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# Prysmian Group



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### Introduction.

This guide addresses the acceptable methods and details for installation of Prysmian Underground Link Disconnecting Boxes, (ULDB's).

The purpose of this document is to serve as a guideline, and is not intended for any specific installation project or works. It is understood there are alternative ways that might be required and/or recommended based on site, project or work conditions.

Prysmian reserves the right to alter this guideline.

### **General Description**

This guide details of the requirements for handling and installation of Prysmian "Tailed" and Un-tailed", ULDB's.

It should be used in conjunction with the Local Rules, Risk Assessment and Method Statements related to the movement, installation and reinstatement of the products stated.

This guide does not presume to modify or supersede those procedures.

The information provided will aid the user in the selection of and use of appropriate equipment prior to moving, lifting, repositioning and reinstatement of the product.

Ensure you have appropriate tooling to unpack the ULDB from its pallet to aid lifting.

Ensure you note the stated component part weights detailed herein and provided on the side of each ULDB prior to performing any manual lift of the component parts.

Ensure you are wearing appropriate PPE; safety glasses, protective gloves and shoes are a minimum requirement to unpack the ULDB.

### **Storage Conditions.**

The ULDB's stated within this document can be stored outside without causing any deleterious effects to its components.

#### **Example of typical outdoor storage:**







## **Eye Bolts Information**

Eye bolts are provide in the base assembly and are labelled accordingly. There are four eyebolts per base assembly and ULDB's need to be unpacked accordingly to access the eye bolts.

Eye bolt specification:

Dimensions reflective of BS 4278 :1984 – Table 1, SWL 0.4 tonnes.



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### Palletised Movement of 2 and 4 way Un-tailed ULDB's.

Dimensions related to pallet size and preferred fork insertion direction for movement.

#### 2 way un-tailed ULDB.

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### **Unpacking of ULDB's**

- 1. Using appropriate tooling and PPE, cut and remove the transport straps securing the ULDB to the pallet.
- 2. Using the approved pavement cover lifting key, unlock and remove the paving slab. Place the key through the lock hole and rotate through 90° and lift the cover to remove.
- 3. Lift and remove the steel frame and set aside for later. **Note**: this is the heaviest individual part to be lifted manually.
- 4. Remove the four height adjusting screws and plates and set aside for later.
- 5. Remove any tool kits and jointing materials from inside the pit segments.
- 6. Remove any joining shells if provided and place items for use later.
- 7. Remove the additional pit segments to reveal the lifting eyes.
- 8. Follow the lifting instructions herein.

#### Short and long handle pavement keys.



### Sling Movement of ULDB's

Dimensions related to eye bolt spacing, minimum "Reach Length" of chain and maximum "Included Inclination Angle" are shown as below. These are recommended so that damage is not caused to the link box during the lifting operation.

The previous operations and methodology should be carried out prior to the lifting by slings of the link box from its pallet. Follow Local Rules, Risk Assessment and Method Statements.

The following should be used as a guideline:

- ENSURE THAT LINK CHAMBER COVERS ARE STILL INSTALLED
  - This reduces risk of damage to seals and seal faces and prevents ingress of foreign bodies and media.
  - Ensure the lifting point is over the centre of gravity. Any loose parts of the load should be removed or secured. Secure the sling firmly to the lifting eyes provided by shackles.
  - Do not exceed the rated angle or minimum reach length of slings.
  - Ensure the load is free to be lifted and not secured to the pallet.
  - It is advised that a trial lift is made by raising the link box a little to ensure it is balanced, stable and secure and if not, lower it and adjust the slinging arrangement to suit.
  - Where appropriate use tag lines to control the load and affix at the zones detailed.

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### Slinging information of all ULDB's

Images show Base Assembly with light weight slab, lift weight quoted is for lifting Base Assembly only.

#### 2 way Un-tailed ULDB.

Gross weight 34Kg.



4 way Un-tailed ULDB.









### **ULDB Installation Process.**

ULDB's covered by this document meet EN124 Class B125 only. It is suitable for use in the grass verges of roads, in footways, pedestrian areas and car parking areas. It is **NOT** to be installed in the surface of normally trafficked highways where fast moving vehicles have access.

The ULDB jointing bay should allow for easy access to complete the installation and allow such equipment to complete an effective reinstatement without causing damage to the ULDB.

The ULDB should be installed on a firm compacted level base and be at a minimum depth of 550mm and a maximum depth of 620mm to allow adjustment of the paving cover to meet the pavement level. Pit segments, (Chamber rings) when stacked allow 150mm of adjustment of depth and can be used to increase the installed depths where appropriate.

A firm compacted base should be prepared to meet the current requirements of the "Highway Authorities & Utilities Committee" - Roads and Street Works Act – Specification for the Reinstatement of Openings in Highways. (HAUC)



#### **Procedure:**

This procedure is a guide only and is used to show a typical stepped process, the procedure should not overwrite any live jointing, continuity bonding or Local Rules and Codes of Practices applicable.

- 1. Prepare joint hole.
- 2. Prepare firm compacted base as detailed in HAUC document listed above.
- 3. Place a light weight slab on the compacted base in the correct position.
- 4. Using the appropriate lifting equipment, lift the ULDB base assembly into the joint hole and place on to the light weight slab in the correct position and orientation.

### a. ENSURE THAT LINK CHAMBER COVERS ARE STILL INSTALLED.

- b. This reduces risk of damage to seals and seal faces and prevents ingress of foreign bodies and media
- 5. Follow all Local Rules and Codes of Practice to ensure ULDB is suitably isolated and can be jointed onto accordingly.

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  - 6. For Tailed ULDBS: straighten cores and joint using supplied manufacturers jointing instruction, go to point 27.

- 7. For Un-tailed ULDB's continue from here.
- 8. To avoid crossing the cores of the waveform cable the colour rotation of cores should be chosen to line up with the cable emerging from the centre section of the box.
- 9. Clean, degrease and abrade the outer PVC sheath for a distance of 50mm.
- 10. Each length of waveform cable should be stripped to the dimensions shown below.
- 11. Set up the waveform cores so that they align with the cores protruding from the ULDB.
- 12. Clean the ULDB cores and apply the mastic provided in the position shown, remove the backing tapes and press firmly onto the cores.
- 13. Remove the XLPE insulation from the ULDB, these are generally prepared by Prysmian so that they can be removed easily.
- 14. Install mechanical connectors on to the appropriate cores and cable phases.
- 15. Tighten the shear bolts progressively and in pairs until they shear accordingly.
- 16. Ensure you clean the connectors and remove all sheared components.
- 17. Either: install the CR sheet patches around each connector and secure with PVC tape in a tight wrap so they don not touch the shell set when applied, or if connector shrouds are supplied snap over the top shroud to envelop the connector assembly.
- 18. Trim the earth or neutral earth conductors to length on both the ULDB and the cable tail so that they overlap sufficiently enough to allow the CNE shear bolt connector to be installed.
- 19. Install the CNE connector and shear the bolt accordingly.
- 20. Clean and remove the sheared components.
- 21. Trim the shell set ends to fit the cable being installed onto the ULDB.
- 22. Slide in the lower shell halve and align with the end cap groove accordingly.
- 23. Remove the backing tape from the foam tape applied.
- 24. Fit the top shell halve.
- 25. Install the metal clips and brown mastic putty supplied to ensure no resin leaks from the assembly.
- 26. Fill each joint shell with the amount of resin required.
- 27. Reassembly each pit segment onto the base assembly.
- 28. Install the height adjusters.
- 29. Note any cable routing paths required and mark up the supplied route markers accordingly.
- 30. Affix the markers into the top pit segment with screws supplied.
- 31. Place toolkits onto link chamber lids.
- 32. Replace the metal frame and seat onto the height adjusters
- 33. Level the frame with the pavement height using the adjusters.
- 34. Refit the pavement cover and lock in position.
- 35. Check pavement level and adjust using the height adjusters if required.
- 36. Prior to reinstatement ensure joint shells and cables are supported adequately and resin has cured.
- 37. Using the appropriate materials, reinstate the backfill, refer back to the HAUC





document quoted for number of layers, depth of layers and number of passes required for the selected material and compaction method.

- 38. During the initial compaction around the joint shells and cables it is important to ensure that they are not over compacted so as not to disturb their positions.
- 39. Complete the reinstatement to the required level following the Local Requirements for the finished layer.

#### **Un-tailed ULDB Cable Preparation Dimensions.**

#### WAVEFORM CABLE







### Chamber Lid Refit and Removal Instruction.

#### <u>Re-fitting the chamber with the insulated toggle tool. (Clockwise Rotations)</u>



Place lid onto chamber walls and ensure it is seated.



Press lid down, using the insulated toggle tool, depress the toggle downwards and rotate though  $45^{\circ}$  (1/8<sup>th</sup> of a turn).



Toggle turned through 45° or 1/8<sup>th</sup> turn.



Repeat for opposing toggle.



Both centre toggles turned through 45° or 1/8<sup>th</sup> turn.



Turn the next indicated toggle through 90° until it locks and clicks.

**Note**: always press toggles down before rotating, do not over rotate, central toggles may pop up when completing the remaining toggles, this is normal, continue until complete.

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locks and clicks.



Turn the next indicated toggle through 90° until it Turn the next indicated toggle through 90° until it locks and clicks.





locks and clicks.

Turn the next indicated toggle through 90° until it Turn the next indicated toggle through 45° until it locks and clicks.



Turn the next indicated toggle through 45° until it locks and clicks.





### <u>Removal of the chamber with the insulated toggle tool. (Anti-Clockwise Rotations)</u>



Chamber lid in its fully locked position. Note that toggles are fully down.



Using the insulated toggle tool, rotate the indicated toggle though 90° anti-clockwise. Toggle will only lift when fully rotated.



Image showing toggle released and lifted.



Turn the next indicated toggle through 90° until it lifts.



Turn the next indicated toggle through 90° until it Turn the next indicated toggle through 90° until it lifts.



lifts.

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Turn the next centre toggle through 90° until it lifts. The lid may lift at this slightly at this point and is normal.



Turn the opposing centre toggle through 90° until it lifts.

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### **Further Information.**

For datasheets of the included product please visit: <u>https://www.biconcomponents.co.uk/biclinkboxes.html</u>

For product video please visit: https://www.biconcomponents.co.uk/Videos.html

Important Notice To Users

#### DISCLAIMER

1. The information contained in these installation instructions is intended to describe the correct method of installing cable accessories under normal conditions. Prysmian has no control over site conditions that may affect installation, and it is the responsibility of the installer to ensure the site is suitable.

2. Installation must always be carried out by a properly trained competent person.

3. Prysmian's liability in respect of all products supplied by it are set out in its Conditions of Sale, a copy of which is available on request.

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