



Information Bulletin:

Update on Concrete Encasement of Service Ducts Within Building Walls and Meter Socket Installation Requirements R1

1.0 Items Covered

ES54 S1-01 Secondary Single-Phase Services 120/240 V up to 600 A
Revenue Meter Socket Installation

2.0 Overview – Revision 1 Update

The original issue of this Information Bulletin (2020-016) was released May 1, 2020 to restate BC Hydro's requirements for underground residential customer service ducts. While compliance with BC Hydro requirements for concrete encasement of service ducts has improved since May, BC Hydro installers still encounter many connection requests for non-conforming installations.

BC Hydro has continued to engage with the Canadian Home Builders' Association of BC, BC Hydro service installers, and BC Hydro Design to improve compliance with BC Hydro requirements.

Recognizing that some home builders and electricians did not receive the January 2019 BC Hydro Information Bulletin 2018-027 *Concrete Encasement of Service Ducts Within Building Walls and Meter Socket Installation*, BC Hydro released the original issue (revision 0) of this Information Bulletin 2020-016 in May 2020, which provided two interim installation methods accepted by BC Hydro until November 1, 2020:

- (a) Duct outside of the building wall and enclosure of the service duct and meter base with a removable covering. This continues to be accepted. See Option 1 below for details.
- (b) Duct in the building wall with less than 50 mm of concrete encasement. This interim installation method is no longer acceptable. If a BC Hydro installer arrives for a service connection and the installation does not meet BC Hydro standards, the connection request will be rejected. Request for a variance will not be considered.

Important: The service duct and meter base should be installed on the exterior of the building for ease of installation and inspection. If the service duct is installed within the foundation and building wall, 50 mm of concrete encasement around the duct shall be visible at the time of connection. The service request will be rejected if BC Hydro service installers cannot verify compliance with BC Hydro requirements.

The duct shall be installed on the exterior of the foundation and building wall if installation within the foundation and building wall causes conflict with other regulations and requirements such as the BC Building Code.

3.0 Background

The requirement for 50 mm concrete encasement of service ducts installed within building walls is in accordance with BC Electrical Code (BCEC) Rule 6-208 *Consumer's service conductors location*, which has existed for more than three decades. The requirement exists because the service conductors are connected to the utility's secondary voltage distribution system, and the overcurrent protection is based on the utility system configuration instead of individual service conductors.

If the service conductors become damaged or overloaded, they could become a potential fire hazard to the building and its occupants. To address this risk, service conductors are installed outside of the building wall or encased in concrete in accordance with BC Hydro and BCEC requirements.

In November 2017, Technical Safety BC (TSBC) Directive D-EL 2017-01 *Exemptions to public utilities* transferred the responsibility for all BC Hydro customer service connections on private property to BC Hydro. Accordingly, all customer-owned utility civil work from the property line to the point of utility connection shall comply with BC Hydro standards, including inspection and acceptance by a BC Hydro inspector. Since TSBC Directive D-EL 2017-01 was released and came into effect, BC Hydro has observed many non-conformances, and in January 2019 BC Hydro issued Information Bulletin 2018-027 *Concrete Encasement of Service Ducts Within Building Walls and Meter Socket Installation*, which:

- (a) Summarized the TSBC directive;
- (b) Restated the BCEC and BC Hydro requirement for concrete encasement; and
- (c) Restated the BC Hydro requirement for adequate meter base access.

Information Bulletin 2018-027 did not reach the intended audience in the building community, and BC Hydro continued to receive service connection requests for non-conforming installations.

The original issue (revision 0) of this Information Bulletin 2020-016 was released in May 2020 to reiterate the requirement for concrete encasement.

4.0 Acceptable Installation Methods for Service Duct

Option 1 – Outside of the building exterior foundation and wall (preferred)

Duct installed outside the building foundation and exterior wall and left uncovered.

Optional: After the service has been connected, a removable covering can be installed over the duct and around the meter base. A 25 mm access cavity shall be provided around the meter base to allow for removal of the meter base cover. The duct shall be on the exterior of the building wall but does not have to be installed on finished siding. BC Hydro Standard ES54 S1-01 *Secondary Single-Phase Services 120/240 V up to 600 A Revenue Meter Socket Installation*, Note 4.6 (page 15) conflicts with this and requires the duct to be run on the outside of the finished building wall. This Information Bulletin takes precedence over Note 4.6 until ES54 S1-01 is revised.

Option 2 – Within the building exterior foundation and wall with bump out (acceptable)

Duct installed within the building foundation and wall with an exterior bump out to accommodate 50 mm of concrete encasement. A 25 mm access cavity shall be provided around the meter base to allow for removal of the cover.

Important: Concrete encasement shall be visible for inspection by the BC Hydro installer at the time of service connection. In-wall ducts without visible concrete encasement at the time of connection will be rejected.

Option 3 – Within the building exterior foundation and wall with flush concrete board siding (acceptable)

Duct installed within the building wall in accordance with BC Hydro Standard ES54 S1-01 using fibre cement siding (see excerpt from standard drawing below).

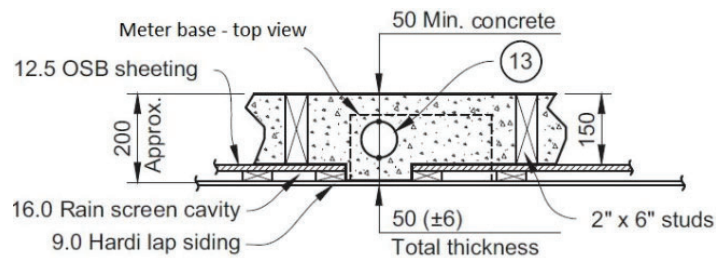


Figure 1. Option 3 top view

Figure 1 shows a top view, with a slot cut in the OSB in front of the service duct (towards exterior) and a form installed to allow additional concrete to be added to the extent of the rain screen cavity. Once the form has been removed the exterior wall finish (fibre cement siding) can be installed.

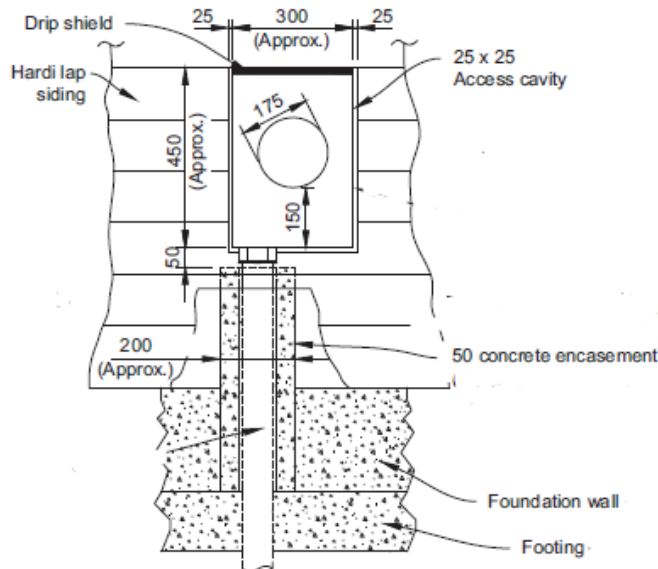


Figure 2. Option 3 front view

5.0 Reference Photos of Acceptable Installations

Option 1 – Outside of the building exterior foundation and wall (preferred)



Figure 3. Option 1 – Outside of building wall with no covering



Figure 4. Option 1 – Outside of building wall, ready for inspection and connection, covering to be installed after connection

Option 2 – Within the building exterior foundation and wall with bump out (acceptable)



Figure 5. Option 2 with concrete encasement visible for inspection

Option 3 – Within the building exterior foundation and wall with flush concrete board siding (acceptable)

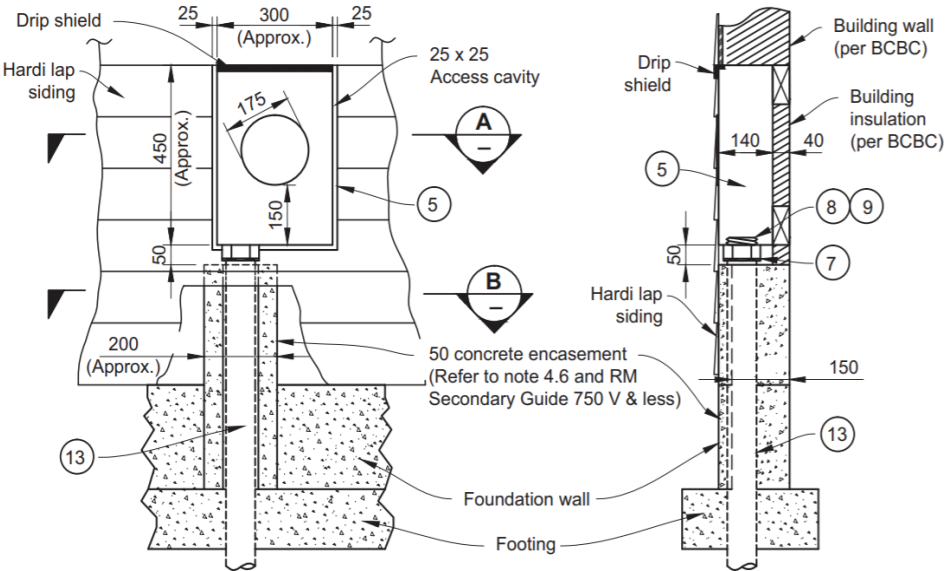


Figure 6. Option 3 front and side view

6.0 Reference Photos of Non-Compliant Installations



Figure 7. Non-compliant installations



Figure 8. Non-compliant installation with no access cavity around meter base

7.0 Service Upgrades to 200A

If an existing residential service is to be upgraded to 200A and the existing service duct and meter base allow for upgraded service conductors to be installed, BC Hydro will accept the existing installation. If the service duct or meter base needs to be upgraded, the installation shall comply with current standards.

8.0 Action

This Information Bulletin is effective November 30, 2020.

8.1 Builders and Electricians

Install residential service ducts to meet the requirements of this Information Bulletin, BC Hydro Standard ES54 S1-01 *Secondary Single-Phase Services 120/240 V up to 600 A Revenue Meter Socket Installation*, the BC Hydro Underground Service Reference Guide, and the Service Declaration. Request clarification from BC Hydro if required before scheduling a service installation to avoid service rejection. Share this communication as necessary. Contact distribution.standards@bchydro.com with the email address of any individual, company, or association that would benefit from future communications regarding BC Hydro service requirements.

8.2 BC Hydro Service Installers

Option 1 – Outside of the building exterior foundation and wall (preferred)

Verify the duct and meter base are installed on the exterior of the building foundation and wall and are visible for inspection. Installation of the duct and meter base directly onto the building sheathing and building wrap is acceptable. Inspection of covering installed after the service connection is not required.

Option 2 – Within the building exterior foundation and wall with bump out (acceptable)

Verify that 50 mm of concrete encasement exists around the duct. Concrete encasement shall be visible for inspection.

Option 3 – Within the building exterior foundation and wall with flush concrete board siding (acceptable)

Verify that 50 mm of concrete encasement exists around the duct. Concrete encasement shall be visible for inspection.




9.0 References

TSBC Directive D-EL 2017-01 <i>Exemptions to public utilities</i>	https://www.technicalsaftybc.ca/alerts/directive-exemptions-public-utilities
TSBC Information Bulletin IB-EL 2017-04 <i>Electrical Safety Regulation application to public utilities</i>	https://www.technicalsaftybc.ca/alerts/information-bulletin-electrical-safety-regulation-application-public-utilities
BC Hydro Distribution Standard ES54-S1-01 <i>Secondary Single-Phase Services 120/240 V Up To 600 A Revenue Meter Socket Installation</i>	https://app.bchydro.com/accounts-billing/electrical-connections/distribution-standards/LA-ES54-S1-01-secondary-single-phase-services-120-240V-to-600A.html
BC Hydro Information Bulletin 2018-027 <i>Concrete Encasement of Service Ducts Within Building Walls and Meter Socket Requirements</i>	https://app.bchydro.com/accounts-billing/electrical-connections/distribution-standards/LA-EA2018-027-concrete-encasement-of-service-ducts-within-building-walls-meter-socket-requirements.html

10.0 Distribution Standards Contact

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11.0 Approval

Recommended	Reviewed	Approved
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	Date: 2020-10-30	Date: 2020-10-30