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TITLE: Lens Impact Test 18.66(a)

MSHA Mine Safety and Health Administration, Approval & Certification Center

#### 1.0 **PURPOSE**

This Standard Test Procedure is used by the Electrical Safety Division to conduct the test to determine the impact resistance of windows and lenses.

#### 2.0 **SCOPE**

This Standard Test Procedure encompasses lenses used on explosion-proof enclosures submitted to MSHA for evaluation under 30 CFR, Part 18.

#### 3.0 **REFERENCES**

- 3.1. 30 CFR Part 18.66(a)
- 3.2. Criteria for the Evaluation of a Window or Lens on an Explosion-Proof (X/P) Enclosure, ACRI2102.
- 3.3. Restricted Access Lens Impact Test ASTP2136.

#### 4.0 **DEFINITIONS**

No Definitions are needed.

#### 5.0 **TEST EQUIPMENT**

- 5.1. Drop weight test apparatus, see Figure 1.
- 5.2. Measuring rod or ruler

#### 6.0 **TEST SAMPLES**

Four (4) samples of the lens to be tested. The test shall be conducted with the sample assembled in the frame or assembly in which used. No "equivalent thereof" samples or assemblies shall be used.

#### 7.0 **PROCEDURES**

- 7.1. Verify that the lens is assembled in accordance with the manufacturer's assembly instructions.
- 7.2. Mount and position the lens holder in the drop weight test apparatus. The center of the lens shall be the point of impact.

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- 7.3. Mount the drop weight in the drop weight test apparatus.
- 7.4. Using a measuring rod or ruler, adjust the height of drop as per the following tables:

### Round Windows and Lenses

Lens diameter, (D), inches	Height of fall, inches
D<4	6
4≤D<5	9
5≤D<6	15
6≤D	24

## Irregularly Shaped Windows and Lenses

Lens area, (A) square inches	Height of fall, inches
A≤12	6
12 <a<19< td=""><td>9</td></a<19<>	9
19≤A<28	15
28≤A	24

This shall be the distance between the striking surface of the drop weight and the top of the accessory.

7.5. Lenses smaller than 1" diameter, or lenses with restricted access should be tested according to ASTP2136 *Restricted Access Lens Impact Test*.

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- 7.6. Perform the drop test on each of the four lenses as specified in Part 18.
- 7.7. Record all results on the Impact Test Form (see Appendix 1.)

### 8.0 TEST DATA

- 8.1. Sample number
- 8.2. Height of drop
- 8.3. Results/observations

## 9.0 PASS/FAIL CRITERIA

9.1. Samples shall not exhibit breakage.

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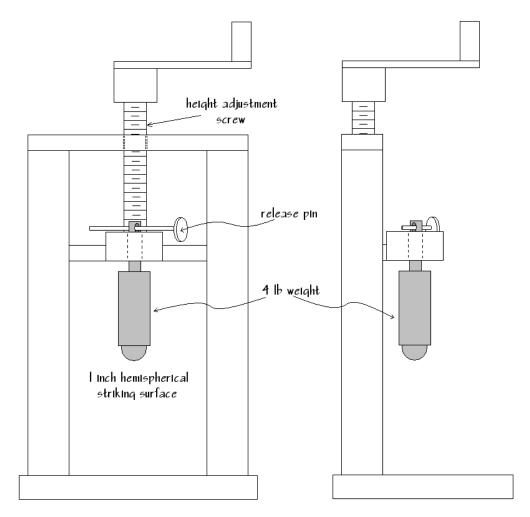


Figure 1 - Drop Weight Test Apparatus

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# Appendix 1

U.S. Department of Labor Mine Safety and Health Administration Approval and Certification Center Electrical Safety Division Triadelphia, WV 26059

Date:		<del></del>	MR:	
To:			PAR:	
From:			MFG:	
Subject:	Impact Tests of W	indows and Len	Enclosure Type:ses	
Reference	e: Title 30 CFR, P	art 18.66(a), AS	TP2132, ASTP2136	
Window/Lens Material			Dimension:	
Holder St	tyle:			
		,		
Sample	Height of Drop	Results		
				_
Comments:				
Pass/Fail	Criteria:			

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