



2016 Changes to ANSI Cut Level Performance Ratings

ANSI 105:2011 performance levels of the Cut Resistance Selection Criteria have been revamped. The 2016 changes were needed because the performance criteria between the different levels was much smaller for the lower levels (ANSI 0 through ANSI 4) than the difference between the higher levels (ANSI 4 and ANSI 5).

More Performance Levels for 2016 Edition: Where ANSI 105:2011 Cut Levels Performance Classifications consisted of ANSI Cut Level 0 to ANSI Cut Level 5, the expanded ranges of the ANSI 105,2016 edition, are now from ANSI Cut Level A1 to ANSI Cut Level A9. The gram scores in the lower ranges (A0 through A3) remain unchanged from ANSI 105: 2011 standard. The additional levels expand the ANSI 105: 2011 Levels in the higher level ranges (A4 through A9).

Test Method Changes and Harmonization

ANSI 105:2011 criteria for Cut Testing specified **ASTM F1790-05 Standard Test Method for Measuring Cut Resistance of Materials Used in Protective Clothing** and allowed testing to be performed on either the CPPT test equipment or the TDM-100 test equipment. From the results of the ASTM F1790-05 test, the ANSI performance level for Cut Resistance was assigned from ANSI Cut Level 0 to Level 5. Some used the 1997 edition of the standard and others used the 2005 edition of ASTM F1790.

ANSI 105:2016 revision specifies a new 2015 ASTM test standard, **ASTM F2992-15 Standard Test Method for Measuring Cut Resistance of Materials Used in Protective Clothing with Tomodynamometer (TDM-100) Test Equipment**. Test Results from the CPPT tester are no longer allowed. From, the result of the ASTM F2992-15 test, the ANSI performance level for Cut Resistance is assigned from ANSI Cut level A1 to A9 as the chart shows.

The European Commission is also planning to adopt the TDM-100 test equipment and ISO 13997 Test Method for higher Cut Resistant materials for EN 388 Cut Testing. The Coup Test Apparatus will still be allowed, for now, for testing lower Cut Levels. These changes will eventually result in closer global harmonization of Cut Levels between USA and European markets with Cut Levels that are much more closely aligned.

ANSI 105 Cut Resistance Level Performance Ratings			
Level 2011 Edition	Weight (grams) needed to cut through material with 20 mm blade travel	Level 2016 Edition	Weight (grams) needed to cut through material with 20 mm blade travel
0	< 200 grams	A0	< 200 grams
1	≥ 200 grams	A1	≥ 200 grams
2	≥ 500 grams	A2	≥ 500 grams
3	≥ 1,000 grams	A3	≥ 1,000 grams
4	≥ 1,500 grams	A4	≥ 1,500 grams
5	≥ 3,500 grams	A5	≥ 2,200 grams
		A6	≥ 3,000 grams
		A7	≥ 4,000 grams
		A8	≥ 5,000 grams
		A9	≥ 6,000 grams

based on results of ASTM F1790-05 Standard Test Method for Measuring Cut Resistance of Materials Used in Protective Clothing

based on results of ASTM F2992-15 Standard Test Method for Measuring Cut Resistance of Materials Used in Protective Clothing with Tomodynamometer (TDM-100) Test Equipment

Example:

TDM-100
Apollo Tool Grabber Cut Protect 4

Gram Score: 2415 grams
ANSI 105, 2011 edition: Cut Level 4
ANSI 105, 2016 edition: Cut Level A5

