

## TI 260-1 Description of IP 4 SB Coupler Installation Method

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#### **Description of IP 4 SB Coupler Installation Method**

### **General**

Special IP 4 SB (Segmental Bridge) Coupler is designed for pressure and corrosion tight connections of internal bonded post-tensioning tendons in pre-cast segmental structures. The SB Coupler with its small outer dimensions can also be used in multi tendon designs with small tendon to tendon distances and is designed to cover a maximum segment to segment installation tolerance of 50 mm caused e.g. by part tolerances, pipe elongation caused by temperatures, pipe cutting and welding, formwork and segment to segment gap.

### **SB Coupler parts**

SB Coupler consists of:

- 2 'Outer Couplers'
- 1 'Inner Coupler'
- 1 Sealing No 1
- 1 Sealing No 2

For the installation also 2 ends caps for temporary use which can be multiple used as well a PESTEC IP 4 duct butt welding equipment are required.

#### **Delivery options**

PESTEC offers 3 options for part deliveries.

Option 1 are prefabricated segment ducts including welding of 'Outer Couplers'.

Option 2 is delivery of ducts in final segment length and SB Couplers separately

Option 3 is delivery of ducts in standard length and SB couplers separately.

Depending on client's decision, number 1 and/or 2 of the installation procedure may be neglectable.

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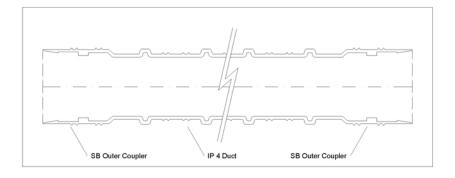


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#### **SB** Coupler installation procedure

- Cut the duct by first marking the duct in the intermediate duct section between the big ribs to final segment length minus 150 mm (-2x85 mm (Outer Coupler length) = -170 mm + 20 mm butt welding lost (4x5 mm)).
  - Cut the duct at duct marking length +5mm minimum each side (consider kind of cutting tool and method and if cut by hand possible cutting angle). Remember duct welding to 'Outer Coupler' is possible in the intermediate section between big ribs only, so also marking and cutting needs to be in this section.
  - Cutting over length to pipe marking will be reduced during duct end planning in the butt welding equipment.
- 2. Butt weld 1 'Outer Coupler' to each duct end using the butt welding operation manual.



- 3. Fix duct in segment reinforcement.
- 4. Close 'Outer Coupler' using ends caps.
- 5. Concrete the new segment.
- 6. Remove formwork and end caps and check clean inner surface of the 'Outer Couplers'. Clean end caps from concrete.

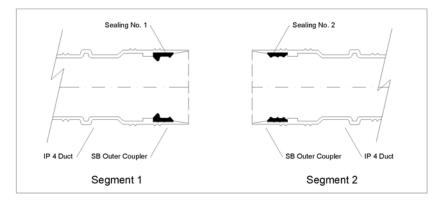
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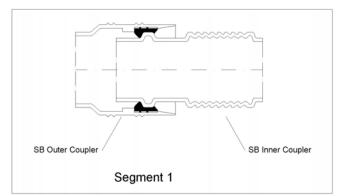
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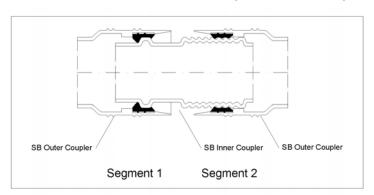
Insert sealing no 1 (big part to inside, small part to outside) into the groove of the Outer Coupler of existing segment 1



- 8. Insert sealing no 2 (big part to inside, small part to outside) into the groove of the Outer Coupler of new segment 2.
- 9. Lube sealings using e.g. oil or soap.
- 10. Push 'Inner Coupler' with 'pipe design end' into the 'Outer Coupler' of existing segment



11. Place new segment 2 against segment 1. The multi-rib part of the 'Inner Coupler' will slide and self locate into the sealing no 2 of new segment.



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