

There's a lot of evaluation that goes into creating personal protective equipment that lives up to wearers' needs and expectations. If you're investing in cut-resistant gloves, for example, you need to know that the gloves will protect workers from the unique hazards of your job. That's where ANSI comes in.

The American National Standards Institute coordinates the creation of industry-driven consensus standards that protect workers across numerous trades. These standards ensure workers have the right level of protection on hand, so to speak.

ANSI CUT

To earn the label of cut-resistant, ANSI 105 requires that gloves pass ASTM F 2992-15 using the TDM test machine, a test that measures the amount required to push a blade across a glove cut through for 25 mm. A1 cut level gloves are able to withstand up to 499 grams of cutting force before slicing open—more than enough protection for workers who are handling boxes in a warehouse or performing light material handling tasks. But it would take more than 6,000 grams of pressure to cut through A9 gloves, which will protect the hands of, for instance, metal fabricators who are regularly handling sharp edges and heavy loads.



ASTM ANSI
200 - 499 grams to cut
Light Cut Hazards

Applications:
lumber / wood / paper, warehouse, General carpentry,
small parts assembly, general purpose, construction



ASTM ANSI
500 - 999 grams to cut
Light / Medium Cut Hazards

Applications:
lumber / wood / paper, warehouse, General
carpentry, small parts assembly, general purpose,
construction



ASTM ANSI
1000 - 1499 grams to cut
Light / Medium Cut Hazards

Applications:
lumber / wood / paper, warehouse, General carpentry,
small parts assembly, general purpose, construction



ASTM ANSI
1500 - 2199 grams to cut
Medium Cut Hazards

Applications:
aerospace, appliance manufacturing, automotive,
general carpentry, glass, HVCA / sheet metal users
/window glazers, lumber / wood / paper, metal
fabrication, metalworking, plastic, plumbers



ASTM ANSI
2200 - 2999 grams to cut
Medium / Heavy Cut Hazards

Applications:
aerospace, appliance manufacturing, automotive,
general carpentry, glass, HVCA / sheet metal users
/window glazers, lumber / wood / paper, metal
fabrication, metalworking, plastic, plumbers



ASTM ANSI
3000 - 3999 grams to cut
High Cut Hazards

Applications:
aerospace, appliance manufacturing, automotive,
general carpentry, glass, HVCA / sheet metal users
/window glazers, lumber / wood / paper, metal
fabrication, metalworking, plastic, plumbers



ASTM ANSI
4000 - 4999 grams to cut
High Cut Hazards

Applications:
aerospace, metal stamping, metal recycling, metal
fabrication / metal working, appliance manufacturing,
automotive, general carpentry, glass, HVAC / sheet
metal users /window glazers, lumber / wood / paper,
metal fabrication, metalworking, plastic, plumbers



ASTM ANSI
5000 - 5999 grams to cut
High Cut Hazards

Applications:
aerospace, metal stamping, metal recycling, metal
fabrication /metal working, appliance manufacturing,
automotive, general carpentry, glass, HVAC / sheet
metal users /window glazers, lumber / wood / paper,
metal fabrication, metalworking, plastic, plumbers



ASTM ANSI
6000+ grams to cut
High Cut Hazards

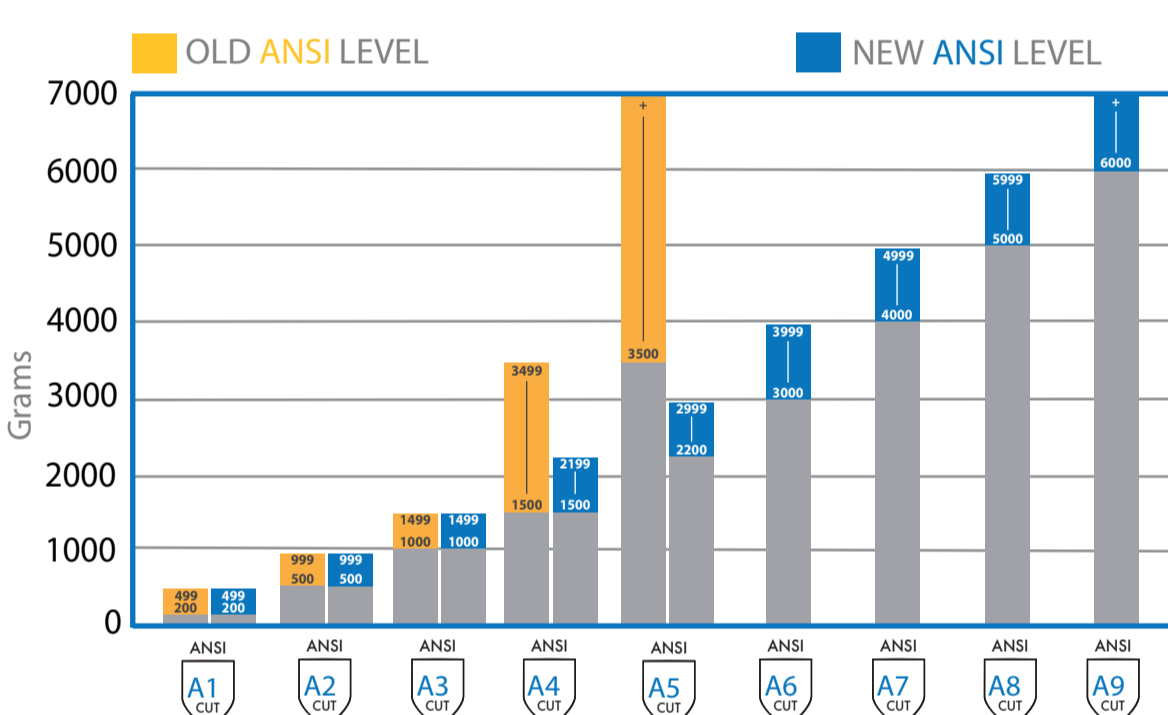
Applications:
aerospace, metal stamping, metal recycling, metal
fabrication / metal working, appliance manufacturing,
automotive, general carpentry, glass, HVAC / sheet
metal users /window glazers, lumber / wood / paper,
metal fabrication, metalworking, plastic, plumbers

OLD LEVELS:

1 2 3 4 5

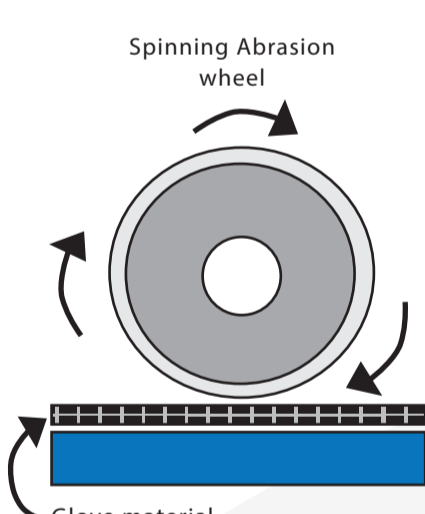
NEW LEVELS:

A1 A2 A3 A4 A5 A6 A7 A8 A9



ANSI ABRASION

The abrasion ANSI / ASTM test method is D3389-10 and D3884-09. This test uses the H-18 abrasion wheel with a 500-gram load for levels 0-3 and a 1000-gram load for levels 4-6. This test method has a 4-inch circular test material mounted on a horizontal axis platform. The abrasion wheel rotates under the weight load until the test material fails. The abrasion wheels are comprised of vitrified clay and silicon carbide abrasive particles. The results are recorded in revolutions and determine the ANSI abrasion level.

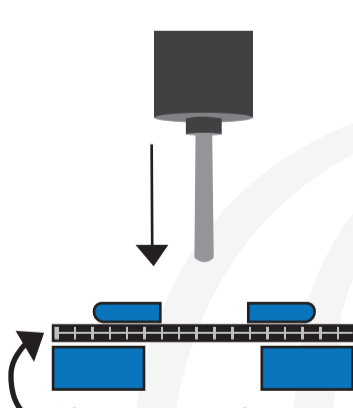


ANSI / ASTM ABRASION		
WEIGHT (grams)	LEVEL	REVOLUTIONS
500	0	<100
500	1	<100
500	2	<500
500	3	>1000
1000	4	>3000
1000	5	>10000
1000	6	>20000

ANSI PUNCTURE

ASTM D4833 | Textiles | Puncture Testing

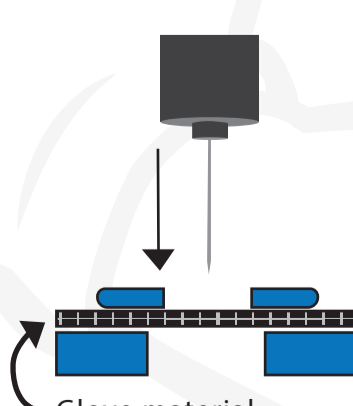
The ASTM D4833 test method determines the index value of the puncture resistance of safety materials. A universal testing machine (tensile/compressive testing) can be utilized to meet the requirements of this specification. The test specimen is clamped between two plates of a ring clamp while a force is exerted against the center of the geomembrane by a steel rod until rupture occurs. Often materials that are tested on ASTM D4833 are also analyzed to D76, a specification for using tensile testing machines on textiles.



ANSI / ISEA PUNCTURE	
LEVEL	NEWTONS
0	<10
1	>=10
2	>=20
3	>=60
4	>=100
5	>=150

ANSI NEEDLESTICK PUNCTURE

The ASTM F2878-10 is the testing method used by ANSI/ISEA 105 standard for Needle stick puncture resistance. The test uses a 25-gauge needle to determine the force it takes a hypodermic needle to penetrate through protective clothing or gloves. The puncture needle is placed at a 90 angle into the testing material at a speed of 500mm/min. The results are reported in newton's using minimum 12 test specimens and has up to 5 levels of classification



ANSI NEEDLESTICK PUNCTURE	
LEVEL	NEWTONS
0	≤2
1	≤2
2	≤4
3	≤6
4	≤8
5	≤10