



Fabric Range

Kozane[®] Pro
Kozane[®] Extreme

Kozane[®] Invicta
Kozane[®] Supreme

Kozane[®] Original
Kozane[®] Terra

GRANBERG®

FEARLESS PERFORMANCE

With more than 61 years of experience in protecting workers in challenging Norwegian climate conditions, Granberg has been producing and selling work gloves in many parts of the world - a proud and well-established company with a worldwide client base and a continued focus on product design and product development for customer satisfaction. Since 1961, our mission has been to offer the correct hand protection through customer proximity, responsiveness, knowledge, and technological innovation. Today, we have a selection of over 250 types of safety gloves, designed to protect

workers in various industries, including food processing and medical fields. We have helped inspire and provide protection in workplaces in the manufacturing industry, in the private sector, and as well as in the public sector. Our products are engineered, designed, and manufactured using the latest technology and the most advanced materials available. This has made it possible to recruit the best talents and develop the strongest brands in the industry.



Our motivation to lead the industry forward, and thirst to find unconventional solutions and make a positive impact on the world around us, has led us to establishing a dedicated research and development centre in 2017. Thanks to a carefully selected team of textile specialists and engineers, we have been creating unique high-performance fabrics, breaking barriers in the protective fabrics industry, and expanding the company's interests outside the glove sector. The Kozane® range of high-performance cut-resistant and abrasion-resistant

fabrics offers industry-leading protection wherever they are needed, delivering flexible, lightweight, and breathable protection that truly performs. Their unique composition and outstanding performance make them suitable for a wide variety of applications, including personal protective equipment (PPE) for the military, security and law enforcement, industry, health and social care, special education, extreme sports, and more.

Choosing your cut level

(F2992-15) ANSI EN388 (ISO 13997)

Cut rating from
A1-A9 (9 levels)

Measured in Grams of
Force 1gf = 0.0098N



Measured in Newtons
1N = 101.97gf

Cut rating from A-F
(6 levels) *proposed

MATERIALS

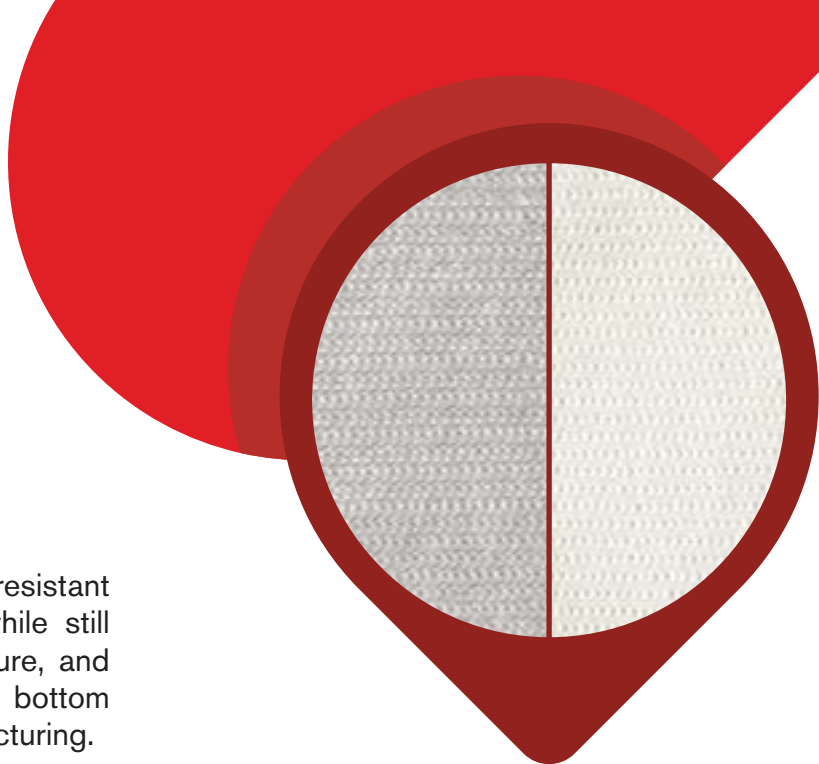
APPLICATION

MATERIALS	Measured in Grams of Force	ANSI A#	EN 388	Measured in Newtons	Cut rating from A-F (6 levels) *proposed
Metal Mesh	6000+ gf	A9			EXTREME Glass manufacturing. Recycling Sorting. Metal Fabrication
Metal Mesh	5000 - 5999 gf	A8			EXTREME Glass manufacturing. Recycling Sorting. Metal Fabrication
Engineered Yarns	4000 - 4999 gf	A7			HIGH Automotive Assembly. Pulp Paper. Aerospace Industry
Engineered Yarns	3000 - 3999 gf	A6	F	30 N (3059 gf)	HIGH Automotive Assembly. Pulp Paper. Aerospace Industry
Engineered Yarns	2000 - 2999 gf	A5	E	22 N (2243 gf)	HIGH Automotive Assembly. Pulp Paper. Aerospace Industry
Engineered Yarns	1500 - 1999 gf	A4	D	15 N (1529 gf)	MODERATE Manufacturing. Warehouse. Food Prep. Packaging
Engineered Yarns Synthetics Polyester/Nylon	1000 - 1499 gf	A3	C	10 N (1019 gf)	MODERATE Manufacturing. Warehouse. Food Prep. Packaging
Synthetics Polyester/Nylon	500 - 999 gf	A2	B	5 N (309 gf)	LOW HAZARD General purpose material handling with sharp edges
Synthetics Polyester/Nylon	200 - 499 gf	A1	A	2 N (203 gf)	LOW HAZARD General purpose material handling with sharp edges

Kozane[®] Pro

Art. No. 500.3503

Kozane[®] Pro is our most lightweight, cut-resistant fabric with an innovative 4-way stretch, while still offering high levels of cut, abrasion, puncture, and tear resistance. Breathable and with a soft bottom layer, designed primarily for garment manufacturing.



EN 388: 2016	Level	Ratings
Abrasion resistance	2	1,890 cycles
Tear resistance	4	301N
Puncture resistance	3	168N
Cut resistance	F	33.1

ANSI ASTM F2992-15	A6	3,743g
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Weight/surface density **345 g/m²**

Roll width **1.97m**

Roll length **20m**

Colour **White or Black**

Safety and care instructions



Patent WO 2018/097737 A1

Potential applications:

- ✓ Cut and slash-resistant clothing
- ✓ Cut-resistant lining
- ✓ Anti-theft bags, luggage, and upholstery
- ✓ Motorcycle, outdoor, and extreme sports apparel (speed skating, hiking, ice hockey, speed boating, etc.)
- ✓ Cut resistant footwear

Recommended Sectors:

- ✓ Sports and Leisure
- ✓ Glass and Metal fabrication
- ✓ Car Manufacturing
- ✓ Security




Kozane[®] Extreme

Art. No. 500.3102

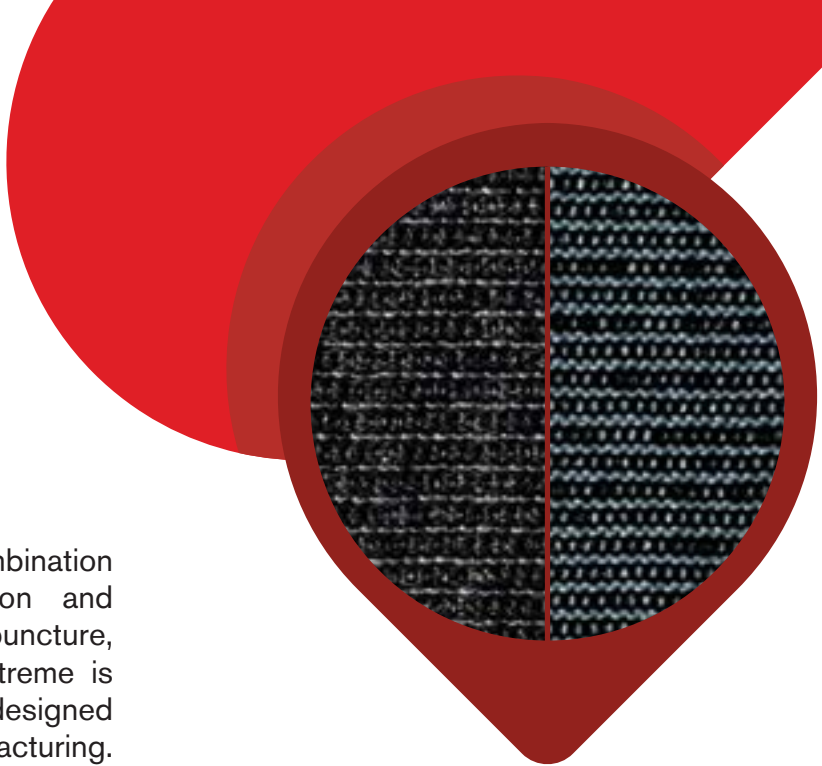
Kozane[®] Extreme offers the best combination between outstanding levels of protection and wearability. Featuring high levels of cut, puncture, abrasion, and tear resistance, Kozane[®] Extreme is breathable, with a soft bottom layer, designed primarily for garment and apparel manufacturing. Personal protective clothing manufactured using Kozane[®] Extreme can effectively prevent serious injuries from cuts and lacerations caused by sharp tools, blades, and materials.

EN 388: 2016	Level	Ratings
Abrasion resistance	3	6,000 cycles
Tear resistance	4	281N
Puncture resistance	4	216N
Cut resistance	F	50.5N

ANSI ASTM F2992-15	A8	5,847g
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Weight/surface density	375 g/m²
Roll width	2.05m
Roll length	20m
Colour	Black or White
Safety and care instructions	 Note: tumble dry at 40°C

Patent WO 2018/097737 A1



Potential applications:

- ✓ Cut and slash-resistant clothing
- ✓ Anti-theft bags, luggage and upholstery
- ✓ Motorcycle, outdoor and extreme sports apparel
- ✓ Cut resistant footwear

Recommended Sectors:

- ✓ Glass and Metal fabrication
- ✓ Car Manufacturing
- ✓ Security
- ✓ Sports and Leisure
- ✓ Mining
- ✓ Recycling
- ✓ Paper and Pulp








Kozane® Invicta

Art. No. 500.2019

Kozane® Invicta features outstanding tear, puncture, and abrasion resistance, and it is our most durable fabric. Initially designed for tear-resistant garments for vulnerable patients and prisoners where traditional clothing and bedding may increase the risk of self-harm, and for motorcycle safety apparel due to its extremely high abrasion resistance. Its unique properties also make it suitable for a wide range of applications which require extreme durability, such as footwear or luggage manufacturing.

EN 388: 2016	Level	Ratings
Abrasion resistance	4	>8,000 cycles
Tear resistance	4	408.2N
Puncture resistance	4	394N
Cut resistance	B	7.3N

Weight/surface density	470 g/m ²
Roll width	1.87m
Roll length	20m
Colour	Black or Grey Marl

Safety and care instructions	    
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Patent WO 2018/097737 A1

Potential applications:

- ✓ Tear-resistant (seclusion) clothing and bedding for mental health and prison/corrections
- ✓ Extremely durable footwear, luggage, upholstery
- ✓ Abrasion resistant protective motorcycle apparel and gear
- ✓ Reinforcements (i.e., knees and elbows) for puncture, tear, and abrasion resistance
- ✓ Bite and scratch resistant clothing for professionals in mental health and special education

Recommended Sectors:

- ✓ Sports and Leisure
- ✓ Healthcare and Social Care
- ✓ Prisons and Corrections
- ✓ Security/Army



Kozane[®] Supreme

Art. No. 500.1005

Kozane[®] Supreme reaches the highest possible cut resistance level according to the American standard ANSI ASTM F2992-15, an unprecedented ANSI A9 for a knitted fabric, previously only achieved by chain mail. Also offering high levels of puncture, abrasion, and tear resistance, Kozane[®] Supreme is suitable for manufacturing cut-resistant products across a variety of sectors.

EN 388: 2016	Level	Ratings
Abrasion resistance	4	18,000 cycles
Tear resistance	4	373N
Puncture resistance	4	332N
Cut resistance	F	55.1N

ANSI ASTM F2992-15 **A9** **7,005g**

Weight/surface density **531 g/m²**

Roll width **2.05m**

Roll length **20m**

Colour **Black or White**

Safety and care instructions



Patent WO 2018/097737 A1

Potential applications:

- ✓ Cut and slash-resistant clothing
- ✓ Anti-theft bags, luggage, and upholstery
- ✓ Motorcycle, outdoor and extreme sports apparel
- ✓ Cut resistant footwear

Recommended Sectors:

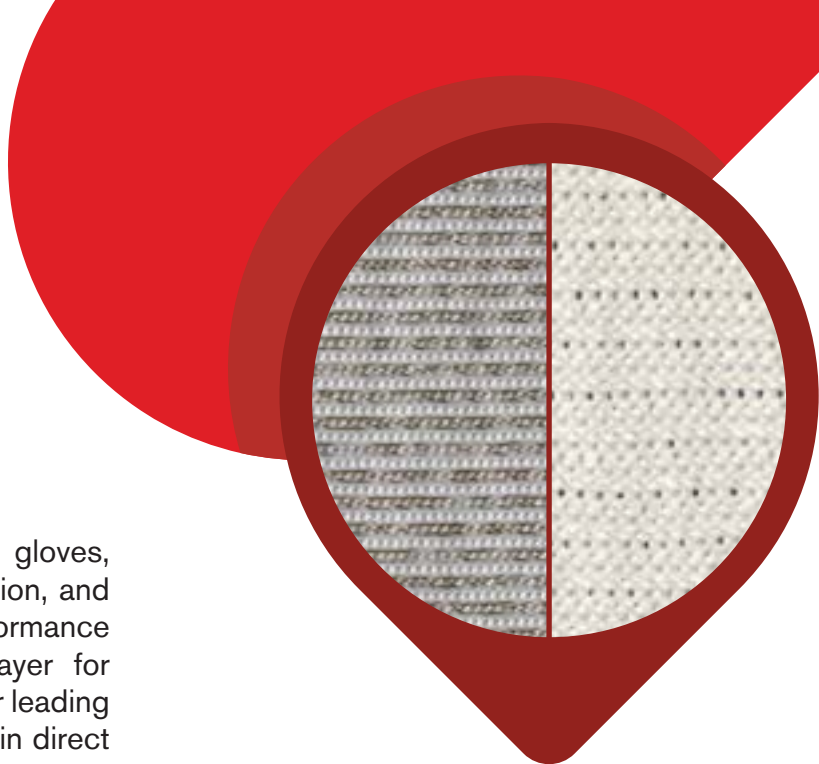
- ✓ Glass and Metal fabrication
- ✓ Car Manufacturing
- ✓ Security
- ✓ Healthcare
- ✓ Sports and Leisure
- ✓ Mining
- ✓ Recycling
- ✓ Paper and Pulp



Kozane® Original

Art. No. 500.2100

Initially designed as a lining for Granberg gloves, Kozane® Original offers high cut, tear, abrasion, and puncture resistance, combining a high-performance top layer with a soft polyester bottom layer for optimum comfort and protection. Unlike other leading brands, Kozane® Original is suitable for use in direct contact with food.



EN 388: 2016	Level	Ratings
Abrasion resistance	3	6,800 cycles
Tear resistance	4	260.7N
Puncture resistance	4	243.4N
Cut resistance	F	32.6N





ANSI ASTM F2992-15	A5	2,512g
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Weight/surface density	470 g/m2
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Roll width	1.77m
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Roll length	20m
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Colour	White
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Safety and care instructions	   
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Patent WO 2018/097737 A1

Potential applications:

- ✓ Cut-resistant lining for gloves
- ✓ Cut resistant body armour covers
- ✓ Anti-theft bags, covers, luggage and upholstery

Recommended Sectors:

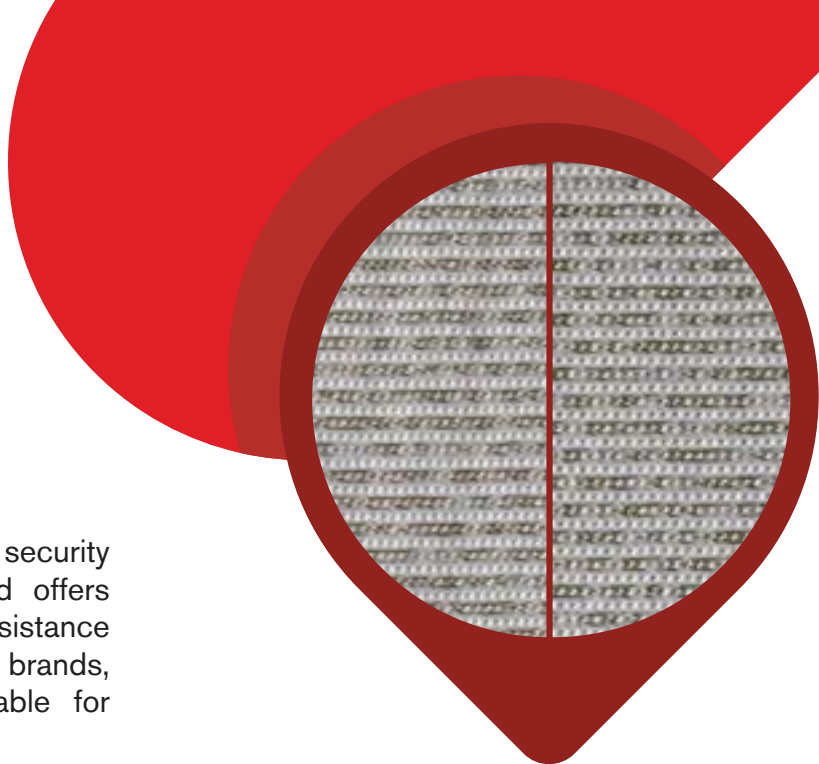
- ✓ Glass and Metal fabrication
- ✓ Car Manufacturing
- ✓ Security
- ✓ Mining
- ✓ Recycling
- ✓ Paper and Pulp



Kozane® Original Double-Sided

Art. No. 500.1100

Initially designed as lining for security garments, Kozane® Original Double-Sided offers high cut, tear, abrasion, and puncture resistance on both sides. Unlike other leading brands, Kozane® Original Double-Sided is suitable for use in direct contact with food.



EN 388: 2016	Level	Ratings
Abrasion resistance	4	16,000 cycles
Tear resistance	4	500.4N
Puncture resistance	4	458.4N
Cut resistance	F	46.1N

ANSI ASTM F2992-15	A6	3,803g
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Weight/surface density	620 g/m ²
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Roll width	1.82m
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Roll length	20m
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Colour	White or Black
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Safety and care instructions	   
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Patent WO 2018/097737 A1

Potential applications:

- ✓ Cut-resistant lining for gloves
- ✓ Cut resistant body armour covers
- ✓ Anti-theft bags, covers, luggage and upholstery

Recommended Sectors:

- ✓ Glass and Metal fabrication
- ✓ Car Manufacturing
- ✓ Security
- ✓ Mining
- ✓ Recycling
- ✓ Paper and Pulp



Kozane[®] Terra V7

Art. No. 500.3507

Kozane[®] Terra V7 features high impact abrasion, tear, and puncture resistance. This 3D knitted fabric combines a high-performance top layer with a soft and breathable bottom layer for optimum comfort and protection.

EN 388: 2016	Level	Ratings
Abrasion resistance	3	4,300 cycles *
Tear resistance	4	340N *
Puncture resistance	4	242N *

EN 17092-2/2020 Impact Abrasion 120 km/h	AAA
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*in-house laboratory test results

Weight/surface density **375 g/m²**

Roll width **1.87m**

Roll length **20m**

Colour **Black**

Safety and care instructions



Patent WO 2018/097737 A1

Potential applications:

- ✓ Impact abrasion resistant motorcycle apparel and clothing
- ✓ Reinforcements (i.e., knees and elbows) for impact abrasion, tear, and puncture resistance
- ✓ Outdoor or hiking apparel
- ✓ Footwear

Recommended Sectors:

- ✓ Sports and Leisure



Kozane[®] Terra V12

Art. No. 500.3512

Kozane[®] Terra V12 features outstanding impact abrasion, tear, and puncture resistance. This exceptional 3D knitted fabric offers the optimum combination of comfort and protection, combining a high-performance top layer with a very soft and breathable bottom layer.

EN 388: 2016	Level	Ratings
Abrasion resistance	3	5,700 cycles *
Tear resistance	4	395N *
Puncture resistance	4	322N *

EN 17092-2/: 2020	
Impact Abrasion 120 km/h	AAA

*in-house laboratory test results

Weight/surface density	390 g/m2
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Roll width	1.74m
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Roll length	20m
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Colour	Black
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Safety and care instructions



Patent WO 2018/097737 A1

Potential applications:

- ✓ Impact abrasion resistant motorcycle apparel and clothing
- ✓ Reinforcements (i.e., knees and elbows) for impact abrasion, tear, and puncture resistance
- ✓ Outdoor or hiking apparel
- ✓ Footwear

Recommended Sectors:

- ✓ Sports and Leisure



Kozane® Terra V17

Art. No. 500.3517

Kozane® Terra V17 features high impact abrasion, tear, and puncture resistance and offers unlimited colour customisation options. This 3D knitted fabric offers optimum comfort and protection, combining a high-performance bottom layer with a top layer available in any colour.

EN 388: 2016	Level	Ratings
Abrasion resistance	2	1,000 cycles *
Tear resistance	4	216N *
Puncture resistance	3	132N *

EN 17092-2/: 2020	
Impact Abrasion 120 km/h	AA

*in-house laboratory test results

Weight/surface density	355 g/m2
Roll width	1.83m
Roll length	20m
Colour	Black/Any colour (MOQs apply)

Safety and care instructions



Patent WO 2018/097737 A1

Potential applications:

- ✓ Impact abrasion resistant motorcycle apparel and clothing
- ✓ Reinforcements (i.e., knees and elbows) for impact abrasion, tear, and puncture resistance
- ✓ Outdoor or hiking apparel
- ✓ Footwear

Recommended Sectors:

- ✓ Sports and Leisure



Kozane® Terra V21






Art. No. 500.3521

Kozane® Terra V21 features outstanding impact abrasion, tear, and puncture resistance while offering unlimited colour customisation options. Our innovative 3D knitted fabric offers both elevated comfort as well as advanced protection, combining a high-performance bottom layer with a top layer available in any colour.

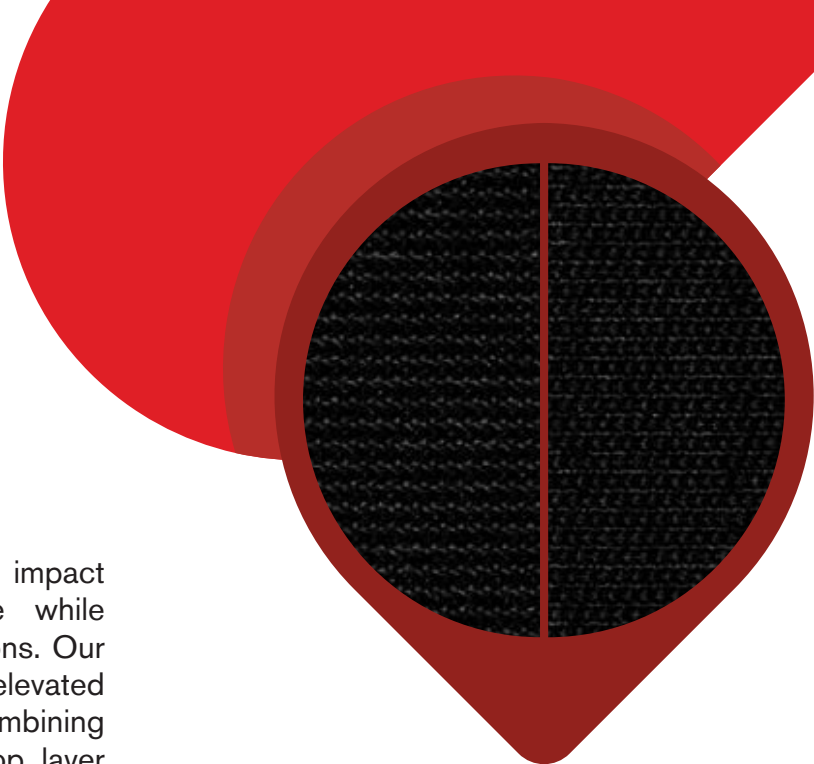
EN 388: 2016	Level	Ratings
Abrasion resistance	3	5,000 cycles *
Tear resistance	4	378N *
Puncture resistance	4	408N *

EN 17092-2/: 2020	
Impact Abrasion 120 km/h	AAA

*in-house laboratory test results

Weight/surface density	490 g/m2
Roll width	1.93m
Roll length	20m
Colour	Black/Any colour (MOQs apply)
Safety and care instructions	    

Patent WO 2018/097737 A1



Potential applications:

- ✓ Impact abrasion resistant motorcycle apparel and clothing
- ✓ Reinforcements (i.e., knees and elbows) for impact abrasion, tear, and puncture resistance
- ✓ Outdoor or hiking apparel
- ✓ Footwear

Recommended Sectors:

- ✓ Sports and Leisure





www.kozaneprotection.com