



NATIONAL CERTIFIED TESTING LABORATORIES

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AAMA/WDMA/CSA 101/I.S.2/A440-11 CSA A440S1-17

TEST REPORT SUMMARY

Rendered to:

Oknoplast Spolka z.o.o.
Ochmanow 117, 32-003 Podleze

PRODUCT TYPE: Three Lite Fixed Lite

SERIES/ MODEL: "Pixel"

Title	Summary of Results
Primary Product Designator AAMA/WDMA/CSA 101/I.S.2/A440-11	Class CW-PG35: Size tested 2572 x 2108 mm (~101 x 83 in) - Type FW
Positive Design Pressure	+1680 Pa (+35.09 psf)
Negative Design Pressure	-1680 Pa (-35.09 psf)
Air Infiltration	0.1 L/s/m ² (0.02 cfm/ft ²)
Canadian Air Infiltration/Exfiltration	Fixed Level
Water Penetration Resistance Test Pressure	440 Pa (9.19 psf)
Uniform Load Structural Test Pressure	±2520 Pa (±52.63 psf)
Forced Entry Resistance	ASTM F588-07 – Grade 10 Pass

Test Completed: 01/18/18

Reference must be made to Report No. NCTL-110-20680-1 dated 01/24/18 for complete test specimen description and data.

For National Certified Testing Laboratories



DIGITAL SIGNATURE

Jay Leader
Technician



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**AAMA/WDMA/CSA 101/I.S.2/A440-11
CSA A440S1-17**

STRUCTURAL TEST REPORT

NCTL-110-20680-1

REPORT TO:
**OKNOPLAST SPOLKA z.o.o.
OCHMANOW 117, 32-003 PODLEZE**

REPORT NUMBER: NCTL-110-20680-1
REPORT DATE: 01/24/18

PRODUCT TYPE: THREE LITE FIXED LITE

SERIES/ MODEL: "PIXEL"



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Report Number	NCTL-110-20680-1
Report Date	01/24/18
Report To	Oknoplast Spolka z.o.o. Ochmanow 117, 32-003 Podleze
Date Testing Started	12/14/17
Date Testing Completed	01/18/18
Specification	AAMA/WDMA/CSA 101/I.S.2/A440-11 NAFS 2011 - North American Fenestration Standard/Specification for windows, doors, and skylights CSA A440S1-17 Canadian Supplement to AAMA/WDMA/CSA 101/I.S.2/A440-11, NAFS - North American Fenestration Standard/ Specification for windows, doors, and skylights
Performance Results	<u>AAMA/WDMA/CSA 101/I.S.2/A440-11</u> Class CW-PG35: Size tested 2572 x 2180 mm (~101 x 83 in) - Type FW
Description of Specimen Tested	
Note: All dimensions are in the order (Width x Height x Thickness) unless otherwise noted.	
Model/ Series	"Pixel"
Configuration	Three Lite Fixed Lite
Frame Size	<u>Overall</u> 2572 mm x 2108 mm (101.25" x 83")
Viewing Area	899 mm x 1965 mm (33.375" x 77.375") 1407 mm x 1407 mm (55.375" x 55.375") 1407 mm x 467 mm (55.375" x 18.375")
Frame Type	Extruded vinyl
Joint Construction	<u>Frame</u> Mitered, welded <u>Intermediate to Frame</u> The vertical intermediate was fastened to the head and sill with metal brackets at each end. The brackets were fastened with (2) screws to each member. The horizontal intermediate was fastened to the frame and vertical intermediate with metal brackets at each end. The bracket was fastened to the jamb and vertical intermediate with (3) screws and to the horizontal intermediate with (2) screws at each end.
Glazing Components	
Overall	23.88 mm (0.940") nominal
Glass Thickness	(2) Lites of 4 mm (0.150") nominal annealed glass
Spacer Type/Size	16.26 mm (0.640") Desiccant-filled aluminum spacer (Type A1-D)
Glazing System	Interior glazed with a (2)-leaf bulb-vinyl back bedding and a snap-in (2)-leaf dual durometer rigid vinyl glazing bead

Weatherstrip	No weatherseals employed
Operating Hardware	No operating hardware employed
Auxiliary	No auxiliary items employed
Reinforcement	
Type	Steel tube
Thickness	1.27 mm (0.050")
Location	Frame perimeter fastened with evenly spaced screws
Type	(2) Steel tube
Thickness	3.81 mm (0.150")
Location	Vertical intermediate fastened with evenly spaced screws
Type	Steel tube
Thickness	3.05 mm (0.120")
Location	Horizontal intermediate fastened with evenly spaced screws
Weep Description	
Size	28 mm (1.120") wide by 76.2 mm (0.300") high
Location	44 mm (1.75") From each end and midspan of the horizontal intermediate glazing channel
Size	28 mm (1.120") wide by 76.2 mm (0.300") high
Location	44 mm (1.75") From each end and on either side of the intermediate at the head glazing channel
Size	4.57 mm (0.180") Diameter weep hole
Location	44 mm (1.75") From each end and on either side of the intermediate at the exterior face of the head
Interior/ Exterior Surface Finish	White vinyl (PVC)
Sealant	
Location	Exterior corners of the glazing and exterior ends of the intermediates
Material	Silicone
Insect Screen	No screen employed
Installation Method	The window was installed in a 51 mm x 254 mm (2" x 10") spruce-pine-fir lumber test buck and was fastened through the frame with (1) #10 x 117 mm (4.625") flat head screw located at 152 mm (6") and 254 mm (10") on center thereafter at the frame perimeter. The interior and exterior perimeter were sealed with silicone sealant.

Test Results - AAMA/WDMA/CSA 101/I.S.2/A440-2011

<u>Paragraph</u>	<u>Test</u>
9.3.2	Air Leakage Resistance ASTM E283-04(12) The tested specimen meets or exceeds the performance levels specified in AAMA/WDMA/CSA 101/I.S.2/A440-2011 for air infiltration at 75 Pa (1.6 psf). Maximum Allowable = 1.5 L/s/m ² (0.3 cfm/ft ²) Total Air Leakage = 0.55 L/s (1.16 cfm) Extraneous Air Leakage _{Tare} = <0.01 L/s (<0.01 cfm) Net Air Leakage = 0.55 L/s (1.16 cfm) Air Infiltration Rate = 0.1 L/s/m ² (0.02 cfm/ft ²)

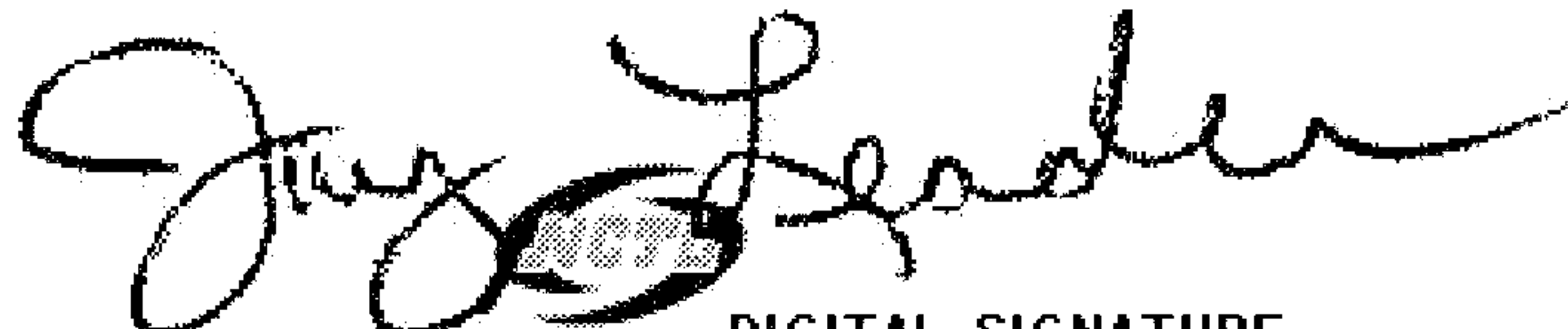
<u>Paragraph</u>	<u>Test</u>
9.3.3	Water Penetration Resistance ASTM E547-00(09) 3.4 L/ (min• m ²) (5.0 gph/ft ²) No Leakage after 4 cycles of 5 minutes at 440 Pa (9.19 psf) NOTE: Tested without insect screen

<u>Paragraph</u>	<u>Test</u>
9.3.4.2	Uniform Load Deflection at Design Pressure ASTM E330-14 No damage after positive 1680 Pa (35.09 psf) held for 10 seconds No damage after negative 1680 Pa (35.09 psf) held for 10 seconds Horizontal Intermediate Measured Deflection _{Positive} = 6.55 mm (0.258 inches) Measured Deflection _{Negative} = 6.12 mm (0.241 inches) Maximum Allowed (L/175) = 8.10 mm (0.319 inches) Vertical Intermediate Measured Deflection _{Positive} = 11.05 mm (0.435 inches) Measured Deflection _{Negative} = 11.28 mm (0.444 inches) Maximum Allowed (L/175) = 11.30 mm (0.445 inches)

<u>Paragraph</u>	<u>Test</u>
9.3.4.3	Uniform Load Structural Test ASTM E330-14 No damage after positive 2520 Pa (52.63 psf) held for 10 seconds No damage after negative 2520 Pa (52.63 psf) held for 10 seconds Horizontal Intermediate Measured Permanent Set _{Positive} = 0.56 mm (0.022 inches) Measured Permanent Set _{Negative} = 0.23 mm (0.009 inches) Maximum Allowed (0.3%) = 4.24 mm (0.167 inches) Vertical Intermediate Measured Permanent Set _{Positive} = 0.36 mm (0.014 inches) Measured Permanent Set _{Negative} = 0.05 mm (0.002 inches) Maximum Allowed (0.3%) = 5.94 mm (0.234 inches) NOTE: Deflection and Permanent Set measurements taken on the horizontal intermediate over a 1416 mm (55.75") span and on the vertical intermediate over an 1878 mm (77.875") span.

<u>Paragraph</u>	<u>Test</u>
9.3.6.2	Thermoplastic Corner Weld Test (PVC products only) = Pass

Detailed drawings were available for laboratory records and compared to the test specimen at the time of this report. Component drawings were reviewed for product verification. The bill of materials contains details with any deviations noted. Ambient conditions during the referenced testing are available upon request. A copy of this report along with representative sections of the test specimen will be retained per applicable requirements by NCTL. This report does not constitute certification or approval of the product, which may only be granted by a certification program validator or recognized approval entity. All tests were conducted in full compliance with the referenced specifications and/or test methods. Tests were performed in the order set forth by the applicable standard or specification. This report is the joint property of National Certified Testing Laboratories Inc. and the Client to whom it is issued. Permission to reproduce this report by anyone other than National Certified Testing Laboratories Inc and the Client must be granted in writing by both of the above parties. This report may not be reproduced, except its entirety, without the written consent of NCTL.

National Certified Testing Laboratories
DIGITAL SIGNATURE

Jay Leader
Technician


DIGITAL SIGNATURE

Justin L. Bupp
Laboratory Manager

NJL/ dro

Attachments

Appendix A – Revision Summary

Appendix B – Drawings

Appendix A

Revision Log

<u>Identification</u>	<u>Date</u>	<u>Page & Revision</u>
Original Issue	01/25/18	Not Applicable

Appendix B

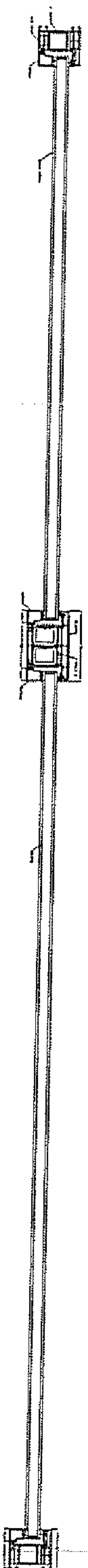
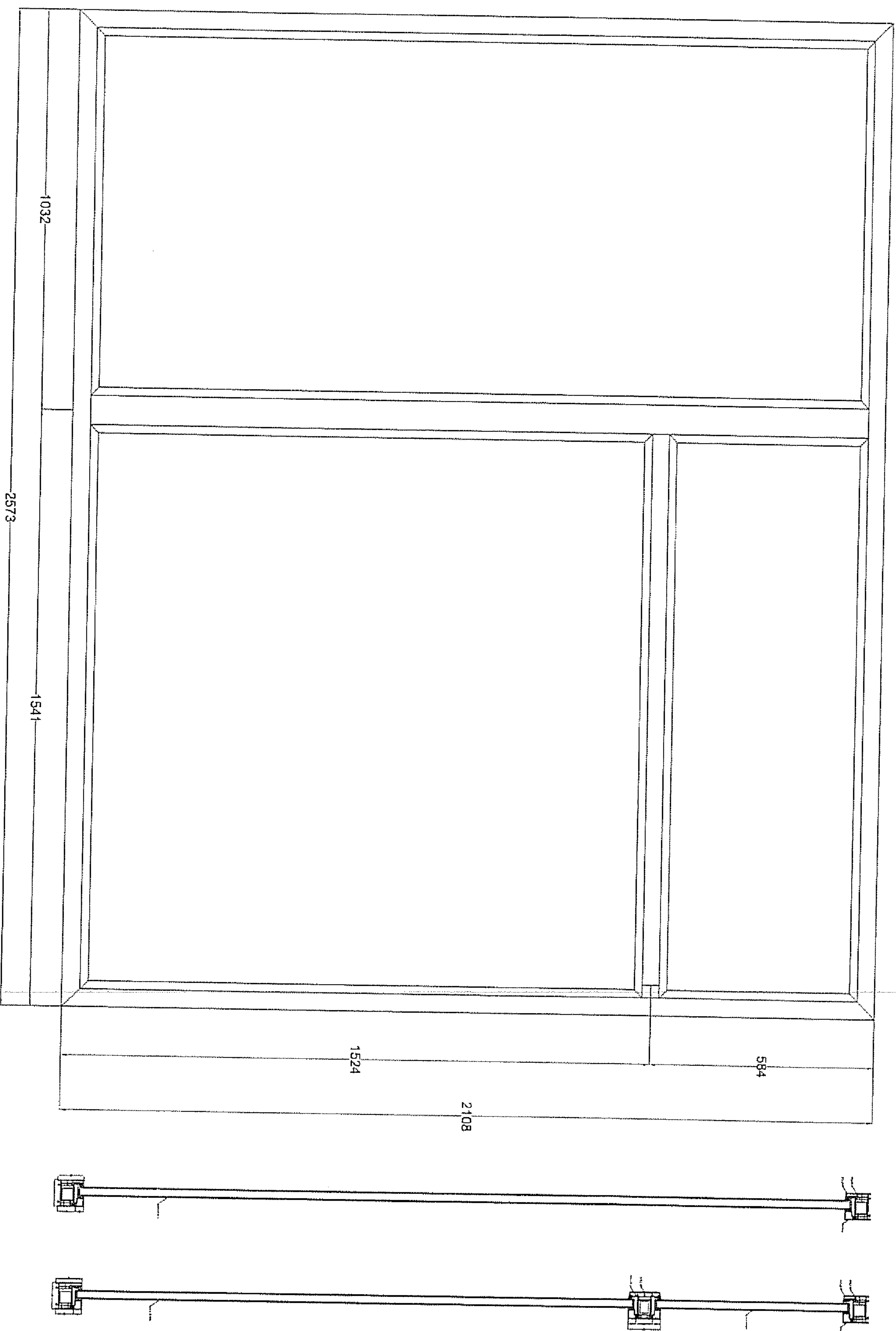
Drawings

Component Drawings, with Applicable Part Numbers, Manufacturing and Modeling Details, were reviewed (as submitted) for Product Verification. Detailed assembly drawings showing wall thicknesses of all members, corner construction and hardware application are on file and have been compared to the test sample submitted.

(Reference: NCTL-110-20680-1)

See Attached Documentation;
any deviations noted.

Note: The above referenced component drawings (if applicable) along with representative sections of the test specimen will be retained by NCTL per applicable retention requirements. This testing facility assumes that all information provided by the client is accurate.



TEST SPECIMEN COMPLIES
WITH THESE DETAILS.

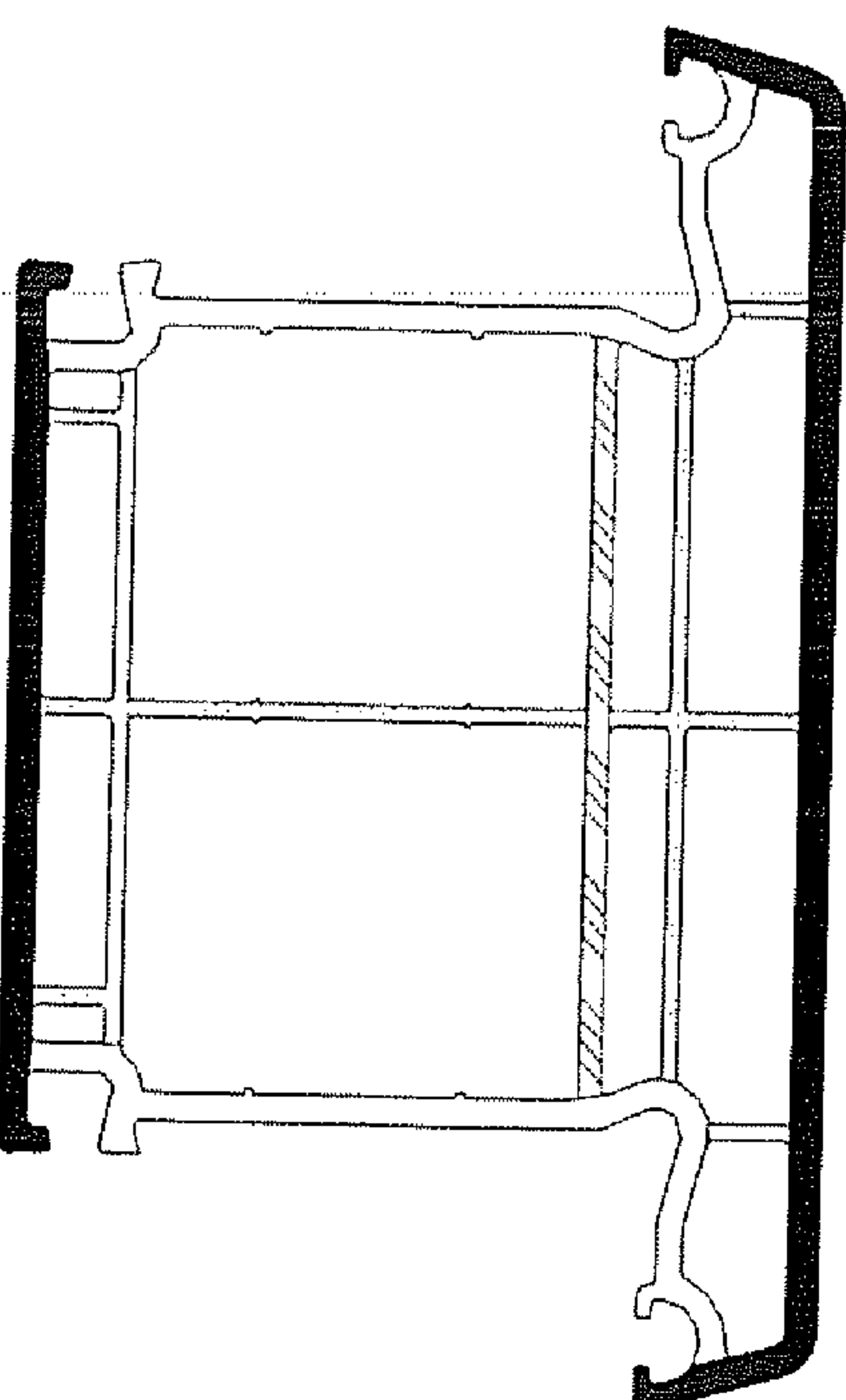
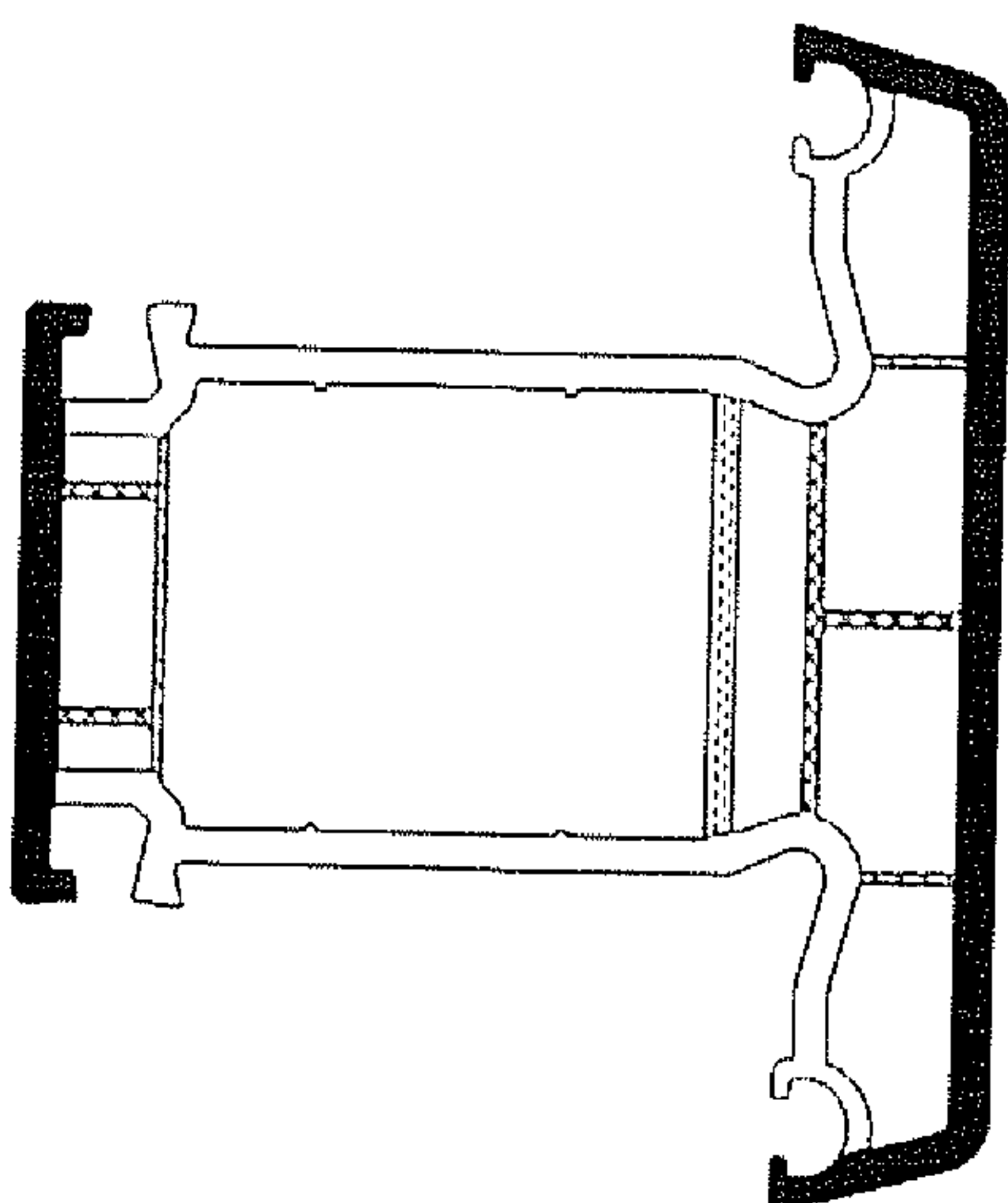
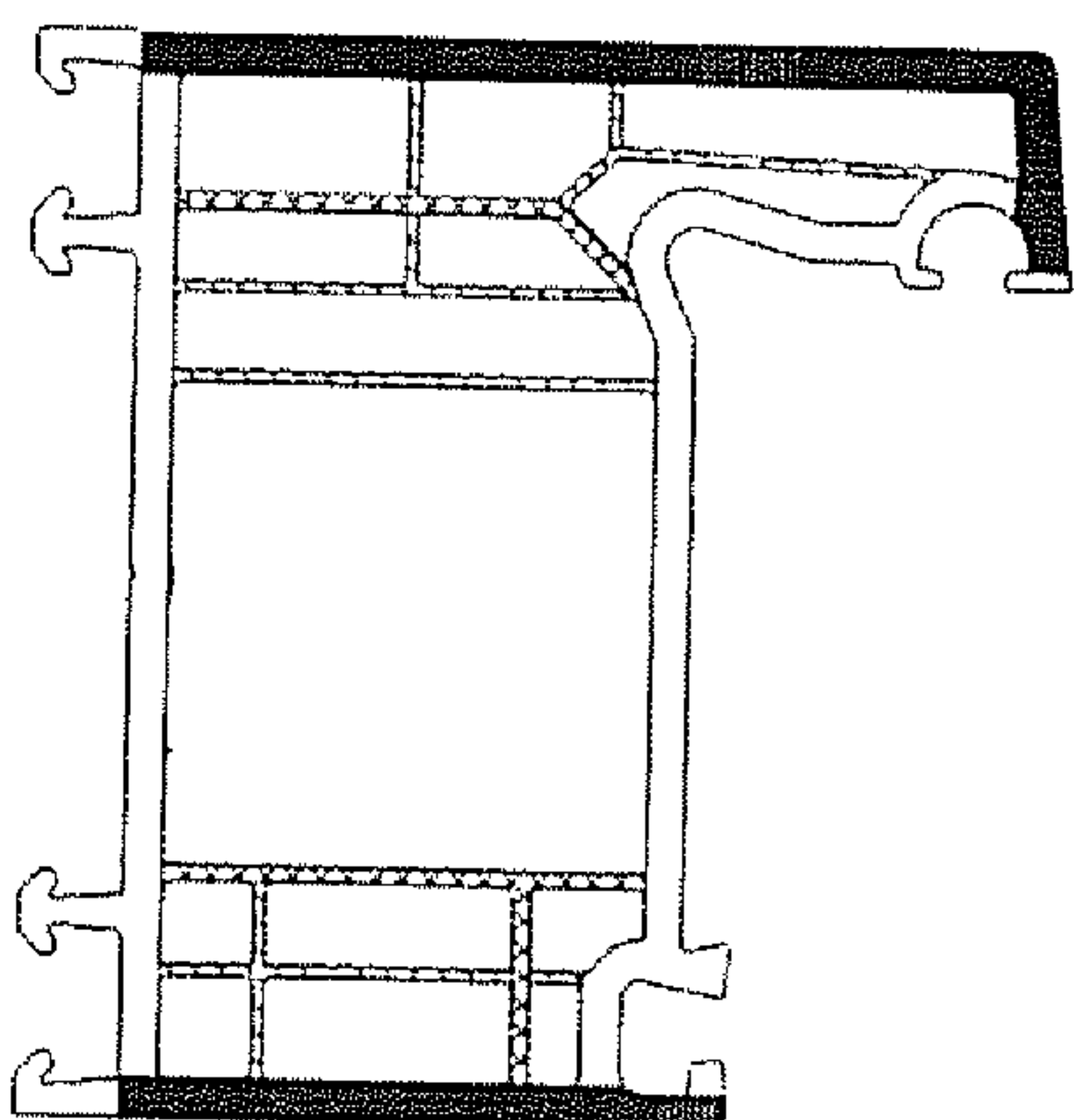
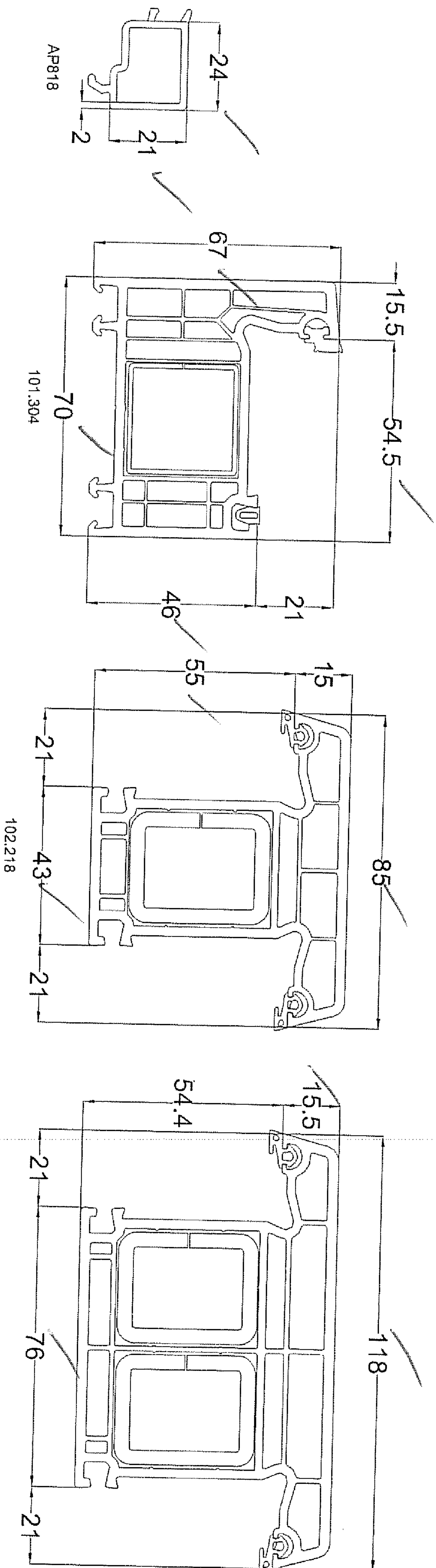
ANY DEVIATION IS NOTED.

REPORT NO. NCTL-110- 20668-1

TEST DATE: 1-18-18

Tytuł:		PIXEL 2573X2108 1691390 poz. 1	
Narysował:	BERNADETA KOPEĆ	Sprawił:	JAROSŁAW RUDKA
Skala:	1:1	Wersja:	
		Zatwierdził:	JAROSŁAW RUDKA
		Data:	22.09.2017

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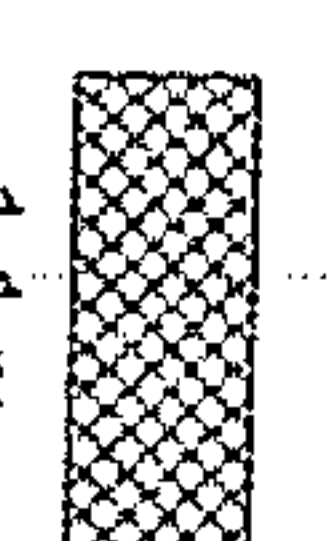
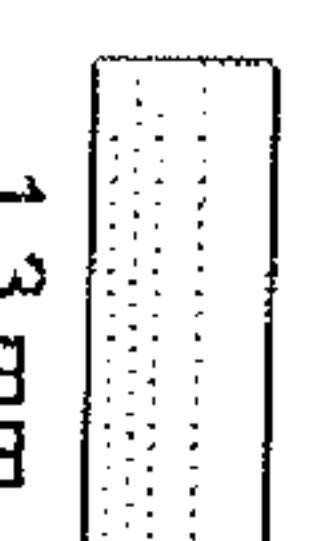
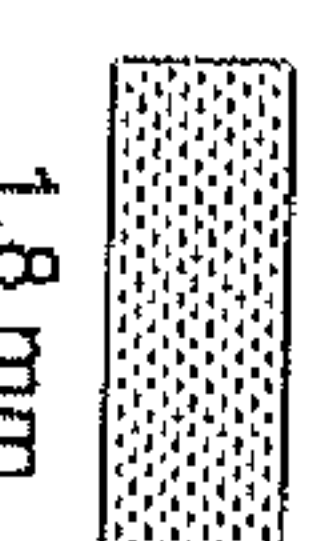
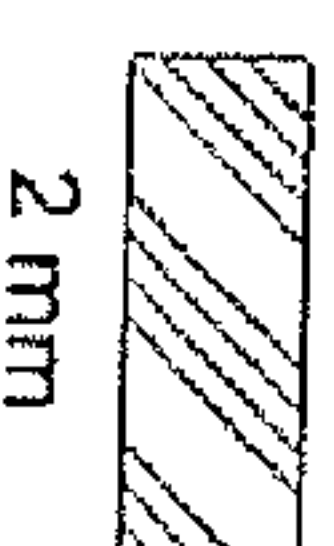
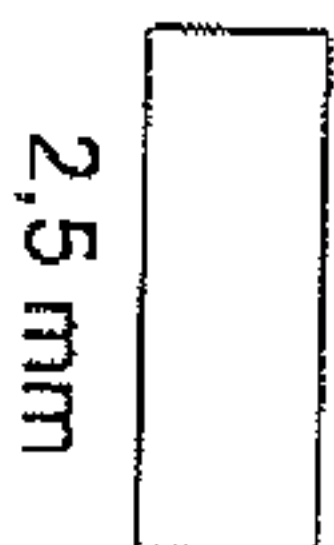


TEST SPECIMEN COMPLIES
WITH THESE DETAILS.

ANY DEVIATION IS NOTED.

REPORT NO. NCTL-110- 201688-1

TEST DATE: 1-16-18



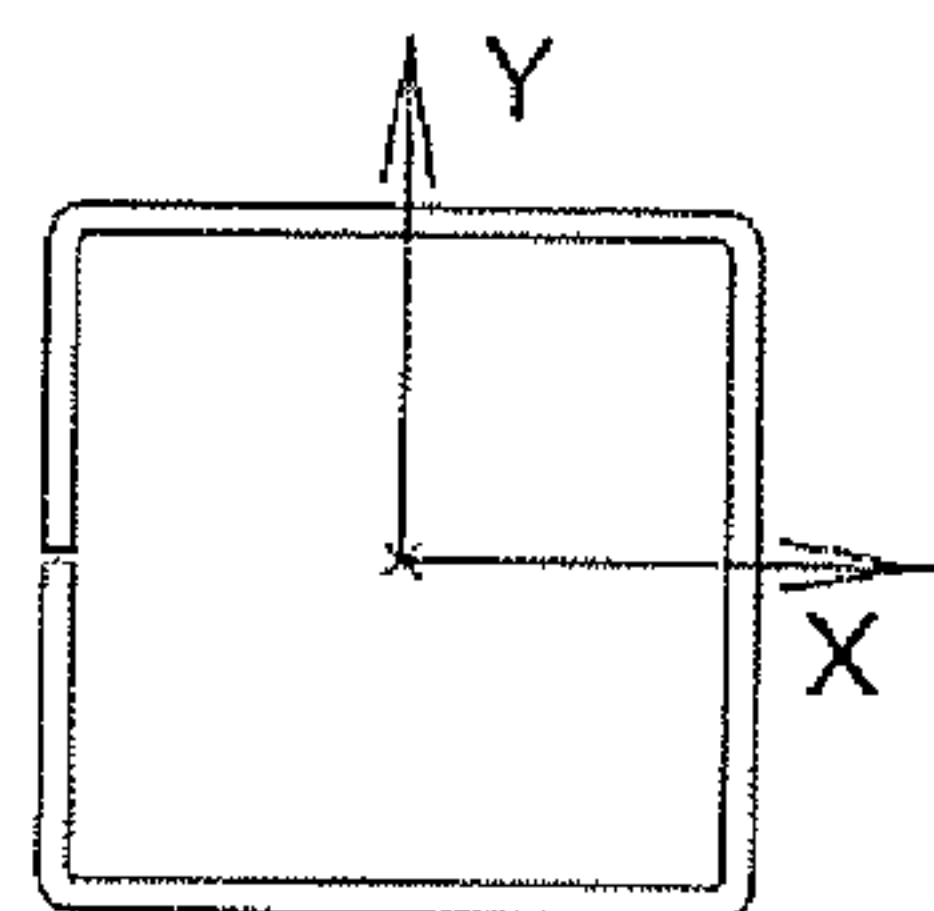
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BERNADETA KOPEĆ		PIXEL 2573X2108 1691390 poz. 1	
SKALA:		SPRAWDZIŁ:	
1:1		JAROSŁAW RUDKA	
		ZATWIERDZIŁ:	
		JAROSŁAW RUDKA	
		DATA:	
		22.09.2017	

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MOMENT OF INERTIA:

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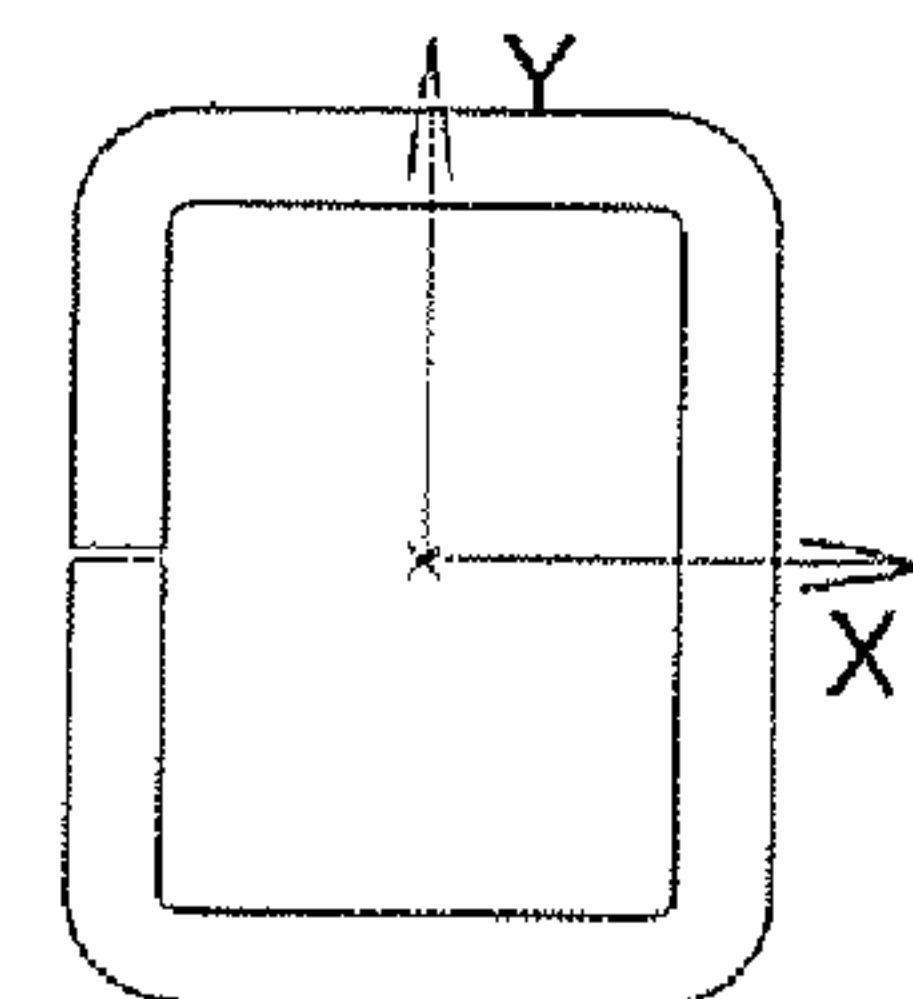
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MOMENT OF INERTIA:

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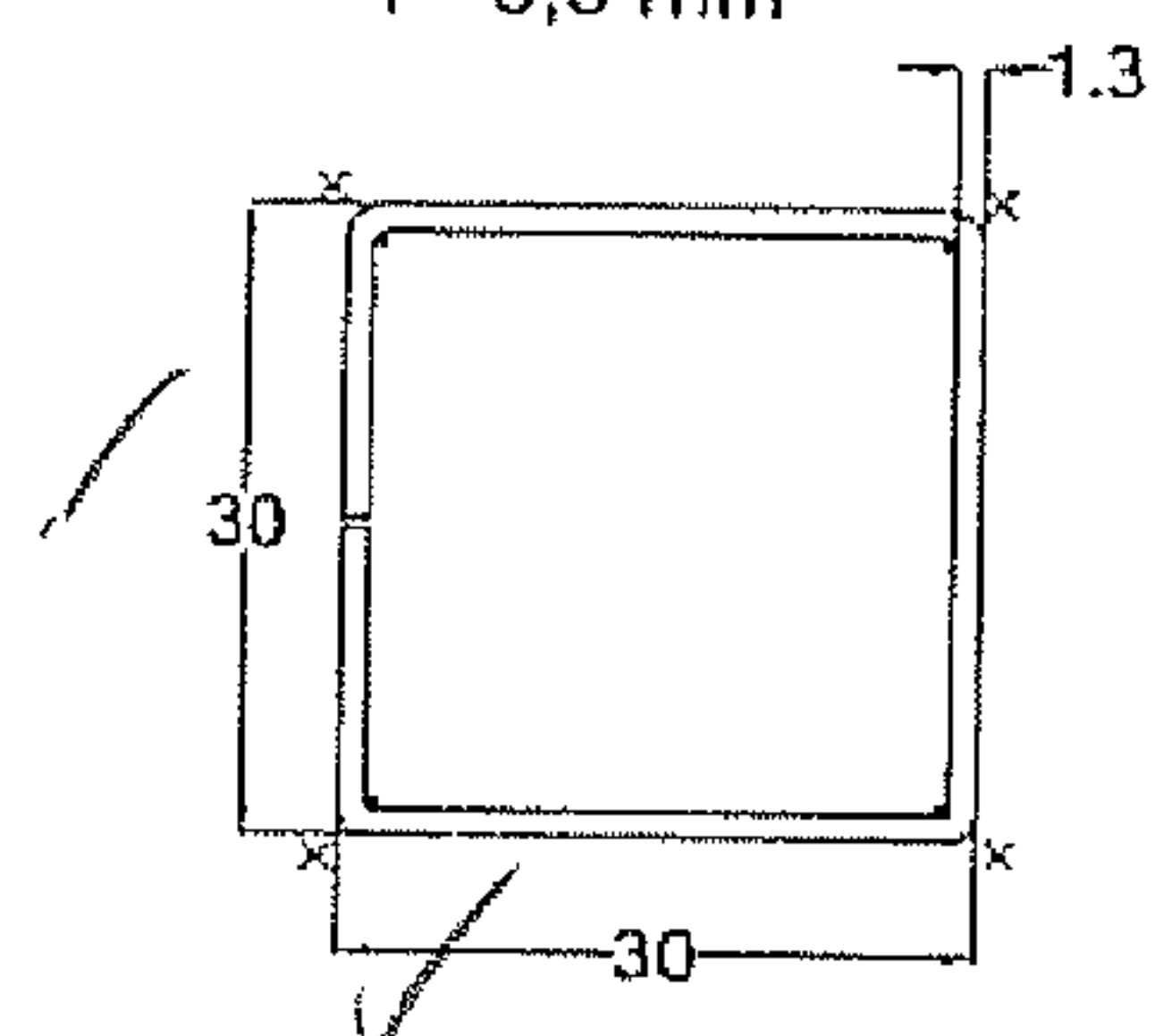
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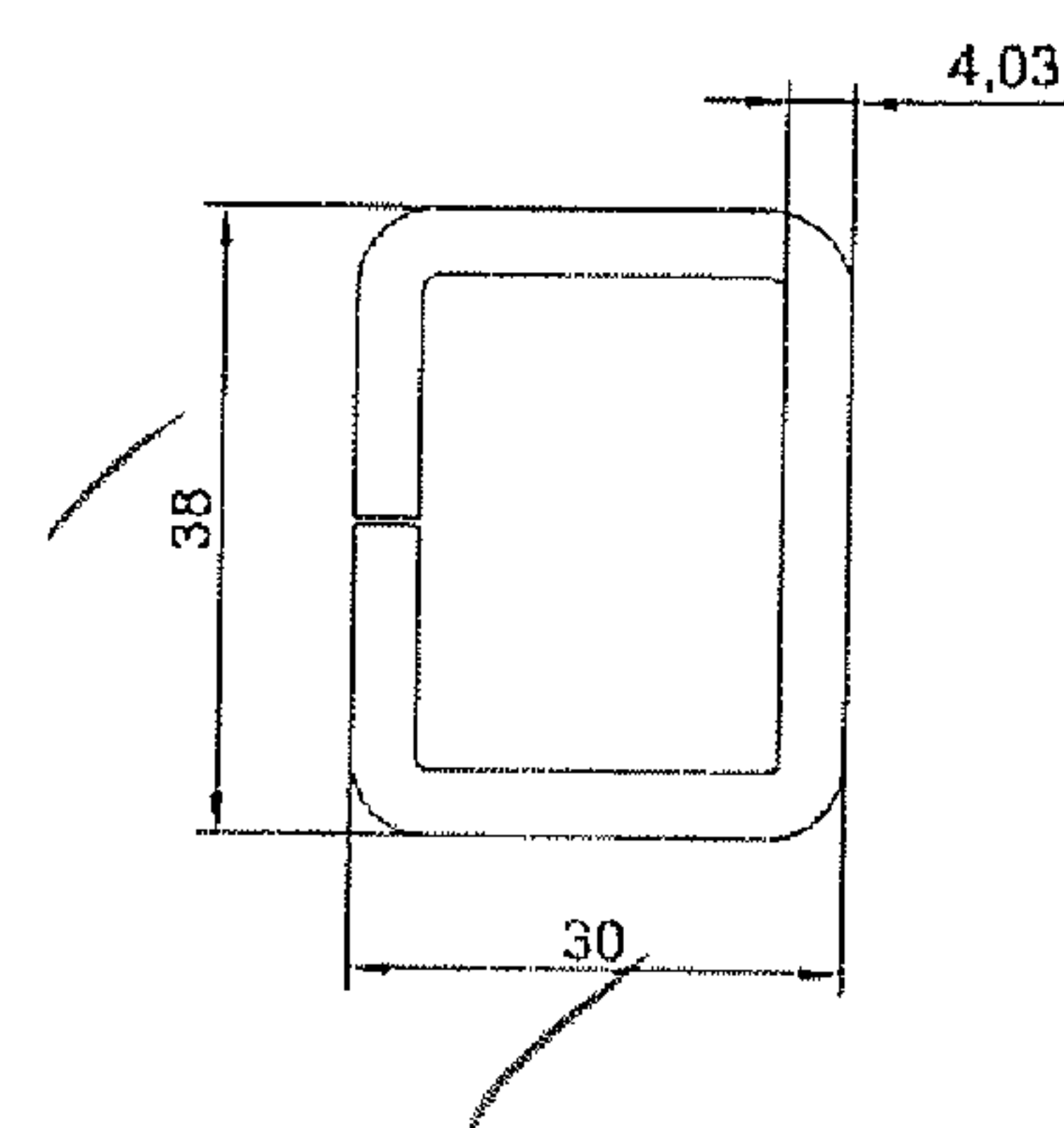
113.025

$\times r = 1,5 \text{ mm}$

$\cdot r = 0,5 \text{ mm}$



113.271.4



and 3,5

TEST SPECIMEN COMPLIES
WITH THESE DETAILS.

ANY DEVIATION IS NOTED.

REPORT NO. NCTL-110- 20686-1

TEST DATE: 1-18-18

TYTUŁ: PIXEL 2573X2108 1691390 poz. 1	
NARYSOWAŁ: BERNADETA KOPEĆ	SPRAWDZIŁ: JAROSŁAW RUDKA
SKALA: 1:1	WERSJA: DATA: 22.09.2017
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