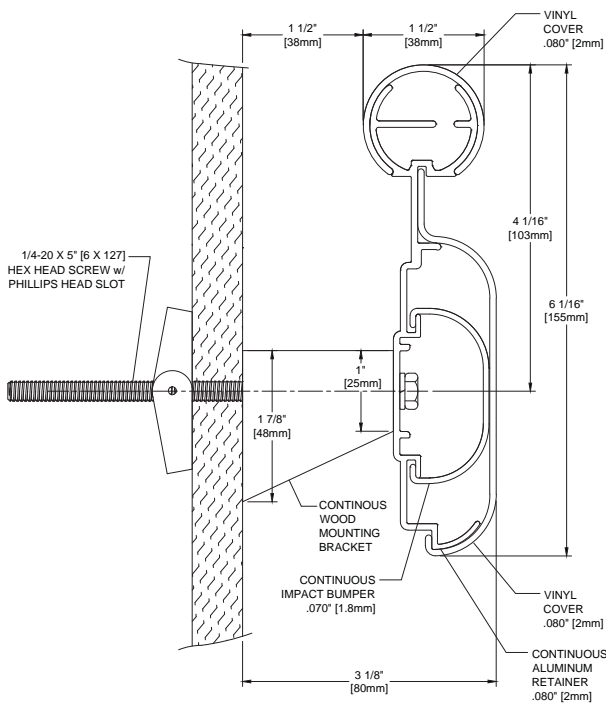


# 3110VV/3110VFFV/3110FVV/3110FVFFV Handrail with Ligature Resistant\*Bracket

## Suggested Specification



- 6-1/8" (155mm) height x 1-1/2" (38mm) round gripping diameter, extends 3-1/8" (79mm) from the wall
  - 3110VV - Solid color handrail and integrated wall guard
  - 3110VFFV - Solid color handrail and Faux-wood pattern integrated wall guard with black reveals for returns and corners.
  - 3110FVV - Faux-wood pattern handrail and solid color integrated wall guard with black reveals for returns and corners.
  - 3110FVFFV - Faux-wood pattern handrail and faux-wood pattern integrated wall guard with black reveals for returns and corners.
  - .080" (2mm) thick, scratch and stain resistant rigid vinyl cover
  - Solid wood ligature resistant\* bracket.
  - Mounted on a sturdy .080" (2mm) thick, continuous aluminum retainer
  - Manufactured in 12' (3.66m) standard lengths
  - Meets ADA and ANSI criteria
  - Easy installation, clean-up and maintenance
  - All mounting fasteners are included with each order
  - Meets the most rigorous standards and criteria of chemical emissions as prescribed by the GREENGUARD Environmental Institute
  - Has been tested and meets GREENGUARD Environmental Institute's and the state of California's requirements for low emitting products as tested by Air Quality Sciences
  - Has been tested and meets the GREENGUARD Children & School chemical emissions levels
- \* While these products are designed for behavioral health applications, they do not guarantee patient safety.



IPC.2156/REV.1

# 3110VV/3110VfV/3110FVV/3110FfV Handrail with Ligature Resistant\*Bracket

## Suggested Specification

### PART 1 GENERAL

#### 1.01 SUMMARY

A. Handrail systems for pedestrian safety and wall protection

#### 1.02 SECTIONS INCLUDES

A. 3110VV/3110VfV/3110FVV/3110FfV Round handrail system with integrated wall guard and ligature resistant\* bracket.

#### 1.03 REFERENCES

- A. American National Standards Institute (ANSI)
- B. American Society for Testing and Materials (ASTM)
- C. American with Disabilities Act (ADA)
- D. National Building Code of Canada (NBC)
- E. National Fire Protection Association (NFPA)
- F. Society of Automotive Engineers (SAE)
- G. Underwriters Laboratory (UL)
- H. Underwriters Laboratory of Canada (ULC)
- I. Uniform Building Code (UBC)

#### 1.04 SYSTEM DESCRIPTION

A. Performance Requirements: Provide handrail system with integrated impact bumpers that conform to the following requirements of regulatory agencies and the quality control of IPC Door and Wall Protection Systems, InPro Corporation.

1. Fire Performance Characteristics: Provide UL Classified impact bumper conforming with NFPA Class A fire rating. Surface burning characteristics, as determined by UL-723 (ASTM E-84), shall be flame spread of 10 and smoke development of 350 - 450. Provide ULC (Canada) listed impact bumper conforming to the requirements of the National Building Code of Canada 2010, Subsection 3.1.13. Surface burning characteristics, as determined by CAN/ULC-S102.2, shall be flame spread of 15 and smoke developed of 35.
2. Self-Extinguishing: Provide impact bumpers with a CC1 classification, as tested in accordance with the procedures specified in ASTM D-635-74, Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position, as referenced in UBC 52-4-1988.
3. Impact Strength: Provide rigid vinyl profile materials that have an impact strength of 30.2 ft-lbs/inch of thickness as tested in accordance with the procedures specified in ASTM D-256-90b, Impact Resistance of Plastics.
4. Chemical and Stain Resistance: Provide impact bumpers that show resistance to stain when tested in accordance with applicable provisions of ASTM D-543.
5. GREENGUARD Certified: Provide GREENGUARD Certified material. Profiles shall meet the requirements of GREENGUARD Certification Standards for Low-Emitting Products and GREENGUARD Product Emission Standard for Children & Schools.
6. Fungal and Bacterial Resistance: Provide rigid vinyl that does not support fungal or bacterial growth as tested in accordance with ASTM G-21 and ASTM G-22.
7. Color Consistency: Provide thermoplastic components matched in accordance with SAE J-1545 - (Delta E) with a color difference no greater than 1.0 units using CIE Lab, CIE CMC, CIE LCh, Hunter Lab or similar color space scale systems.
8. Code Compliance: Provide handrails that comply with all current ANSI and ADA requirements.

#### 1.05 SUBMITTALS

- A. Product Data: Manufacturer's printed product data for each product indicated in this section.
- B. Detail Drawings: Mounting details with appropriate fasteners for specific project substrates.

C. Samples: Verification samples of handrail, 8" (203mm) long, in full size profiles of each type and color indicated.  
D. Manufacturer's Installation Instructions: Printed installation instructions for each handrail.

#### 1.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in unopened factory packaging to the jobsite.
  - B. Inspect materials at delivery to assure that specified products have been received.
  - C. Store in original packaging in a climate controlled environment away from direct sunlight.
- #### 1.07 WARRANTY
- A. Standard IPC limited lifetime warranty against material and manufacturing defects.

### PART 2 PRODUCTS

#### 2.01 MANUFACTURERS

- A. Acceptable Manufacturer: IPC Door and Wall Protection Systems, InPro Corporation, PO Box 406, Muskego, WI 53150 USA; Telephone 800.222.5556, Fax: 888.715.8407, Internet address: www.inprocorp.com
- B. Substitutions: Not permitted
- C. Provide all handrails and wall protection from a single manufacturer.

#### 2.02 MANUFACTURED UNITS

- A. Handrail
  1. 31100VV Handrail, 6-1/8" (155mm) height x 1-1/2" (38mm) round gripping diameter, system extends 3-1/8" (79mm) from the wall. Integrated vinyl cover, 4" (101mm) high. Inner impact bumper, 2-1/4" (57mm) high.
    - a. Ligature Resistant\* Handrail Bracket: Ligature resistant\* bracket shall be solid wood and continuous behind handrail.
  2. 31100VfV Handrail, 6-1/8" (155mm) height x 1-1/2" (38mm) round gripping diameter, system extends 3-1/8" (79mm) from the wall. Integrated vinyl cover, 4" (101mm) high. Inner impact bumper, 2-1/4" (57mm) high. Wall guard shall have a full wrap faux-wood pattern. Returns and corners include reveals.
    - a. Ligature Resistant\* Handrail Bracket: Ligature resistant\* bracket shall be solid wood and continuous behind handrail.
  3. 3110FVV Handrail, 6-1/8" (155mm) height x 1-1/2" (38mm) round gripping diameter, system extends 3-1/8" (79mm) from the wall. Integrated vinyl cover, 4" (102mm) high. Inner impact bumper, 2-1/4" (57mm) high. Handrail shall have a full wrap faux-wood pattern. Returns and corners include reveals.
    - a. Ligature Resistant\* Handrail Bracket: Ligature resistant\* bracket shall be solid wood and continuous behind handrail.
  4. 3110FfV Handrail, 6-1/8" (155mm) height x 1-1/2" (38mm) round gripping diameter, system extends 3-1/8" (79mm) from the wall. Integrated vinyl cover, 4" (102mm) high. Inner impact bumper, 2-1/4" (57mm) high. Handrail and wallguard shall have a full wrap faux-wood pattern. Returns and corners include reveals.
    - a. Ligature Resistant\* Handrail Bracket: Ligature resistant\* bracket shall be solid wood and continuous behind handrail.
- B. Materials
  - A. Vinyl: Snap-on covers of .080" (2mm) thickness shall be extruded from chemical and stain resistant unplasticized polyvinyl chloride (uPVC) with the addition of impact modifiers. No plasticizers shall be added (plasticizers may aid in bacterial growth). Inner snap-on vinyl impact bumper of .070" (1.8mm) thickness shall be extruded

from chemical and stain resistant unplasticized polyvinyl chloride (uPVC) with the addition of impact modifiers. No plasticizers shall be added (plasticizers may aid in bacterial growth). Accent strips when used shall be of polyvinyl chloride (PVC).

- B. Aluminum: Continuous aluminum retainer of .080" (2mm) thickness shall be fabricated from 6063-T5 aluminum, with a mill finish.
- C. Ligature Resistant\* Handrail Bracket: Ligature Resistant\* bracket shall be milled from kiln dried poplar wood.

#### 2.04 COMPONENTS

- A. Molded returns, inside corners, outside corners and brackets shall be made of injection molded thermoplastic.
  - B. Molded reveals shall have a smooth finish and shall be black.
  - C. Ligature Resistant\* Handrail Bracket: Ligature resistant\* bracket shall be milled from poplar wood.
  - D. Fasteners: All mounting systems accessories appropriate for substrates indicated on the drawings shall be provided.
- #### 2.05 FINISHES
- A. Vinyl Covers: Color of the vinyl cover to be selected, by the architect, from the IPC finish selection. Surface shall have a pebble texture.
  - B. Inner Impact Bumper: Color of the inner impact bumper to be black.
  - C. Molded Components: Returns, inside corners, outside corners and brackets shall be of a color and texture matching the vinyl covers.
  - D. Thumb insert accent strip: Color of the accent strip to be selected, by the architect, from the IPC finish selection.
  - E. Ligature Resistant\* Handrail Bracket: Ligature resistant\* handrail bracket shall be painted black and have a smooth finish.

### PART 3 EXECUTION

#### 3.01 INSTALLERS

A. Installer should be familiar with the installation of fine finished wood products.

#### 3.02 EXAMINATION

- A. Examine areas and conditions in which handrail will be installed.
  1. Complete all finishing operations, including painting, before beginning installation of handrail system materials.
  2. Wall surface shall be dry and free from dirt, grease and loose paint.

#### 3.03 PREPARATION

A. General: Prior to installation, clean substrate to remove dust, debris and loose particles.

#### 3.04 INSTALLATION

A. General: Locate the handrail as indicated on the approved detail drawing for the appropriate substrate and in compliance with the IPC installation instructions. Install handrail level and plumb at the height indicated on the drawings.

#### 3.05 CLEANING

A. At completion of the installation, clean surfaces in accordance with the IPC clean-up and maintenance instructions.

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