


**This MotoCAP safety rating applies to:**

**Brand:** Merlin  
**Model:** Axe Kevlar shirt  
**Type:** Jacket - Textile  
**Date purchased:** 29 November 2018  
**Sizes tested:** 2XL and XL  
**Gender:** M  
**Style:** All Purpose  
**Test code:** J18T19

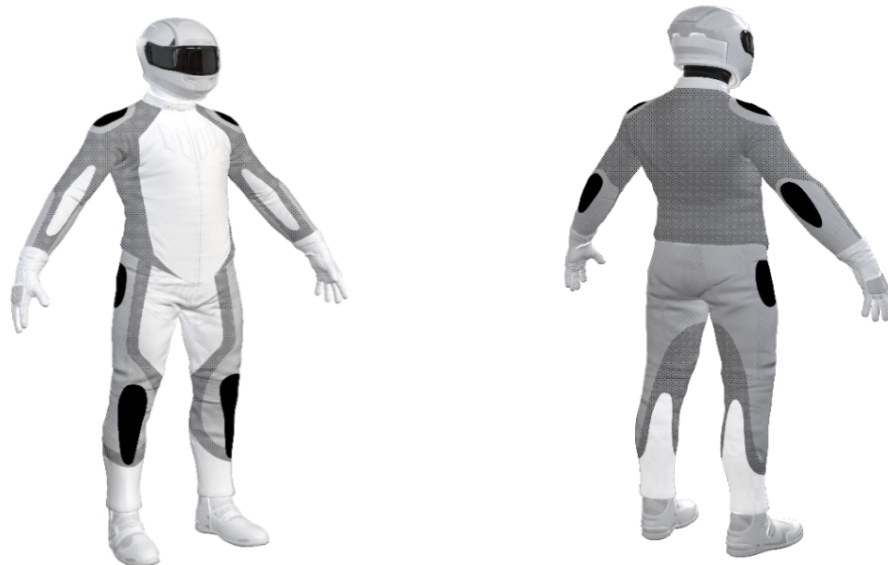
**Test Results Summary:**

	Rating	Score
MotoCAP Protection Rating	★	20.3
Abrasion	1/10	0.89
Burst	9/10	925
Impact	3/10	22.1
MotoCAP Comfort Rating	★★	0.357
Moisture Vapour Resistance		37.9
Thermal Resistance		0.225
Water resistance	N/A	N/A

This garment is fitted with impact protectors for the elbows and shoulders, with a pocket provided for an aftermarket back protector. There are no vents fitted to allow airflow to aid cooling in hot weather.

**Jacket and Pants - Crash Impact Risk Zones**

This diagram is a pictorial representation of the crash impact risk Zones.


**Zone 1**


High risk of abrasion  
High risk of impact

**Zone 2**


High risk of abrasion

**Zone 3**


Medium risk of abrasion

**Zone 4**


Low risk of abrasion

### Abrasion Resistance

The garment was tested for abrasion resistance in accordance with MotoCAP test protocols. The table below shows the test results for time to abrade through all layers of the materials. Calculated for each sample by Zone, type and area coverage of each material as a proportion of that Zone.

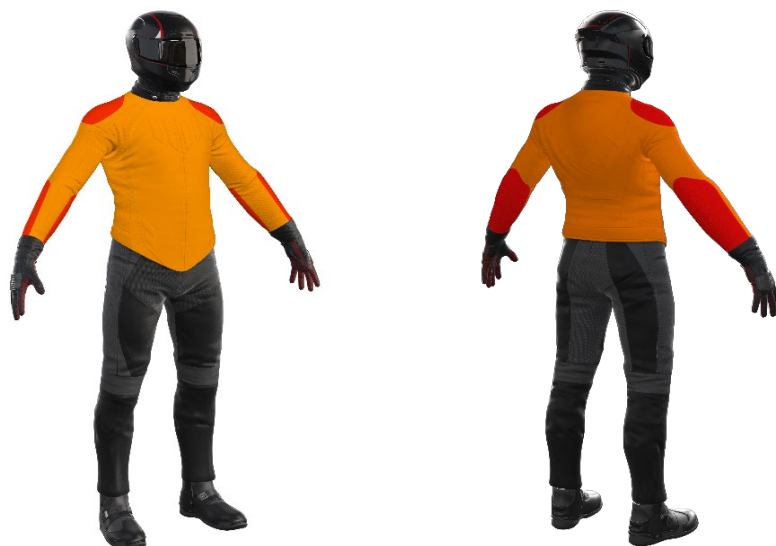
#### Details of materials used in garment:

Material A: Crushed cotton fabric shell, Kevlar liner and mesh inner liner

Zone	Coverage (%)	Abrasion time for each test (seconds)						Average (seconds)	
		1	2	3	4	5	6		
<b>Zone 1 and 2 areas (High abrasion risk)</b>									
Material A	100%	1.02	1.33	0.60	0.96	0.74	0.66	0.89	P
<b>Zone 3 area (Medium abrasion risk)</b>									
Material A	100%	1.02	1.33	0.60	0.96	0.74	0.66	0.89	M
<b>Zone 4 area (Low abrasion risk)</b>									
Material A	100%	1.02	1.33	0.60	0.96	0.74	0.66	0.89	M

Abrasion times are capped at a maximum of 10.00s.

The diagram below is a visual indication of the likely abrasion performance of the materials in each zone calculated from the data in the table above. The colour coding is based on the worst performing material in each zone.



Determining Criteria		Good	Acceptable	Marginal	Poor
High abrasion risk	Zone 1/2:	> 5.6	3.0 - 5.6	1.3 - 2.9	< 1.3
Medium abrasion risk	Zone 3:	> 2.5	1.8 - 2.5	0.8 - 1.7	< 0.8
Low abrasion risk	Zone 4:	> 1.5	1.0 - 1.5	0.4 - 0.9	< 0.4

### Burst Strength

The garment's burst strength was tested in accordance with MotoCAP test protocols. The table below shows the burst pressure in kilopascals (kPa) for each sample tested by Zone and the average result for each zone.

Burst pressure (kPa)

Area	1	2	3	4	5	Average	
Zones 1 & 2	1160	1431	869	769	1331	1112	G
Zone EZ	816	897	724	938	918	859	A
Zones 3 & 4	694	694	566	827	635	683	M

The diagram below illustrates the burst strength results in terms of the likely performance of the garment in an impact and is a pictorial representation of the data from the table above.



#### Determining Criteria

Burst strength

(kPa)	Good	Acceptable	Marginal	Poor
	> 1000	800 - 1000	500 - 799	< 500

### Impact Protection

The garment was tested for impact protection and coverage in accordance with MotoCAP test protocols. The table below shows the test results for each strike on each impact protector in kilonewton (kN) and their area of coverage as a proportion (%) of the Zone.

Impact protector type	Elbow		Shoulder	
Average force (kN)	27.6	<b>M</b>	27.6	<b>M</b>
Maximum force (kN)	31.3	<b>P</b>	31.3	<b>P</b>
Coverage of zone 1 area	95%		110%	
Coverage of zone after displacement	50%		80%	

### Individual test results

Impact force (kN)	Elbow			Shoulder		
	A	B	C	A	B	C
Impact Protector 1	24.7	27.2	28.2	24.7	27.2	28.2
Impact Protector 2	24.6	26.2	31.3	24.6	26.2	31.3
Impact Protector 3	26.7	29.3	30.2	26.7	29.3	30.2

The diagram below is a visual indication of the likely performance of each impact protector calculated from the data in the table above. The colour coding is based on the worst performing score for average or maximum force for each impact zone.



Determining Criteria	Impact force (kN)			
	Good	Acceptable	Marginal	Poor*
Impact force (kN)	< 15	15 - 24	25 - 30	> 30

\* Poor may also indicate that no impact protector, or impact protector pocket is present in the garment

Areas shaded black are not considered in the impact protection ratings.

### Thermal comfort

The garment was tested for thermal comfort following the MotoCAP test protocols. The table below shows the moisture vapour resistance and the thermal resistance values obtained.

	1	2	Average
Moisture Vapour Resistance - $R_{et}$ ( $kPam^2/W$ )	36.9	38.9	37.9
	1	2	Average
Thermal Resistance - $R_{ct}$ ( $Km^2/W$ )	0.215	0.236	0.225

### Water spray and rain resistance

This garment has not been advertised as water resistant so has not been tested for water spray and rain resistance.