



International

**ArmorShield®**

Miracle Glass Protective Coating

**SAVES YOUR POSSESSIONS... EVEN YOUR LIFE.**



**A 0.38 calibre bullet cannot penetrate through this.**

# What is ArmorShield ?

# Space Age Technology

ArmorShield is a new space-age polymer coating. When applied to any existing glass surface, this innovative product increases their strength dramatically. ArmorShield has been thoroughly tested against shotguns, pistols, flame throwers, grenades and hand tools to phenomenal results. Hence, ArmorShield offers excellent protection against smash-and-grab robberies, vandalism, forcible entries and prevents serious injuries caused by walking through glass panes. ArmorShield also keeps out ultraviolet ray transmission that causes furniture and interiors to fade.

ArmorShield is a good alternative to prison-like iron bars and grills. It has also passed stringent safety-impact standard **16 CFR 1201**. Moreover, it is easy to apply. For the protection it offers, this product is the most economical option.

# Benefits of ArmorShield

- . Prevent walk thru glass accident
- . Delay & deter forcible entries
- . Protect against smash & grab burglaries
- . Protect against flying glass shards resulting from explosion or thrown objects
- . Protect against dangerous spalling
- . Prevent fading of fabrics & materials
- . Reduce energy cost
- . Employee comfort & satisfaction



## Where can ArmorShield be used?

**Existing windows & doors glass panels**

**Partition glass panels**

**Skylight**

**Glass counters**

**Glass Curtain Walling**

**Cars**

**Table tops**

**Mirrors**

**Sight glass (ship usage)**

**Alternative to other safety glasses**



## ARMORSHIELD GENERAL INFORMATION

**Material:** ArmorShield Safety Organic film Coating is optically clear and exceptionally strong. The coating is made of polyethelene terephthalate (P.E.T.), It is of uniform composition, contains no plasticizers, and is free from defects which impair functionality and/or appearance.

**Properties:** ArmorShield Safety Organic film Coating is highly resistant to acids, solvents and staining. It is non-toxic, non-gaseous and does not support combustion. (B.S. 476 part 5, the indices for performance of polyester film was at 3 minutes '0' and finally '0'). It retains good physical properties from -70°C to 150°C. (-94°F to 302°F.) Other physical, chemical, thermal and solar optical properties are well depicted in Tables contained in this Booklet.

**Adhesive:** ArmorShield Safety Organic film Coating is coated on one surface of glass with an aggressive acrylic pressure sensitive mounting adhesive system. (8 lbs. per 500 sq. feet, or 3.63 Kg per 46.45 sq. meters). ArmorShield Safety Organic film Coating is uncontaminated; an easily removable release liner is placed over the adhesive mounting system permitting it to be wrapped into roll without sticking to itself. The adhesive mounting system is not water activated. The adhesive mounting system does not cause distortion in glass clarity under normal viewing conditions. Adhesive mounting system also does not support bacterial hosts. The adhesive system contains a chemical called Uvinol, which can block out 99.96% of the sun's damaging ultraviolet rays.





## ARMORSHIELD GENERAL INFORMATION

**Anti-Abrasive Coating (Tuffcoat):** ArmorShield Safety Organic Coating has an anti-abrasive silicone coating applied to the surface opposite that to which the mounting adhesive system is applied. It has passed the Tabor Abrasion Test ASTM 1044D.

**Safety Impact Tests:** ArmorShield Safety Organic Coating when applied to any existing glass surfaces increases their strength by up to 400% and makes them shatter resistant. It has passed safety impact standards which include B.S. 6206, **Class A**, ANSI Z97 and 16 CFR 1201.

**Other Tests:** It has also passed Weathering test ASTM D1499-64, Aging test ASTM D756-78 & Peel test ANZI 2-971 (Peeling strength is at a level higher than 3,200 grams/ inch of width).

**Standard Dimensions:** 5 feet x 100 feet (1.524m x 30.38m).

**Warranty:** Warranty shall be for 10 years (for interior application) against peeling, cracking, crazing and fading when it is applied by qualified ArmorShield Installation Technician (AIT) or ArmorShield Proprietary Design and Build machine (refer to warranty certificate).

## **ARMORSHIELD SAFETY & SECURITY FILM COATING**

ArmorShield was established in 1985 as a pioneer Company in the Asia Pacific region to market the ArmorShield miracle glass protective coating to the building and construction industry. Today ArmorShield is in a unique position to offer unsurpassed flexibility in providing a wide variety of safety and security film coatings to meet virtually any specific performance and budget requirement.

ArmorShield safety and security film coating is engineered to offer a wide variety of benefits, such as:

- Protecting people and property against the life threatening dangers of broken glass
- Restricting or preventing illegal entry
- Reducing the risks of 'smash and grab' theft
- Blocking out up to 99% of the harmful ultraviolet radiation, providing protection for people and interior furnishings or display merchandise
- Rejecting up to 81% of the total solar energy
- Reducing up to 78% of the eye straining sun glare





## **ARMORSHIELD NON-REFLECTIVE SAFETY AND SECURITY FILM COATING**

**ArmorClear Code 1 and Code 2** are one-ply ultra clear safety and security films; available in a variety of different gauges; recommended for commercial, residential or automotive installations.

**ArmorClear Code 1 Exterior** is a one-ply security film designed for exterior installation. This film provides all of the same safety benefits of ArmorClear Code 1 but with the flexibility of exterior installation when necessary.

**ArmorClear Code 3** are two-ply clear, two-ply laminated security film; recommended for commercial and residential installations, increased protection compared to thinner, non-laminated films.

**ArmorCharcoal** are two-ply full body dyed security film: recommended for commercial, residential or automotive installations. ArmorCharcoal is available in three visible light transmissions.



## ARMORSHIELD REFLECTIVE SAFETY AND SECURITY FILM COATING

**ArmorVisions** are two-ply, three-ply and four-ply metallized and sputter coated safety and security films; recommended for commercial, residential or automotive installations. ArmorVisions combine the traditional benefits of solar control film with safety and security features and are available in several gauges and a wide variety of visible light transmissions.

**ArmorSilver** are two-ply, three-ply and four-ply metallized and sputter coated safety and security films; recommended for commercial, residential or automotive installations. ArmorSilver combine the traditional benefits of solar control film with safety and security features and are available in several gauges and a wide variety of visible light transmissions.

**ArmorTitan** are high performance sputter coated films that feature very high solar energy rejection with high visible light transmission.

**ArmorHeatShield** is a multi-layered sputter coated two-ply safety and security film; this film combines a high visible light transmission with very good total solar energy rejection; recommended for commercial, residential or automotive installations.

**ArmorNeutral** are two-ply sputter coated security films that feature high energy efficiency of sputter coating with the benefits of safety and security film.



## ARMORSHIELD NON-REFLECTIVE SAFETY AND SECURITY COATING SPECIFICATIONS

| MATERIAL             | % VLT | % GLARE REDUCTION | % VISIBLE LIGHT REFLECTION<br>Ext. / Int. | % UV | SC  | SHGC | % TOTAL SOLAR ENERGY REFECTED | % TOTAL SOLAR ENERGY ABSORBED | %TOTAL SOLAR ENERGY REJECTED |
|----------------------|-------|-------------------|---|------|-----|------|-------------------------------|-------------------------------|------------------------------|
| <b>ArmorClear</b>    |       |                   |   |      |     |      |                               |                               |                              |
| Code 1               | 90    | 1                 | 8 / 8                                     | 0-4  | .94 | .82  | 9                             | 12                            | 18                           |
| Code 2               | 89    | 1                 | 10 / 8                                    | 0-4  | .93 | .81  | 9                             | 14                            | 19                           |
| Code 3               | 88    | 1                 | 11 / 9                                    | 0-1  | .91 | .79  | 10                            | 15                            | 21                           |
| <b>ArmorClear</b>    |       |                   |   |      |     |      |                               |                               |                              |
| Code 1 Exterior      | 90    | 1                 | 8 / 8                                     | 0-4  | .94 | .82  | 9                             | 12                            | 18                           |
| <b>ArmorCharcoal</b> |       |                   |   |      |     |      |                               |                               |                              |
| Dark Code 1          | 16    | 82                | 5 / 5                                     | 0-1  | .66 | .57  | 10                            | 46                            | 43                           |
| Medium Code 1        | 36    | 59                | 6 / 5                                     | 0-1  | .74 | .64  | 9                             | 38                            | 36                           |
| Lite Code 1          | 51    | 42                | 6 / 5                                     | 0-1  | .78 | .68  | 8                             | 34                            | 32                           |
| <b>ArmorBlue</b>     |       |                   |   |      |     |      |                               |                               |                              |
| Lite Code 1          | 51    | 42                | 6 / 5                                     | 0-1  | .78 | .68  | 8                             | 34                            | 18                           |



## ARMORSHIELD REFLECTIVE SAFETY AND SECURITY COATING SPECIFICATIONS

| MATERIAL                  | % VLT | % GLARE REDUCTION | % VISIBLE LIGHT REFLECTION<br>Ext. / Int. | % UV | SC  | SHGC | % TOTAL SOLAR ENERGY REFLECTED | % TOTAL SOLAR ENERGY ABSORBED | %TOTAL SOLAR ENERGY REJECTED |
|---------------------------|-------|-------------------|---|------|-----|------|--------------------------------|-------------------------------|------------------------------|
| <b>ArmorVisions</b>       |       |                   |   |      |     |      |                                |                               |                              |
| Dark Code 1a              | 24    | 73                | 34 / 18                                   | 0-1  | .35 | .30  | 47                             | 32                            | 70                           |
| Medium Code 1             | 36    | 59                | 25 / 16                                   | 0-1  | .42 | .37  | 33                             | 41                            | 63                           |
| <b>ArmorSilver</b>        |       |                   |   |      |     |      |                                |                               |                              |
| Dark Code 1               | 16    | 82                | 60 / 56                                   | 0-1  | .22 | .19  | 58                             | 32                            | 81                           |
| <b>ArmorTitan</b>         |       |                   |   |      |     |      |                                |                               |                              |
| Medium Code 1a            | 35    | 60                | 13 / 13                                   | 0-1  | .48 | .42  | 23                             | 49                            | 58                           |
| Lite Code 1a              | 49    | 44                | 11 / 11                                   | 0-1  | .57 | .50  | 19                             | 43                            | 50                           |
| <b>ArmorHeatShield 60</b> |       |                   |   |      |     |      |                                |                               |                              |
| Code 1                    | 58    | 34                | 14 / 12                                   | 0-1  | .53 | .46  | 32                             | 31                            | 54                           |
| <b>ArmorHeatShield 55</b> |       |                   |   |      |     |      |                                |                               |                              |
| Green Code 1              | 37.5  | 33                | 16 / 15                                   | 0-1  | .60 | .52  | 25                             | 32                            | 48                           |
| <b>ArmorNeutral</b>       |       |                   |   |      |     |      |                                |                               |                              |
| Extra Dark Code 1         | 10    | 89                | 41 / 40                                   | 0-1  | .27 | .23  | 39                             | 53                            | 77                           |
| Dark Code 1               | 22    | 75                | 26 / 24                                   | 0-1  | .42 | .37  | 25                             | 53                            | 63                           |
| Medium Code 1             | 40    | 55                | 15 / 13                                   | 0-1  | .56 | .49  | 19                             | 44                            | 51                           |
| Lite Code 1               | 51    | 42                | 13 / 11                                   | 0-1  | .64 | .56  | 15                             | 40                            | 44                           |



## ARMORSHIELD NON-REFLECTIVE SAFETY AND SECURITY COATING PHYSICAL PROPERTIES

| MATERIAL             | COLOR           | MATERIAL THICKNESS (MICRONS) | NUMBER OF PLYS | VISIBLE LIGHT TRANS. | TENSILE STRENGTH | BREAK STRENGTH | PEEL STRENGTH | PUNCTURE STRENGTH | ELONGATION AT BREAK |
|----------------------|-----------------|------------------------------|----------------|----------------------|------------------|----------------|---------------|-------------------|---------------------|
| <b>ArmorClear</b>    |                 |                              |                |                      |                  |                |               |                   |                     |
| Code 1               | Clear           | 100                          | 1              | 91%                  | 33,175           | 136            | 3,200         | 74                | 166%                |
| Code 2               | Clear           | 175                          | 1              | 89%                  | 27,665           | 197            | 3,200         | 124               | 170%                |
| Code 3               | Clear           | 275                          | 2              | 88%                  | 27,328           | 306            | 1,555         | 187               | 162%                |
| <b>ArmorClear</b>    |                 |                              |                |                      |                  |                |               |                   |                     |
| Code 1 Exterior      | Clear           | 100                          | 1              | 91%                  | 33,175           | 136            | 3,200         | 74                | 166%                |
| <b>ArmorCharcoal</b> |                 |                              |                |                      |                  |                |               |                   |                     |
| Dark Code 1          | Charcoal Dark   | 100                          | 2              | 16%                  | 25,730           | 105            | 3,210         | 78                | 142%                |
| Medium Code 1        | Charcoal Medium | 100                          | 2              | 36%                  | 25,730           | 105            | 3,210         | 78                | 142%                |
| Lite Code 1          | Charcoal Lite   | 100                          | 2              | 51%                  | 25,730           | 105            | 3,210         | 78                | 142%                |



## ARMORSHIELD REFLECTIVE SAFETY AND SECURITY COATING PHYSICAL PROPERTIES

| MATERIAL                  | COLOR      | MATERIAL THICKNESS (MICRONS) | NUMBER OF PLYS | VISIBLE LIGHT TRANS. | TENSILE STRENGTH | BREAK STRENGTH | PEEL STRENGTH | PUNCTURE STRENGTH | ELONGATION AT BREAK |
|---------------------------|------------|------------------------------|----------------|----------------------|------------------|----------------|---------------|-------------------|---------------------|
| <b>ArmorVisions</b>       |            |                              |                |                      |                  |                |               |                   |                     |
| Dark Code 1a              | Dark       | 150                          | 3              | 24%                  | 25,730           | 220            | 3,210         | 112               | 136%                |
| Medium Code 1             | Medium     | 100                          | 3              | 36%                  | 25,730           | 136            | 3,210         | 78                | 142%                |
| <b>ArmorSilver</b>        |            |                              |                |                      |                  |                |               |                   |                     |
| Dark Code 1               | Dark       | 100                          | 2              | 19%                  | 25,730           | 136            | 3,210         | 78                | 142%                |
| <b>ArmorTitan</b>         |            |                              |                |                      |                  |                |               |                   |                     |
| Medium Code 1a            | Medium     | 150                          | 4              | 35%                  | 28,500           | 148            | 3,210         | 112               | 130%                |
| Lite Code 1a              | Lite       | 150                          | 4              | 49%                  | 28,500           | 148            | 3,210         | 112               | 130%                |
| <b>ArmorHeatShield 60</b> |            |                              |                |                      |                  |                |               |                   |                     |
| Code 1                    | Neutral    | 100                          | 2              | 58%                  | 25,730           | 136            | 3,210         | 78                | 142%                |
| <b>ArmorNeutral</b>       |            |                              |                |                      |                  |                |               |                   |                     |
| Extra Dark Code 1         | Extra Dark | 100                          | 2              | 10%                  | 25,730           | 136%           | 3,210         | 78                | 136%                |
| Dark Code 1               | Dark       | 100                          | 2              | 22%                  | 25,730           | 136%           | 3,210         | 78                | 136%                |
| Medium Code 1             | Medium     | 100                          | 2              | 40%                  | 25,730           | 136%           | 3,210         | 78                | 136%                |
| Lite Code 1               | Lite       | 100                          | 2              | 51%                  | 25,730           | 136%           | 3,210         | 78                | 136%                |



## PHYSICAL PROPERTIES DEFINITIONS

**Tensile Strength** has been tested in accordance with the ASTM D882 method and the result expressed in pounds per square inch (psi).

**Break Strength** has been tested in accordance with ASTM D882 method and the result expressed in pounds of force per inch width.

**Peel Strength** has been tested in accordance with the ASTM D3330 method and the result expressed in grams per inch width.

**Puncture Strength** has been tested in accordance with the ASTM D4830 method and the result expressed in grams of force per square inch.

**Elongation At Break** has been tested in accordance with the ASTM D883 method and the result expressed in a percentage.

Individual test results may vary but these figures do provide for valid product comparisons.



ARMORCLEAR Code 1 & 2



## ARMORCLEAR Code 1 & 2

ArmorClear Code 1 and Code 2 safety and security coatings are designed to make ordinary plate glass windows safer against all types of glass related accidents and are a strong deterrent against illegal entry or 'smash and grab' thefts.

ArmorClear Code 1 and Code 2 coatings are extraordinarily clear, without the 'yellowing' effect that plagues many other brands. These films are a very economical insurance against most forms of glass related injuries, from simple accidents to acts of vandalism or terrorism, factory explosions or natural disasters such as hurricanes, tornadoes or earthquakes.

ArmorClear Code 1 and Code 2 do not prevent glass breakage; however, they do add an extra degree of resiliency and will help hold the glass in place while greatly reducing the dangers of shattered glass and spalling and the clean up task that follows.

ARMORCLEAR Code 3



## **ARMORCLEAR Code 3**

ArmorClear Code 3 is a two-ply laminated safety film that turns ordinary glass into an almost impenetrable barrier.

ArmorClear Code 3 is optically very clear yet provides a very strong deterrent against illegal entry or glass related accidents.

ARMORCLEAR Code 1  
Exterior



## **ARMORCLEAR Code 1 Exterior**

ArmorClear Code 1 Exterior is a one-ply security film designed for exterior installation. This film provides all of the same safety benefits of ArmorClear Code 1 but with the flexibility of exterior installation when necessary.

ARMORCHARCOAL





## ARMORCHARCOAL

ArmorCharcoal are two-ply laminated films that combine a traditional non-reflective dyed component in a security film construction to create films that provide glare protection and safety benefits.

ArmorCharcoal components are full body dyed with UV inhibitors for maximum color stability and longevity.

# ARMORVISIONS



## ARMORVISIONS

The ArmorVisions collection provides the flexibility of achieving a uniform appearance in tradition solar control window film applications with security film when needed.

ArmorVisions are available in a variety of gauges and visible light transmissions.

ARMORSILVER

## ARMORSILVER

ArmorSilver are security films that also provide the solar control benefits of traditional metallized window film. These films are built from the same base material and extra strength adhesive as our clear non-reflective safety film but with the added energy performance benefits of metallization.

ARMORTITAN



## ARMORTITAN

ArmorTitan Medium Code 1a and Lite Code 1a are high performance sputter coated films that feature very high solar energy rejection with high visible light transmission or VLT.

These films provide the flexibility of creating a uniform appearance using both traditional solar control window film with safety and security film.



# ARMORHEATSHIELD 60



## **ARMORHEATSHIELD 60**

ArmorHeatShield 60 is a spectrally selective multi-layered sputter coated film that provides all of the solar control benefits of sputter coated film with the security of a laminated safety film.

This film has a very good TSER with a very high visible light transmission of 58%.

ARMORNEUTRAL



## **ARMORNEUTRAL**

ArmorNeutral are sputter coated safety and security films that blend this hi-tech metallization process for outstanding solar control benefits with the safety features of traditional security film.

The stylish neutral appearance affords tremendous versatility for almost limitless installation applications.

**GET IT ON. KEEP THEM OUT.**

