



Test Report: WND-00336, Issue: 1

ANSI Z87.1-2020

Wendy's Pancake Welding Shields

Z - Model

May 11, 2023



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Authorized By:

A handwritten signature in black ink, appearing to read 'Jacob Gary', written in a cursive style.

Jacob Gary  
Quality Manager/Quality Engineer

Reviewed By:

A handwritten signature in black ink, appearing to read 'Dale Payne', written in a cursive style.

Dale Payne  
Technical Services Manager

## Report Summary

**Product Description:** Z - Model: Black Front and Side Piece, 5/8" Lens with Wooden Lens Holder/Face Piece  
**Date Received:** April 21, 2023  
**Date(s) Tested:** May 02, 2023 to May 10, 2023  
**Standard:** ANSI Z87.1-2020  
**Laboratory Conditions:** 22°C, 45% RH

### Final Conclusion:

The Welding Helmet Sample: Z - Model (Black Front and Side Piece, 5/8" Lens with Wooden Lens Holder/Face Piece) **does** comply with ANSI Z87.1-2020 for the test(s) included in this report.

Test Name	Result
<b>ANSI Z87.1-2020 Base Model General Requirements</b>	
5.2 Physical Requirements	<b>Pass</b>
5.2.2 Ignition	<b>Pass</b>
5.2.3 Corrosion Resistance of Metal Components	<b>Pass</b>
5.2.4 Minimum Coverage Area	<b>Pass</b>
5.3.2 Placement of Markings	<b>Pass</b>
5.4.3.1 Cover Lenses	<b>Pass</b>
5.6 Aftermarket Components and Accessories	<b>N/A</b>
7.2.2.2 Transmittance of Non-Lens Components (Welding Helmets)	<b>Pass</b>
<b>ANSI Z87.1-2020 Optional Claim (+)</b>	
7.1.3 Lateral (Side) Coverage	<b>Pass</b>
7.1.4.2 High Mass Impact	<b>Pass</b>
7.1.4.3 High Velocity Impact	<b>Pass</b>
7.1.4.4 Penetration Test (lenses only)	<b>Pass</b>
7.1.4.7 Devices with Lift Fronts	<b>N/A</b>



**Procedures:**

All test protocols were performed using good laboratory practices.

All tests were conducted in standard laboratory conditions unless otherwise noted.

**Test Results - WND-00336-01/Z - Model Black Front and Side Piece, 5/8" Lens with Wooden Lens Holder/Face Piece**  
**ANSI Z87.1-2020 Base Model General Requirements**

**5.2 Physical Requirements**

Test	Specification	Pass
Free of defects which may cause discomfort or injury		Pass

**5.2.2 Ignition**

Test	Specification	Pass
Shell		Pass
Lens Housing		Pass
Other		Pass

**5.2.3 Corrosion Resistance of Metal Components**

Test	Specification	Pass
Function of protector not impaired		Pass

**5.2.4 Minimum Coverage Area**

Test	Specification	Pass
40 x 33 mm (34 x 28 mm - H)		Pass

**5.3.2 Placement of Markings**

Test	Specification	Pass
Markings		Pass

**5.4.3.1 Cover Lenses**

Test	Specification	Pass
Cover Lenses		Pass

**5.6 Aftermarket Components and Accessories**

Test	Specification	N/A
Aftermarket Components and Accessories		N/A

**7.2.2.2 Transmittance of Non-Lens Components (Welding Helmets)**

Test	Specification	Pass
Light Penetration		Pass
Non-lens area		Pass
Near UV		0.000002 (%)
Far UV		0.000011 (%)
Luminous		0.000021 (%)
Infrared		0.003203 (%)
Blue Light		0.000023 (%)

**ANSI Z87.1-2020 Optional Claim (+)**

**Test Results - WND-00336-01/Z - Model Black Front and Side Piece, 5/8" Lens with Wooden Lens Holder/Face Piece**

**7.1.3 Lateral (Side) Coverage**

Test	Specification	Pass
Lateral (Side) Coverage		Pass

**7.1.4.2 High Mass Impact**

Test	Specification	Pass
Left Eye Sample 1		Pass
Left Eye Sample 2		Pass
Right Eye Sample 3		Pass
Right Eye Sample 4		Pass

**7.1.4.3 High Velocity Impact**

Test	Specification	Pass
Left Eye Center	Min: 150.00	155 (fps)
Left Eye Center		Pass
Left Eye 30°	Min: 150.00	156 (fps)
Left Eye 30°		Pass
Right Eye Center	Min: 150.00	155 (fps)
Right Eye Center		Pass
Right Eye 30°	Min: 150.00	154 (fps)
Right Eye 30°		Pass
One Side 90° at 10mm Above (H - 8mm)	Min: 150.00	154 (fps)
One Side 90° at 10mm Above (H - 8mm)		Pass
Opposite Side 90° at 10mm Below (H - 8mm)	Min: 150.00	153 (fps)
Opposite Side 90° at 10mm Below (H - 8mm)		Pass

**7.1.4.4 Penetration Test (lenses only)**

Test	Specification	Pass
Left Eye Sample 1		Pass
Left Eye Sample 2		Pass
Right Eye Sample 3		Pass
Right Eye Sample 4		Pass

**7.1.4.7 Devices with Lift Fronts**

Test	Specification	N/A
Lift front in "up" position		N/A

**Test Results - WND-00336-01/Z - Model Black Front and Side Piece, 5/8" Lens with Wooden Lens Holder/Face Piece**

**Observations:**

Test Name		Observation
5.2.2 Ignition	Other	Strap buckle

## APPENDIX 1

### ANSI Z87.1 - 2020 Measurement Uncertainty Values

Section	Requirement	Uncertainty
5.1.2	Luminous Transmittance	0.19%
5.1.3	Haze	0.08%
5.1.4	Refractive Power	0.018D
	Astigmatism	0.018D
	Prism	0.048Δ
5.4.5	Minimum Lens Thickness	0.012 mm
5.5.1	Replaceable Lenses – Goggles	0.17 mm
5.5.2	Replaceable Lenses – Welding Helmets and Handshields	0.17 mm
6.1	Relaxed Optics Level	See 5.1.4
6.2	Anti-Fog Properties	1.79%
7.2.1	Optical Radiation - Clear Lenses	See 5.1.2
7.2.2.1.1	Transmission Requirements	
	Table 7 (Welding Filters)	
	W1.3 – W3.0	See 5.1.2
	W4	0.0018287%
	W5	0.0003283%
	W6	0.0003605%
	W7	0.0000961%
	W8	0.0001944%
	W9	0.0000459%
	W10	0.0000707%
	W11	0.0000163%
	W12	0.0000055%
	W13	0.0000029%
	W14	0.0000017%
	EFUV	0.0000551%
	NUV	0.0000576%
	IR	0.010395%
	Table 8 (UV Filters)	
	EFUV	0.0000551%
	NUV	0.0000576%
	Table 9 (IR Filters)	0.010395%
	Table 10 (VIS Filters)	See 7.2.2.1.1 W1.3 – W10
	Table 11 Tinted	See 5.1.2
	Extra Dark	See 5.1.2
7.2.2.1.2	Visible Light Filters	
	Visible Light (L1.3 - L3)	See 5.1.2
	UVA	See Table 7 NUV
	UVB	See Table 7 EFUV
7.2.2.2	Transmittance of Non-lens Components	See 7.2.2.1.1 Table 7, 8 & 9
7.2.3.1	Automatic Darkening Welding Filter Lenses - Luminous Transmittance	See 7.2.2.1.1 Table 7
7.2.3.2	Automatic Darkening Welding Filter Lenses - UV/IR Transmittance	See 7.2.2.1.1 Table 7
7.2.3.3	Switching Index	0.0192 mSec
7.2.3.5	Angular dependence of luminous transmittance	See 7.2.2.1.1 Table 7