Primary applications for Harden WAFV-N Series Security Windows include government, industrial, commercial and residential properties where protection of people and property is of utmost concern and where forced entry, ballistic and blast threats are present singularly or in combination; where conformance to U.S. Department of State forced-entry and ballistic threat levels is required; where aesthetic, architectural or security concerns require the use of a large window or ganged window systems; and where window thermal performance is important to overall building performance. For more information, please call our phone number above or visit our website.

Harden WAFV-N Series Security Windows can be installed as single unit or ganged together in a “window wall”. Ballistic-resistant models mitigate high-level ballistic threats- UL 752 level 5 and level 8; NIJ III; 7.62 x 39. Harden security windows can be engineered to resist blast loads up to and beyond 40 psi / 300 psi-ms, with “no hazard” rating. All-aluminum construction, no steel or composite inserts to corrode or fall out of location. Optional snap-on interior and exterior trim allows for both installation flexibility and a wide range of finish types. The widespread acceptance and success of our products stem from Harden's test-proven designs and extremely high level of manufacturing quality.

SECTION 085655

SECURITY WINDOWS

(HARDEN WAFV-N SERIES ALUMINUM SECURITY WINDOWS)

PART 1 - GENERAL

1.1 SUMMARY

A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:

1. Factory-glazed aluminum security windows with thermal break.

1.2 SUBMITTALS

A. Product Data: Submit manufacturer’s product data for each type of product.

B. Shop Drawings: Submit shop drawings including the following:

1. Complete list of materials and manufacturer’s descriptive and technical literature.
2. Proposed layout, details of construction and anchorage and relationship to other parts of the work.
3. Manufacturer’s certification of security performance.

C. Warranty: Submit executed copy of manufacturer’s standard limited warranty.

1.3 QUALITY ASSURANCE

A. Installer: Minimum 2-year documented history of installing similar windows and acceptable to the manufacturer. Installer shall accept responsibility for all field verifications.

1.4 DELIVERY, STORAGE AND HANDLING

A. Store materials in a location protected from the weather, humidity, temperature variation, dirt and dust, or other contaminants.

1.5 WARRANTY

A. Warranty: Provide manufacturer's standard limited 5-year warranty.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Basis-of-Design Manufacturer: Harden Architectural Security Products, LLC, 31 Industrial Circle, Lancaster, PA 17601. 717-308-9227. www.hardensecure.com. No substitutions.

2.2 SECURITY WINDOWS

A. Security Windows: Model WAFV-N Security Windows by Harden Architectural Security Products, LLC complying with the following:

1. Model WAFV-N-BU5:

a. Ballistic Resistance: UL 752 level 5 (7.62 M80).
b. Blast Resistance: Level is highly dependent on size and mounting technique. Non-linear analysis, shock tube testing or arena testing is required if blast resistance is required.

2. Model WAFV-N-BU8:

a. Ballistic Resistance: UL 752 level 8 (7.62 M80, multiple shot).
b. Blast Resistance: Level is highly dependent on size and mounting technique. Non-linear analysis, shock tube testing or arena testing is required if blast resistance is required.

3. Model WAFV-N-BN3:

a. Ballistic Resistance: NIJ III (7.62 M80, multiple shot).
b. Blast Resistance: Level is highly dependent on size and mounting technique. Non-linear analysis, shock tube testing or arena testing is required if blast resistance is required.

4. Model WAFV-N-B39:

a. Ballistic Resistance: 7.62 X 39.
b. Blast Resistance: Level is highly dependent on size and mounting technique. Non-linear analysis, shock tube testing or arena testing is required if blast resistance is required.

5. Model WAFV-N-EX:

a. Ballistic Resistance: Blast-only models will have some inherent ballistic resistance, but laminates designed for blast resistance shall be tested to specific ballistic threats if ballistic resistance is required.
b. Blast Resistance: Engineered to project requirements, 20-50 psi is typical; higher levels available.

6. Frame Construction: Aluminum, thermally broken frame with mitered, sealed and mechanically joined corners and drain holes with exterior weep slots and removable glazing stops.

    a. Frame Depth (without trim): 6.0 inches.
    b. Frame Profile Width: 3.25 inches.
    c. Mounting Technique: M12 or larger bolts, or as engineered to project requirements.

7. Performance:

    a. Air Leakage, ASTM E283, 1.6 psf: <0.10 cfm/ft.
    b. Water Penetration, ASTM E331/E547, 20 psf: Pass.
    c. Dynamic Water Penetration, AAMA 501.1, 15 psf: Pass.
    d. Uniform Load Deflection, ASTM E330, +91 psf / -115 psf: <0.07 inch.
    e. Uniform Load Structural, ASTM E330, +136 psf / -173 psf: <0.03 inch.
    f. Thermal Cycling, AAMA 501.5, 6.2 psf air: 0.06 cfm/sqft; 15 psf water: Pass.
    g. Thermal U-factor, SHGC, CR, VLT, analyzed per NFRC 100, 200, 500; results vary with glazing type.

8. Window System Components: (optional)

    a. Transaction tray (certified as 15 minute FE/BR) with interior lid and stainless steel interior/exterior trim.
    b. Transaction drawer (certified as 15 minute FE/BR) with interior lid and stainless steel interior/exterior trim.
    c. Snap-on interior window trim.
    d. Snap-on exterior window trim.
    e. Blast-rated glazing and anchorage systems (user-defined blast loads).
    f. Sub-frames for installation, pre-drilled and tapped plate-type embeds.
    g. Sub-frames for installation, pre-drilled and tapped tube-type frames.

9. Glazing: Engineered to project requirements. (optional glazing:)

    a. Low-e hardcoats.
    b. Films for RF / IR attenuation.
    c. Tints.
    d. Frits.
    e. High-definition printing.

10. Finish for Frame and Glazing Stops: (optional)

    a. Clear anodizing, 204-R1. (standard).
    b. Clear anodizing, 215-R1.
    c. Color anodizing.
    d. Painted finish, AAMA 2604. (contact Harden for color chart and minimum quantities)
    e. Painted finish, AAMA 2605. (contact Harden for color chart and minimum quantities)

11. Finish for Interior/Exterior Trim: (optional)

    a. Primer and finish coat. (standard, contact Harden for color chart)
    b. Clear anodizing, 204-R1 or 215-R1.
    c. Color anodizing.

d. Painted finish, AAMA 2604. (contact Harden for color chart and minimum quantities)
e. Painted finish, AAMA 2605. (contact Harden for color chart and minimum quantities)
f. Stainless steel cladding.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and site conditions for compliance with requirements for installation tolerances and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install products in strict accordance with manufacturer's instructions and approved submittals. Locate security windows level, plumb, and in proper alignment with adjacent work. Provide installation method suitable for substrate and project conditions:

1. Pre-drilled and tapped plate-type embeds cast into concrete.
2. Pre-drilled and tapped steel tube-type sub-frames bolted into the wall.
3. Pre-drilled and tapped steel tube-type sub-frames welded to the wall structure.

B. Protect adjacent areas against damage; repair or patch damaged areas. Restore damaged finishes so no evidence remains of corrective work.

3.3 ADJUSTING AND CLEANING

A. Clean exposed surfaces using methods acceptable to the manufacturer which will not damage finish.

END OF SECTION

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