Advancing Head Protection in the Building and Construction Industry

A Framework for Aligning National and International Industrial Occupational Protective Helmet Standards

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Foreword

The nature of risk in construction is changing—sites are more dynamic, tasks more varied, and hazards more unpredictable—and our understanding of head protection must evolve to meet these realities.

Helmets are no longer just protection from falling objects—they are a critical line of defence against the unpredictable realities of modern worksites, where lateral impacts, low-height falls, and dynamic movement are commonplace.

This document brings together the latest updates in helmet standards and evaluates what they mean for New Zealand. It reflects the growing need for multi-impact protection and secure retention across all roles, not just those working at height. As our industry continues to modernise, the case for moving beyond traditional hard hats becomes clearer—and more urgent.

The conversation about head protection is no longer just technical; it is strategic. The decisions we make now will shape not only product availability and site compliance, but the safety culture we set for the next generation of workers.

Anthony Ford
ZERO Height Safety

Contents

Visual Disclaimer Diagrams and illustrations in this document are intended as visual guides only. They are not technical representations of the actual testing procedures, equipment, or conditions described in the relevant standards. For accurate specifications and compliance details, refer to the full text of BS EN 397:2025, AS/NZS 1801:2024, or the applicable testing protocols.

Introduction

The introduction of AS/NZS 1801:2024 and BS EN 397:2025 marks a pivotal moment in the evolution of industrial head protection. These standards formalise what has been known across the construction and infrastructure sectors for some time: that real-world hazards demand more than just vertical (crown) impact protection.

AS/NZS 1801:2024 introduces Type 4 helmets—engineered for multi-directional impact attenuation—addressing a longstanding gap in local PPE regulation since the 1997 version. In parallel, BS EN 397:2025 establishes a two-tier system: Type 1 helmets for traditional crown-only protection, and Type 2 helmets with additional testing for front, side, and rear impacts, along with secure retention system requirements. While the standards differ in methodology and thresholds, both reflect a shared goal: to better protect workers in dynamic environments where the risk of off-centre impacts and low-height falls is ever-present.

The urgency of this shift is underscored by national safety data. Slips, trips, and same-level falls remain a leading cause of serious harm across construction and service roles—incidents that often fall outside the protection offered by legacy helmet designs. Traditional hard hats, though widely accepted and readily available, do not provide the lateral energy management or secure fit needed in today's high-risk environments.

In the absence of a local multi-impact standard until now, many businesses have turned to helmets certified under EN 12492 (mountaineering) or hybrid models combining features of EN 397 and EN 12492. While these helmets have helped bridge the gap, their use has been complicated by varying levels of recognition and inconsistent regulatory acceptance. The formal release of AS/NZS 1801:2024 and BS EN 397:2025 now provides a clear path forward—anchored in defined performance criteria and internationally recognised testing principles.

Together, these two standards offer complementary pathways for improving industrial head protection. Their coexistence enables flexibility in procurement while reinforcing a shared baseline for safety: helmets must perform under realistic, multi-directional impact conditions. For New Zealand, this is more than an update—it is a chance to establish a consistent, enforceable, and future-ready approach to protecting workers on the job.

Objective

This document provides industry leaders, regulators, and procurement decision-makers with a technical and strategic overview of the latest industrial helmet standards—AS/NZS 1801:2024 and BS EN 397:2025—and their implications for head protection in New Zealand's construction and infrastructure sectors.

It evaluates how these standards address modern workplace risks, compares their performance criteria, and outlines the case for the universal adoption of multi-impact tested helmets across all construction roles. The document also explores the feasibility of recognising both standards in parallel, the transition away from legacy helmets, and the interim role of EN 12492-certified hybrid models already in circulation.

Ultimately, this paper aims to inform a unified direction for head protection policy—one that simplifies compliance, strengthens worker safety, and supports a future-ready industry standard across New Zealand.

Health, Safety & Wellbeing in the New Zealand Construction Industry

The construction industry remains one of New Zealand's highest-risk sectors for workplace harm, accounting for 14% of work-related fatalities and 18% of serious non-fatal injuries. Each year, an average of 50 to 60 workers die, while 400 to 500 suffer serious injuries.

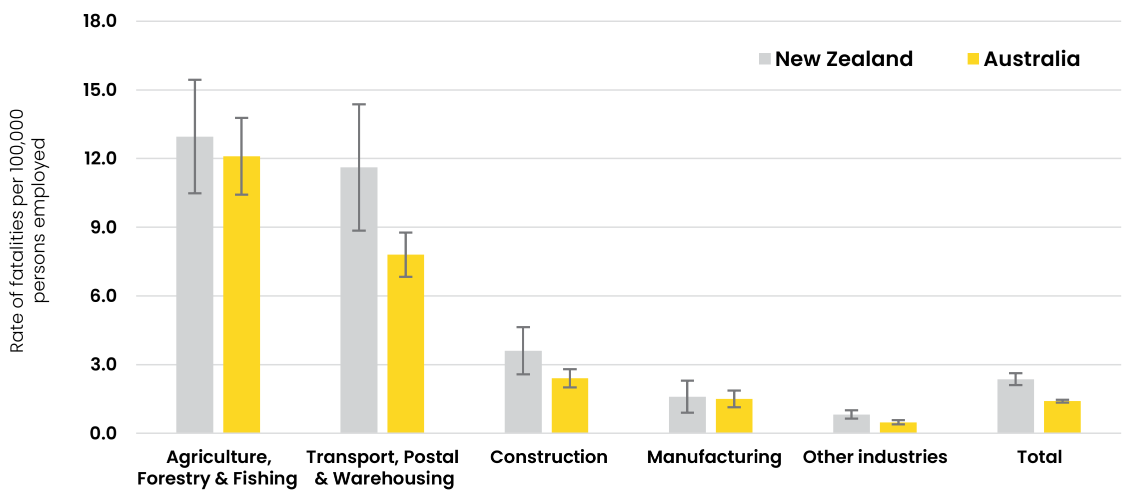
Vehicles are the leading cause of fatalities, contributing to over 50% of deaths, followed by falls from height (11%) and being struck by falling objects. Despite a 50% reduction in fatalities over 20 years, progress has slowed, and New Zealand's workplace fatality rate remains 40% higher than Australia's.

Serious non-fatal injuries remain a major issue, with construction having an injury rate of 33.4 per 100,000 workers. The number of injuries requiring over a week off work (WAFW) in construction doubled between 2012 and 2021, with falls, slips, and trips now accounting for 24% of all claims, while being struck by objects accounts for 27%.

Despite improvements, worker protection still lags behind international benchmarks, with construction worker fatality rates exceeding those in Australia and the UK.

While there have been improvements in fatality rates, construction still faces persistently high serious injury rates, highlighting the need for stronger fall protection, vehicle safety measures, and musculoskeletal injury prevention.

Work-related acute fatality rates per 100,000 persons employed in New Zealand and Australia, 2017-21



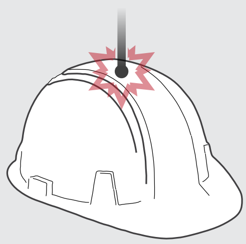
WorkSafe NZ - Work health and safety, An overview of work-related harm and risk In Aotearoa New Zealand: - 2024

Head injuries from slips, trips, and falling objects account for nearly half of serious harm incidents in construction. Yet helmet standards have only recently begun to evolve in response.

Aligning PPE standards with real-world risks is critical to improving long-term health and safety outcomes.

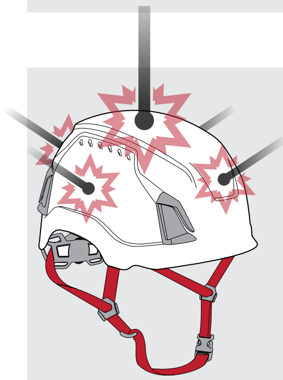
Head Protection: Terms

The new BS EN 397:2025 Type 2 and AS/NZS 1801:2024 Type 4 introduces enhanced testing for occupational safety helmets. New terminology replaces terms such as hard hats, climbing-style helmets, or work-at-height helmets, signifying a modernised approach to head protection.



Type 1
Helmets (Hard Hats)

Designed primarily for vertical (crown) impact protection from falling objects. Type 1 helmets typically features a suspension harness and minimal side coverage, with limited retention capability and no off-crown impact testing.



Type 2 & 4
Enhanced Helmets

Tested for protection against crown and off-centre impacts, these helmets are designed for dynamic environments with fall and strike hazards from multiple directions. including an energy-absorbing liners, and a secure four-point chinstrap.

Hard hats

A common term for occupational helmets with a rigid shell, wide brim or peak, and typically no chin strap. Designed for crown impacts and usually meet AS/NZS 1801:2024 Type 1, BS EN 397:2025 Type 1, or ANSI Z89.1-2021 Type I.

Type 1 General Occupational / Industrial helmets

Helmets with a rigid shell, brim or peak, and optional chin straps. Typically compliant with AS/NZS 1801:2024 Type 1, BS EN 397:2025 Type 1, or ANSI Z89.1-2021 Type I.

Climbing-style helmets

Originally for alpine use, offering a secure fit and off-crown protection. Widely adopted where fall or movement risks exist.

Multi-impact helmets

A performance term for helmets tested at multiple points—crown, front, side, rear. Typically certified to BS EN 397:2025 Type 2, AS/NZS 1801:2024 Type 4, or ANSI Z89.1-2021 Type II.

Hybrid helmets

Mountaineering-style helmets certified to EN 12492. Some are partly certified to EN 397, bridging recreational and industrial use.

Work-at-height helmets

Term for helmets that stay secure during movement or falls. Functionally align with climbing-style or enhanced helmets and typically meet BS EN 397:2025 Type 2, AS/NZS 1801:2024 Type 4, or ANSI Z89.1-2021 Type II.

Type 2 (or 4) Enhanced helmets

Certified under BS EN 397:2025 Type 2 or AS/NZS 1801:2024 Type 4. Include crown and off-crown protection plus a retention system. Equivalent to ANSI Z89.1-2021 Type II.

Enhanced helmets

A term recognised under AS/NZS 1801:2024 for Type 4 helmets. Include crown/off-crown protection, retention systems, and impact energy attenuation.

Head Protection: Standards

AS/NZS 1801:2024 - Occupational Protective Helmets – Type 1
General-use helmets designed to protect against vertical (crown) impacts only. The most common helmet type in Australia and New Zealand.

AS/NZS 1801:2024 - Occupational Protective Helmets – Type 2
Helmets intended for high-heat environments, such as smelting or furnace work, with specific performance criteria for thermal exposure.

AS/NZS 1801:2024 - Occupational Protective Helmets – Type 3
Helmets intended for wildland firefighting.

AS/NZS 1801:2024 - Occupational Protective Helmets – Type 4
Enhanced helmets tested for multi-directional impact performance with lower force thresholds, dynamic retention strength, and helmet stability.

BS EN 12492:2012 Mountaineering Equipment. Helmets for mountaineers.
European standard for helmets used in mountaineering and climbing. It includes multi-directional impact and retention requirements.

BS EN 397:2025 Industrial Safety Helmets – Type 1
Updated UK and European standard for general industrial safety helmets. Focused on protection from vertical impact and penetration from falling objects.

BS EN 397:2025 Industrial Safety Helmets – Type 2
Introduces enhanced industrial helmets with testing for off-crown impacts, penetration resistance, and performance categories such as UV ageing, electrostatic discharge, and molten metal splash.

BS EN 50365:2023 - TC Helmet: Live Working. Electrically insulating helmets for use on low and medium voltage installations
Standard for electrically insulating helmets used in low and medium-voltage applications.

NSI Z89.1-2021 – Type 1
The U.S. standard for top-impact protection only. Closely aligned with older EN 397 Type 1 standards but lacking lateral impact testing.

ANSI Z89.1-2021 – Type 2
Covers helmets designed for both crown and off-crown impacts. Comparable to BS EN 397:2025 Type 2 and AS/NZS 1801:2024 Type 4, often used in the U.S. industrial and construction sectors.

New Zealand industry has led the shift to multi-impact tested helmets, well before regulations caught up.

With the release of AS/NZS 1801:2024 and BS EN 397:2025 Type 2, the performance demands once met through EN 12492 are now formally recognised—bringing standards in line with real-world risks like slips, trips, and lateral impacts.

A Continued Shift Towards Enhanced Head Protection

For more than a decade, many of New Zealand's construction, utilities, infrastructure, and forestry sectors have been transitioning to helmets offering protection beyond the minimum requirements of AS/NZS 1801:1997.

The driving force behind this shift was a practical recognition: that traditional hard hats—designed primarily to protect against falling objects—are not sufficient in the dynamic, high-risk conditions of modern worksites.

In today's dynamic work environments, risks go well beyond vertical impact. Lateral and rearward impacts, along with slips, trips, and falls from standing height or low elevation, are now common across many roles. Traditional helmet designs offer limited protection in these scenarios, lacking both off-crown impact resistance and secure head retention. In response, many organisations began adopting multi-impact tested helmets that more accurately reflect the realities of modern worksites—ahead of regulatory requirements.

The release of AS/NZS 1801:2024 formally acknowledges this shift. By introducing Type 4 helmets, the standard defines helmets intended for use where there is risk of being struck by falling objects and from falls from standing or low heights (up to one metre). This provides a long-overdue regulatory mechanism for evaluating off-crown impact performance in local contexts. However, the scope of the Type 4 classification remains relatively narrow compared to how industry has already been using higher-performance helmets—often in environments involving heights, mobile work platforms, heavy machinery, and variable terrain where the fall risk exceeds one metre.

Around the same time, BS EN 397:2025 introduced a new Type 2 classification, requiring energy attenuation tests for crown and off-centre impacts and including provisions for chinstrap retention. This standard offers broader protective intent and aligns closely with the features of EN 12492-certified mountaineering helmets, which many New Zealand worksites had adopted as interim solutions. These helmets, favoured for their multi-directional performance, high-retention chinstraps, and durable construction, effectively bridged the gap between industrial requirements and real-world risk.

To adapt these helmets for industrial settings, manufacturers often supplemented EN 12492 certification with partial EN 397 testing—particularly for lateral deformation, low-temperature performance, and resistance to penetration. This hybrid certification model became widely accepted and specified, especially on major construction, energy, and transport projects. In some cases, multi-impact helmets have become mandatory within procurement policies and site PPE frameworks, reinforcing an industry-led evolution toward higher protection standards ahead of formal mandates.

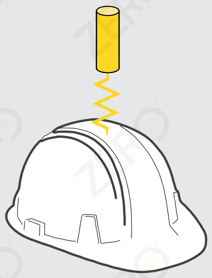
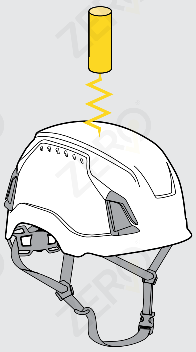
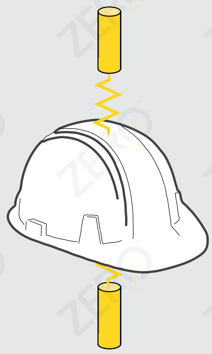
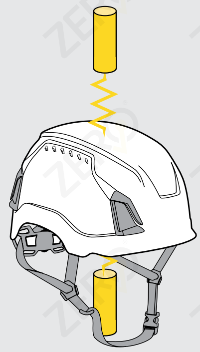
With the intent and application of modern helmets now better defined, it's essential to understand how each standard evaluates performance—and where the key differences lie.

Testing Standards Overview

AS/NZS 1801:2024 and BS EN 397:2025 introduce formal classifications for multi-directional impact protection and secure retention—criteria now essential for modern construction environments. The following section outlines the key testing requirements of each standard and how they reflect today's workplace risks.

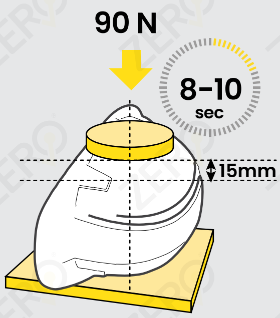
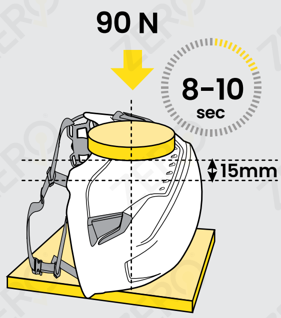
Electrical Resistance

The test evaluates the helmet's ability to provide insulation and protect the wearer from electrical hazards. The test ensures the helmet's material resists the passage of electrical current under specified conditions, verifying its insulation properties.

General Type 1 Helmets	Enhanced Type 4 Helmets	Type 1 Industrial Helmets	Type 2 Industrial Helmets
AS/NZS 1801:2024 - Type 1 4.6 Electrical resistance	AS/NZS 1801:2024 - Type 4 4.6 Electrical resistance	BS EN 50365:2023 - TC PR 6.3.4, PR 6.3.5 Class 0 (optional)	BS EN 50365:2023 - TC PR 6.3.4, PR 6.3.5 Class 0 (optional)
 50 Hz 3.5kV	 50 Hz 3.5kV	 1,000 V AC 1,500 V DC	 1,000 V AC 1,500 V DC

Stiffness (optional for AS/NZ1801:2024 Type 1 & 2)

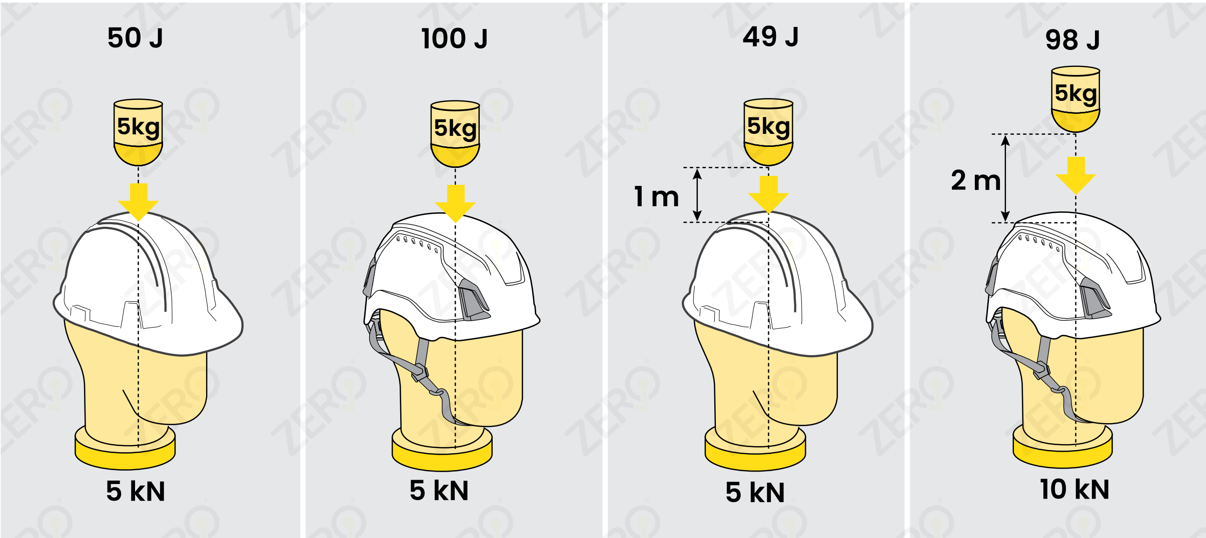
The stiffness test specified evaluates a helmet's ability to maintain structural integrity under compression ensuring the helmet can withstand forces it may encounter during.

Type 1: General Occupational Protective Helmets	Type 4: Enhanced Occupational Protective Helmets	Type 1 Industrial Helmets	Type 2 Industrial Helmets
AS/NZS 1801:2024 - Type 1 4.7 Stiffness test (optional)	AS/NZS 1801:2024 - Type 4 4.7 Stiffness test (optional)	BS EN 397:2025 Type 1 No test	BS EN 397:2025 Type 2 No test
		NOT SPECIFIED	NOT SPECIFIED

Shock absorption - Striker Drop

The Striker Drop Test under evaluates the helmet's impact resistance by simulating a falling object striking the helmet. The test assesses the ability of the helmet to absorb and dissipate energy from an impact while protecting the head from penetration and excessive force transmission.

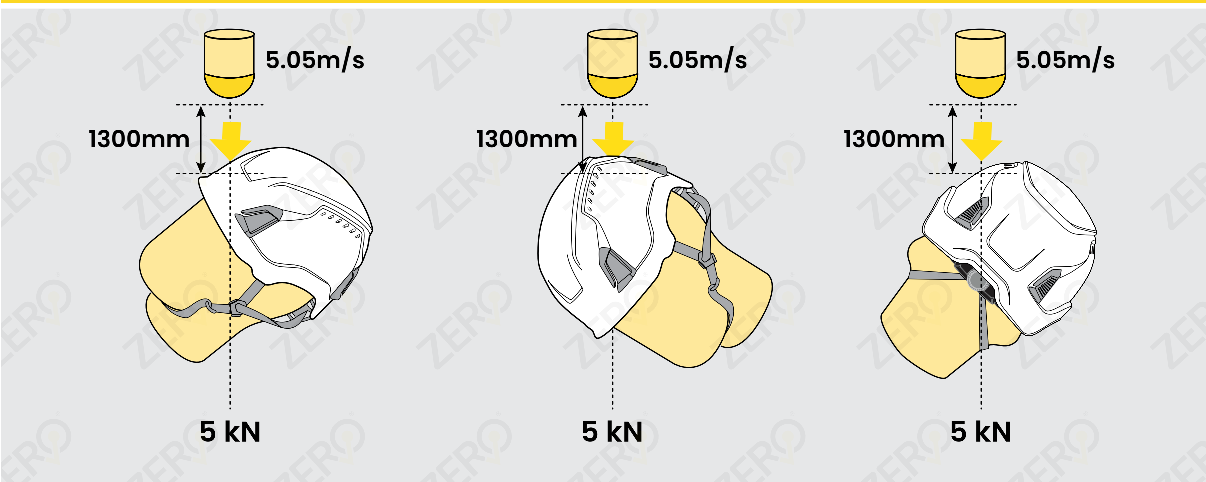
General Type 1 Helmets	Enhanced Type 4 Helmets	Type 1 Industrial Helmets	Type 2 Industrial Helmets
AS/NZS 1801:2024 - Type 1 4.8 Striker Drop Test	AS/NZS 1801:2024 - Type 4 4.8 Striker Drop Test	BS EN 397:2025 Type 1 & 2 5.7.1 Shock absorption on-crown	BS EN 397:2025 Type 2 5.7.2 Shock absorption on crown



Impact Energy Attenuation (AS/NZS 1801:2024, Type 4)

Type 4 helmets are tested at five specific locations (front, side, rear, and two additional points on the opposite side) using a hemispherical anvil (48 mm radius) at an impact speed of 5.05 m/s (equivalent to a 1,300 mm drop height).

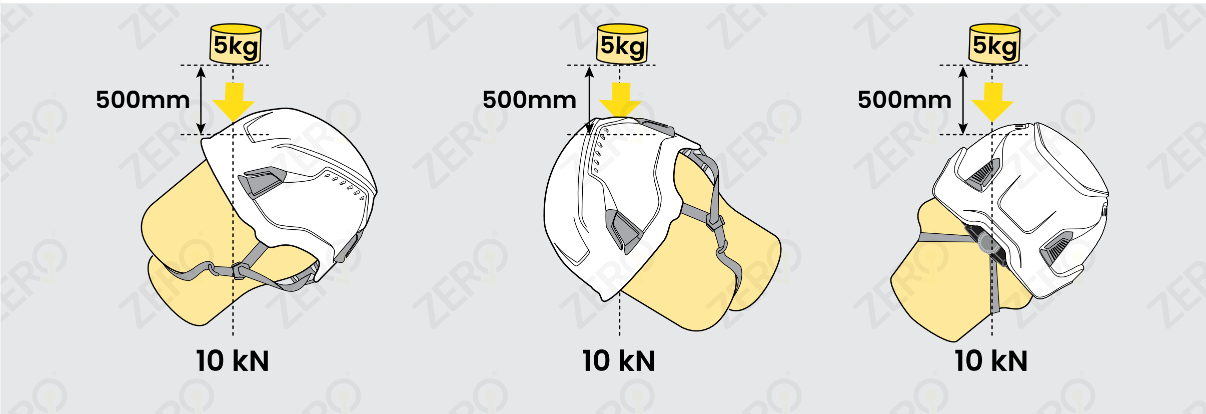
Enhanced Type 4 Helmets
AS/NZS 1801:2024 - Type 4 4.9 Impact Energy Attenuation Test



Shock absorption for off-crown for BS EN 12492:2012 type 2

The helmet is tested on a headform mounted at a 30° angle. Within 40 ±10 seconds of removal from conditioning, the helmet is fitted as specified by the manufacturer. A striker is dropped onto a designated impact point at a velocity of 3.13 ±0.05 m/s, corresponding to roughly 24.5 joules of energy from a 0.5 m drop. The striker's speed is measured 10–60 mm before impact, with a ±1% margin of error.

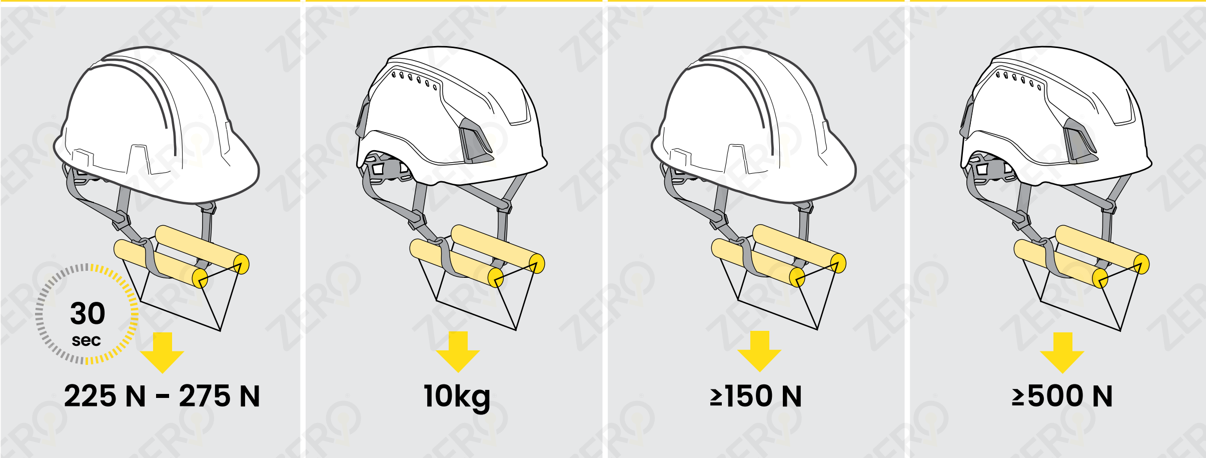
Type 2 Industrial Helmets
BS EN 397:2025 Type 2 5.7.3 Shock absorption off-crown



Dynamic Strength of the Retention System

The Dynamic Strength of the Retention System Test evaluates the helmet's chinstrap or retention system's ability to withstand dynamic forces without breaking or stretching excessively. The test simulates a dynamic load applied to the retention system to verify its strength and durability under sudden forces.

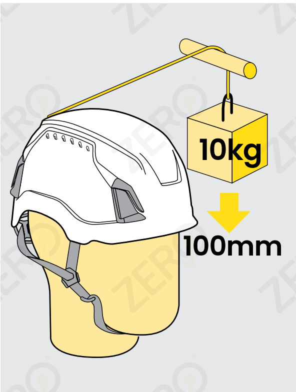
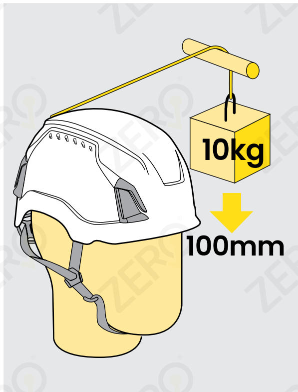
General Type 1 Helmets	Enhanced Type 4 Helmets	Type 1 Industrial Helmets	Type 2 Industrial Helmets
*AS/NZS 1801:2024 - Type 1 4.14 Hight retaining chinstrap	AS/NZS 1801:2024 - Type 4 4.10 Dynamic strength of the retention system	BS EN 397:2025 Type 1 4.2.5.2 Chin strap strength release - type 1	BS EN 397:2025 Type 2 4.2.5.2 Chin strap strength release - type 2



**AS/NZS 1801:2024 - Type 1, Clause 5.3 outlines high retaining chinstrap requirements. Schedule 4.2.1/4.2.2 Table 1 does not list a specific test procedure in relation to this clause.*

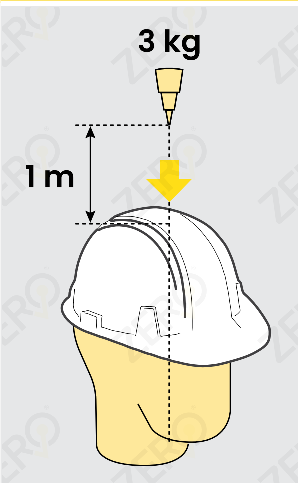
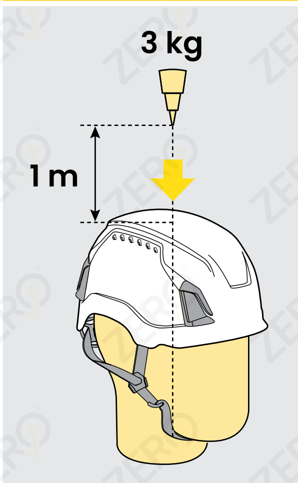
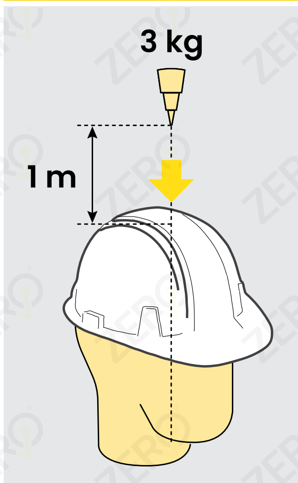
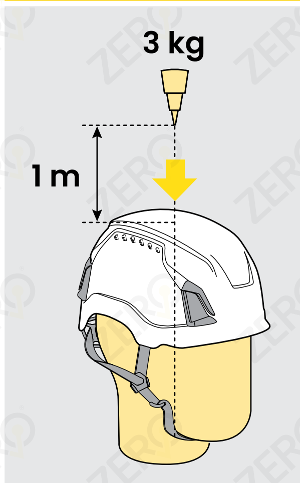
Dynamic Helmet Stability

The Dynamic Helmet Stability Test evaluates how well a helmet remains securely positioned on a wearer's head when subjected to dynamic forces. The test simulates forces that could cause the helmet to move or slip off, replicating real-world scenarios such as falls, impacts, or rapid head movements.

General Type 1 Helmets	Enhanced Type 4 Helmets	Type 1 Industrial Helmets	Type 2 Industrial Helmets
AS/NZS 1801:2024 - Type 1 No test	AS/NZS 1801:2024 - Type 4 4.11 Dynamic helmet stability	BS EN 397:2025 Type 1 No test	BS EN 397:2025 Type 2 4.2.5.3 Retention system effectiveness Type 2
NOT SPECIFIED		NOT SPECIFIED	

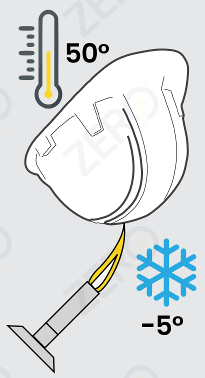
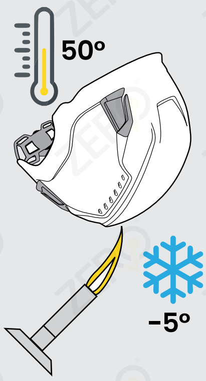
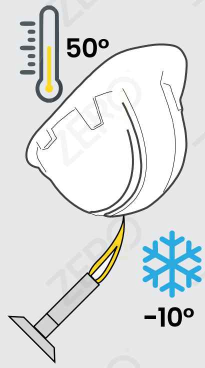
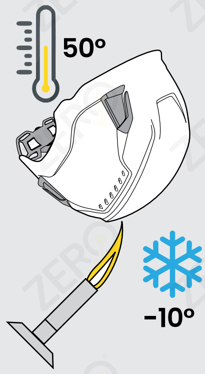
Resistance to Penetration

The Penetration Test under AS/NZS 1801:2024, Type 4 evaluates a helmet's resistance to penetration by sharp or pointed objects. The test simulates an impact from a pointed or sharp object dropped from a specified height onto the helmet, assessing its ability to resist penetration and protect the wearer.

General Type 1 Helmets	Enhanced Type 4 Helmets	Type 1 Industrial Helmets	Type 2 Industrial Helmets
AS/NZS 1801:2024 - Type 1 4.10 Resistance to Penetration	AS/NZS 1801:2024 - Type 4 4.10 Resistance to Penetration	BS EN 397:2025 Type 1 4.2.4 Resistance to penetration	BS EN 397:2025 Type 2 4.2.4 Resistance to penetration
			

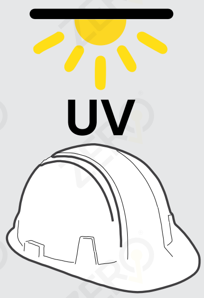
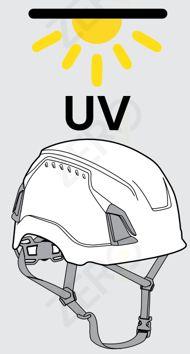
Thermal Performance Test

The Thermal Performance Test under AS/NZS 1801:2024, Type 4 evaluates a helmet's ability to maintain its structural integrity and protective properties when exposed to extreme temperatures. This test assesses how the helmet material reacts to temperature extremes and whether it retains its intended safety properties after exposure.

General Type 1 Helmets	Enhanced Type 4 Helmets	Type 1 Industrial Helmets	Type 2 Industrial Helmets
AS/NZS 1801:2024 - Type 1 4.13.(1),(2)&(3) Thermal performance	AS/NZS 1801:2024 - Type 4 4.13 Thermal performance	BS EN 397:2025 Type 1 4.2.7.1 Performance at lower temperatures 4.2.7.2 Performance at higher temperatures	BS EN 397:2025 Type 24.2.7.1 Performance at lower temperatures 4.2.7.2 Performance at higher temperatures
 50° -5°	 50° -5°	 50° -10°	 50° -10°

UV Ageing

Helmets undergo 400 hours of UV exposure to assess material durability. After this artificial aging, helmets are tested for impact absorption and penetration resistance to ensure they maintain safety standards. This simulates long-term sun exposure, verifying that helmets remain protective in outdoor environments.

General Type 1 Helmets	Enhanced Type 4 Helmets	Type 1 Industrial Helmets	Type 2 Industrial Helmets
AS/NZS 1801:2024 - Type 1 No test	AS/NZS 1801:2024 - Type 4 No test	BS EN 397:2025 Type 1 6.2.6 Artificial ageing	BS EN 397:2025 Type2 6.2.6 Artificial ageing
NOT SPECIFIED	NOT SPECIFIED	 UV 400 Hours	 UV 400 Hours

What's changed in the revised standards?

Both BS EN 397:2025 and AS/NZS 1801:2024 introduce expanded testing for lateral impact protection and reinforce chinstrap performance. Below is a summary of the key updates that differentiate the latest standards from their predecessors.

Impact Attenuation

Both standards now include multi-impact testing across crown, front, side, and rear zones, distinguishing basic protection (Type 1) from extended coverage (Type 2 under EN 397 and Type 4 under AS/NZS 1801). A notable difference is the allowable force transmitted to the headform: 5 kN under AS/NZS 1801:2024 Type 4 versus 10 kN under BS EN 397:2025 Type 2. This reflects a stricter threshold in the AS/NZS standard, aimed at reducing injury from low-height falls and lateral impacts, whereas EN 397 accommodates higher-energy industrial hazards

	BS EN 397:2025 Type 2	AS/NZS 1801:2024 Type 4
Crown Impact	98 J (high energy) at ≤10 kN	100 J (high energy) at ≤5 kN
Off-Centre Impact	25.4 J (front, side, rear) at ≤10 kN	20 J at ≤5 kN

Lateral Performance

AS/NZS 1801:2024 offers an optional stiffness test for static lateral compression, assessing shell rigidity but not dynamic impact resistance while BS EN 397:2025 removes the former lateral deformation test on Type 2 helmets as they undergo off-centre impact testing, which inherently evaluates lateral performance.

Chinstrap and Retention System

AS/NZS 1801:2024 requires chinstrap release at ≥150 N, with no upper limit defined. BS EN 397:2025 also introduces two performance categories for chinstrap behaviour, aligned to different workplace risks:

Type 1 helmets with chinstraps that release between 150 N and 250 N are intended for use in environments where entanglement is a concern, such as around moving machinery or in confined spaces. **Type 2 helmets** with chinstraps that do not release below 250 N offer stronger retention and are suited to environments where helmet loss during a fall would pose a greater risk than entanglement.

Electrostatic Properties

BS EN 397:2025 introduces testing for surface resistance, enabling use in environments where static discharge presents a risk. AS/NZS 1801:2024 includes no test for electrostatic performance.

UV Ageing

BS EN 397:2025 includes UV ageing tests to simulate long-term degradation. Helmets are re-tested after exposure to ensure durability in outdoor environments. AS/NZS 1801:2024 does not assess material performance after UV exposure.

Connective Eye, Face, Hearing & Sun Protection

AS/NZS 1801:2024 explicitly supports the use of manufacturer-approved accessories—such as visors, earmuffs, and sun shields—provided they don't compromise helmet performance. While BS EN 397:2025 does not detail accessory use, it permits integration as long as compliance with the standard is maintained. This reflects the growing demand for adaptable, multi-risk protection on modern worksites.

Earmuffs and Means of Attachment

Both AS/NZS 1801:2024 and BS EN 397:2025 permit the use of earmuff attachments, but only where they do not affect the helmet's certified performance. Under BS EN 397:2025, helmets fitted with earmuff slots or adaptors must still meet all safety requirements, and any combination must be tested if supplied as a system. AS/NZS 1801:2024 also requires that earmuffs or their mounting systems not compromise the helmet's retention, impact performance, or marking visibility.

Eye and Face Protection

Helmets may be fitted with integrated or attachable eye and face protection, such as visors or face shields, under both AS/NZS 1801:2024 and BS EN 397:2025, provided these additions do not interfere with the helmet's core safety functions.

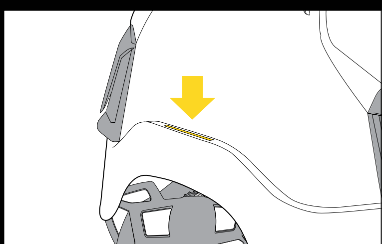
BS EN 397:2025 requires that any supplied eye or face protection be tested for compatibility and performance with the helmet. If provided as part of a system, the helmet must meet all safety criteria both with and without the visor fitted. Similarly, AS/NZS 1801:2024 permits eye and face protectors, but only where their use does not affect helmet retention, impact resistance, or structural integrity.

In both standards, components must be manufacturer-approved and correctly fitted to maintain certified protection and regulatory compliance.

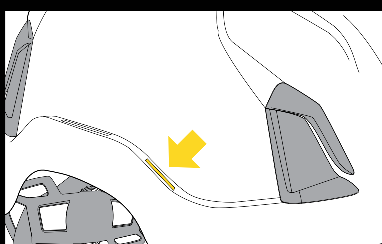
Sun brims and Neck Protectors

Both AS/NZS 1801:2024 and BS EN 397:2025 allow the use of accessories like sun brims, visors, and earmuffs—provided they do not compromise the helmet's safety performance.

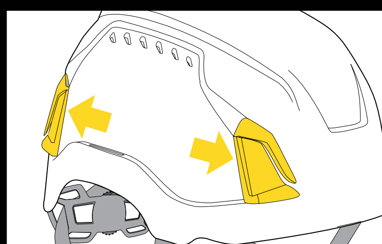
Under BS EN 397:2025, helmets must be tested with and without non-integral accessories if supplied, and only approved attachments may be used without affecting compliance. AS/NZS 1801:2024 similarly requires that accessories not interfere with fit, structural performance, or safety markings unless tested as part of the helmet system.



Earmuff attachment slots



Visor and Face shield attachment slots



Sun brim and lamp clips

As worksites place greater focus on worker protection, helmets must become more adaptable—allowing wearers to respond quickly to changing risks.

With growing exposure to UV, noise, and airborne hazards, integrated accessories like visors, earmuffs, and sun shields are now essential for modern, multi-risk environments.

A Changing Landscape for Head Protection

The introduction of AS/NZS 1801:2024 Type 4 helmets and BS EN 397:2025 Type 2 helmets signals a significant evolution in head protection standards. Both respond to growing awareness of multi-directional impact risks, particularly in dynamic, real-world work environments. While their test methods and thresholds differ, both represent a shift beyond traditional crown-only protection.

Can New Zealand Recognise Both AS/NZS and BS EN Standards?

It is both reasonable and practical for New Zealand to recognise AS/NZS 1801:2024 Type 4 and BS EN 397:2025 Type 2 helmets in parallel. Although their transmitted force limits differ (5.0 kN vs 10.0 kN), the standards are based on different assumptions—not conflicting safety outcomes.

Both aim to enhance off-crown impact protection, but they differ in test procedures and performance thresholds. BS EN 397:2025 Type 2 offers a broader scope of application, accommodating a wider range of impact scenarios. In contrast, AS/NZS 1801:2024 Type 4 applies a stricter force limit, targeting more controlled or lower-energy impact conditions.

The technical requirements of Type 4—particularly the combination of off-crown testing and a 5.0 kN force cap—present a challenge for international manufacturers. The added design, testing, and compliance costs may deter adoption, especially among global brands already aligned with EN or ANSI standards. Without a clear commercial incentive or regulatory mandate, availability of Type 4-certified helmets in New Zealand may remain limited in the near term.

By contrast, BS EN 397:2025 Type 2 helmets are expected to become increasingly available. Their alignment with hybrid designs that already comply with EN 12492 and legacy EN 397 makes them easier to scale. Many of these helmets are already in global circulation, offering a practical and immediately accessible solution for New Zealand worksites.

What Role will Type 1 Helmets (Hard Hats) have in the Modern Worksite?

Type 1 industrial helmets remain a recognised and compliant form of head protection, designed primarily for falling objects and suited to workers in relatively static environments. Where this is the predominant hazard—and movement, task variation, or machinery interaction is limited—these helmets may still be considered fit for purpose. Given standards like BS EN 397:2025 and AS/NZS 1801:2024 have evolved to address broader impact scenarios, organisations can reassess helmet selection not only for compliance, but in line with the environments their teams actually work in.

Defining the Future of Head Protection in New Zealand Construction

The introduction of BS EN 397:2025 Type 2 and AS/NZS 1801:2024 Type 4 presents an opportunity to establish a nationally consistent, future-ready approach to head protection:

1. Aligning with Real-World Risk

ACC data shows that slips, trips, and low-height falls are among the leading causes of serious injuries in the New Zealand construction sector. These incidents don't just affect those working at height—they impact nearly all trade roles across various work environments (ACC, 2023).
Work-related claims – Injury Statistics Dashboard.

2. Enabling Industry Simplicity Through Standardisation

Enforcing two helmet types across a site could introduce complexity in training, compliance, inventory, and communication. A single, multi-impact helmet standard—such as BS EN 397:2025 Type 2 or a compliant hybrid model—streamlines onboarding, auditing, and policy enforcement across trades and subcontractors.

3. Bridging Local and Global Compliance

New Zealand construction is increasingly tied to international procurement, project management, and safety frameworks. Many international helmets will be certified to EN 397. Recognising BS EN 397:2025 Type 2 as equivalent to or exceeding local expectations avoids isolation, while still supporting AS/NZS 1801:2024 where locally-developed helmets are viable.

What Happens to EN 12492 (Hybrid) Helmets in Circulation?

EN 12492 helmets—originally designed for mountaineering—have become increasingly common on construction and utility sites due to their multi-directional impact protection and high-retention chinstraps. These helmets have often filled the gap left by older industrial helmet standards like AS/NZS 1801:1997 or EN 397:2012.

With BS EN 397:2025 Type 2 introducing off-centre impact testing and chinstrap performance, many EN 12492-compliant helmets are expected to transition or dual-certify under the new framework. Manufacturers will likely adopt Type 2 certification as the default for industrial head protection—phasing out EN 12492 for general construction use.

What About UV Protection?

Ultraviolet resistance affects both helmet durability and worker wellbeing. BS EN 397:2025 includes UV ageing tests to assess long-term material performance under sun exposure, whereas AS/NZS 1801:2024 does not include this requirement. Helmets used in outdoor environments may degrade over time—becoming brittle or less impact-resistant. Increasingly, helmets are also expected to offer direct UV shielding through features like wide brims, visors, or reflective surfaces. UV protection is now viewed not just as a durability factor, but as part of a broader occupational health strategy.

A Case For Helmet Standardisation in the Construction Industry

Despite recognised standards for both crown-only and multi-directional helmets, New Zealand is trending toward universal adoption of multi-impact helmets. Workers move between tasks and hazards quickly. Site risks—like uneven ground, overhead tools, and low-level falls—span roles. Managing different helmets for different tasks creates unnecessary complexity and compliance risk.

A unified helmet style—such as BS EN 397:2025 Type 2 or a high-performing equivalent—makes enforcement easier, supports consistent training, and increases protection. AS/NZS 1801:2024 Type 4 could also serve this role if widely adopted. However, lack of global harmonisation may limit uptake due to the cost of certification and testing.

Conclusion

The evolution of helmet standards presents an opportunity to align head protection policy with the real risks faced on today's construction sites. Slips, trips, falls from varying heights, and loss of control of machinery—often resulting in unpredictable impact angles—are now more commonly identified, along with more proactive measures to prevent them. In this context, the most important step is to support the universal adoption of helmets tested for off-centre (multi-directional) impact protection.

Whether certified to BS EN 397:2025 Type 2, AS/NZS 1801:2024 Type 4, or an equivalent high-performing model such as ANSI Z89.1 Type II, these helmets offer enhanced protection against side, rear, and front impacts. They better reflect the dynamic and variable conditions of modern worksites and provide a realistic baseline for personal safety in environments where the nature of risk can change daily.

New Zealand is well positioned to recognise both AS/NZS and EN standards in parallel, enabling flexibility in procurement, continuity for local manufacturers, and alignment with global PPE supply chains. BS EN 397:2025 Type 2 offers an immediately scalable path forward, while AS/NZS 1801:2024 Type 4 remains a valuable domestic framework that—if adopted—could serve a similar role. These standards do not compete; they complement one another by offering multiple routes to achieving improved safety outcomes, depending on context and supply availability.

In the interim, many construction and infrastructure workers continue to wear helmets certified to EN 12492 or hybrid-certified models. Originally developed for mountaineering, these helmets already incorporate many features now formalised in BS EN 397:2025, including high-retention chinstraps and off-crown impact performance. They have played a critical role in bridging the safety gap between older hard hat standards and the demands of modern worksites. As BS EN 397:2025 Type 2 helmets become more widely available—and while AS/NZS 1801:2024 Type 4 remains unmanufactured—these hybrid models remain a valid and effective interim solution.

Clear, unified guidance from regulators, industry bodies, and manufacturers will be essential to support this transition—particularly in defining what constitutes an acceptable level of protection in construction environments. The goal is not to prioritise one certification over another, but to ensure that all helmets in use meet the same elevated performance expectations: multi-impact testing, off-crown energy attenuation, and secure retention systems.

By aligning policy and procurement around these key safety outcomes, New Zealand has the opportunity to lead with a consistent, evidence-based approach that strengthens compliance, improves protection, and builds long-term resilience across the sector.

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