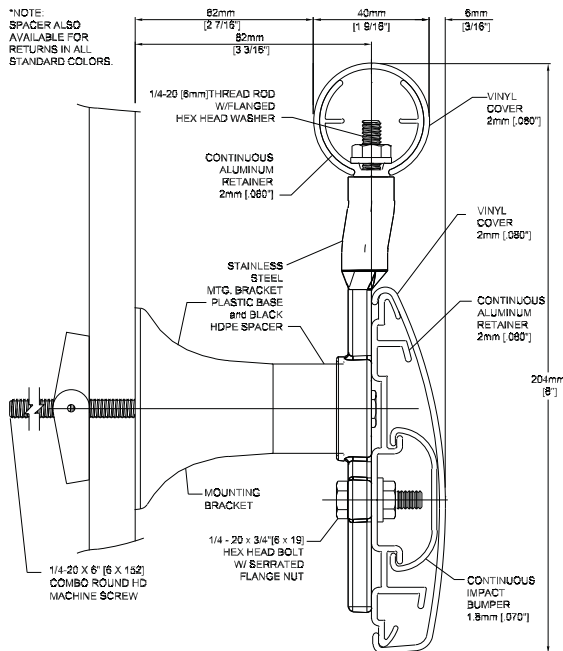


# 3400VV/3400FV/3400VFV/3400FVV

## Handrail



- 204mm (8") height x 40mm (1-9/16") gripping diameter, extends 108mm (4-1/4") from the wall
- 3400 Handrail employs a Woodland full wrap for the warmth of wood grain; choose from seven patterns. Includes black reveals for returns and corners.
- Lower wall guard is mounted on a sturdy 2mm (.080") thick, continuous aluminum retainer
- Handrail and wall guard covered with a scratch and stain resistant, .2mm (.080") thick vinyl cover
- 1.8mm (.070") continuous impact bumper
- Meets ADA and ANSI criteria
- 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



IPC.2144/REV.2

# 3400VV/3400FVfV/3400VFV/3400FVV

## Handrail

### PART 1 GENERAL

#### 1.01 SUMMARY

- A. Handrail systems for pedestrian safety and wall protection

#### 1.02 SECTIONS INCLUDES

- A. 3400VV/FVfV Handrail.

#### 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 com-

ponents 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.

#### 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. 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
- 3400VV 204mm (8") height x 40mm (1-9/16") gripping diameter, system extends 108mm (4-1/4") from the wall. Integrated vinyl cover, 127mm (5") high. Inner impact bumper, 48mm (1-7/8") high. H>Returns and corners include reveals.
  - 3400FVfV 204mm (8") height x 40mm (1-9/16") gripping diameter, system extends 108mm (4-1/4") from the wall. Integrated vinyl cover, 127mm (5") high. Inner impact bumper, 48mm (1-7/8") high. Handrail and/or wall guard shall have a full wrap woodgrain pattern. Returns and corners include reveals.
  - Options: Curved handrail, specify radius. Minimum radius - .91m (3 feet)

#### 2.03 MATERIALS

- A. Vinyl: Snap-on covers of 2mm (.080") 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. Woodland patterns when used shall be of polyvinyl chloride (PVC).

- B. Aluminum: Continuous aluminum retainer of 2mm (.080") thickness shall be fabricated from 6063-T5 aluminum, with a mill finish.

- C. Stainless Steel: Brackets shall be made of type 304 stainless steel with a plastic base.

#### 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. 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. Handrail surface shall have a velvet finish. Wall guard covers shall have a pebble texture.  
B. Inner Impact Bumper: Color of the inner impact bumper to be black.  
C. Molded Components: Returns, inside corners and outside corners shall be of a color and texture matching the covers.  
D. Molded Bracket: Shall be of a solid color to match or compliment the vinyl covers. Surface shall have a velvet texture.  
E. Stainless Steel: Exposed surfaces of brackets shall be #4 satin finish.

### PART 3 EXECUTION

#### 3.01 EXAMINATION

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

#### 3.02 PREPARATION

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

#### 3.03 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.

#### 3.04 CLEANING

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