SPANBEST WIND & SNOW LOAD CALCULATION REPORT TEMPLATE

- PROJECT: TBD
- SITE LOCATION / COORDINATES: TBD
- GOVERNING CODE & EDITION: TBD
- BUILDING SYSTEM / SPAN / LENGTH / HEIGHT: TBD
- RISK / IMPORTANCE CATEGORY: TBD
- PREPARED BY / CHECKED BY / REVISION: TBD
- IMPORTANT: This is a calculation-book template and scope guide, not a construction calculation for a specific project. Final values require confirmed site data and licensed engineer review.

1. CLIENT INPUT & DESIGN BASIS

- 1.1 Site address, coordinates, elevation and terrain photographs — TBD
- 1.2 Required building use, occupancy, clear span, length, eave/apex clearance — TBD
- 1.3 Door status, opening dimensions, airlocks and operational open-door cases — TBD
- 1.4 Local wind map reference, basic/design wind speed and return period — TBD
- 1.5 Ground snow value, altitude, exposure, thermal condition and drifting obstructions — TBD
- 1.6 Geotechnical report, allowable bearing pressure, frost depth and groundwater — TBD
- 1.7 Collateral loads: MEP, cranes, conveyors, photovoltaic equipment and suspended services — TBD
- 1.8 Governing local code, national annex and authority requirements — TBD

2. WIND LOAD CALCULATION WORKFLOW

- 2.1 Confirm velocity basis, averaging time, return period and risk category.
- 2.2 Select terrain/exposure category and compute height-dependent exposure factor.
- 2.3 Determine topographic, directionality, elevation and importance factors required by the governing code.
- 2.4 Calculate design velocity pressure q(z) using code-specific coefficients; every coefficient is reported in a traceable table.
- 2.5 Select external pressure coefficients for roof, walls, end zones, corners and open canopies.
- 2.6 Select internal pressure cases from enclosure classification and door/opening conditions.
- 2.7 Resolve net pressures by surface and load direction; include dominant-opening and open-door cases where relevant.
- 2.8 Generate global wind cases by principal axes, oblique directions and uplift combinations.
- 2.9 Apply pressures to the 3D analysis model and verify members, bracing, connections, membranes/cable nets and anchors.
- PROJECT WIND VALUES: ALL TBD UNTIL LOCATION AND CODE INPUTS ARE CONFIRMED.

3. SNOW LOAD CALCULATION WORKFLOW

- 3.1 Confirm characteristic ground snow from the governing map/authority and site altitude.
- 3.2 Establish exposure, thermal, importance and roof-shape factors required by the selected code.
- 3.3 Calculate balanced roof snow for the actual barrel, gable, arch or membrane geometry.
- 3.4 Evaluate unbalanced loading, sliding snow and asymmetric accumulation.
- 3.5 Check drifting at steps, parapets, adjacent higher roofs, valleys, doors and equipment obstructions.
- 3.6 Check rain-on-snow or ponding where required by the governing jurisdiction.
- 3.7 Generate governing snow patterns and combine with permanent, wind, seismic and collateral actions.
- 3.8 Verify members, local panels, membrane pretension, cable-net forces, connections and foundation reactions.
- PROJECT SNOW VALUES: ALL TBD UNTIL SITE, ALTITUDE, THERMAL AND EXPOSURE DATA ARE CONFIRMED.

4. LOAD COMBINATIONS & STRUCTURAL ANALYSIS

- 4.1 Permanent load D — self-weight and fixed equipment: TBD.
- 4.2 Imposed/service load L — occupancy and maintenance: TBD.
- 4.3 Wind W — positive pressure, suction, uplift and internal pressure patterns: calculated per project.
- 4.4 Snow S — balanced, unbalanced and drifted patterns: calculated per project.
- 4.5 Seismic/thermal/accidental actions — included when required by the governing code.
- 4.6 ULS / LRFD combinations — table generated directly from selected code edition.
- 4.7 SLS / ASD combinations — deflection, drift, ponding, vibration and membrane serviceability.
- 4.8 Second-order P-Delta, buckling/eigenvalue and geometric non-linear analysis where applicable.
- 4.9 Utilization table by member/connection; allowable criteria documented and checked.

5. FOUNDATION REACTIONS & DELIVERABLES

- 5.1 Support node compression, uplift, shear and moment envelopes for every governing combination.
- 5.2 Base-plate, anchor-bolt, ring-beam or cable-anchor reactions for local civil design.
- 5.3 Foundation layout coordinated with actual soil parameters and frost/seismic conditions.
- 5.4 3D model views and load maps.
- 5.5 Member and connection check summaries.
- 5.6 Roof/membrane/cable-net force and pretension schedules where applicable.
- 5.7 Deflection and drift plots.
- 5.8 Reaction tables in PDF and spreadsheet format.
- 5.9 General arrangement, elevations, details and fabrication/installation drawings.
- 5.10 Licensed engineer stamp where included in the agreed jurisdictional scope.

6. REVIEW CHECKLIST & ASSURANCE

- INPUT REVIEW: project location, geometry, openings, use and code confirmed.
- INDEPENDENT CHECK: load inputs, coefficients, combinations and model restraints reviewed.
- SENSITIVITY: door-open, unbalanced snow, drift and uplift cases assessed.
- MODEL QA: units, mesh/member connectivity, releases, supports and stiffness verified.
- OUTPUT QA: governing utilization, displacement and reaction envelopes reviewed.
- CLIENT HOLD POINT: calculation basis issued for approval before fabrication release.
- REVISION CONTROL: every design change logged and calculations rerun.
- FINAL STATUS: NOT FOR CONSTRUCTION until inputs are confirmed, review complete, and final documents are issued.