

# ELECTRICAL BULLETIN

## 2014-06

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Subject: Spray Foam Insulation and Recessed Luminaires

**Question 1:** Can spray foam insulation be permitted to be in contact with or to cover a “ Type IC ” or “Type IC , inherently protected ” marked recessed luminaire?

**Answer 1:**     **No.**                    **(See note 4 for exception)**

While rule 30-906 of the Canadian Electrical Code, Part 1 (CEC) would appear to allow such contact a further review indicates that testing performed to obtain the IC rating for recessed luminaires is performed using blown-in or batting type insulation which would correlate with the wording used in the above rule “blanketed” with thermal insulation.

The above issue is further supported by the CAN/ULC S705.2 Standard.

In accordance with the CAN/ULC S705.2 Standard for Thermal Insulation - Spray Applied Rigid Polyurethane Foam, Medium Density - Application, spray foam insulation may not be installed within 3 inches of heat emitting devices, such as recessed luminaires and shall not be used inside electrical outlets or junction boxes.

Spray polyurethane foam is combustible and should not be subject to continuous temperatures in excess of 80 C and many recessed luminaires rated for contact insulation have surface temperatures that exceed this.

Because polyurethane foam has a higher insulation value than the insulation types used for “Type IC” luminaire testing and rating, foam insulation contact with recessed luminaires may elevate the fixture temperature above expected levels and may cause luminaires equipped with a thermal protection device to trip out.

Also, expanding spray foam may intrude into the crevices and small openings inherent with recessed luminaires and can degrade the functionality of the luminaire and prevent routine maintenance and inspection by limiting access to critical electrical connections of the luminaire.

Therefore, a minimum space of 3 inches is required between any “Type IC” or “Type IC, inherently protected” recessed luminaire and any spray foam insulation.

Where the 3 inch distance cannot be maintained the following installation techniques may be considered, but are not limited to:

- a) building a suitable barrier around the recessed luminaire and/or junction box, or (See note 3)
- b) installing an approved recessed luminaire that permits direct spray foam contact (See note 4)

Notes:

1. Access to the luminaire for future maintenance or inspection should be considered at all times.
2. Because polyurethane foam can exert significant force as it expands, any blocking mechanism must be sturdy enough to resist the resulting forces. The luminaire manufacturer should be contacted for specific installation guidelines applicable to their products if any concerns.
3. The local building inspector should be consulted with any concerns as to the suitability of any enclosure or barrier built around a luminaire for compliance to the National Building Code.
4. The contact of spray foam insulation and a “Type IC” recessed luminaire may be permitted where the manufacturer’s instructions and approval clearly permit such an installation and such documentation must be provided if requested by the local electrical inspector.

Question 2: What is the required distance for a “Type Non-IC” marked recessed luminaire to be from spray foam insulation?

Answer 2: A “Type Non-IC” marked recessed luminaire requires a minimum of 3 inches of clearance from any type of insulation.

This bulletin may be subject to revisions at any time.

Review Dept. of Labour Electrical Bulletins at:

<http://novascotia.ca/lae/electricalsafety/electricalbulletins.asp>

Review NSPI Electrical Bulletins at:

<https://www.nspower.ca/en/home/for-my-home/electrical-inspections/default.aspx>

Any deviations or questions concerning this Bulletin may be forwarded to the:

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