This MotoCAP safety rating applies to:

Brand:	Harley Davidson
Model:	SwitchBack GMC Hill City
Type:	Jacket - Textile
Date purchased:	23 October 2018
Sizes tested:	2XL
Gender:	M
Style:	Cruiser
Test code:	J18T09

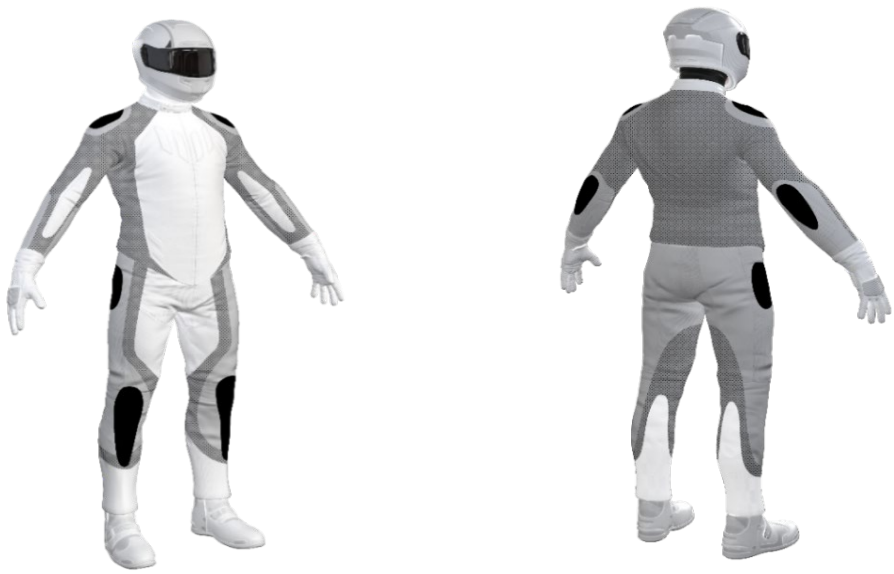
Test Results Summary:

	Rating	Score
MotoCAP Protection Rating	★	26.0
Abrasion	4/10	3.08
Burst	10/10	1055
Impact	1/10	0.0
MotoCAP Comfort Rating	★	0.224
Moisture Vapour Resistance		55.7
Thermal Resistance		0.208
Water resistance	N/A	N/A

This garment is not fitted with impact protectors, but pockets are provided for shoulder, elbow and back aftermarket impact protectors. A double vent system on the sides is provided to allow airflow cooling in hot weather. Removable panels in the front and back convert the garment into a mesh shell. Comfort measurements were conducted with and without the removable panels. The comfort rating increased from 1 star to 2 stars when in the mesh jacket mode.

Jacket and Pants - Crash Impact Risk Zones

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



Zone 1	Zone 2	Zone 3	Zone 4
High risk of abrasion High risk of impact	High risk of abrasion	Medium risk of abrasion	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: Abrasion testing was done in mesh jacket mode.

Material A:	Polyester woven fabric shell, foam layer and mesh inner liner
Material B:	Polyester woven fabric shell and mesh inner liner
Material C:	Polyester woven fabric shell, foam layer and mesh inner liner
Material D:	Polyester mesh shell and mesh inner liner

Zone	Coverage (%)	Abrasion time for each test (seconds) 1	2	3	4	5	6	Average (seconds)	
Zone 1 and 2 areas (High abrasion risk)									
Material A	90%	7.56	7.30	7.14	7.20	2.59	5.96	6.29	G
Material B	10%	0.85	0.45	0.72	0.65	0.50	0.53	0.62	P
Zone 3 area (Medium abrasion risk)									
Material C	15%	2.88	1.68	1.64				2.07	A
Material D	85%	0.45	0.32	0.51	0.40	0.32	0.44	0.41	P
Zone 4 area (Low abrasion risk)									
Material D	100%	0.45	0.32	0.51	0.40	0.32	0.44	0.41	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	1075	1545	802	1400	1773	1319	G
Zone EZ	1333	1268	725	773	602	940	A
Zones 3 & 4	694	826	729	547	987	757	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		Good	Acceptable	Marginal	Poor
Burst strength	(kPa)	> 1000	800 - 1000	500 - 799	< 500

Impact Protection

The garment was not tested for impact protection and coverage as there were no impact protectors provided. The table below would otherwise provide 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)	P	P
Maximum force (kN)	P	P
Coverage of zone 1 area	0%	0%
Coverage of zone after displacement	0%	0%

Individual test results

Impact force (kN)	**Elbow**	No impact protector present		**Shoulder**	No impact protector present	
Strike location	**A**	**B**	**C**	**A**	**B**	**C**
Impact Protector 1						
Impact Protector 2						
Impact Protector 3						

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 maximium force for each impact zone.

Determining Criteria		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} ($kPam^2/W$)	54.7	56.8	55.7

	1	2	**Average**
Thermal Resistance - R_{ct} (Km^2/W)	0.204	0.211	0.208

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.