

# CASCADE Safety & Security



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## WHATS GUARDING YOUR EMPLOYEES?

GuardianCoil® works as a protective screen around all types of machinery, including mills, routers, spar mills, lathes, grinders, forges, testing equipment, etc. It's used as a machine guard to protect personnel and property from high-velocity flying debris or shrapnel. GuardianCoil is an excellent barrier against shattered carbide cutters, grinding wheel fragments, and large metal shards. The wire mesh curtain provides a clear view of the equipment while keeping the operator safe.

Installing GuardianCoil allows easy access to machines while providing a lower-cost method of meeting OSHA guard standards. Because the mesh is typically black, safety yellow or stainless steel, the machine operator's eyes can easily focus on the point of operation. The curtains are lightweight, easy to install, maintenance free, and allow natural light visibility.

GuardianCoil is typically secured at the top and hangs free at both sides and the bottom. GuardianCoil not only stops dangerous flying debris, but also protects those within the confines of the work area. Upon contact, GuardianCoil wraps around the debris and drops it onto the floor, preventing it from leaving the work area or ricocheting back toward the machine operator.

GuardianCoil woven wire guards, dividers and security gates are custom made to your specifications and are available in a wide variety of weave sizes, colors, and materials to insure the utmost protection. Contact us today to discuss your safety and security needs.

### What is the material?

- Steel & Stainless Steel Coiled Wire Fabric
- Flexible Metal Mesh Safety Guard Systems

### Product Applications

- Machine Safety Guards
- Hydraulic Press Guards
- Personnel/Access Safety Barriers
- Hazardous Area Barriers
- Pinch Point Barriers
- Security Gates

## KEY FEATURES

- Prevents injuries caused by flying, falling, rolling, or sliding debris
- High Strength - Superior strength and corrosion resistance
- Energy Absorption - Dissipates a projectile's kinetic energy

by enveloping airborne debris

- Fireproof - Will not burn and does not absorb oil or other flammable liquids
- Visually unobtrusive - Maintain visibility of both the machine and operator to enhance supervision and productivity without sacrificing the operator's safety
- Versatility - Guards and screens can easily be moved to allow access for maintenance and operation of equipment
- Customizable - Engineered systems for varied safety applications. Systems are available in virtually any size
- Prevents operators and bystanders from accessing hazardous areas
- Protective safety barriers (storm debris, industrial containment)
- Internal security barriers
- Long lifecycle and durability

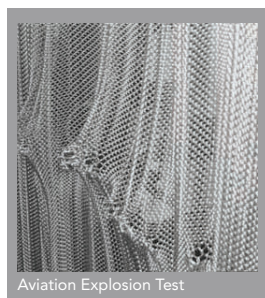
## AIRLINER FUSELAGE TESTING

During aircraft fuselage testing, GuardianCoil is used to wrap the cabin as a precaution to intercept and subsequently stop any debris or shrapnel that may be ejected if the fuselage were to fail. Aircraft engineers varied the strength and effectiveness of our GuardianCoil by projecting several 1.2in diameter x 2.5in long [30.5mm x 63.5mm] steel slugs into draping 3/32" - 21gauge steel mesh at 170 feet/sec [51.8 meters/sec].

The woven wire mesh stopped all the slugs. GuardianCoil was adopted by the world's leading aircraft manufacturer as their primary containment mesh during destructive testing.

## GUARDIANCOIL VALIDATION SHOCK TUBE TESTS – RESULTS ANALYSIS UNIVERSITY OF OTTAWA, JUNE 2015

Analysis of University of Ottawa Shock Tube Test for window blast (Fig. 1) closely matches results of Finite Element Analysis simulation (Fig. 2), modeling the behavior of GuardianCoil for peak displacement and other critical performance factors. Results applied to predictive modeling and analysis for retrofit building installation (Fig. 3) illustrate the ability to withstand an exterior truck bomb explosion.



Aviation Explosion Test

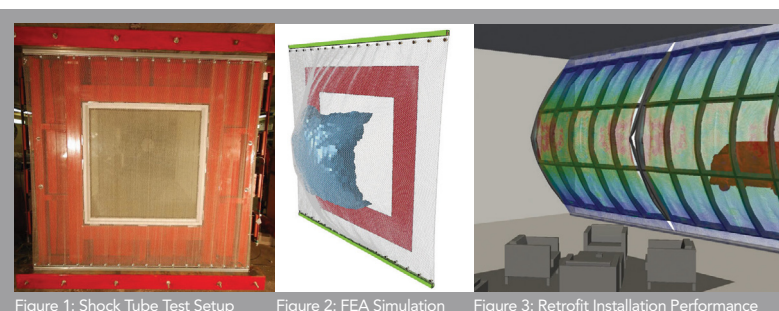
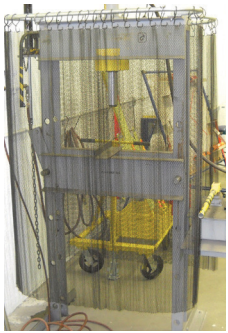


Figure 1: Shock Tube Test Setup

Figure 2: FEA Simulation

Figure 3: Retrofit Installation Performance

# CASCADE Safety & Security



Press Guard



Mobile Machine Guard



100-Ton Press Guard



Guard - Bandsaw



Press Guard - Operable Secura Track



Press Guard - Operable Ring Hooks



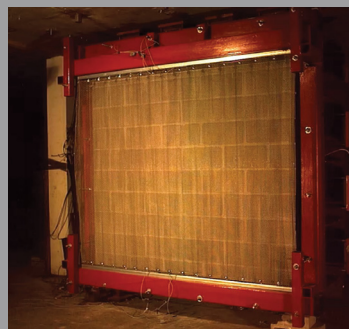
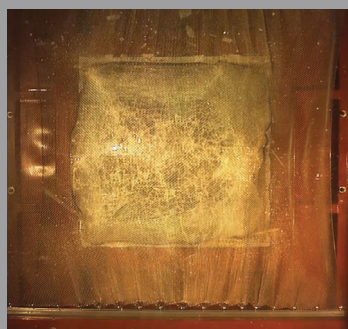
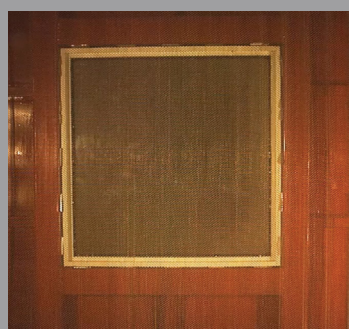
Guard - Scissor Lift



Guard - Mining Conveyor Line



400-Ton Press Gate



## DYNAMIC INNOVATION

Cascade is bringing dynamic innovation to a market that has not recently seen new debris or blast mitigation technologies. The GuardianCoil material can be described in terms of a trampoline, which flexes to absorb the energy from the athlete, and then rebounds to its original shape and position. In a similar manner, GuardianCoil flexes to absorb energy and then returns to its original state. It can do this over and over.

## R&D FACILITY

"Yesterday two people working for us were using our 50 Ton press when the object they were pressing broke and was ejected at speed from the press. Fortunately, one of your screens was in place saving them from injury"

# CASCADE Safety & Security



## WHO IS CASCADE SAFETY & SECURITY?

Cascade Safety & Security® is committed to protecting lives and property from man-made and natural catastrophes through its state-of-the-art GuardianCoil® Dynamic Blast Protection and Debris Mitigation Technologies. GuardianCoil Safety Barriers protect personnel, contain debris, and comply with Occupational Safety and Health Administration's (OSHA) requirements to prevent injuries from projectiles.

Cascade Safety & Security provides solutions for a variety of applications, from safety guards and testing facility blast containment to protection against storm-driven debris and terrorist incidents, in permanent or temporary installations. It is flexible, lightweight, and easily installed. It can be repurposed and redeployed. It is an investment with an indefinite lifetime and is also 100% recyclable with energy saving benefits.

Cascade Safety & Security is a subsidiary of Cascade Coil Drapery, with a heritage in the engineered metal products business dating back to 1939.

## ACCREDITATIONS

- GSA Standard Test Method for Glazing and Window Systems Subject to Dynamic Overpressure Loadings
- Rating: 3b
- ASTM F1642 Standard Test Method for Glazing and Glazing Systems Subject to Airblast Loadings
- Low Hazard Level
- ASTM F2912 Standard Specification for Glazing and Glazing Systems Subject to Airblast Loadings
- ASTM E1300-04 Standard Practice for Determining Load Resistance of Glass in Buildings
- ISO 16932:2016 Glass in Building - Destructive - Windstorm-Resistant Security Glazing - Test and Classification
- ISO 16936-1:2005: Glass in Building - Forced-Entry Security Glazing
- ISO 16933:2007 Glass in Building - Explosion Resistant Security Glazing - Test and Classification for Arena Air Blast Loading
- Rated ISO EXV25
- ISO 16934:2007 Glass in Building - Explosion Resistant Security Glazing - Test and Classification by Shock Tube Loading
- AAMA 510-06 Voluntary Guide specification for Blast Hazard Mitigation for Fenestration Systems
- UFC 4-010-01 DOD Minimum Antiterrorism Standards for Buildings
- UFGS-08 87 23.13: Whole Building Design Guide
- Department of Homeland Security (DHS) SAFETY Act 2017 both designation and certification.



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