Category	Feature	SeismoBuild	SeismoStruct
Typical Use	**Primary Purpose**	**Seismic assessment and strengthening design** of existing buildings	Advanced **nonlinear structural analysis** and research-grade simulation
	Typical Use Case	Professional engineering projects, code-based assessment, retrofit studies	Detailed component-level behavior, parametric studies, academic & advanced engineering analyses
	Commercial/Academic Use		Advanced analysis engine. Widely used in universities and publications
	Target Users	Consulting engineers, design offices, assessment & retrofit specialists	Researchers, PhD students, advanced practitioners
Types of Structures & Projects	**Modeling Level**	Building-level modeling with practical abstractions	Element / member / plastic-hinge / fiber-based modeling
	Types of Structures	Buildings (reinforced concrete and steel)	Any structural configuration
	Typical Project Scale	Medium to very large multi-storey buildings	Single element models to very large structures
Types of Analysis	**Analysis Types**	• Eigenvalue	• Eigenvalue
		• Linear static	• Linear static
		• Linear dynamic (modal)	• Linear dynamic (RSA)
		• Nonlinear static (pushover)	• Pushover analysis, conventional / adaptive
		• Nonlinear dynamic (time-history)	• Nonlinear dynamic time-history analysis
			• Nonlinear dynamic time-history analysis with non-synchronous motion
			• Advanced cyclic analysis (static time-history)
			• Incremental Dynamic Analysis (IDA)
			• Buckling analysis
			• Tsunami analysis
	Nonlinear Static (Pushover)	Guided pushover per code. Automatic calculation of the target displacement	Advanced flexibility, no code wrapper. Automatic calculation of the target displacement
	Nonlinear Dynamic Analysis	Fully integrated with code checks	High flexibility
	Nonlinear Dynamic Analysis Records	Artificial accelerograms matched to the target spectrum or user-defined records	High flexibility. Any type of loading
Ease-of-use & Productivity	**Workflow Automation**	Highly streamlined, guided workflows	High flexibility
	Ease of Use	Engineer-friendly interface with rapid onboarding	Moderate-to-steep learning curve
	User Productivity, Operational Efficiency	Optimized for deadlines	Long (expert-driven)
Supported standards	**Design Codes Focus**	Strong alignment with codes	Limited to moderate code alignment
	Codes Supported	Eurocode 8, ASCE 41, NTC-18, KANEPE, TBDY	Eurocode 8, ASCE 41, NTC-18, KANEPE, TBDY
	Regulatory Philosophy	Explicitly implements code-based procedures	User must implement code logic
	Effective Stiffness of the Members	Automatically applied per code	Fully manual
	Acceptance Criteria	Embedded and automated	High flexibility. Must be implemented manually. Automatic capacity calculation
Modelling & Analysis	**Material Modeling**	Robust but simplified nonlinear material models, suitable for practice	Highly detailed constitutive models (concrete, steel, confinement, degradation, cyclic effects)
	Geometric Nonlinearity	Fully supported (P-Δ, large displacement effects) where relevant	Fully supported (P-Δ, large displacement effects)
	Component Failure & Redistribution	Explicit simulation of local failures and force redistribution	Explicit simulation of local failures and force redistribution
	Computation Speed	Very fast (parallel processing within the analysis, parallel execution of several analyses)	Fast (parallel processing within the analysis)
Code-based Checks	**Performance Levels**	✓ Automatically evaluated (e.g. DL / SD / NC, IO / LS / CP)	✕ User-defined
	Knowledge Level / Data Quality Handling	✓ Automatic support for Knowledge Levels	✓ Automatic support for Knowledge Levels
	Support for code-based procedures	✓ Fully implemented	⚠ Partly supported. Not built-in
	Acceptance Criteria (Component Level)	✓ Built-in deformation / force limits	✕ Manual implementation, but automatic capacity calculation
	Envelope of results	✓ Fully implemented	✕ Manual implementation. Results are output per analysis
	Member Classification (Primary / Secondary)	✓ Code-consistent handling	✓ Code-consistent handling
	Chord Rotation / Plastic Rotation Checks	✓ Code-based automatic checks	⚠ Partly automatic
	Shear & Brittle Failure Checks	✓ Explicitly checked per code	⚠ Partly automatic
	Global Drift Limits	✓ Code-based automatic checks	⚠ Partly automatic
Output	**Visualization & Output**	Engineering-oriented reports, tables, plots and compliance checks	Detailed response plots, hysteresis, fiber-level results
	Reporting	Auto-generated, submission-ready	Raw results only
	CAD drawings	✓ Yes. Auto-generated	✕ No
Seismic Retrofit	**Strengthening & Retrofit Tools**	Built-in tools for jacketing, FRP, walls, braces, base-isolation etc.	Generic modeling (engineer-defined)
	Iteration Loop	Fully automated workflow	Manual rebuild & rerun
	Productivity	✓ Very easy and fast implmentation of the strengthening interventions	✕ Manual implementation