


**This MotoCAP safety rating applies to:**

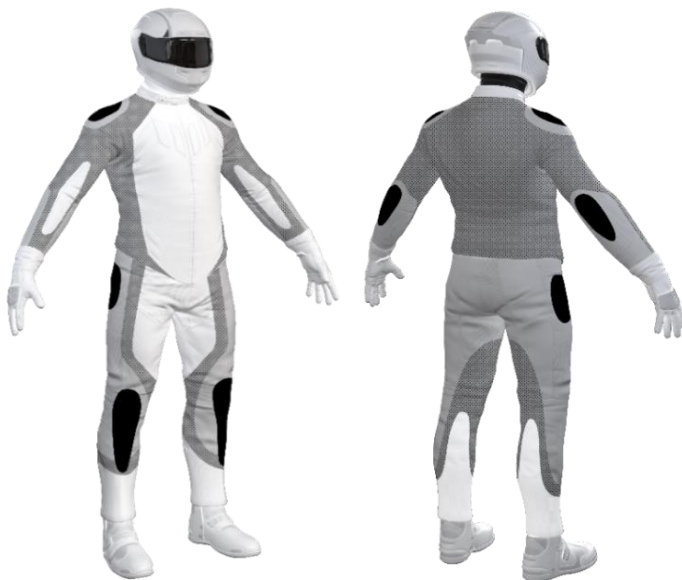
Brand	Rev'it
Model	Tornado 4 H2O
Type	Pants - Textile
Date purchased	8 April 2025
Sizes tested	XL and XXL
Test garment gender	Male
Style	All Purpose
RRP	\$459.00

Test Results Summary	Rating	Score
MotoCAP Protection Rating	★★	28.2
Abrasion	1/10	0.57
Burst	10/10	1229
Impact	6/10	43.5
MotoCAP Breathability Rating	★★	0.368
Moisture Vapour Resistance	-	27.8
Thermal Resistance	-	0.170
Water resistance	7/10	5.4

This garment is fitted with impact protectors for the knees and hips. Replacing the hip armour with higher performing impact protectors would improve the protection levels of this garment. Mesh panels are located in the front of the upper and lower legs to allow airflow movement through the garment. This garment has a removable water-resistant liner. The breathability rating above was achieved with the thermal and water-resistant liners removed. When tested with the water-resistant liner installed, the breathability rating reduced but remained within the 2 star range.

**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

**Removable liners**

Thermal liner	<input checked="" type="checkbox"/>
Water-resistant liner	<input checked="" type="checkbox"/>

**Removable impact protection**

	Pockets	Armour
Knee	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Hip	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

## Abrasion Resistance

These pants were tested for abrasion resistance in accordance with MotoCAP test protocols. 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 below. The colour coding is based on the worst performing material in each zone.



### Abrasion Resistance Performance

Abrasion rating	1/10
Abrasion score	0.57

Determining Criteria	Area	Good	Acceptable	Marginal	Poor
High abrasion risk	Zones 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

**Individual Abrasion Resistance Results:** - 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. Abrasion times are capped at a maximum of 10.00s.

### Abrasion time for each test (seconds)

Zones 1 & 2	Coverage (%)	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Average	
Material A	100%	0.64	0.47	0.76	0.64	0.44	0.58	0.59	P
Zone 3	Coverage (%)	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Average	
Material A	75%	0.64	0.47	0.76	0.64	0.44	0.58	0.59	P
Material B	25%	0.42	0.55	0.23	0.52	0.31	0.42	0.41	P
Zone 4	Coverage (%)	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Average	
Material A	50%	0.64	0.47	0.76	0.64	0.44	0.58	0.59	M
Material B	50%	0.42	0.55	0.23	0.52	0.31	0.42	0.41	M

### Details of materials used in pant

Material A	Woven fabric shell with mesh inner liner
Material B	Mesh fabric shell with mesh inner liner

## Burst Strength

These pants were tested for burst strength in accordance with MotoCAP test protocols. 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 below.



### Burst Strength Performance

Burst rating	10/10
Burst score	1229

Determining Criteria	Unit	Good	Acceptable	Marginal	Poor
Burst strength	(kPa)	> 1000	800 - 1000	500 - 799	< 500

**Individual Burst Strength Results:** - 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 for each seam (kPA)

Area	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Average	
Zones 1 & 2	1344	1279	908	1387	1227	1154	1216	G
Zones 3 & 4	1567	1468	1359	1193	846	1242	1279	G

## Impact Protection

These pants were tested for impact protection and coverage in accordance with MotoCAP test protocols. The diagram below is a visual indication of the likely performance of each impact protector calculated from the data in the table below. The colour coding is based on the worst performing score for average or maximum force for each impact zone. Areas shaded black are not considered for impact protection ratings.



### Impact Protection Performance

Impact rating	6/10
Impact score	43.5

Determining Criteria	Unit	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

**Impact Protector Results:** - The table below shows the average and maximum force transmitted through each impact protector type in kilonewtons (kN) and their area of coverage as a proportion (%) of the Zone.

Impact protector type	Knee		Hip	
Average force (kN)	15.8	A	25.8	M
Maximum force (kN)	19.5	A	27.2	M
Coverage of Zone 1 area	120%		115%	
Coverage of Zone after displacement	100%		100%	

**Individual Impact Protector Results:** - The table below shows the test results for each strike on individual impact protectors in kilonewtons (kN) and the position of the strike. Individual strike results are capped at a maximum of 50kN.

### Force transfer for each impact strike (kN)

Impact protector type	Knee			Hip		
	Centre	Mid	Edge	Centre	Mid	Edge
Impact Protector 1	13.1	16.7	16.3	25.8	26.6	24.8
Impact Protector 2	14.8	15.5	16.0	26.8	24.9	27.2
Impact Protector 3	15.7	14.6	19.5	25.6	24.8	25.3

## Breathability

These pants were tested for breathability following the MotoCAP test protocols. The table below shows the moisture vapour resistance and the thermal resistance values obtained.

### Without removable liners

Breathability rating	★★
Breathability score	0.368

### With water-resistant liner

Breathability rating	★★
Breathability score	0.344

### Moisture Vapour Resistance - $R_{et}$ (kPa.m<sup>2</sup>/W)

	1	2	Average
Without removable liners	27.9	27.6	27.8
With water-resistant liner	35.4	36.6	36.0

### Thermal Resistance - $R_{ct}$ (K.m<sup>2</sup>/W)

	1	2	Average
Without removable liners	0.168	0.173	0.170
With water-resistant liner	0.199	0.214	0.206

## Water spray and rain resistance

These pants are advertised as water-resistant, and so have been tested for water spray and rain resistance according to the MotoCAP test protocols. The table below shows the water absorbed (ml) and the wetting proportion (%) of the garment and undergarments due to water absorption.

	Water absorbed by garment		Water absorbed by underwear		<b>Water Resistance Performance</b>	
	Volume (ml)	Percentage (%)	Volume (ml)	Percentage (%)		
Pants 1	682	48%	19	7%	Water rating	7/10
Pants 2	507	36%	10	4%	Water score	5.37
<b>Average</b>	595	42%	15	5%		

## Location of wetting

Minor visible wetting to the cotton underwear was present at the waistband of both pants tested.

## Assessment Details.

Brand	Rev'it
Model	Tornado 4 H2O
Type	Pants - Textile
Date purchased	8 April 2025
Tested by	AMCAF, Deakin University
Report approved by	MotoCAP Chief Scientist
Garment test reference	P25T13
Rating first published	August 2025
Rating updated	11 August 2025