



## Architectural Specification Writer’s Information Worksheet (Ballistic-Resistant Armor Security System)

**Objectives:** The following guide is written as a technical support document for the specification of ballistic-resistant laminates in commercial and governmental architectural construction.

**Construction:** Ballistic-resistant laminates are available in two basic constructions: transparent (e.g., acrylic & polycarbonate) and opaque (ballistic-resistant fiberglass). This worksheet is applicable to both constructions but is written to support specification of ballistic-resistant fiberglass, or Micarta® BRASS™.

**Thickness:** Ballistic-resistant laminates are manufactured in a variety of thicknesses, depending on the weapon threat the designer is requiring. As a general rule, thicker laminates provide greater ballistic threat protection. However, all ballistic-resistant materials do not perform equally. As a result, ballistic-resistant laminate should never be specified by thickness, only by performance level.

**Ballistic Protection Level:** The industry utilizes two major testing protocols upon which ballistic-resistant laminates are designed:

- Underwriters Laboratories Inc. UL-752
- National Institute of Justice NIJ-STD-0108.01

Underwriters Laboratories is the benchmark testing agency for the industry due to its periodic product testing program to confirm performance to designated threat levels. If the product is not UL-Listed, it was not tested by Underwriters Laboratories. All specifications should specifically identify the UL-752 or NIJ-STD-0108.01 protection level.

**Fire & Smoke Protection:** There are basically five recognized National Model Fire Codes. These codes outline the industry regulations for interior finish building materials and can be used to identify the level of protection for ballistic-resistant materials.

### National Model Fire Codes

Designation	Name	Last Published	Organization
NBC	National Building Code	1990	Bldg.Official & Code Administrations Int'l
UBC (ICBO)	Uniform Building Code	1988	Int'l Conference of Building Officials
SBC (SBCC)	Standard Building Code	1988	Southern Building Code Congress Int'l
CABO	CABO 1&2 Family Dwelling Code	1990	Council of American Building Officials
NFPA	Life Safety Code	1988	National Fire Protection Association

**Statewide Building Codes:** States which have adopted specific model codes are:

**BOCA Basic Building Code:** Connecticut, Maryland, Michigan, New Jersey, Rhode Island, Virginia

**ICBO Uniform Building Code:** Alaska, Idaho, Indiana, Minnesota, Montana, New Mexico, Oregon, Washington

**SBCCI Standard Building Code:** Georgia



**Flame Spread & Smoke Developed Classification:** The most widely accepted classification system is epitomized by the National Fire Protection Association Life Safety Code, NFPA 101:

- Class A    0 - 25    flame spread    0 - 450 smoke developed
- Class B    26 - 75    flame spread    0 - 450 smoke developed
- Class C    76 - 200    flame spread    0 - 450 smoke developed

The flame spread classification system is based on the premise that the higher the flame spread value, the greater the fire spread potential. Flame spread testing for interior finish materials is obtained using the Steiner Tunnel Test, ASTM E84. All Model Codes, with the exception of NBC, regulate smoke generation of interior finish materials to a maximum rating of 450 (where 100 is red oak).

### Other Flame Spread Classifications



Maximum Rating	Classification in Code				
	BOCA	SBC	UBC	NBC	Life Safety Code NFPA 101
25	1	A	1	25	A
75	11	B	11	75	B
200	111	C	111	200	C

Micarta® BRASS™ certified test results by the Hardwood Plywood & Veneer Association Lab (HPVA) were:

- Flame Spread index      5
- Smoke Developed index    0

Warranting a class A - class 1 rating.

### Specification Example

Ballistic-Resistant Laminate	Protection Level	Fire Rating
Micarta® BRASS™	 Level 1	Class 1-A
Micarta® BRASS™	 Level 1	Class 1-A rated ballistic-resistant laminate

**LIMITED WARRANTY:**


Seller warrants that products sold hereunder shall be of merchantable quality and shall conform in all material respects to Seller's standard specifications shown on the Specifications sheets provided to Micarta, or authorized distributors. Buyer assumes all risk as to the results of the use of the products purchases, whether used singly or in combination with other materials or in any process.

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