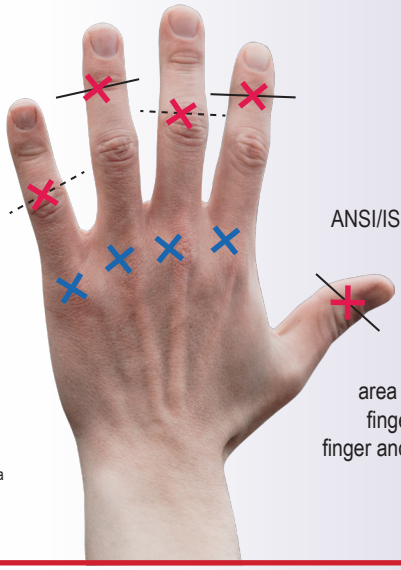
Comparison of Impact Testing Standards – EN 13594:2015 vs ANSI/ISEA 138-2019

	Glove is cut horizontally in half top of hand is tested	5.5lb (2.5kg) polished steel drop striker	Dropped 8 inches	Knuckles are tested	Fingers are tested	Must register less than 9 kN of force	Reports as a pass or fail	Reports as levels 1-3
EN 13594:2015	✓	✓	✓	✓	✗	✓	✓	✗
ANSI/ISEA 138-2019	✓	✓	✓	✓	✓	✓	✗	✓

EN 13594:2015

The EN 13594 standard demands only that the knuckles be tested for impact absorption.

ANSI/ISEA 138-2019



ANSI/ISEA 138-2019 institutes testing of knuckles as well as finger protection. On the middle and little fingers the testing area is measured 5 cm from fingertip. On the index, ring finger and thumb, testing area is 2.5 cm from fingertip.

- 5 cm from tip
- 2.5 cm from tip
- Knuckle Testing Area
- Finger Testing Area

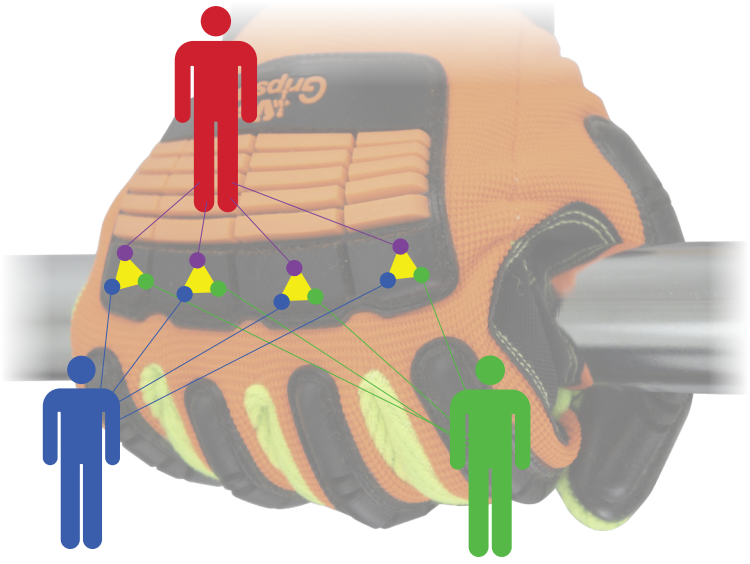
Test Results: Designation

EN 388 **3X43DP** — P - Pass, F - Fail

EN 388 **3X43DX** — X (or unmarked) Not Tested

ANSI / ISEA 138 **1** | ANSI / ISEA 138 **2** | ANSI / ISEA 138 **3**

ANSI/ISEA 138-2019 - Where To Test?



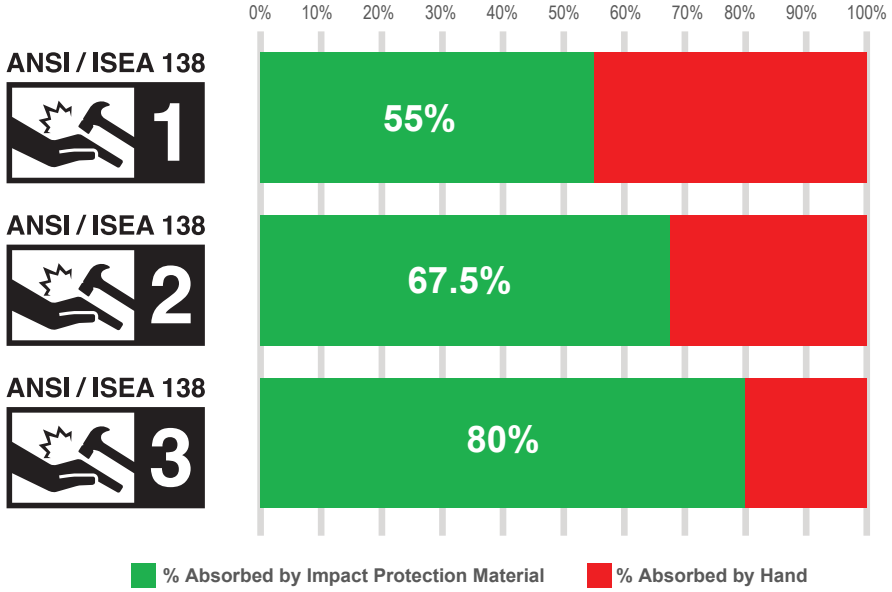
Three different individuals with appropriately sized hands try on the glove.

While firmly gripping a cylindrical bar, a point is made where each knuckle is most prominent.

A triangle is then drawn to connect the points from all three individuals. The center of these triangles becomes the test area.

Testing Process

	Mean force felt by hand	Max force allowed to pass	Percentage of force absorbed by glove
ANSI / ISEA 138 1	≤ 9 kN or 2,023 lbs force	< 11.3	55%
ANSI / ISEA 138 2	≤ 6.5 kN or 1,461 lbs force	≤ 8.1	67.5%
ANSI / ISEA 138 3	≤ 4 kN or 899 lbs force	≤ 5	80%



Temperature Matters

Impact protection made of TPU, TPR and other polyurethane mixtures can be modified from product to product. While the ANSI/ISEA 138-2019 standard identifies the ability of a glove to withstand impact and protect hands under ideal conditions, variations in temperature can greatly affect the effectiveness of impact protection.
Internal evaluation should be done for each unique situation to identify the effectiveness of a glove at absorbing impact.

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