

NEON ENERGY TEST REPORT

SCOPE OF WORK

ANSI/NFRC 400-2017 TESTING ON ULTRA TILT TURN DOOR

REPORT NUMBER

I5916.01-301-44 R0

TEST DATE(S)

07/26/18

ISSUE DATE

08/20/18

RECORD RETENTION END DATE

07/26/23

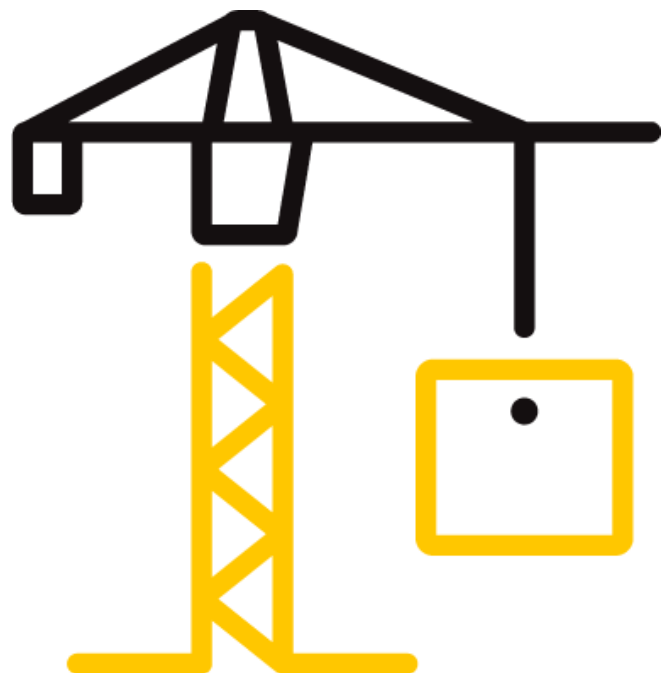
PAGES

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DOCUMENT CONTROL NUMBER

RT-R-AMER-Test-2803 (06/28/18)

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TEST REPORT FOR NEON ENERGY

Report No.: I5916.01-301-44 R0

Date: 08/20/18

REPORT ISSUED TO

NEON ENERGY

4989 East La Palma Avenue
Anaheim, California 92807

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by Neon Energy to perform testing in accordance with ANSI/NFRC 400-2017, *Procedure for Determining Fenestration Product Air Leakage*, on their Ultra Tilt Turn Door. Results obtained are tested values and were secured by using the designated test method(s) in full compliance with NFRC requirements.

Testing was conducted at Intertek B&C test facility in Fresno, California. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

SECTION 2

SUMMARY OF TEST RESULTS

Product Type: Ultra Tilt Turn Door

Series/Model: Ultra Tilt Turn Door

| TITLE | RESULTS |
|-----------------------------|--|
| Air Leakage Resistance Test | 0.4 L/s/m ² (0.07 cfm/ft ²) |

For INTERTEK B&C:

| | | | |
|----------------------|---------------|---------------------|-------------------------|
| COMPLETED BY: | Erick Caldera | REVIEWED BY: | Tyler Westerling, P.E. |
| TITLE: | Technician | TITLE: | Senior Project Engineer |
| SIGNATURE: | | SIGNATURE: | |
| DATE: | 08/20/18 | DATE: | 08/20/18 |

EC:ms

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SECTION 3

TEST METHOD(S)

The specimens were evaluated in accordance with the following:

ANSI/NFRC 400-2017, *Procedure for Determining Fenestration Product Air Leakage*. National Fenestration Rating Council.

SECTION 4

MATERIAL SOURCE/INSTALLATION

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

The specimen was installed into a Douglas-Fir wood buck. The rough opening allowed for a no shim space. The exterior perimeter of the door was sealed with tape.

| LOCATION | ANCHOR DESCRIPTION | ANCHOR LOCATION |
|-----------|--------------------|-----------------|
| Wood buck | Wood blocks | 6" from corners |

SECTION 5

EQUIPMENT

A calibration was performed on the Intertek B&C Structural Control Panel, Asset #005724, on 03/08/18. The calibration procedure is fully described in Standard Calibration Procedure 31-12. The basic procedure requires calibrating the pressure transducers and then measuring flow rates through calibrated orifice plates.

SECTION 6

LIST OF OFFICIAL OBSERVERS

| NAME | COMPANY |
|---------------|--------------|
| Erick Caldera | Intertek B&C |
| Nick Keo | Intertek B&C |

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SECTION 7

TEST SPECIMEN DESCRIPTION

Product Type: Ultra Tilt Turn Door

Series/Model: Ultra Tilt Turn Door

Product Size(s):

| OVERALL AREA: | WIDTH | | HEIGHT | |
|---|-------------|--------|-------------|--------|
| 2.01 m ² (21.6 ft ²) | Millimeters | Inches | Millimeters | Inches |
| Overall Size | 959 | 37-3/4 | 2092 | 82-3/8 |
| Leaf | 914 | 36 | 2045 | 80-1/2 |

Frame Construction:

| FRAME MEMBER | MATERIAL | DESCRIPTION |
|-------------------|---------------------------|-----------------------------------|
| Head, sill, jambs | Thermally broken aluminum | Thermally broken by polyamide |
| | JOINERY TYPE | DETAIL |
| All Corners | Mitered | Sealed; crimped and keyed corners |

Sash Construction:

| MEMBER | MATERIAL | DESCRIPTION |
|------------------|---------------------------|--|
| Rails and stiles | Thermally broken aluminum | Thermally broken by polyamide |
| | JOINERY TYPE | DETAIL |
| All corners | Mitered | Sealed; crimped and keyed corners (2 keys) |

Reinforcement: No reinforcement was utilized.

Weatherstripping:

| DESCRIPTION | QUANTITY | LOCATION |
|-------------------|----------|--------------------------------------|
| EPDM gasket | 1 row | Head, sill, jambs, rails, and stiles |
| Large EPDM gasket | 1 row | Head, sill, jambs |

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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 | EXTERIOR LITE | GLAZING METHOD |
|------------|-----------------------------------|-------------------------|-----------------------|---|
| 1" IG | TP-D: Thermo-plastic Spacer | 1/4" Guardian SN5128 | 1/4" Guardian IS20 | Exterior dry glazed with an EPDM gasket and interior secured with an aluminum glazing bead with EPDM gasket |

| LOCATION | QUANTITY | DAYLIGHT OPENING | | GLASS BITE |
|----------|----------|------------------|-----------------|------------|
| | | Millimeters | Inches | |
| Leaf | 1 | 759 x 1899 | 29-7/8 x 74-3/8 | 1/2" |

Drainage:

| DRAINAGE METHOD | SIZE | QUANTITY | LOCATION |
|-----------------|-------------|----------|---|
| Weephole | 1" x 1/4" | 2 | Sill face, 5-1/2" from corners |
| Weephole | 5/32" round | 4 | Sill face, 4-1/2" and 6-1/2" from corners |

Hardware:

| DESCRIPTION | QUANTITY | LOCATION |
|----------------------------|----------|------------------------|
| Hinge | 2 | Hinge stile at corners |
| Multi-point latch assembly | 1 | Latch stile; mid-span |
| Keeper | 2 | Lock jamb |

Screen Construction: *No screen construction was utilized.*

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SECTION 8

TEST RESULTS

The temperature during testing was 23°C (73°F). The results are tabulated as follows:

Test Specimen #1:

| TITLE OF TEST | RESULTS | ALLOWED | TABLE |
|---|---|---|-------|
| Air Leakage, Infiltration per ASTM E283 (qA) at 75 Pa (1.57 psf) | 0.4 L/s/m ² (0.07 cfm/ft ²) | 1.5 L/s/m ² (0.3 cfm/ft ²) max. | 1 |

Table #1:

| | | | |
|----------------------------|--------------------|--------------------|------------------------------------|
| AIR TEMPERATURE | 73°F | | |
| BAROMETRIC PRESSURE | 30.01 in. of Hg | | |
| RELATIVE HUMIDITY | 64.5% | | |
| TOTAL AIRFLOW (Qt) | TARE (Qe) | NET (Qs) | CORRECTED NET AIRFLOW (Qst) |
| 1.1 l/s (2.26 cfm) | 0.4 l/s (0.78 cfm) | 0.7 l/s (1.48 cfm) | 0.7 l/s (1.48 cfm) |

TEST REPORT FOR NEON ENERGY

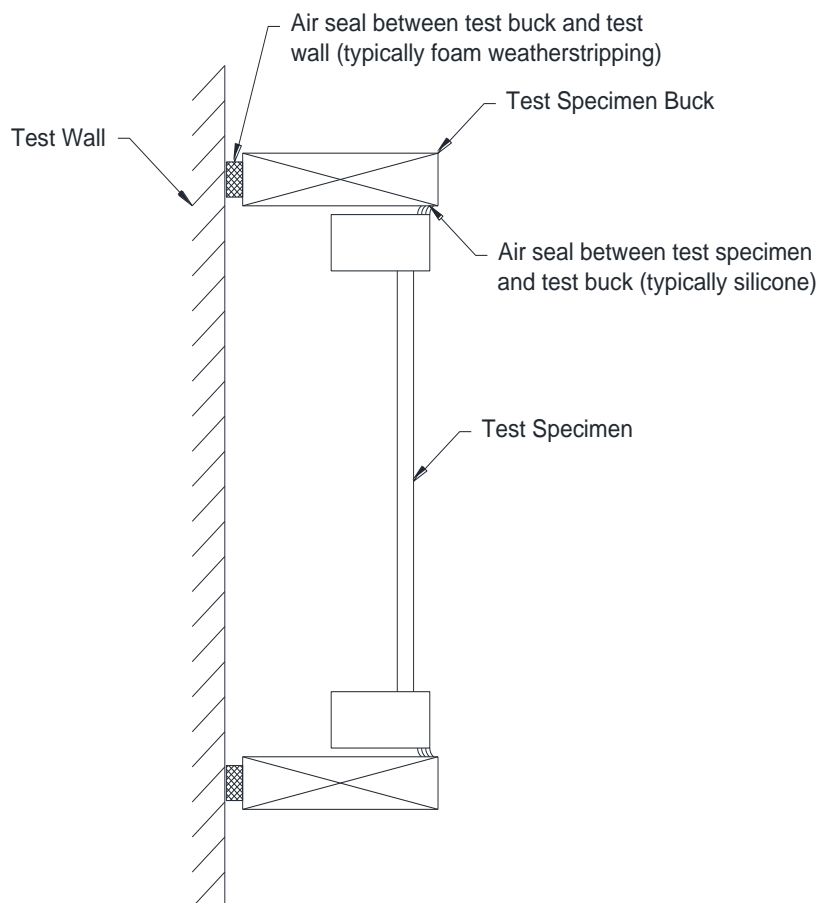
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SECTION 9

LOCATION OF AIR SEAL

The air seal between the test specimen and the test wall is detailed below. The seal is made of foam weatherstripping and is attached to the edge of the test specimen buck. The test specimen buck is placed against the test wall and clamped in place, compressing the weatherstripping and creating a seal.



SECTION 10

CONCLUSION

The specimens tested met the performance requirements of ANSI/NFRC 400-2017.

Air infiltration values included in this report are not meant to be used for NFRC labeling purposes. Official NFRC Rating values may be obtained by submitting this report to an NFRC Licensed Inspection Agency for certification purposes. Only those values identified on a valid Certification Authorization Report (CAR) are to be used for labeling purposes.



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SECTION 11

DRAWINGS

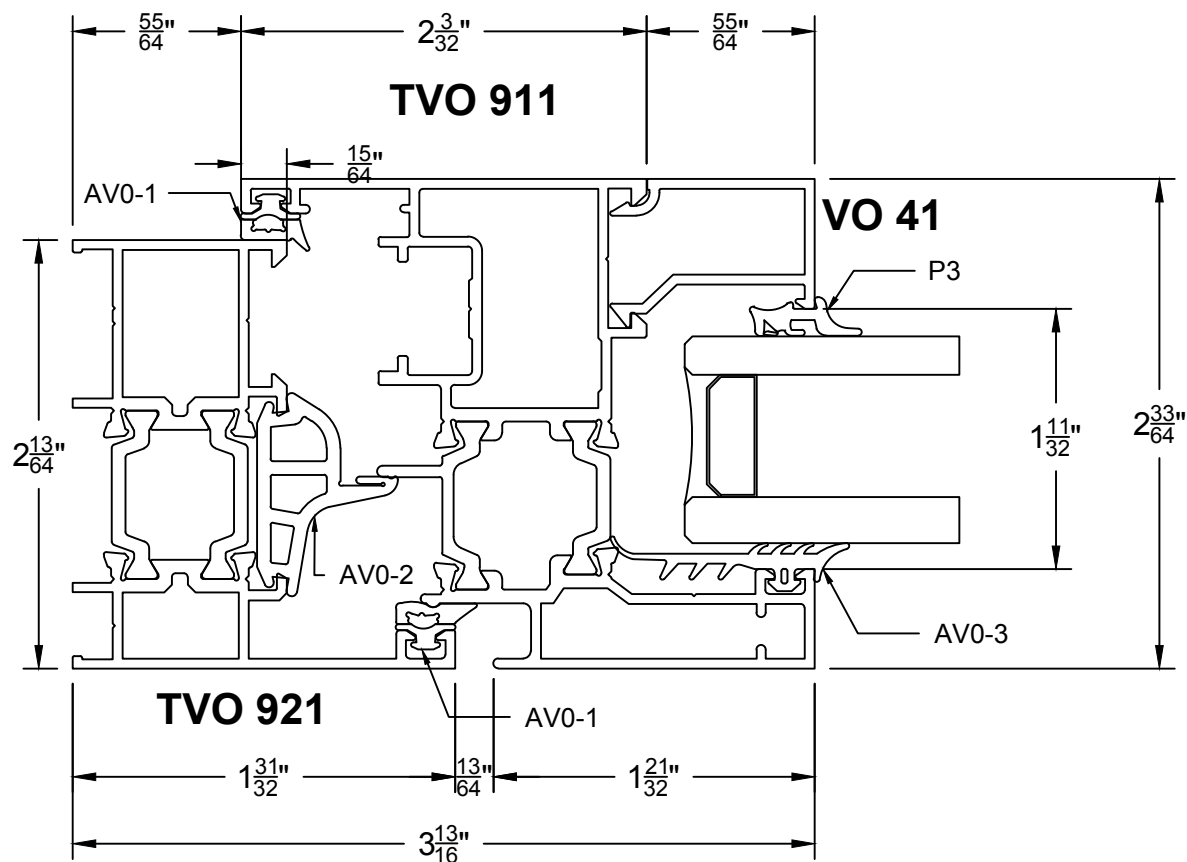
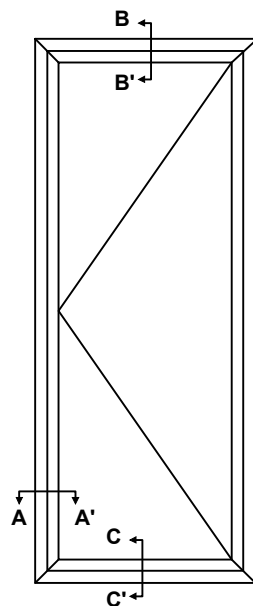
The test specimen drawings have been reviewed by Intertek B&C and are representative of the test specimen(s) reported herein. Test specimen construction was verified by Intertek B&C per the drawings included in this report. Any deviations are documented herein or on the drawings.

Company Name: Neon Energy

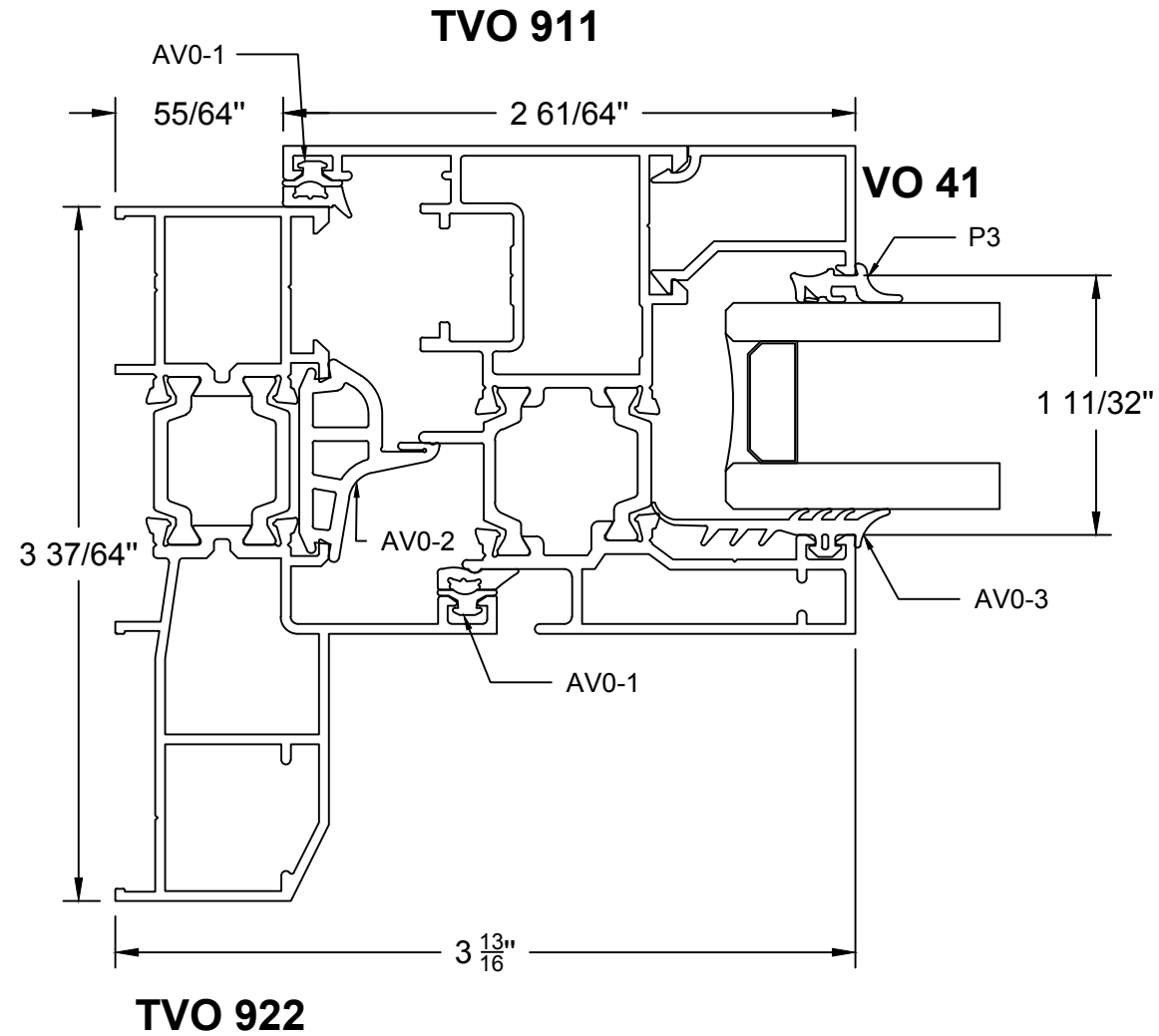
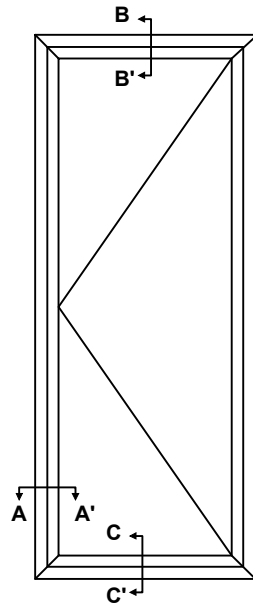
Series/Model: Tilt Turn Door

| Part # | Part Description | Material | Finish |
|-----------|----------------------|-----------|--------------------|
| TVO 911 a | - | Aluminum | Painted & Anodized |
| TVO 911 b | - | Aluminum | Painted & Anodized |
| VO 41 | - | Aluminum | Painted & Anodized |
| - | Sash Thermal Breaks | Polyamide | - |
| TVO 921 a | - | Aluminum | Painted & Anodized |
| TVO 921 b | - | Aluminum | Painted & Anodized |
| TVO 922 a | - | Aluminum | Painted & Anodized |
| TVO 922 b | - | Aluminum | Painted & Anodized |
| TVO 923 a | - | Aluminum | Painted & Anodized |
| TVO 923 b | - | Aluminum | Painted & Anodized |
| - | Frame Thermal Breaks | Polyamide | - |
| AVO 1 | - | EPDM | - |
| AVO 2 | - | EPDM | - |
| AVO 3 | - | EPDM | - |
| P3 | - | EPDM | - |
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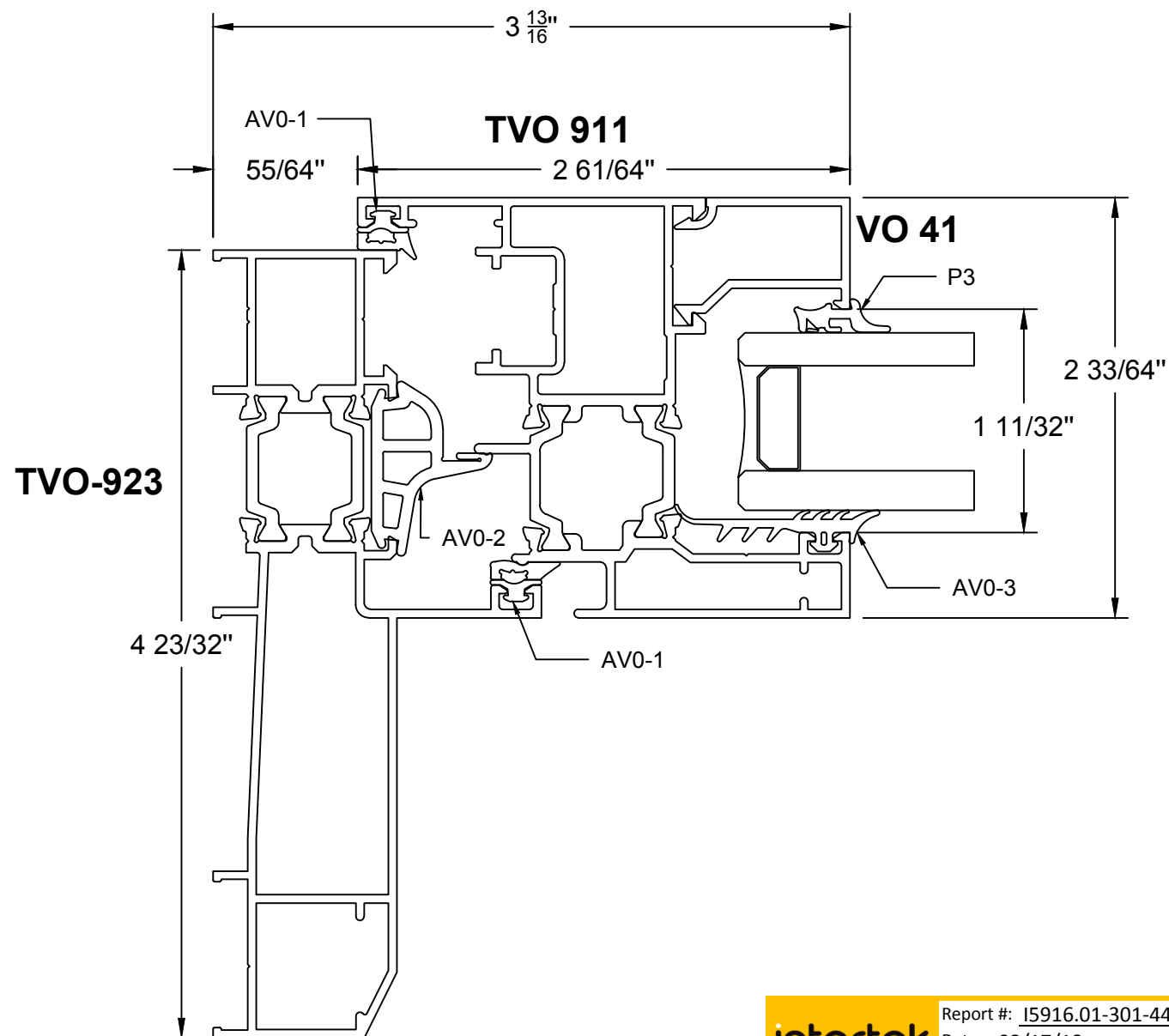
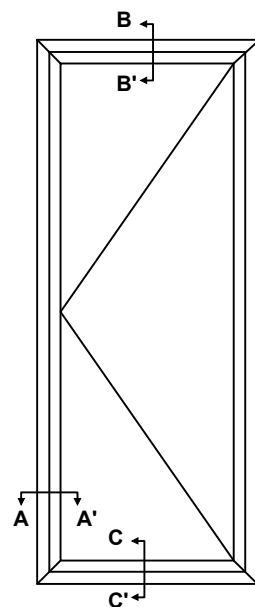
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SCALE. 1:1



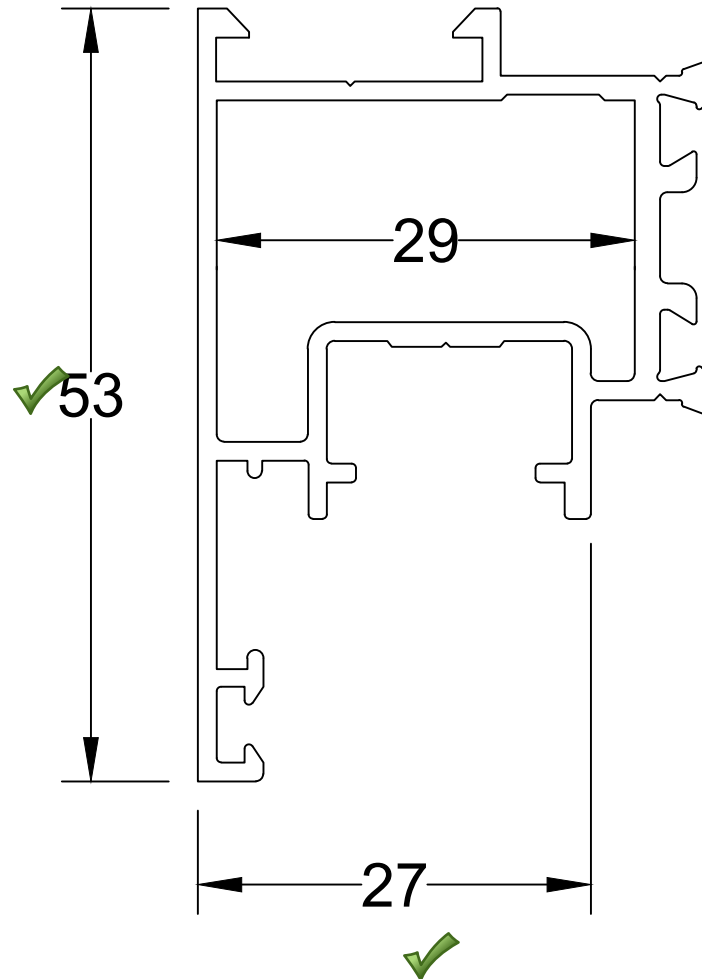
HORIZONTAL SECTION A-A' VERTICAL SECTION B-B' & C-C'
SCALE. 1:1



HORIZONTAL SECTION A-A' VERTICAL SECTION B-B' & C-C'
SCALE. 1:1

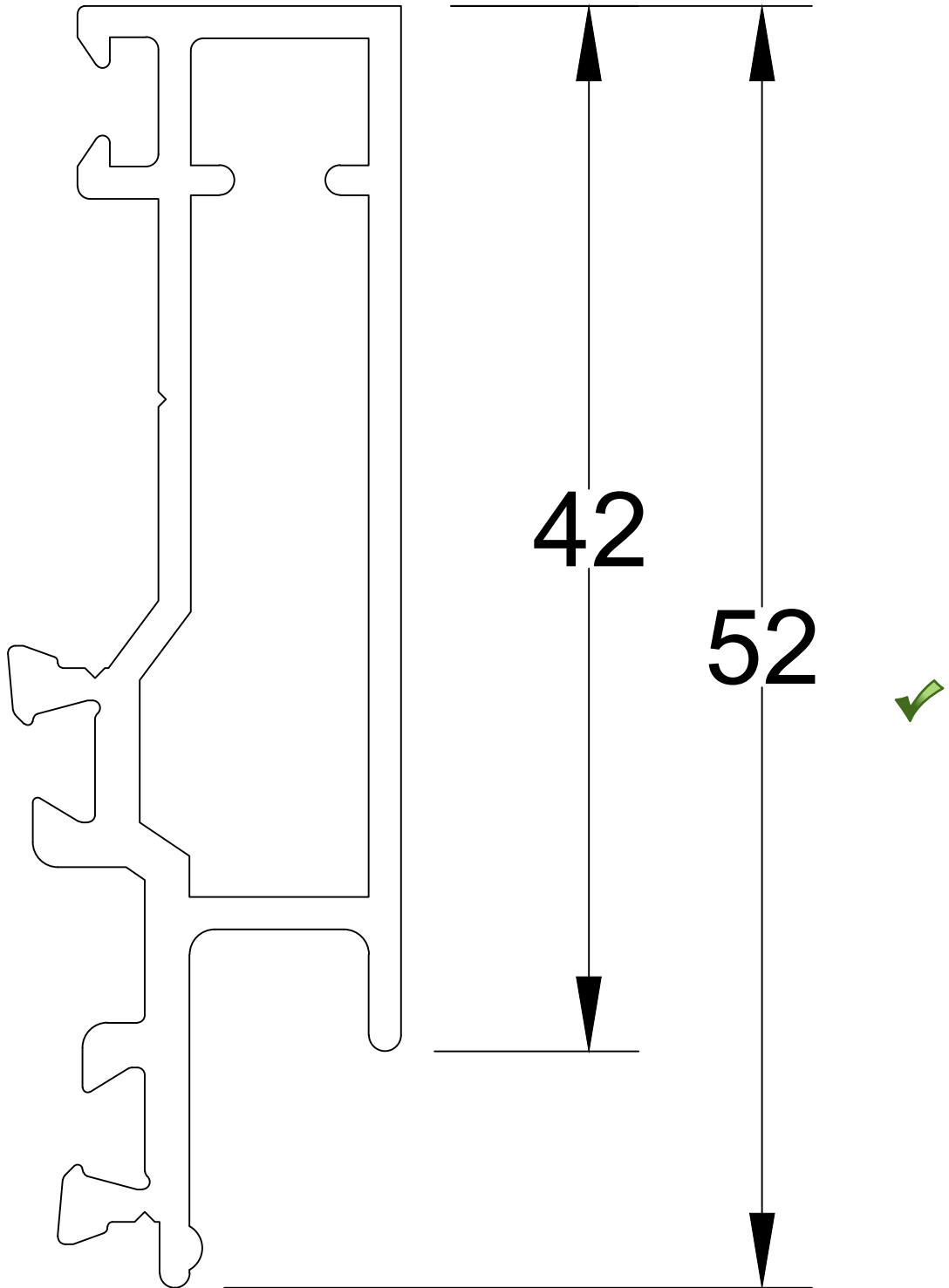


TVO 911 a

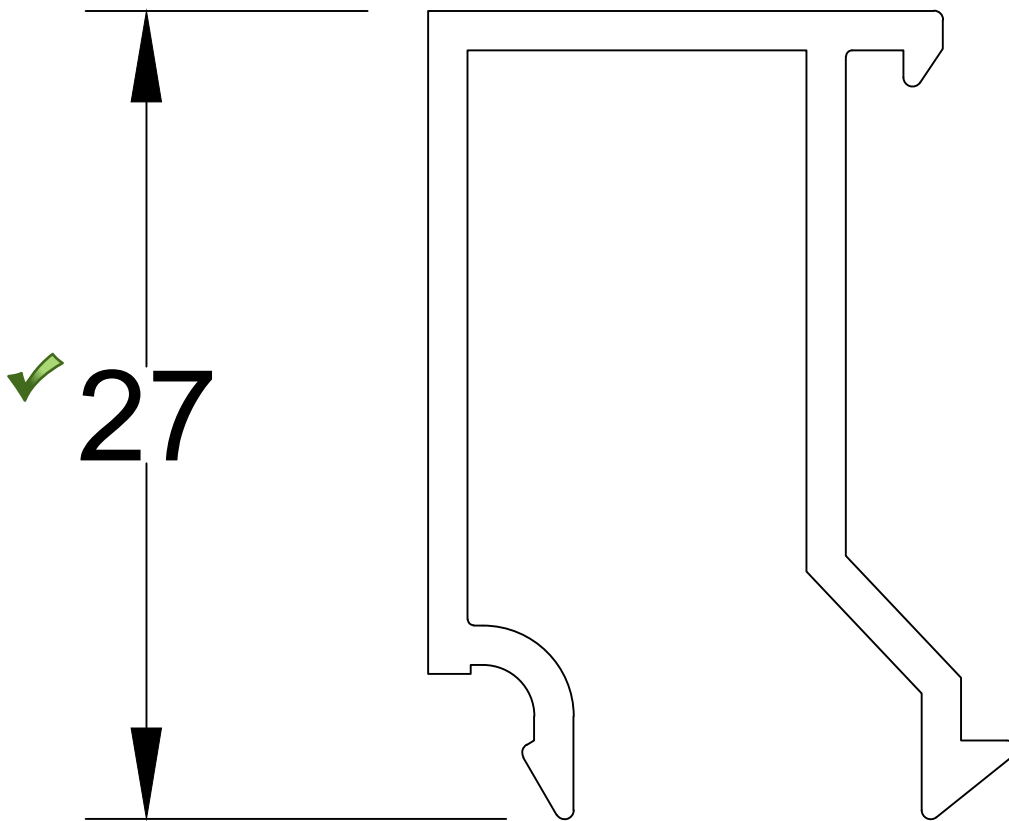
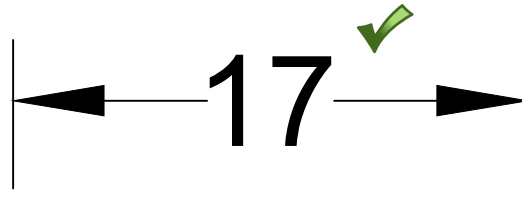


TVO 911 b

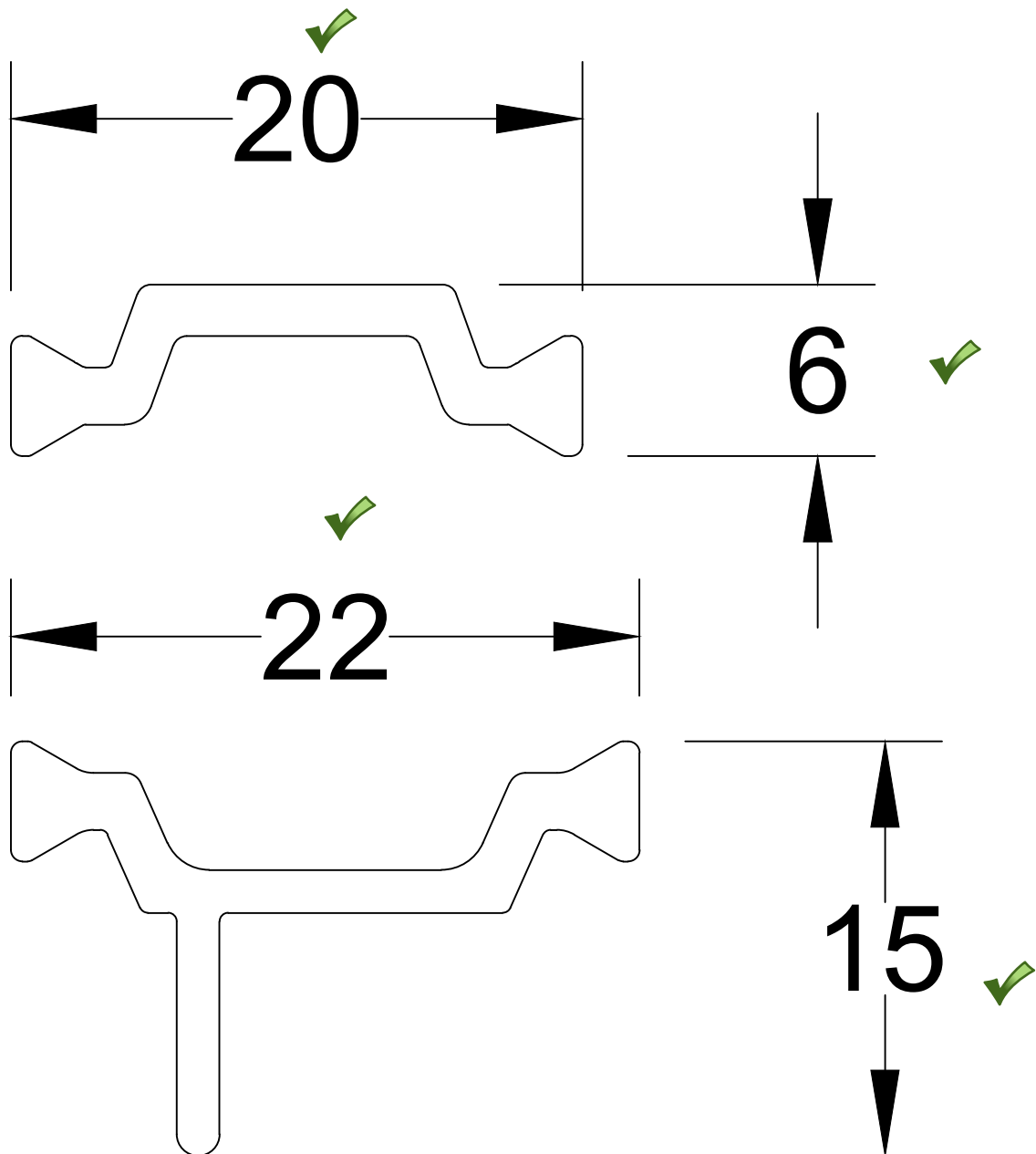
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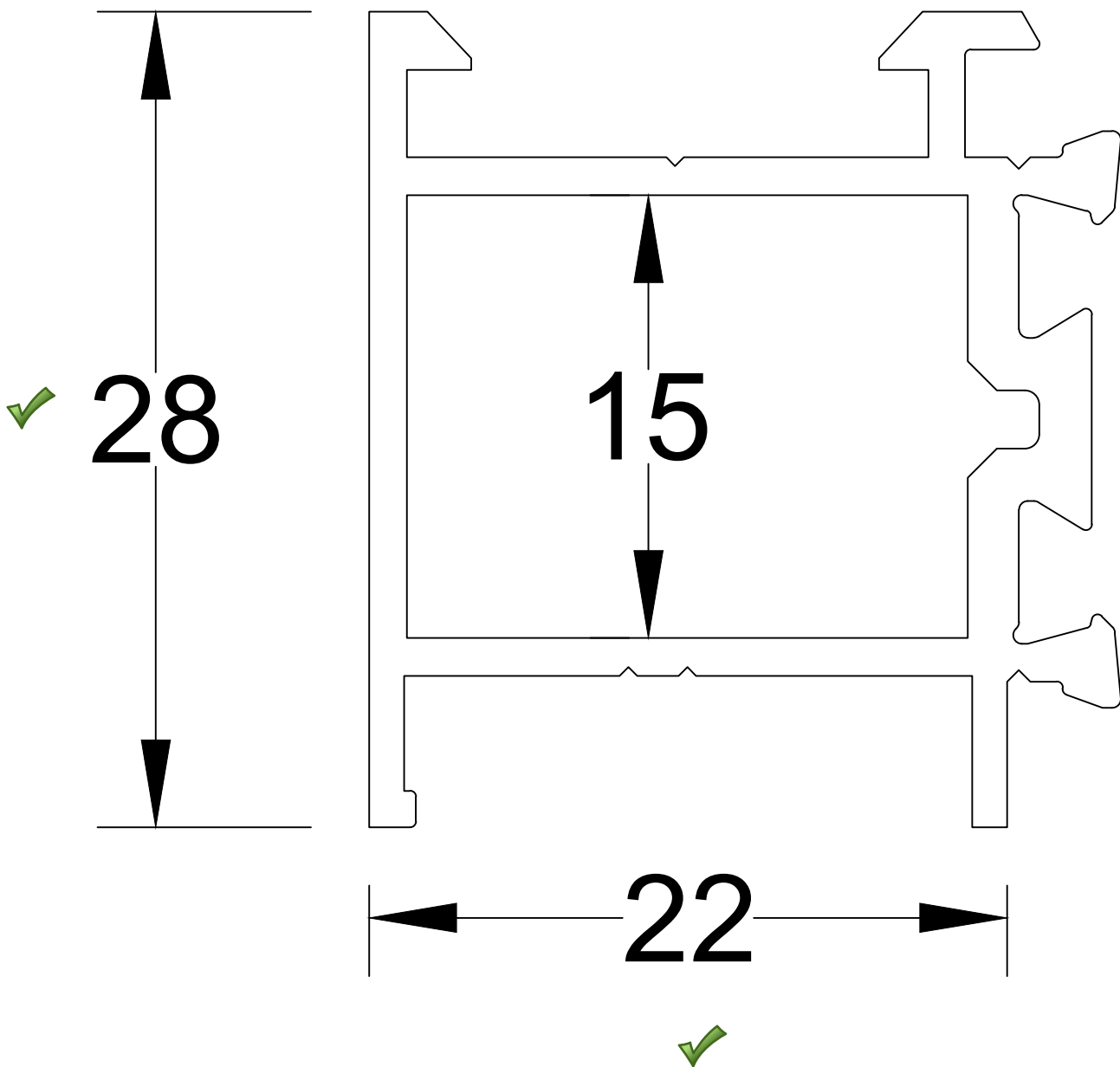
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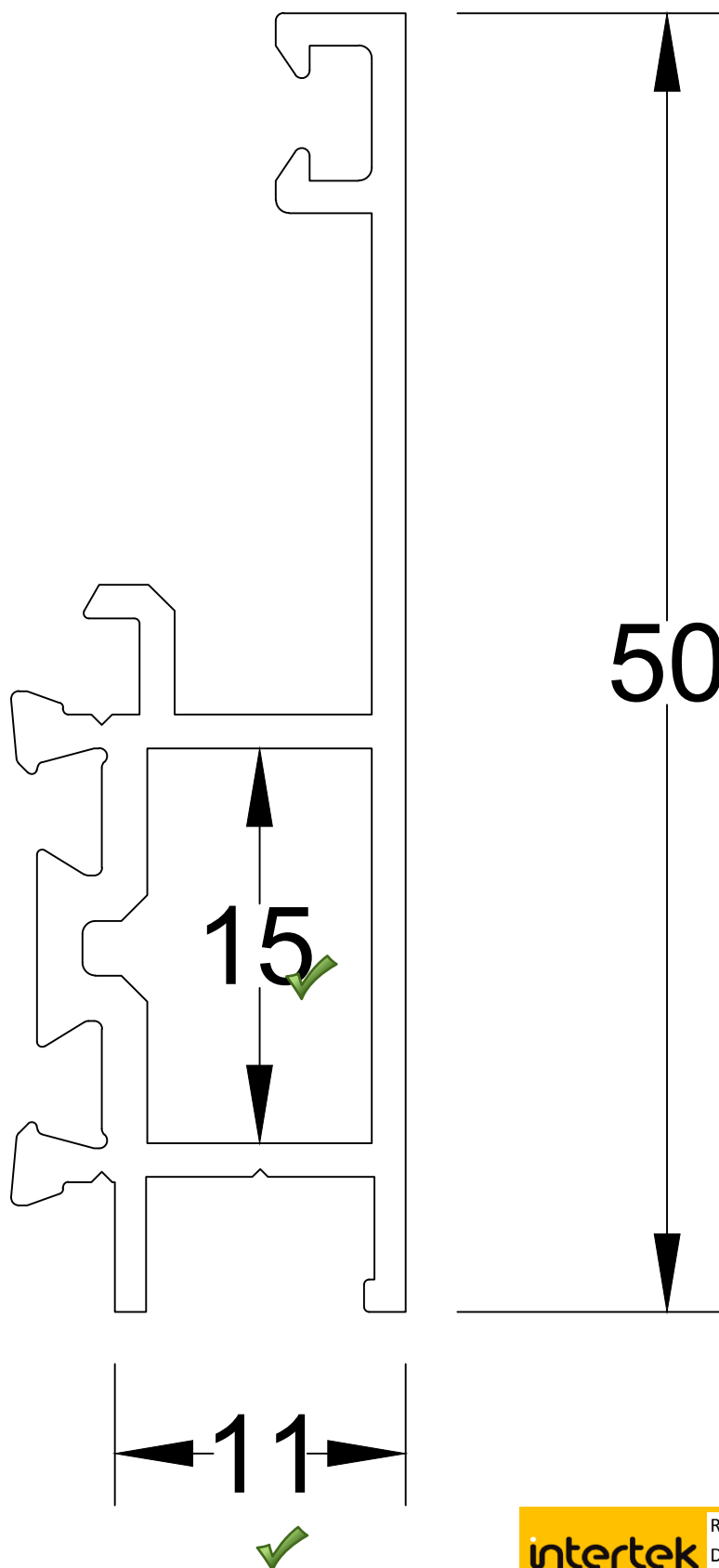
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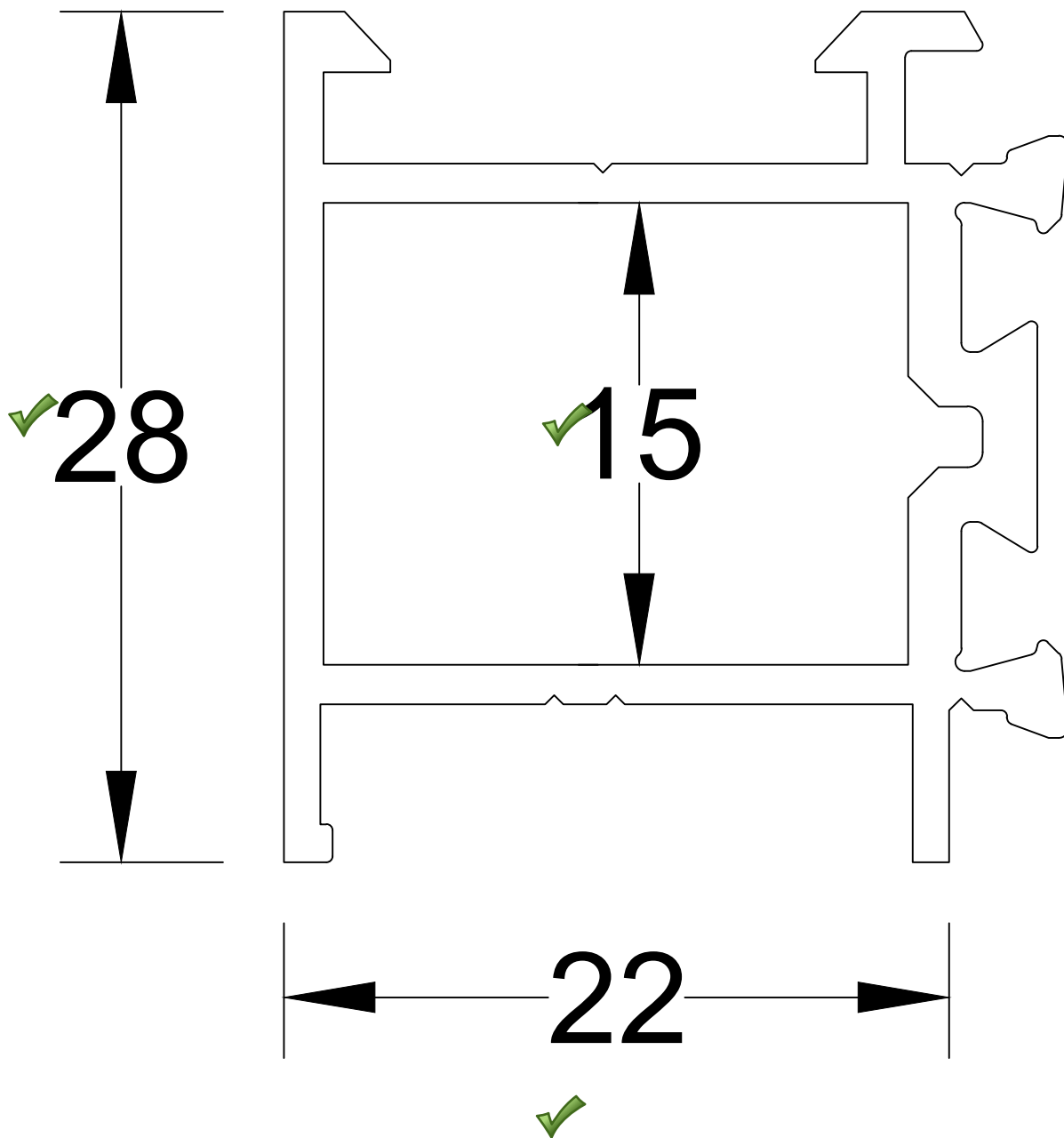
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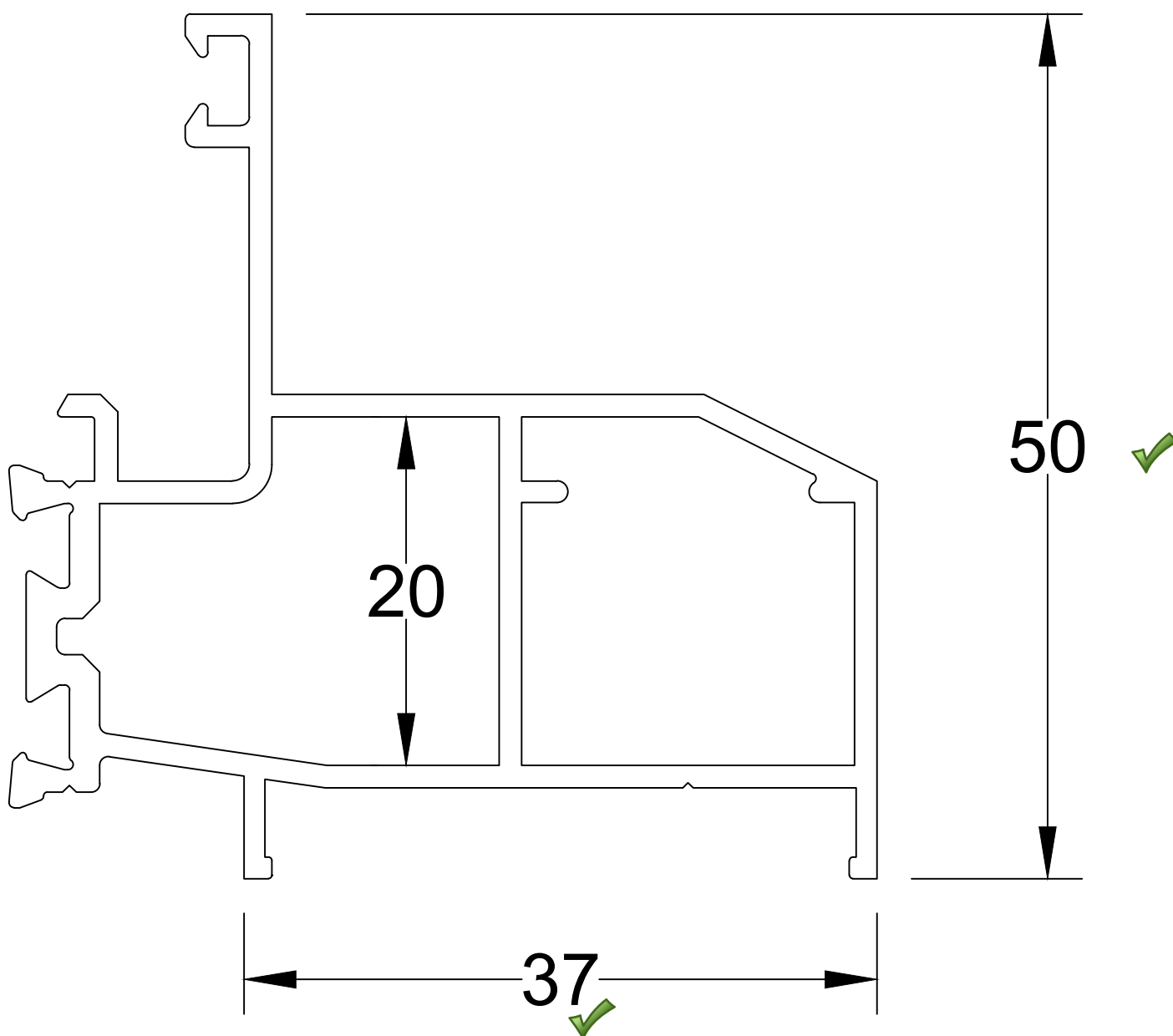
TVO 921 b



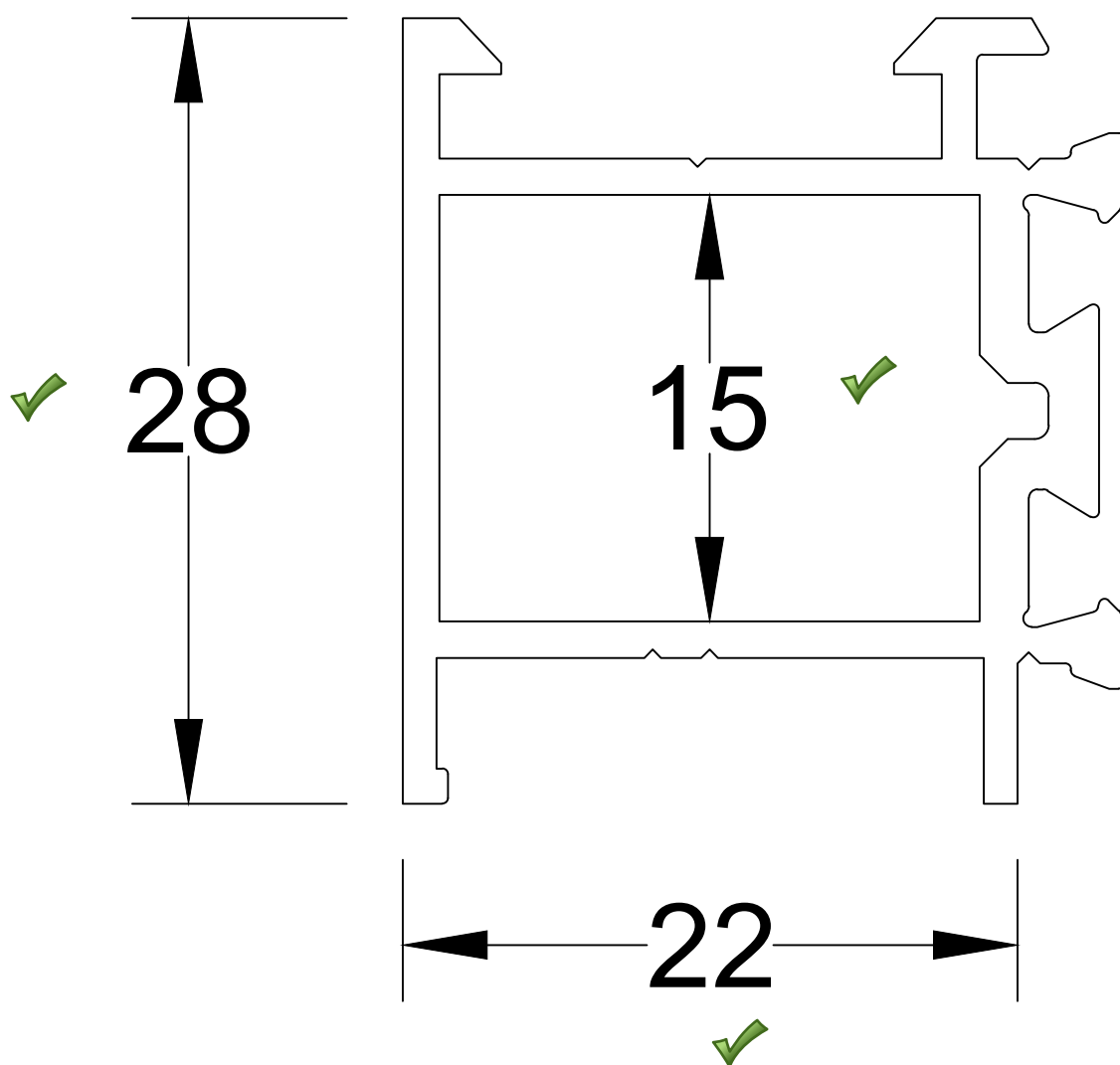
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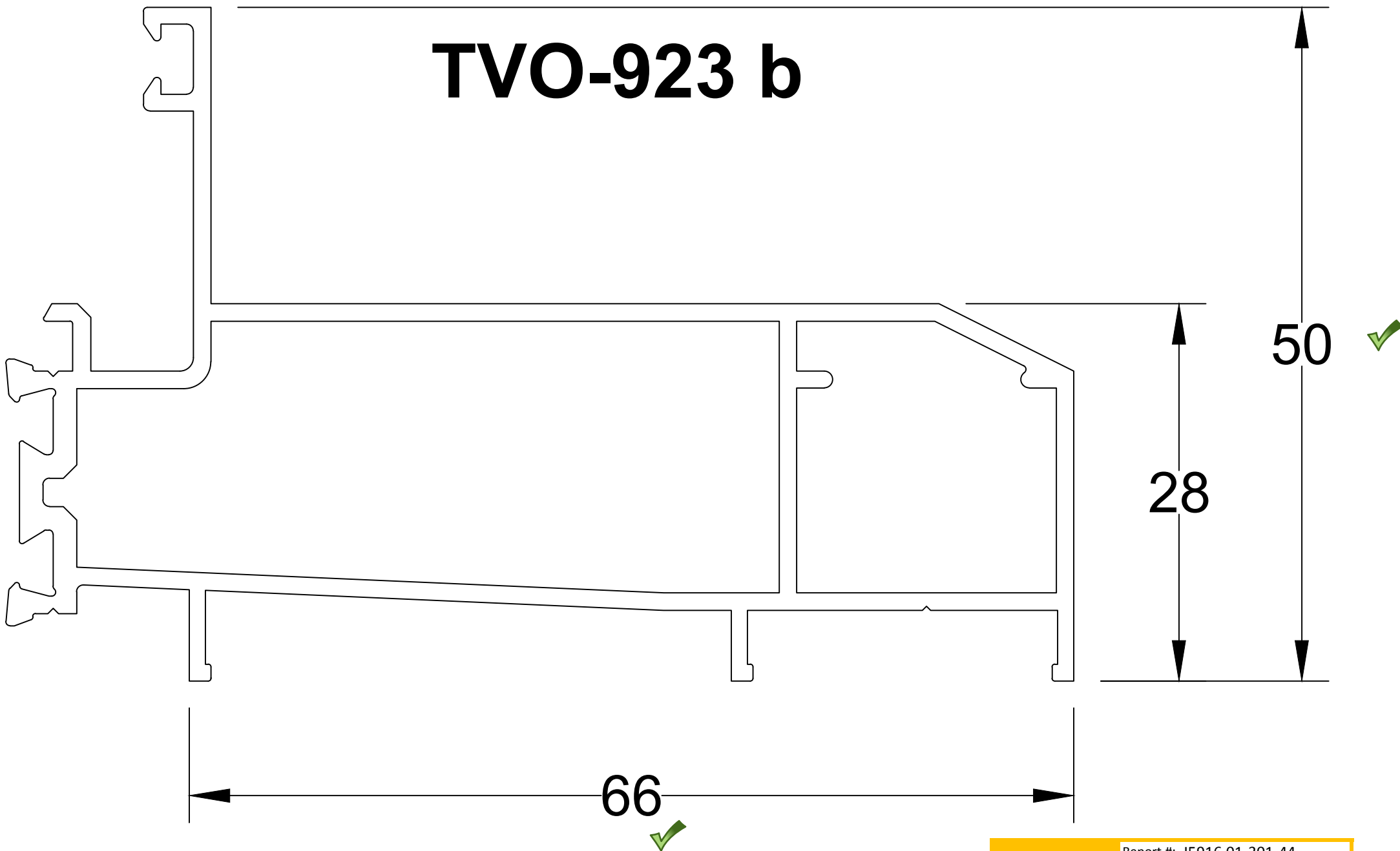
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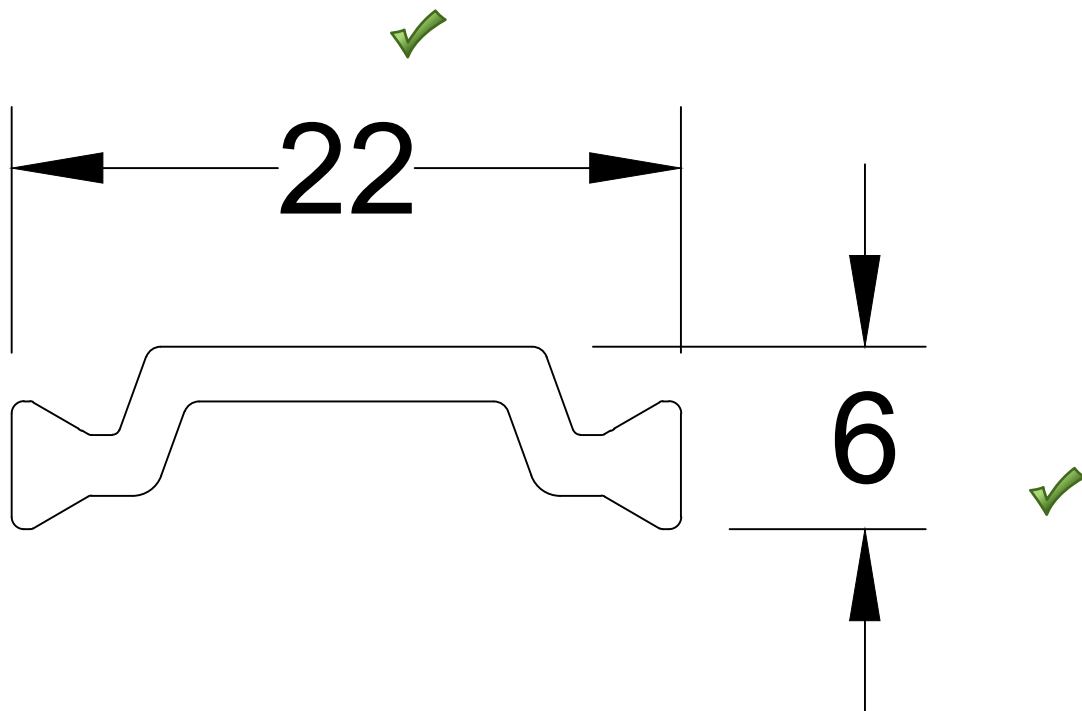
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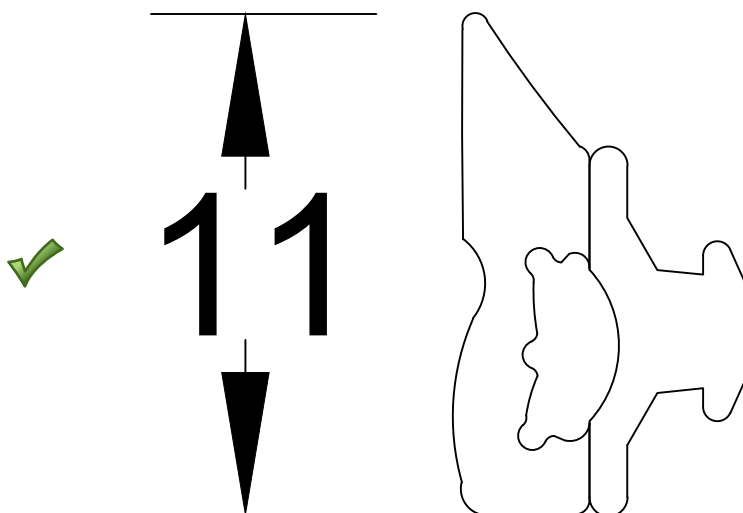
TVO-923 b

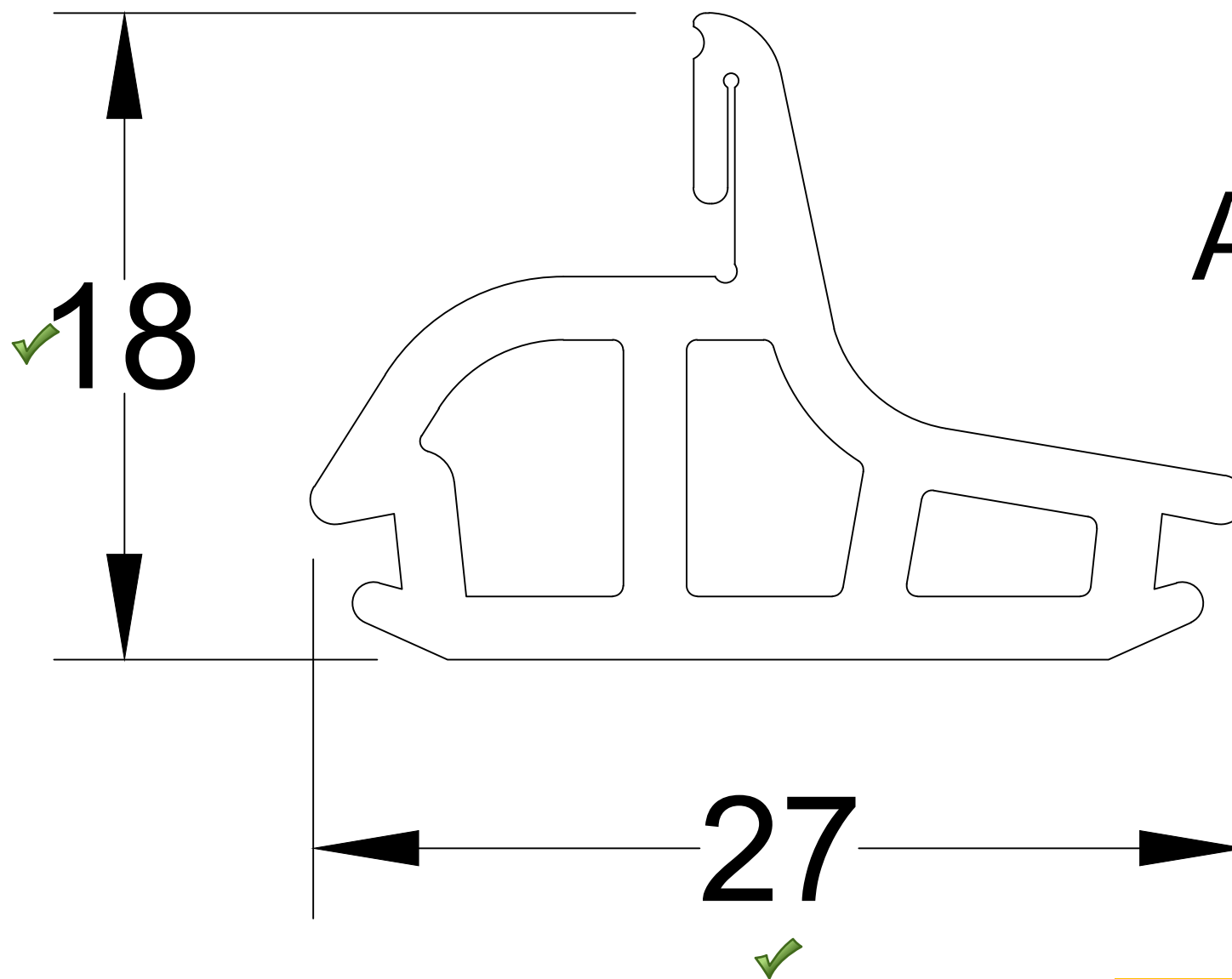


Frame Thermal Breaks



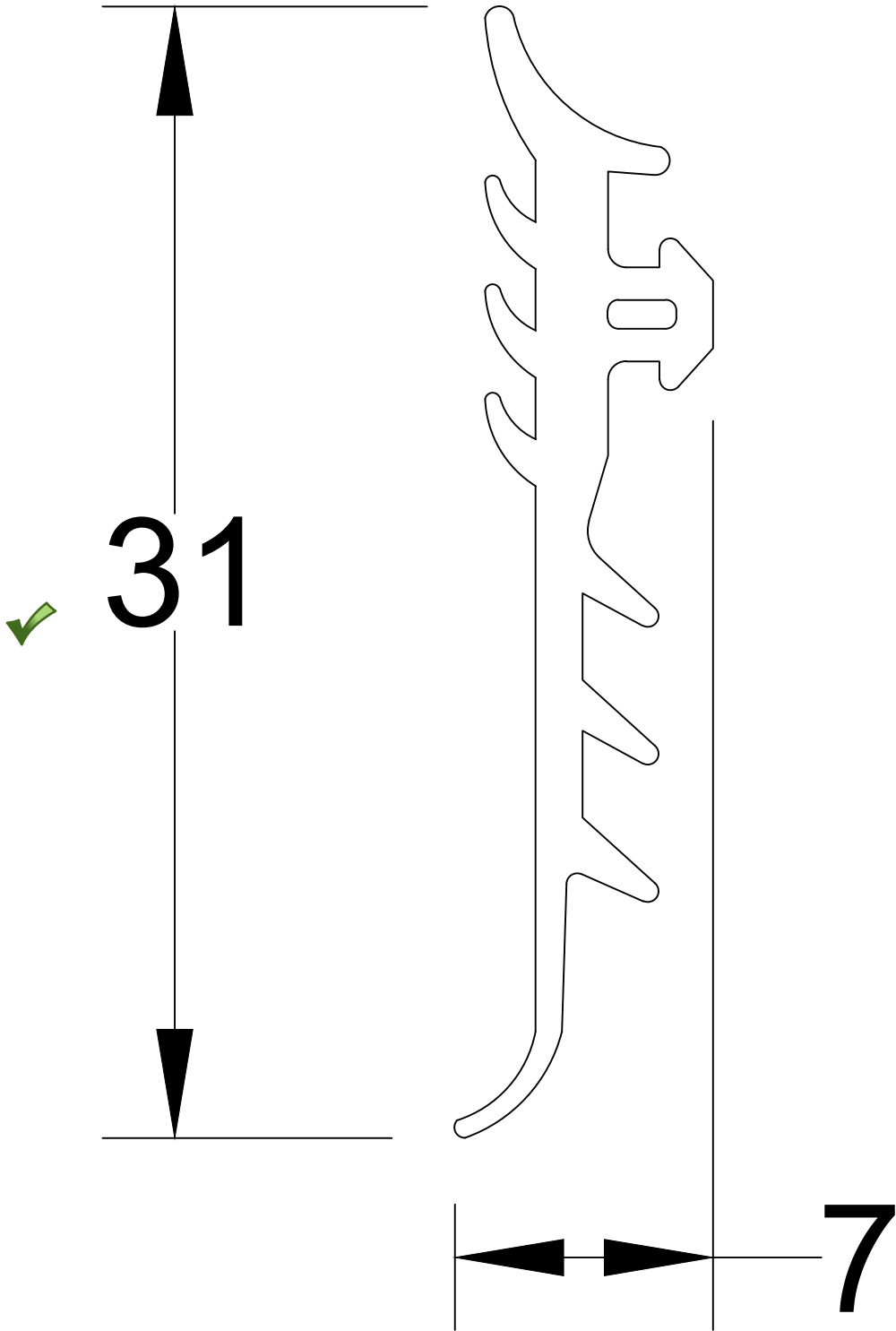
AV0-1



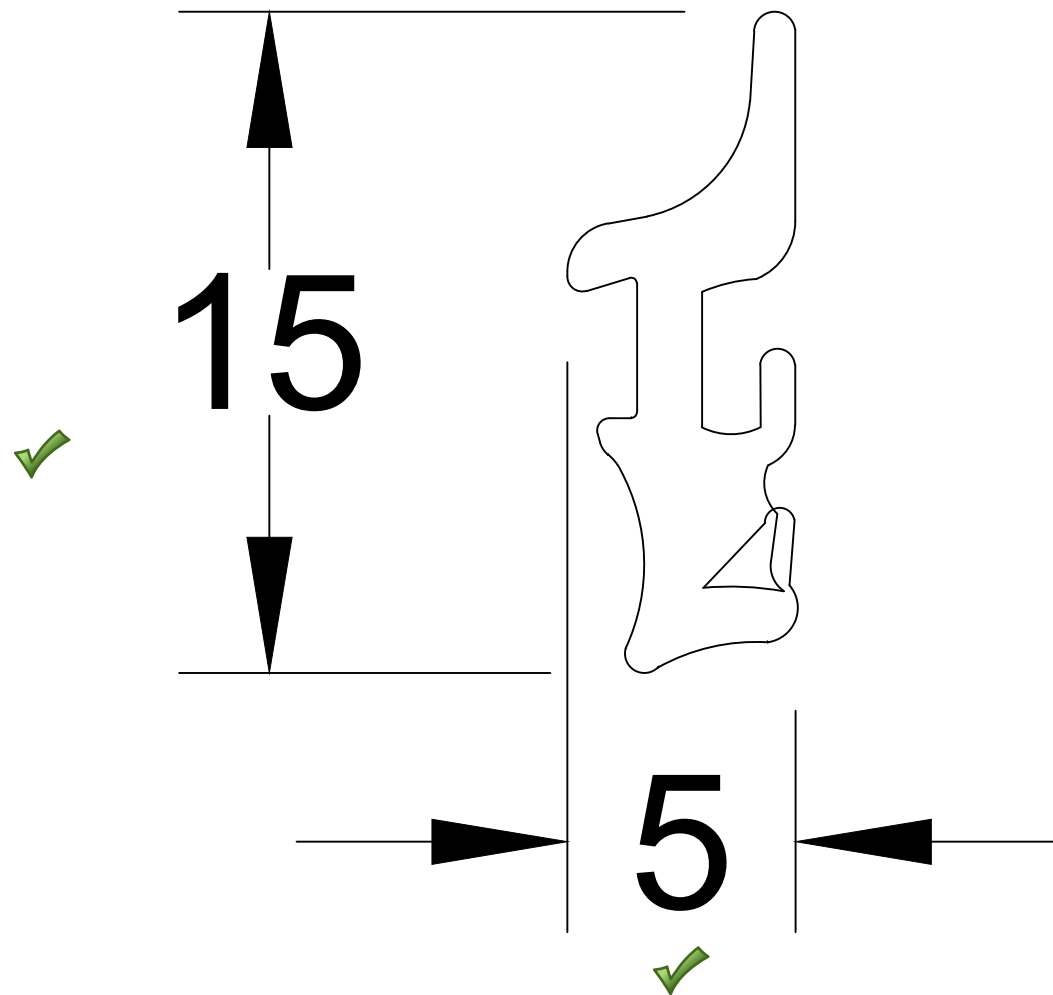


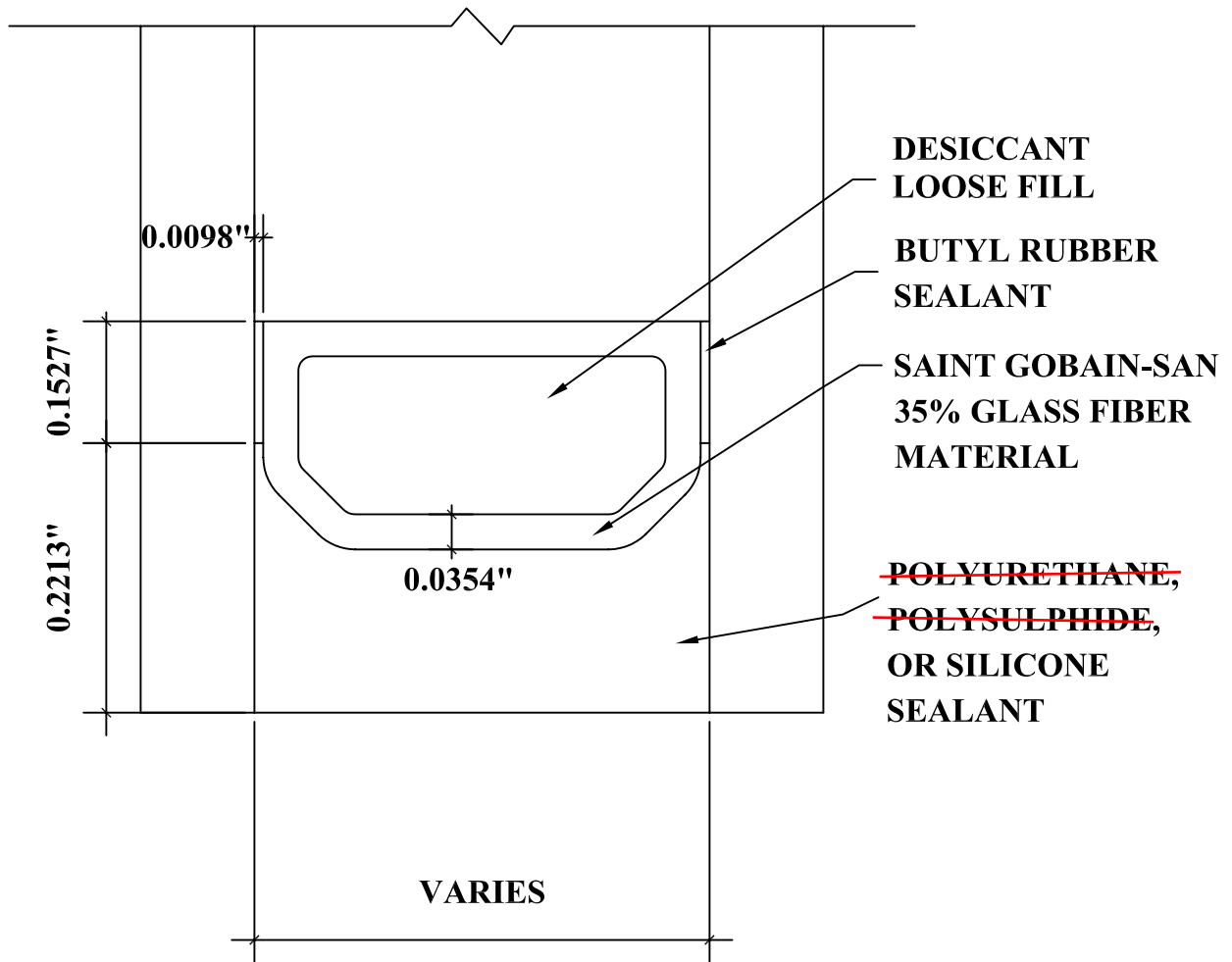
AV0-2

AV0-3



P3





DETAIL FOR THERMAL MODELING OF
SAINT-GOBAIN SWISSPACER (TP-D)



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SECTION 12

REVISION LOG

| REVISION # | DATE | PAGES | REVISION |
|------------|----------|-------|-----------------------|
| 0 | 08/20/18 | N/A | Original Report Issue |