TonyView — Technical Specification Book

3/12/2026

Installation & Manufacturing Criteria

Purpose

This document defines the mandatory material, joint, welding, fastener and adhesive requirements and the installation/application procedures for TonyView assemblies. All materials, products, and installation procedures must be executed strictly in accordance with the manufacturer's published specifications and instructions. All requirements herein are mandatory unless superseded by a sealed engineering revision.

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1. Window / Unit Description

Item	Information
Product Name	-TonyView Structural Corner Window System
Type / Operator	-Fixed, Glazed Structural Corner window (non-operable)
Frame Materials	-Welded 304 Stainless Steel Structural Sub-Frame with affixed Plastic (PVC) Window Cassette. Cassette is responsible for retaining glazing, trims, adjacent nailing fin attachment and thermal break between exterior and stainless-steel sub frame.
Thermal Break	-Plastic (PVC) Window Cassette- 2.945"x1.705x 1/8" wall thickness - Density: 1.36 g/cm^3 -Fabreeka HIPS Shims 3.5"x.125" - Density: 107.83 lb/ft^3 (1727 Kg/M^3) - Thermal Conductivity: 0.259 W/m*K
Structural Posts	-2"x 3"x 3/16" 304 Stainless Steel
Interior/ Exterior Trims	-6063-T6 Anodized Aluminum cover trims affixed to stainless steel posts and cassette utilizing Sikasil® WS-305 Silicone.
Additional notes	-TonyView is a patented, load-bearing structural corner window system engineered to replace conventional framed corners. Capable of supporting corner loads of up to three stories, TonyView functions as a structural element of the building envelope, offering seamless integration into both retrofit and new construction standard framing applications.

2. Glazing Matrix

Parameter	Specification
Glass type	9/16” Heat Strengthened Starphire Laminated
Pane thickness(es)	¼” Starphire, .090 SentryGlass Interlayer, ¼” Starphire
Coating type	N/A
Primary & secondary sealants	Sikasil® SG-10 Silicone

3. Bill of Materials (BOM)

Component	Part Number	Dimensions	Material
Cassette	TV-001	2.945”x1.705x 1/8” wall thickness	PVC
Nailing Fin	TV-NF	2.7”x.42”x1/32” wall thickness	PVC
Vertical Post	TV-002	2”x3”x3/16” wall thickness	304 Stainless
Sill	TV-003	3.5”x1.75”x1/4” thickness	304 Stainless
Head	TV-004	3.5”x1.75”x1/4” thickness	304 Stainless
Exterior Trim	TV-005	3.08”x.44”x.091” thickness	6063-T6 Anodized Aluminum
Header L- Saddle	-	8”x3.6”x0.188” thickness	A36 Steel
Saddle Back Plate	-	7”x0.188” thickness	A36 Steel
Glazing	TV-LAMI	6’8” unit: 75.25” x10-7/16”x9/16” 8’0” unit: 91.25”x10-7/16”x9/16”	9/16” Heat Strengthened Starphire Laminated
Spacer Gasket	TV-G3	¼”x ¼”	Santoprene TPV 121-70a
Setting Block	TV-SB	½”x .307” thickness	Santoprene TPV 121-80a
Cassette Screws	-	#10-32x1.00” fully threaded	Stainless Steel
Header Saddle Bolts	-	½”-13x5” Grade 5	Zinc Coated Steel
Concrete Anchors	-	½”- 3.75” Concrete Anchor	Stainless Steel
Nailing Fin Screw	-	#8 x 0.75” tri-lobal thread-forming screw, 0.75” for plastic	Stainless Steel
Structural Silicone	SG-10 WS-305 SIKA 205	Sikasil® SG-10 Silicone Sikasil® WS-305 Silicone Sika Activator 205 Primer	Fast Cure Neutral Silicone, Primer
Fabreeka HIPS	HIPS	3.5”x.125”x 1’	High Impact Polystyrene
Sill Channel Block	TV-CB	.125x.5”	6061 Aluminum
Vertical Interior Trim	TV-CAP 1	3.76”x2.2”x.078” thickness	6063-T6 Anodized Aluminum
Horizontal Int. Trim	TV-CAP 2	3.76”x2.14”x.078” thickness	6063-T6 Anodized Aluminum

1. Joint & Sealant Requirements — Sikasil® SG-10 (Sika)

Product

Sikasil® SG-10 — fast-cure, neutral-cure, one-component silicone assembly sealant. Complies with ASTM C920 S, Grade NS, Class 25. Movement capability ±25% (ASTM C-719). Service temperature −80°F to 350°F.

Application Areas (required):

- L-joint: cassette → glass (perimeter structural silicone).
- Nailing fin / fastener channel: bedding and secondary seal.
- Cassette Miter Joints
- Glazing Miter Joint

Joint Dimensions (mandatory):

- Perimeter L-joint (cassette→glass, **minimum 1/4" (6.4 mm)** nominal gap.
- Cassette Miter Joints, **minimum 1/4" (6.4 mm)** nominal gap
- Glazing Miter Joints, **± 1/8" (6.4 mm)** nominal gap

Surface Preparation & Priming:

- Substrates must be clean, dry, frost-free, sound and free of oils, greases, release agents or incompatible coatings.
- Porous substrates: clean mechanically to expose a sound surface.
- Non-porous substrates: clean using the two-cloth method with IPA or an approved industrial solvent; allow solvent to evaporate fully.
- Sikasil SG-10 bonds without primer to many substrates. For low-energy/problematic substrates apply Sika Activator 205 per Sika PDS and obtain Sika Technical acceptance for any non-standard substrate prior to production.

Application & Tooling:

- Apply with a professional caulking gun, pneumatic pump or bulk dispensing system. Do not open cartridge/pail until preparation is complete.
- Apply with consistent positive pressure to fully fill the joint. Tool immediately to a concave profile using **dry tooling**. **Do not use soap or oil tooling aids.**

Cure & Performance:

- Skin time (77°F/50%RH): 6–8 minutes. Typical cure: ~1/8" in 12 hours. Movement ±25% per ASTM C-719. Application temp: **40–105°F (5–40°C)**. Service temp: −80°F to 350°F. Follow Sika PDS for non-standard conditions.

Limitations & Safety:

- MSDS/PDS (oxime/MEKO hazards); ensure ventilation and PPE.

Coverage:

- Example: ½" × ¼" bead ≈ 12.2 linear feet per cartridge. Calculate quantities with waste allowance.

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2. Stainless Steel Subframe — Welding & Fabrication (304 SS)

Welding Standards & Qualifications:

- Submit welder qualification records prior to production.

Material:

- Stainless HSS per structural calculations (304 or 316 as specified). Provide mill certificates/ Certification of Compliance.

Fillet Weld Requirements (MANDATORY):

- **Sill / Head component:** intermittent **3/16" (0.1875") fillet welds, 1" weld length spaced at 3" on center** (1" weld, 2" gap). Throat/leg sized to achieve the 3/16" fillet design capacity.
- **Post (2" × 3") → 1/4" sill/head plates: FULL continuous 3/16" fillet weld** around the connection.

Weld QA & Post-Weld Treatment:

- 100% visual inspection.

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3. Fasteners & Torque Requirements

General:

- All exposed fasteners shall be stainless steel unless otherwise noted.

Nailing-Fin → Cassette Fastener (PLASTIC ATTACHMENT) — MANDATORY

- **Type:** #8, tri-lobal thread-forming screw, 0.75”, 316 SS for plastics.
- **Geometry:** Tip blunted / radiused to prevent crack initiation in PVC.
- **Material:** Stainless Steel.
- **Torque: 5–10 in·lb maximum** (do not exceed).
- **Length/Engagement:** 0.75" overall length, sized to achieve full engagement in the cassette material while preventing contact or penetration of the steel backing.

Cassette → Stainless Steel Post / Sill / Head — MANDATORY

- **Type:** #10-32, fully threaded, 1.00" length,
- **Torque: 20 in·lb maximum**. Do not exceed.
- **Material**: Stainless steel
- **Sealant:** Apply SikaSil SG-10 on steel-to-steel threads & cassette holes.
- **Installation:** Install into specified threaded holes on vertical post & sill/ head component. Torque to spec.

Header Through Bolts — MANDATORY

- **Type:** ½”-13 5” Grade 5 Bolt, Zinc Plated Steel.
- **Head:** Hex head; head width (across flats) 0.75" (3/4"), head height 11/32".
- **Mechanical:** Grade 5 steel; Tensile ≈ 120,000 psi; Hardness Rockwell C25. Thread class UNC Class 2A. Zinc-plated finish (as provided).
- **Torque: 75 ft·lb (900 in·lb)** recommended installation torque. Do not exceed. (Install per engineer/ manufacturer guidance; record torque.)
- **Installation:** Install into mating plates per shop drawings. Ensure flat, clean bearing surfaces and hardened washers under head and nut. Tighten in a staged/balanced sequence to the engineer-specified torque (75 ft·lb recommended); use calibrated torque tools and record each installation.

Concrete Anchors — MANDATORY

- **Type:** 1/2"–13 UNC stainless-steel stud anchor, fully threaded stud style, 3.75" (3 3/4") length.
- **Head:** Supplied with hex nut and washer; nut width 3/4"; washer OD 1-1/16". Material: 316 stainless steel.
- **Mechanical:** Ultimate pull-out = 4,400 lbf; shear = 4,800 lbf (tested in 4,000 psi concrete). Performance: highly corrosion resistant; reusable.
- **Torque: 50 ft·lb (50 ft·lbf) maximum.** Do not exceed.
- **Installation:** Drill bit 1/2" dia; minimum installation depth 2.25" (2 1/4"); minimum thread length 2". Install per manufacturer instructions

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4. Interior Trim Attachment

Interior Trim Attachment (MANDATORY — Sikasil WS-305):

- Sikasil® WS-305 must be used for all interior trim attachment to stainless steel posts, and sill/head members. Follow Section 1 (application, surface prep, tooling, cure). **Minimum gap:** 1/16" (1.6 mm).

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5. Exterior Trim Attachment

Exterior Trim Attachment (MANDATORY — Sikasil WS-305):

- Sikasil® WS-305 must be used for all exterior trim attachment to glass and cassette. Follow Section 1 (application, surface prep, tooling, cure). **Minimum gap:** 1/4" (1.6 mm).

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6. Quality Control & Vendor Deliverables (MANDATORY)

Vendors must submit and receive acceptance prior to fabrication: PDS & MSDS, fastener cut-sheets and drawings, welder qualifications, tool calibration certificates, Sika/Aurora PVC adhesion test results confirming Sikasil SG-10/ WS-305 adhesion to PVC.

Inspection & Acceptance: QC Manager will verify required joint widths, sealant/primer selection, torque checks, weld sizes & continuity. Record inspections in QC log.

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6. Final Remarks

This specification is mandatory. Any deviation requires sealed engineering revision. Vendors must confirm acceptance in writing and submit required shop drawings and certificates prior to production. Final acceptance contingent on sealed structural drawings and QC pass.

References

- Sikasil SG-10 Product Data Sheet (Sika)
- Sikasil WS-305 Product Data Sheet (Sika)
- TonyView Structural Calculations (Wheaton & Sprague Engineering, sealed PE)
- Aurora PVC Cassette Material Data Sheet

General Notes: