CPP WIND ENGINEERING CONSULTANTS

Site Specific Snow Study for Solar Projects

A CPP Site-Specific Snow Study provides project-specific evaluations of snow accumulation, snowfall rates, and combined snow and wind loading to establish precise, data-driven design parameters. Conducted in accordance with ASCE 7 Section C7.2 – Minimum Design Loads and Associated Criteria for Buildings and Other Structures, this analysis is especially valuable in regions with significant snow exposure. By leveraging localized meteorological data and advanced analytical methods, CPP enables engineers to reduce conservatism, optimize design, and achieve cost efficiencies without compromising safety or compliance.

METHODOLOGY

Site Specific Ground Snow Load: Site-specific snow studies are conducted using long-term meteorological data from nearby weather and snow-monitoring stations. CPP evaluates daily records of snow depth, precipitation, and temperature to characterize the local snow climate. Through statistical extreme-value analysis, CPP determines site-specific ground snow loads as a function of mean recurrence interval (MRI), providing accurate, inputs for structural design.

Snowfall Accumulations for Module Clearance: Site-specific snow accumulation probabilities help establish module clearance. The maximum peak daily, multi-day events, and peak snow depth snowstorms define a range of accumulation probabilities to guide module clearance based on risk and probability of exceedance.

Site Specific Companion Snow and Wind: For comprehensive load evaluation, CPP performs a site-specific combined wind and snow analysis to establish companion load values required for design. By correlating daily peak wind speeds with recorded snow events, CPP generates companion statistical relationships; including Gumbel-type plots used to define combined snow and wind load cases consistent with ASCE 7 load combination requirements.

RESULTS AND BENEFITS

Site-specific snow studies reduce overly conservative loads, enabling optimized, cost-efficient designs while fully complying with ASCE 7 and accepted by engineers of record and permitting authorities.

CONTACT CPP TO ENSURE THE EFFECTS OF SNOW ARE INCORPORATED IN YOUR DESIGN

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