



Valued Quality. Delivered.

PRODUCT EVALUATION

REPORT NUMBER: 102203014ST-001
ORIGINAL ISSUE DATE: July 13, 2015
LAST REVISION DATE: Rev. 1, July 27, 2015

EVALUATION CENTER

Intertek Testing Services NA, Inc.
16015 Shady Falls Road
Elmendorf, TX 78112
USA

RENDERED TO

Hewlett-Packard Company
16399 West Bernardo Drive
Mail Stop 8-60
San Diego, CA 92127
USA

PRODUCT EVALUATED

HP PVC-free Durable Smooth Wall Paper

EVALUATION PROPERTY

2013 California Building Code, Chapter 8, Section 803.2, Thickness Exemption

This evaluation is being conducted solely for the above referenced project. Due to the variables that exist from project to project and the fact that each evaluation requires review of the most current existing data and information, this evaluation is not to be used as justification for any other opinion nor used for any other project, without the express written consent of Intertek. This report should serve as Intertek's opinion regarding the use of the product in the conditions described herein. The materials used on the project, which are applied in compliance with Intertek Design Listings, must bear the Intertek Listing Mark. All certified products must be installed in accordance with the details contained in Intertek's *Directory of Listed Building Products*.

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to copy or distribute this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.



1 Table of Contents

1	Table of Contents	2
2	Introduction	3
3	Product and Assembly Description	3
3.1.	Product and/or Assembly Description:	3
3.2.	Product and/or Assembly Traceability:	3
3.3.	Product and/or Assembly Certification:	4
4	Reference Documents	4
5	Evaluation Method	4
6	Conclusion	5
7	APPENDIX	6
8	LAST PAGE & REVISION SUMMARY	21

2 Introduction

Intertek Testing Services NA, Inc. (Intertek) is conducting a product evaluation for Hewlett-Packard Company (HP), of its HP PVC-free Durable Smooth Wall Paper product. The Product Evaluation is being conducted to determine whether the HP PVC-free Durable Smooth Wall Paper will meet compliance provisions of the 2013 California Building Code, Chapter 8 – Interior Finishes; specifically, the “Thickness Exemption” in Section 803.2.

3 Product and Assembly Description

3.1. Product Description:

The following tabled information has been extracted from an HP Data Sheet for the HP PVC-free Durable Smooth Wall Paper. The product is manufactured without an adhesive backing for application to code-complying interior walls in accordance with applicable installation instructions (see Appendix 7 documents).

HP PVC-free Durable Smooth Wall Paper For the latest ICC profiles/paper presets, please visit HPLMedia.com/paperpresets .	
Weight	290 g/m ² per TAPPI T-410 Test Method
Thickness	431 microns/17 mil per TAPPI T-411 Test Method
Opacity	94% per TAPPI T-425 Test Method
Finish	Matte
Operating temperature	15 to 35° C / 59 to 95° F
Operating humidity	30 to 80% RH
Display permanence (Indoor home or office)	Over 20 years, away from direct sun with HP Latex Inks [®]
Display permanence (Commercial in-window)	Over 3 years, unlaminated with HP Latex Inks [®]
Water resistance	Water resistant with HP Latex Inks [®]
Flame resistance	Class A rated flame-spread material ⁷
Dry time	Instant dry
Shelf life	1 year, unopened in original packaging
Storage temperature	10 to 40° C / 50 to 104° F
Storage humidity	20 to 80% RH
Country of origin	Product of China

3.2. Product Assembly Traceability:

Not applicable to this product evaluation.

3.3. Product Certification:

Hewlett-Packard Company is an Intertek testing client but not an Intertek Listing and Follow-up Service client, which means HP PVC-free Durable Smooth Wall Paper is not an Intertek certified product and Intertek does not have any Listing for HP PVC-free Durable Smooth Wall Paper contained in *Intertek's Directory of Listed Building Products*.

Authorities Having Jurisdiction (AHJ) should be consulted in all cases as to the particular requirements covering the installation and use of Intertek certified products, equipment, systems, devices and materials. The AHJ should be consulted before construction. Fire resistance assemblies and products are developed by the design submitter and have been investigated by Intertek for compliance with specific requirements. The published information (product and design listings) cannot always address every construction nuance encountered in the field. When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the test standard referenced for each Intertek certified product. The test standard includes specifics concerning alternate materials and alternate methods of construction. Only products which bear Intertek's Mark are considered as certified. The appearance of a company's name or product in Intertek Directory of Listed Building Products does not in itself assure that products so identified have been manufactured under Intertek's Follow-Up Service. Only those products bearing the Intertek Mark should be considered to be Listed and covered under Intertek's Follow-Up Service. Always verify the Mark on the product before using it.

4 Reference Documents

As part of this evaluation, Intertek has directly or indirectly used the following referenced documents:

- *Data Sheet | HP PVC-free Durable Smooth Wall Paper*, Hewlett-Packard Development Company, Brand Management Group, December 2014 (see Appendix 7 documents);
- *HP PVC-free Durable Wall Paper – Installation tips and tricks*. Hewlett-Packard Development Company, Brand Management Group, May 2015 (see Appendix 7 documents).
- *Matrix Adoption Table (BSC, SFM, HCD, DSA, OSHPD), Chapter 8 – Interior Finishes*. 2013 California Building Code (page 301) (see Appendix 7 documents);
- *Chapter 8 – Interior Finishes*. 2013 California Building Code (pages 303-308) (see Appendix 7 documents); and

5 Evaluation Method

Compliance of HP PVC-free Durable Smooth Wall Paper to Section 803.2 (Thickness Exemption) of the 2013 California Building Code

Hewlett-Packard Company manufactures a product, HP PVC-free Durable Smooth Wall Paper, having a nominal thickness of 0.46 mm. The product is applied directly to the surface of existing walls.

The 2013 California Building Code, Section 803.2 provide for the following:

“803.2 Thickness Exemption. Materials having a thickness of less than 0.036 inch (0.9 mm) applied directly to the surface of walls or ceilings shall not be required to be tested.”

The thickness of the HP PVC-free Durable Smooth Wall Paper is a nominal 0.46 mm and is approximately one half the maximum thickness allowed under the 2013 California Building Code's Section 803.2, Thickness Exemption.

Consequently, HP PVC-free Durable Smooth Wall Paper is not required to be tested under the provisions of the 2013 California Building Code, and is permitted for use by the various State Agencies (for example: BSC, SFM, HCD, DSA, OSHPD) adopting the applicable provisions of the 2013 California Building Code.



6 Conclusion

Intertek has conducted a product evaluation for Hewlett-Packard, Inc., of its HP PVC-free Durable Smooth Wall Paper product. The Product Evaluation was conducted to determine whether the HP PVC-free Durable Smooth Wall Paper will meet compliance provisions of the 2013 California Building Code, Chapter 8 – Interior Finishes, specifically the “Thickness Exemption” in Section 803.2.

Based on the information contained and referenced herein, it is Intertek’s professional judgment based on sound engineering principles that the following is true:

- HP PVC-free Durable Smooth Wall Paper product meets the “Thickness Exemption” criteria of 2013 California Building Code, Chapter 8 – Interior Finishes, Section 803.2.
- HP PVC-free Durable Smooth Wall Paper is not required to be tested under the provisions of the 2013 California Building Code Chapter 8 – Interior Finishes, Section 803.2, and is permitted for use by the various State Agencies (for example: BSC, SFM, HCD, DSA, OSHPD) adopting the applicable provisions of the 2013 California Building Code.

INTERTEK TESTING SERVICES NA, INC.

Reported by: 
John L. Mulder
Staff Engineer

Reviewed by: 
Karl Kooner
Director, Evaluation Services NA



7 APPENDIX

HP Data Sheet for the HP PVC-free Durable Smooth Wall Paper

Data sheet

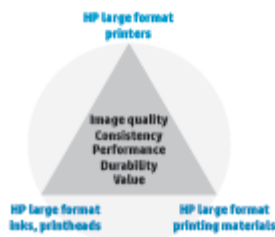


HP PVC-free Durable Smooth Wall Paper



The HP large format printing system—the complete solution

HP large format printers, Original HP inks and printheads, and Original HP printing materials are designed to work together as a system to provide reliable, consistent results with every print.



What is a "Type II" wallcovering?

Type II wallcoverings are compliant with a durability standard for commercial wallcoverings. Criteria include scrubability, stain resistance, flame spread, colorfastness, abrasion resistance, and more. Testing is conducted according to the Type II ASTM F793 standard and test procedures. The American Society for Testing Materials (ASTM) established the standard with input from the Wallcovering Association. Type II is often a requirement when specifying wallcoverings.

Differentiate with durable PVC-free¹ smooth wall murals

Set your business apart with environmental certifications

Help your customers define interiors with durable, colorful, creative wall decorations that last—with scrub- and scratch-resistant performance. Prints produced with HP Latex Inks enable healthier printing² and more sustainable printing. Odorless displays are UL GREENGUARD GOLD Certified³ using this FSC®-certified paper.⁴

Be productive—durable prints are easy to install and remove

Maintain high productivity and offer your customers a durable, easy-to-use solution. This wall paper goes up with common adhesives and installation techniques. Prints produced with HP Latex Inks on HP PVC-free Durable Smooth Wall Paper are Type II (ASTM F793) compliant⁵ for durability characteristics—ideal for use in environments subject to wear and tear.

Boldly define interior spaces—see the ColorPRO difference⁶

See high-impact graphics with an extended range of colors. Engineered with ColorPRO Technology to deliver color excellence, this digital wall decoration solution from HP delivers professional quality and striking results.

Target customers	Applications	Benefits	
		Compliance with international wallcovering industry standards	Environmental and health certifications
Print service providers	Wall murals	Type II wallcovering, ASTM F793 compliant for durability characteristics ⁵	REACH compliant ⁹
	Creative design applications	Class A rated flame-spread performance material ⁷	PVC-free ¹ alternative, easier to dispose of than most PVC-based substrates
		Over 20 years indoor display permanence ⁸	FSC®-certified paper ⁴
		Wide range of textures (embossable)	UL GREENGUARD GOLD Certified prints ³
		Works with common primers, pastes, finishing, and installation methods	Compliant with CHPS Section 01350 specification ¹⁰
			Earn LEED credits ¹¹
			Highly mold and mildew resistant ¹²

Data sheet | HP PVC-free Durable Smooth Wall Paper

Technical specifications



HP PVC-free Durable Smooth Wall Paper

For the latest ICC profiles/paper presets, please visit HPLFMedia.com/paperpresets.

Weight	290 g/m ² per TAPPI T-410 Test Method			
Thickness	431 microns/17 mil per TAPPI T-411 Test Method			
Opacity	94% per TAPPI T-405 Test Method			
Finish	Matte			
Operating temperature	15 to 35° C / 59 to 95° F			
Operating humidity	30 to 80% RH			
Display permanence (Indoor home or office)	Over 20 years, away from direct sun with HP Latex inks ¹			
Display permanence (Commercial in-window)	Over 3 years, unilluminated with HP Latex inks ¹			
Water resistance	Water resistant with HP Latex ink ⁴			
Flame resistance	Class A rated flame-spread material ⁷			
Dry time	Instant dry			
Shelf life	1 year, unopened in original packaging			
Storage temperature	10 to 40° C / 50 to 104° F			
Storage humidity	20 to 80% RH			
Country of origin	Product of China			
Ordering information	Product numbers	Roll sizes	UPC codes	Region
	E4J52A	1057 mm x 30.5 m (42 in x 100 ft)	84842014563	Worldwide
	E4J53A	1372 mm x 30.5 m (54 in x 100 ft)	84842014570	Worldwide

Warranty
HP large format printing materials are free from defects in materials and workmanship. For warranty statement, please see HPLFMedia.com/largeformatwarranty. To obtain warranty service, please contact Brand Management Group customer support at HPLFMedia.com/brandcontactus.



Note: Not all FSC®-certified products are available in all regions.

- Chemical analysis demonstrated elemental chlorine to be at or below 200 ppm. Presence of chlorine is attributed to residual chlorine used in the papermaking process, and not due to the presence of PVC.
- Based on a comparison of HP Latex ink technology to competitors with leading market share as of December, 2013 and analysis of published MSDS/SDSs and/or internal evaluation. Performance of specific attributes may vary by competitor and ink technology/formulation.
- With HP Latex inks, UL GREENGUARD GOLD Certification to UL 2818 demonstrates that products are certified to UL's GREENGUARD standards for low chemical emissions into indoor air during product usage. For more information, visit ul.com/gg or greenprint.org.
- HP trademark license code FSC®-C017543, see fsc.org. Not all FSC®-certified products are available in all regions.
- HP PVC-free Durable Smooth Wall Paper is compliant with the ASTM F793 standard (Type II) when printed at full coverage using Original HP 792 Latex inks on the HP Latex 200 Printer series or HP 831 Latex inks on the HP Latex 300 Printer series or HP LX510 Latex inks on the HP Latex 800 Printer series or HP 881 Latex inks on the HP Latex 3000 Printer. To avoid staining in unprinted areas, HP recommends cleaning the area within 30 minutes of any spill using a non-abrasive sponge with warm water and a mild dishwashing detergent.
- Prints on HP PVC-free Durable Smooth Wall Paper with Original HP 831 Latex inks on the HP Latex 300 Printer series or HP 792 Latex inks on the HP Latex 210/260/280 Printers have a color gamut ≥ 43% CIE Lab units. Type II wallcovering compliant with ASTM F793 for durability characteristics.
- Tested to ASTM E84-13a for burning characteristics. Rated per section 803.1.1 of the International Building Code.
- With HP Latex inks, Display permanence rating for interior displays/away from direct sunlight, by HP Image Permanence Lab. See HPLFMedia.com/04displaypermanence.
- This product does not contain substances listed as SVHC (155) per Annex XIV of the EU REACH directive published as of June 18, 2014 in concentrations exceeding 0.1%. To determine the status of SVHC in HP products, see the HP REACH Declaration published at HP.DirectiveProductsandConsumableSupplies. Logo source: Copyright European Chemicals Agency.
- UL GREENGUARD GOLD Certified prints exceed the Special Environmental Requirements of the Collaborative for High-Performance Schools (CHPS), California Department of Public Health Standard Practice Section 01350, specification for indoor air emissions, and are accepted by Green Globes and Green Guide for Healthcare programs. See chps.org.
- To obtain US LEED credits based on FSC® certification, the builder must purchase HP PVC-free Durable Smooth Wall Paper printed with HP Latex inks from an FSC Chain of Custody certified print service provider. To obtain LEED credits based on UL GREENGUARD GOLD Certification, HP PVC-free Durable Smooth Wall Paper printed with HP Latex inks must be part of a wall system in which all components are UL GREENGUARD GOLD Certified.
- With HP Latex inks, UL GREENGUARD found HP PVC-free Durable Smooth Wall Paper, which is designed with a breathable construction, to be highly mold and mildew resistant using test method GGT.M.PC40 and following the guidelines of ASTM D 6329. See greenprint.org/en/CertificationPrograms/indoorprograms_copy/1/CertificationPrograms_moldmildewProgram.aspx. No products are mold proof. It is uncertain that any material will resist mold or mildew indefinitely.
- Interior in-window display ratings by HP Image Permanence Lab on a range of media including HP printing materials. See HPLFMedia.com/04displaypermanence.
- Water resistance testing by HP Image Permanence Lab on a range of media including HP media; water resistance is comparable to eco- and low-solvent inks when printed on water resistant substrates. Water resistance testing follows ISO 10935 method. Results may vary based on specific media performance. See HPLFMedia.com/04displaypermanence.

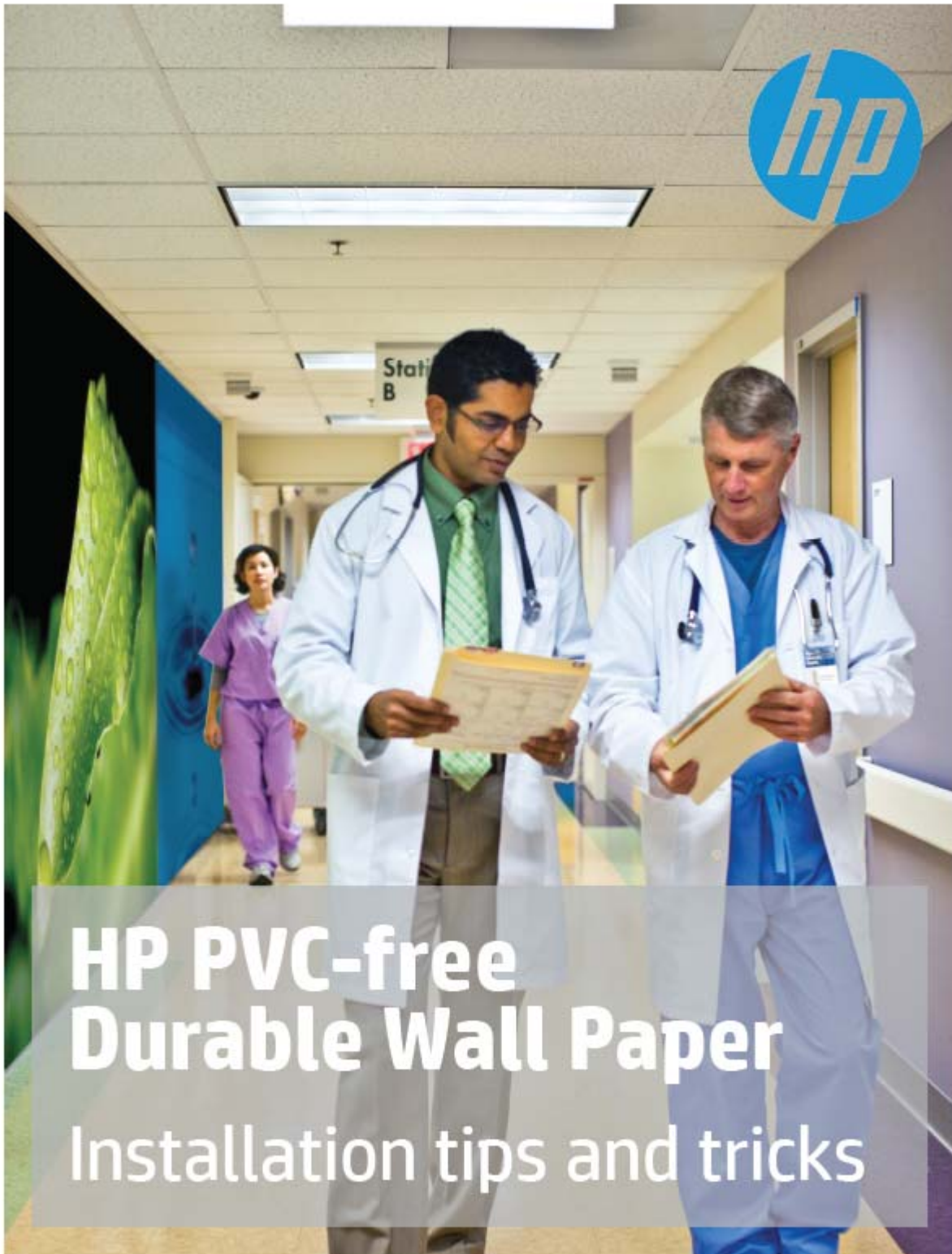
For detailed information on the HP large format printing materials portfolio and to order, see HPLFMedia.com.

© 2014 Hewlett-Packard Development Company. © 2014 Brand Management Group. The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP and BMG shall not be liable for technical or editorial errors or omissions contained herein.

HP is a registered trademark of Hewlett-Packard Company and is used by Brand Management Group on license from Hewlett-Packard Company.
December 2014



HP PVC-free Durable Wall Paper – Installation tips and tricks



HP PVC-free Durable Wall Paper

Installation tips and tricks

Brochure | HP PVC-free Durable Wall Paper installation tips and tricks



In addition to the instructions below, you may be interested in more detailed information on hanging wall fabric back paper. Please visit <http://www.wallcoveringinstallers.org/wia-university/courses/>.

HP PVC-free Durable Wall Paper installation tips and tricks

This document explains general recommendations for installing HP PVC-free Durable Wall Paper. HP has worked with the following organizations to develop these application instructions:

- Roman Decorating Products, LLC
- Gardner-Gibson, Inc.
- Wallcovering Installers Association (formerly NGPP—National Guild of Professional Paperhangers)

Brochure | HP PVC-free Durable Wall Paper installation tips and tricks

About the product

HP PVC-free Durable Wall Paper is a PVC-free¹ wallcovering with a textile scrim backing, intended for durable, colorful, creative wall decorations that last with scrub- and scratch-resistant performance. Prints produced with HP Latex Inks enable healthier printing² and more sustainable printing. Odorless displays are UL GREENGUARD GOLD Certified³ using this FSC®-certified paper.⁴

Prints produced with HP Latex Inks on HP PVC-free Durable Wall Paper are Type II (ASTM F793) compliant⁵ for durability characteristics—ideal for use in environments subject to wear and tear.

Pre-installation

Recommended tools

1. Short-knap rollers
2. Soft plastic smoother and/or brush smoother
3. Steel putty knife
4. Olfa rotary cutter, box-style cutter, or similar
5. Seam roller
6. Non-abrasive soft cellulose sponge

Other: drop cloths, buckets, pasting machine, paint trays, plastic bags for booking, table, etc.

Allow the prints and adhesive to settle in under clean, dry, and protected conditions between 65 to 75° F (18 to 24° C) and 40-60% RH for at least 8 hours or until the prints adjust to the environment. Inspect all materials prior to installation: print image and size of panels is correct, panel numbering and sequence is correct, color matching of panels is acceptable, print surface is free from defects, and edges have enough space for overlap, trimming, and cutting.

Do not crease the material prior to or during installation, as the creases may not disappear.

Ensure the walls are smooth, clean, dry, and free of mold, mildew, grease, or other stains. On new walls, drywall joints should be taped, mudded, and sanded smooth. Remove any nailheads, nicks, gouges, and other surface imperfections. Allow primers to dry thoroughly before hanging the wallcovering. For best results, old wallcoverings should be removed, and residual moisture content of the wall should be < 4%.

Follow priming instructions per the table below, before pasting. Allow adequate drying time before applying paste and wallcovering.

Recommended primers and pastes (references for products available in the Americas)

Gardner Gibson

Primer	Paste	Other instructions
<ul style="list-style-type: none"> • Dynamite 221 Acrylic Wallcovering Primer or • Dynamite 222 White Acrylic Wallcovering Primer or • Equivalent primer that contains a mold inhibitor <p>Do not use oil-based or alkylid primer sealer</p>	<ul style="list-style-type: none"> • Dynamite 234 Premium Heavy Duty Clear Strippable • Dynamite 111 Heavy Duty Clay Non-Strippable • Dynamite 433 Heavy Duty Clay Strippable 	<p>Use short nap/foam rollers for primer and paste</p> <p>Application rates per installer recommendation</p>

Roman Décor

Primer	Paste	Other instructions
<ul style="list-style-type: none"> • Roman PRO-377 Ultra Primer—two coats, allow each to dry overnight <p>(If using Roman adhesive products on an existing wall, first seal with one coat of Roman Rx-35/PRO-999 before priming, and allow to dry overnight)</p>	<ul style="list-style-type: none"> • Roman PRO-888 Ultra Clear Adhesive • Roman PRO-774 Strippable Clay Adhesive 	<p>Primer application rate 400-450 ft²/gal, recommend allowing 24 hrs at room temperature prior to pasting</p> <p>Paste applied with 9-inch roller and 3/8-inch knap</p> <p>Application rate per installer recommendation</p>

- As used by third-party installation:
1:1 mix of Zinsser 123/Guardz primer and Roman PRO-770 adhesive

Brochure | HP PVC-free Durable Wall Paper Installation tips and tricks

Installation/application

Make sure the wall is cleaned, prepped, and primed before attempting to install pasted wallcovering.

Optimum installation conditions are between 65 and 75° F (18 to 24° C) and 40-60% RH. For higher temperatures and relative humidities, allow more time for primer and paste coats to dry.

Lay out the area to be covered as appropriate for the image or wallcovering to be hung. Double check the pattern, color, and sequence numbering of panels to ensure it is correct.

Apply an even coat of adhesive to the backing of the wallcovering using a brush, roller, or pasting machine. Paste-the-wall is not a recommended application. When pasting several strips in advance, booking is recommended to ensure proper wetting of the backing. Fold each end toward the middle, pasted sides together, aligning the edges carefully to prevent the paste on the edges from drying out.

Book the strips for a minimum of 5-10 minutes. Do not crease the wallcovering, and avoid stacking multiple booked strips as the added weight could cause creasing.

Install wallcovering using a plastic wallcovering smoother, working out air pockets or bubbles. Stop the installation if there is a question of panel color matching, and contact the print service provider.

Remove excess paste immediately with clean water and a soft cellulose sponge. Use the soft side of the sponge if there is an abrasive side. It will be difficult to remove paste after it starts to dry.

If following an overlapping method, use a minimum of 1 inch but preferably 2 inches.

After the adhesive has begun to set (approximately 20-30 minutes), roll the seams lightly with a seam roller as necessary. Avoid excessive pressure when rolling the seams to avoid squeezing out paste. Keep in mind that although the paste will seem fully dried after approximately 24-48 hours, it may take 1-2 weeks for it to finally settle.

Maintenance and cleaning of installed wallcovering

Cleaning instructions for HP PVC-free durable wall papers

Using the right cleaning solution is important when caring for your HP PVC-free Durable Wallpaper printed with HP Latex Inks. The ideal cleaning product is readily available, safe to use, and effective in removing contamination from the surface without risking damage to the wall paper or printed image. Choosing the wrong cleaner can lead to removal of color in the picture, abrasive damage to the wall paper substrate, or staining.

Examples of recommended general cleaning agents:

- Dawn Dish Soap
- Seventh Generation
- Palmolive Dish Soap
- Joy Dish Soap
- Disinfectants
- Bleach and water
- Ecolab A-456-II

Examples of cleaning agents to avoid (spray cleaners):

- 409
- Shout
- Windex
- Clorox
- Ace

Brochure | HP PVC-free Durable Wall Paper Installation tips and tricks



Using the right cleaning product is critical

How to find the right cleaning product

In general, HP recommends using a solution of water and mild dishwashing soap (1 ounce of mild soap to 1 gallon of water or approximately a 1:100 ratio) and a soft non-abrasive sponge or cloth and gently rub the surface to clean HP PVC-free Durable Wall Paper. Then completely rinse the washed area with clean water and wipe dry. If the surface also needs to be disinfected, HP recommends adding up to one cup of bleach per gallon of water (1:16 ratio) or using a quaternary ammonium-based disinfectant such as Ecolab A-456-II. To identify a mild detergent, look for a "dishwashing" or "hand" soap in liquid form. Please note that the label of "soap" and "detergent" can often mean the same thing, and may be used interchangeably. Carefully inspect the use applications of each cleaner. A better soap for cleaning the wall paper will likely indicate: mild, safe and gentle, does not dry out skin, non-toxic, or "tough on grease while soft on hands." Even better, look for a soap that messages eco, eco-friendly, phosphate-free, additive free, pure, free and clear, etc.

Do not use dishwashing tablets or detergents designed for dishwashing machines. These tablets contain harsh abrasives that can damage your wall paper. Also, stay away from common household cleaners, laundry detergents, solvent-based cleaning agents such as lacquer thinners, nail polish remover, pine oil, or mineral spirits, or multi-surface cleaners which typically have harsh solvents that can remove color from the wall paper. A good rule of thumb is if it comes in a spray bottle or powder, it's best to avoid using it on your wall paper.

- ¹ Chemical analysis demonstrated elemental chlorine to be at or below 200 ppm. Presence of chlorine is attributed to residual chlorine used in the papermaking process, and not due to the presence of PVC.
- ² Based on a comparison of HP Latex Ink technology to competitors with leading market share as of December, 2013 and analysis of published MSDS/SDSs and/or internal evaluation. Performance of specific attributes may vary by competitor and ink technology/formulation.
- ³ With HP Latex inks, UL GREENGUARD GOLD Certification to UL 2818 demonstrates that products are certified to UL's GREENGUARD standards for low chemical emissions into indoor air during product usage. For more information, visit ul.com/gg or greenguard.org.
- ⁴ BMG trademark license code FSC®-C115319, see fsc.org. HP trademark license code FSC®-C017543, see fsc.org. Not all FSC®-certified products are available in all regions. For information about HP large format printing materials, please visit HPLEMedia.com.
- ⁵ HP PVC-free Durable Wall Paper is compliant with the ASTM F793 standard (Type II) when printed at full coverage using Original HP 792 Latex Inks on the HP Latex 200 Printer series or HP 831 Latex Inks on the HP Latex 300 Printer series or HP LX610 Latex Inks on the HP Latex 800 Printer series or HP B81 Latex Inks on the HP Latex 3000 Printer. To avoid staining in unprinted areas, HP recommends cleaning the area within 30 minutes of any spill using a non-abrasive sponge with warm water and a mild dishwashing detergent.



© 2015 Hewlett-Packard Development Company. © 2015 Brand Management Group. The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP and BMG shall not be liable for technical or editorial errors or omissions contained herein.

HP is a registered trademark of Hewlett-Packard Company and is used by Brand Management Group on license from Hewlett-Packard Company.



2013 California Building Code (pages 303-308) – Chapter 8 – Interior Finishes

CHAPTER 8

INTERIOR FINISHES

SECTION 801
GENERAL

801.1 Scope. Provisions of this chapter shall govern the use of materials used as interior finishes, trim and decorative materials.

801.2 Interior wall and ceiling finish. The provisions of Section 803 shall limit the allowable fire performance and smoke development of interior wall and ceiling finish materials based on occupancy classification.

801.3 Interior floor finish. The provisions of Section 804 shall limit the allowable fire performance of interior floor finish materials based on occupancy classification.

[F] 801.4 Decorative materials and trim. Decorative materials and trim shall be restricted by combustibility and the flame propagation performance criteria of NFPA 701, in accordance with Section 806.

801.5 Applicability. For buildings in flood hazard areas as established in Section 1612.3, interior finishes, trim and decorative materials below the elevation required by Section 1612 shall be flood-damage-resistant materials.

801.6 Application. Combustible materials shall be permitted to be used as finish for walls, ceilings, floors and other interior surfaces of buildings.

801.7 Windows. Show windows in the exterior walls of the first story above grade plane shall be permitted to be of wood or of unprotected metal framing.

801.8 Foam plastics. Foam plastics shall not be used as interior finish except as provided in Section 803.4. Foam plastics shall not be used as interior trim except as provided in Section 806.3 or 2604.2. This section shall apply both to exposed foam plastics and to foam plastics used in conjunction with a textile or vinyl facing or cover.

SECTION 802
DEFINITIONS

802.1 Definitions. The following terms are defined in Chapter 2:

EXPANDED VINYL WALL COVERING.

FLAME SPREAD.

FLAME SPREAD INDEX.

INTERIOR FINISH.

INTERIOR FLOOR FINISH.

INTERIOR FLOOR-WALL BASE.

INTERIOR WALL AND CEILING FINISH.

SITE-FABRICATED STRETCH SYSTEM.

SMOKE-DEVELOPED INDEX.

TRIM.

SECTION 803
WALL AND CEILING FINISHES

803.1 General. Interior wall and ceiling finish materials shall be classified for fire performance and smoke development in accordance with Section 803.1.1 or 803.1.2, except as shown in Sections 803.2 through 803.13. Materials tested in accordance with Section 803.1.2 shall not be required to be tested in accordance with Section 803.1.1.

803.1.1 Interior wall and ceiling finish materials. Interior wall and ceiling finish materials shall be classified in accordance with ASTM E 84 or UL 723. Such interior finish materials shall be grouped in the following classes in accordance with their flame spread and smoke-developed indexes.

Class A: = Flame spread index 0-25; smoke-developed index 0-450.

Class B: = Flame spread index 26-75; smoke-developed index 0-450.

Class C: = Flame spread index 76-200; smoke-developed index 0-450.

Exception: Materials tested in accordance with Section 803.1.2.

803.1.2 Room corner test for interior wall or ceiling finish materials. Interior wall or ceiling finish materials shall be permitted to be tested in accordance with NFPA 286. Interior wall or ceiling finish materials tested in accordance with NFPA 286 shall comply with Section 803.1.2.1.

803.1.2.1 Acceptance criteria for NFPA 286. The interior finish shall comply with the following:

1. During the 40 kW exposure, flames shall not spread to the ceiling.
2. The flame shall not spread to the outer extremity of the sample on any wall or ceiling.
3. Flashover, as defined in NFPA 286, shall not occur.
4. The peak heat release rate throughout the test shall not exceed 800 kW.
5. The total smoke released throughout the test shall not exceed 1,000 m³.

803.1.3 Room corner test for textile wall coverings and expanded vinyl wall coverings. Textile wall coverings and expanded vinyl wall coverings shall meet the criteria of Section 803.1.3.1 when tested in the manner intended for use in accordance with the Method B protocol of NFPA 265 using the product-mounting system, including adhesive.

INTERIOR FINISHES

803.1.3.1 Acceptance criteria for NFPA 265. The interior finish shall comply with the following:

1. During the 40 kW exposure, flames shall not spread to the ceiling.
2. The flame shall not spread to the outer extremities of the samples on the 8-foot by 12-foot (203 by 305 mm) walls.
3. Flashover, as defined in NFPA 265, shall not occur.
4. The total smoke released throughout the test shall not exceed 1,000 m³.

803.1.4 Acceptance criteria for textile and expanded vinyl wall or ceiling coverings tested to ASTM E 84 or UL 723. Textile wall and ceiling coverings and expanded vinyl wall and ceiling coverings shall have a Class A flame spread index in accordance with ASTM E 84 or UL 723 and be protected by an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2. Test specimen preparation and mounting shall be in accordance with ASTM E 2404.

803.2 Thickness exemption. Materials having a thickness less than 0.036 inch (0.9 mm) applied directly to the surface of walls or ceilings shall not be required to be tested.

803.3 Heavy timber exemption. Exposed portions of structural members complying with the requirements for buildings of Type IV construction in Section 602.4 shall not be subject to interior finish requirements.

803.4 Foam plastics. Foam plastics shall not be used as interior finish except as provided in Section 2603.10. This section shall apply both to exposed foam plastics and to foam plastics used in conjunction with a textile or vinyl facing or cover.

803.5 Textile wall coverings. Where used as interior wall finish materials, textile wall coverings, including materials having woven or nonwoven, napped, tufted, looped or similar surface and carpet and similar textile materials, shall be tested in the manner intended for use, using the product mounting system, including adhesive, and shall comply with the requirements of Section 803.1.2, 803.1.3 or 803.1.4.

803.6 Textile ceiling coverings. Where used as interior ceiling finish materials, textile ceiling coverings, including materials having woven or nonwoven, napped, tufted, looped or similar surface and carpet and similar textile materials, shall be tested in the manner intended for use, using the product mounting system, including adhesive, and shall comply with the requirements of Section 803.1.2 or 803.1.4.

803.7 Expanded vinyl wall coverings. Where used as interior wall finish materials, expanded vinyl wall coverings shall be tested in the manner intended for use, using the product mounting system, including adhesive, and shall comply with the requirements of Section 803.1.2, 803.1.3 or 803.1.4.

803.8 Expanded vinyl ceiling coverings. Where used as interior ceiling finish materials, expanded vinyl ceiling coverings shall be tested in the manner intended for use, using the product mounting system, including adhesive, and shall comply with the requirements of Section 803.1.2 or 803.1.4.

803.9 Interior finish requirements based on group. Interior wall and ceiling finish shall have a flame spread index not greater than that specified in Table 803.9 for the group and location designated. Interior wall and ceiling finish materials tested in accordance with NFPA 286 and meeting the acceptance criteria of Section 803.1.2.1, shall be permitted to be used where a Class A classification in accordance with ASTM E 84 or UL 723 is required.

803.10 Stability. Interior finish materials regulated by this chapter shall be applied or otherwise fastened in such a manner that such materials will not readily become detached where subjected to room temperatures of 200°F (93°C) for not less than 30 minutes.

803.11 Application of interior finish materials to fire-resistance-rated or noncombustible building elements. Where interior finish materials are applied on walls, ceilings or structural elements required to have a fire-resistance rating or to be of noncombustible construction, they shall comply with the provisions of this section.

803.11.1 Direct attachment and furred construction. Where walls and ceilings are required by any provision in this code to be of fire-resistance-rated or noncombustible construction, the interior finish material shall be applied directly against such construction or to furring strips not exceeding 1 1/4 inches (44 mm), applied directly against such surfaces.

803.11.1.1 Furred construction. If the interior finish material is applied to furring strips, the intervening spaces between such furring strips shall comply with one of the following:

1. Be filled with material that is inorganic or noncombustible;
2. Be filled with material that meets the requirements of a Class A material in accordance with Section 803.1.1 or 803.1.2; or
3. Be fireblocked at a maximum of 8 feet (2438 mm) in every direction in accordance with Section 718.

803.11.2 Set-out construction. Where walls and ceilings are required to be of fire-resistance-rated or noncombustible construction and walls are set out or ceilings are dropped distances greater than specified in Section 803.11.1, Class A finish materials, in accordance with Section 803.1.1 or 803.1.2, shall be used.

Exceptions:

1. Where interior finish materials are protected on both sides by an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.
2. Where interior finish materials are attached to noncombustible backing or furring strips installed as specified in Section 803.11.1.1.

803.11.2.1 Hangers and assembly members. The hangers and assembly members of such dropped ceilings that are below the horizontal fire-resistance rated floor or roof assemblies shall be of noncombustible materials. The construction of each set-out wall and

INTERIOR FINISHES

TABLE 803.9
INTERIOR WALL AND CEILING FINISH REQUIREMENTS BY OCCUPANCY^a

GROUP	SPRINKLERED ^d			NONSPRINKLERED		
	Interior exit stairways, interior exit ramps and exit passageways ^{e, f}	Corridors and enclosure for exit access stairways and exit access ramps	Rooms and enclosed spaces ^g	Interior exit stairways, interior exit ramps and exit passageways ^{e, f}	Corridors and enclosure for exit access stairways and exit access ramps	Rooms and enclosed spaces ^g
A-1 & A-2	B	B	C	A	A ^h	B ^h
A-3 ⁱ , A-4, A-5	B	B	C	A	A ^h	C
B, E, M, R-1	B	C	C	A	B	C
R-4	B	C	C	A	B	B
F	C	C	C	B	C	C
H, L	B	B	C ^j	A	A	B
I-2, I-2.1	B	B	B ^{k, l}	A	A	B
I-3	A	A ^l	B	NP	NP	NP
I-4	B	B	B ^{k, l}	A	A	B
R-2	C	C	C	B	B	C
R-2.1	B	C	C	A	B	B
R-3, R-3.1	C	C	C	C	C	C
S	C	C	C	B	B	C
U	No restrictions			No restrictions		

For SI: 1 inch = 25.4 mm, 1 square foot = 0.0929m².

NP = Not permitted (SFM)

- Class C interior finish materials shall be permitted for wainscoting or paneling of not more than 1,000 square feet of applied surface area in the grade lobby where applied directly to a noncombustible base or over furring strips applied to a noncombustible base and fireblocked as required by Section 803.11.1.
- In other than Group I-2 occupancies in buildings less than three stories above grade plane of other than Group I-3, Class B interior finish for nonsprinklered buildings and Class C interior finish for sprinklered buildings shall be permitted in interior exit stairways and ramps.
- Requirements for rooms and enclosed spaces shall be based upon spaces enclosed by partitions. Where a fire-resistance rating is required for structural elements, the enclosing partitions shall extend from the floor to the ceiling. Partitions that do not comply with this shall be considered enclosing spaces and the rooms or spaces on both sides shall be considered one. In determining the applicable requirements for rooms and enclosed spaces, the specific occupancy thereof shall be the governing factor regardless of the group classification of the building or structure.
- Lobby areas in Group A-1, A-2 and A-3 occupancies shall not be less than Class B materials.
- Class C interior finish materials shall be permitted in places of assembly with an occupant load of 300 persons or less.
- For places of religious worship, wood used for ornamental purposes, trusses, paneling or chancel furnishing shall be permitted.
- Class B material is required where the building exceeds two stories.
- Class C interior finish materials shall be permitted in administrative spaces.
- Class C interior finish materials shall be permitted in rooms with a capacity of four persons or less.
- Class B materials shall be permitted as wainscoting extending not more than 48 inches above the finished floor in corridors and exit access stairways and ramps.
- Finish materials as provided for in other sections of this code.
- Applies when protected by an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.

horizontal fire-resistance rated floor or roof assembly shall be of fire-resistance-rated construction as required elsewhere in this code.

Exception: In Types III and V construction, fire-retardant-treated wood shall be permitted for use as hangers and assembly members of dropped ceilings.

803.11.3 Heavy timber construction. Wall and ceiling finishes of all classes as permitted in this chapter that are installed directly against the wood decking or planking of Type IV construction or to wood furring strips applied directly to the wood decking or planking shall be fire-blocked as specified in Section 803.11.1.1.

803.11.4 Materials. An interior wall or ceiling finish material that is not more than 1/4 inch (6.4 mm) thick shall be applied directly onto the wall, ceiling or structural ele-

ment without the use of furring strips and shall not be suspended away from the building element to which it is applied.

Exceptions:

- Noncombustible interior finish materials.
- Materials that meet the requirements of Class A materials in accordance with Section 803.1.1 or 803.1.2 where the qualifying tests were made with the material furred out from the noncombustible backing shall be permitted to be used with furring strips.
- Materials that meet the requirements of Class A materials in accordance with Section 803.1.1 or 803.1.2 where the qualifying tests were made with the material suspended away from the non-

INTERIOR FINISHES

combustible backing shall be permitted to be used suspended away from the building element.

803.12 High-density Polyethylene (HDPE) and Polypropylene (PP). Where high-density polyethylene or polypropylene is used as an interior finish it shall comply with Section 803.1.2.

803.13 Site-fabricated stretch systems. Where used as interior wall or interior ceiling finish materials, site-fabricated stretch systems containing all three components described in the definition in Section 802 shall be tested in the manner intended for use, and shall comply with the requirements of Section 803.1.1 or 803.1.2. If the materials are tested in accordance with ASTM E 84 or UL 723, specimen preparation and mounting shall be in accordance with ASTM E 2573.

SECTION 804 INTERIOR FLOOR FINISH

804.1 General. Interior floor finish and floor covering materials shall comply with Sections 804.2 through 804.4.2.

Exception: Floor finishes and coverings of a traditional type, such as wood, vinyl, linoleum or terrazzo, and resilient floor covering materials that are not comprised of fibers.

804.2 Classification. Interior floor finish and floor covering materials required by Section 804.4.2 to be of Class I or II materials shall be classified in accordance with NFPA 253. The classification referred to herein corresponds to the classifications determined by NFPA 253 as follows: Class I, 0.45 watts/cm² or greater; Class II, 0.22 watts/cm² or greater.

804.3 Testing and identification. Interior floor finish and floor covering materials shall be tested by an agency in accordance with NFPA 253 and identified by a hang tag or other suitable method so as to identify the manufacturer or supplier and style, and shall indicate the interior floor finish or floor covering classification according to Section 804.2. Carpet-type floor coverings shall be tested as proposed for use, including underlayment. Test reports confirming the information provided in the manufacturer's product identification shall be furnished to the building official upon request.

804.4 Interior floor finish requirements. Interior floor covering materials shall comply with Sections 804.4.1 and 804.4.2 and interior floor finish materials shall comply with Section 804.4.3.

804.4.1 Test requirement. In all other occupancies except I-3, interior floor finish and interior floor covering materials shall comply with the requirements of the ASTM Standard E 648, and having a specific optical density smoke rating not to exceed 450 per ASTM E 662. For Group I-3 occupancies see Section 804.4.3.

804.4.2 Minimum critical radiant flux. In all occupancies, interior floor finish and floor covering materials in enclosures for stairways and ramps, exit passageways, corridors and rooms or spaces not separated from corridors by partitions extending from the floor to the underside of the ceiling shall withstand a minimum critical radiant flux. The minimum critical radiant flux shall not be less than

Class I in Groups I-2 and not less than Class II in Groups A, B, E, H, I-4, M, R-1, R-2 and S.

Exception: Where a building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2, Class II materials are permitted in any area where Class I materials are required, and materials complying with ASTM Standard E 648, and having a specific optical density smoke rating not to exceed 450 per ASTM E 662 are permitted in any area where Class II materials are required.

804.4.3 Group I-3 Occupancy floor surfaces. Interior floor finish and floor coverings occupied by inmates or patients whose personal liberties are restrained shall be noncombustible.

Exception: Noncombustible floor finish and floor coverings in areas where restraint is not used may have carpet or other floor covering materials applied in areas protected by an automatic sprinkler system and meeting ASTM Standard E 648, and having a specific optical density smoke rating not to exceed 450 per ASTM E 662. The carpeting and carpet padding shall be tested as a unit in accordance with floor covering radiant panel test meeting class I and has a critical radiant flux limit of not less than 0.45 watt per centimeter square. The carpeting and padding shall be identified by a hang-tag or other suitable method as to manufacturer and style and shall indicate the classification of the material based on the limits set forth above.

SECTION 805 COMBUSTIBLE MATERIALS IN TYPES I AND II CONSTRUCTION

805.1 Application. Combustible materials installed on or embedded in floors of buildings of Type I or II construction shall comply with Sections 805.1.1 through 805.1.3.

Exception: Stages and platforms constructed in accordance with Sections 410.3 and 410.4, respectively.

805.1.1 Subfloor construction. Floor sleepers, bucks and nailing blocks shall not be constructed of combustible materials, unless the space between the fire-resistance-rated floor assembly and the flooring is either solidly filled with noncombustible materials or fireblocked in accordance with Section 718, and provided that such open spaces shall not extend under or through permanent partitions or walls.

805.1.2 Wood finish flooring. Wood finish flooring is permitted to be attached directly to the embedded or fireblocked wood sleepers and shall be permitted where cemented directly to the top surface of fire-resistance-rated floor assemblies or directly to a wood subfloor attached to sleepers as provided for in Section 805.1.1.

805.1.3 Insulating boards. Combustible insulating boards not more than 1/2 inch (12.7 mm) thick and covered with finish flooring are permitted where attached directly to a noncombustible floor assembly or to wood subflooring attached to sleepers as provided for in Section 805.1.1.

INTERIOR FINISHES

**SECTION 806
DECORATIVE MATERIALS AND TRIM**

[F] **806.1 General requirements.** In occupancies in Groups A, E, I and R-1 and dormitories in Group R-2, curtains, draperies, hangings and other decorative materials suspended from walls or ceilings shall meet the flame propagation performance criteria of NFPA 701 in accordance with Section 806.2 or be noncombustible.

Exceptions:

1. Curtains, draperies, hangings and other decorative materials suspended from walls of sleeping units and dwelling units in dormitories in Group R-2 protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1 and such materials are limited to not more than 50 percent of the aggregate area of walls.
2. Decorative materials, including, but not limited to, photographs and paintings in dormitories in Group R-2 where such materials are of limited quantities such that a hazard of fire development or spread is not present.

In Groups I-1 and I-2, combustible decorative materials shall meet the flame propagation criteria of NFPA 701 unless the decorative materials, including, but not limited to, photographs and paintings, are of such limited quantities that a hazard of fire development or spread is not present. In Group I-3, combustible decorative materials are prohibited.

Fixed or movable walls and partitions, paneling, wall pads and crash pads applied structurally or for decoration, acoustical correction, surface insulation or other purposes shall be considered interior finish if they cover 10 percent or more of the wall or of the ceiling area, and shall not be considered decorative materials or furnishings.

In Group B and M occupancies, fabric partitions suspended from the ceiling and not supported by the floor shall meet the flame propagation performance criteria in accordance with Section 806.2 and NFPA 701 or shall be noncombustible.

[F] **806.1.1 Noncombustible materials.** The permissible amount of noncombustible decorative material shall not be limited.

[F] **806.1.2 Combustible decorative materials.** The permissible amount of decorative materials meeting the flame propagation performance criteria of NFPA 701 shall not exceed 10 percent of the specific wall or ceiling area to which it is attached.

Exceptions:

1. In auditoriums in Group A, the permissible amount of decorative material meeting the flame propagation performance criteria of NFPA 701 shall not exceed 75 percent of the aggregate wall area where the building is equipped throughout with an automatic sprinkler system in accordance

with Section 903.3.1.1 and where the material is installed in accordance with Section 803.11.

2. The amount of fabric partitions suspended from the ceiling and not supported by the floor in Group B and M occupancies shall not be limited.

[F] **806.2 Acceptance criteria and reports.** Where required by Section 806.1, decorative materials shall be tested by an agency and meet the flame propagation performance criteria of NFPA 701 or such materials shall be noncombustible. Reports of test results shall be prepared in accordance with NFPA 701 and furnished to the building official upon request.

[F] **806.3 Foam plastic.** Foam plastic used as trim in any occupancy shall comply with Section 2604.2.

[F] **806.4 Pyroxylin plastic.** Imitation leather or other material consisting of or coated with a pyroxylin or similarly hazardous base shall not be used in Group A occupancies.

[F] **806.5 Interior trim.** Material, other than foam plastic used as interior trim, shall have a minimum **Class B flame spread and 450 smoke-developed index** in Group I-3 and for all other occupancies **Class C flame spread and smoke-developed index** when tested in accordance with ASTM E 84 or UL 723, as described in Section 803.1.1. Combustible trim, excluding handrails and guardrails, shall not exceed 10 percent of the specific wall or ceiling area in which it is attached.

[F] **806.6 Interior floor-wall base.** Interior floor-wall base that is 6 inches (152 mm) or less in height shall be tested in accordance with Section 804.2 and shall not be less than Class II. Where a Class I floor finish is required, the floor-wall base shall be Class I.

Exception: Interior trim materials that comply with Section 806.5.

**SECTION 807
INSULATION**

807.1 Insulation. Thermal and acoustical insulation shall comply with Section 720.

**SECTION 808
ACOUSTICAL CEILING SYSTEMS**

808.1 Acoustical ceiling systems. The quality, design, fabrication and erection of metal suspension systems for acoustical tile and lay-in panel ceilings in buildings or structures shall conform with generally accepted engineering practice, the provisions of this chapter and other applicable requirements of this code.

808.1.1 Materials and installation. Acoustical materials complying with the interior finish requirements of Section 803 shall be installed in accordance with the manufacturer's recommendations and applicable provisions for applying interior finish.

808.1.1.1 Suspended acoustical ceilings. Suspended acoustical ceiling systems shall be installed in accordance with the provisions of ASTM C 635 and ASTM C 636.

808.1.1.2 Fire-resistance-rated construction. Acoustical ceiling systems that are part of fire-resistance-rated construction shall be installed in the same manner used in the assembly tested and shall comply with the provisions of Chapter 7.



8 LAST PAGE & REVISION SUMMARY

DATE	SUMMARY
July 13, 2015	Original
July 27, 2015	Section 3.1, delete reference to adhesive-backed wall paper; Section 4, update reference documents with <i>HP PVC-free Durable Wall Paper – Installation tips and tricks (May 2015)</i> ; and Appendix 7, replace outdated installation instructions with new (May 2015) HP Installation instructions.