


This MotoCAP safety rating applies to:

Brand: Macna
Model: Saber
Type: Glove - Leather
Date purchased: 8 July 2020
Sizes tested: XL and 2XL
Test glove gender: Male
Style: All Purpose
RRP: \$69.95

Test Results Summary:

| | Rating | Score |
|---------------------------|--------|-------|
| MotoCAP Protection Rating | ★★ | 2.5 |
| Abrasion | 5/10 | 2.59 |
| Seam strength | 4/10 | 7.9 |
| Impact | 5/10 | 8.5 |
| 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 in the fingers, palm and wrist, provide continuous airflow within 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 | 5/10 |
| Abrasion score | 2.59 |

| 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 | Coverage (%) | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 | Sample 6 | Average | |
|---------------|---------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|---|
| Material A | 70% | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 | G |
| Material B | 30% | 1.91 | 1.41 | 1.33 | 1.30 | 1.28 | 1.22 | 1.41 | M |
| Zone 2 | Coverage (%) | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 | Sample 6 | Average | |
| Material B | 100% | 1.91 | 1.41 | 1.33 | 1.30 | 1.28 | 1.22 | 1.41 | M |
| | | | | | | | | | |
| Zone 3 | Coverage (%) | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 | Sample 6 | Average | |
| Material B | 50% | 1.91 | 1.41 | 1.33 | 1.30 | 1.28 | 1.22 | 1.41 | M |
| Material C | 50% | 1.01 | 2.19 | 0.12 | 2.74 | 1.37 | 1.39 | 1.47 | M |

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

| | |
|------------|--|
| Material A | Leather shell over hard-shell armour with fabric inner liner |
| Material B | Leather shell with fabric inner liner |
| Material C | Perforated leather shell with fabric 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 | 4/10 |
| Seam strength score | 7.9 |

| 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 | 5.63 | 8.12 | 8.68 | 7.70 | 9.89 | 8.00 | M |
| Zone 3 | 9.83 | 9.71 | 7.16 | 6.48 | 5.86 | 7.81 | M |

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 | 331.1 | 283.7 | 242.6 | 264.8 | 227.0 | 269.8 | 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 5/10
Impact score 8.5

| 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) | 1.7 G | P |
| Maximum force (kN) | 2.0 A | P |
| Coverage of zone 1 area | 120% | 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 | | 1.5 | 1.7 | 1.7 | | |
| Impact Protector 2 | | 1.6 | 2.0 | 1.7 | | |
| Impact Protector 3 | | 1.8 | 1.8 | 1.7 | | |

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 | Macna |
| Model | Saber |
| Type | Glove - Leather |
| Date purchased | 8 July 2020 |
| Tested by | AMCAF, Deakin University |
| Report approved by | MotoCAP Chief Scientist |
| Garment test reference | G19L61 |
| Rating first published | October 2020 |
| Rating updated | 17 August 2021 |