


This MotoCAP safety rating applies to:

Brand: Macna
Model: Catch mesh
Type: Glove - Leather
Date purchased: 11 August 2018
Sizes tested: XXL
Gender: M
Style: All Purpose
Test code: G18L04

Test Results Summary:

	Rating	Result
MotoCAP Protection Rating	★	1.9
Abrasion	5/10	2.80
Seam strength	1/10	3.9
Impact	1/10	3.9
Water resistance	N/A	N/A

This glove is fitted with impact protectors for the knuckles and palm but there is no impact protection in the wrist area. There is mesh fabric on the tops of the fingers and wrist and perforated leather on the palm to aid cooling in hot weather.

Gloves - Crash Impact Risk Zones

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


Zone 1


High risk of impact
Medium risk of abrasion

Zone 2


High risk of abrasion

Zone 3


Medium risk of abrasion

Zone 4


Low risk of abrasion

Abrasion Resistance

The glove was tested for abrasion resistance in accordance with MotoCAP test protocols. The table below shows the test results for time to abrade to material failure 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:	Single layer of leather shell
Material B:	Single layer of leather shell
Material C:	Single layer of mesh fabric shell with soft plastic molded inserts
Material D:	Single layer of mesh fabric shell

Zone	Coverage (%)	Abrasion time for each test (s)						Average (s)	
		1	2	3	4	5	6		
Zone 2 area (High abrasion risk)									
Material A	100%	3.40	3.32	3.63	3.09	2.62	3.67	3.29	A
Zone 3 area (Medium abrasion risk)									
Material B	100%	1.86	1.98	3.20	1.41	1.49	2.24	2.03	M
Zone 4 area (Low abrasion risk)									
Material C	70%	3.33	4.85	1.76	3.71	2.60	1.31	2.93	G
Material D	30%	0.30	0.22	0.23	0.46	0.45	0.20	0.31	P

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.



Determining Criteria		Good	Acceptable	Marginal	Poor
High abrasion risk	Zone 2:	> 4.0	2.7 - 4.0	1.2 - 2.6	< 1.2
Medium abrasion risk	Zone 3:	3.5	2.5 - 3.5	1.0 - 2.4	< 1.0
Low abrasion risk	Zone 4:	>2.5	1.8 - 2.5	0.8 - 1.7	< 0.8

Seam Tensile Strength

The tensile strength of the gloves seams and glove restraint (the force required to drag off a correctly fastened glove) were tested in accordance with MotoCAP test protocols. 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 2 & 3	8.97	8.16	6.57	2.44	8.15	6.86	M
Zone 4	8.49	10.04	7.26	9.29	9.20	8.86	M

The table below shows the force required to remove the restrained glove in newtons (N) for each glove tested and the average result.

Glove restraint (N)

Area	1	2	3	4	5	Average	
Wrist restraint	234.9	226.3	188.3	195.9	171.4	203.3	M

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 above.



Determining Criteria		Good	Acceptable	Marginal	Poor
Seam tensile strength	(N/mm)	> 15	10 - 15	6.5 - 9.9	< 6.5
Glove restraint	(N)	> 400	300 - 400	200 - 299	< 200

Impact Protection

The glove 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 in percentage (%) within the Zone.

Impact protector type		Knuckles		Palm		Wrist
Average force	(kN)	5.01	M	5.41	A	P
Maximum force	(kN)	6.70	M	5.70	A	P
Coverage of zone 1 area		140%		40%		0%

Individual test results

Impact force (kN)	Knuckles			Palm	
	A	B	C	A	B
Impact Protector 1	4.40	5.20	4.10	5.20	5.50
Impact Protector 2	5.70	6.70	5.10	5.70	5.30
Impact Protector 3	3.30	5.60	5.00		

Impact force (kN)	Wrist	No impact protector present
Strike location	A	B
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 maximum force for each impact zone.



Determining Criteria

		Good	Acceptable	Marginal	Poor*
Knuckle and wrist Impact force	(kN)	< 2	2 - 4.9	5 - 8	> 8
Palm impact force	(kN)	< 4	4 - 5.9	6 - 8	> 8

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

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

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.