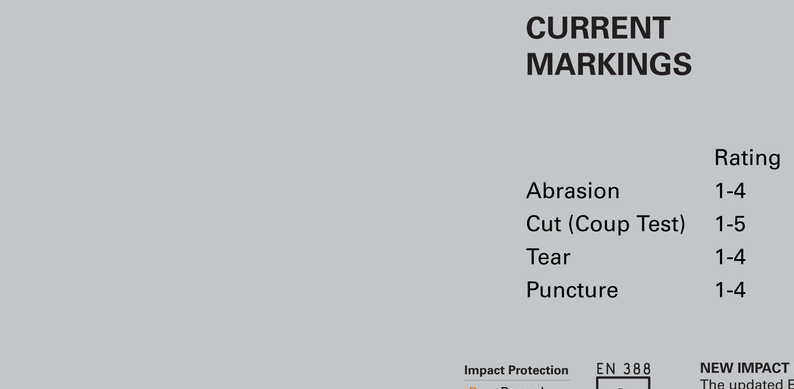
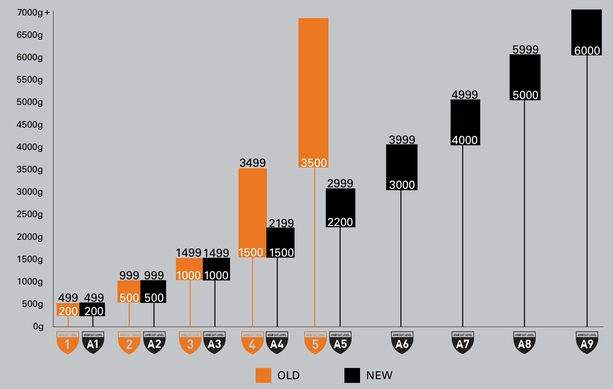
Body Guard® SAFETY GEAR

CUT-RESISTANT STANDARDS

ANSI/ISEA 105-2016

The American National Standards Institute (ANSI), and Safety Equipment Association (ISEA) have released an updated ANSI/ISEA 105 standard (2016 ed.). The new change involves nine classification levels and a new scale to determine cut score. This remodeled scale will lessen the staggering number of material handling injuries. Additionally, all new levels will be identifiable with the prefix "A" before the cut levels to represent compliance with the new standard.

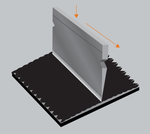




WHY IT MATTERS

Understanding the basics of cut-resistance ratings and methods may not have a direct impact on the safety at your worksite, but it can help you choose PPE that will. Educating not only yourself but your employees on safety standards is a vital part of taking worksites one step closer to zero injuries.

TESTING METHOD



TDM TESTING METHOD
VARIABLE LOAD (gr/N)

PULLS A BLADE IN 20MM PATHS ACROSS GLOVE SURFACE TO MEASURE THE WEIGHT NEEDED TO CUT THROUGH

Materials are tested under three varied weights to achieve five-cut through distances within each set of distance ranges. All cuts are made in the same direction and a new blade is used after each cut, until the cut-through is achieved. Then the grams cut-through is recorded. The test is repeated a total of three times, and the average of the three tests is given the final gram rating that ranges from 2,000 grams to 6,000 grams of cut resistance.

Tests under the new standard have an "A" before the cut level.

The old safety scale only had five levels; the upgraded system now has nine.

ANSI CUT

A1 — **200-499 GRAMS TO CUT**
Assembly, Maintenance, Material Handling, and Shipping and Receiving

A2 — **500-999 GRAMS TO CUT**
Assembly, Appliance Manufacturing, Automotive, Construction, Maintenance, Material Handling, and Metal Handling

A3 — **1,000-1,499 GRAMS TO CUT**
Assembly, Appliance Manufacturing, Automotive, Construction, Maintenance, Material Handling, and Metal Handling

A4 — **1,500-2,199 GRAMS TO CUT**
Appliance Manufacturing, Automotive, Construction, Glass Handling, Machining, Metal Handling, Metal Stamping, and Paper Production

A5 — **2,200-2,999 GRAMS TO CUT**
Appliance Manufacturing, Automotive, Construction, Glass Handling, Machining, Metal Handling, Metal Stamping, and Paper Production

A6 — **3,000-3,999 GRAMS TO CUT**
Appliance Manufacturing, Automotive, Construction, Glass Handling, Machining, Metal Handling, Metal Stamping, and Paper Production

A7 — **4,000-4,999 GRAMS TO CUT**
Assembly or Movement of Large, Bulky, or Heavy Objects with Sharp Edges. Also, recommended for Assembly or Movement of Items that are Difficult to Grip

A8 — **5,000-5,999 GRAMS TO CUT**
Assembly or Movement of Large, Bulky, or Heavy Objects with Sharp Edges. Also, recommended for Assembly or Movement of Items that are Difficult to Grip

A9 — **6,000+ GRAMS TO CUT**
Assembly or Movement of Large, Bulky, or Heavy Objects with Sharp Edges. Also, recommended for Assembly or Movement of Items that are Difficult to Grip

EUROPEAN EN 388-2016

The European Standard for cut-resistant gloves, EN 388, was updated in 2016, on many of the gloves sold in North America, you will see the EN 388 marking but EN markings are intended for the European market. The EN 388 is the European rating to our ANSI/ISEA 105 but uses different testing methods and requirements to evaluate the mechanical risks of hand protection. Gloves with an EN 388 marking are third-party tested and rated based on abrasion, cut, tear, and puncture resistance. Within this updated standard is a new impact protection test.

CURRENT MARKINGS

	Rating
Abrasion	1-4
Cut (Coup Test)	1-5
Tear	1-4
Puncture	1-4

NEW MARKINGS

	Rating
Abrasion	1-4
Cut (Coup Test)	1-5
Tear	1-4
Puncture	1-4
Cut (TDM-100 Test)	A-F
Impact Protection	P, F, X

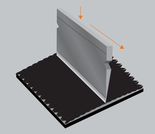
Impact Protection	
P	Passed
F	Failed
X	Not Tested

NEW IMPACT PROTECTION TEST
The updated EN388 2016 standard will include an impact protection test. There are three potential ratings that will be given. Gloves that do not offer impact protection will not be subjected to testing.

TWO TESTING METHODS FOR CUT PROTECTION

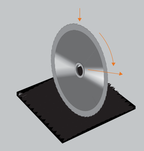
TDM TESTING METHOD
VARIABLE LOAD (gr/N)

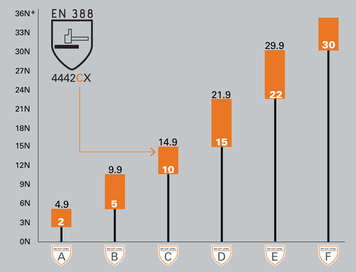
PULLS A BLADE IN 20MM PATHS ACROSS GLOVE SURFACE TO MEASURE THE WEIGHT NEEDED TO CUT THROUGH



COUP TEST METHOD
FIXED LOAD 500 gr/N

ROTATING BLADE UNDER A FIXED WEIGHT THAT SPINS ON GLOVE SURFACE UNTIL IT CUTS THROUGH





UNDERSTANDING THE TDM-100 TEST

There are two cut scores now with the new EN388 2016 standard. The cut score using the above parameters is the ISO 13997 test method. This adds a letter to the end of the four digits.

EN388 2016 VS ANSI/ISEA 105-2016

EN 388 RATING	RANGE (NEWTONS)	CONVERTED RANGE (GRAMS)	ANSI/ISEA 105 LEVEL	RANGE (GRAMS)
A	2 - 4.9	204 - 508	A1	200 - 499
B	5 - 9.9	509 - 1,019	A2	500 - 999
C	10 - 14.9	1,020 - 1,529	A3	1,000 - 1,499
D	15 - 21.9	1,530 - 2,242	A4	1,500 - 2,199
E	22 - 29.9	2,243 - 3,058	A5	2,200 - 2,999
F	30+	3,059+	A6	3,000 - 3,999
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Some confusion is possible as the industry moves to the new standard. **If you have any questions, reach out to your local Fastenal representative, safety specialist, or email safetyquestions@fastenal.com**

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