

08.2 WATERSTOP JOINTS

MECHANICAL AND PHYSICAL CHARACTERISTICS

TYPE OF ANALYSIS	METHOD	U.M.	VALUES
Specific weight	ISO 1183	g/cc	1.38 ± 0.03
Shore A hardness	ISO 868		71 ± 3
Tensile strength	ISO 527	N/mm ²	12 ± 2
Elongation at break	ISO 527	%	300 ± 3
Operating temperature	-	°C	-30 / +70
Cold flexibility	ISO 458/2	°C	-30
Flammability	UL94	Classe	V-O
Resistance to oils	Normal resistance in case of short-time contact, not suitable for long term or continuous contact. In the case of long term contact, it is necessary the use of a specific compound.		



^ **ART. 401**



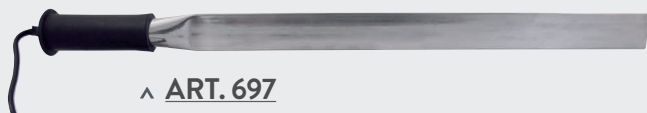
^ **ART. 440**



^ **ART. 451**



^ **ART. 599**



^ **ART. 697**

INSTALLATION METHOD

In the case of construction joints, after the first part of the structure has been installed, the following concrete pour will be executed taking care that the profiles are not bent and that there are no air pockets, while in the case of expansion joints, during the pour of the first part of the construction a specific compartment must be designed in order to avoid warping. During the next step a sheet of elastic and rot-proof material of the same thickness as the bulb or to the required size must be inserted (see Fig. A). In cases where the waterstop is to be placed on the outside the structure, the joints must be nailed in the shuttering at the edges, while with metal shuttering they should be secured with suitable adhesives. In the case of flat or bulb joints, the profiles are hung loosely and held in position by fixing the edges of the wings with steel anchoring rings, (Art. 598) closed tightly with appropriate pliers (Art. 597) every 30 to 50 cm to reinforcement rods, this is necessary to prevent the profiles from moving or bending during pouring or vibration (compacting) of the concrete. The connection between two waterstop profiles is executed by welding the two heads with hot air or with a special thermal sword at 200° C.

SIZING

The width of the waterstop must be of equal size to the thickness of the cast reinforced concrete (example, for a wall thickness of 200 mm you must use a profile of 200 mm).

WELDING CONNECTION OF TWO ELEMENTS

The connection between the various profiles can be realized directly on the construction site. The two ends are welded together by using a hand held hot air gun (Art. 401) or by means of a thermal sword (Art. 697).

HOT AIR WELDING

- 1 - The edges of the waterstop joint to be welded must be perfectly square.
- 2 - Eliminate the fins/ribs for about 5 mm on both sides so as to create a smooth surface to accommodate the cord reinforcement.
- 3 - Use the hand held hot-air gun to heat and weld two elements together, head to head.
- 4 - Once the welding between the two elements has been accurately executed, weld a reinforcement cord/strip (Art. 599) on either side of the waterstop profile, rolling it with a PTFE roller (Art. 440).
- 5 - Wait for the weld to cool completely and test the tightness of the weld with the specific probing tool for testing welds (Art. 451).

WELDING WITH A THERMAL SWORD

- 1 - The edges of the waterstop joint to be welded must be perfectly square.
- 2 - Insert the thermal sword heating the ends of both waterstop joint simultaneously, melt approximately 2 mm of both ends, while still hot, press one against the other.
- 3 - Hold the two welded elements in place for 1-2 minutes until completely cooled before proceeding with testing.