

6.2.5 Prescription Lens Material Qualification

When tested in accordance with Section 9.14, representative test lenses for use in prescription protectors shall be capable of resisting impact from a 6.35 mm (0.25 in.) diameter steel ball traveling at a velocity of 45.72 m/s (150 ft/s). When tested in accordance with this section, the lens shall fail if any of the following occurs:

- Posterior displacement of the lens completely through the test holder;
- Fracture;
- Any detachment of a portion of the lens from its inner surface; or
- Any full thickness penetration of a lens.

Failure of any lens constitutes a failure. If all test lenses pass, then any prescription lens of the same or greater thickness at its thinnest point, which is made by the same manufacturer, from the same material, with the same coatings and processes may bear the “+” mark.

9.14 Prescription Lenses Test

9.14.1 Purpose

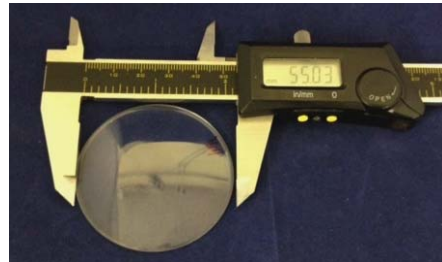
This test is intended to determine the ability of prescription lens materials and individual coatings and processes applied to those materials to withstand impact from high velocity, low mass projectiles.

9.14.2 Procedure

Plano power lenses, maximum base curve of 6.25 diopter, shall be edged round with a uniform $115^\circ + 5^\circ$ included angle bevel to a diameter $55.0 \text{ mm} +0.04 \text{ mm}/-0.25 \text{ mm}$ ($2.17 + 0.002/- 0.01 \text{ in.}$). Each lens shall be tested once, with a new lens used for each additional impact. Each lens shall be mounted in a steel test holder by two retaining washers so that the test lens is held firmly against the bevel of the lens holder (See Figure E7). Perform the high velocity impact test on the center of each lens with the missile and velocity determination specified in Section 9.12 at a velocity of 45.7 m/s (150 ft/s). Three lenses shall be tested.



Uniform $115^\circ + 5^\circ$ included angle bevel
(V bevel)



Diameter $55.0 \text{ mm} +0.04 \text{ mm}/-0.25 \text{ mm}$



Fixture that holds test lenses that are edged round with a uniform $115^\circ + 5^\circ$ included angle bevel to a diameter $55.0 \text{ mm} +0.04 \text{ mm}/-0.25 \text{ mm}$ ($2.17 + 0.002/- 0.01 \text{ in.}$)



ANSI Z87.1 – 2010 Rx Lens Material Qualification Form

Company (To appear on report)	
Contact (To appear on report)	
Address	
Email	
Phone	
PO Number/Credit Card Number	

Lens Configuration (Plano)	
Maximum Base Curve of 6.25 Diopter	Edged to 54.75 – 55.04 mm round with a
Uniform 115° ±5° included angle bevel	Lens Thickness at thinnest point 2.00mm



Lens/Coating Information			
Group #: (please include lens box top) 4 samples			
Lens Mfg		Lens Material	
HC Mfg		HC Type	
AR Mfg		AR Type	
Group #: (please include lens box top) 4 samples			
Lens Mfg		Lens Material	
HC Mfg		HC Type	
AR Mfg		AR Type	
Group #: (please include lens box top) 4 samples			
Lens Mfg		Lens Material	
HC Mfg		HC Type	
AR Mfg		AR Type	
Group #: (please include lens box top) 4 samples			
Lens Mfg		Lens Material	
HC Mfg		HC Type	
AR Mfg		AR Type	
Group #: (please include lens box top) 4 samples			
Lens Mfg		Lens Material	
HC Mfg		HC Type	
AR Mfg		AR Type	
Group #: (please include lens box top) 4 samples			
Lens Mfg		Lens Material	
HC Mfg		HC Type	
AR Mfg		AR Type	
Group #: (please include lens box top) 4 samples			
Lens Mfg		Lens Material	
HC Mfg		HC Type	
AR Mfg		AR Type	

Other Comments/Special Instructions:

Sample Disposition: Return All Samples Return Failed Samples Destroy Samples

Report Type: Electronic (pdf File) Hard Copy (\$35 Charge per Report)

Lab Preliminary Check: ANSI Z87.1 – 2010 Rx Lens Material Qualification

Plano Test Lens Configuration	
Uniform 115° Included Safety “V” Bevel	Edged to 54.75-55.04 mm round.
No Less than 2.00 mm at thinnest point	Maximum base curve of 6.25 Diopter
 Number of samples required to test: 3	
 Number of samples we request: 4 (1 extra as a backup)	

Product No. _____				
Sample	Min. Thickness	Diameter (mm)	Safety Bevel	Box Top
1			<input type="checkbox"/>	<input type="checkbox"/>
2			<input type="checkbox"/>	<input type="checkbox"/>
3			<input type="checkbox"/>	<input type="checkbox"/>
4			<input type="checkbox"/>	<input type="checkbox"/>

Product No. _____				
Sample	Min. Thickness	Diameter (mm)	Safety Bevel	Box Top
1			<input type="checkbox"/>	<input type="checkbox"/>
2			<input type="checkbox"/>	<input type="checkbox"/>
3			<input type="checkbox"/>	<input type="checkbox"/>
4			<input type="checkbox"/>	<input type="checkbox"/>

Product No. _____				
Sample	Min. Thickness	Diameter (mm)	Safety Bevel	Box Top
1			<input type="checkbox"/>	<input type="checkbox"/>
2			<input type="checkbox"/>	<input type="checkbox"/>
3			<input type="checkbox"/>	<input type="checkbox"/>
4			<input type="checkbox"/>	<input type="checkbox"/>

Product No. _____				
Sample	Min. Thickness	Diameter (mm)	Safety Bevel	Box Top
1			<input type="checkbox"/>	<input type="checkbox"/>
2			<input type="checkbox"/>	<input type="checkbox"/>
3			<input type="checkbox"/>	<input type="checkbox"/>
4			<input type="checkbox"/>	<input type="checkbox"/>