



This MotoCAP safety rating applies to:

Brand:	Helstons
Model:	Eagle Air
Type:	Glove - Leather
Date purchased:	11 March 2024
Sizes tested:	9, 11 and 12
Test glove gender:	Male
Style:	Cruiser
RRP:	\$250.00

Test Results Summary:

	Rating	Score
MotoCAP Protection Rating	★★★	3.4
Abrasion	8/10	4.15
Seam strength	10/10	13.0
Impact	4/10	7.8
Water resistance	N/A	N/A

These gloves are fitted with impact protection for the knuckles only. There is no impact protection for the palms. Perforated leather on the back of the hand provides continuous airflow movement through the glove.

Gloves - Crash Impact Risk Zones

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



Impact protection

Knuckles	☒
Palm	☐

Zone 1

High risk of impact
High risk of abrasion

Zone 2

High risk of abrasion

Zone 3

Medium risk of abrasion

Abrasion Resistance

The gloves 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	8/10
Abrasion score	4.15

Determining Criteria	Area	Good	Acceptable	Marginal	Poor
High abrasion risk	Zone 1 & 2	> 4.0	2.7 - 4.0	1.2 - 2.6	< 1.2
Medium abrasion risk	Zone 3	2.5	1.8 - 2.5	0.8 - 1.7	< 0.8

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	Coverage (%)	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Average	
Material A	36%	10.00	10.00	10.00	10.00	10.00	10.00	10.00	G
Material B	64%	2.70	3.45	5.26	4.57	2.30	2.36	3.44	A
Zone 2	Coverage (%)	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Average	
Material C	10%	4.81	5.04	3.29	3.13	7.09	7.77	5.19	G
Material D	90%	3.05	2.81	2.59	1.86	2.17	2.73	2.54	M
Zone 3	Coverage (%)	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Average	
Material B	40%	2.70	3.45	5.26	4.57	2.30	2.36	3.44	G
Material D	60%	3.05	2.81	2.59	1.86	2.17	2.73	2.54	G

Details of materials used in glove - derived from manufacturer provided information

Material A	Hard-shell armour over leather shell
Material B	Leather shell with mesh inner liner
Material C	Leather patch over leather shell with mesh inner liner
Material D	Perforated leather shell with mesh inner liner

Seam Tensile Strength

The tensile strength of the gloves seams and glove restraint (the force required to drag off a properly fastened glove) were tested in accordance with MotoCAP test protocols. The diagram below illustrates the tensile strength and wrist restraint results in terms of the likely performance of the glove in a crash and is a pictorial representation of the data from the tables below.



Seam Strength Performance

Seam strength rating	10/10
Seam strength score	13.0

Determining Criteria	Unit	Good	Acceptable	Marginal	Poor
Seam tensile strength	(N/mm)	> 11	9 - 11	6 - 8.9	< 6
Glove restraint	(N)	> 200	100 - 200	50 - 99	<50

Individual Seam Strength Results: - The table below shows the seam tensile strength in newtons per millimeter (N/mm) for each seam tested by Zone and the average result for each Zone.

Seam tensile strength (N/mm)

Area	1	2	3	4	5	Average	
Zones 1 & 2	8.42	15.53	11.48	6.54	17.03	11.80	G
Zone 3	18.64	14.72	11.23	16.76	12.74	14.82	G

Individual Glove Restraint Results: - The table below shows the force required to remove the restrained glove in newtons (N) for each of the five gloves tested and the average result.

Glove restraint (N)

Glove	1	2	3	4	5	Average	
Wrist restraint	252.9	174.1	143.7	374.9	346.7	258.5	G

Impact Protection

The glove was 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 in the impact protection ratings.



Impact Protection Performance

Impact rating	4/10
Impact score	7.8

Determining Criteria	Unit	Good	Acceptable	Marginal	Poor
Impact force	(kN)	< 2	2 - 4.9	5 - 8	> 8

* Poor may also indicate that no impact protector is present in the glove

Impact Protector Results: - The table below shows the test results for each strike on each impact protector in kilonewtons (kN) and their area of coverage in percentage (%) within the Zone. Impact forces are capped at a maximum of 10.0kN.

Impact protector type	Knuckles	Palm
Average force (kN)	1.5 G	P
Maximum force (kN)	1.6 G	P
Coverage of zone 1 area	105%	0%

Individual test results: - The table below shows the test results for each strike on each impact protector in kilonewtons (kN) and the position of the strike. Impact forces are capped at a maximum of 10.0kN.

Impact protector type	Knuckles			Palm	No impact protector present
Strike number	1	2	3	1	2
Impact Protector 1	1.4	1.4	1.6		
Impact Protector 2	1.4	1.6	1.3		
Impact Protector 3	1.6	1.5	1.5		

Water spray and rain resistance

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

Assessment Details.

Brand	Helstons
Model	Eagle Air
Type	Glove - Leather
Date purchased	11 March 2024
Tested by	AMCAF, Deakin University
Report approved by	MotoCAP Chief Scientist
Garment test reference	G24L26
Rating first published	April 2024
Rating updated	29 April 2024