



AN INTRODUCTION TO QUANTUM PROTECTIVE





ORIGIN

- Quantum was created by founder Patrick Matthews following an identified need for increased comfort and durability (better ROI), on safety garments in the steel industry
- After much trial & error, Patrick found exactly what he was looking for: an innovative combination of FR fabric base and Quantum treatment which was durable, effective AND comfortable!



Patrick Matthews, Founder



WHAT IS QUANTUM?

- Quantum treatment makes already inherently FR fabric superior to other FR fabrics
- Quantum enhances ability to protect against molten metal splash, slag & sparks
- Base fabric is inherently FR

“The positive comments from our employees were rewarding to hear knowing the fact our staff is better protected today than ever before from exposure to thermal burns, radiate heat, and molten metal splash. ”

Ron Herring, CSHO Safety Manager, Gerdau Long Steel
North, Midlothian, TX 4/11/13





BASE FABRIC

- **Unique fiber content**
- **10.8 oz/yd²**
- **Inherently FR**
- **Extraordinary resistance to molten iron splash (Maximum protection per EN 11612)**
- **High mechanical resistance**
- **Fantastic comfort**
- **Easy maintenance**
- **Minimum shrinkage**

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WHO USES QUANTUM?



- **50+ steel mills are currently testing or using Quantum products**
- **Foundries, welding applications and various hot liquid splash environments**
- **Areas in which flame resistance and molten metal splash protection are key requirements**

KEY BENEFITS OF QUANTUM



Shedding

Comfort

Customization

Durability

Heat release

SHEDDING MOLTEN SPLASH



“The guys just love the Quantum jackets. They get hit with SLAG, SPARKS and all kinds of stuff and it doesn’t put a hole in the jacket. It just BOUNCES OFF!”

Mark Hefley, Safety & Health, Nucor Steel Memphis, TN 4/30/2013

“I have never seen anything test as well as Quantum for molten metal splash.”

Engineer, University of Alabama Testing Center 11/3/11

- ASTM F955
- EN 11612 (base fabric)
- Pour Test
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COMFORT



Lightweight protection offers comfort without compromising safety

“Quantum has breached the gap in providing protection and wearer comfort. It's unique ability to shed molten metal while being lightweight and comfortable makes it the perfect choice.”

Randy Cooper, Health and Safety Manager, Horsehead Metal Products, Inc., 2/5/14

“Have anyone contact me for a reference for the Quantum Jackets. My guys are safer, more comfortable and the jackets last much longer.”

Thurman Register, Safety Specialists, Gerdau-Petersburg, VA 1/8/14

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CUSTOMIZATION/DESIGN

- Most users utilize the below design, but our products are easily customized
- Tube City has customized to meet unique needs



- Extended tail
- Double layered quilted chest, arms & yoke
- Hi-vis triple trim over shoulders
- Para-aramid knit wrist and thumb hole
- Covered snaps with leather washers
- Radio loop at chest
- Vented back
- Available in all sizes & lengths
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DURABILITY AND GARMENT LIFE



“Quantum lasts up to 4 times longer than the silvers, leading to reduction on PPE cost.”

Ron Herring, CSHO Safety Manager, Gerdau Long Steel North, Midlothian, TX 4/11/13

- **Can be laundered at a high temperature for more thorough cleaning**
- **Wash study results indicate no Quantum loss after 25 wash/dry cycles**
- **With proper care, customers have reported 11+ months use of one garment**
- **FR properties are inherent**
- **<3% shrinkage after multiple launderings**
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HEAT RELEASE

Protection from steam burns due to trapped sweat

Wearer less likely to experience heat-related illness

“The guys here at our plant love these jackets and have thanked me numerous times for making the change to Quantum. As a safety manager, I fully support this initiative due to the relief it provides our employees regarding heat stress. Since implementation, there haven’t been any issues noted and we made it through this summer without one person falling out from the heat. I believe the design we went with helps with having better air flow through the jacket without compromising protection.”

David Likens, Safety Manager, Gerdau, Jackson, MI, 10/7/13

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DOES QUANTUM REPLACE ALUMINIZED?



- **Quantum protects against radiant heat for short intervals**
- **Aluminized panels may be added to enhance protection against radiant heat- ask us about customization**
- **Quantum helps protect against steam burns resulting from trapped sweat; while aluminized garments trap heat, quantum allows for heat *release***

CERTIFICATION/TESTING



- **ASTM 6413-11A**

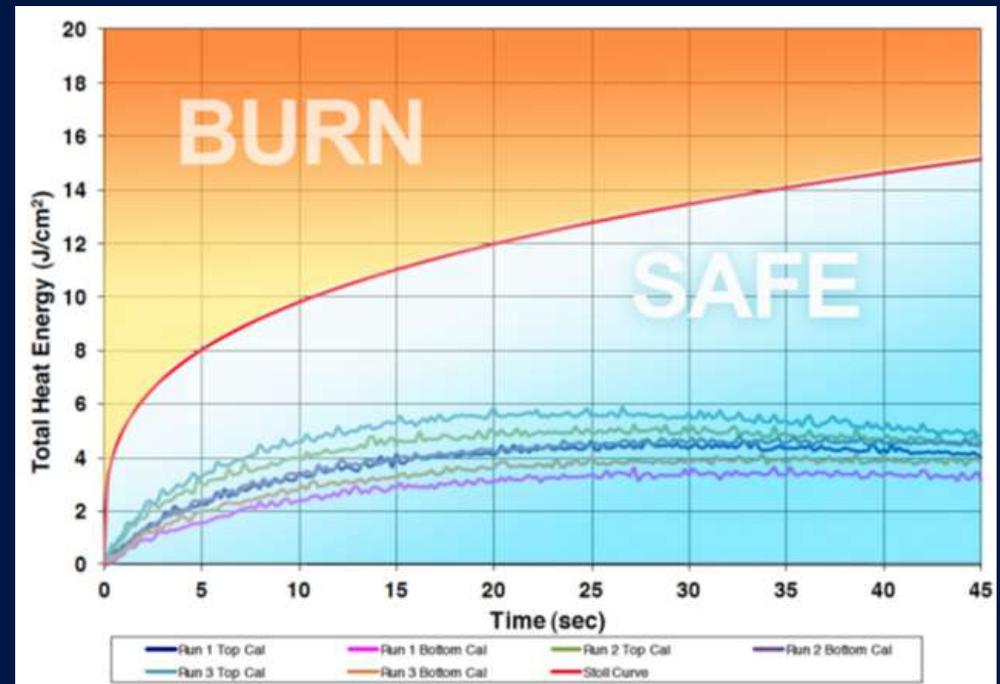
Flame Resistance of Textiles (Vertical Test)

- **ASTM F955**

Heat Transfer through Materials for Protective Clothing Upon Contact with Molten Substances

- **NFPA 2112 Base Fabric Valen-T 937**

Flame Resistant Garments for Protection of Industrial Personnel Against Flash Fire (base fabric)



All Quantum fabric tested below the **RED** line on the Stoll Curve



THANK YOU!

FOR MORE INFORMATION CONTACT:

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