestic applications incorporating Amendments 14289 and 15666, as indicated on the following pages of this Report. This request was made on Quotation No BSI0000360080 dated 20 December 2011. It is emphasized that assessments have not been made against the other Clauses of the Specification.

#### **TEST SAMPLES**

2 off projecting side hung next to projecting side hung windows (Sample 1)

2 off projecting top hung windows (Sample 2)

(Equipment Record No 10132933)

Date samples received: 2 February 2012

#### **SUMMARY OF RESULTS**

1.	Manipulation	The test samples met the requirements of the Specification in respect of Clause 7 Annex A.4.
2.	Glazing removal	The test samples met the requirements of the Specification in respect of Clause 7 Annex A.5.
3.	Mechanical loading	The test samples met the requirements of the Specification in respect of Clause 7 Annex A.6.
4.	Manual check test	The test samples met the requirements of the Specification, in respect of Clause 7 Annex A.7.

#### **CLAUSE 4 SAMPLE SELECTION**

The samples submitted for tests were selected by the Client.

#### **CLAUSE 5.2 ASSESSMENT**

The assessment of the test samples followed the sequence detailed in Scheme document PCP519.

#### **CLAUSE 6 TEST APPARATUS AND SAMPLE MOUNTING**

The test apparatus used for the manual and mechanical tests is shown in Appendix A of this Report. This apparatus meets the requirements of the Specification. Each test sample was submitted for test mounted in a  $50 \times 100$ mm timber subframe in accordance with the manufacturer's installation requirements.

## **DESCRIPTION OF SAMPLE (Sample 1)**

Sample type - Projecting side hung next to projecting side hung

Material - Aluminium

Construction - Cleated

Frittings (each sash) - Friction stays: 16" Securistyle Defender side hung stays

Locking: a six point lock (six mushroom bolts) Trojan

reverse espagnolette system operated by a

key locking handle 4 of run up blocks

2 of pairs of Vector Excluder hinge

protectors

**Glass -** Double glazed, 4-20-4mm toughened glass sealed units

Glazing system - Internal beads and gaskets

**Sample dimensions -** For information only (nominal sizes)

Overall size

Length: 1455mm Height: 1275mm

Sash sizes

Length: 690mm Height: 1195mm

#### **EXAMINATION AND TEST**

Sample type - Projecting side hung next to projecting side hung

Date of test – 6 February 2012

Laboratory temperature – 19.1 °C

#### **CLAUSE 7 PERFORMANCE REQUIREMENTS**

**ASSESSMENT** 

## **Annex A.4 Manipulation test**

The sample was mounted vertically in the test rig as described in Annex A.2. The test was carried out in accordance with the given objective of this Annex using the implements described in Annex A.3.

The key for the lockable hardware was fully removable. No entry could be effected within 3 minutes.

**Pass** 

#### Annex A.5 Glazing removal test

#### Annex A.5.1 Manual test

The sample was mounted vertically in the test rig as described in Annex A.2. The sample was assessed using a selection of tools as described in Annex A.3.

No entry could be effected within 3 minutes

Pass

#### **Annex A.5.2 Mechanical test**

The sample was mounted vertically in the test rig as described in Annex A.2. A perpendicular to plane load of 2.0kN was applied to each corner of the glazing in turn as specified in Annex A.5.2.

No evidence of bead failure No entry could be effected

**Pass** 

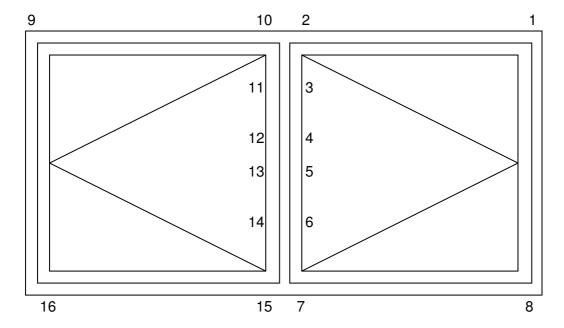
#### **CLAUSE 7 PERFORMANCE REQUIREMENTS**

## **Annex A.6 Mechanical loading test**

The sample was mounted vertically in the test rig as described in Annex A.2.

The test was carried out in accordance with the procedures detailed in Annex A.6 and Figure 1 using the test apparatus detailed in Appendix A of this test report.

Diagram of points of application of loads



#### Annex A.6.2 Loading procedure

Point of application of load (right hand light)

#### First sequence

1 - Hinge protector/Friction stay (right head)

Standard loading case used: 5/1

Load applied in plane: 1.0kN in direction to disengage hinge protector Load applied perpendicular to plane: 3.0kN applied for 10 seconds

Load applied in plane: 1.0kN towards opposite stay

**ASSESSMENT** 

## Annex A.6.2 Loading procedure

Point of application of load

## 2 - Corner (mullion head)

Standard loading case used: 3

Load applied in plane: 1.0kN along edge in direction to disengage nearest locking point

Load applied perpendicular to plane: 3.0kN applied for 10 seconds

Loads applied in plane: 1.0kN at right angles to edge and towards opposite edge

Load applied perpendicular to plane: 3.0kN applied for 10 seconds

#### 3 - Mushroom bolt/Mushroom bolt (upper mullion)

Standard loading case used: 4

Load applied in plane: 1.0kN along edge in direction to disengage bolt Load applied perpendicular to plane: 3.0kN applied for 10 seconds

Load applied in plane: 1.0kN along edge in direction to disengage bolt Load applied perpendicular to plane: 3.0kN applied for 10 seconds

Loads applied in plane: 1.0kN at right angles to edge and towards opposite edge

1.0kN at the mullion to oppose the above load

Load applied perpendicular to plane: 3.0kN applied for 10 seconds

#### 4 - Mushroom bolt (centre mullion)

Standard loading case used: 4

Load applied in plane: 1.0kN along edge in direction to disengage bolt Load applied perpendicular to plane: 3.0kN applied for 10 seconds

Loads applied in plane: 1.0kN at right angles to edge and towards opposite edge

1.0kN at the mullion to oppose the above load

Load applied perpendicular to plane: 3.0kN applied for 10 seconds

#### 5 - Mushroom bolt (centre mullion)

Standard loading case used: 4

Load applied in plane: 1.0kN along edge in direction to disengage bolt Load applied perpendicular to plane: 3.0kN applied for 10 seconds

Loads applied in plane: 1.0kN at right angles to edge and towards opposite edge

1.0kN at the mullion to oppose the above load

**ASSESSMENT** 

#### Annex A.6.2 Loading procedure

Point of application of load

6 - Mushroom bolt/Mushroom bolt (lower mullion)

Standard loading case used: 4

Load applied in plane: 1.0kN along edge in direction to disengage bolt Load applied perpendicular to plane: 3.0kN applied for 10 seconds

Load applied in plane: 1.0kN along edge in direction to disengage bolt Load applied perpendicular to plane: 3.0kN applied for 10 seconds

Loads applied in plane: 1.0kN at right angles to edge and towards opposite edge

1.0kN at the mullion to oppose the above load

Load applied perpendicular to plane: 3.0kN applied for 10 seconds

7 - Corner (mullion sill)

Standard loading case used: 3

Load applied in plane: 1.0kN along edge in direction to disengage nearest locking point

Load applied perpendicular to plane: 3.0kN applied for 10 seconds

Loads applied in plane: 1.0kN at right angles to edge and towards opposite edge

Load applied perpendicular to plane: 3.0kN applied for 10 seconds

8 - Hinge protector/Friction stay (right sill)

Standard loading case used: 5/1

Load applied in plane: 1.0kN in direction to disengage hinge protector Load applied perpendicular to plane: 3.0kN applied for 10 seconds

Load applied in plane: 1.0kN towards opposite stay

Load applied perpendicular to plane: 3.0kN applied for 10 seconds

No entry effected Pass

Point of application of load (left hand light)

9 - Hinge protector/Friction stay (left head)

Standard loading case used: 5/1

Load applied in plane: 1.0kN in direction to disengage hinge protector Load applied perpendicular to plane: 3.0kN applied for 10 seconds

Load applied in plane: 1.0kN towards opposite stay

**ASSESSMENT** 

#### Annex A.6.2 Loading procedure

Point of application of load

#### 10 - Corner (mullion head)

Standard loading case used: 3

Load applied in plane: 1.0kN along edge in direction to disengage nearest locking point

Load applied perpendicular to plane: 3.0kN applied for 10 seconds

Loads applied in plane: 1.0kN at right angles to edge and towards opposite edge

Load applied perpendicular to plane: 3.0kN applied for 10 seconds

## 11 - Mushroom bolt/Mushroom bolt (upper mullion)

Standard loading case used: 4

Load applied in plane: 1.0kN along edge in direction to disengage bolt Load applied perpendicular to plane: 3.0kN applied for 10 seconds

Load applied in plane: 1.0kN along edge in direction to disengage bolt Load applied perpendicular to plane: 3.0kN applied for 10 seconds

Loads applied in plane: 1.0kN at right angles to edge and towards opposite edge

1.0kN at the mullion to oppose the above load

Load applied perpendicular to plane: 3.0kN applied for 10 seconds

#### 12 - Mushroom bolt (centre mullion)

Standard loading case used: 4

Load applied in plane: 1.0kN along edge in direction to disengage bolt Load applied perpendicular to plane: 3.0kN applied for 10 seconds

Loads applied in plane: 1.0kN at right angles to edge and towards opposite edge

1.0kN at the mullion to oppose the above load

Load applied perpendicular to plane: 3.0kN applied for 10 seconds

#### 13 - Mushroom bolt (centre mullion)

Standard loading case used: 4

Load applied in plane: 1.0kN along edge in direction to disengage bolt Load applied perpendicular to plane: 3.0kN applied for 10 seconds

Loads applied in plane: 1.0kN at right angles to edge and towards opposite edge

1.0kN at the mullion to oppose the above load

**ASSESSMENT** 

#### Annex A.6.2 Loading procedure

Point of application of load

14 - Mushroom bolt/Mushroom bolt (lower mullion)

Standard loading case used: 4

Load applied in plane: 1.0kN along edge in direction to disengage bolt Load applied perpendicular to plane: 3.0kN applied for 10 seconds

Load applied in plane: 1.0kN along edge in direction to disengage bolt Load applied perpendicular to plane: 3.0kN applied for 10 seconds

Loads applied in plane: 1.0kN at right angles to edge and towards opposite edge

1.0kN at the mullion to oppose the above load

Load applied perpendicular to plane: 3.0kN applied for 10 seconds

15 - Corner (mullion sill)

Standard loading case used: 3

Load applied in plane: 1.0kN along edge in direction to disengage nearest locking point

Load applied perpendicular to plane: 3.0kN applied for 10 seconds

Loads applied in plane: 1.0kN at right angles to edge and towards opposite edge

Load applied perpendicular to plane: 3.0kN applied for 10 seconds

16 - Hinge protector/Friction stay (left sill)

Standard loading case used: 5/1

Load applied in plane: 1.0kN in direction to disengage hinge protector Load applied perpendicular to plane: 3.0kN applied for 10 seconds

Load applied in plane: 1.0kN towards opposite stay

Load applied perpendicular to plane: 3.0kN applied for 10 seconds

No entry effected Pass

#### Annex A.7 Manual check test

The sample was mounted vertically in the test rig as described in Annex A.2.

The test was carried out using the tools described in Annex A.7.2 in accordance with the procedures detailed in Annex A.7.3.

No alternative method of entry could be effected

**Pass** 

#### Annex A.8 Additional mechanical loading test

Not applicable as an alternative method of entry was not identified under Annex A.7.

## **DESCRIPTION OF SAMPLE (Sample 2)**

Sample type - Projecting top hung

Material - Aluminium

Construction - Cleated

**Fittings -** Friction stays: 16" Securistyle Defender top hung stays

Locking: a six point lock (six mushroom bolts) Trojan

reverse espagnolette system operated by a

key locking handle 4 of run up blocks

2 of pairs of Vector Excluder hinge

protectors

Glass - Double glazed, 4-20-4mm toughened glass sealed unit

Glazing system - Internal beads and gaskets

**Sample dimensions -** For information only (nominal sizes)

Overall size

Length: 1455mm Height: 1270mm

Sash sizes

Length: 1400mm Height: 1200mm

#### **EXAMINATION AND TEST**

Sample type - Projecting top hung

Date of test - 6 February 2012

Laboratory temperature – 19.1 °C

#### **CLAUSE 7 PERFORMANCE REQUIREMENTS**

**ASSESSMENT** 

## **Annex A.4 Manipulation test**

The sample was mounted vertically in the test rig as described in Annex A.2. The test was carried out in accordance with the given objective of this Annex using the implements described in Annex A.3.

The key for the lockable hardware was fully removable. No entry could be effected within 3 minutes.

**Pass** 

#### Annex A.5 Glazing removal test

#### Annex A.5.1 Manual test

The sample was mounted vertically in the test rig as described in Annex A.2. The sample was assessed using a selection of tools as described in Annex A.3.

No entry could be effected within 3 minutes

**Pass** 

#### Annex A.5.2 Mechanical test

The sample was mounted vertically in the test rig as described in Annex A.2. A perpendicular to plane load of 2.0kN was applied to each corner of the glazing in turn as specified in Annex A.5.2.

No evidence of bead failure No entry could be effected

**Pass** 

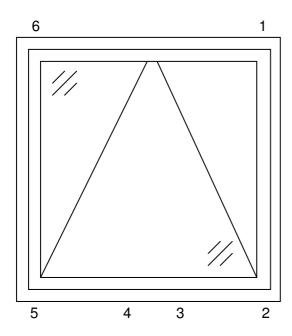
#### **CLAUSE 7 PERFORMANCE REQUIREMENTS**

#### **Annex A.6 Mechanical loading test**

The sample was mounted vertically in the test rig as described in Annex A.2.

The test was carried out in accordance with the procedures detailed in Annex A.6 and Figure 1 using the test apparatus detailed in Appendix A of this test report.

Diagram of points of application of loads



## Annex A.6.2 Loading procedure

Point of application of load

#### First sequence

1 - Hinge protector/Friction stay (right head)

Standard loading case used: 5/1

Load applied in plane: 1.0kN in direction to disengage hinge protector Load applied perpendicular to plane: 3.0kN applied for 10 seconds

Load applied in plane: 1.0kN towards opposite stay

**ASSESSMENT** 

#### Annex A.6.2 Loading procedure

Point of application of load

## 2 - Corner/Mushroom bolt/Mushroom bolt (right sill)

Standard loading case used: 4

Load applied in plane: 1.0kN along edge in direction to disengage bolt Load applied perpendicular to plane: 3.0kN applied for 10 seconds

Load applied in plane: 1.0kN along edge in direction to disengage bolt Load applied perpendicular to plane: 3.0kN applied for 10 seconds

Loads applied in plane: 1.0kN at right angles to edge and towards opposite edge Load applied perpendicular to plane: 3.0kN applied for 10 seconds

#### 3 - Mushroom bolt (centre sill)

Standard loading case used: 4

Load applied in plane: 1.0kN along edge in direction to disengage bolt Load applied perpendicular to plane: 3.0kN applied for 10 seconds

Loads applied in plane: 1.0kN at right angles to edge and towards opposite edge Load applied perpendicular to plane: 3.0kN applied for 10 seconds

#### 4 - Mushroom bolt (centre sill)

Standard loading case used: 4

Load applied in plane: 1.0kN along edge in direction to disengage bolt Load applied perpendicular to plane: 3.0kN applied for 10 seconds

Loads applied in plane: 1.0kN at right angles to edge and towards opposite edge Load applied perpendicular to plane: 3.0kN applied for 10 seconds

#### 5 - Corner/Mushroom bolt/Mushroom bolt (left sill)

Standard loading case used: 4

Load applied in plane: 1.0kN along edge in direction to disengage bolt Load applied perpendicular to plane: 3.0kN applied for 10 seconds

Load applied in plane: 1.0kN along edge in direction to disengage bolt Load applied perpendicular to plane: 3.0kN applied for 10 seconds

Loads applied in plane: 1.0kN at right angles to edge and towards opposite edge Load applied perpendicular to plane: 3.0kN applied for 10 seconds

**ASSESSMENT** 

#### Annex A.6.2 Loading procedure

Point of application of load

6 - Hinge protector/Friction stay (left head)

Standard loading case used: 5/1

Load applied in plane: 1.0kN in direction to disengage hinge protector Load applied perpendicular to plane: 3.0kN applied for 10 seconds

Load applied in plane: 1.0kN towards opposite stay

Load applied perpendicular to plane: 3.0kN applied for 10 seconds

No entry effected Pass

#### **Annex A.7 Manual check test**

The sample was mounted vertically in the test rig as described in Annex A.2.

The test was carried out using the tools described in Annex A.7.2 in accordance with the procedures detailed in Annex A.7.3.

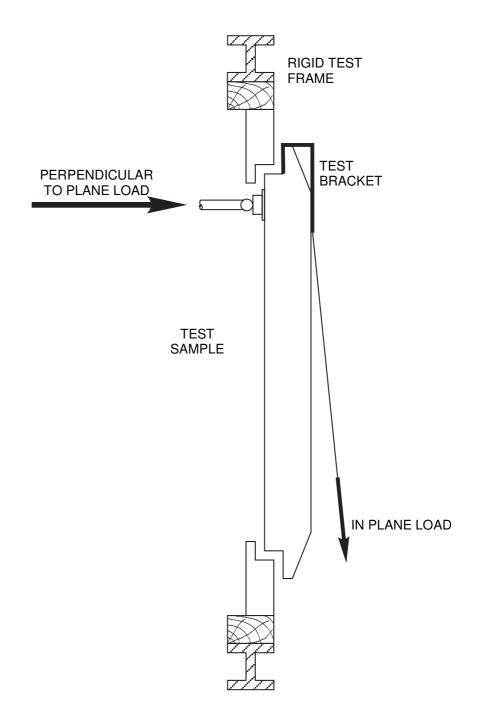
No alternative method of entry could be effected

Pass

#### Annex A.8 Additional mechanical loading test

Not applicable as an alternative method of entry was not identified under Annex A.7.

## **APPENDIX A**

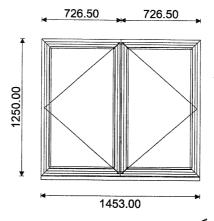


## **APPENDIX B**

2

## Casemen

ETC317: Outer Frame ETC424: Vent ETC335: Mullion ETC157: Cill NONE: Head Extension



QUALITY CONTROL
Approved
Cut
Fabricated
Checked
Glazed

1,453 mm x 1,275 mm

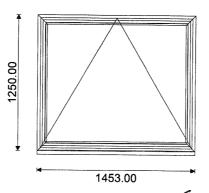
ETC157   Cill - 150mm SubCill   0.0T   0.0T   1   2   2   1,453 mm   1   1   1   1   1   1   1   1   1	Extrusions	1,433 11111	x 1,275 mm <i>End Pre</i>	D	Qty	Total	Length	Stat	us.
ETC162	ETC157	Cill - 150mm SubCill							1
ETC162   Bead - 24mm (ALI47) Square	ETC162	Bead - 24mm (ALI47) Square	0.0T	0.0T			_	•	1
ETC317   Square Outerframe for Standard Stays   45.0T   45.0T   2   4   1.250 mm   1   1.250 m	ETC162	Bead - 24mm (ALI47) Square	0.0T	0.0T	-		al and a second		1
ETC317	ETC317	Square Outerframe for Standard Stays	45.0T	45.0T	2	4	,	·	1
ETC335	ETC317	Square Outerframe for Standard Stays	45.0T	45.0T			1		1
ETC424   Internally Beaded Square Vent Frame	ETC335	Wide Transom/Mullion for STD Stays	0.0T	0.0T		_ ` .	1 400	L	, 1
Tercapa	ETC424	·	45.0T	45.0T		ا ه	600	-	, 1
Residual Components	ETC424	Internally Beaded Square Vent Frame	45.0T	45.0T	4		4 407	L	1
Components	Glazing		······································		Qty				
ACET012 CornerCleat (Crimping cleat)	28MM	28mm Glazing			2	4 59	93 mm × 1,098	[	]
ACET044 Chevron S/S (for 55)  ACET045 Chevron S/S (for 47)  ACET062 Screws (for Cills) No.10 x 2 CskSS STap  ACET064 Screws (for Cills) No.10 x 2 CskSS STap  ACET065 Screws (for Handles) No. 8 X5/8 Csk Hd.  ACET066 Screws (for Handles) No. 8 X5/8 Csk Hd.  ACET066 Screws No. 7 x 1.5 Csk head S/S  ACET069 Screws (for ACET081)  ACET069 Screws (for ACET081)  ACET070 8X 1/2 "Pozi Flange S.S. Self Tapping  ACET074 CornerCleat (Crimping for 47 Internal)  ACET075 Anti Twist Clip  ACET125 Anti Twist Clip  ACET125 Anti Twist Clip  ACET126 Anti Twist Clip  ACET157WP Cill end cap  ACET165WPL Espag Handle Left - White  ACET165WPR Espag Handle Right - White  ACET165WPR Espag Handle Right - White  ACET165WPR Espag Handle Right - White  ACET1304L Espag'  ACET304L Espag'  ACET304R Espag'  ACET304R Espag'  ACET304R Espag'  ACET304R Espag Handle Collect fix to  ACET304R Espag'  ACET305R Espag'  ACET304R Espag'  A	Components	1			Qty	Total	Unit		
ACET045 Chevron S/S (for 47)  ACET062 Screws (for Cills) No.10 x 2 CskSS STap  ACET064 Screws (for Cills) No.10 x 2 CskSS STap  ACET065 Screws (for Handles) No. 8 X5/8 Csk Hd.  ACET066 Screws (for Handles) No. 8 X5/8 Csk Hd.  ACET066 Screws No. 7 x 1.5 Csk head S/S  ACET069 Screws (for ACET081)  ACET070 8X 1/2 " Pozi Flange S.S. Self Tapping  ACET070 8X 1/2 " Pozi Flange S.S. Self Tapping  ACET074 CornerCleat (Crimping for 47 Internal)  ACET125 Anti Twist Clip  ACET125 Anti Twist Clip  Cill end cap  ACET157WP Cill end cap  ACET157WP Espag Handle Left - White  ACET165WPL Espag Handle Left - White  ACET165WPL Espag Handle Right - White  ACET165WPL Espag Handle Right - White  ACET165WPL Espag  ACET1304 Espag'  ACET304L Espag'  ACET304L Espag'  ACET304R Espag   ACET304R Espag   ACET310 Cleat for ETC310 316 317  ACET335 PVC Transom Locator Block for ETC335  ACET380 Run Up Block  ACET394 Keep Packer  ACET394 Keep Packer  ACET394 Keep Packer  ACET394 Keep Packer  ACET394 Gasket - E Gasket 3mm  ACUG31 Gasket - E Gasket 5mm  ACUG31 Gasket - Small Flipper  15 30 Each [ ]  ACUG32 Gasket - Small Flipper  ACUG022 Stainless Steel Chevron  AUMOS ENDOWN this end is a feet between the cap is a feet between the c	ACET012	CornerCleat (Crimping cleat)			4	8	Each	[	]
ACET1062 Screws (for Cills) No.10 x 2 CskSS STap  ACET064 Screws (for Handles) No. 8 X5/8 Csk Hd.  ACET066 Screws No. 7 x 1.5 Csk head S/S  ACET066 Screws (for ACET081)  ACET069 Screws (for ACET081)  ACET070 8X 1/2 " Pozi Flange S.S. Self Tapping  ACET070 8X 1/2 " Pozi Flange S.S. Self Tapping  ACET071 ComerCleat (Crimping for 47 Internal)  ACET072 Anti Twist Clip  ACET125 Anti Twist Clip  ACET125 Anti Twist Clip  ACET165WPL Espag Handle Left - White  ACET165WPL Espag Handle Left - White  ACET165WPR Espag Handle Right - White  ACET180 Alitherm 47 - Run up block for direct fix to  ACET304L Espag'  ACET304L Espag'  ACET304L Espag'  ACET304R Espag'  ACET304R Espag'  ACET305 PVC Transom Locator Block for ETC335  ACET335 PVC Transom Locator Block for ETC335  ACET380 Run Up Block  ACET380 Run Up Block  ACET394 Keep Packer  ACET394 Keep Packer  ACET394 Keep Packer  ACET394 Keep Packer  ACET395 Gasket - E Gasket 3mm  ACVG31 Gasket - E Gasket 3mm  ACVG34 Gasket - Wedge Gasket 5mm  ACVU302 Gasket - Small Flipper  ACWU0024 Stainless Steel Chevron  AUMOS PROMET Climpe Protectors (Pr.)	ACET044	Chevron S/S (for 55)			8	16	Each	[	]
ACET1064 Screws (for Handles) No. 8 X5/8 Csk Hd. 24 48 Each [ ]  ACET066 Screws No. 7 x 1.5 Csk head S/S 6 12 Each [ ]  ACET069 Screws (for ACET081) 4 8 Each [ ]  ACET070 8X 1/2 " Pozi Flange S.S. Self Tapping 24 48 Each [ ]  ACET074 ComerCleat (Crimping for 47 Internal) 8 16 Each [ ]  ACET125 Anti Twist Clip 2 4 Each [ ]  ACET125 Anti Twist Clip 2 4 Each [ ]  ACET157WP Cill end cap 1 2 Each [ ]  ACET165WPL Espag Handle Left - White 1 2 Each [ ]  ACET165WPR Espag Handle Right - White 1 2 Each [ ]  ACET180 Alitherm 47 - Run up block for direct fix to 4 8 Each [ ]  ACET304L Espag' 1 2 Each [ ]  ACET304R Espag' 1 2 Each [ ]  ACET304R Espag' 1 2 Each [ ]  ACET310 Cleat for ETC310 316 317 4 8 Each [ ]  ACET335 PVC Transom Locator Block for ETC335 2 4 Each [ ]  ACET380 Run Up Block 2 4 Each [ ]  ACET394 Keep Packer 4 8 Each [ ]  ACH1984 Keep Packer 4 8 Each [ ]  ACH1985 Rin Up Block 5 Standard Hinge 5 ACH1986 16 Each [ ]  ACVG31 Gasket - E Gasket 3mm 7 14 Each [ ]  ACVG34 Gasket - Small Flipper 15 30 Each [ ]  ACW20024 Stainless Steel Chevron 8 16 Each [ ]	ACET045	, ,			8,.	16	Each	[	]
ACET066 Screws No. 7 x 1.5 Csk head S/S  ACET069 Screws (for ACET081)  ACET070 8X 1/2 "Pozi Flange S.S. Self Tapping  ACET070 8X 1/2 "Pozi Flange S.S. Self Tapping  ACET074 CornerCleat (Crimping for 47 Internal)  ACET125 Anti Twist Clip  ACET125 Anti Twist Clip  ACET157WP Cill end cap  ACET157WP Cill end cap  ACET156WPL Espag Handle Left - White  ACET165WPR Espag Handle Right - White  ACET165WPR Espag Handle Right - White  ACET180 Alitherm 47 - Run up block for direct fix to  ACET304L Espag'  ACET304L Espag'  ACET304 Espag'  ACET305 Cleat for ETC310 316 317  ACET335 PVC Transom Locator Block for ETC335  ACET380 Run Up Block  ACET394 Keep Packer  ACINDSSH16 16" SH. Standard Hinge  ACVG31 Gasket - E Gasket 3mm  ACVG34 Gasket - Wedge Gasket 5mm  ACVU32 Gasket - Small Flipper  ACW20024 Stainless Steel Chevron  AUMOR PROTECTION P	ACET062	Screws (for Cills) No.10 x 2 CskSS STap			6	12	Each	[	]
ACET1069 Screws (for ACET081)	ACET064	Screws (for Handles) No. 8 X5/8 Csk Hd.			24	48	Each	[	]
ACET070 8X 1/2 * Pozi Flange S.S. Self Tapping 24 48 Each [ ]  ACET074 ComerCleat (Crimping for 47 Internal) 8 16 Each [ ]  ACET125 Anti Twist Clip 2 4 Each [ ]  ACET125 Anti Twist Clip 1 2 Each [ ]  ACET157WP Cill end cap 1 2 Each [ ]  ACET165WPL Espag Handle Left - White 1 2 Each [ ]  ACET165WPR Espag Handle Right - White 1 2 Each [ ]  ACET180 Alitherm 47 - Run up block for direct fix to 4 8 Each [ ]  ACET304L Espag' 1 2 Each [ ]  ACET304R Espag' 1 2 Each [ ]  ACET304R Espag' 1 2 Each [ ]  ACET310 Cleat for ETC310 316 317 4 8 Each [ ]  ACET335 PVC Transom Locator Block for ETC335 2 4 Each [ ]  ACET380 Run Up Block 2 4 Each [ ]  ACET380 Run Up Block 2 4 Each [ ]  ACET394 Keep Packer 4 8 Each [ ]  ACINDSSH16 16" SH. Standard Hinge 2 4 Each [ ]  ACVG31 Gasket - E Gasket 3mm 7 14 Each [ ]  ACVG34 Gasket - Wedge Gasket 5mm 7 14 Each [ ]  ACVG34 Gasket - Small Flipper 15 30 Each [ ]  ACW20024 Stainless Steel Chevron 8 16 Each [ ]	ACET066	Screws No. 7 x 1.5 Csk head S/S			6	12	Each	[	]
ACET174 ComerCleat (Crimping for 47 Internal)  ACET125 Anti Twist Clip  ACET125 Anti Twist Clip  ACET125 Anti Twist Clip  Cill end cap  ACET157WP Cill end cap  ACET165WPL Espag Handle Left - White  ACET165WPR Espag Handle Right - White  ACET165WPR Espag Handle Right - White  ACET180 Alitherm 47 - Run up block for direct fix to  ACET304L Espag'  ACET304L Espag'  ACET304R Espag'  ACET310 Cleat for ETC310 316 317  ACET310 Cleat for ETC310 316 317  ACET335 PVC Transom Locator Block for ETC335  ACET380 Run Up Block  ACET380 Run Up Block  ACET394 Keep Packer  ACINDSSH16 16" SH. Standard Hinge  ACVG31 Gasket - E Gasket 3mm  ACVG31 Gasket - Wedge Gasket 5mm  ACVG34 Gasket - Small Flipper  ACW20024 Stainless Steel Chevron  ACW20024 Stainless Steel Chevron  ACW20024 Stainless Steel Chevron  ACM35 POOT Miles Protectors (Pp.)	ACET069	Screws (for ACET081)			4	8	Each	[	]
ACET125 Anti Twist Clip	ACET070	8X 1/2 " Pozi Flange S.S. Self Tapping			24	48	Each	[	]
ACET157WP Cill end cap 1 2 Each [ ]  ACET165WPL Espag Handle Left - White 1 2 Each [ ]  ACET165WPR Espag Handle Right - White 1 2 Each [ ]  ACET180 Alitherm 47 - Run up block for direct fix to 4 8 Each [ ]  ACET304L Espag' 1 2 Each [ ]  ACET304R Espag' 1 2 Each [ ]  ACET310 Cleat for ETC310 316 317 4 8 Each [ ]  ACET335 PVC Transom Locator Block for ETC335 2 4 Each [ ]  ACET380 Run Up Block 2 4 Each [ ]  ACET394 Keep Packer 4 8 Each [ ]  ACET394 Keep Packer 4 8 Each [ ]  ACINDSSH16 16" SH. Standard Hinge 2 4 Each [ ]  ACVG31 Gasket - E Gasket 3mm 7 14 Each [ ]  ACVG34 Gasket - Wedge Gasket 5mm 7 14 Each [ ]  ACVG35 Gasket - Small Flipper 15 30 Each [ ]  ACW20024 Stainless Steel Chevron 8 16 Each [ ]	ACET074	CornerCleat (Crimping for 47 Internal)			8	16	Each	[	]
ACET165WPL Espag Handle Left - White	ACET125	Anti Twist Clip			2	4	Each	[	]
ACET165WPR Espag Handle Right - White 1 2 Each [ ] ACET180 Alitherm 47 - Run up block for direct fix to 4 8 Each [ ] ACET304L Espag' 1 2 Each [ ] ACET304R Espag' 1 2 Each [ ] ACET310 Cleat for ETC310 316 317 4 8 Each [ ] ACET335 PVC Transom Locator Block for ETC335 2 4 Each [ ] ACET380 Run Up Block 2 4 Each [ ] ACET394 Keep Packer 4 8 Each [ ] ACINDSSH16 16" SH. Standard Hinge 2 4 Each [ ] ACVG31 Gasket - E Gasket 3mm 7 14 Each [ ] ACVG34 Gasket - Wedge Gasket 5mm 7 14 Each [ ] ACVG35 Gasket - Small Flipper 15 30 Each [ ] ACW20024 Stainless Steel Chevron 8 16 Each [ ]	ACET157WP	Cill end cap			1	2	Each	[	]
ACET180 Alitherm 47 - Run up block for direct fix to  ACET304L Espag'  ACET304R Espag'  ACET310 Cleat for ETC310 316 317  ACET335 PVC Transom Locator Block for ETC335  ACET380 Run Up Block  ACET394 Keep Packer  ACET394 Keep Packer  ACINDSSH16 16" SH. Standard Hinge  ACVG31 Gasket - E Gasket 3mm  ACVG34 Gasket - Wedge Gasket 5mm  ACVG34 Gasket - Small Flipper  ACW20024 Stainless Steel Chevron  ACW20024 Stainless Steel Chevron  ACW20024 Stainless Steel Chevron  ACM20025 Gasket - Small Flipper  ACW20026 Fach Care and Acmandian and	ACET165WPL	Espag Handle Left - White			1	2	Each	[	]
ACET304L Espag' 1 2 Each [ ]  ACET304R Espag' 1 2 Each [ ]  ACET310 Cleat for ETC310 316 317 4 8 Each [ ]  ACET335 PVC Transom Locator Block for ETC335 2 4 Each [ ]  ACET380 Run Up Block 2 4 Each [ ]  ACET394 Keep Packer 4 8 Each [ ]  ACINDSSH16 16" SH. Standard Hinge 2 4 Each [ ]  ACVG31 Gasket - E Gasket 3mm 7 14 Each [ ]  ACVG34 Gasket - Wedge Gasket 5mm 7 14 Each [ ]  ACVG34 Gasket - Small Flipper 15 30 Each [ ]  ACW20024 Stainless Steel Chevron 8 16 Each [ ]	ACET165WPR				1	2	Each	[	]
ACET304R Espag'  ACET310 Cleat for ETC310 316 317  ACET335 PVC Transom Locator Block for ETC335  ACET380 Run Up Block  ACET394 Keep Packer  ACINDSSH16 16" SH. Standard Hinge  ACVG31 Gasket - E Gasket 3mm  ACVG34 Gasket - Wedge Gasket 5mm  ACVG34 Gasket - Small Flipper  ACVG32 Gasket - Small Flipper  ACW20024 Stainless Steel Chevron  Back I 2 Each [ ]  ACW20024 Stainless Steel Chevron  Back I 2 Each [ ]  ACW20024 Stainless Steel Chevron  Back I 2 Each [ ]  ACW20024 Stainless Steel Chevron  Back I 2 Each [ ]  ACW20024 Stainless Steel Chevron  Back I 2 Each [ ]  ACW20024 Stainless Steel Chevron  Back I 2 Each [ ]	ACET180	Alitherm 47 - Run up block for direct fix to			4	8	Each	[	]
ACET310       Cleat for ETC310 316 317       4       8       Each [ ]         ACET335       PVC Transom Locator Block for ETC335       2       4       Each [ ]         ACET380       Run Up Block       2       4       Each [ ]         ACET394       Keep Packer       4       8       Each [ ]         ACINDSSH16       16" SH. Standard Hinge       2       4       Each [ ]         ACVG31       Gasket - E Gasket 3mm       7       14       Each [ ]         ACVG34       Gasket - Wedge Gasket 5mm       7       14       Each [ ]         ACVL032       Gasket - Small Flipper       15       30       Each [ ]         ACW20024       Stainless Steel Chevron       8       16       Each [ ]         HINCE PROTECHings Protectors (Pr)       4       2       Each [ ]	ACET304L	Espag'			1	2	Each	[	]
ACET335 PVC Transom Locator Block for ETC335 2 4 Each [ ] ACET380 Run Up Block 2 4 Each [ ] ACET394 Keep Packer 4 8 Each [ ] ACINDSSH16 16" SH. Standard Hinge 2 4 Each [ ] ACVG31 Gasket - E Gasket 3mm 7 14 Each [ ] ACVG34 Gasket - Wedge Gasket 5mm 7 14 Each [ ] ACVG34 Gasket - Small Flipper 15 30 Each [ ] ACVL032 Gasket - Small Flipper 15 30 Each [ ] ACW20024 Stainless Steel Chevron 8 16 Each [ ]	ACET304R	Espag'			1	2	Each	[	]
ACET380       Run Up Block       2       4       Each [ ]         ACET394       Keep Packer       4       8       Each [ ]         ACINDSSH16       16" SH. Standard Hinge       2       4       Each [ ]         ACVG31       Gasket - E Gasket 3mm       7       14       Each [ ]         ACVG34       Gasket - Wedge Gasket 5mm       7       14       Each [ ]         ACVL032       Gasket - Small Flipper       15       30       Each [ ]         ACW20024       Stainless Steel Chevron       8       16       Each [ ]         HINCE PROTECHings Protectors (Pr)       4       2       Each [ ]	ACET310	Cleat for ETC310 316 317			4	8	Each	[	]
ACET394       Keep Packer       4       8       Each [ ]         ACINDSSH16       16" SH. Standard Hinge       2       4       Each [ ]         ACVG31       Gasket - E Gasket 3mm       7       14       Each [ ]         ACVG34       Gasket - Wedge Gasket 5mm       7       14       Each [ ]         ACVL032       Gasket - Small Flipper       15       30       Each [ ]         ACW20024       Stainless Steel Chevron       8       16       Each [ ]         HINCE PROTECHings Protectors (Pr)       4       2       Fach [ ]	ACET335	PVC Transom Locator Block for ETC335			2	4	Each	[	]
ACINDSSH16       16" SH. Standard Hinge       2 . 4       Each [ ]         ACVG31       Gasket - E Gasket 3mm       7 14       Each [ ]         ACVG34       Gasket - Wedge Gasket 5mm       7 14       Each [ ]         ACVL032       Gasket - Small Flipper       15 30       Each [ ]         ACW20024       Stainless Steel Chevron       8 16       Each [ ]         HINCE PROTECHings Protectors (Pr)       4 9 9 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	ACET380	Run Up Block			2	4	Each	[	]
ACINDSSH16       16" SH. Standard Hinge       2 . 4       Each [ ]         ACVG31       Gasket - E Gasket 3mm       7 . 14       Each [ ]         ACVG34       Gasket - Wedge Gasket 5mm       7 . 14       Each [ ]         ACVL032       Gasket - Small Flipper       15 . 30       Each [ ]         ACW20024       Stainless Steel Chevron       8 . 16       Each [ ]         HINCE PROTECHings Protectors (Pr)       4 . 2       Fach [ ]	ACET394	Keep Packer			4	8	Each	[	]
ACVL032 Gasket - Wedge Gasket 5mm 7 14 Each [ ]  ACVL032 Gasket - Small Flipper 15 30 Each [ ]  ACW20024 Stainless Steel Chevron 8 16 Each [ ]	ACINDSSH16	16" SH. Standard Hinge			2	. 4	Each	[	]
ACVL032 Gasket - Small Flipper 15 30 Each [ ]  ACW20024 Stainless Steel Chevron 8 16 Each [ ]	ACVG31	Gasket - E Gasket 3mm			7	14	Each	[	]
ACW20024 Stainless Steel Chevron 8 16 Each [ ]	ACVG34	Gasket - Wedge Gasket 5mm			7	14	Each	Ī	]
ACW20024 Stainless Steel Chevron 8 16 Each [ ]	ACVL032	Gasket - Small Flipper			15	30	Each	Ī	]
HINGE PROTE(Hinge Protectors (Pr)  4 8 Each [ ]					8	16	Each	[	]
	HINGE PROTI	E(Hinge Protectors (Pr)			4	8	Each	[	]

## **APPENDIX B (CONTINUED)**

1

## Casemen

ETC317: Outer Frame ETC424: Vent ETC157: Cill



	QUALITY CONTROL
	Approved
	Cut
	Fabricated
	Checked
	Glazed
-	

1,453	mm	x	1 275	mm
1,700	111111	^	1,210	

Extrusions		End Pre	End Prep		Total	Length	Stati	Status	
ETC157	Cill - 150mm SubCill	0.0T	0.0T	1	2	1,453 mm	[	]	
ETC162	Bead - 24mm (ALI47) Square	0.0T	0.0T	2	4 🧻	1,075 mm	ī	1	
ETC162	Bead - 24mm (ALI47) Square	0.0T	0.0T	2	4 📆	1,308 mm	ſ	1	
ETC317	Square Outerframe for Standard Stays	45.0T	45.0T	2	4 🚅	1,250 mm	ī	1	
ETC317	Square Outerframe for Standard Stays	45.0T	45.0T	2	4		ſ	1	
ETC424	Internally Beaded Square Vent Frame	45.0T	45.0T	2	4 b	1,197 mm	ſ	i	
ETC424	Internally Beaded Square Vent Frame	45.0T	45.0T	2	4 🖃	1,400 mm	[	1	
Glazing				Qty		Width Height	-		
28MM	28mm Glazing			1	2	1,301 x 1,098	ī	]	
Components				Qty	Total	Unit			
ACET012	CornerCleat (Crimping cleat)			4	8	Each	I	1	
ACET044	Chevron S/S (for 55)			4	8	Each	Ī	]	
ACET045	Chevron S/S (for 47)			8	16	Each	Ī	1	
ACET062	Screws (for Cills) No.10 x 2 CskSS STap			6	12	Each	[	1	
ACET069	Screws (for ACET081)			2	4	Each	[	]	
ACET070	8X 1/2 " Pozi Flange S.S. Self Tapping			12	24	Each	Ī	1	
ACET074	CornerCleat (Crimping for 47 Internal)			4	8	Each	[	1	
ACET157WP	Cill end cap		.*	1	2	Each	Ī	1	
ACET165WPR	Espag Handle Right - White			1	2	Each	Ī	]	
ACET180	Alitherm 47 - Run up block for direct fix to			2	4	Each	Ī	1	
ACET305R	Espag'			1	2	Each	ĺ	1	
ACET310	Cleat for ETC310 316 317			4	8	Each	Ī	1	
ACET380	Run Up Block			2	4	Each	ſ	1	
ACET394	Keep Packer			4	8	Each	Ī	j	
ACINDS24	24" Standard Hinge			1	2	Each	ŗ	i	
ACVG31	Gasket - E Gasket 3mm			5	10	Each	[	]	
ACVG34	Gasket - Wedge Gasket 5mm			5	10	Each	ſ	1	
ACVL032	Gasket - Small Flipper			10	21	Each	Ī	1	
ACW20024	Stainless Steel Chevron			4	8	Each	Ī	1	
HINGE PROTE(Hinge Protectors (Pr)								-	