# Brisbane City Council

# Reference Specifications for Engineering Work

# S605 Traffic Signal Hardware – Pits and Lids

## Amendment Register

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| --- | --- | --- | --- |
| Ed/Rev Number | Section Number | Description | Date |
| 1.0 |  | Issue for Tender Requirements | Feb 2010 |
| 2.0 |  | Issue for Publication  All sections reviewed, | Apr 2014 |
| 3.0 | 1.3 | Referenced documents list updated | May 2016 |
| 3.0 | Reference updated |
| 4.0` | General | Document name changed from ‘Reference Specifications for Civil Engineering Work’ to ‘Reference Specifications for Engineering Work’ | Mar 2021 |
| 1.2 | Definitions wording and layout revised for clarity. |
| 1.3 | Typo corrected in text. |
| 1.4 | Reference to proposed Standard Drawing removed. |
| 3.1 | DTMR drawing reference added. |
| 3.3.1 | Rectangular pits manufacture materials expanded. |
| 3.3.2 | ‘Lid Markings’ expanded and clarified. |

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## GENERAL

### Scope

This specification outlines the technical acceptance criteria for cable jointing pits and lids (used in conjunction with traffic signals).

### Interpretation

Definitions

Superintendent: Refer *Reference Specification for Engineering Works* *S110 General Requirements, Clause 1.1*.

Contractor: Refer *Reference Specification for Engineering Works S110 General Requirements, Clause 1.1*.

Interested parties:

* Where the Principal is Brisbane City Council: the Contractor and the Superintendent;
* Where the Principal is any other person or agency: Brisbane City Council, the Superintendent, and the Contractor.

### Standards

|  |  |  |
| --- | --- | --- |
| Australian/New Zealand Standard | AS/NZS3000 | Electrical Installations (wiring rules) |
| Australian/New Zealand Standard | AS/NZS3100 | Approval and test specification – General requirements for electrical equipment |
| Australian Standard | AS3996 | Access covers and grates |
| Australian Standard | AS4586 | Slip resistance classification of new pedestrian surface materials |
| Australian/New Zealand Standard, International Standards Organization | AS/NZS ISO 9001 | Quality management systems – Requirements |

### References

Refer to the following other Reference Specifications for Engineering Work:

|  |  |
| --- | --- |
| S110 | General Requirements |
| S230 | Structural Steel |

Refer to the following Standard Drawing:

|  |  |
| --- | --- |
| BSD-1011 | Cable pit – Rectangular types |
| BSD-1012 | Cable pit – Rectangular type lids |
| BSD-4032 | Circular cable jointing pit 600 diameter – Collar |
| BSD-4033 | Circular cable jointing pit 600 diameter – Cover |
| BSD-4034 | Replacement pit cover existing round to square pit types |

Refer to the following Queensland Department of Transport and Main Roads Standard Drawing:

|  |  |
| --- | --- |
| SD 1415 | Traffic signals/Road lighting – Cable jointing pit circular 600 diameter |

## QUALITY SYSTEMS

### General

The Superintendent responsible for the management of the quality of work under the contract must maintain a Quality Assurance System with third party accreditation to *AS/NZS* *ISO* *9001*.

Responsibility for preparation of an inspection and test plan may rest with the Contractor or the Superintendent. Where the Contractor is responsible for the plan, submit it to the Superintendent for approval. Where the Superintendent is responsible for the plan, submit it to the Principal for approval.

## TECHNICAL REQUIREMENTS

### General

A pit and its lid shall be supplied as a matching pair.

If a pit and its lid are supplied by separate manufacturers, the manufacturing tolerances specified on Standard Drawings BSD-1011, BSD-1012, BSD-4032, BSD-4033 and DTMR Drawing SD 1415 must be complied with.

### Compliance Testing

All materials and manufacturing of Pits and Lids and their components are to comply with all standards and specifications referenced in this document. Conformance shall be demonstrated by submitting current certificates of all specified test results issued by a registered NATA laboratory.

### Manufacture and Material

#### Pits

Rectangular pits

Materials:

* Pits shall be manufactured out of black moulded polyethylene (or approved equivalent or alternative);
* Normal tradesman’s tools used on site shall be capable of drilling and cutting the pit material;
* The material shall be inert to minerals, acids, fluids, and other substances (i.e. when in direct contact with earth, soils, clays, sands, etc.);
* The pits shall withstand the exposure to Queensland’s weather and direct ultraviolet light;
* The pits shall have sufficient strength to resist substantial deformation when stacked in storage;
* The pits shall have sufficient strengths when subjected to mechanical stress during installation;
* The pits shall have sufficient strength when subjected in the field to pressures exerted by backfill material and hydrostatic pressures;
* Internal surfaces shall be smooth and devoid of any sharp edges or abrasive surfaces;

Dimensions and tolerances:

* Dimensions shall be as specified on *Standard Drawing BSD-1011*.
* Manufacturing tolerances shall be ±1% U.O.S.

Circular pits

Dimensions and standards:

* Circular pits to be to *DTMR Drawing SD* *1415*.

#### Lids

Security

Lids shall be lockable and shall prevent entry into the pits of harmful devices or foreign matter.

Retangular lids

Material:

* Lids may be manufactured out of, but not limited to, galvanised steel plate, cast or ductile metal, concrete, glass reinforced concrete or polymer concrete. Material to be approved by council;
* Lid material to be compatible with chosen pit type and material;
* The load capacity of the lids shall be minimum Class B to *AS* *3996* (nominal wheel loading of 2,670 kg);
* Lids shall be designed to prevent needles and syringes being disposed off (into the pits);
* The material shall be inert to minerals, acids, fluids, and other substances (i.e. when in direct contact with earth, soils, clays, sands, etc.);
* The lids shall be able withstand extended exposure to Queensland’s weather and direct ultra-violet light;

Storage:

* The lids shall have sufficient strength to resist substantial deformation when stacked in storage;

Finish:

* Surfaces shall be devoid of any sharp edges;

Dimensions and tolerances:

* Dimensions shall be as specified on *Standard Drawing BSD-1012*.
* Manufacturing tolerances shall be ±1% U.O.S.

Circular lids

Dimensions and standards:

* Circular pit lids and collars to be to *Standard Drawings BSD-4032* and *BSD-4033*.

Markings – All Lids

* Pits to be clearly and permanently marked as per the detail on Standard Drawing BSD-1012 and BSD-4033 with:
* The lettering ‘BCC’ and/or The Brisbane City Council logo; and
* Load Class as per *AS 3996*; and
* One of these identification types:
* ‘TRAFFIC SIGNAL’;
* ‘ELECTRICAL’; or
* ‘COMMUNICATIONS’.
* On the underside of the lid in accordance with *AS* *3996*:
* Manufacturer name;
* Date of manufacture (Month/Year);
* Weight of lid (in kg).