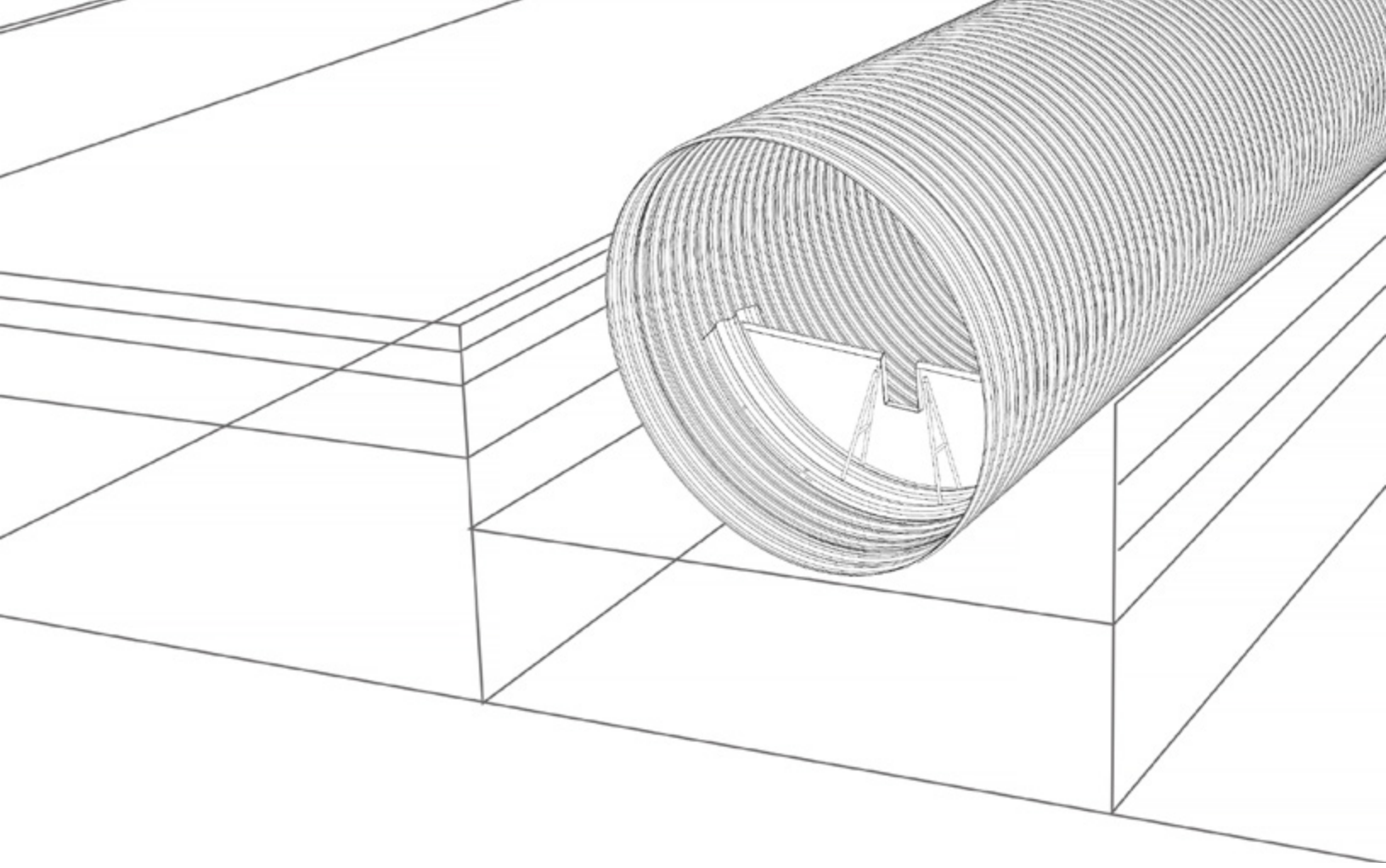


REMOVABLE FISH WEIR

INSTALLATION GUIDE

INSTALLATION INSTRUCTIONS FOR A REMOVABLE FISH WEIR IN A STEEL CULVER

STEPS

REV 06.2020

STEP 1
BEFORE STARTING WORK

In case of discrepancy between the instructions contained in this guide and those contained in the plans and specifications, please contact your Soleno sales representative.

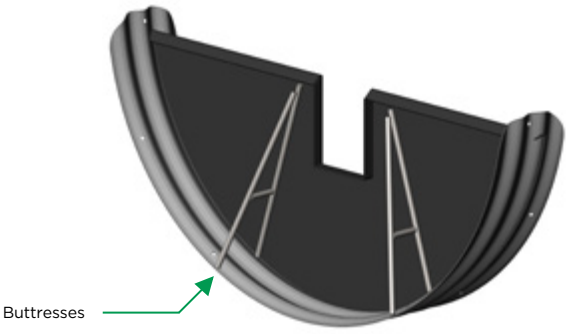
Contact your Soleno sales representative at least 48 hours before work begins. A visit from your authorized Soleno representative is recommended after receipt of the materials on site or/and before the work begins.

Required tools and equipment

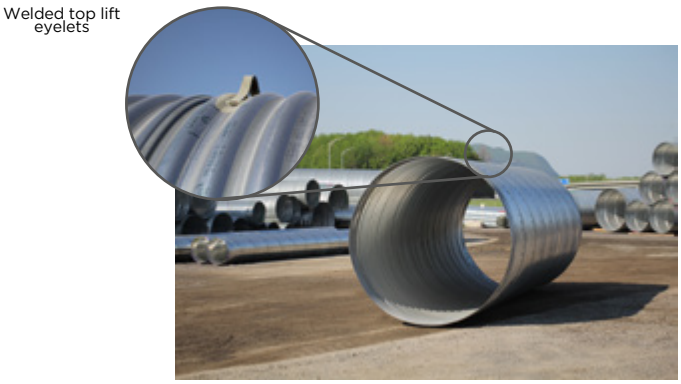
- Wooden adapter type 4 x 4, consult Table 1 *Length of the wooden adapter*
- Wrench (optional : ratchet) 9/16 in
- Chalk line or equivalent
- Hydraulic jack, cylinder style, minimum 4 tons
- 9/16 in deep socket
- Indelible marker
- Rubber hammer or mass
- Bubble level
- Impact drill with 1/2 in chuck
- Hand drill with 3/8 in drill bit
- Caulking gun
- Hearing protection
- Measuring tape

STEP 2
INSPECTION OF THE MATERIAL

Upon receipt of the materials, ensure that all items required on the slip are delivered and in good condition. Please notify immediately your Soleno representative in case of damage.



Removable fish weir



Steel culvert

Additional material supplied by Soleno (if the weirs are installed on site)

- Grade 8 anchor bolts (3/8 in by 1.25 in long), nuts and washers, steel (zinc), supplied by Soleno
- Sika 221 sealant (only)

STEP 3
HANDLING

Weirs
Follow the manual method to move the weirs individually, respecting the health and safety rules in force.

Culverts
Steel culverts can be handled using a loader, forklift or excavator, equipped with a “Y” sling, so that there are 2 lifting points.

With or without lifting eyelets welded to the culvert, follow the rules of the *Association paritaire pour la santé et la sécurité du travail du secteur de la construction* (ASP Construction).

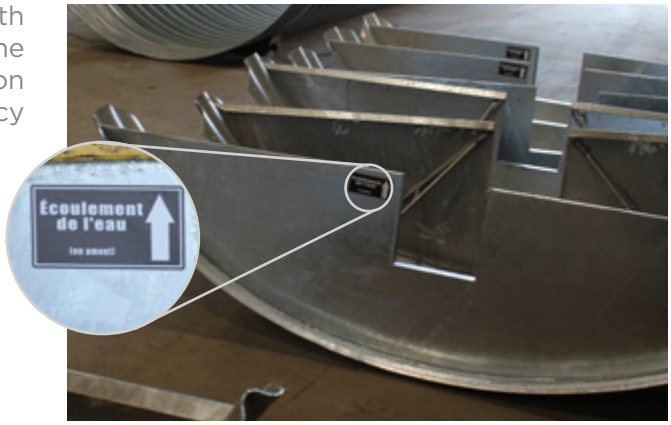
Before continuing
If the weirs have been pre-installed (in factory) in the pipe, skip to step 8.

STEP 4
STREAM SLOPE

Culverts equipped with weirs must be installed in accordance with *Table 1 - Maximum slope of the watercourse on the basis of the length of the conduits* in Schedule 10 of the Regulation Respecting the Sustainable Development of Forests (RRSDF), which varies with the length of the culvert.

STEP 5
DIRECTION OF INSTALLATION

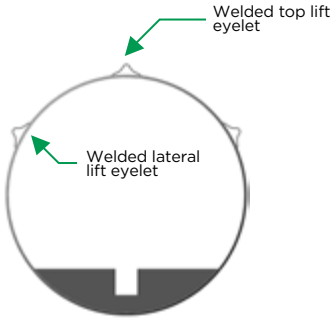
The direction of installation must comply with the indications (stickers) on the weirs. The water flow must follow the arrows indicated on them to ensure the resistance and efficiency of the installation.



STEP 6
POSITIONING AND ALIGNMENT

Alignment
If the culvert has top lift eyelets, these must be on top of the crown (at 12 o'clock).

Using a chalk line, mark a horizontal line inside the culvert at the bottom (at 6 o'clock). This line will serve as a guide for the positioning of the weirs.

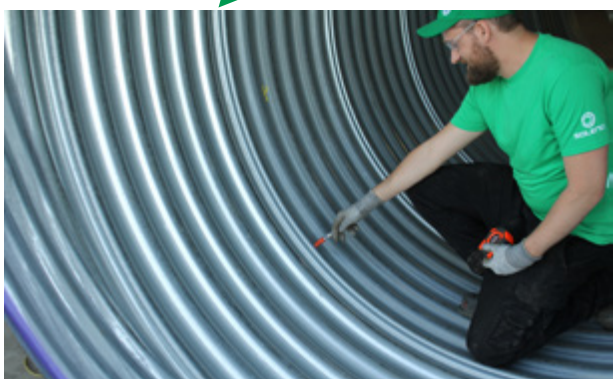


Positioning

The number of weirs and their location in culverts must meet the standards set out in *Table 2 - Number and location of the outlets in relation with the length of the conduit* in Schedule 10 of the RRSDF.

6a. Measure the location of the first weir to be installed in accordance with the requirements of Table 2 in Schedule 10 of the RRSDF.

In the case of an installation requiring more than one culvert, be more attentive to the measures taken so that they take into account the joints thus created.



6b. Be sure not to position the anchor bolts in the staple joint.

If this is the case, offset the weir by one ring before or one ring after, making sure to respect the **maximum** distance of 2000 mm (78.9 in) between the weirs, according to requirements of Table 2 in Schedule 10 of the RRSDF.

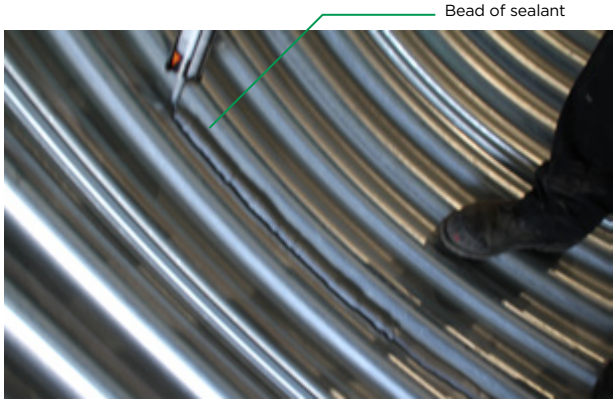
STEP 6
POSITIONING AND ALIGNMENT (CONT'D)

6c. Using the indelible marker, mark and number the position of the weir using the previously marked alignment line.

6d. Measure, mark and number the locations of the following weirs, following the steps mentioned above.

For ease of installation, Soleno recommends removing the weirs from the culvert before proceeding to step 7.

STEP 7
WEIR INSTALLATION



7a. Apply approximately 1.5 in bead of sealant (Sika 221 only), in the centre corrugation trough, outside the weir.

7b. Reposition the first weir in its place.

STEP 7
WEIR INSTALLATION (CONT'D)

7c. Using the hammer or rubber mass, make sure the weir is level. Soleno recommends wearing hearing protection.

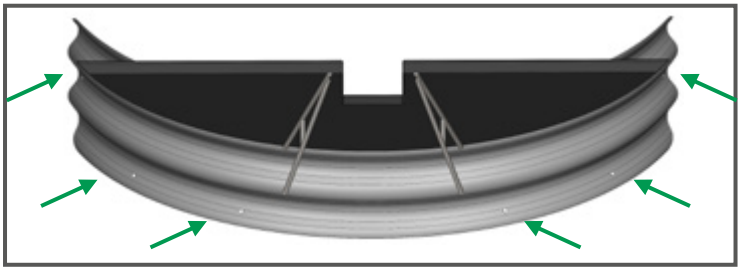
7d. Using the jack and the wooden adapter, hold the weir at the bottom of the culvert.

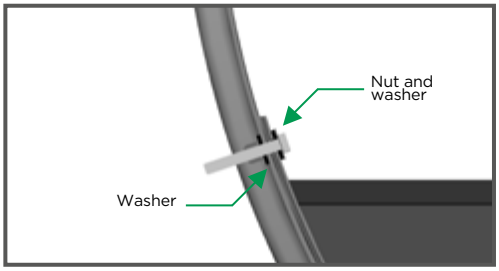
Note 1 : Make sure your adapter has a beveled end so that it fits well in the corrugation.

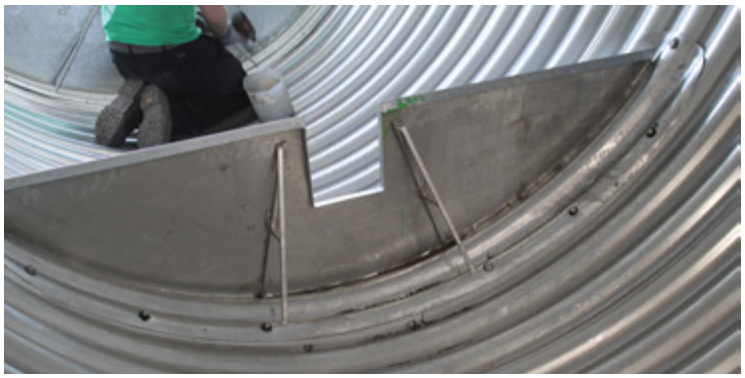
Note 2 : Make sure you have a support (2x6 wooden suggested) to provide a stable base for your hydraulic jack.

Note : The length of your wooden adapter type 4 x 4 will depend on the diameter of your pipe, consult Table 1 *Length of the wooden adapter* of this document for the recommended length.

STEP 7
WEIR INSTALLATION (CONT'D)







7e. Drill the weir-culvert assembly; distribute the holes evenly **on each side** of the weir and make sure to keep the same distance between each hole, approximately.

NOTES

The following practices are prohibited:
- on-site welding;
- torch cutting of steel elements;
- cutting holes with a torch.

7f. Insert anchor bolts with the head inside the culvert. Make sure you have a washer inside and one outside.

7g. Continue with the installation of the weirs, following the steps mentioned above, always referring to the direction arrows.

STEP 8
CULVERT INSTALLATION WITH FISH WEIR

- Referring to step 3, make sure you have the necessary equipment to lift the appropriate loads.
- Level the culvert and weirs. If available, use the lateral lift eyelets.
- The culvert(s) with weirs must be installed in accordance with the requirements of Schedule 10 of the RRSDF.

TABLE 1
LENGTH OF THE WOODEN ADAPTER TYPE 4 X 4

Nominal diameter of the pipe		Length of the wooden adapter type 4 x 4		Nominal diameter of the pipe (cont'd)		Length of the wooden adapter type 4 x 4 (cont'd)	
mm	in	mm	in	mm	po	mm	po
1200	48	900	36	2200	88	1900	76
1400	56	1100	44	2400	96	2100	84
1500	60	1200	48	2700	108	2400	96
1600	64	1300	52	3000	120	2700	108
1800	72	1500	60	3600	144	3000	120
2000	80	1700	68				

* The measurements were taken with a wooden seat type 2 x 6 and a hydraulic jack measuring 200 mm (8 in) high.

APPENDIX 1
LOCATION OF WEIRS IN A CULVERT

Bird's eye view