

Wilsonart ® Fire-Rated Laminate Technical Data

1. Manufacturer

Wilsonart LLC
2400 Wilson Place
P.O. Box 6110
Temple, Texas 76503-6110
Phone: (254) 207-7000; (800) 433-3222
Fax: (254) 207-2384
Web Site: www.wilsonartlaminates.com

2. Product Description

Recommended Uses: Fire-Rated Laminate is recommended for interior application where fire codes specify or the environment suggests a fire-resistant and smoke-resistant surface.

It may be applied as decorative surfacing for casework and cabinets, wainscoting, interior doors, and wall panel and divider systems. This laminate is particularly appropriate for surfacing furniture in public places such as airports, hotels, office buildings and institutions such as hospitals and schools. Fire-Rated Laminate can offer a Class I or A fire rating, provided fire-retardant adhesives and substrates are used.

- Vertical Surface (VGF) Type 604: Intended to surface walls in public spaces and corridors, front panels on commercial casework and other applications where a functional, durable, decorative surface must absorb somewhat less impact than a comparable horizontal surface.
- General Purpose (HGF) Types 605 and (SGF) 607: Produced for both horizontal and vertical applications where the surface must perform under constant use.
- Fire-Rated Backer Type 264: A stabilizing backer sheet for applications where the decorative surface is Vertical Surface Type 604.
- Fire-Rated Backer Type 266: A stabilizing backer sheet for applications where the decorative surface is General Purpose Type 605 or 607.

Product Composition: The decorative surface is composed of melamine resin-treated decorative surface papers. Special kraft core sheets, used to obtain the desired thickness, are impregnated with phenolic resin.

Basic Limitations: Wilsonart Laminate is intended for interior use only, and should be protected from continuous exposure to direct sunlight, extremes in humidity and temperatures greater than 275°F (135°C). It is not structural material and must be bonded to a suitable substrate.

Wilsonart Laminate should not be used as direct covering for plaster or concrete walls, or for gypsum wallboard. It should not be exposed to flame, molten metal, metallic sparks or intense, direct sunlight. Nor should it be used as cutting surfaces.

Pattern and Color Availability:

Wilsonart Fire-Rated Laminate is available in most **Standard Line (DG1)** patterns. Please note the patterns that are **NOT** available in Fire-Rated Laminate.

Custom Laminate: Silk Screen & Digital Image are NOT available
Non-Standard Line (DG-2) patterns are NOT available.

Please verify pattern availability by type, size and finish by checking the Laminate Pattern Availability Search @ <http://www.wilsonartcontract.com/fast-pattern-result/>

Finishes:

- #60 Matte
A textured finish with a moderate reflective quality. *Glossometer reading: MD and CD 10 ± 2.*
- #01 High Gloss
A mirror sheen finish which gives a smooth, brilliant appearance. Excellent for any vertical application. Laminates with a high gloss finish can be used for horizontal application only in light use areas. We recommend that it not be used on horizontal work surfaces such as countertops. *Glossometer reading: MD and CD 110 ± 10.*
- #07 Textured Gloss
A textured finish which produces the high sheen of waxed wood furniture. Recommended for horizontal and vertical applications. #07 finish features AEON technology and carries a premium upcharge. *Glossometer reading: MD and CD 42±4*

NOTE: Glossometer readings are made at a 60° angle of incidence. MD means the machine direction of a laminate sheet and CD refers to the cross direction.

Sheet Sizes

48" x 96"	(1219mm x 2438mm)
48" x 120"	(1219mm x 3048mm)

Sheet Thicknesses

Type	Typical Wilsonart Thickness	NEMA Thickness	Weight PSF
Vertical Surface Type 604 (VGF)	0.032" ± 0.005" (0.81mm ± 0.13mm)	0.032" ± 0.005" (0.8mm ± 0.12mm)	0.274#
General Purpose Type 605 (HGF)	0.048" ± 0.005" (1.22mm ± 0.13mm)	0.048" ± 0.005" (1.2mm ± 0.12mm)	0.438#
Specific Purpose Type 607 (SGF)	0.059" ± 0.005" (1.5mm ± 0.13mm)	0.059" ± 0.005" (1.5mm ± 0.12mm)	0.480#
Backer Type 264	0.030" ± 0.004" (0.76mm ± 0.10mm)	0.028" ± 0.004" (0.7mm ± 0.10mm)	0.223#
Backer Type 266	0.050" ± 0.005" (1.27mm ± 0.13mm)	0.048" ± 0.005" (1.2mm ± 0.12mm)	0.359#

Note: Minimum sheet order requirements: 2 sheets by size, finish and product type

3. Technical Data

Physical Properties of Fire-Rated Laminate

NEMA Test	Typical Wilsonart Type 604 (VGF)	NEMA Standard VGF	Typical Wilsonart Type 605 (HGF)	NEMA Standard HGF	Typical Wilsonart Type 607 (SGF)	NEMA Standard SGF
Thickness	0.032" (0.81mm)	0.032" ± 0.005" (0.8mm ± 0.12mm)	0.048" (1.22mm)	0.048" ± 0.005" (1.2mm ± 0.12mm)	0.059" (1.5mm)	0.059" ± 0.005" (1.5mm ± 0.12mm)

Surface Wear Resistance (cycles)	Meets or Exceeds 400	400 (min.)	Meets or Exceeds 400	400 (min.)	Meets or Exceeds 400	400 (min.)
Boiling Water Resistance	No effect	No effect	No effect	No effect	No effect	No effect
High Temperature Resistance	Slight effect	Slight effect	Slight effect	Slight effect	Slight effect	Slight effect
Radiant Heat Resistance	100 seconds	50 sec. (min.)	150 seconds	75 sec. (min.)	200 seconds	125 sec. (min.)
Stain Resistance Reagents 1-10 Reagents 11-15	No effect Slight effect	No effect Moderate effect	No effect Slight effect	No effect Moderate effect	No effect Slight effect	No effect Moderate effect
Light Resistance	Slight effect	Slight effect (min.)	Slight effect	Slight effect (min.)	Slight effect	Slight effect (min.)
Dimensional Stability Machine Direction Cross Direction	0.40% 1.00%	0.70% (max.) 1.20% (max.)	0.30% 0.80%	0.50% (max.) 0.90% (max.)	0.30% 0.80%	0.50% (max.) 0.90% (max.)
Impact Resistance	35" (889mm)	20" (508mm)	65" (1651mm)	45" (1143mm)	75" (1905mm)	55" (1397mm)
Cleanability (cycles)	10	20 (max.)	10	20 (max.)	10	20 (max.)
Appearance	No ABC defects	No ABC defects	No ABC defects	No ABC defects	No ABC Defects	No ABC defects

Note: Since Fire-Rated backer sheets are not intended to be exposed to light, wear or everyday use, no physical property tests are in current use.

Typical Fire Test Data

Test data for Wilsonart Fire-Rated Laminate is obtained by the Steiner Tunnel Test method of the American Society for Testing Materials (ASTM E 84, Standard Test Method For Surface Burning Characteristics of Building Materials). This procedure is cataloged by Underwriters Laboratories, Inc. as UL 723.

Typical Flame Spread and Smoke Developed Properties

NEMA Type	Wilsonart Product	Unbonded	Bonded to Incombustible Cement Board	Bonded to Fire-Rated Particleboard
VGF	604	15/15	15/0	15/20
HGF	605	15/15	15/0	15/25
SGF	607	15/25	15/0	15/35
BKV	264	15/0	15/0	20/10
BKH	266	20/0	15/0	10/15

Note: Adhesive to attain Flame Spread and Smoke Developed figures for bonded laminates (above) is resorcinol. Fire-rated particleboard is Duraflake, with a UL rating of 25/25, or comparable material. The above values are CUL (Canadian Underwriters Lab) approved.

Model Code Designations used to determine flame spread classification

Flame Spread Classification (Maximum Rating)	International (IBC)	Life Safety (NFPA 101)
25	A	A
75	B	B
200	C	C

(Reference: Architectural Woodwork Quality Standard, 8th Edition, Version 1.0 – 2003)

All Model Codes regulate the generation of smoke by interior finish material. In all cases they specify a maximum smoke development rating of 450.

Codes and Certifications:

General Fire Code Compliance

Test data for code compliance is from the UL 723 Tunnel Test method. This procedure has been cataloged under the following designations:

- American Society for Testing Materials ASTM E 84
- American Society for Testing Materials ASTM E 162
- American Society for Testing Materials ASTM E 662
- American National Standards Institute ANSI No. 2.5
- National Fire Protection Agency NFPA No. 255
- Underwriters Laboratories, Inc. UL No. 723

This test data is the basis for fire codes written by various responsible groups, including:

- BBC Basic Building Code (Building Officials Conference of America. Used in Midwest and Northeast.)
- NFPA National Fire Protection Agency (Building Exits Code, Section #101.)
- SSBC Southern Standards Building Code (Southern Building Codes Congress. Used primarily in the South.)

Many local codes, especially in densely populated areas, have been patterned after these. Examples include the cities of Los Angeles and San Francisco and the Port Authority of New York. Approvals include:

- New York City, Department of Buildings, Materials and Equipment Acceptance
(Types 264, 266, 604, 605 & 607) MEA 167-87M

General Standards

Fire-Rated Laminate conforms to ANSI/NEMA LD3-2005 for VGF, HGF and SGF (Types 604, 605 and 607, respectively).

NSF International (NSF) #35, "Laminated Plastic for Surfacing for Food Service Equipment." All solid colors and printed patterns in Basic Types 604, 605 and 607, with #60 finish comply.

The GREENGUARD Environmental Institute™ has awarded its GREENGUARD® Indoor Air Quality Certification to Wilsonart Laminate. All Wilsonart Laminate product types were tested under the stringent GREENGUARD Standards for low-emitting products. All GREENGUARD Indoor Air Quality Certified products ensure minimal impact on the indoor environment. For a copy of the certificate, visit www.greenguard.org.

Specific Product Standards

Fire-Rated Laminate meets the following federal codes:

Aircraft Interiors. U.S. Federal Test Method, Federal Aviation Administration, DOT, Part 25.853, Airworthiness Standards: Transport Category Airplane (Interior Finish). Fire-Rated Laminate Types 604, 605 and 607 comply with parts A and C.

Military/Ships. U.S. Military Standard MIL-P-17171E (SHIPS) Plastic Laminate and U.S. Military Standard 1623D (SHIPS), "Fire Performance Requirements and Approval Specifications for Interior Finished Materials and Furnishings - Naval Shipboard Use." Fire-Rated Laminate Types 605 and 607 comply with both of these standards.

Military/Ships

Fire-Rated Product Type	U.S.C.G. (46 CFR 164.012)	U.S.C.G. (IMO FTP Code)	Canadian Board of Steamship Inspection
Type 604	164.012/29/0	164.112/8/0	G1-162
Type 605	164.012/105/0	164.112/9/0	G1-166
Type 607	164.012/30/0	164.112/10/0	G1-163
Type 264	164.012/46/0	164.112/11/0	G1-161
Type 266	164.012/106/0	164.112/12/0	G1-165

Types 605 and 607 also appear on the U.S. Department of the Navy "Approved Habitability Materials List 9640, SER 05M1.11/1148," (Revision K, May 1996), Pages 3 and 4, paragraphs 1.5 and 2(b), for use on bulkhead sheathing, and on NAVSEA Drawing #804-5000991.

Mobile Homes

U.S. Federal Register August 9, 1984, Housing and Urban Development Mobile Home Construction and Safety Standard (24CFR), 3280.203. Fire-Rated Laminate Types 604, 605, 607, 264 and 266 comply.

Motor Vehicles/Interiors

U.S. Federal Motor Vehicle Safety Standard (FMVSS) 302, "Flammability of Interior Materials." Fire-Rated Laminate Types 604, 605 and 607 comply.

4. Installation: Fabrication and Assembly Recommendations

Wilsonart Laminate must be bonded to a substrate of reliable quality and appropriate fire rating, such as particleboard, incombustible cement board or plywood with one A face. Bond with adhesives, and follow the techniques recommended by the adhesive manufacturer. Permanent adhesives are recommended such as specialized PVAs, phenol/resorcinol, resorcinol, and epoxy. Contact cement, such as Wilsonart Adhesives, also may be used.

Take care to ensure an appropriate moisture balance between the laminate and the substrate prior to fabrication. The face and backing laminates and the substrate should be conditioned in the same environment for 48 hours before fabrication.

Recommended conditioning temperature is about 75°F (24° C). Laminates should be conditioned at 45% to 55% relative humidity.

To avoid stress cracking, do not use square-cut inside corners. All inside corners should have a minimum of 1/8" (3.18mm) radius, and all edges should be routed smooth.

Fabricating for Fire Rating Concerns

Flame Spread and Smoke Developed data for products fabricated with Wilsonart Fire-Rated Laminate vary with the choice of substrate and adhesive, as well as with pressing conditions. In general, these factors range from most to least fire-retardant, as shown below:

Substrate	Adhesive	Pressing Conditions
Incombustible	Resorcinol	Hot pressed/cold

Fire-Rated Particleboard	Phenol/Resorcinol	Cold pressed/long
Conventional Particleboard*	Casein	Cold pressed/short
Conventional Plywood	Contact	Nip rolled

**45 lb. cu. ft. density, industrial grade*

Methods

Assembled pieces should meet the specification of KCMA (Kitchen Cabinetmakers Manufacturers Association) ANSI-161.2-1998 (revised) and “Architectural Woodwork Quality Standards, Guide Specifications and Quality Certification Program” guidelines of the Architectural Woodwork Institute where applicable. Drill oversized holes for screws or bolts. Screws or bolts should be slightly countersunk into the face side of a laminate-clad substrate.

5. Warranty

Wilsonart LLC warrants to the original consumer purchaser for one (1) year after date of purchase (“Warranty Period”) that, under normal use and service, Wilsonart® Laminate Sheets are free from manufacturing defects and conform to published specifications. This warranty applies only to a Wilsonart Laminate Sheet which has been installed in an interior application and remains installed at that location (“Warranted Product”) and is extended only to, and may be enforced only by, the original consumer purchaser. THIS WARRANTY IS NOT TRANSFERABLE. This warranty is expressly conditioned upon submission of proof of date of purchase.

WHAT IS EXCLUDED:

This warranty shall not apply to damage arising from any of the following:

1. Accidents, abuse or misuse;
2. Exposure to extreme temperature;
3. Improper fabrication or installation; or
4. Improper maintenance or repair.

WHAT WILSONART WILL DO IF YOUR CLAIM IS COVERED BY THIS WARRANTY

Wilsonart will provide, at no cost and with delivery prepaid, a Wilsonart® Laminate Sheet to replace the Warranted Product. Wilsonart will not pay for removal of the Warranted Product or for fabrication or installation of the replacement laminate or any other costs. No replacement under the warranty shall extend the Warranty Period.

Any replacement is limited to colors and styles of Wilsonart® Laminate Sheets available at the time of replacement. Exact color matches may not be possible. If the original color or style is no longer available, Wilsonart has the right to substitute another Wilsonart Laminate Sheet of equal or greater value than the Warranted Product.

WHAT YOU NEED TO DO

To make a claim under this warranty, you must contact the Wilsonart Warranty Center at the address listed below before the end of the Warranty Period. You must provide proof of date of purchase, photographs of the Warranted Product and access for inspection for warranty determination by a Wilsonart representative, and thereafter Wilsonart will provide you a determination on your claim.

Wilsonart
Warranty Center
2400 Wilson
Place
Temple, Texas 76504
877-537-0533... Toll Free

THE FOREGOING SHALL CONSTITUTE THE EXCLUSIVE REMEDY OF THE PURCHASER AND THE EXCLUSIVE LIABILITY OF WILSONART.

THE ABOVE WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS WARRANTIES WHETHER ORAL OR WRITTEN. ANY IMPLIED WARRANTIES WHICH MAY ARISE BY OPERATION OF LAW, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE PERIOD OF THE WRITTEN WARRANTY SET FORTH HEREIN.

WILSONART SHALL NOT, UNDER ANY CIRCUMSTANCES OR UNDER ANY LEGAL THEORY, BE LIABLE TO THE PURCHASER OR ANY OTHER PERSON FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY NATURE, INCLUDING WITHOUT LIMITATION DAMAGES TO, OR LOSS OF USE OF, PROPERTY, DAMAGES FOR LOSS OF PROFITS OR REVENUES OR ANY OTHER DAMAGES ARISING FROM THE PURCHASE. WILSONART'S LIABILITY WILL IN NO EVENT EXCEED THE PURCHASE PRICE OF THE WILSONART® PRODUCT.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

No agent, dealer, employee or representative of Wilsonart nor any installer, fabricator or other person is authorized to modify the warranty in any respect.

The invalidity of all or a part of any of the provisions of the Limited Warranty shall not affect or invalidate any other provision of the Limited Warranty. For further assistance or questions, contact Wilsonart at the address or telephone number listed above or at www.wilsonart.com.

Maintenance*

The decorative surface may be cleaned with warm water and mild soaps, such as those used for hands or dishes. Do not use cleansers that contain abrasives, acids or alkalis; they will damage the decorative surface. Remove stubborn stains with a 1 1/2-minute exposure to hypochlorite bleach such as Clorox®, followed by a clean water rinse.

We recommend that you **not** allow any of the following reagents to **remain** in contact with the decorative surface:

1. Hypochlorite bleach, except as described above
2. Hydrogen peroxide solution
3. Mineral acids, hydrochloric acid such as Lime-A-Way™, sulfuric or nitric acid
4. Caustic solutions containing greater than 2% lye, such as Drano®
5. Sodium bisulfate, such as Sani-Flush®
6. Potassium permanganate
7. Berry juices
8. Silver nitrate, in 1% concentration
9. Gentian violet
10. Mild silver protein, such as 20% argyrol
11. Bluing
12. Fabric dye, such as Tintex® or Rit®
13. Alcohol containing 1% iodine in solution

If you require a laminate that can withstand these and other chemicals, please refer to the tech data for Wilsonart® Chemsurf® Chemical-Resistant Laminates.

*Not applicable for Phenolic Laminate Backing Sheets.

Free copies of the "Care and Maintenance Guide," which covers all Wilsonart products, are available. The guide can be accessed at <http://www.wilsonartlaminates.com> or by calling our hotline at: 800-433-3222. It can be used for your own information, for project manuals, and for provision to clients and contractors involved with interior construction and finishing.

6. Technical Services

For samples, literature, questions or technical assistance, please contact our toll-free Hotline at (800) 433-3222, Monday through Friday, 8 am –5 pm, CST.

Specification Form:

Surface shall be Wilsonart Laminate, produced by Wilsonart LLC, Temple, Texas 76503-6110.	
Type: See Fire-Rated specific types under Product Description/Product Definition	
Surface	Color Number: _____ Color Name: _____
Finish	Number: _____ Name: _____
Edge Trim	Color Number: _____ Color Name: _____
Adhesive	Name: _____ Grade/Type: _____ Brand: Wilsonart Adhesive
<i>Material shall equal or exceed performance standards set by the American National Standards Institute/National Electrical Manufacturers Association (ANSI/NEMA) LD3-2005 for high-pressure laminate. Fabrication shall comply with "Architectural Woodwork Quality Standards, Guide Specifications and Quality Certification Program" guidelines of the Architectural Woodwork Institute.</i>	

Fire Rated TD (TD0611)
Revised: January 16, 2013
©1998- 2013, Wilsonart LLC