

SERVICES AND SERVICE EQUIPMENT

This bulletin provides guidance on the application of rules pertaining to the 2015 BC Electrical Code Regulation. The requirements of local municipal authorities having jurisdiction may vary. Installers should consult with local authorities having jurisdiction prior to undertaking work, to determine their requirements.

*This Information Bulletin supplements the Directive on:
Services and Service Equipment, issued on February 29, 2016*

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Topic: Services and Service Equipment

A: Services (Supply or Consumer) to Low Buildings

1. Where a service mast is used, a suitable installation will:
 - (a) Use a mast of sufficient height to provide clearances required by Rule 6-112(2); and
 - (b) Have its mast located as close as practicable to a point opposite the service pole so that the requirements of Rule 6-116 will be met; and
 - (c) Maintain the clearances over roofs required by Rule 12-310 whether the roof is accessible by stairway, door opening or by ladder; and
 - (d) In areas of heavy snowfall, where the mast is in the path of sliding snow from a sloping roof of smooth hard material such as plastic or metal, have its mast securely braced or guyed back to a structural roof member; and
 - (e) See Appendix B Rule 6-112(4), for additional information regarding acceptable mast installations.
2. Where doubt exists concerning the correct mast location, the matter should be referred to the electrical safety officer and the Supply Authority before commencing the installation.
3. Rules 54-604(1) and 60-510(1) require that a minimum clearance of 300 mm be maintained at the mast between the lowest service wire and communication service drop wires. The clearances required by Rule 6-112(2) also apply to communication services. Therefore the service wires must be high enough to permit the communication drops to maintain the minimum clearances above grade.

NOTE: For clearance requirements at other than service masts,
See CSA Standard C22.3 No. 1-06

B: Location of Consumer's Service Equipment and Panelboards

1. The ready access required by Rule 6-206(1) (b) may be obtained by locating the service equipment within an accessible room or electrical closet within the building.
2. A consumer's service box may be located in a detached building on the same property.
3. Rule 6-208 requires consumer's service conductors to be outside the building except where necessary to connect to a service box, unless the risk of fire has been reduced by additional measures such as concrete encasement. In addition, Rule 6-206(1) (e) requires the consumer's service box to be located as close as practicable to the point where the consumer's service conductors enter the building. These restrictions are needed to limit the risk of fire, because service conductors lack effective overcurrent protection.
5. A consumer's service raceway or cable that passes through the roof overhang but does not enter the wall is considered to be outside the building.
6. Where metering, supplied from an overhead or underground supply, has been installed on a secondary pole and the consumer's service conductors are run overhead to a service or multiple services, the installation will be considered to be acceptable, for the purposes of Rule 6-310, if the connection to the overhead conductors is made using compression connectors applied with a compression tool and in compliance with Rule 14-100(g).

C: Panelboards in Secondary Suites

1. The requirements for panels in secondary suites are found in Rule 26-400. A suite or self-contained unit in a new house must have its own panelboard which is independently supplied. In a newly constructed single dwelling only, a room or area which is common to all dwellings, and is readily accessible to all occupants is considered to be part of each dwelling. A panelboard installed in a common room or area is interpreted as complying with this Rule. Consult with the local Authority having jurisdiction where local by-laws may conflict with this interpretation.
2. Rule 26-400 (1)(a) & (b) exempts the requirement for a separate panel in a dwelling where an existing home has been modified to contain a secondary suite and where the suite is not individually metered.

D: Outdoor Services

Permanent Installations

1. Rules 6-206(1)(c) requires that consumers service equipment be located indoors except as permitted by Sub-rule (3). Acceptable installations for outdoor services will meet the following conditions:
 - (a) A pole on which the service equipment is mounted is in accordance with CSA Standard C22.3 No 1, Overhead Systems, or other acceptable standard recognized by the Authority having jurisdiction;

- (b) The requirements of Rule 6-112(1) and (2) are met;
 - (c) The service equipment is installed in an enclosure that is approved for the location; and
 - (d) The equipment is protected from mechanical damage.
2. Protection from the weather includes protecting the equipment from all environmental conditions that can normally be expected in that location. This includes ensuring that the equipment is kept free of moisture and that adverse temperatures do not affect the proper operation of the equipment and overcurrent devices. Installers may be required to provide a report by an engineer in order to confirm that these conditions have been adequately mitigated.
3. Treatment of wood poles shall conform to CSA Standard C22.3 No 1, Overhead Systems, or other standard recognized as acceptable by the Authority having jurisdiction.

Temporary Construction Installations and permanent services connected prior to completion.
(Refer to Information Bulletin)

http://www.safetyauthority.ca/sites/default/files/temporary_and_permanent_services_for_construction_pover_ib-el_2016-03.pdf

Condensation in Service Raceways and Equipment

In areas of the province other than those listed below, it is considered that condensation will be avoided if a minimum of 12 mm of insulation or a 12 mm space is provided between the service box and the exterior sheathing.

- (a) All Vancouver Island districts;
- (b) All Lower Mainland districts;
- (c) Chilliwack districts;
- (d) Prince Rupert district;
- (e) Powell River and Squamish district;
- (f) The Gulf Islands, University of British Columbia, Howe Sound and Bella Coola sub-districts;
- (g) Terrace district.

E: Meters

1. In installations where the service is connected, but the meter sockets are without meters, the safety requirements of Rules 2-200 and 2-300 will be fulfilled if:
 - (a) Meter sockets are fitted with substantial covers to exclude the weather and protect against accidental contact; and
 - (b) All unused openings in meter sockets are fitted with screw-type plugs, inserted from within the socket and so secured as to prevent their removal after the meter and seal have been installed.
2. When terminating conductors to the lugs of a meter base, attention must be given to the amount of torque given to a particular meter lug when tightening. Specifications for recommended torque pressure is stated either in the manufacturer's specification sheet for the particular meter, or on the specification label mounted on the exterior or interior of a meter base. The torque pressure is stated in either foot- lbs or foot- inches of torque pressure.
3. There is not sufficient space in the round Type-S meter socket to provide proper clearance from live parts to the locknut and bushing, or to bend the conductors without damage if the conductors enter from the back of the socket. Consequently, back entry to such meter sockets cannot be accepted.
4. There is not sufficient space in round Type-S meter sockets for side entry of conductors larger than No. 6 AWG. When using No. 6 conductors, care must be taken to avoid damage to meter terminals and to avoid interference with the proper seating of the meter.
5. Either back or side entry to the square type of meter socket will produce a satisfactory installation provided that both locations are not used at the same time and that terminal blocks are arranged with the terminals on the outside of the block for back entry and on the inside for side entry.
6. Installers are reminded that Rules 6-116, 6-206, 6-404, 6-408 and 6-410 require compliance with the utility concerned. Because different utilities may have different requirements for the installation of their metering equipment, installers should be aware of current utility requirements.

F: Location of Consumer's Service Conductors

Consumer's service conductors should be treated as unprotected until they enter the main service box. If damaged, these conductors can be a potential fire and shock hazard and should therefore be located outside the building to prevent risk of fire. The Code allows for installation methods which permit these unprotected conductors to be run inside a building. Rule 6-208 (1) requires that raceways or cables containing consumer's service conductors be located outside buildings unless they are embedded in at least 50 mm of concrete or masonry, directly buried and beneath a concrete slab which is at least 50 mm thick, or run in a non-combustible crawl space which is no more than 1.8 m in height and no combustible materials will be stored in the crawl space. Sub-rule (2) allows the conductor to enter the building only for the purpose of making a connection to the service box. Rule 6-206 (1)(e) requires that the service box be located "as close as practicable" to the point where the consumer's service conductors enter the building.

Under these rules, "close as practicable" is interpreted to mean that the length of cable or raceway containing consumer's service conductors must be kept as short as possible, without violating any other rules of the Code. It is recommended that a cable or raceway containing consumer's service conductors



be encased in concrete or buried where the cable or raceway is run inside a building. Cables or raceways not encased in concrete or buried and run inside a building for distances greater than 1.5 m, are not considered to be acceptable without prior consultation with the Authority having jurisdiction.

Ulrich Janisch
Provincial Safety Manager – Electrical

References:

Bill 19 – 2003	<i>Safety Standards Act</i>
B.C. Reg. 100/2004	Electrical Safety Regulation
B.C. Reg. 105/2004	Safety Standards General Regulation
C22.1-15	Canadian Electrical Code

For more information on British Columbia Safety Authority, please visit our web site at:
www.safetyauthority.ca

