

Part 1 - GENERAL

Scope

The framing shall be Metro "T" Series fixed window system with thermal break as manufactured by Metro Glass. Furnish all materials, labour and services for the complete fabrication, assembly and installation of aluminum framing as required based on the contract or the purchase agreement.

Work Not Included: Structural support for framing, wood liner, interior or exterior closures or trim.
(See Specifiers list of other exclusions.)

Related Work Specified Elsewhere: See Specifier List

Design & Performance

Framing to fully comply with applicable standard specifications as typically referenced to the following requirement criteria: Air and water tightness, wind and other load resistance.

Maintenance and Warranty

Upon request, Metro will provide instructions for proper cleaning and maintenance. Metro Glass Metal Products come with a two year warranty which shall begin from the day the product is shipped or from substantial completion of the installation. The warranty covers materials and workmanship as specified by drawings and customer requirements per contract or purchase agreement.

Part 2 - PRODUCTS

Materials

All materials to meet design and material specifications as applicable. Extruded aluminum shall be 6063 T5 alloy and temper. Any defects impairing strength, durability or appearance are not acceptable.

Fasteners shall be of sufficient size and strength and made of corrosion-resistant and compatible materials.

Glazing gaskets shall be Polyshim II Tape a 100% solid, highly adhesive and elastic, cross-linked butyl preformed tape with a continuous integral EPDM shim and extruded black santoprene designed and sized to perform their intended function.

Fabrication

Frame assembly to provide accurately fit tight hairline joints only. Extruded profiles to be of sizes and profiles indicated in the contract or the purchase agreement. Corner joints shall be screw spline with fastening by means of anticorrosive steel screws.

Finish - Anodized 6063 Material Code Identification

Exposed surfaces shall be finished as specified by customer:

Satin Clear 14 AA-M12C22A41


Satin Medium Bronze 30 AA-M12C22A44

Satin Black 29 AA-M12C22A44

Powdercoated and various other finishes (including shades of Bronze) available upon request.

Installation

Framing to be installed plumb, level and square and glazed by an experienced crew in prepared openings in accordance to the manufacturers instructions and approved shop drawings, and as specified by drawings and customer requirements per contract or purchase agreement.

| | | | | | |
|--|---|-----------------|--------------|-----------------------------------|--------------|
|  <p>GLAZING, CLADDING & SPECIALTY STRUCTURAL ENGINEERING Suite 200 - 1067 9 72nd Avenue, Langley, B.C., Canada V2Y 1K7 Tel: 604-884-8811 • Fax: 604-878-8321 www.laytonconsulting.com</p> <p>British Columbia • Alberta • Yukon • Washington • Oregon California • Hawaii • Arizona</p> | Project: T-Series Vent System: U-Value Calculation | | | Project No: 1256-13547 | |
| | Sections: NFRC Sized Awning Vent | | | Client: Metro Glass Products Ltd. | |
| | Calc. by: JL | Date: Aug, 2017 | Chk'd by: IC | Date: Aug, 2017 | App'd by: IC |

RESULT

| Calculated Section | U-Value (W/m2-K) | U-Value (BTU/h-ft2-°F) | Total Sq. Ft |
|-------------------------|------------------|------------------------|--------------|
| Independent Vent System | 2.44 | 0.431 | 9.68 |
| T-Series Vent System | 2.60 | 0.459 | 9.68 |

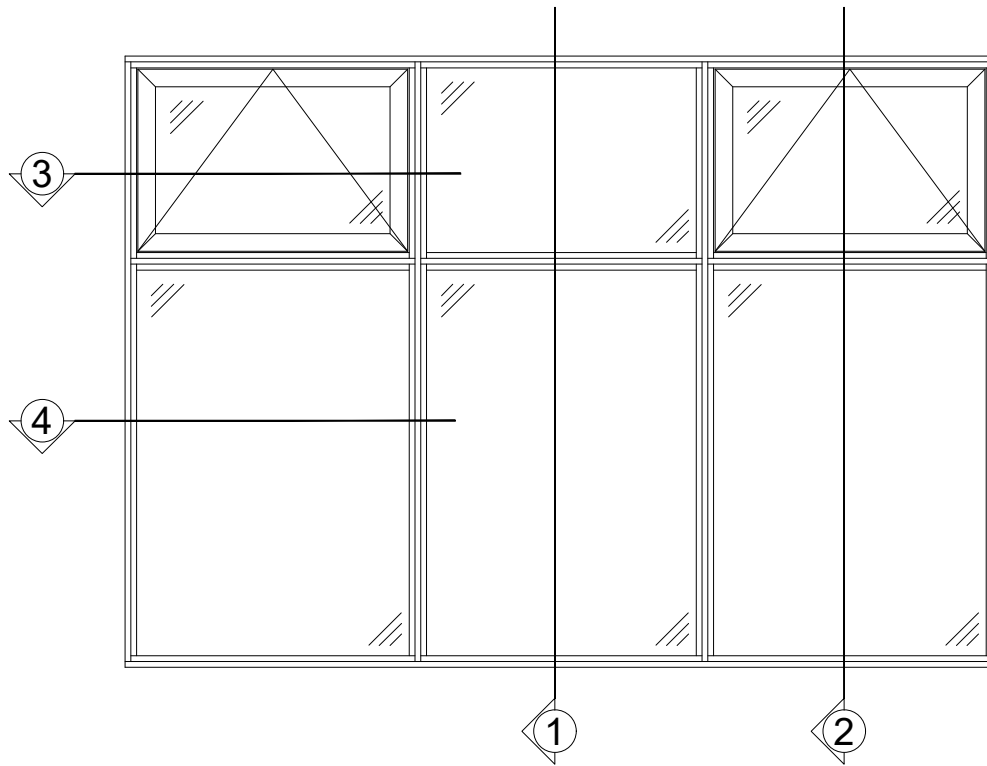
Table 2: Thermal Modelling Result – U-Value

Glazing Sealed Units:

Cardinal 272 Low E (Surface 2) on 6mm Clear / 12.7mm warm edge space with 90% Argon / 6mm Clear

CONCLUSION

From the thermal analysis on the proposed vent window, the T-Series Vent System modelled for Metro Glass Products Ltd in Calgary Alberta, the overall calculated U-Value for the independent Vent is 2.44 W/m2-K (0.431 Btu/h-ft2-°F) while the U-Value for the total T-Series Vent System is 2.60 W/m2-K (0.459 Btu/h-ft2-°F). The systems analysed included Metro Glass Products Ltd. independent vent window as well as the T-Series Vent System. All of the glazing sealed units are double glazed with Cardinal 272 Low E coating on surface 2 along with an argon gas fill and with polyurethane foam insulation to increase thermal performance. The model size for modelling is NFRC standard sizing for projected awning vent windows.

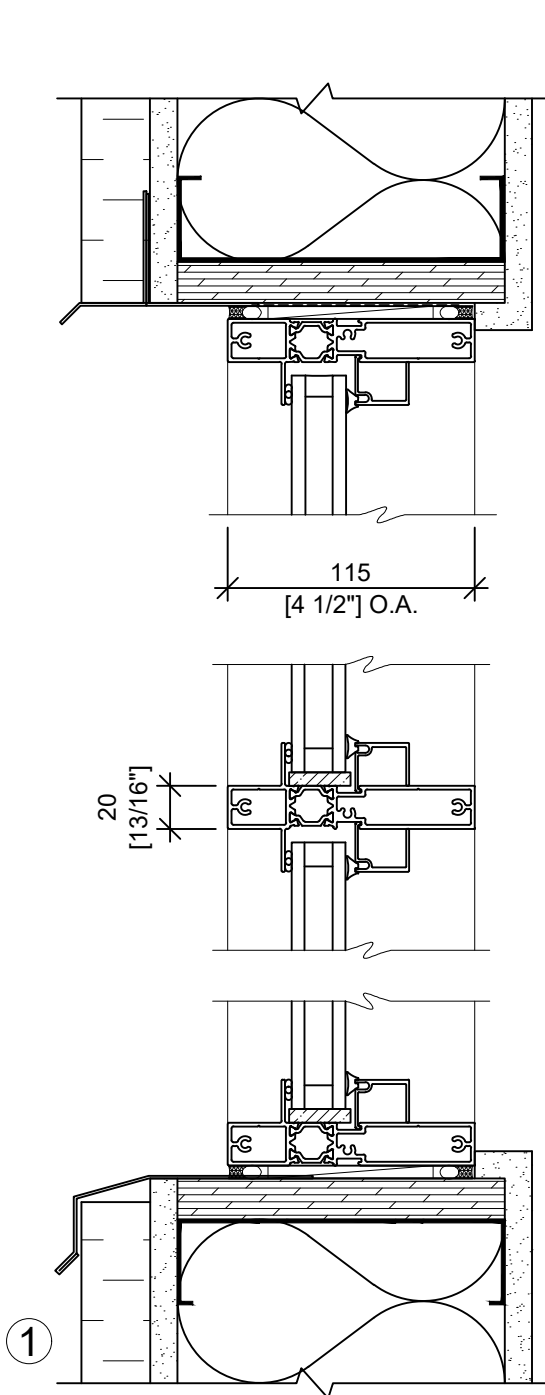


T SERIES: FIXED WINDOW SYSTEM

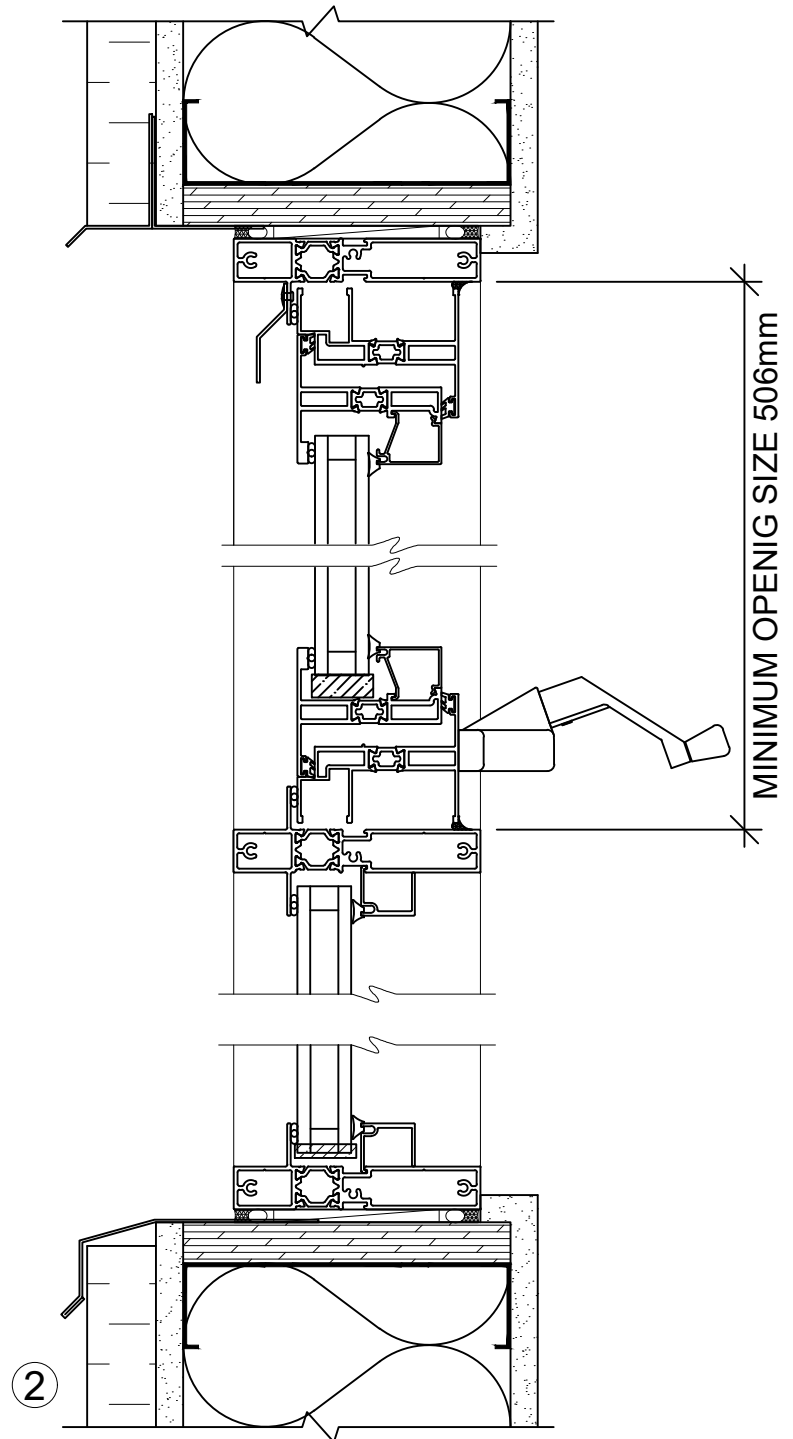
AN ECONOMICAL FRAMING SOLUTION FOR PUNCHED WINDOW AND HORIZONTAL STRIP WINDOW APPLICATIONS. A THERMALLY BROKEN DOUBLE GLAZED SYSTEM THAT IS INTERIOR GLAZED ALLOWING EASY INSTALLATION AND REPLACEMENT OF SEALED UNITS. SCREW SPLINE JOINERY ALLOWS FOR QUICK AND EASY FABRICATION.

T SERIES: OPERABLE WINDOW SYSTEM

T SERIES VENT INSERTS ARE A THERMALLY BROKEN DOUBLE GLAZED SYSTEM THAT CAN BE INCORPORATED INTO MOST METRO GLASS WINDOW SYSTEMS ALLOWING FOR INCREASED AIR FLOW AND VENTILATION. CORNER KEY/CRIMPING ALLOWS FOR QUICK ASSEMBLY AND ENSURES STRONG JOINTS.



**T SERIES
FIXED WINDOW SYSTEM**



**T SERIES WITH HP GOLIATH
SERIES VENT INSERT**

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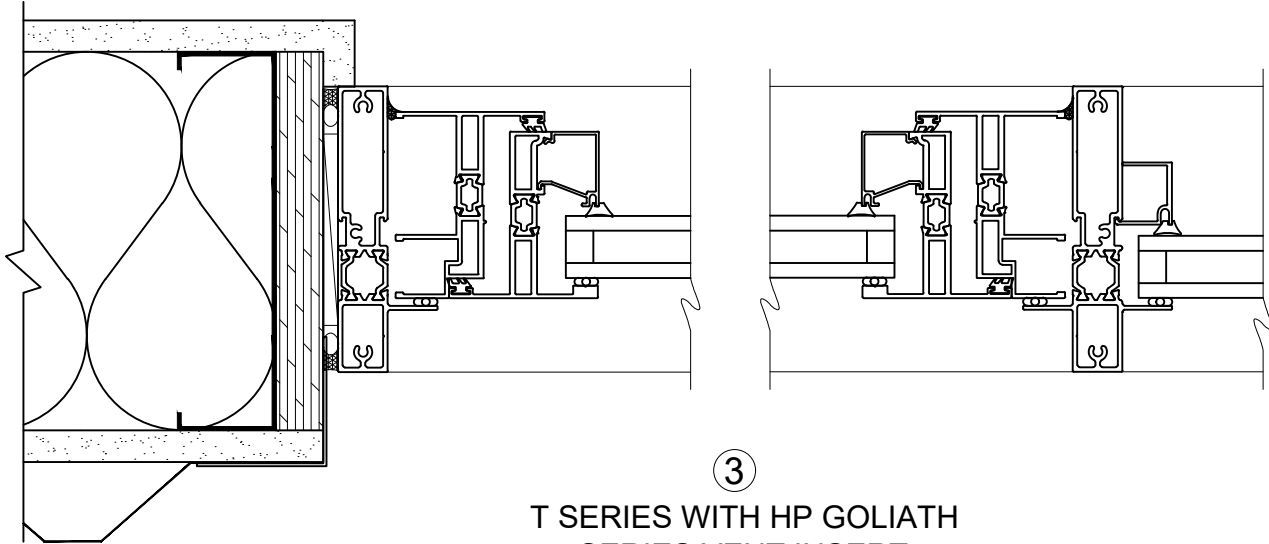
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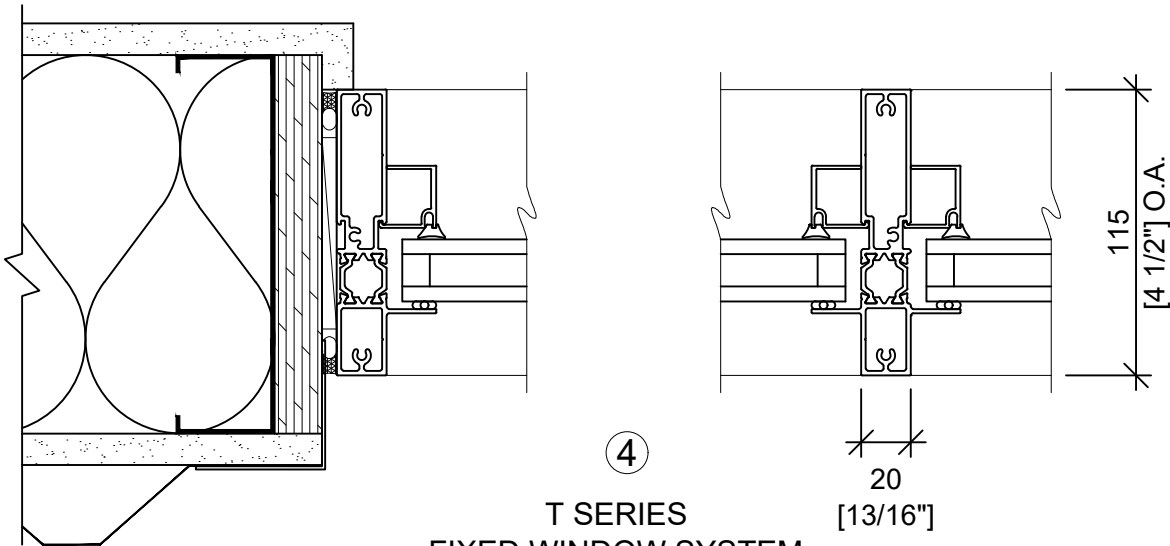
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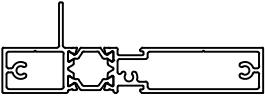
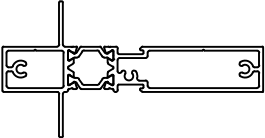

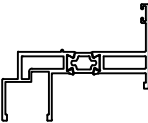
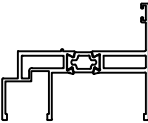
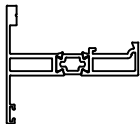
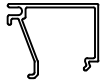




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








| CROSS SECTION | PART # | DESCRIPTION | STOCK LENGTH | CLEAR ANODIZED | BRONZE ANODIZED | BLACK ANODIZED |
|---|--------|--|--------------|----------------|-----------------|----------------|
|  | T1 | 20mm X 115mm (13/16" X 4 1/2") HEAD, SILL & JAMB | 7.315 m | ✓ | ✓ | ✓ |
|  | T2 | 20mm X 115mm (13/16" X 4 1/2") INTERMEDIATE MULLION | 4.6 m | ✓ | ✓ | ✓ |
|  | T4 | T SERIES GLASS STOP | 7.315 m | ✓ | ✓ | ✓ |
|  | T5 | 57mm X 52mm (2 1/4" X 2 1/8") VENT FRAME w/UNEQUAL LEG | 4.6 m | ✓ | ✓ | ✓ |
|  | T6 | 57mm X 52mm (2 1/4" X 2 1/8") VENT FRAME | 4.6 m | ✓ | ✓ | ✓ |
|  | T7 | 57mm X 52mm (2 1/4" X 2 3/8") VENT SASH | 4.6 m | ✓ | ✓ | ✓ |
|  | T8 | VENT SASH GLASS STOP | 7.315 m | ✓ | ✓ | ✓ |
|  | T9 | TRIPLE GLAZE GLASS STOP | 7.315 m | ✓ | ✓ | ✓ |
|  | T10 | DRIP CAP DEFLECTOR | 3.66 m | ✓ | ✓ | ✓ |
|  | T13 | SCREEN BAR | 3.66 m | ✓ | ✓ | ✓ |
|  | T14 | JUMBO SCREEN BAR | 3.66 m | ✓ | ✓ | ✓ |

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| CROSS SECTION | PART # | DESCRIPTION | STOCK LENGTH | CLEAR ANODIZED | BRONZE ANODIZED |
|---|------------------------------|---|--------------|-----------------|-----------------|
|  | T15 | CORNER BRACKET | 4.6 m | MILL FINISH | |
|  | 2116862 | LOCKING CLAW HANDLE | | ✓ | ✓ |
|  | 2115491 | HOOK LOCK KEEPER | | STAINLESS STEEL | |
|  | 23.01.01.201 23.03.01.202 | ROTO OPERATOR FOR CASEMENT VENTS VT 310 | | ✓ | ✓ |
|  | 2115717 | DUAL ARM ROTO OPERATOR FOR AWNING VENTS | | ✓ | ✓ |
|  | SH-WX1 | CASEMENT PUSHBAR | | ✓ | ✓ |
|  | | VENT BUTT HINGE | | ✓ | ✓ |
|  | YXL-23.2.25.06 | FRICTION HINGE VARIOUS SIZES | | STAINLESS STEEL | |
|  | | SASH CONTROL DEVICE | | STAINLESS STEEL | |
| | | | | | |
| | | | | | |

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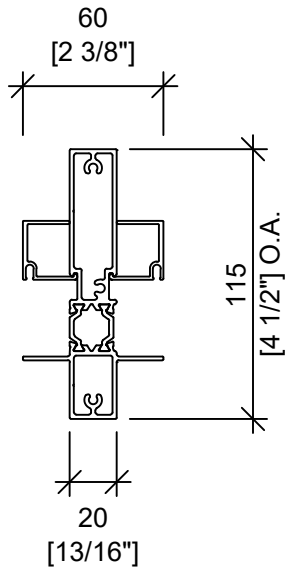
| CROSS SECTION | PART # | DESCRIPTION | STOCK LENGTH | CLEAR ANODIZED | BRONZE ANODIZED |
|---|--|-------------------------------------|-----------------|----------------|-----------------|
|  | 25.29.01.110 L.H. 25.29.01.111 R.H. | 3" CAM HANDLE | | ✓ | |
| | 25.29.05.110 L.H. 25.29.05.111 R.H. | 3" CAM HANDLE | | | ✓ |
|  | 27.20.01.102 L.H. 27.20.01.103 R.H. | 3" CAM HANDLE c/w CONCEALED PAWL | | ✓ | |
|  | | CAM HANDLE KEEPER | | ✓ | ✓ |
|  | TREMCO | 1/8" POLY SHIM GLAZING TAPE | 12.1 m ROLLS | POLY | |
|  | 688 | GLAZING SEAL | | POLY | |
|  | 2388 | (120) VENT WEDGE GASKET | | POLY | |
| | | | | | |
| | | | | | |
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T2 $I_{x-x} = 2.073 \text{ IN}^4$
 $S_{x-x} = 0.855 \text{ IN}^3$

