

carbonzero<sup>hpl</sup>

# Fire Retardant

TECHNICAL DATA SHEET

# carbonzero<sup>hpl</sup><sup>®</sup> Fire Retardant

## Composition

The Fire Retardant is manufactured with melamine resin, special decorative papers which provide design and wear resistance and Kraft papers with phenolic resin the core support of the laminate. All of them are subjected to a high specific pressure (100 kg/cm<sup>2</sup>) and 135°C (275°F). Once the press cycle is finished, the laminate is trimmed, following the established nominal dimensions and sanded to provide a bigger adherence when the adhesive is applied over the wooden surface.

## Recommended Applications

The Fire Retardant of is recommended for interior surfaces where design, appearance, quality, stain resistance, fire resistance, and low flame propagation are required. The degree of low flame propagation is tested under the ASTM E-84 international norm certification for this type of product and the UNE-EN 13501-1:2007+A1:2010.

## Basic Limitations

The Fire Retardant is designed for interior uses only, it is not meant to be structural material, it does not admit high humidity or high temperature, exceeding 135°C (275°F). The Fire Retardant should not be exposed to intense and continue sunlight. The Fire Retardant is offered in any design of our approved line and exclusively for normal applications, not for postforming. It is important to make clear that for a furniture or accessories covered with our laminate, to be considered fire retardant, all of the constituting parts (wooden surface, adhesive, etc.) must comply with the condition of being fire retardants.

| product identification |             |                   |             |        |       |        |          |       |
|------------------------|-------------|-------------------|-------------|--------|-------|--------|----------|-------|
| TYPE OF LAMINATE       | GRADE       | NOMINAL THICKNESS | SIZES       |        |       |        | FINISHES |       |
|                        |             |                   | feet (ft)   |        |       |        | Gloss    | Matte |
|                        |             |                   | 4 x 8       | 4 x 10 | 5 x 8 | 5 x 12 |          |       |
|                        |             |                   | meters (mt) |        |       |        |          |       |
| 1,22 x 2,44            | 1,22 x 3,06 | 1,53 x 2,44       | 1,53 x 3,66 |        |       |        |          |       |
| Horizontal Standard    | 70          | 1,20<br>(0,048)   | X           | X      | X     | X      | X        | X     |
| Horizontal Standard    | 50          | 1,0<br>(0,039)    | X           | X      | X     | X      | X        | X     |
| Vertical Standard      | 30          | 0,70<br>(0,028)   | X           | X      | X     | X      | X        | X     |
| Backer Vertical        | 03          | 0,70<br>(0,028)   | X           | X      | X     | X      | -        | X     |
| Backer Medium          | 05          | 0,90<br>(0,035)   | X           | X      | X     | X      | -        | X     |
| Backer High            | 07          | 1,10<br>(0,043)   | X           | X      | X     | X      | -        | X     |

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### Useful Information

1. Conditioning and storing of the Fire Retardant are very important, it should be stored horizontally, at a regular temperature (max. 30°C 86°F) and relative humidity (max. 60%), in a dry and drafty place.
2. For applications of the Fire Retardant, adhesive and wooden surface to be used must be fire retardants and shall comply with the ASTM E84 norm and the UNE-EN 13501-1:2007+A1:2010. Both of them shall have the same classification given by the NFPA 101. Get assistance from your wood surface and adhesive suppliers so that the finished good can be used for this purpose.  
Please contact our sales representatives to obtain further information.
3. To avoid warping in the surface coated with CarbonZero High Pressure Fire Retardant, we strongly recommend the use of backer laminate on the back side of the substrate.
4. The Fire Retardant should be cut with circular saws at a 8-12 m/ min. and 3,000-5,500 r.p.m. speed, the tooth of the saw must be done in plane trapezoidal diamond with alternating geometry. For routed jobs, a cylindrical miller of minimum 12,000 r.p.m. must be used.
5. To perforate Fire Retardant use a tungsten-carbide drill bit with biangular end at 10,000. r.p.m. The selected drill bit must be 0.002 inches (0.05 mm.) bigger than the specific diameter of the hole to be made.
6. CarbonZero High Pressure Fire Retardant is available in two finishes: Gloss and Texture. We recommend the use of textured laminates in horizontal surfaces as cafeteria tables, desks, kitchen countertops, etc. To avoid damages on the laminate surface, a protector element such as a of wooden or ceramic piece must be used before doing any kind of cut labor over it. Also use a similar protector element on the laminates to put hot objects with temperature exceeding 135°C(275°F).
7. For stain cleaning or maintenance of the Fire Retardant, use water, soft non-abrasive detergents and nylon brushes. Stubborn stains may require the use of hypochlorite bleach dissolved in water. Avoid the use of strong bleachers, organic detergents and abrasive brushes, these may discolor and scratch the surface. Grease stain should be cleaned with a soft cloth and organic solvent or a mixture of 50:50 alcohol-organic solvent, the laminate shall be free of stain without any deterioration of its color tone or its original design.
8. High Pressure Fire Retardant provide a long-life surface and easy maintenance. It is not suited for laboratory surfaces, where corrosive material, alkalis and strong acids are used in its daily labor.

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| technical specifications                 |                             |                      |                      |                      |            |
|--|-----------------------------|----------------------|----------------------|----------------------|------------|
| * NEMA LD.3/<br>EN-438<br>TEST<br>METHOD | PROPERTY                    | UNITS                | Grade 30             | NEMA LD3 VGF         | EN-438 VGF |
|  | NOMINAL THICKNESS           | In (mm.)             | 0.028 (0.70)         | 0.028 (0.70)         | -          |
|  | THICKNESS TOLERANCE         | In (mm.)             | +/- 0.004 (+/- 0.10) | +/- 0.004 (+/- 0.10) | -          |
| 3.1 / 4.0                                | APPEARANCE                  | defects              | No A,B,C defects     | No A,B,C defects     | -          |
| 3.3 / 27                                 | LIGHT RESISTANCE            | effect/gray scale    | 5                    | SL                   | 4- 5       |
|  | CLEANABILITY                | Rating (max.)        | 12                   | 20                   | -          |
|  | STAIN RESISTANCE            |                      |                      |                      |            |
| 3.4 / 26                                 | Reagents 1-10               | Rating (min.)        | NE                   | NE                   | -          |
|  | Reagents 11-15              | Rating (min.)        | SL                   | M                    | -          |
|  | Group 1                     | grade                | 5                    | -                    | 5          |
|  | Group 2                     | grade                | 5                    | -                    | 5          |
|  | Group 3                     | grade                | 4                    | -                    | 4          |
| 3.5                                      | BOILING WATER RESISTANCE    | effect               | NE                   | NE                   | -          |
| 3.6 / 16                                 | HIGH TEMPERATURE RESISTANCE | effect/grade         | SL                   | SL                   | 4          |
| 3.7 / 25                                 | SCRATCH RESISTANCE          | grade (min.)         | 2                    | 2                    | 2          |
| 3.8 / 21                                 | BALL IMPACT RESISTANCE      | In (mm.) min.        | 39 (1,000)           | 20 (500)             | 24 (600)   |
|  | DIMENSIONAL CHANGE          |                      |                      |                      |            |
| 3.11 / 17                                | Direction Machine           | % max.               | 0.50                 | 0.70                 | 0.75       |
|  | Cross Machine               | % max.               | 0.80                 | 1.20                 | 1.25       |
| 3.13 / 10                                | WEAR RESISTANCE             | Cycles (min.)        | 600                  | 400                  | 350        |
| 3.14 / 32                                | POST-FORMABILITY            | In (mm.) Radio, min. | NA                   | NA                   | NA         |
| 3.15 / 34                                | BLISTER RESISTANCE          | Sec (min.)           | NA                   | NA                   | NA         |

SL=Slight Effect=4, NE=No Effect=5, M=Moderate=3, NA=Not Applicable, S=Standard, PF=Post-Formable  
 \* Nema LD.3 America and EN-438 Europe

The widest world system of classification accepted by the National Association of Fire Protection and safe life code in the United States is the NFPA101. Its codification is the following.

- CLASS A 0-25 FLAME SPREAD INDEX 0-450 SMOKE DEVELOPED
- CLASS B 26-75 FLAME SPREAD INDEX 0-450 SMOKE DEVELOPED
- CLASS C 76-200 FLAME SPREAD INDEX 0-450 SMOKE DEVELOPED

| "fire rated" test results under the code NFPA 101 |         |                   |                |  |
|---|---------|-------------------|----------------|--|
| TYPE NEMA   | PRODUCT | CERTIFIED BY HVPA | CLASS NFPA 101 | FLAME SPREAD INDEX/<br>SMOKE DEVELOPED |
| VGF   | VGF     | T-10718           | A              | 25/80 (Unbonded)                       |
| VGF   | VGF     | T-10772           | A              | 20/20 (Bonded)                         |

Under European standard UNE-EN 13501-1:2007 the laminate is rated B-s2, d0.

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### Codes and Certifications/General Fire Codes

The data for the analysis ASTM E-84 have been homologated under the following international norms:

- American National Norms Institute      ANSI No. 2.5
- National Protection Agency              NPA No. 225
- Securing Laboratories                      No. 723
- Uniform Construction Code                No. 42-1

The test is the data base for the fire codes written by several responsible groups including:

- **BBC:** Basic Construction Code (Official Conference of Construction in America. Used in Middle East and North East).
- **NFPA:** National Fire Protection Agency (Construction Base Code, Section#101)
- **SSBC:** Meridian Standard Construction Code (Meridian Construction Code Assembly. Mainly used in the South).
- **UBC:** Uniform Construction Code (Official Construction International Conference (ICBO). Used in Western States).

### Limited Warranty

CarbonZero warrants that its products are reasonably free of defects, and when properly used, will comply with normal deviations to related manufacturing specifications. This warranty will be extended only to the original buyers for a period of one (1) year from the purchase date. It excludes damage resulting from accidents, abuse or lack of care, improper use and/or any alteration. Since CarbonZero laminates have a wide range of applications, without the possibility of control over the manufacturing of the end product, CarbonZero does not assume obligations or liabilities arising from the furnishing, sale, installation or repair, use or subsequent sale of any product, to any person or entity. The contents of this brief correspond to common knowledge of High Pressure Laminates. CarbonZero offers this information solely to provide suggestions for your application. Since it's impossible to anticipate all variations in actual end use conditions, no warranties or liabilities can be assumed by CarbonZero in connection to the use of this information. CarbonZero believed the information and recommendations provided herein to be accurate at the time of preparation or obtained from sources believe to be generally reliable. CarbonZero can modify it without prior notice.