

THE IMPORTANCE OF RODENT PROTECTION FOR SOLAR INSTALLATIONS IN CANADA



THE EASIEST GAME OF "WOULD YOU RATHER" YOU'LL EVER PLAY:

Would you rather install an attractive, one-time, stick-on protective barrier?

Or would you rather send a crew back to deal with this hazardous mess and voided warranties?

THE NEW CODE REQUIREMENTS

The new 2015 CE Code came into effect on May 5, 2016, and contains a hidden gem, unnoticed by most solar installers: rodent protection is now mandatory for rooftop solar arrays. Steve Douglas explains the changes to Rule 50-018, in this excerpt was taken from his recent Electrical Industry Canada article entitled "2015 CE Code – Part 1 Changes":

"The second new subrule will require photovoltaic source circuits installed on or above a building to be protected against damage from rodents unless DC arc-fault protection is located at the module. An Appendix B note has also been added indicating that material such as expanded metal, solid metal, and screening can be used to enclose photovoltaic source circuit conductors as protection against damage from rodents."

THE RISKS OF RODENT INFESTATION

Rodent protection aims to protect the PV source wiring and underside of the modules from nesting squirrels, roosting pigeons, snow ingress and debris.

This can lead to:

- interruption in productivity
- system damage (frayed wiring, arcing, grounding issues, compromised insulation)
- corrosive animal droppings
- roof rot
- fire
- disease
- and voided module/optimizer/micro-inverter warranties.

Squirrels' incisors grow continuously, up to 6 inches in a year. To keep the growth of their teeth in check,

they will gnaw any hard substances to wear them down. “Once squirrels establish a nest under a module, they will chew on whatever is available, they don’t discriminate. All they see is an unlimited buffet of nice chewy wiring and insulation,” said Bob Smith, President of SolaTrim.

In regions where squirrels are prevalent, such as the Northeastern US and Great Lakes Area, Smith said installers are reporting service calls for 8 to 12 percent of their installed systems. The average cost of replacing all the damaged wiring and micro-inverters is between \$3,000 to \$4,000 CAD – per service call!

On March 9, 2016 a rooftop array in Mississauga, Ontario caught fire but was quickly brought under control by local authorities. Officials said the fire was caused by rodent damage to the wires. As the number of solar installations in the province grows, so too does the risk of fire. The Illinois Department of Public Health estimates that 25 percent of all fires attributed to “unknown causes” are likely started by rodents gnawing on gas lines, electrical wiring or matches. This amounts to approximately 4,300 residential fires per year in the US, with a whopping bill of over \$100 million in direct property damages.

THE OPPORTUNITY FOR PEACE OF MIND

Installers in the US have been slow to adopt rodent protection, due to the twin barriers of fragmented regional electrical codes and lack of education, Smith said.

For Canada, national code adoption poses an opportunity for improvement. “In my opinion, the Canadian authorities likely found that the current model for rooftop solar construction is incomplete as it stands now. It leaves the backside of the module array open to rodent infestation, debris, snow loads or ice dams,” said Smith.

The new rodent protection requirement is a benefit to both installers and PV system owners and should be implemented, regardless of the inverter technology used. It is up to the Canadian solar industry to educate customers on the safety and performance benefits of a quality PV system, which includes rapid shutdown, arc fault protection and protective barriers.

SOLATRIM BENEFITS TO PV SYSTEM OWNERS

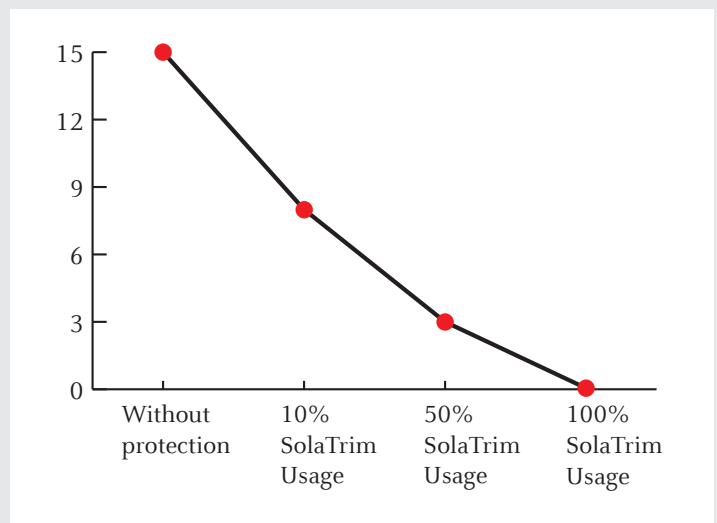
- Peace of mind
- Fully protected PV system, up to code installation
- Lower operations and maintenance costs

- Attractive PV system

SOLATRIM BENEFITS FOR PV INSTALLERS

- Improved system aesthetics, which will lead to an increase in closing percentages
- Improved perceived reliability and installation expertise by potential customers
- **Increased customer satisfaction and referral rates**
- Universal protective barrier for any roof type that is fast and easy to install
- **Mitigated long term operation and maintenance costs. SolaTrim systems are proven to have less pest incidents and service calls.**
- This one-time investment pays for itself.

Pest and Debris Incident Rate*



*In selected test markets.

Last year SolaTrim conducted a Solar Integrators Survey, interviewing over 600 companies. Respondents overwhelmingly said that protective barriers work to deter pests and improve referral rates. Over 40,000 ft. of SolaTrim has been installed to date, with no reported incidence of pest intrusion.

It’s a tough marketplace and acquisition costs are astoundingly high. Satisfied customers with rodent protection have a secret dual payoff – lower O&M costs, but also free lead referral services. A survey published in the June 2015 issue of Electrical Business found that if you cultivate your online reviews correctly, 86 percent of customers would pay *more* for a residential service provider with higher ratings and reviews. Over half of survey respondents said they searched online to locate their local business services and that reviews were very important when evaluating between competitors.

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