## Major Types of Electical Boxes

Technical Specifications
There are 10 major types of Electrical Boxes used in Canada.
All these types of boxes serve specific purposes and are offered with various features / characteristics.

| Type | Purpose | Features / Characteristics |
| :---: | :---: | :---: |
| Device Boxes | , Flush installation of a device (switch, receptacle, thermostat, ...) | , From 1-1/2 in. deep up to 3 in. deep <br> , Available options: cable clamps, brackets, gangable <br> , For new or old work |
| Octagonal Boxes | , Wire connections (junction box) <br> , Light fixture installation <br> , Temporary device installation | , 3 depths available: $1 / 2$ in., 1-1/2 in., 2-1/8 in. <br> - Available options: cable clamps, brackets, extensions |
| 4 in. Square Boxes | , Wire connections (junction box) <br> , Flush or surface device installation (special cover required) | , 2 depths available: 1-1/2 in., 2-1/8 in. <br> , Available options: brackets and extensions |
| 4-11/16 in. Square Boxes | - Range / Dryer receptacle installation <br> , Wire connections (junction box) <br> , Flush device installation (special cover required) | , 2 depths available: 1-1/2 in., 2-1/8 in. <br> , Available options: brackets and extensions |
| Utility Boxes | , Surface installation of a device (special cover required) | , 2 major models available: BC-1110, BC-2020 <br> , Available options: brackets and extensions |
| 347 Volt Boxes | , Installation of 347 V switches for commercial / industrial lighting | , Device mounting holes are $1 / 4 \mathrm{in}$. further apart <br> - Models available for flush or surface installation |
| Concrete Rings | , Wire connections in concrete slabs | , 1-1/2 in. deep to 6 in. deep |
| Masonry Boxes | , Device installation in masonry (concrete, bricks, ...) construction | , 2-1/2 in. deep and 3-1/2 in. deep <br> , From 1 to 6 gang |
| Pre-ganged Boxes | - Sturdy boxes for multiple device installation (special covers required) | , 2 in. deep <br> , From 2 to 6 gang |
| Power / Communication Boxes | , Installation of communication devices (cable TV, telephone, ...) side by side with power devices | , Communication devices concealed within a box or not <br> , 2 gang covers required |

## How to Select the Right Box

## Technical Specifications

The selection of the proper box for a given job, is a function of 2 major factors: the application and the type of construction

|  | APPLICATION |  |
| :---: | :---: | :---: |
| Type of Construction | Device Installation | Wire Connection |
| Flush Installation | , Device boxes and wall plates <br> , Square boxes and raised covers <br> , Pre-ganged boxes and covers | , Octagonal boxes and blank covers <br> , Square boxes and blank covers |
| Surface Installation | , Utility boxes and covers <br> , Square boxes and surface covers | , Octagonal boxes and blank covers <br> , Square boxes and blank covers |
| New Construction | , Device boxes and wall plates <br> , Utility boxes and covers <br> , Square boxes and covers | , Octagonal boxes and blank covers <br> , Square boxes and blank covers |
| Old Work | , Rework device boxes (special brackets) <br> , Device boxes plus 820-D ("F" clips) <br> , Switch Box Extension <br> , Square extension and cover <br> , Utility boxes and covers | , Octagonal rework boxes (special brackets) <br> , Octagonal extensions and blank covers <br> , Square extensions and blank covers |
| Drywall / Wood Stud | , Device boxes and wall plates <br> , Square boxes and raised covers | , Octagonal boxes and blank covers <br> , Square boxes and blank covers |
| Drywall / Metal Stud | , Steel stud device boxes and wall plates <br> , Steel stud square boxes and raised covers | , Steel stud octagonal boxes and blank covers <br> , Steel stud square boxes and blank covers |
| Masonry / Concrete | , Masonry boxes and wall plates <br> , Pre-ganged boxes and covers | , Concrete rings and covers |
| Nonmetallic Sheathed Cable | , Device boxes with "LOOMEX" cable clamps <br> - Device boxes with KOs and "LOOMEX" connectors | - Octagonal boxes with "LOOMEX" cable clamps and blank covers <br> , Octagonal / Square boxes with KOs and "LOOMEX" connectors |
| Armoured Cable | , Device boxes with "BX" cable clamps <br> , Device boxes with KOs and "BX" connectors | , Octagonal boxes with "BX" cable clamps and blank covers <br> , Octagonal / Square boxes with KOs and "BX" connectors |
| Conduit / E.M.T. | , Device boxes with conduit KOs and E.M.T. connectors or rigid conduit and locknuts | , Octagonal / Square boxes with conduit KOs and E.M.T. connectors or rigid conduit and locknuts |

The selection is also guided by the physical dimensions of the box and, to a certain extent, by some personal preferences.
Physical dimensions: In a flush installation, the depth of the box is limited by the wall thickness. The cubic capacity of the box is also a major factor to consider. According to the C.E.C., only a limited number of conductors are allowed inside a box of a given cubic capacity (see maximum wire fill chart on page A11).

Personal preferences: Device boxes are available either gangable or non-gangable. Gangable means that two or more boxes can be joined together, on the job site, to create a multi-gang box as required. Most boxes are also available with or without brackets.

Boxes with brackets are usually installed with screws running through the bracket mounting holes. There are numerous types of brackets either to satisfy a specific need (steel stud bracket or rework bracket) or simply because of personal preferences.

Boxes without brackets are usually nailed from the outside of the box or screwed in place from the inside.

## Catalogue Number Designation

Technical Specifications
Most boxes have a 2 part Catalogue Number: a PREFIX ...
The prefix identifies the Series' number, which indicates the type of box, its physical dimensions, as well as the properties of each series.

| i.e.: BC1104 is the prefix which identifies a: |  | Device Box Gangable $\quad$-1/2 in. deep (12.5 cu. in.) |
| :---: | :---: | :---: |
| Series \#: BC or CI as applicable | Cu. in. | Description |
| 425 | 10 | , Gangable Rework Device Box - 2 in. deep |
| 525 | 12.5 | , Gangable Rework Device Box - 2-1/2 in. deep |
| 775 | 10 | , Gangable Device Box - 2-1/4 in. deep |
| 777 | 11 | , Non-gangable Rework Device Box - 2-1/4 in. deep |
| 1004 | 15 | , Gangable Device Box - 3 in. deep |
| 1018 | 18.0 | , Gangable Device Box-3 in. deep |
| 1100 | 8 | , Gangable Device Box - 1-1/2 in. deep |
| 1102 | 10 | , Gangable Device Box - 2 in. deep |
| 1104 | 12.5 | , Gangable Device Box - 2-1/2 in. deep |
| 1110 | 16.5 | , Utility Box - 1-7/8 in. deep |
| 1141 | 13 | , Utility Box - 1-1/2 in. deep |
| 1151 | 18.5 | , Utility Box - 2-1/8 in. deep |
| 1199 | 18.5 | , Utility Box - 2-1/8 in. deep |
| 1204 | 16 / gang | , 347 Volt Gangable Device Box - 2-1/2 in. deep |
| 1304 | 14.5 | , Gangable Device Box - 2-1/2 in. deep |
| 1504 | 15 | , Non-gangable Device Box - 2-1/2 in. deep |
| 1804 | 18 | , Gangable Device Box - 2-1/2 in. deep |
| 2004 | 18.5 | , Non-gangable Device Box - 2-3/4 in. deep |
| 2016 | 18.5 | , Non-gangable Device Box - 2-1/2 in. deep |
| 2018 | 13 | , Utility Box - 1-1/2 in. deep |
| 2020 | 14 | , Utility Box - 1-7/8 in. deep |
| 2104 | 12.5 / gang | , Non-gangable Device Box - 2-1/2 in. deep |
| 2304 | 14.5 | , Non-gangable Device Box - 2-1/2 in. deep |
| 3004 | 18 | , Gangable Device Box - 3 in. deep |
| 3102 | 12 | , Gangable Device Box - 2 in. deep |
| 3104 | 16 | , Gangable Device Box - 2-1/2 in. deep |
| 4104 | 12.5 | , Power / Communication Box - 2-1/2 in. deep |
| 4204 | 12.5 / gang | , Power / Communication Box - 2-1/2 in. deep |
| 4304 | 12.5 | , Power / Communication Box - 2-1/2 in. deep |

## Catalogue Number Designation

## Technical Specifications

| Series \#: BC or CI as applicable | Cu. in. | Description |
| :---: | :---: | :---: |
| 52151 | 21 | , 4 in. Square Box - 1-1/2 in. deep |
| 52171 | 30 | , 4 in. Square Box - 2-1/8 in. deep |
| 53151 | 21 | , 4 in. Square Extension - 1-1/2 in. deep |
| 53171 | 30 | , 4 in. Square Extension - 2-1/8 in. deep |
| 54151 | 15 | , 4 in. Octagonal Box - 1-1/2 in. deep |
| 54171 | 21 | , 4 in. Octagonal Box - 2-1/8 in. deep |
| 54521/54591 | see page A44 | , Concrete Rings - 1-1/2 in. to 6 in . deep |
| 55151 | 15 | , 4 in. Octagonal Extension - 1-1/2 in. deep |
| 55171 | 21 | , 4 in. Octagonal Extension - 2-1/8 in. deep |
| 56111 | 5 | , 4 in. Ceiling Pan $-1 / 2 \mathrm{in}$. deep |
| 72151 | 30 | , 4-11/16 in. Square Box - 1-1/2 in. deep |
| 72171 | 42 | , 4-11/16 in. Square Box - 2-1/8 in. deep |
| 73151 | 30 | , 4-11/16 in. Square Extension - 1-1/2 in. deep |
| 73171 | 42 | , 4-11/16 in. Square Extension - 2-1/8 in. deep |
| CWB | 16.0 | , Concrete wall box |
| GSB | see page A54 | , Pre-ganged Box - 2 in. deep |
| MBD | 21 / gang | , Masonry Box - 3-1/2 in. deep |
| MBD-HV | 22.25 / gang | , 347 Volt Masonry Box - 3-3/8 in. deep |
| MBS | 14 / gang | , Masonry Box - 2-1/2 in. deep |
| MBS-HV | 20.25 / gang | , 347 Volt Masonry Box - 2-3/8 in. deep |
| OBEX | 5 | , 4 in. Round Extension - 1/2 in. deep |
| WBF | - | , Low Voltage Mounting Bracket |

## Catalogue Number Designation

## Technical Specifications

## ... and a SUFFIX

The suffix identifies the various features available for each series of boxes (in most cases, the suffix is strictly alphabetical).
i.e.: $L$ is the suffix which identifies a box having: Cable clamps for nonmetallic sheathed cable.


## Catalogue Number Designation

## Technical Specifications

## Catalogic

LN . . . . . . . . . .Clamps for nonmetallic sheathed cable or armoured cable. Staked nails.
LRB . . . . . . . . .Clamps for nonmetallic sheathed cable or armoured cable and pivoting ends for "rework" installation
LRE . . . . . . . . . Clamps for nonmetallic sheathed cable or armoured cable. Recessed ears.
LRW . . . . . . . .Clamps for nonmetallic sheathed cable or armoured cable and spring mounting device for installation in finished walls
LSBA . . . . . . . .Clamps for armoured cable or nonmetallic sheathed cable and side bracket
LSSA1X-1 . . . .Clamps for armoured cable or nonmetallic sheathed cable, mounting strap for steel stud installations and integral additional support bracket. Recessed 1 in.
LSSA-2X . . . . .Clamps for armoured cable or nonmetallic sheathed cable, mounting strap for steel stud installations and integral additional support bracket. 2 gangs.
LSSA-3X . . . . .Clamps for armoured cable or nonmetallic sheathed cable, mounting strap for steel stud installations and integral additional support bracket. 3 gangs.
LSSAX . . . . . . .Clamps for armoured cable or nonmetallic sheathed cable, mounting strap for steel stud installations and integral additional support bracket
LSSAX-HV . . . .Clamps for nonmetallic sheathed cable or armoured cable, mounting strap for steel stud installations and integral additional support bracket. High voltage.
LSSAX-1 . . . . .Clamps for armoured cable or nonmetallic sheathed cable, mounting strap for steel stud installations and integral additional support bracket. Recessed 1 in.
LSSX . . . . . . . .Clamps for nonmetallic sheathed cable or armoured cable, mounting strap for steel stud installations and integral additional support bracket
LSS2X . . . . . . . Clamps for nonmetallic sheathed cable or armoured cable, mounting strap for steel stud installations and integral additional support bracket. 2 gangs.
LSS3X . . . . . . .Clamps for nonmetallic sheathed cable or armoured cable, mounting strap for steel stud installations and integral additional support bracket. 3 gangs.
LSSX-1 . . . . . .Clamps for nonmetallic sheathed cable or armoured cable, mounting strap for steel stud installations and integral additional support bracket. Recessed 1 in.
LSS1X-1 . . . . .Clamps for nonmetallic sheathed cable or armoured cable, mounting strap for steel stud installations and integral additional support bracket. Recessed 1 in. 1 gang box.
LSS2X-1 . . . . .Clamps for nonmetallic sheathed cable or armoured cable, mounting strap for steel stud installations and integral additional support bracket. Recessed 1 in. 2 gang box.
LSS3X-1 . . . . .Clamps for nonmetallic sheathed cable or armoured cable, mounting strap for steel stud installations and integral additional support bracket. Recessed 1 in. 3 gang box.
LX . . . . . . . . . . Self-locking spring clamps for nonmetallic sheathed cable
LV ............ . .V style bracket
P . . . . . . . . . . .Partition
R . . . . . . . . . . Utility box extension
SB . . . . . . . . . . Side bracket
SSX . . . . . . . . .Mounting strap for steel stud installations and integral additional support bracket
SSX-HV . . . . . .Mounting strap for steel stud installations and integral additional support bracket. (Mounting ears spaced for high voltage devices)
SSX-1 ....... .Mounting strap (offset for $2 \times 1 / 2$ in. drywall thicknesses) for steel stud installations and integral additional support bracket.
VB . . . . . . . . . .Vapour barrier
1/2 . . . . . . . . . $1 / 2$ in. conduit knockouts
1 . . . . . . . . . . . 1 in. conduit knockouts

[^0]Technical Specifications
Gangable
Non-Gangable

|  | Depth | 1-1/2 | 2 | 2 | 2 | 2-1/4 | 2-1/2 | 2-1/2 | 2-1/2 | 2-1/2 | 2-1/2 | 2-1/2 | 2-1/2 | 3 | 3 | 3 | 2-1/4 | 2-1/2 | 2-1/2 | 2-1/2 | 2-3/4 | 2-1/2 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Cu. in. | 8.0 | 10.0 | 10.0 | 12.0 | 10.0 | 12.5 | 12.5 | 14.5 | 12.5 | 12.5 | 16.0 | 18.0 | 15.0 | 18.0 | 18.0 | 11.0 | 12.5 | 14.5 | 15.0 | 18.5 | 25.0 |
|  | Series \# BC / Cl | 1100 | 1102 | 425 | 3102 | 775 | 525 | 1104 | 1304 | 4104 | 4304 | 3104 | 1804 | 1004 | 1018 | 3004 | 777 | 2104 | 2304 | 1504 | 2004 | 4204 |
|  | Basic Model |  | $\checkmark$ | $\checkmark$ |  |  |  | $\checkmark$ |  |  |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |  |
|  | B |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | K |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | KSSX |  |  |  |  |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |  |  | $\checkmark$ |
|  | KSS1X-1 |  |  |  |  |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |
|  | LE |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | SB |  | $\checkmark$ |  |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | SSX |  |  |  | $\checkmark$ |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |
|  | L | $\checkmark$ | $\checkmark$ | $\checkmark$ |  | $\checkmark$ | $\checkmark$ | $\checkmark$ |  | $\checkmark$ |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |  |
|  | LB |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |  |
|  | LD |  |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | LH |  | $\checkmark$ |  |  |  |  |  |  |  |  | $\checkmark$ | $\checkmark$ | $\checkmark$ |  | $\checkmark$ |  |  |  |  | $\checkmark$ |  |
|  | LHT |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | LHTQ |  |  |  |  |  |  |  | $\checkmark$ |  |  | $\checkmark$ |  |  | $\checkmark$ |  |  |  | $\checkmark$ |  |  |  |
|  | LLE | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\checkmark$ |  | $\checkmark$ |  |  |
|  | LHTQ-2/LLE-2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |
|  | LHTQ-3/LLE-3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |
|  | LHTQ-4/LLE-4 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |
|  | LMS |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |  |  |  | $\checkmark$ |  |  |  |
|  | LN |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |
|  | LRB |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |  |
|  | LRE | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | LRW |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | LSSX |  |  |  |  |  |  |  |  |  | $\checkmark$ | $\checkmark$ |  |  |  | $\checkmark$ |  | $\checkmark$ |  |  |  | $\checkmark$ |
|  | LSS2X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |
|  | LSS3X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |
|  | LSSX-1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |  |  |
|  | LSS1X-1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |
|  | LSS2X-1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |
|  | LX |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\checkmark$ |  |  | $\checkmark$ |  |
|  | LA |  |  |  |  |  |  | $\checkmark$ |  | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |
|  | LBA |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | LHA |  |  |  |  |  |  | $\checkmark$ |  |  |  | $\checkmark$ | $\checkmark$ | $\checkmark$ |  |  |  |  |  |  | $\checkmark$ |  |
|  | LLEA |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |
|  | LLEA-2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |
|  | LMSA |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | LSBA |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | LSSAX |  |  |  | $\checkmark$ |  |  |  |  |  | $\checkmark$ | $\checkmark$ |  |  |  |  |  | $\checkmark$ |  | $\checkmark$ |  | $\checkmark$ |
|  | LSSA-2X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |
|  | LSSA-3X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |
|  | LSSAX-1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |  | $\checkmark$ |
|  | LSSA1X-1 |  |  |  |  |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |

## Other types of Boxes－Available Models

## Technical Specifications

|  |  |  |  | Conduit Knockouts |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | NMD90 Clamps |  |  | AC90 Clamps |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Types of Boxes | Depth | Cu．in． | Series \＃ BC or CI as applicable | $\vec{W}$ <br> $\sum_{0}$ <br> $\frac{0}{5}$ <br> $\mathbf{c}$ |  |  | $\begin{array}{\|l} \stackrel{\rightharpoonup}{2} \\ \stackrel{2}{2} \\ \stackrel{\rightharpoonup}{2} \\ \stackrel{\rightharpoonup}{r} \\ \hline \end{array}$ | $\pm$ |  | $\stackrel{\rightharpoonup}{\sim}$ | ¢ | $\pm$ | \％ | － | 㜽 | $\geq$ | 密 | $\propto$ | ¢ | $-$ | $\because 9$ |  | $\leq$ | 논 | 孛 |  |
|  | 2－3／8 | 16.5 | 1110 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 347 Volt | 2－1／2 | 16.0 | 1204 |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\checkmark$ |  | $\checkmark$ |
| Device Boxes | 2－3／8 | 16.5 | MBS |  |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 3－3／8 | 20.24 | MBD |  |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 1／2 | 5.0 | 56111 | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Octagonal Boxes | 1－1／2 | 15.0 | 54151 |  | $\checkmark$ |  |  |  |  |  |  | $\checkmark$ |  | $\checkmark$ |  | $\checkmark$ |  |  | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |  | $\checkmark$ |  |  |
|  | 2－1／8 | 21.0 | 54171 |  |  |  |  |  |  |  |  | $\checkmark$ |  | $\checkmark$ | $\checkmark$ | $\checkmark$ |  |  | $\checkmark$ | $\checkmark$ | $\checkmark$ |  |  |  |  |  |
|  | 1／2 | 5.0 | OBEX | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Octagonal Extensions | 1－1／2 | 15.0 | 55151 |  |  |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 2－1／8 | 21.0 | 55171 |  |  |  |  |  |  |  |  | $\checkmark$ |  | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 in．Square | 1－1／2 | 21.0 | 52151 |  |  |  |  |  |  |  |  | $\checkmark$ | $\checkmark$ | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |
| Boxes | 2－1／8 | 30.0 | 52171 |  |  | $\checkmark$ |  |  |  |  |  | $\checkmark$ | $\checkmark$ |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |  |  |
| 4 in．Square | 1－1／2 | 21.0 | 53151 |  |  |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Extensions | 2－1／8 | 30.0 | 53171 |  |  |  |  |  |  |  | $\checkmark$ | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4－11／16 in． | 1－1／2 | 30.0 | 72151 |  |  |  |  |  |  |  |  | $\checkmark$ |  | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |
| Square Boxes | 2－1／8 | 42.0 | 72171 |  |  | $\checkmark$ |  |  |  |  |  | $\checkmark$ | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4－11／16 in． | 1－1／2 | 30.0 | 73151 |  |  |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Square Extensions | 2－1／8 | 42.0 | 73171 |  |  |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 1－1／2 | 13.0 | 2018 | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |
| Utility Boxes | 1－7／8 | 14.0 | 2020 | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  | $\checkmark$ | $\checkmark$ |  |  |  |  |  |  |  |
| and Extensions | 1－7／8 | 16.5 | 1110 | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  | $\checkmark$ | $\checkmark$ |  |  |  |  |  |  |  |
|  | 1－1／2 | 13.0 | 1141 | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Masonry | 2－1／2 | 14.0 | MBS |  |  |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Boxes | 3－1／2 | 21.0 | MBD |  |  |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Pre－Ganged Boxes | 2 | 52.0 | GSB |  |  |  |  |  |  | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 1－1／2 | 18.0 | 54521 | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 2 | 24.0 | 54531 | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 2－1／2 | 30.0 | 54541 | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Concrete | 3 | 36.0 | 54551 | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Rings | 3－1／2 | 42.0 | 54561 | $\checkmark$ | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 4 | 48.0 | 54571 | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 5 | 60.0 | 54581 | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 6 | 72.0 | 54591 | $\checkmark$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## Features, Brackets, Clamps, Knockouts

## Technical Specifications

IBERMLE' steel boxes and covers are manufactured from hot dipped galvanized steel sheet. Hot dipped galvanizing is one of the most effective methods of protecting bare steel from corrosion. This zinc coating is uniformly distributed both inside and outside the box, and not only protects the surface of the steel but also sacrifices itself through galvanic action to prevent corrosion at edges, holes (plain or tapped) and possible scratches. The use of hot dipped galvanized steel sheet ensures full zinc protection for all IBERMLLE‘ steel boxes and covers.


IBERVLE* steel boxes incorporate numerous features which result in boxes rugged enough to stand up against the severest abuse.
, Pre-set positioning tabs for perfectly aligned installation
, Formed stabilizing embosses, which prevent rocking and will not flatten under the impact of a hammer
, The Wedgelock system, which locks sides even tighter together when installed
Diamond shaped pryouts, for easy removal
, Loomex cable clamps, with supporting legs that maintain elevation for easier cable entry
, Combination "slot / Robertson head" screws, which allow the use of more than one type of screwdriver
Large pan head ground screws above two wire retainers
, Various types of brackets for different applications
Rework Mounting Systems*

[^1]

## Maximum Wire Fill Chart

## Technical Specifications

The Canadian Electrical Code specifies that the maximum number of conductors to be contained in a box is determined by the following factors:
, The total volume of the box assembly (box, extension, raised cover)
, The size (AWG) of the insulated conductors
, The presence of one or more fixture studs or hickeys
, The number of wire connectors in the box
, The presence and thickness of flush devices mounted on a single strap

The table below indicates the maximum number of conductors allowed in a box containing 0 or 1 wire connectors and no fixture stud, hickey or flush device.

| Space for conductors in boxes |  |
| :---: | :---: |
| Size of <br> Conductors <br> (AWG) | Usable space <br> required for <br> each Insulated <br> Conductor <br> (cu. in.) (cu. cm.) |
|  | 1.50 |
| 24.6 |  |
| 14 | 1.75 |
| 12 | 28.7 |
| 10 | 2.25 |
| 36.9 |  |
| 8 | 2.75 |
| 6.50 | 73.1 |


| Cubic Inch Capacity * (Milliliter) |  | Box Series No. <br> ( BC or Cl as applicable) | Maximum Number of Conductors ** (with 0 or 1 wire connectors) |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 14 <br> AWG | $\begin{gathered} 12 \\ \text { AWG } \end{gathered}$ | $\begin{gathered} 10 \\ \text { AWG } \end{gathered}$ | $\begin{gathered} 8 \\ \text { AWG } \end{gathered}$ |
| 5 | (81) |  | 56111, OBEX | 3 | 2 | 2 | - |
| 8 | (131) | 1100 | 5 | 4 | 3 | 2 |
| 10 | (163) | 425, 775, 1102 | 6 | 5 | 4 | 3 |
| 11 | (180) | 777 | 7 | 6 | 4 | 4 |
| 12 | (197) | 3102 | 8 | 6 | 5 | 4 |
| 12.5 | (204/gang) | 525, 1104, 2104, 4104, 4204, 4304 | 8 | 7 | 5 | 4 |
| 13 | (213) | 1141, 2018 | 8 | 7 | 5 | 4 |
| 14 | (229/gang) | 2020, MBS | 9 | 8 | 6 | 5 |
| 14.5 | (237) | 1304, 2304 | 9 | 8 | 6 | 5 |
| 15 | (245) | 1004, 1504, 54151, 55151 | 10 | 8 | 6 | 5 |
| 16 | (262/gang) | 1004-LB, 1204, 3104 | 10 | 9 | 7 | 5 |
| 16.5 | (270) | 1110, 1110-HV | 11 | 9 | 7 | 6 |
| 18 | (295) | 1018, 1804, 3004, 54521 | 12 | 10 | 8 | 6 |
| 18.5 | (303) | 1151, 1199, 2004 | 12 | 10 | 8 | 6 |
| 20.25 | (331/gang) | MBS-HV | 13 | 11 | 9 | 7 |
| 21 | (344/gang) | 52151, 53151, 54171, MBD | 14 | 12 | 9 | 7 |
| 22.25 | (364/gang) | MBD-HV | 14 | 12 | 9 | 8 |
| 24 | (393) | 54531 | 16 | 13 | 10 | 8 |
| 25 | (410) | 2104 (2 gangs) | 16 | 14 | 11 | 9 |
| 27 | (442) | 2304 (2 gangs) | 18 | 15 | 12 | 9 |
| 30 | (491) | 52171, 53171, 72151, 73151 | 20 | 17 | 13 | 10 |
| 36 | (590) | 54551 | 24 | 20 | 16 | 13 |
| 37.5 | (614) | 2104 (3 gangs) | 25 | 21 | 16 | 13 |
| 39.5 | (647) | 2304 (3 gangs) | 26 | 21 | 17 | 17 |
| 42 | (688) | 54561, 72171, 73171 | 28 | 24 | 18 | 15 |
| 50 | (819) | 2104 (4 gangs) | 33 | 28 | 22 | 18 |
| 52 | (853) | 2304 (4 gangs) | 34 | 29 | 23 | 18 |

[^2]
[^0]:    When joined together, they identify a particular box and nothing else.
    Therefore, $\mathbf{B C 2 1 0 4}$-LX represents a non-gangable device box, $2-1 / 2$ in. deep with self-locking clamps for nonmetallic sheathed cable.

[^1]:    * C.E.C. 2012 Rule 12-3010 (2)

    Where ganged sectional boxes are used, they shall be secured to metal supports or to wooden boards at least 19 mm thick that are rigidly secured to the structural units.

[^2]:    * When a single strap device is more than 1 in. thick, reduce box capacity by: 5 cu . in. x thickness of device
    ** The maximum number of conductors shown in the table must be reduced in each of the following cases:
    , One conductor, if the box contains one or more fixture studs or hickeys
    , One conductor for every additional pair of wire connectors (1 conductor for 2 or 3 wire connectors, 2 conductors for 4 or 5 wire connectors...)
    , Two conductors for each single strap flush device up to 1 in. thick
    , 1 cu. in. $=16.4$ milliliter = 16.4 cubic centimeter
    1 cubic centimeter $=1$ milliliter $=0.061 \mathrm{cu}$. in.

