🔍 Summary of Technical Changes in NZS 3404 (2025 Draft)

🔧 Section 01 – Scope and General

Area	1997 Version	2025 Draft Changes
Scope	Applied to buildings, structures, cranes, and bridges	Scope retained but clarified and reformatted into “Inclusions” and “Exclusions”
Steel Grade Limit	Excluded steels with fy > 450 MPa (except Q&T 690 MPa for splice plates)	Now allows steel up to 690 MPa for non-seismic applications
Verification Method	Linked to NZ Building Code via NZS 4203	Now explicitly aligned with AS/NZS 1170 series and Approved Documents B1, B2, C4
Interpretation	Notes and commentary roles explained	Clarified use of “shall”, “should”, and “normative”; commentary role retained
Roles	Defined in general terms	Now includes a comprehensive list of defined roles (e.g. design engineer, construction reviewer, welding inspector)
Definitions	Extensive list of technical terms	Retained and expanded, with clearer formatting and alignment with AS/NZS 1170 terminology
Use of Alternative Materials/Methods	Allowed via special study, testing, or rational design	Retained with clearer reference to NZ Building Code alternative solutions
Design & Construction Review	Covered in one clause	Now split into separate sections for design and construction review, with expanded detail
Design Documentation	Listed key items	Now includes expanded list: seismic categories, fatigue, weld

Area	1997 Version	2025 Draft Changes
		demand, AESS, propping, traceability, etc.
Workmanship & Construction Categories	Not explicitly defined	Introduces Construction Categories CC1–CC4, aligned with AS/NZS 5131
Architecturally Exposed Structural Steelwork (AESS)	Not addressed	Now includes AESS categories 1–4 and C, with reference to AS/NZS 5131
Abbreviations	Not included	New section added (to be finalized), includes terms like AESS, FCM, NDE, RHS, SHS

✅ **Overall Themes in the 2025 Draft**

- **Modernization: Aligned with AS/NZS 5131, AS 4100:2020, and current NZBC practices.**
- **Clarity: Improved structure, formatting, and terminology.**
- **Traceability & Reuse: Introduces marking and documentation for end-of-life reuse.**
- **Seismic & Fire Considerations: Stronger integration of seismic categories and fire design roles.**
- **Workmanship & Quality: Emphasis on construction categories and inspection roles.**

🔩 **Section 02 – Materials and Brittle Fracture**

Area	1997 Version	2025 Draft Changes
Steel Standards	AS/NZS, BS, JIS	Expanded to include EN, ASTM, API, and updated JIS editions. Now includes approval process for alternative steels with detailed criteria

Area	1997 Version	2025 Draft Changes
Acceptance of Steels	Mill test certificates	Now requires ILAC MRA-accredited lab reports for compliance
Unidentified Steel	fy = 170 MPa, fu = 300 MPa	Now allows fy = 210 MPa, fu = 370 MPa or mechanical testing; CVN testing may be required for cold applications
Steel Properties	Not explicitly listed	Now explicitly lists E, G, v, αT for all grades
Through-Thickness Properties	Not addressed	New requirements for Z-grade steel and lamellar tearing risk, including exemptions and preferred weld locations
Seismic Steel Requirements	Table 12.4	Now fully integrated into Section 2 with Tables 2.2.7.1(1) and (2), including elongation, CVN, fy/fu ratio, and product type limits
Bridge Steel Requirements	Not detailed	New Table 2.2.8.2 for FCMs and non-FCMs in highway/rail bridges, with stricter CVN and manufacturing controls
Reuse of Steel	Not addressed	New clause requiring hard stamping and certified documentation for reuse traceability
Line Pipe	Brief mention	Now references Appendix B for additional requirements
Welding of Non-AS/NZS Steels	Allowed with design engineer approval	Now requires qualification testing per AS/NZS 1554.1 for non-prequalified materials
Fasteners	AS/NZS 1252 and equivalents	Expanded to include EN 14399, with updated verification and CVN requirements for bolts in cold climates
Material Selection for Brittle Fracture	Based on notch-ductile range	Retained and expanded with Equation 2.6.1, updated Table 2.6.4.1, and new Appendix C and Appendix D references

Area	1997 Version	2025 Draft Changes
Steel Type–Grade Mapping	**Table 2.6.4.4**	**Expanded to include more grades and standards, including API, ASTM, EN, and AS 3597**

✅ **Overall Themes in the 2025 Draft**

- **Modernization: Aligns with international standards (EN, ASTM, API) and current industry practice.**
- **Seismic & Bridge Readiness: Stronger integration of seismic and fracture-critical member requirements.**
- **Traceability & Reuse: New provisions for end-of-life reuse and documentation.**
- **Weldability & Toughness: Emphasis on CVN impact energy, Z-grade steel, and weld qualification.**
- **Clarity & Structure: Improved formatting, clause numbering, and cross-referencing.**

Section 03 – General Design Requirements

Area	1997 Version	2025 Draft Changes
Terminology & Structure	More narrative and less modular	Reorganized into clearer subheadings (e.g. Stability, Strength, Durability)
Load References	Referenced older bridge and lift standards	Updated to latest Waka Kotahi and KiwiRail documents
Structural Robustness	Referred to AS 3828	Now aligned with AS/NZS 1170.0; AS 3828 withdrawn
Corrosion Protection	Appendix C guidance	Now references SNZ TS 3404 and AS/NZS 5131; includes thermal bridging considerations
Lamellar Tearing	Not explicitly addressed	New clause added with material selection and detailing guidance

Area	1997 Version	2025 Draft Changes
Reliability Management	Not included	New clause referencing AS/NZS 5131 and ISO 2394 for quality and reliability

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Section 04 – Structural Analysis

Area	1997 Version	2025 Draft Changes
Analysis Methods	Elastic, elastic with redistribution, plastic	Adds **Advanced Analysis** (Direct Analysis, Non-linear Dynamic)
Second-Order Effects	P-Δ and P-δ effects discussed	More detailed treatment, including **notional lateral loads**, **imperfections**, and **direct analysis**
Seismic Design	Limited	Now explicitly integrates with NZS 1170.5 and includes **non-linear time history analysis** provisions
Plastic Hinge Rotations	Tables for hinge limits	Updated and expanded with **cold-formed section limits** in brackets
Effective Length Factors	Based on frame type and stiffness	More refined treatment, including **triangulated structures** and **portal frames**
Composite Members	Not covered	Now references AS/NZS 2327 for composite design inputs
Moment Redistribution	Allowed with limits	More detailed categorization and linkage to seismic detailing (Section 12)

Section 05 – Members Subject to Bending and Shear

Area	1997 Version	2025 Draft Changes
Section Slenderness	Based on $\lambda = b/t\sqrt{(250/fy)}$	Now optionally uses $\lambda = b/t\sqrt{(fy/E)}$ for consistency with AS/NZS 2327 and 4600
Effective Section Modulus	Based on compactness	Clarified and expanded for **non-compact and slender sections**

Area	1997 Version	2025 Draft Changes
Lateral Restraint	General rules	Detailed classification: Full, Partial, Lateral, Rotational; includes **restraint load path strength/stiffness checks**
Moment Capacity	αm and αs factors	Expanded tables and equations for **moment modification** and **slenderness reduction**
Web Design	Basic shear and bearing	Expanded to include **stiffeners**, **doubler plates**, **web openings**, and **interaction with bending**
Stiffeners	General guidance	Detailed design rules for **load-bearing**, **intermediate**, and **longitudinal** stiffeners
Combined Actions	Limited	Now includes **interaction equations** for shear + bending and **bearing + bending** in hollow sections

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✅ **Overall Themes in the 2025 Draft**

- **Modernization**: Aligns with AS/NZS 5131, AS 4100:2020, and international best practices.
- **Seismic Resilience**: Stronger integration with NZS 1170.5 and capacity design principles.
- **Durability & Sustainability**: Emphasis on corrosion protection, thermal bridging, and lifecycle considerations.
- **Advanced Analysis**: Introduces direct and non-linear methods for complex structures.
- **Clarity & Usability**: Improved formatting, clearer terminology, and better cross-referencing.

🔩 Section 06 – Members Subject to Axial Compression

Area	1997 Version	2025 Draft Changes
General Format	Dense, less structured	Improved formatting, clearer clause numbering, and consistent equation numbering

Area	1997 Version	2025 Draft Changes
Design Criteria	$N^* \leq \phi N_s$ and $N^* \leq \phi N_c$	Retained, but now with clearer references to equations and subclauses
Form Factor (kf)	Defined and used in Ns and Nc	Retained with clearer equations and formatting
Effective Widths & Slenderness	Based on λ_e and λ_{ey}	Retained, but equations now numbered and clarified; includes improved notation for circular hollow sections
Yield Slenderness Table	Table 6.2.4	Retained with minor formatting updates; clearer notes on residual stress categories
Member Capacity (Nc)	Based on α_c and λ_n	Retained with updated equation references and clearer structure
Tables for α_b and α_c	Tables 6.3.3(1) and (2)	Renumbered to 6.3.4(1) and (2); same values, but improved layout and merged cells for clarity
Laced & Battened Members	Detailed provisions	Retained with clearer formatting and equation numbering (e.g. Eq. 6.4.3.7(1), (2))
Back-to-Back Members	Separated and in-contact configurations	Retained with clearer subclause structure and consistent terminology
Discontinuous Members	Special rules for angles, channels, tees	Retained with Table 6.6 summarizing slenderness rules; clearer axis definitions
Restraining Elements	Strength-based design	Now includes strength and stiffness checks, aligned with AISC 360 (2016) and AS 4100:2020
Twist Restraint	Not explicitly separated	Now clearly separated into 6.7.3.1 (strength) and 6.7.3.2 (stiffness)

Area	1997 Version	2025 Draft Changes
Torsional Buckling	Not addressed	Now references Appendix H (clause H6) for guidance

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✅ Overall Themes in the 2025 Draft

- Modernization: Aligned with AISC 360 and AS 4100 for bracing and restraint requirements.
- Clarity: Improved structure, consistent terminology (e.g. "tee-section"), and equation numbering.
- Stiffness Checks: New provisions for stiffness of bracing systems, not just strength.
- Seismic Integration: Clearer references to Section 12 for seismic design of compression members.
- Formatting: Tables and equations are more readable and logically grouped.

🔩 **Section 07 – Members Subject to Axial Tension**

Area	**1997 Version**	**2025 Draft Changes**
kte Factors	Limited to a few cases	Expanded to a detailed **Table 7.3.2** with 9 cases, including CHS, RHS, I-sections, and angles
Terminology	"Correction factor"	Now consistently referred to as **"shear lag factor" kte**
Design for Non-Uniform Force Distribution	General guidance	More specific provisions for **eccentrically connected members** and **flange-only connections**
Two-Component Members	Covered	Clarified and aligned with seismic detailing (12.9.8)
Pin Connections	Basic geometry rules	Retained with clearer formatting and cross-referencing

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🔩 Section 08 – Members Subject to Combined Actions

Area	1997 Version	2025 Draft Changes
Significance of Axial Force	Defined by thresholds	Thresholds retained but clarified with **explicit equations** and **expanded definitions**
Alternative Design Provisions	Optional	Now more structured with **clear eligibility criteria** (e.g. compact sections, kf = 1.0, etc.)
Yielding Regions	Referenced in Section 12	Now fully integrated into Section 8 with new clauses (8.1.6) for **plastic hinges and seismic design**
Web Slenderness	Referenced in Section 12	Now explicitly included in Section 8 with equations for **web slenderness limits**
Design Equations	Scattered	Now **clearly numbered** and grouped by axis (x, y, biaxial) and member type (tension/compression)
Single Angles	Covered in 8.4.6	Now split into **double- and single-bolt cases**, with clearer equations and diagrams
Torsion	Not addressed	New clause added for **primary vs secondary torsion**, requiring rational analysis

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🔩 Section 9 (Connections)

Area	1997 Version	2025 Draft Changes
Scope & References	**Limited cross-referencing; no AS/NZS 5131**	**Expanded references to AS/NZS 5131, AS/NZS 1170.0, and other standards**
Connection Design	**No explicit block shear provisions**	**Introduces block shear design equations and eccentricity factors**
Bolt Grades	**4.6 and 8.8 only**	**Adds 10.9/S, 10.9/TB, and 10.9/TF bolt categories**
Bolt Shear Capacity	**No krd factor**	**Introduces krd for 10.9 bolts with threads in shear plane**

Area	1997 Version	2025 Draft Changes
Filler Plates	**General 15% reduction**	**Clarified and aligned with AISC 360; max 15% reduction retained**
Slip Factors	**Limited surface treatment options**	**New Table 9.3.3 with detailed surface treatments and ILAC-accredited testing requirements**
Weld Strength Table	**Basic consumables listed**	**Expanded Table 9.7.3.10(1) with more welding processes and grades**
Compound Welds	**Not explicitly covered**	**Now permitted with design throat thickness guidance**
Fillet Weld Groups	**Basic analysis methods**	**Clarified in-plane and out-of-plane analysis; improved terminology**
Figures	**Older diagrams**	**Updated figures (e.g., 9.7.3(2)) to align with AS 4100:2020**
Terminology & Formatting	**Inconsistent**	**Improved clarity, grammar, and formatting throughout**
Gaps in Welds	**Not addressed**	**Gaps ≤1.5 mm shown to not reduce weld performance (based on testing)**

🦴 Section 10 – Fatigue

Area	1997 Version	2025 Draft Changes
Scope & Exclusions	Covered fatigue due to stress cycles	Expanded exclusions to include notch stress/strain methods, fracture mechanics, hot spot stress, post-fabrication treatments, and high-temperature effects
Alternative Assessment	Allowed fracture assessment (2.6.5)	Now allows fracture assessment or hot spot stress method per AS/NZS 5100.6
Terminology & Definitions	Focused on stress cycles and S-N curves	Expanded to include nominal stress, stress history, rainflow method, reference fatigue strength, and stress range spectrum

Area	1997 Version	2025 Draft Changes
Notation	Compact list	Expanded and aligned with AS/NZS 5100.6, including ΔσC, ΔτC, ks, kt, kf
Weld Category Requirements	Category SP for most welded details	Now distinguishes between SP and FP categories, with separate rules for rail bridges, cranes, and general structures
Strength Reduction Factor (φ)	Based on redundancy and inspection	Retained, with clearer structure and consistent formatting
Thickness Effect	Correction for tp > 25 mm	Retained, now using ks factor and clearer equations
Fatigue Loading	Referenced AS 1418, Transit NZ, NZ Rail	Updated to Waka Kotahi Bridge Manual and AS 1418 (unspecified part)
Stress Determination	Elastic analysis or strain measurement	Clarified use of nominal stresses, stress concentration factors, and principal stresses
Truss Connections	Included stress multipliers for CHS/RHS	Retained with clearer tables (10.3.1(A) and (B)) and weld thickness rules
Exemption from Assessment	f* < φ × 27 MPa or low cycle count	Retained with updated equations and notation
Detail Categories	Tables 10.5.1(1)–(4)	Expanded to Tables 10.5.1(A)–(J), covering orthotropic decks, runway beams, lattice joints, etc.
Fatigue Strength (S-N Curves)	Figures 10.6.1 and 10.6.2	Expanded to Figures 10.6.1(A–C), 10.6.2, 10.6.3, with Table 10.6.1 summarizing slope (m) and Nknee
Combined Stress Range	Not explicitly addressed	Now refers to AS/NZS 5100.6 for combined stress, headed studs, and highway signs

Area	1997 Version	2025 Draft Changes
Punching Limitation	Punched holes only if tp ≤ 12 mm	Retained

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✅ Overall Themes in the 2025 Draft

- Alignment with AS/NZS 5100.6: Many clauses now reference or defer to this standard, especially for bridges and fatigue-critical applications.
- Expanded Detail Categories: More comprehensive classification of fatigue-prone details, including orthotropic decks and hollow sections.
- Improved Clarity: Better structure, consistent terminology, and clearer equations and tables.
- Modernized Methods: Incorporates newer fatigue assessment techniques and stress range definitions.

🔥 NZS 3404 Section 11 – Summary of Proposed Changes

Area	1997 Version	2025 Draft Changes
Scope	Focused on standard fire exposure and passive protection	Expanded to include natural fires, composite structures, and cold-formed steel; clarified scope exclusions
Definitions	Limited and less structured	Comprehensive glossary with ~40 terms including “firecell,” “load ratio,” “thermal elongation,” and “transfer member”
Fire Exposure Types	Standard fire only	Includes standard fire, natural fire, parametric fire, and travelling fire
Design Approaches	Prescriptive only	Introduces both prescriptive and performance-based approaches; includes simple and advanced analysis

Area	1997 Version	2025 Draft Changes
Fire Resistance Rating (FRR)	Based on AS 1530.4	FRR linked to MBIE Acceptable Solutions or Verification Methods; includes structural adequacy, integrity, insulation
Material Properties	Basic thermal properties	Detailed equations for temperature-dependent properties of steel, bolts, welds, and fire protection materials
Thermal Analysis	Basic lumped mass model	Expanded to include shadow effects, section factors, and detailed equations for protected/unprotected members
Connection Temperatures	Not explicitly addressed	Detailed treatment of connection temperature gradients and section factor-based calculations
Simple Analysis Domains	Time domain only	Adds temperature and strength domains; each with equations and limitations
Limiting Temperatures	General guidance	Specific equations for bolts, welds, bending, compression, and combined actions based on load ratio
Strength Domain	Not included	Full design procedures for tension, compression, bending, shear, and combined actions under fire conditions
Connection Design	Minimal guidance	Extensive detailing requirements for simple, semi-rigid, and rigid connections; includes CFST columns and splices
Reinforced Concrete Slabs	Not covered	Minimum reinforcement requirements for slabs on/off decking for fire performance
Advanced Analysis	Not included	Introduces fire, thermal, and mechanical response models; validation and sensitivity analysis required

Area	1997 Version	2025 Draft Changes
Installation & Practical Guidance	Not covered	New section on installation, environmental considerations, corrosion protection, and construction records
Appendix X	Not present	Normative appendix for simple connection design under fire conditions, including splices and CFST connections

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🔍 Summary of Key Changes in Section 12 (2025 Draft)

Area	1997 Version	2025 Edited Version
Terminology	Used terms like "Category 1 systems"	Replaced with clearer terms: "Fully ductile", "Limited-ductile", "Nominally ductile", "Elastic"
Structural Performance Factor (Sp)	Sp = 0.7 or 0.9 depending on system	Clarified that Sp = 0.7 can apply to nominally ductile/elastic systems if they meet Cat 2 detailing
Ductility Classification	Appendix B referenced	Now references Appendix M; clearer definitions and limits
Member Classification	Category 1–4 members	Retained, but with more consistent language and clearer links to system categories
Capacity Design Philosophy	Explained in general terms	Expanded with explicit rules for primary vs secondary elements, and clarified overstrength factors
Overstrength Factors	Tables 12.2.8(1) and (2)	Retained, but updated values, cold-formed steel notes, and clarified use of ϕ_{oms}
Damping Modifications	Equation for Ch_η	Retained, but clarified scope (e.g. not for Cat 1/2 systems) and updated clause references

Area	1997 Version	2025 Edited Version
Analysis Methods	Elastic, redistribution, nonlinear	Retained, with clearer guidance on P–Δ effects, sway/braced status, and Loadings Standard references
Member Design	Extensive detailing	Retained, but restructured for clarity, added yielding region rules, and updated restraint requirements
Connections	Section 12.9	Retained, but reorganized, clarified minimum/maximum design actions, and updated splice rules
Moment-Resisting Frames (MRFs)	Section 12.10	Significantly restructured, with new tables, RBS provisions, and explicit sway index guidance
Eccentrically Braced Frames (EBFs)	Section 12.11	Expanded with clearer link rotation limits, collector beam rules, and updated stiffener spacing
Concentrically Braced Frames (CBFs)	Section 12.12	Clarified brace slenderness, height limits, chevron brace rules, and dual system provisions
Buckling-Restrained Braced Frames (BRBFs)	Brief mention	Now includes Section 12.13, with testing, stability, and system-level design guidance
Dual Systems	Section 12.13	Expanded into Section 12.14, with minimum MRF contribution, load sharing, and special study requirements
Associated Structural Systems	Covered in 12.3.4	Retained, but clarified member category expectations, yielding region assumptions, and column axial load waivers

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🛠️ Editorial & Structural Improvements

- Clause numbering aligned with Section 12 (e.g. 12.2.3, 12.10.2)
- Tables and equations renumbered and reformatted
- Notes and exceptions moved out of footnotes and into clauses
- Commentary references added for clarity
- Images and figures added (not visible here but noted in the draft)

🔗 **Section 13 – Composite Members and Structures**

Area	1997 Version	2025 Draft Changes
Scope	Included full composite design	Now **limited in scope**: refers to **AS/NZS 2327** and **AS/NZS 5100.6** for full composite design
Slab Systems	Detailed slab design	Now focuses on **interface detailing**, **seismic diaphragm actions**, and **construction assumptions**
Seismic Design	Limited	Now includes detailed provisions for **diaphragm shear**, **collector beams**, and **post-splitting reinforcement**
Shear Connectors	Full design equations	Now refers to **AS/NZS 2327** for design, but retains **minimum detailing** for restraint and seismic transfer
Edge Beams & Precast Slabs	Not addressed	New provisions for **edge detailing**, **precast slab compatibility**, and **torsional effects**
Composite Columns	Full design included	Now refers to **AS/NZS 2327** or **NZS 3101**, with additional seismic-specific requirements retained
Fire & Construction Stages	Covered	Now clarified with **explicit construction assumptions**, **ponding checks**, and **fire reinforcement** references

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✅ **Overall Themes in the 2025 Draft**

- **Seismic Integration**: Stronger alignment with NZS 1170.5 and Section 12 for ductility, overstrength, and detailing.
- **Modernization**: Delegates full composite design to AS/NZS 2327, focusing NZS 3404 on steel-centric provisions.
- **Clarity & Structure**: Improved formatting, equation numbering, and cross-referencing.
- **Safety & Detailing**: Emphasis on **post-splitting reinforcement**, **torsion**, and **construction-stage assumptions**.

🔩 Section 14 – Fabrication

Area	1997 Version	2025 Draft Changes
Standards Referenced	NZS 3404-specific procedures	Now aligned with **AS/NZS 5131** for fabrication procedures and tolerances
Material Requirements	Referenced 2.2–2.5	Clarified for **seismic categories 1–3** (must comply with 2.2.4)
Hole Sizes & Types	Detailed limits for oversize/slotted holes	Retained but clarified with **washer coverage requirements** and **minimum edge distances**
Bolting Requirements	Included washer placement, thread visibility	Now explicitly requires **washer under rotated part**, **tapered washers**, and **thread runout** based on bolt length
Surface Preparation	Described for friction and bearing joints	Now refers to **AS/NZS 5131** and **Section 9** for friction-type joints
Tolerances	Detailed tables and figures	Now refers to **AS/NZS 5131** for both **essential** and **functional tolerances**, with class definitions
Non-Conformance Handling	Not explicitly addressed	Now includes **procedures for accepting deviations** via revised capacity checks

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🔩 Section 15 – Erection

Area	1997 Version	2025 Draft Changes
Erection Procedures	Detailed in NZS 3404	Now refers to **AS/NZS 5131** for erection procedures, safety, and temporary works
Bolt Tensioning	Included part-turn and direct-tension methods	Retained but now aligned with **AS/NZS 5131**, and includes **updated bolt tension values** for **property classes 8.8 and 10.9**
Tolerances	Detailed tables and figures	Replaced with reference to **AS/NZS 5131 tolerances**, including **essential vs functional** classification
Inspection of Bolted Connections	Included visual and torque checks	Now refers to **AS/NZS 5131** for inspection procedures
Grouting at Supports	Detailed requirements for grout placement	Removed or delegated to AS/NZS 5131 (not included in the draft reviewed)

✅ Overall Themes in the 2025 Draft

- **Harmonization**: Strong alignment with **AS/NZS 5131** and **AS 4100:2020** for fabrication and erection.
- **Simplification**: Many detailed procedures and tolerances are now **delegated to referenced standards**.
- **Clarity**: Improved structure, terminology, and cross-referencing.
- **Seismic Readiness**: Clearer requirements for **seismic categories** and **connection detailing**.

🔩 Section 16 – Modification of Existing Structures

Area	1997 Version	2025 Draft Changes
Scope	Applied NZS 3404 provisions with some specific clauses	Retains full applicability of NZS 3404 but now explicitly refers to **AS/NZS 5131** for site modifications, repairs, and welding

Area	1997 Version	2025 Draft Changes
Welding & Cutting	Included provisions for heating effects and distortion control	These are now **delegated to AS/NZS 5131**, aligning with modern fabrication and erection standards
Cleaning Requirements	Required cleaning of weld zones	Retained implicitly via AS/NZS 5131 reference
Consistency	Standalone NZS 3404 guidance	Now harmonized with **AS 4100:2020** and **AS/NZS 5131**

🔩 Section 17 – Testing of Structures or Elements

Area	1997 Version	2025 Draft Changes
Scope	Covered proof and prototype testing	Scope retained, but now includes **clear clause headings** and improved structure
Seismic Testing Reference	ANSI/AISC 341-05 Appendices S or T	Updated to **ANSI/AISC 341-22 Appendix K**, reflecting the latest U.S. seismic testing protocols
Test Load Factors	Table 17.5.2 for prototype testing	Retained with **no changes to values**, but clarified formatting and context
Acceptance Criteria	Strength, ductility, serviceability	Retained, with clearer separation between **non-seismic and seismic** applications
Reporting Requirements	Included test conditions and results	Retained with improved clarity and formatting

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✅ Overall Themes in the 2025 Draft

- **Modernization**: Updated references (e.g. ANSI/AISC 341-22) and harmonization with AS/NZS 5131.
- **Clarity**: Improved structure, clause headings, and formatting for readability.
- **Delegation**: More reliance on referenced standards for procedures (especially in Section 16).

- **Seismic Alignment**: Stronger integration with international seismic testing protocols.
