

3.2 SOCKET FUSION WELDING

3.2.1 WARNINGS AND PRELIMINARY RECOMMENDATIONS

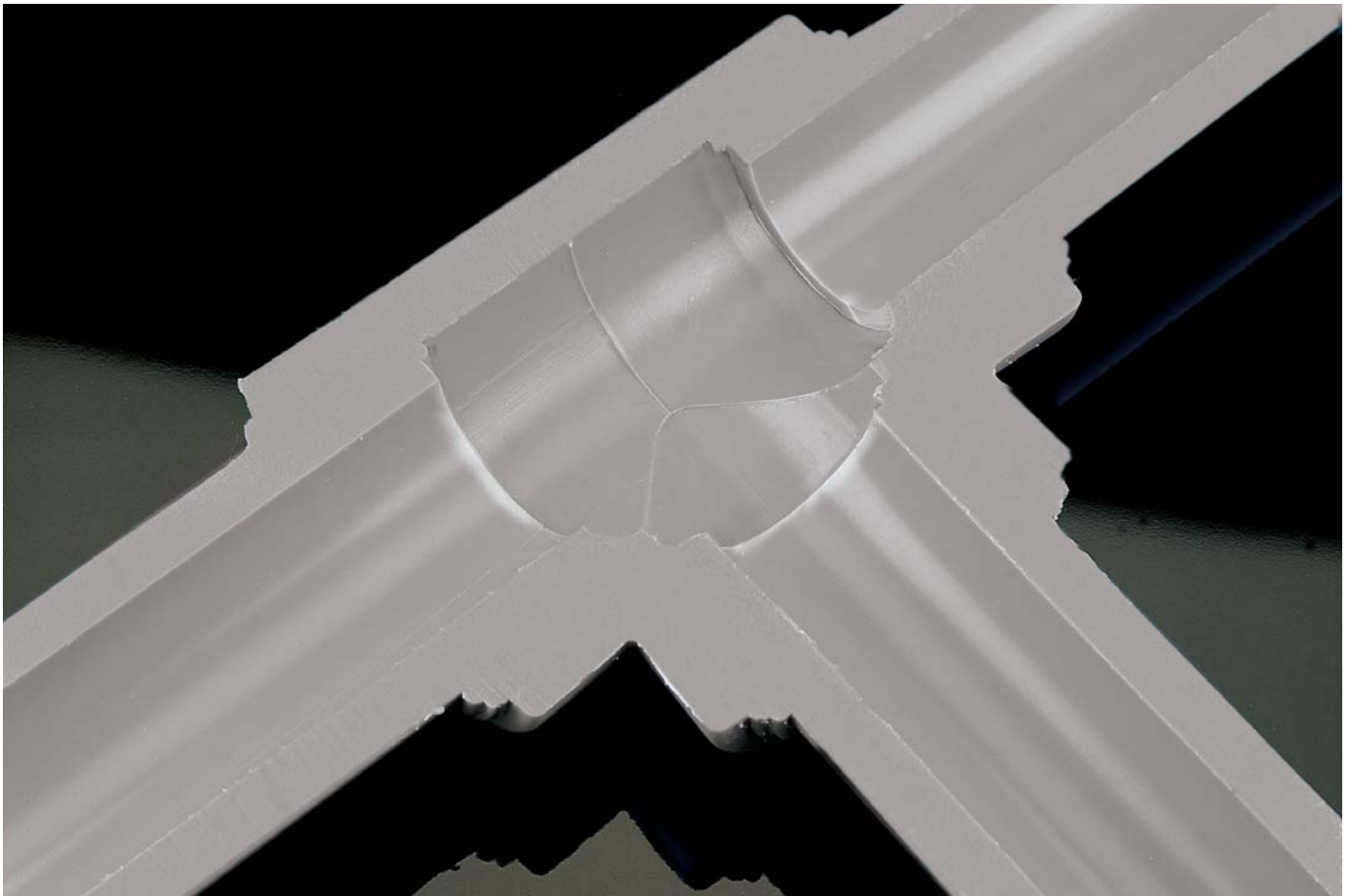
Socket fusion welding is one of the most used joining techniques for the installation of heat fusible thermoplastic piping in general, and for NIRON PP-RCT systems as well. There are just a few and simple steps necessary to complete it, but they require the attention of the contractor.

Welding equipment check:

The welding equipment must be inspected and checked thoroughly to evaluate the efficiency of the equipment and tools to be used.

In particular you should carry out the following operations:

- Check the functioning of the thermostat by measuring the temperature on the surface of the bushings with an appropriate contact thermometer 500°F (260°C).
- If you are using a Polyfusion welding tool, check the functioning of the clamps and the handling system of the welding machine so as to ensure the proper alignment of the parts to be welded.
- Inspect the integrity of the non-stick coating of the bushings.



If a perfect socket fusion welding of the NIRON PP-RCT PIPING SYSTEM has been carried out, a sectioning of the welded joint does not show any difference of material between the pipe and the fitting, proving correct molecular fusion. The welded joint section should be homogeneous.

3.2.2 SOCKET FUSION WELDING OF FITTINGS



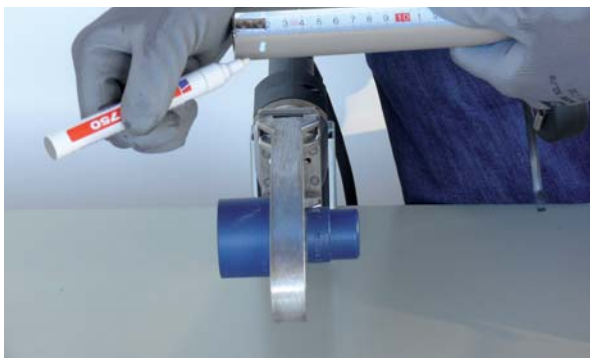
Assemble the male and female bushings on the cold plate and connect the welder to the power network. Wait for the sound or light signal (see the user's manual of the welder) that informs that the actual temperature is reached.



Cut the tube perpendicularly to its axis using the suitable pipe cutter.



Inside Nupi Americas' welding case (where a tool is used that is supplied by Nupi Americas, this will not be true when using welding devices supplied by others) you will find a sheet that shows the welding parameters (diameter, pipe insertion depth, heating time, fusion time and time prior to testing).



Mark the insertion depth on the pipe.

Make a longitudinal mark as a reference on the external surfaces of the pipe and fitting to avoid turning the components to be welded while performing the welding procedure (do not cut the surface of the pipe and fitting).

Place the ends to be welded close to each other to be able to begin the heating process of the components simultaneously.

After checking the surface temperature of both of the bushings, insert the pipe into the female bushing without rotating it and the fitting over the male bushing up to the depth previously marked. This position should be maintained for the heating time t_1 as shown in table A (page 48). Do not heat up the parts to be welded twice.

After the heating time, quickly remove the elements from the bushings and insert them one inside the other, within time t_2 , until you reach the insertion depth previously marked. Be careful not to rotate the pipe into the fitting and carefully align the reference longitudinal signs.

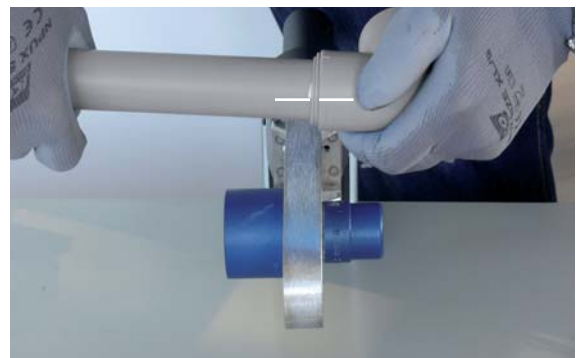
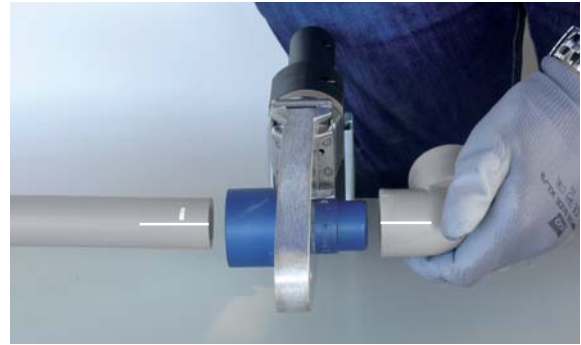


TABLE A: SOCKET FUSION WELDING PARAMETERS

| diameter | Heat Up Time (seconds) | | Max Change-over (seconds) | Cool Down Time | |
|-------------------------|---------------------------|--------|---------------------------------|----------------------|--------------------|
| | SDR 11 SDR 7.3 | SDR 17 | | Clamped (seconds) | Total (minutes) |
| 1/2" (20mm) | 5 | NA | 4 | 6 | 2 |
| 3/4" (25mm) | 7 | NA | 4 | 10 | 2 |
| 1" (32mm) | 8 | NA | 6 | 10 | 4 |
| 1-1/4" (40mm) | 12 | NA | 6 | 20 | 4 |
| 1-1/2" (50mm) | 18 | NA | 6 | 20 | 4 |
| 2" (63mm) | 24 | 10 | 8 | 30 | 6 |
| 2-1/2" (75mm) | 30 | 15 | 8 | 30 | 6 |
| 3" (90mm) | 40 | 22 | 8 | 40 | 6 |
| 4" (110mm) | 50 | 30 | 10 | 50 | 8 |
| 5" (125mm) | 60 | 35 | 10 | 60 | 8 |