

ECO SUPPLY TEST REPORT

SCOPE OF WORK

AAMA/WDMA/CSA 101/I.S.2/A440 TESTING ON
IV79 BILDAU AND BUSSMAN, DUAL ACTION WINDOW

REPORT NUMBER

I1015.01-109-44

TEST DATE(S)

02/19/18 - 02/27/18

ISSUE DATE

03/08/18

RECORD RETENTION END DATE

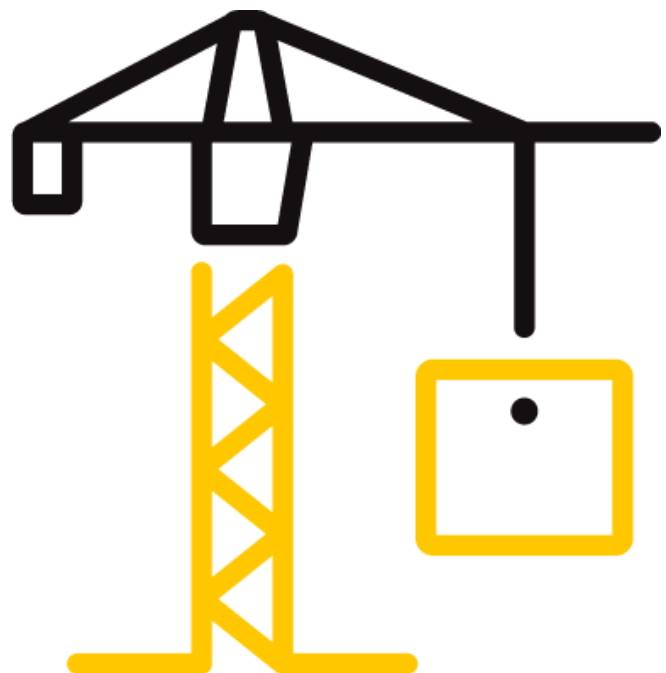
02/27/22

PAGES

16

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TEST REPORT FOR ECO SUPPLY

Report No.: I1015.01-109-44

Date: 03/08/18

REPORT ISSUED TO

ECO SUPPLY

2115 Westmoreland Street
Richmond, Virginia 23230

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by ECO Supply, 2115 Westmoreland Street, Richmond, Virginia 23230 to perform testing in general accordance with AAMA/WDMA/CSA 101/I.S.2/A440-17, *North American Fenestration Standard/Specification for Windows, Doors, and Skylights*, on their IV79 Bildau and Bussman, dual action window. The specimen tested did not meet the gateway size requirements for an AW rating. Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted at Intertek B&C test facility in York, Pennsylvania. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

SECTION 2

SUMMARY OF TEST RESULTS

TITLE	RESULTS
Design Pressure	±1920 Pa (±40.10 psf)
Air Infiltration	<0.1 L/s/m ² (<0.01 cfm/ft ²)
Water Penetration Resistance Test Pressure	390 Pa (8.15 psf)

For INTERTEK B&C:

COMPLETED BY:	Richard E. Hartman III	REVIEWED BY:	Timothy J. McGill
TITLE:	Technician III – Product Testing	TITLE:	Manager – Product Testing
SIGNATURE:		SIGNATURE:	
DATE:	03/08/18	DATE:	03/08/18

REH:abo

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TEST METHOD(S)

The specimen was evaluated in general accordance with the following:

AAMA/WDMA/CSA 101/I.S.2/A440-17 - North American Fenestration Standard/Specification for Windows, Doors, and Skylights

AAMA 910-16, Voluntary "Life Cycle" Specifications and Test Methods for AW Class Architectural Windows and Doors

SECTION 4

MATERIAL SOURCE/INSTALLATION

Test specimen(s) was provided by the client. Representative samples of the test specimen(s) will be retained by Intertek B&C for a minimum of two years from the test completion date.

The specimen was installed into a Spruce-Pine-Fir wood buck. The rough opening allowed for a 1/2" shim space. The exterior perimeter of the window was sealed with spray foam and flashing tape. Installation of the tested product was performed by the client.

LOCATION	ANCHOR DESCRIPTION	ANCHOR LOCATION
Head, sill, and jambs	A 1" wide by 6-1/4" long by 0.058" thick steel strap was secured to the specimen using one #9 x 1-5/8" flat head screw and secured to the test buck using two #9 x 1-5/8" flat head screws	3-3/4" – 5-1/4" from ends and spaced 6-1/2" on center

SECTION 5

EQUIPMENT

Force Gauge: INT00155

Control Panel: 003921

Weather Station: 63316

Spray Rack: 003956-C

Spring Scale: INT00009, 63395

Transducers: INT00141, INT00153, INT00145

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LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Sal Bertolino	ECO Supply
Timothy J. McGill	Intertek B&C
Richard E. Hartman III	Intertek B&C

SECTION 7

TEST SPECIMEN DESCRIPTION

Product Type: Dual Action Window

Series/Model: IV79 Bildau and Bussman

Product Size(s):

OVERALL AREA:	WIDTH		HEIGHT	
2.0 m ² (21.0 ft ²)	millimeters	inches	millimeters	inches
Overall size	1067	42	1829	72
Vent	987	38-7/8	1730	68-1/8

Frame Construction:

FRAME MEMBER	MATERIAL	DESCRIPTION
Head, sill, and jambs	Wood	Milled
Sill cladding	Aluminum	Extruded with weepslots

	JOINERY TYPE	DETAIL
All corners	Finger jointed	Glued and sealed

Vent Construction:

VENT MEMBER	MATERIAL	DESCRIPTION
Rails and stiles	Wood	Milled

	JOINERY TYPE	DETAIL
All corners	Finger jointed	Glued and sealed

Reinforcement: No reinforcement was utilized.

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Weatherstripping:

DESCRIPTION	QUANTITY	LOCATION
Custom gasket	1 Row	Vent perimeter
Custom gasket	1 Row	Vent perimeter

Glazing: *No conclusions of any kind regarding the adequacy or inadequacy of the glass in any glazed test specimen(s) can be made.*

GLASS TYPE	SPACER TYPE	INTERIOR LITE	CENTER LITE	EXTERIOR LITE	GLAZING METHOD
1-3/4" IG	Desiccant-filled box spacer	5/32" Annealed	5/32" Annealed	5/32" Annealed	Interior glazed against a bead of sealant and secured using a wood glazing stop with sealant. Glazing stops were secured using 0.049" diameter by 1-1/4" long finish nails placed 3" from corners and spaced 3-1/2" on center.

LOCATION	QUANTITY	DAYLIGHT OPENING		GLASS BITE
		millimeters	inches	
Vent	1	822 x 1568	32-3/8 x 61-3/4	1/2"

Drainage:

DRAINAGE METHOD	SIZE	QUANTITY	LOCATION
Weepslot	1-3/16" wide by 1/4" high	5	Sill cladding spaced 3-3/8", 10-3/4", 18-1/4", 25-5/8", and 33-3/8" from latch jamb, draining from exterior to hollow
Weepslot	1-3/16" wide by 1/4" high	5	Sill cladding spaced 3-3/8", 10-3/4", 18-1/4", 25-5/8", and 33-3/8" from latch jamb, draining from hollow to exterior

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Hardware:

DESCRIPTION	QUANTITY	LOCATION
Hinges	2	Hinge jamb, 3" from head and 4" from sill
Handle and multi-point lock assembly	1 Set	Handle located 23" from bottom rail
Receivers	10	Sill - 2-1/2" and 24-3/4" from latch jamb Head - 16" from latch jamb Latch jamb - 1-1/2", 12-3/4", 39-1/2", and 60-1/2" from head Hinge jamb - 7", 30-1/2", and 54" from head

SECTION 8

TEST RESULTS

The temperature during testing was between 15°C - 21°C (59°F - 70°F). The results are tabulated as follows:

TITLE OF TEST	RESULTS	ALLOWED	NOTE
LIFE CYCLE per AAMA 910			
Operating Force, per ASTM E2068	Initiate Motion: 80 N (18 lbf) Maintain Motion: 102 N (23 lbf) Latches: 62 N (14 lbf)	155 N (34.85 lbf) max 135 N (30.35 lbf) max 100 N (22.48 lbf) max	
Air Leakage, Infiltration per ASTM E283 at 300 Pa (6.27 psf)	<0.1 L/s/m ² (<0.01 cfm/ft ²)	0.5 L/s/m ² (0.10 cfm/ft ²) max.	1, 2
Water Penetration, per ASTM E547 and ASTM E331 at 390 Pa (8.15 psf)	Pass	No leakage	3
VENTING			
Vent Cycling, (First half) per AAMA 910 2000 cycles	Vent: Pass	No damage	4
Locking Hardware Cycling, (First half) per AAMA 910 2000 cycles	Handle: Pass	No damage	5
MISUSE TESTING per AAMA 910			

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TITLE OF TEST	RESULTS	ALLOWED	NOTE
Stabilizing arm load test, at 667 N (150 lbf)	Pass	No damage	
Cleaning position vertical load test, at 667 N (150 lbf)	Pass	No damage	
VENTING			
Vent/Sash/Door Leaf Cycling, (First half) per AAMA 910 2000 cycles	Vent: Pass	No damage	4
Locking Hardware Cycling, (First half) per AAMA 910 2000 cycles	Handle: Pass	No damage	5
Operating Force, per ASTM E2068	Initiate Motion: 76 N (17 lbf) Maintain Motion: 44 N (10 lbf) Latches: 93 N (21 lbf)	155 N (34.85 lbf) max 135 N (30.35 lbf) max 100 N (22.48 lbf) max	
Thermal Cycling, per AAMA 501.5 six cycles from 0°F to 180°F	Reference Sequence Chart		
Uniform Load Deflection, per ASTM E330 Deflections taken between lock points +11920 Pa (+40.10 psf) -1920 Pa (-40.10 psf)	<0.3 mm (<0.01") 0.5 mm (0.02")	3.8 mm (0.15") max. 3.8 mm (0.15") max.	6, 7, 8
Air Leakage, Infiltration per ASTM E283 at 300 Pa (6.27 psf)	<0.1 L/s/m ² (<0.01 cfm/ft ²)	0.5 L/s/m ² (0.10 cfm/ft ²) max.	1, 9
Water Penetration, per ASTM E547 and ASTM E331 at 390 Pa (8.15 psf)	Pass	No leakage	2

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TITLE OF TEST	RESULTS	ALLOWED	NOTE
Uniform Load Structural, per ASTM E330 Permanent set taken at between lock points +2880 Pa (+60.15 psf) -2880 Pa (-60.15 psf)	0.3 mm (0.01") <0.3 mm (<0.01")	1.3 mm (0.05") max. 1.3 mm (0.05") max.	7, 8
Forced Entry Resistance, per ASTM F588, Type: B - Grade: 10	Pass	No entry	
Sash/Leaf Torsion 70 N (15.74 lbf)	43.4 mm (1.71")	98.0 mm (3.86") max.	
Sash/Leaf Concentrated Load Test on Latch Rail (Horizontal) 270 N (60.70 lbf)	1.0 mm (0.04")	1.5 mm (0.06") max.	
Sash/Leaf Concentrated Load Test on Latch Rail (Vertical) 400 N (89.92 lbf)	5.3 mm (0.21")	6.4 mm (0.25") max.	

Note 1: The tested specimen meets (or exceeds) the performance levels specified in AAMA/WDMA/CSA 101/I.S.2/A440 for air leakage resistance.

Note 2: Test Date 02/19/18 / Time: 8:15 AM

Note 3: Without insect screen.

Note 4: Normal wear and tear on vent.

Note 5: Normal wear and tear on handle.

Note 6: The deflections reported are limited by AAMA/WDMA/CSA 101/I.S.2/A440 for this product designation. The deflection data is recorded in this report for special code compliance and information.

Note 7: Loads were held for 10 seconds.

Note 8: Tape and film were not used to seal against air leakage during structural testing.

Note 9: Test Date 02/27/18 / Time: 9:45 AM

General Note: *The window was tested in accordance with the venting use classification.*



Total Quality. Assured.

130 Derry Court
York, Pennsylvania 17406

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SECTION 9 ALTERATIONS

No alterations were required.

SECTION 10 CONCLUSION

The specimen tested did not meet the gateway size requirements for an AW rating.



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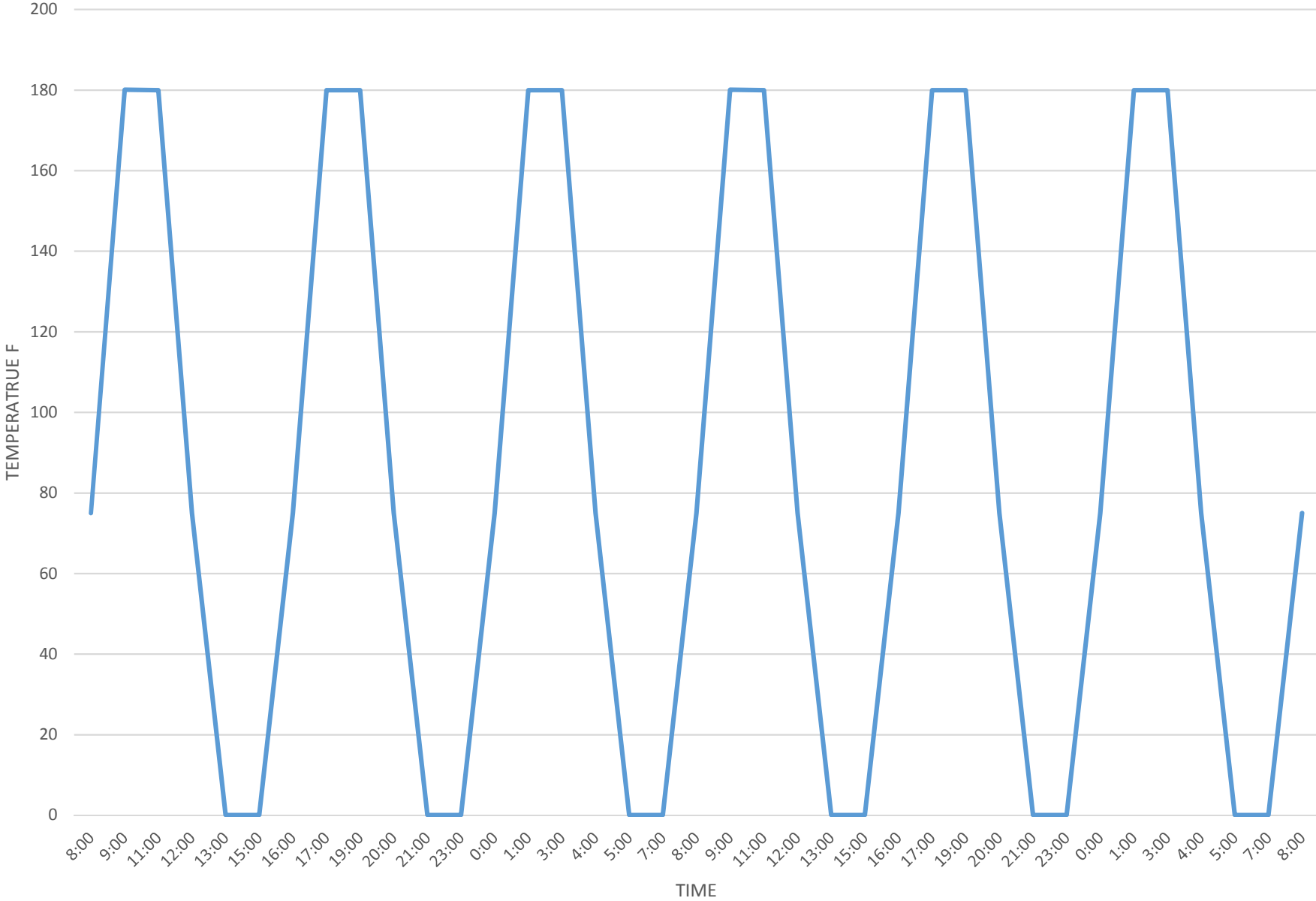
SECTION 11

CHART(S)

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THERMAL CYCLING



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SECTION 12

PHOTOGRAPH



Photo No. 1
View of Tested Specimen



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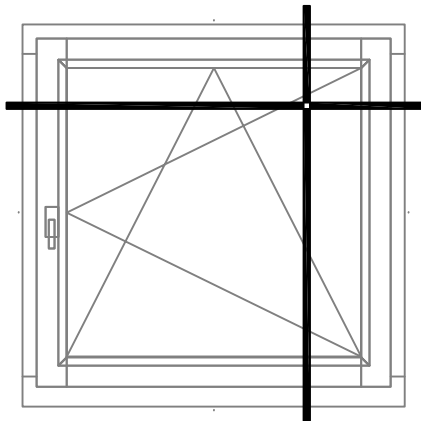
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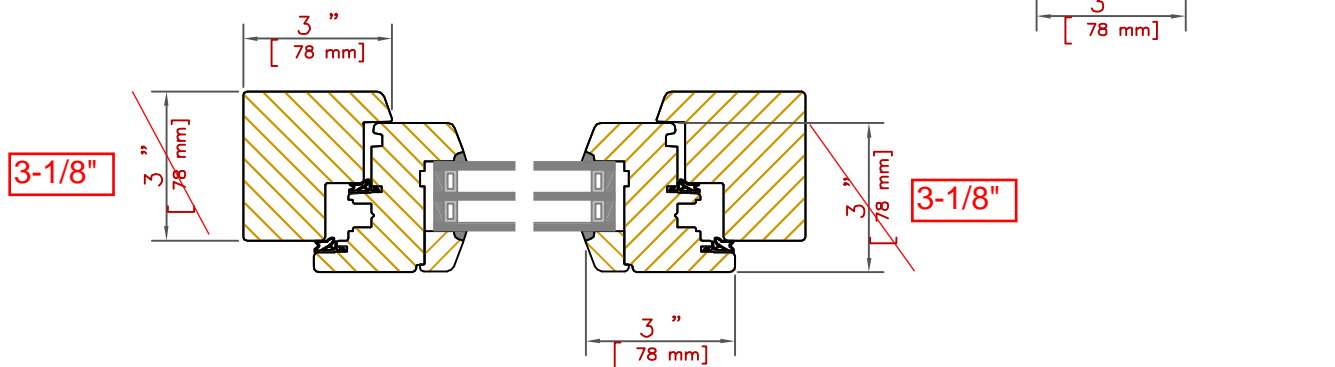
DRAWINGS

The test specimen drawings have been reviewed by Intertek B&C and are representative of the test specimen(s) reported herein. Test specimen construction was verified by Intertek B&C per the drawings included in this report. Any deviations are documented herein or on the drawings.



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Report #: I1015.01
Date: 2/28/18
Verified by: *Richard E. H. [Signature]*



Standard Wood IV79 Tilt-Turn Window with
Aluminium Drip Rail

Bildau & Bussmann

Fenster und Türen
Fenêtres et portes
Windows and Doors

Other than Siberian Larch as the wood species and SIKKENS Joinery Classic as the finishing system, the hardware is: (from their BOM)

Position 6: Tilt-Turn

Larch

Triple Glazed 4mm Glass

Identifier:	MFG Number:	Description:
NT.EB.E5 (RotoGesamt2014)	447352	FALZECKBAND E5 NUT 12/18-13 R.NT
NT.MV.0600.1V (RotoGesamt2014)	296855	NT CENTRE LOCK 600, 1V
NT.EU.GKU.1V (RotoGesamt2014)	260288	NT T&T CORNER DRIVE, 1V
NT.GK.1690.0563.15.3V (RotoGesamt2014)	259844	FIXED HH T&T ESPAG. 1690/ 563, 3V, BS15
NT.EU.1V (RotoGesamt2014)	260272	NT CORNER DRIVE, 1V, (2160)
NT.AX.SDK.0500.0890.1V (RotoGesamt2014)	260206	NT STAY GUIDE, 500/890, 1V
NT.EU.AX.STD.1V (RotoGesamt2014)	260284	NT STAY CORNER DRIVE, 1V
NT.MV.KUP.0600.1V (RotoGesamt2014)	337711	NTi CENTRE LOCK 600, 1V, CLAMPABLE
NT.MV.0600.1V (RotoGesamt2014)	296855	NT CENTRE LOCK 600, 1V
NT.FT.NSP (RotoGesamt2014)	260538	NT LIFTING MISHANDLING DEVICE-SASH PART
NT.RA.NSP (RotoGesamt2014)	578785	Najazd blokady NT DREWNO 30mm
NT.ZB.ANS (RotoGesamt2014)	627343	DRILLING-PROTECTION NT
NT.AX.ARM.E5.0500 (RotoGesamt2014)	262377	AXARM.E5 500 12/18-13 NT R
NT.AX.LG.E5 (RotoGesamt2014)	230187	STAY BEARING E5 12/18-9 SL (3600)
NT.EL.E5 (RotoGesamt2014)	449763	PIVOT REST E5 12/18 OZ.R.NT
NT.EL.E5 (RotoGesamt2014)	449763	PIVOT REST E5 12/18 OZ.R.NT
NT.AX.STI.STD (RotoGesamt2014)	227354	STAY BEARING PIN, SL,

The Glazing units are from St. Gobain

The composite spacer between the glass is the "Swiss Spacer Ultimate"



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SECTION 14

REVISION LOG

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