

PRESS RELEASE - New: SICA Starbell™ Belling Machine forms Rieber Socket in PVC-O Pipes

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SICA, a manufacturer of plastic pipe processing machinery, has developed an innovative Rieber belling process, specific for PVC-O pipes (oriented molecule PVC pipes). At the same operating pressure, these pipes require a wall thickness of about 35-40% less than those in PVC-U and allow the construction of water supply pipes up to 25 bar of operating pressure. Because of these and other advantages, PVC-O piping systems are becoming increasingly popular.

Like PVC-U pipes, the PVC-O pipes are joined in a socket. The socket, including the gasket seat, is made in an extrusion line with a special belling machine.

In PVC-U pipes, “Anger” type socket are used, i.e. with removable and replaceable gaskets, as well as “Rieber” type sockets that have a gasket already integrated in the belling phase and not removable during the assembly of the pipeline. The Rieber system is popular because during installation the possibility of accidental displacement of the gasket is reduced and the risks of external water dispersion are lower.

The realization of the socket in PVC-O pipe requires different procedures than the conventional ones for PVC-U pipes. Up to now, these specific procedures have proved to be industrially applicable only for forming Anger-type sockets. The absence of the Rieber socket joint in the PVC-O piping sector has excluded its application where the Rieber socket is considered decisive for the operating conditions for laying the pipelines.

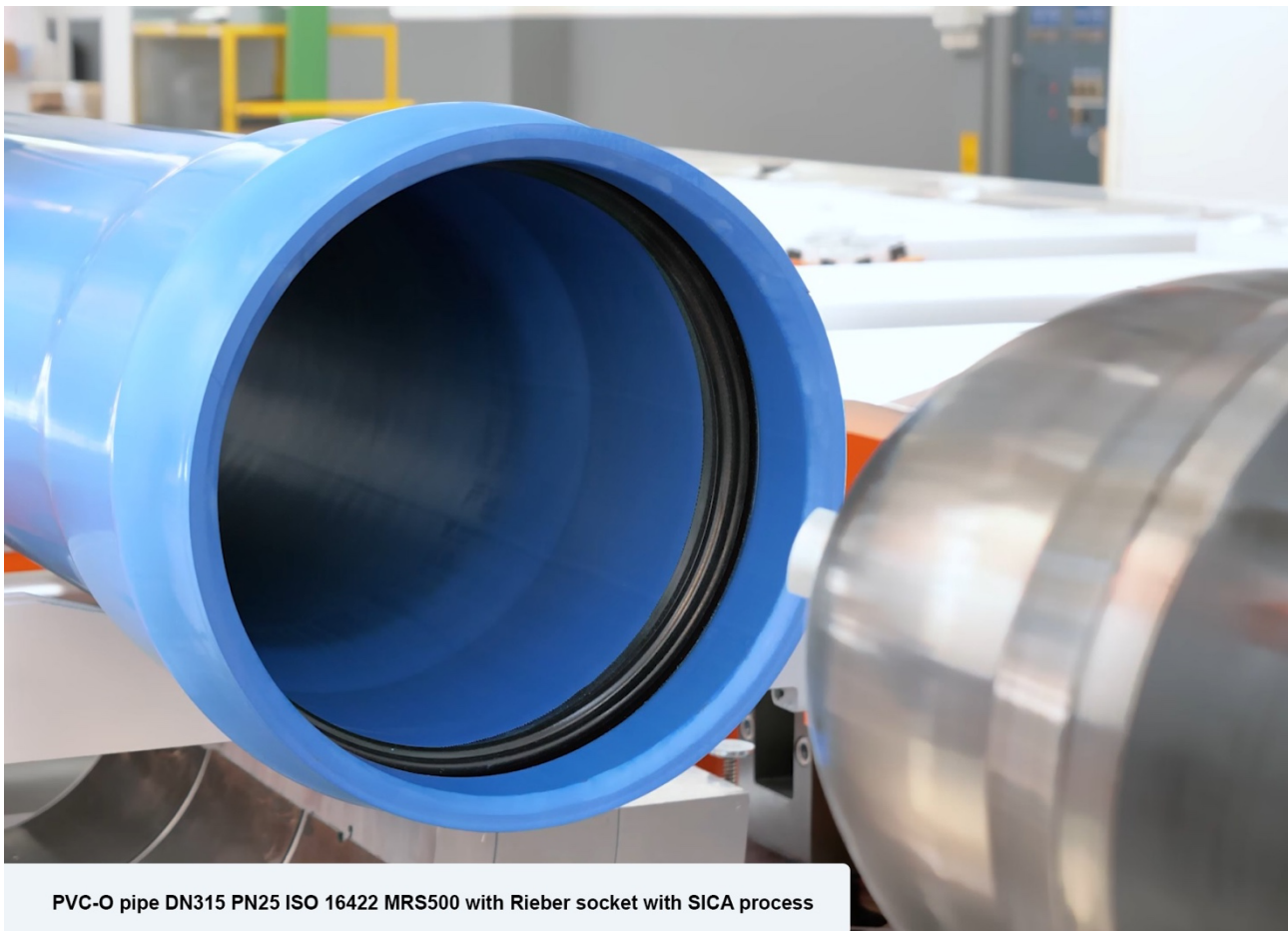
The innovative and exclusive SICA Rieber belling process for PVC-O pipes changes the scenario and makes the Rieber system possible on belling machines used in bioriented pipe production plants. In fact, the belling machines are able to process both pipes produced and oriented continuously in the extrusion line, but also pipes oriented off-line in a tank. The Rieber SICA belling system is functional in PVC-O pipes that comply with all the following technical standards:

- European **EN 17176**
- American **ANSI / AWWA C909 and ASTM F1483**
- Australian **AS / NZS 4441**
- Canadians **CAN / CSA-B137**
- International **ISO 16422**

It is significant that, as with the well-established SICA Starbell belling machines used for making Anger sockets, the innovative SICA procedure is applied to pipes up to the maximum molecular orientation required by the standards, including class 500 established by ISO 16422; a standard that, among all those indicated, imposes the most stringent requirements for resistance to hydrostatic pressure in PVC-O piping systems.

The SICA belling machines that implement the Rieber belling process are available in three models based on the dimensions range of the machinable pipe (see table below).

Figure 1. PVC-O pipe DN315 PN25 ISO 16422 MRS500 with Rieber socket with SICA process



PVC-O pipe DN315 PN25 ISO 16422 MRS500 with Rieber socket with SICA process

Socketing Machines			
Sica machine model	PVC-O Pipe Regulation	DN min External nominal pipe diameter minimum	DN max External nominal pipe diameter maximum
----- 250	ISO 16422	63 mm	250 mm
	ANSI/AWWA C909	4 in. (121.9 mm)	8 in. (229.9 mm)
	ASTM F1483	4 in. (114.3 mm)	8 in. (219.1 mm)
----- 500	ISO 16422	110 mm	500 mm
	ANSI/AWWA C909	4 in. (121.9 mm)	18 in. (495.3 mm)
	ASTM F1483	4 in. (114.3 mm)	20 in (508.0 mm)
----- 630	ISO 16422	110 mm	630 mm
	ANSI/AWWA C909	4 in. (121.9 mm)	24 in. (655.3 mm)
	ASTM F1483	4 in. (114.3 mm)	24 in. (609.6 mm)

More information please contact:

Perapechyna Palina

pperapechyna@sica-italy.it