

Acrovyn® Doors

Bullet Resistant Doors

Suggested Specifications | Section 08210 (08 14 23)
Impact Resistant Interior Doors (Bullet Resistant)

PART 1- GENERAL

1.1 SCOPE

- A. All labor, material, equipment, and related services necessary to furnish and install Bullet Resistant Acrovyn® Doors with flush faces as shown on the drawings or specified herein.

1.2 RELATED SECTIONS

- A. Related Sections include the following:
 - 1. Division 6 Section 06100 (06 10 00) Rough Carpentry
 - 2. Division 6 Section 06400 (06 40 00) Architectural Woodwork
 - 3. Division 8 Section 08110 (08 11 13) Metal Doors and Frames
 - 4. Division 8 Section 08710 (08 71 00) Finish Hardware

1.3 REFERENCE STANDARDS

- A. ASTM G-21 and ASTM G-22 (Bacteria and Fungal resistance): Provide doors that do not support fungal and bacterial growth when tested in accordance with applicable provisions of ASTM G-21 and ASTM G-22.
- B. ASTM D-543 (Chemical and Stain Resistance): Provide doors that show chemical and stain resistance when tested in accordance with ASTM D-543.
- C. CARB Emission Standards Section 93120.2 (a), California Air Resources Board
- D. GGHC Title EP 4.1 PBT Elimination: Dioxins, Green Guide for Health Care v 2.2 '07
- E. ANSI/BHMA A156.115-W-2006 American National Standard for Hardware Preparation in Wood Doors with Wood or Steel Frames
- F. Underwriters Laboratories #752 Bullet Resistance Testing

1.4 SUBMITTALS

- A. Submit in accordance with Section 01300 (01 30 00)
- B. Product Data: For each type of door, submit manufacturer's data sheets including details of core and edge construction.
- C. Shop Drawings: Submit complete schedule indicating location, size, hardware sets, swing of each door; elevation of each type of door and construction details not covered in product data and other pertinent information. Indicate dimensions and locations of mortises and holes for hardware, fire ratings, and location of cutouts for glass.
- D. Manufacturer's lifetime warranty.

1.5 QUALITY ASSURANCE

- A. Source Limitations: Obtain Bullet Resistant Acrovyn Door Systems flush doors through one source from a single manufacturer.
- B. Quality Standard: Comply with WDMA Industry Standard (I.S. 1A-04 "Architectural Wood Flush Doors").



1. The mechanical properties of the materials in the door are equal to or greater than "Extra Heavy Duty"
2. Tolerances for warp, telegraphing, squareness and prefitting dimensions as per the latest edition of WDMA I.S.1A-04.

1.6 DELIVERY, STORAGE, HANDLING AND SITE CONDITIONS

- A. Deliver, store, protect and handle products under guidelines of WDMA and manufacturer's care and handling instructions.
- B. Package doors individually using foam interleaf and stack on pallet, not exceeding 10 doors per pallet.
- C. Mark each door with opening number used on shop drawings.
- D. Accept doors on site in manufacturer's standard packaging. Inspect for damage.
- E. Do not store doors in damp or wet areas. HVAC systems should be operating and balanced prior to arrival of doors. Acceptable humidity shall be no less than 25% or greater than 55%.
- F. Do not subject doors to extreme conditions or changes in heat, dryness or humidity in accordance with the latest edition of WDMA I.S.1A-04.
- G. Protect doors from exposure to natural and artificial light after delivery.
- H. Doors should be lifted and carried when being moved, not dragged across one another.

1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver store, or install doors until building is enclosed, wet work is complete, and HVAC system is operating and will maintain temperature and relative humidity at occupancy levels during the remainder of the construction period.
- B. HVAC systems should be operating and balanced prior to arrival of doors. Acceptable humidity shall be no less than 25% or greater than 55%. Note: Any claim for warp, bow, twist, or telegraphing may be denied if required humidity requirements are not maintained.

1.8 WARRANTY

- A. Manufacturer's standard form in which manufacturer agrees to repair or replace doors that are deemed defective in materials or workmanship. Conditions are subject to the terms set forth in the manufacturer's warranty.
 1. Solid-Core Interior Doors: provide manufacturer's limited lifetime written warranty guarantee against warp, delamination and defects in materials and workmanship.
 2. Warranty does not apply to exterior applications

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Subject to compliance with all requirements, provide one of the following:
 1. To establish a standard of quality, design and function required, drawings and specifications are based on Construction Specialties, Inc. Acrovyn® Door Systems (800) 416-6586 - no substitutions.

2.2 MATERIALS

A. Door Construction

1. Bullet Resistant NON-FIRE RATED interior doors conforming to UL 752 & WDMA I.S.1A-04 and the following:
 - a. Thickness: 1 3/4" (+/-1/16")
 - b. Core: Laminated and fully bonded multi-layer ballistic core. Constructed with two layers of UF free particleboard and a center of multilayer woven ballistic grade fiberglass.
 - c. Crossbanding: High Density Fiberboard (HDF)
 - d. Door Stiles: 1/2" thick prior to factory sizing. Solid and fixed.
 - e. Door Edges: engineered PVC-free Acrovyn edges with rounded/radiused corners, bonded to core.
 - f. Profile of edge covers shall be a minimum height/thickness of 3/4" for maximum durability and ease of replacement.
 - g. Bullet resistant doors are constructed using components that are equal to or greater than those in Extra Heavy Duty doors.
2. Must specify Bullet Resistance Protection Level required:
 - a. Level 1 [or]
 - b. Level 2 [or]
 - c. Level 3
3. All Pairs require a CS bullet resistant metal edge/astragal.

B. Door Faces & Edges:

1. Door faces to be engineered PVC-free Acrovyn with standard Suede finish, Acrovyn Woodgrains & Brushed Metals or optional Microtexture where available: _____ [Acrovyn color # and name and Microtexture name (if applicable)]
 - a. [or] "Acrovyn by Design". Imbedded image (not surface printed) to provide maximum durability and impact resistance. PVC-free. For a specific image/design refer to the Finish Schedule.
2. Face material base color must be integral throughout to eliminate discoloration caused by scratching.
3. Face Veneer Wear Index - Abrasion Resistance Testing - ASTM D4060-90: 28,000 cycles to prove out resistant to scuffing and scratching.
4. Face Veneer Impact Resistance - ASTM D-4226: 86 in/lb. (99.08kg/cm³) to confirm impact resistance of face finish.
5. Edges to be engineered PVC-free Acrovyn containing no persistent bio-accumulative toxicants (PBTs): _____ [Insert finish # and finish name]
6. Door edges shall be exclusive of fasteners to improve appearance.
7. Edges must be flush with face of door thus eliminating raised edges that could be torn off.

C. Adhesives

1. Crossbanding to core adhesives shall be waterproof urea formaldehyde-free Type I to improve structural integrity of door.
2. Door faces are to be applied to the crossbanded core using waterproof urea formaldehyde-free Type I to eliminate delamination.

2.3 FABRICATION, GENERAL

- A.** Doors shall be pre-fit and beveled at the factory to fit the openings to reduce handling and onsite labor costs. Prefit tolerances shall be in accordance with the requirements of WDMA I.S.1A-04, latest edition.
- B.** Coordinate measurements of hardware mortises in metal frames. Contractor or door distributor to verify dimensions and alignment before factory machining.
- C.** Factory machine doors for hardware that is not surface applied. Comply with final hardware schedules, door frame shop drawings, and hardware templates.
- D.** Light openings to be cut by the manufacturer ONLY.

PART 3 - INSTALLATION

3.1 EXAMINATION

- A.** Inspect all doors prior to hanging. Repair noticeable marks or defects that may have occurred from improper storage or handling. Field repairs and touchups are the responsibility of the installing contractor upon completion of the initial installation. Field touchup shall include repair of job inflicted marks and final cleaning of finished doors.
- B.** Examine door frames and verify that they comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.
- C.** Adjust frames to plumb condition before door installation. Tolerances for warp, squareness and pre-fitting dimensions shall be as per latest edition of WDMA I.S.1A-04.
- D.** Do not install doors in frame openings that are not plumb or are out of tolerance for size or alignment.
- E.** Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A.** Handle doors in accordance with recommendations of WDMA I.S.1A-04 "Care and Installation at Job Site."
- B.** Condition doors to average temperature and humidity in area of installation for not less than 48 hours prior to installation.
- C.** Install doors to comply with manufacturer's written instructions, referenced quality standard and as indicated.
- D.** Reseal exposed tops and bottom rails of any doors that required site alteration with an approved wood sealer.
- E.** Hardware installation: See Division 8 Section "Door Hardware".
- F.** Clean prefinished doors with a rag in concert with water or household cleaners such as Simple Green[®], Formula 409[®], or equivalent. Following use of the cleaner, the cleaned surface should be "rinse wiped" with clean water and wiped dry to remove any remaining residue.
- G.** Additional Bullet Resistant Door Installation Precautions:
 - 1.** Bullet Resistant doors are extremely heavy. Door frames, hinges, pivots all need to be designed to handle the weight of the door.
 - 2.** Doors must be picked and placed - never slide on any type of surface.

3. All penetrating screws need to be pre-drilled the entire depth of the screw using the same size drill as would be normally used for pre-drilling hardwoods.
4. Firmly seat all screws using care to not over tighten.
5. All drilling operations should be conducted using slow speeds. The ballistic material is designed to absorb energy. The more energy you impart on the material the more it will convert that energy to heat which in turn will destroy tooling.
6. For best results, all penetrations into the faces of the door should be cut at the factory.
7. Always wear a suitable respirator, long sleeves, gloves, and eye protection when drilling the ballistic material. Vacuum up and dust created during drilling. Never blow the dust with compressed air.

3.3 ADJUSTING

- A. Operating: Re-hang or replace doors that do not swing or operate freely.
- B. Replace doors that are damaged or do not comply with requirements. Doors may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION