ROCKY VIEW COUNTY

BUILDING SERVICES

Solar Photovoltaic Panels

Guideline

Guideline ESP- 23

Purpose

This guideline has been developed to address the permit requirements for the installation of Solar Photovoltaic Panels on residential, commercial or industrial buildings.

Summary

The information noted within this Guideline is to provide clarity towards the requirements surrounding, and the information required when installing Solar Photovoltaic Panels (solar panels) onto a new or existing residential, commercial, or industrial building.

Interpretation

1) Is a Permit Required?
   a) Electrical - An Electrical Permit is required for all solar panel installations.
   b) Building - A Building Permit is required for solar panel installations located on a building. However, where a building is exempt under the Building Code, such as a Farm Building, or Accessory Building under 10m^2, a Building Permit is not required.
   c) Energy Storage Systems (Batteries) – A Building Permit is required where construction or renovation of a dedicated room or utility room is undertaken to accommodate an energy storage system. The construction of the room must be reviewed and inspected by a Building Safety Codes Officer. An Electrical Permit is also required for the electrical installation of the energy storage system.

2) Professional Involvement
   Rocky View County has varying snow loads and wind loads within the region, and contains homes that vary in age, size and construction. To ensure the structural safety of each home and its occupants, a review of the roof systems to confirm it will support the additional dead weight loads for solar panel installations is required. The following options for providing confirmation of structural conformance are available.

   a) Structural Engineer Review Letter – A Professional Structural Engineer will need to determine if the load bearing capacity on an existing or new structure will be adequate to support the additional panel loads. A letter noting their review of the existing structure and any remedial requirements must be provided.
   b) Roof Truss Layouts - Where a building roof truss system is/has been designed by a roof truss manufacturer either new or previously, the roof truss layouts can be used to confirm if the design has taken into consideration the additional load for the solar panels. Truss layouts providing comments/annotations noting the additional dead weight loads for solar

panel installation(s) can be provided in lieu of a Professional Engineers review letter, except where that design states it has been designed in accordance with Part-4 of the building code.

c) Large Buildings – When the size and complexity of a building requires full professional involvement, such as a Part 3 building, a structural Engineer and electrical Engineer must design the roof solar panel system and perform field reviews during construction. Schedules of professional involvement must be submitted with the Building Permit application.

3) Building Permit Application

A Building Permit for the installation of solar panels within or on a building will require the following additional documentation for the permit application and inspection process.

a) Racking System Specifications - Details must include dead weight loads, connection details to the roof, and flashing details. An Engineering evaluation for the structural capabilities of the racking system must be provided. Racking systems must be ULC or CSA approved as per electrical STANDATA 21-ECI-064.

b) Site Plan – A Site Plan drawing showing the location of the panels on the roof.

c) Inspection – A letter must be submitted to Rocky View County to confirm the solar panel installation has been completed as per the submitted documentation. The letter must be dated and signed by the installer. Photos of the completed solar panel installation must also be provided.

d) Battery Packs – A drawing showing the proposed location of the batteries within the building must be provided. Where an energy storage system (ESS) is installed in a dedicated room or utility room in accordance with Canadian Electrical Code Rule 64-1100(1)(d), the walls and ceilings must be finished with gypsum board, the floors must be finished with lumber sheathing, and the room door must be equipped with a self-closing device. In residential buildings containing multiple dwelling units, the room's walls, ceilings and floor assemblies must provide a minimum 1-hour fire-resistance rating. An acceptable example of a 1-hour-rated wall assembly consists of 38 mm × 89 mm wood studs spaced at 400 mm or 600 mm on centre, with one layer of 15.9 mm (5/8-inch) Type X gypsum board on each side and no absorptive material in the cavity. Alternative assemblies must demonstrate the required fire-resistance rating in accordance with the National Building Code – current Alberta Edition. Where a fire-protection rating is required by the applicable Building Code, the door and closure assembly must comply with those requirements. The required fire-resistance rating must be demonstrated for the complete wall, floor and ceiling assemblies, as applicable. Type X gypsum board alone does not establish the required fire-resistance rating. A smoke alarm or smoke detector must be installed within the room in accordance with Section 32 of the Canadian Electrical Code. **The construction of the room must be reviewed and inspected by a Building Safety Codes Officer.** Ventilation, battery location restrictions, equipment certification and installation requirements must comply with the applicable Canadian Electrical Code and manufacturer's installation instructions.

4) Electrical Permit Application Requirements

An Electrical Permit is required for all solar panel installations located either in/on buildings and as well as those located on the ground. The following information must be provided for the permit application and inspection process.

a) Schematics – A Schematic drawing showing the circuitry and components of the unit
b) Kilowatts – Details for the total Kilowatts of the system being installed
c) Contractor Information – Contractor information including the Master Electrician ID number for the contractor completing the installation
d) Inspection – An electrical inspection is required upon the completion of all solar panel installations.
e) Battery Packs – A line diagram showing the planned location of the batteries within the building, including battery specifications such as energy storage capacity in kilowatt-hours (kWh) and power rating in kilowatts (kW), make, model, and type. The diagram must also indicate the testing/certification standards to which the batteries comply, as well as their location within the building relative to other rooms and spaces, all of which must be clearly identified.

Reference

Applicable Codes and Interpretations: The current Alberta Building Code; The current Canadian Electrical Code, Part I – 2024, Rule 64-1100; Alberta Municipal Affairs STANDATA 23-BCI-025/24-ECI-009, Service/utility room for energy storage systems (October 2026).

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