

Machine-Learning Engineering Tools for Structural Steel

Six browser-based prediction, analysis and monitoring tools for structures — built on peer-reviewed research, validated against experiments and finite-element analysis, and delivered with corporate-grade reporting.



Peer-reviewed models

Every tool is backed by a published study



Runs in your browser

No installation — instant predictions



Corporate reporting

Branded PDF reports with your logo



Research-driven · Validated · Instant

www.steelpredictor.com

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Edition 2026 / 08

Bridging research and engineering practice

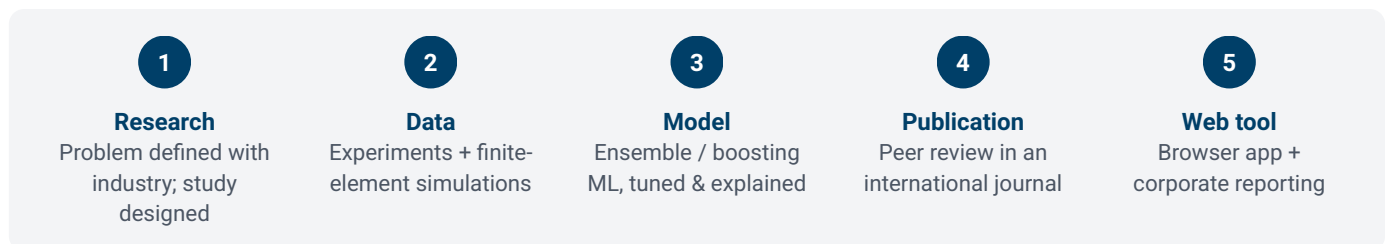
SteelPredictor is a research-oriented technology platform delivering machine-learning-powered engineering tools for structural analysis and design. Founded by experienced researchers and structural engineers, we bridge the gap between advanced scientific knowledge and practical engineering workflows through transparent, high-accuracy and academically validated software.

We specialise in data-driven tools that transform traditional structural engineering processes. Our software removes the need for finite-element simulations or physical testing at the prediction stage by providing instant, interpretable and engineering-grade results. Each tool is grounded in rigorous experimental data and scientific publication.

We believe machine learning should empower engineers, not replace them. Our tools complement professional judgement, accelerate decision-making and reduce design uncertainty – helping engineers design safer, more efficient structures, faster.

6	4	100 %	EN · TR
SOFTWARE TOOLS	PEER-REVIEWED PUBLICATIONS	BROWSER-BASED	REPORT LANGUAGES

HOW EVERY TOOL IS BUILT



IN THIS CATALOGUE

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WHY STEELPREDICTOR



Peer-reviewed research

Every tool is released only after its underlying model has been published in an international academic journal. Nothing is a black box – results are traceable, explainable and referenced.



Validated accuracy

Models are trained and validated on experimental data and finite-element analysis, with published accuracy metrics (R^2 , RMSE, MAE).



Instant, in the browser

No installation, no licence servers. Log in, enter your parameters and get engineering-grade predictions in seconds – on any modern device.



Corporate reporting

Each tool exports a branded PDF report with cover page, your company logo, PREPARED FOR / PREPARED BY panels and a report archive.



SteelTemp

Predicting high-temperature strength of steels
using machine learning



PRODUCT 01 · HIGH-TEMPERATURE STEEL STRENGTH

SteelTemp

Predicting the high-temperature strength of steels with machine learning.

\$299

per year · single-user licence

OVERVIEW

SteelTemp estimates the mechanical performance of structural and high-strength steels exposed to elevated temperatures. A gradient-boosting model trained on experimental and literature data returns the ultimate strength at the target temperature together with the complete strength–temperature curve of the selected grade – instantly, without furnace testing or finite-element simulation.

The tool implements the peer-reviewed model published in *Results in Engineering* (Elsevier), so every prediction is traceable to a documented, validated methodology.

KEY CAPABILITIES

- ✓ **Ultimate strength at temperature**
Tensile strength (MPa) for any exposure temperature and plate thickness.
- ✓ **20+ steel grades**
S235, S355, S460, S690, G550, HSA800, Q345, Q960, RQT701, ZAR-340 and more.
- ✓ **Instant results**
Typically under 0.2 seconds – no testing or simulation required.
- ✓ **Fire-design reduction factors**
Degradation factors ready for Eurocode and AISC fire-design workflows.
- ✓ **Strength–temperature curve**
The full predicted curve is plotted and highlighted at your input point.
- ✓ **Corporate PDF report**
Branded report with cover page, inputs, chart and technical note; archived in My Reports.

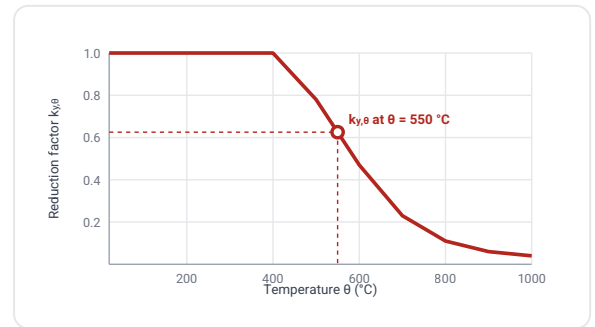
R² > 0.98 MODEL ACCURACY	0.05 / 0.04 RMSE / MAE	455+ DATA POINTS	20+ STEEL GRADES
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SCIENTIFIC FOUNDATION

C. Yazici, F. J. Domínguez-Gutiérrez (2025)
Machine learning techniques for estimating high-temperature mechanical behavior of high strength steels.
Results in Engineering, 25, 104242 – Elsevier
[DOI 10.1016/j.rineng.2025.104242](https://doi.org/10.1016/j.rineng.2025.104242)

INPUTS

PARAMETER	DESCRIPTION
Material class	Steel grade selected from the built-in library (e.g. S235, S355, G550, HSA800)
Wall thickness (mm)	Thickness of the steel plate / sample
Target temperature (°C)	Fire or exposure temperature at which strength is evaluated



Reference: EN 1993-1-2 yield-strength reduction factor $k_{y,\theta}$ for carbon steel. SteelTemp predicts the grade-specific ultimate-strength curve and the value at your target temperature.

OUTPUTS

- Predicted ultimate stress (MPa) at the target temperature
- Strength–temperature curve of the selected grade (chart)
- Reduction factor χ for fire-design use
- Corporate PDF report (cover, inputs, chart, technical note)

HOW IT WORKS

- 1 Enter parameters**
 Type values, pick from libraries, or draw / import the section.
- 2 Run**
 The validated model returns the result in seconds — in your browser.
- 3 Review**
 Charts, diagrams and checks make the result easy to interpret.
- 4 Report**
 Export a branded PDF report; it is archived under My Reports.

TYPICAL APPLICATIONS

- Fire-safety assessment of structural steel elements
- In-fire and post-fire residual strength evaluation
- Early-stage design validation and parametric studies
- Performance-based fire design
- Teaching and research in structural fire engineering

WHO IT IS FOR

Structural engineers

Fire-safety consultants

Steel structure designers

Building-code specialists

Researchers & PhD students

LICENCE & SUPPORT

- 12-month licence — full access to all features
- All updates during the subscription period
- Priority e-mail technical support
- Free demo available on request · Runs in any modern browser

\$299

USD / YEAR

www.steelpredictor.com/pages/software.php

Engineering note. Predictions describe material behaviour under the tested conditions. Partial safety factors and code-specific provisions must be applied by the responsible engineer.

SigmaBuckling

Load-bearing capacity prediction of sigma-section cold-formed steel beam-columns using machine learning



PRODUCT 02 · SIGMA-SECTION CFS BEAM-COLUMNS

SigmaBuckling

Section-based capacity prediction for sigma-section cold-formed steel members.

\$499

per year · single-user licence

OVERVIEW

SigmaBuckling predicts the load-bearing capacity of cold-formed steel (CFS) sigma-section beam-column members under combined axial load and bending. Trained on a high-fidelity dataset generated with validated finite-element models, the ensemble machine-learning model accounts for the complete section geometry, local and distortional buckling parameters, global slenderness and load eccentricity – and delivers FE-quality estimates in real time.

The underlying study was published in the *Journal of Constructional Steel Research* (Elsevier), giving the tool the scientific credibility required for design offices, manufacturers and research groups.

KEY CAPABILITIES

- ✓ **Load-bearing capacity (kN)**
Real-time capacity of sigma-section beam-columns at the ultimate limit state.
- ✓ **Local & distortional buckling**
Critical lengths, critical load factors and slenderness ratios as explicit inputs.
- ✓ **Ensemble ML model**
Gradient-boosting model with $R^2 \approx 0.97$ and MAE of 10.8 kN on the validation set.
- ✓ **Complete sigma geometry**
Web, flange, lip, web-stiffener lengths (D, E) and thickness are all considered.
- ✓ **Global behaviour & eccentricity**
Global slenderness about both axes, load angle and biaxial eccentricities.
- ✓ **FE-free workflow**
No ABAQUS / ANSYS model required – pure ML inference in the browser, with PDF report.

$R^2 \approx 0.97$

MODEL ACCURACY

10.8 kN

MEAN ABSOLUTE ERROR

FE-based

TRAINING DATASET

< 1 s

PER PREDICTION

SCIENTIFIC
FOUNDATION

Y. Yılmaz, F. Öztürk, S. Demir, A. Durmuş Demir (2025)

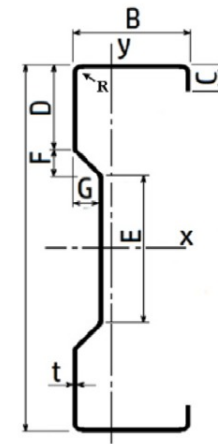
Prediction of load-bearing capacity of sigma section CFS beam-column members using ensemble and deep learning algorithms.

Journal of Constructional Steel Research, 228, 109458 – Elsevier

DOI 10.1016/j.jcsr.2025.109458

INPUTS

PARAMETER	DESCRIPTION
Dimensional parameters	Profile length L, web H, flange B, lip C, thickness t, web end length D, web centre length E (mm)
Buckling parameters	Local / distortional critical lengths $L_{cr,l}$, $L_{cr,d}$; load factors $\alpha_{cr,l}$, $\alpha_{cr,d}$; slenderness λ_l , λ_d , λ_{Gx} , λ_{Gy} ; area A
Load & moment parameters	Yield load P_y (kN), yield moments M_{1y} , M_{2y} (kNm), load angle, eccentricities e_x , e_y (mm)



Sigma channel section

Sigma channel section and the geometric parameters used by SigmaBuckling (B, C, D, E, F, G, t, R).

OUTPUTS

- Load-bearing capacity of the member (kN)
- Input summary with reference section diagrams
- Corporate PDF report (cover, inputs, result, scientific basis)

HOW IT WORKS

- 1 Enter parameters**
 Type values, pick from libraries, or draw / import the section.
- 2 Run**
 The validated model returns the result in seconds — in your browser.
- 3 Review**
 Charts, diagrams and checks make the result easy to interpret.
- 4 Report**
 Export a branded PDF report; it is archived under My Reports.

TYPICAL APPLICATIONS

- Design and verification of sigma-section CFS beam-columns
- Parametric optimisation of section geometry
- Cross-checking finite-element models
- Research on cold-formed steel stability

WHO IT IS FOR

CFS structure designers

Rack & profile manufacturers

Structural consultants

Researchers

LICENCE & SUPPORT

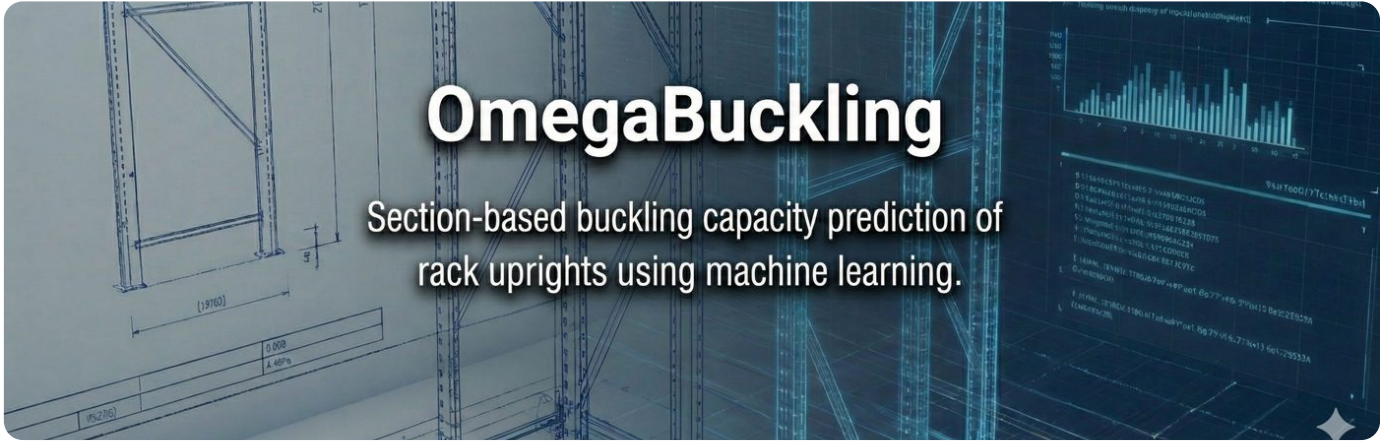
- 12-month licence — full access to all features
- Priority e-mail technical support
- All updates during the subscription period
- Free demo available on request · Runs in any modern browser

\$499

USD / YEAR

www.steelpredictor.com/pages/software.php

Engineering note. Estimated capacities correspond to peak responses at or near the failure limit under idealised conditions. Safety factors and code-based checks must be applied by the practising engineer.



PRODUCT 03 · RACK UPRIGHT BUCKLING CAPACITY

OmegaBuckling

Section-based buckling capacity prediction of rack uprights using machine learning.

\$499

per year · single-user licence

OVERVIEW

OmegaBuckling predicts the critical axial buckling load of cold-formed steel storage-rack uprights using an XGBoost model developed from experimental and numerical data. Beyond prediction, it ships with a complete section toolkit: draw or import the upright cross-section, let the software compute A , I_x , I_y automatically, visualise the first buckling mode and export a corporate report.

The model is documented in *Results in Engineering* (Elsevier), ensuring transparency and engineering-grade accuracy for rack designers, consultants and researchers.

KEY CAPABILITIES

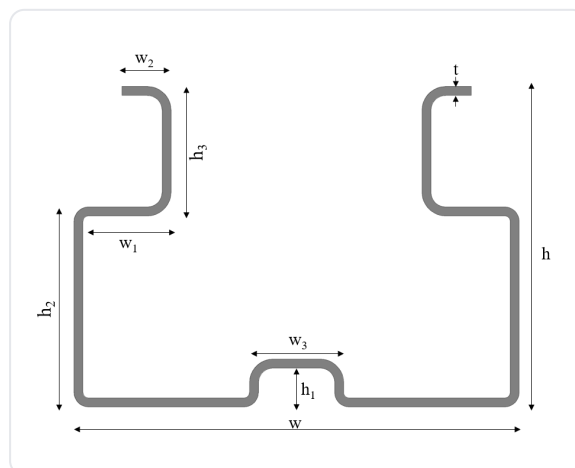
- Critical buckling load P_{cr}**
 Axial capacity (kN) of the upright at the ultimate limit state, with mode plot and animation.
- Moment of Inertia Calculator**
 Draw the section point by point, round corners with fillets, get A , I_x , I_y instantly.
- Import from AutoCAD (DXF)**
 True arcs and splines preserved; fragmented curves rebuilt; corner radii detected.
- Import from Excel / CSV**
 Load section coordinates from a template — no manual typing.
- Saved drawings**
 Store, reopen and reuse your section drawings across projects.
- PDF & Word reports**
 Numbered, watermarked reports with cover page — editable Word (.docx) output included.

XGBoost REGRESSION MODEL	Test + FE VALIDATED DATASET	DXF · XLSX SECTION IMPORT	PDF · DOCX REPORT FORMATS
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SCIENTIFIC FOUNDATION	B. Mammadli, C. Yazici, M. Gürbüz, İ. Kocaman, F. J. Domínguez-Gutiérrez, F. M. Özkal (2025) <i>A data-driven machine learning approach for predicting axial load capacity in steel storage rack columns.</i> Results in Engineering, 28, 107475 — Elsevier DOI 10.1016/j.rineng.2025.107475
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INPUTS

PARAMETER	DESCRIPTION
Material	Yield stress f_y (MPa)
Member	Upright length L (mm), thickness t (mm)
Section properties	Area A , I_x , I_y , radii of gyration i_x , i_y , section moduli W_x , W_y – typed, drawn or imported
Section geometry	Width w , height h , back indentation h_1 , side folding distance h_2



Omega (rack upright) section parameters used by OmegaBuckling – w , h , h_1 , h_2 , w_1 – w_3 , h_3 and thickness t .

OUTPUTS

- Critical buckling load P_{cr} (kN)
- First buckling mode chart and animation
- Cross-section drawing with computed properties
- Corporate PDF / Word report with report number

HOW IT WORKS

- 1 Enter parameters**
 Type values, pick from libraries, or draw / import the section.
- 2 Run**
 The validated model returns the result in seconds – in your browser.
- 3 Review**
 Charts, diagrams and checks make the result easy to interpret.
- 4 Report**
 Export a branded PDF report; it is archived under My Reports.

TYPICAL APPLICATIONS

- Verification of existing rack uprights
- Development of new upright profiles
- Warehouse safety audits and retrofits
- Teaching of cold-formed steel stability

WHO IT IS FOR

Rack system designers

Structural consultants

CFS researchers

Warehouse infrastructure specialists

LICENCE & SUPPORT

- 12-month licence – full access to all features
- All updates during the subscription period
- Priority e-mail technical support
- Free demo available on request · Runs in any modern browser

\$499

USD / YEAR

www.steelpredictor.com/pages/software.php

Engineering note. Estimated capacities represent critical loads under idealised conditions reflecting collapse-stage loading. All design decisions and code checks remain the responsibility of the practising engineer.



PRODUCT 04 · BEAM-TO-UPRIGHT CONNECTION STIFFNESS

StiffPredict

Rotational stiffness prediction of rack beam-to-upright connections using machine learning.

\$299

per year · single-user licence

OVERVIEW

StiffPredict predicts the initial rotational stiffness k_0 of semi-rigid beam-to-upright connections in steel pallet racks – replacing costly full-scale connection tests at the design stage. Trained on experimental and numerical data, the model evaluates connector geometry, upright and beam sections and material strengths, and returns k_0 in seconds through an explainable, multi-model machine-learning framework.

The methodology is published in the *Challenge Journal of Structural Mechanics*, reflecting the state of the art in semi-rigid connection research.

KEY CAPABILITIES

- ✓ **Rotational stiffness k_0**
Initial stiffness (kN·m/rad) of semi-rigid beam-to-upright joints.
- ✓ **Multi-model ML framework**
Linear, tree-based, boosting and XGBoost regressors with automatic accuracy optimisation.
- ✓ **Interactive diagrams**
Dimensioned drawings of upright, beam, connector and beam position guide data entry.
- ✓ **Full joint description**
Upright, beam and connector geometry plus beam position and yield strengths.
- ✓ **Explainable predictions**
Feature-importance analysis shows which parameters drive the result.
- ✓ **Technical PDF report**
Branded report including dataset, method and recommendations sections.

k_0 KN·M/RAD OUTPUT	Multi-model ML FRAMEWORK	Test + FE VALIDATED DATASET	Explainable FEATURE IMPORTANCE
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SCIENTIFIC FOUNDATION

C. Yazici, F. J. Domínguez-Gutiérrez (2026)

Data-driven prediction of initial rotational stiffness in beam-to-upright connections of steel pallet racks.

Challenge Journal of Structural Mechanics, 12(2), 73–86

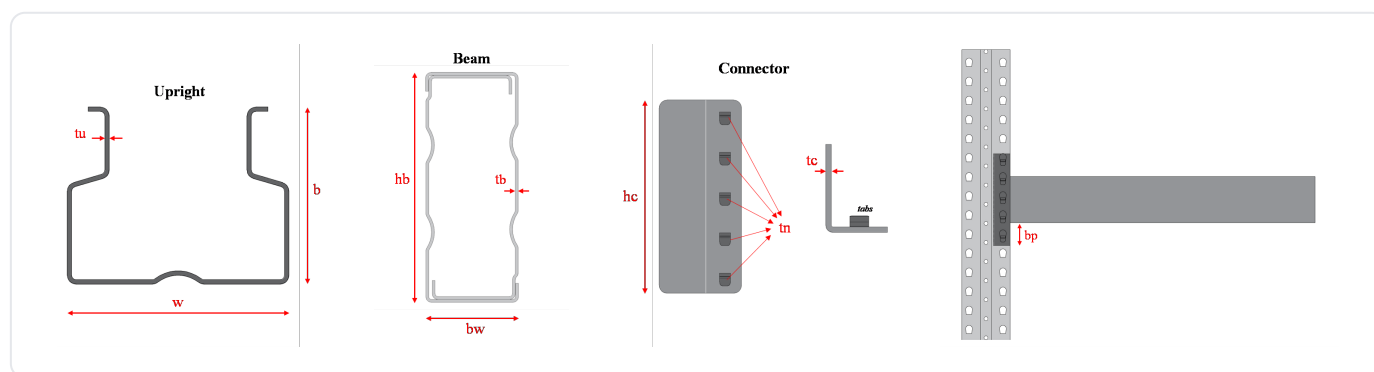
DOI [10.20528/cjsmec.2026.02.002](https://doi.org/10.20528/cjsmec.2026.02.002)

| INPUTS

PARAMETER	DESCRIPTION
Upright	Width w , depth b , thickness t_u (mm)
Beam	Height h_b , width b_w , thickness t_b (mm)
Connector	Height h_c , thickness t_c , number of tabs t_n
Assembly & material	Beam position b_p ; yield strengths of upright, beam and connector (MPa)

| OUTPUTS

- Predicted initial rotational stiffness k_0 (kN·m/rad)
- Parameter diagrams embedded in the report
- Technical PDF report with methodology and recommendations



Dimensioned input diagrams — upright (b , w , t_u), beam (h_b , b_w , t_b), connector (h_c , t_c , tabs t_n) and beam position (b_p).

| HOW IT WORKS

- 1 Enter parameters**
 Type values, pick from libraries, or draw / import the section.
- 2 Run**
 The validated model returns the result in seconds — in your browser.
- 3 Review**
 Charts, diagrams and checks make the result easy to interpret.
- 4 Report**
 Export a branded PDF report; it is archived under My Reports.

| TYPICAL APPLICATIONS

- Semi-rigid frame analysis of pallet racks
- Connector development and comparison
- Reducing physical connection testing programmes
- Research on semi-rigid connection mechanics

| WHO IT IS FOR

Rack system designers

Structural consultants

Connection researchers

Warehouse safety specialists

LICENCE & SUPPORT

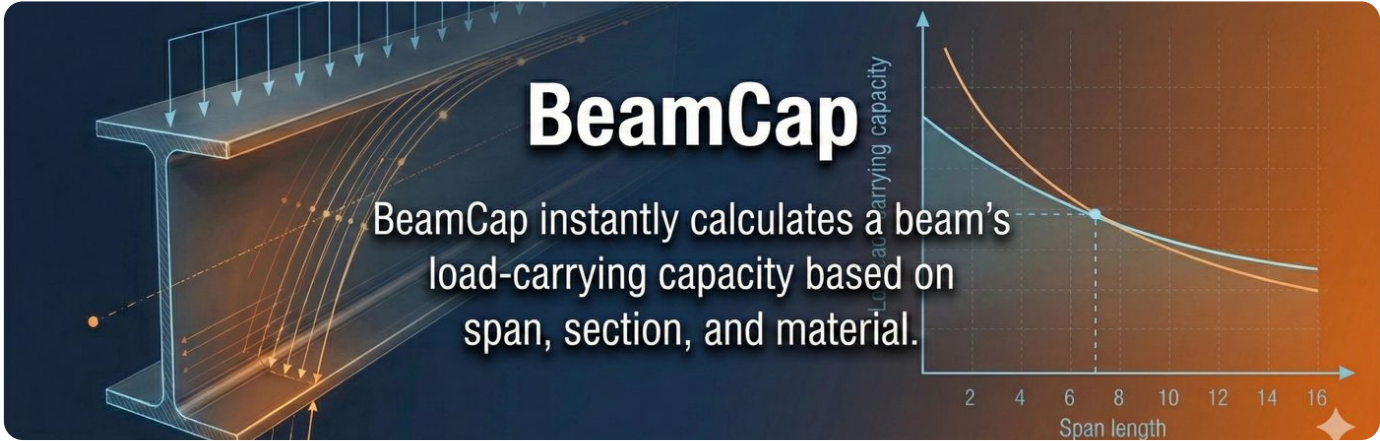
- 12-month licence — full access to all features
- Priority e-mail technical support
- All updates during the subscription period
- Free demo available on request · Runs in any modern browser

\$299

USD / YEAR

www.steelpredictor.com/pages/software.php

Engineering note. Predictions apply to idealised loading. For conservative design, a 20 % reduction of the predicted k_0 is recommended; all safety factors and regulatory verifications must be performed by the practising engineer.



PRODUCT 05 · RACK & STEEL BEAM ANALYSIS

BeamCap

Stress, deflection and moment verification of beams — from library profiles or your own section.

\$399

per year · single-user licence

OVERVIEW

BeamCap verifies stress, deflection and bending moment of steel beams — with dedicated support for storage-rack beam pairs — using an OpenSees-based analysis engine. Select one of 670+ standard profiles from 16 section families, or draw / import a custom section; define the end conditions as rigid, pinned or semi-rigid with a connector stiffness K_h ; enter the load — and obtain pass/fail checks with a moment diagram in seconds.

Built on OpenSees, the trusted open-source structural analysis framework, BeamCap turns a full beam model into a minimal-input, report-ready workflow.

KEY CAPABILITIES

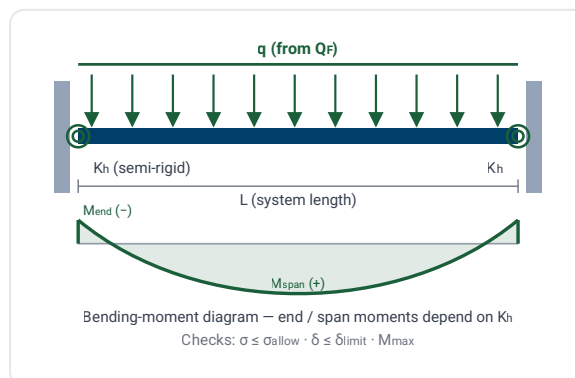
- ✓ **OpenSees analysis engine**
Numerical beam analysis with stress, deflection and moment checks and an overall pass/fail summary.
- ✓ **Section Designer**
Draw custom sections, import from AutoCAD (DXF) or Excel; A , I_x , W_x computed automatically.
- ✓ **Rack beam pairs**
Twin-traverse modelling option for storage-rack systems; single-member mode for other beams.
- ✓ **670+ standard sections**
16 families: IPE, IPN, HE, HD, UPN, UAP, UB, UC, W, C, box profiles and more.
- ✓ **Semi-rigid connections**
Rigid, pinned or semi-rigid ends with user-defined connector stiffness K_h .
- ✓ **Diagrams & reports**
Beam schema, bending-moment diagram and corporate PDF report with responsibility statement.

670+ LIBRARY SECTIONS	16 PROFILE FAMILIES	OpenSees ANALYSIS ENGINE	DXF · XLSX CUSTOM SECTIONS
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SCIENTIFIC FOUNDATION	Analysis framework <i>OpenSees — Open System for Earthquake Engineering Simulation, Pacific Earthquake Engineering Research Center.</i> opensees.berkeley.edu
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INPUTS

PARAMETER	DESCRIPTION
Geometry	System length L (centre-to-centre span); net beam length
Section	Standard profile (family + size) or custom section from the Section Designer
Material & connections	Material grade (S235 ... S355); connector type — rigid, pinned or semi-rigid with K_h ; foot type
Loading	Total load on the beam pair Q_F (or single beam)



Beam model with semi-rigid end connections (K_h) under load and the resulting bending-moment diagram.

OUTPUTS

- Stress check and deflection check with utilisation
- Moment results and bending-moment diagram
- Overall verdict: ALL CHECKS PASSED / CHECKS FAILED
- Corporate PDF report with beam schema and technical note

HOW IT WORKS

- 1 Enter parameters**
 Type values, pick from libraries, or draw / import the section.
- 2 Run**
 The validated model returns the result in seconds — in your browser.
- 3 Review**
 Charts, diagrams and checks make the result easy to interpret.
- 4 Report**
 Export a branded PDF report; it is archived under My Reports.

TYPICAL APPLICATIONS

- Storage-rack beams (paired traverses)
- Platform, service and secondary floor beams
- Early-stage sizing and quick feasibility checks
- Teaching capacity-span sensitivity

WHO IT IS FOR

Structural / steel design engineers

Rack manufacturers & design teams

Faculty and students

LICENCE & SUPPORT

- 12-month licence — full access to all features
- All updates during the subscription period
- Priority e-mail technical support
- Free demo available on request · Runs in any modern browser

\$399

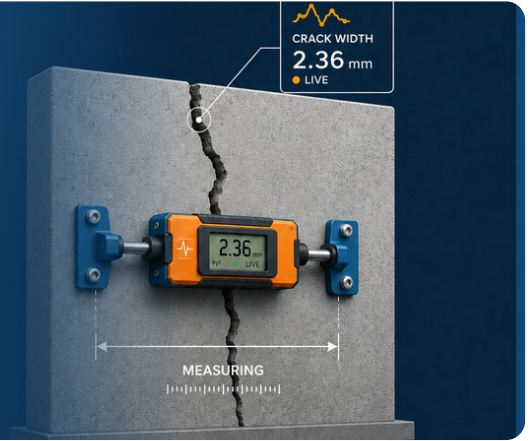
USD / YEAR

www.steelpredictor.com/pages/software.php

Engineering note. Results are valid within the adopted modelling assumptions and input data. Independent engineering review and code compliance remain the responsibility of the licensed engineer.

CrackMonitor

AI-powered crack-meter analysis with environmental data integration and engineering time-series reports



PRODUCT 06 · STRUCTURAL CRACK MONITORING

CrackMonitor

AI-powered crack-meter analysis with environmental data integration and engineering time-series reports.

5 credits

per analysis · credit-based (100 credits = 999 TL)

OVERVIEW

CrackMonitor is a web platform for the systematic monitoring of structural cracks. Engineers upload a photograph of a crack gauge (crack meter) mounted on the building; the platform reads the gauge, produces an AI-assisted assessment with a severity rating, and links every reading to the project, building, floor and façade. Each gauge is identified by a code (or QR) so the same crack can be tracked over time.

Readings are correlated with environmental data for the building location – temperature, humidity, precipitation and groundwater level – and presented as engineering time-series charts and downloadable PDF reports.

KEY CAPABILITIES

- ✓ **AI-assisted crack assessment**
Instant reading of the crack gauge photo with a severity rating and comparison to previous readings.
- ✓ **Gauge tracking with codes / QR**
Each crack meter has a unique code; QR codes are read automatically from the photo.
- ✓ **Time-series reports**
Progression charts and engineering PDF reports for every gauge, building or project.
- ✓ **Project & building management**
Create projects, locate buildings on the map, register gauges by floor and façade.
- ✓ **Environmental correlation**
Crack progression compared with temperature, humidity, precipitation and groundwater level (GWL).
- ✓ **Credit-based access**
No annual licence — buy credit packages and pay per analysis, with secure online payment.

AI IMAGE ASSESSMENT	4 ENVIRONMENTAL SERIES	QR GAUGE AUTO-IDENTIFICATION	PDF TIME-SERIES REPORT
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TECHNOLOGY & DATA

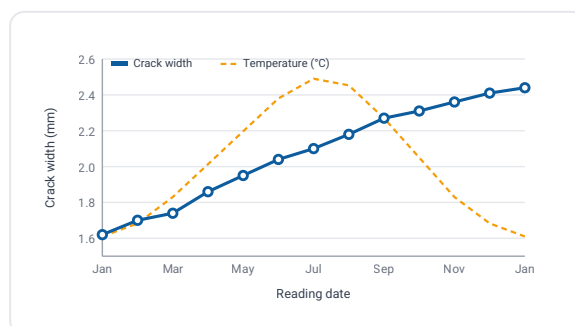
AI-assisted image assessment + environmental data integration

Crack-gauge photographs are assessed by a vision-capable AI model and stored as dated readings per gauge; readings are correlated with weather and groundwater series for the building location and compiled into engineering time-series reports.

Web platform · project / building / gauge hierarchy · PDF reporting

INPUTS

PARAMETER	DESCRIPTION
Project & building	Project; building located on the map or picked from nearby registered buildings
Crack gauge (meter)	New or existing gauge code (e.g. A1-NORTH-01); floor and façade
Reading date	Date the photo was taken
Photograph	Crack-gauge photo; QR code read automatically



Crack-width readings of one gauge over time (points) with the temperature series (dashed), as plotted by CrackMonitor for every gauge.

OUTPUTS

- AI-assisted crack assessment with severity rating
- Crack width and comparison with earlier readings of the same gauge
- Correlation with temperature, humidity, precipitation and GWL
- Time-series charts and downloadable PDF report

HOW IT WORKS

- 1 Project & building**
Create the project and locate the building on the map.
- 2 Upload photo**
Upload the crack-gauge photo; the QR code is read automatically.
- 3 AI analysis**
Receive the assessment and severity rating together with environmental data.
- 4 Track & report**
Follow progression with time-series charts and download the PDF report.

TYPICAL APPLICATIONS

- Periodic crack monitoring of existing buildings
- Structural health follow-up after seismic events or nearby excavation
- Documented evidence for expert reports and facility management
- Separating seasonal / environmental effects from structural progression

WHO IT IS FOR

Structural engineers & consultants

Building inspection firms

Facility & property managers

Structural health monitoring researchers

ACCESS & PAYMENT

- Credit-based – 5 credits per analysis, no annual licence
- Secure online payment (PayTR) · corporate invoicing
- Packages of 100 – 2,000 credits, up to 20 % volume discount
- Runs in any modern browser · unlimited projects and gauges

999 TL

PER 100 CREDITS

steelpredictor.com/pages/buy-credits.php

Engineering note. AI assessments support – and do not replace – inspection by a qualified engineer; severity ratings are indicative and structural decisions require on-site evaluation.

Six tools, one platform

PRODUCT	DOMAIN	METHOD	KEY INPUTS	PRIMARY OUTPUT	VALIDATION	PRICE / YR
● SteelTemp	High-temperature strength of steels	Gradient boosting (ML)	Grade, thickness, temperature	Ultimate stress (MPa), curve, χ	$R^2 > 0.98$	\$299
● SigmaBuckling	Sigma-section CFS beam-columns	Ensemble ML (boosting)	Section geometry, buckling & load parameters	Load-bearing capacity (kN)	$R^2 \approx 0.97$	\$499
● OmegaBuckling	Storage-rack upright buckling	XGBoost + section toolkit	f_y , L, section properties / drawing / DXF	Critical buckling load P_{cr} (kN)	Test + FE validated	\$499
● StiffPredict	Beam-to-upright connection stiffness	Multi-model ML	Upright, beam, connector, position, f_y	Rotational stiffness k_0	Explainable ML	\$299
● BeamCap	Beam stress / deflection / moment	OpenSees analysis	Span, section (library / custom), K_h , load	Checks, moment diagram, verdict	670+ sections	\$399
● CrackMonitor	Structural crack monitoring	AI image assessment + environmental data	Crack-gauge photo, location, building, floor / façade, date	Severity rating, progression charts, PDF report	Env. data-correlated	5 credits / analysis

LICENSING & ACCESS

- **Annual licence** — 12 months of full access per tool, single user, updates included.
- **Credit model** — CrackMonitor: 100 credits = 999 TL, 5 credits per analysis, volume discounts up to 20 %.
- **Priority support** — e-mail based (info@steelpredictor.com).
- **Free demo** — for the software tools on request; no academic discount.
- **Secure online payment** — Visa / Mastercard; software prices in USD.

CORPORATE REPORTING

- **Branded cover page** — your company name and logo, PREPARED FOR / BY panels, project name.
- **Consistent template** — inputs table, charts, diagrams, results and technical note.
- **Report archive** — every downloaded report is stored under *My Reports*.
- **Languages** — reports in English or Turkish following the site language; OmegaBuckling also exports editable Word (.docx).

REQUIREMENTS

- **No installation** — runs in Chrome, Edge, Firefox or Safari.
- **Any device** — desktop, laptop or tablet with an internet connection.
- **Account** — free registration at www.steelpredictor.com; licences and credits are assigned to your account.

WHICH TOOL ANSWERS YOUR QUESTION?

?	How much strength does this steel grade retain at 500 °C?	SteelTemp
?	What is the capacity of a sigma-section CFS beam-column under combined loading?	SigmaBuckling
?	What is the critical axial buckling load of this rack upright — and its section properties?	OmegaBuckling
?	How stiff is the beam-to-upright connector, without a full-scale test?	StiffPredict
?	Does this beam — library or custom section — pass stress and deflection checks?	BeamCap
?	Is this crack progressing — and is it structural or seasonal?	CrackMonitor

Responsibility statement. All SteelPredictor tools provide predictions and analysis outputs derived from published, validated models under stated assumptions. They support — and do not replace — the judgement of the licensed engineer, who remains responsible for safety factors, code compliance and the final design. Prices and specifications valid as of August 2026 and subject to change.

SteelPredictor

Machine-learning-powered engineering tools for structural steel — built on peer-reviewed research.

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