



CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

Beneficial Designs, Inc.

2325 P51 Ct., Suite 402
Minden, NV 89423

Fulfills the requirements of

ISO/IEC 17025:2017

In the fields of

CALIBRATION and TESTING

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

Jason Stine, Vice President

Expiry Date: 13 December 2024

Certificate Number: ACT-3159



This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory
quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

Beneficial Designs, Inc.

2325 P51 Ct., Suite 402
Minden, NV 89423

Peter W. Axelson
peter@beneficialdesigns.com

CALIBRATION AND TESTING

Valid to: **December 13, 2024**

Certificate Number: **ACT-3159**

TESTING

Mechanical

Specific Tests and/or Properties Measured	Specification, Standard, Method, or Test Technique	Items, Materials or Product Tested	Key Equipment or Technology
Determination of static stability	RESNA WC-1 Section 1 ISO 7176-1	Manual wheelchairs Powered wheelchairs Scooters	Static tilt ramp Angular measurement devices
Determination of effectiveness of brakes	RESNA WC-1 Section 3 ISO 7176-3	Manual wheelchairs Powered wheelchairs Scooters	Static tilt ramp Angular measurement devices
Determination of dimensions, mass and maneuvering space	RESNA WC-1 Section 5 ISO 7176-5	Manual wheelchairs Powered wheelchairs Scooters	Various linear measurement devices
Method of measurement of seating and wheel dimensions	RESNA WC-1 Section 7 ISO 7176-7	Manual wheelchairs Powered wheelchairs Scooters	Various linear and angular measurement devices
Requirements and test methods for static, impact and fatigue strengths	RESNA WC-1 Section 8 ISO 7176-8	Manual wheelchairs Powered wheelchairs Scooters	Impact and fatigue loading indenters, impact pendulums, multi-drum, drop, and repetitive load testing equipment
Test mannequins	RESNA WC-1 Section 11 ISO 7176-11	Manual wheelchairs Powered wheelchairs Scooters	Test mannequin Center of mass chair
Determination of coefficient of friction of test planes	RESNA WC-1 Section 13 ISO 7176-13	Testing surfaces	Test block Force gauge

Mechanical

Specific Tests and/or Properties Measured	Specification, Standard, Method, or Test Technique	Items, Materials or Product Tested	Key Equipment or Technology
Determination of static stability	RESNA WC-1 Section 1 ISO 7176-1	Manual wheelchairs Powered wheelchairs Scooters	Static tilt ramp Angular measurement devices
Determination of effectiveness of brakes	RESNA WC-1 Section 3 ISO 7176-3	Manual wheelchairs Powered wheelchairs Scooters	Static tilt ramp Angular measurement devices
Determination of dimensions, mass and maneuvering space	RESNA WC-1 Section 5 ISO 7176-5	Manual wheelchairs Powered wheelchairs Scooters	Various linear measurement devices
Method of measurement of seating and wheel dimensions	RESNA WC-1 Section 7 ISO 7176-7	Manual wheelchairs Powered wheelchairs Scooters	Various linear and angular measurement devices
Requirements and test methods for static, impact and fatigue strengths	RESNA WC-1 Section 8 ISO 7176-8	Manual wheelchairs Powered wheelchairs Scooters	Impact and fatigue loading indenters, impact pendulums, multi-drum, drop, and repetitive load testing equipment
Test mannequins	RESNA WC-1 Section 11 ISO 7176-11	Manual wheelchairs Powered wheelchairs Scooters	Test mannequin Center of mass chair
Determination of coefficient of friction of test planes	RESNA WC-1 Section 13 ISO 7176-13	Testing surfaces	Test block Force gauge
Requirements for information disclosure, documentation and labeling	RESNA WC-1 Section 15 ISO 7176-15	Manual wheelchairs Powered wheelchairs Scooters	
Wheelchairs for changing occupant posture	RESNA WC-1 Section 20 excluding Clause 16 ISO 7176-30 Excluding Clause 5.7 Excluding subclauses of Clause 6.1 that reference the following: ISO 7176-21, ISO 7176-25 and ISO 7176-14 Clauses 8.2, 8.5, 8.6, 8.16, 8.17, 8.18.1, 8.18.3, 8.18.4, 9.9.1, 9.9.2.1, 9.9.2.2, 10.7, 11, 13, 14.2	Manual wheelchairs Powered wheelchairs Scooters	Various linear and angular measurement devices and equipment required per subsection being tested
Set-up procedures	RESNA WC-1 Section 22 ISO 7176-22	Manual wheelchairs Powered wheelchairs Scooters	Various linear and angular measurement devices
Determination of dynamic stability of electrically powered wheelchairs	RESNA WC-2 Section 2 ISO 7176-2	Powered wheelchairs Scooters	Dynamic stability ramp Various linear and angular measurement devices Timing gate

Mechanical

Specific Tests and/or Properties Measured	Specification, Standard, Method, or Test Technique	Items, Materials or Product Tested	Key Equipment or Technology
Energy consumption of electrically powered wheelchairs and scooters for determination of theoretical distance range	RESNA WC-2 Section 4 ISO 7176-4	Powered wheelchairs Scooters	Watt hour meter Test track
Determination of maximum speed of electrically powered wheelchairs	RESNA WC-2 Section 6 ISO 7176-6	Powered wheelchairs Scooters	Timing gate Stopwatch
Climatic testing - Tests for functional check	RESNA WC-2 Section 9, Clause 9 ISO 7176-9, Clause 9	Powered wheelchairs Scooters	Test track Stopwatch
Determination of obstacle-climbing ability of electrically powered wheelchairs	RESNA WC-2 Section 10 ISO 7176-10	Powered wheelchairs Scooters	Obstacle height platform Various linear measurement devices
Power and control systems for electrically powered wheelchairs, scooters and add-in devices	RESNA WC-2 Section 14 ISO 7176-14 Excluding Clauses 8.2, 8.5, 8.6, 8.16, 8.17, 8.18.1, 8.18.3, 8.18.4 Excluding Clauses 9.9.1, 9.9.2.1, 9.9.2.2 Excluding Clause 10.7 Excluding Clauses 11, 13 Excluding Clause 14.2	Powered wheelchairs Scooters	Dynamic stability ramp Circuit breaker Watt meter Shunt Stopwatch
Postural support devices - Test Methods for Static, Impact, and Repeated Load Strength	RESNA WC-3 Section 3 ISO 16840 Part 3	Manual wheelchairs Powered wheelchairs Scooters	Impact and fatigue loading indenters, impact pendulums, repetitive load testing equipment
European Standard (requirements and test methods for manual wheelchairs intended to carry one person of mass not greater than 250 kg)	EN 12183 Excluding Clauses 7.4 & 8.5	Manual wheelchairs	Equipment using ISO 7176 test procedures and additional observation & test procedures covered by EN 12183

Mechanical

Specific Tests and/or Properties Measured	Specification, Standard, Method, or Test Technique	Items, Materials or Product Tested	Key Equipment or Technology
European Standard (requirements and test methods for electrically powered wheelchairs, including electrically powered scooters with three or more wheels, with a maximum speed not exceeding 15 km/h intended to carry one person of mass not greater than 300 kg)	EN 12184 Excluding Clauses 8.3, 8.4, 9.5, 12.3, 12.9 Excluding sub-clauses of Clause 12.1 that reference the following: ISO 7176-21; EN 60601-1; ISO 7176-14:2008 Clauses 8.2, 8.5, 8.6, 8.16, 8.17, 8.18.1, 8.18.3, 8.18.4, 9.9.1, 9.9.2.1, 9.9.2.2, 10.7, 11, 13, 14.2	Powered wheelchairs Scooters	Equipment using ISO 7176 test procedures and additional observation & test procedures covered by EN 12184
Medicare coding requirements for manual and powered wheelchairs and power operated vehicles	Pricing, Data Analysis and Coding (PDAC) Requirements for Manual wheelchairs Powered wheelchairs Power operated vehicles	Manual wheelchairs Powered wheelchairs Power operated vehicles	Reference to RESNA WC-1 & WC-2 Healthcare Common Procedure Coding System 'K' Codes
Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment	ASTM F1951	Surfaces	SmartWheel instrumented wheelchair with associated software
Measurement of Firmness and Stability Using an Instrumented Surface Indenter	Instrumented Surface Indenter Standard Operating Procedure (BD-ST-SOP-70)	Surfaces	Instrumented surface indenter

CALIBRATION

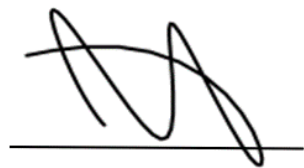
Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Instrumented Surface Indenter	Up to 2 in of Penetration	0.0034 in	ISI RP SOP Granite Calibration Proc (BD-ISIRP-SOP-46) ISI RP Scale Verification PROC (BD-ISIRP-SOP-68) ISI RP Concrete Verification Proc (BD-ISIRP-SOP-64)

Calibration and Measurement Capability (CMC) is expressed in terms of the measurement parameter, measurement range, expanded uncertainty of measurement and reference standard, method, and/or equipment. The expanded uncertainty of measurement is expressed as the standard uncertainty of the measurement multiplied by a coverage factor of 2 ($k=2$), corresponding to a confidence level of approximately 95%.

Note:

1. This scope is formatted as part of a single document including Certificate of Accreditation No. ACT-3159.



Jason Stine, Vice President