Wilsonart®
ENGINEERED SURFACES

2501 Wilsonart Drive
P.O. Box 6110
Temple, TX 76503-6110

1. <u>Manufacturer</u>

Wilsonart LLC
2501 Wilsonart Drive
P.O. Box 6110
Temple, Texas 76503-6110
Phone: (254) 207-7000; (800) 433-3222
Fax: (254) 207-2384
Web Site: www.wilsonart.com

2. <u>Product Description</u>

Recommended Uses
Wilsonart® 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® Fire-Rated 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.
- Digital Print Laminate: Virtual Design Library and Wilsonart By You designs are NOT available.
- Non-promoted, factory-order designs are NOT available.

Please verify Fire-Rated Laminate pattern availability by type, size and finish by checking Pattern Availability at www.wilsonart.com.

Finishes
- #07 Textured Gloss - A fine textured finish with a sheen level indicative of a waxed wood, polished stone, or other moderately reflective materials. #07 finish features AEON™ ENHANCED SCRATCH & SCUFF-RESISTANT PERFORMANCE TECHNOLOGY, and carries a premium upcharge. Recommended for horizontal and vertical applications. *Nominal Glossometer Reading = 42*
- #38 Fine Velvet Texture - A smooth textured finish with moderate reflective value. Recommended for horizontal and vertical applications. *Nominal Glossometer Reading = 14*
- #60 Matte - A textured finish with a moderate reflective quality. Recommended for horizontal and vertical applications. *Nominal Glossometer Reading = 10*

NOTE: Nominal Glossometer Readings are made at a 60° angle of incidence.

Sheet Sizes

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

Sheet Thicknesses

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

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

3. <u>Technical Data</u>

Physical Properties of Fire-Rated Laminate

ISO 4586 Test	Typical Wilsonart Type 604 (VGF)	ISO 4586-3 VGF	Typical Wilsonart Type 605 (HGF)	ISO 4586-3 HGF	Typical Wilsonart Type 607 (SGF)	ISO 4586-3 HDF
Thickness	0.032" ± 0.005" (0.8mm ± 0.12mm)	N/A	0.048" ± 0.005" (1.2mm ± 0.12mm)	N/A	0.059" ± 0.005" (1.5mm ± 0.12mm)	N/A
Surface Wear Resistance (cycles)	Meets or Exceeds 400	350 (min.)	Meets or Exceeds 400	350 (min.)	Meets or Exceeds 400	350 (min.)
Boiling Water Resistance	No effect	Slight Effect (Gloss) No Effect (Other Finishes)	No effect	Slight Effect (Gloss) No Effect (Other Finishes)	No effect	Slight Effect (Gloss) No Effect (Other Finishes)

Property						
High Temperature Resistance	Slight effect	Slight Effect (Gloss) No Effect (Other Finishes)	Slight effect	Slight Effect (Gloss) No Effect (Other Finishes)	Slight effect	Slight Effect (Gloss) No Effect (Other Finishes)
Radiant Heat Resistance	205 seconds	≥ 200 sec.	205 seconds	≥ 200 sec.	220 seconds	≥ 200 sec.
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%	1.10% (max.) 1.40% (max.)	0.30% 0.80%	1.10% (max.) 1.40% (max.)	0.30% 0.80%	0.50% (max.) 0.90% (max.)
Impact Resistance	35" (889mm)	23.5" (600mm)	65" (1651mm)	31.5" (800mm)	75" (1905mm)	39.3" (1000mm)
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.

4. 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 UL 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.

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.

Branded Cleaner and Sanitizer Resistance for Wilsonart® Fire-Rated Laminate per ISO 4586-2 Method 31 (B)
No effect was exhibited except as noted (* or **) on the following:

1.   Beckart Environmental (Stabilized Chlorine Dioxide Mixed with Water at 3000ppm)
2.   Benefect®
3.   Claire® Germicidal Cleaner (Country Fresh Scent)
4.   Claire® Disinfectant Spray Q (Country Fresh Scent)
5.   Clean Republic − All Purpose Everyday Cleaner (Hypochlorous Acid − 0.003% Solution)
6.   Clorox® Anywhere® Hard Surface Sanitizing Spray*
7.   Clorox® Clean-Up (Cleaner & Bleach)
8.   Clorox® Disinfecting Bleach w/6% Sodium Hypochlorite (24:1/Water:Bleach)
9.   Clorox® Disinfecting Spray
10. Clorox® Disinfecting Wipes
11. Clorox Healthcare® Bleach Germicidal Cleaner *
12. Clorox Healthcare® Hydrogen Peroxide Cleaner Disinfectant
13. Clorox Healthcare® Fuzion® Cleaner Disinfectant*
14. Clorox Healthcare® VersaSure® Cleaner Disinfectant Wipes
15. Clorox® Total 360 Disinfectant Cleaner
16. Diversey™ Expose® II 256
17. Diversey™ Oxivir 1
18. Diversey™ Oxivir Tb Wipes
19. Diversey™ Stride® Floral Neutral Cleaner
20. Diversey™ Virex® II 256
21. Fabuloso® Complete (Multi-Purpose Cleaner)
22. Lysol® Professional Disinfectant Spray
23. Microban® 24 Hour (Multi-Purpose Cleaner)
24. PDI Sani-Prime® Germicidal Spray
25. PDI Super Sani-Cloth® Germicidal Disposable Wipes
26. Purell® Advanced Hand Sanitizer Gel
27. Purell® Food Service Surface Sanitizer
28. Purell® Professional Surface Disinfectant
29. Purell® Healthcare Surface Disinfectant
30. Simple Green® Concentrated (All-Purpose Cleaner)
31. Spic and Span® Everyday (Antibacterial Cleaner)

Test procedure: Listed materials were placed in contact with Wilsonart® Fire-Rated Laminate surface under 1"
(25.4mm) diameter watch cover glass for 16 hours duration prior to evaluation for effect. The branded cleaners and sanitizers listed above were cleaned with water only.
*   Causes slight change of gloss or color.
**   Causes slight damage, with degree of damage proportionate to length of exposure and concentration.

Branded Cleaner and Sanitizer Resistance for Wilsonart® Fire-Rated Laminate per BIFMA HCF 8.1-2014 (Section 6 / Modified)
No effect was exhibited except as noted (* or **) on the following:

1. Beckart Environmental, Inc. (Stabilized Chlorine Dioxide Mixed with Water at 3000ppm)
2. Benefect®
3. Claire® Germicidal Cleaner (Country Fresh Scent)
4. Claire® Disinfectant Spray Q (Country Fresh Scent)
5. Clean Republic − All Purpose Everyday Cleaner (Hypochlorous Acid − 0.003% Solution)
6. Clorox® Anywhere® Hard Surface Sanitizing Spray
7. Clorox® Clean-Up (Cleaner & Bleach)
8. Clorox® Disinfecting Bleach w/6% Sodium Hypochlorite (24:1/Water:Bleach)
9. Clorox® Disinfecting Spray
10. Clorox® Disinfecting Wipes
11. Clorox Healthcare® Bleach Germicidal Cleaner
12. Clorox Healthcare® Hydrogen Peroxide Cleaner Disinfectant
13. Clorox Healthcare® Fuzion® Cleaner Disinfectant
14. Clorox Healthcare® VersaSure® Cleaner Disinfectant Wipes
15. Clorox® Total 360 Disinfectant Cleaner
16. Diversey™ Expose II 256
17. Diversey™ Oxivir 1
18. Diversey™ Stride® Floral Neutral Cleaner
19. Diversey™ Tb Wipes
20. Diversey™ Virex II 256
21. Fabuloso® Complete (Multi-Purpose Cleaner)
22. Lysol® Professional Disinfectant Spray
23. Microban® 24 Hour (Multi-Purpose Cleaner)
24. PDI Sani-Prime® Germicidal Spray
25. PDI Super Sani-Cloth® Germicidal Disposable Wipes
26. Purell® Advanced Hand Sanitizer Gel
27. Purell® Food Service Surface Sanitizer
28. Purell® Professional Surface Disinfectant
29. Purell® Healthcare Surface Disinfectant
30. Simple Green® Concentrated (All-Purpose Cleaner)
31. Spic and Span® Everyday (Antibacterial Cleaner)

Test procedure: Listed reagent materials were placed in contact with Wilsonart® Fire-Rated Laminate surface with a one-inch square 100% cotton cloth completely saturated and covered with a 2" (50.8mm) diameter watch cover glass for 15 minute duration. The reagents listed above were removed with clean cloth and the area was then cleaned with clean cloth and distilled water only. The surface area was allowed to dry for 1-hour prior to evaluation for effect.
*   Causes slight change of gloss or color.
**   Causes slight damage, with degree of damage proportionate to length of exposure and concentration.

Resistance of Furniture to UV Lights for Wilsonart® Fire-Rated Laminate per BIFMA HCF 8.1-201X Section 9 (Alternate Method per ASTM G155 using ISO 4586-2.33 conditions)

Wilsonart® Fire-Rated Laminates 604, 605, and 607 conforms to BIFMA – Healthcare Furniture Design Guidelines for Cleanability , Section 9 Resistance to Furniture to UV Lights. Wilsonart Fire-Rated Laminates 604, 605, and 607 meet or exceed the acceptance level for surface evaluation.

5. <u>Installation: Fabrication and Assembly Recommendations</u>

Wilsonart® Fire-Rated 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.

6. [Warranty](#)

7. [Maintenance](#)

8. <u>Technical Services</u>

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® Fire-Rated 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

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.

Wilsonart® Fire-Rated Laminate Technical Data
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