



## Information Bulletin:

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

#### 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

This information bulletin provides guidance on BC Hydro's requirements for concrete encasement of underground residential customer service ducts installed within building walls and to restate the access cavity requirements for recessed meter bases.

#### 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 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 as opposed to the individual service conductors.

As such, if the service conductors become damaged or overloaded, they could become a potential fire hazard to the building or its occupants. To address this risk, service conductors are installed outside of the building or embedded in concrete in accordance with the utility and BCEC requirements.

In November 2017 Technical Safety BC (TSBC) directive D-EL 2017-01 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 BC Hydro inspector. Since that time, BC Hydro had observed numerous non-conformances and in January 2019, BC Hydro issued Information Bulletin 2018-027 which:

- Summarized the TSBC Directive
- Restated the BCEC and BC Hydro requirement for concrete encasement
- Restated the BC Hydro requirement for adequate meter base access

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

## 4.0 Current Compliance Issues

Recently, BC Hydro has observed numerous non-conformances related to the concrete encasement and meter base installation requirements. In a number of instances where the service duct has been installed within the building wall, either the concrete embedment was inadequate (i.e. less than 50 mm of encirclement) or not present at all. In addition, there have been numerous instances where the meter base has been installed without the required 25 mm access cavity around the enclosure.

These non-conformances have resulted in rejection of the service request and the need to reschedule the energization date pending correction of the deficiencies.

Samples of non-conforming installations:



Based on feedback from builders, electricians and industry associations including the Canadian Home Builders' Association of BC (CHBA BC) and the Electrical Contractors Association of BC (ECABC), there does not appear to be a common understanding of BC Hydro's requirements.

In addition, builders have expressed concern with meeting the concrete encasement requirement while conforming to other building envelope specifications and have also requested options for improving the exterior appearance of the home.

## 5.0 Next Steps

The CHBA BC has invited BC Hydro to participate in their Technical Research Committee to develop options to allow the service duct and meter base to be installed within the building wall in compliance with all applicable regulations.

While additional solutions are under development, the requirement for compliance with existing BC Hydro standards remains. However, based on builder and industry association feedback, BC Hydro acknowledges that there may be a number of homes under construction which will not comply with its standards.

To facilitate compliance with BC Hydro’s requirements, we have summarized the acceptable installation methods for service duct in table 1 below:

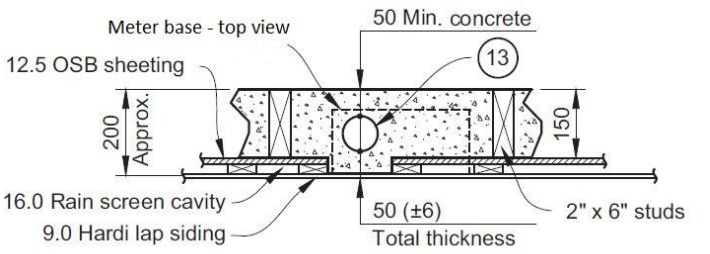
Option	Description	Notes
1	Duct mounted on exterior of building with no cover / concrete encasement	Preferred
2	Duct mounted inside the building wall with a minimum of 50 mm concrete encasement. Note that this does not fit within a standard 2 x 6 stud wall.	Acceptable
3	Duct installed within the building wall with small exterior bump out to accommodate the 50 mm of concrete encasement.	Acceptable
4	<p>Duct installed within the building wall in accordance with BC Hydro ES54 S1-01 Standard using fibre cement siding (see excerpt from standard drawing below).</p>  <p>In this top view, a slot has been 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.</p>	Acceptable

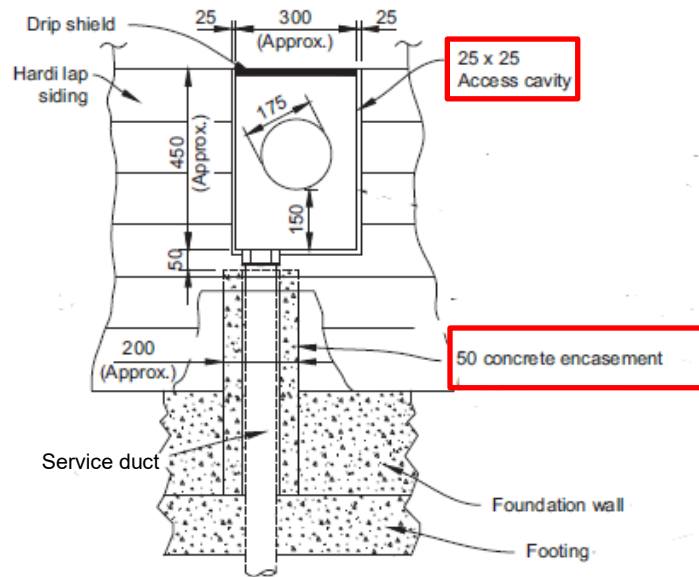
Table 1 – Service duct installation options that are compliant with BC Hydro requirements

In recognition that there may be a number of home builders and electricians that may not have received BC Hydro’s earlier communication regarding its service duct requirements, Table 2 presents two non-standard installation methods (options 5 and 6) that will be accepted by BC Hydro for an interim period of 6 months from the issue date of this bulletin:

Option	Description	Notes
5	Duct installed on exterior of building and left uncovered until inspection and service connection is complete. After the service has been connected, a removable and non-combustible aesthetic covering can be installed over the duct and meter base.	Continued acceptance of this non-standard installation method beyond the 6 month period is subject to further review by BC Hydro.
6	Duct installed inside the building wall, encased with concrete that may be less than 50 mm. This installation method is only to be used as an option of last resort where another option cannot be achieved.	This non-standard option will strictly not be accepted beyond the 6 month period.

Table 2 – Non-compliant service duct installation options that will be accepted for a period of 6 months from the date of issue of this bulletin

In all cases, the recessed meter base must be installed in a manner which allows unimpeded access for meter base cover removal. BC Hydro Distribution Standard ES54 S1-01 requires that a 25 mm access cavity is provided to facilitate access.



### Service Upgrades to 200A

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


## 6.0 References

TSBC Directive: Exemptions to public utilities D-EL 2017-01	<a href="https://www.technicalsaftybc.ca/alerts/directive-exemptions-public-utilities">https://www.technicalsaftybc.ca/alerts/directive-exemptions-public-utilities</a>
Information Bulletin: Electrical Safety Regulation application to public utilities IB-EL 2017-04	<a href="https://www.technicalsaftybc.ca/alerts/information-bulletin-electrical-safety-regulation-application-public-utilities">https://www.technicalsaftybc.ca/alerts/information-bulletin-electrical-safety-regulation-application-public-utilities</a>
BC Hydro Distribution Standard ES54-S1-01 Secondary Single-phase Services 120/240 V Up To 600 A Revenue Meter Socket Installation	<a href="https://app.bchydro.com/accounts-billing/electrical-connections/distribution-standards.html#residentialserviceconnection">https://app.bchydro.com/accounts-billing/electrical-connections/distribution-standards.html#residentialserviceconnection</a>
BC Hydro Information Bulletin 2018-027 Concrete Encasement of Service Ducts Within Building Walls and Meter Socket Requirements	<a href="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">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</a>

## 7.0 Distribution Standards Contact

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## 8.0 Approval

Recommended		Reviewed		Approved	
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Date:	2020-04-28	Date:	2020-04-28	Date:	2020-04-28