

The Genuine Air Technology to achieve  
the most of PVC-O pipes

## Integrated Socket System

In opposition to other existing systems, the **technology developed by Molecor produces the socket at the same time as the rest of the pipe** to achieve the optimum conditions for molecular orientation. In addition to the process simultaneity and stability, **Molecor's patented technology allows different degrees of orientation** in the required sections of the socket and specific wall thickness distribution.

The socket's design in **PVC-O pipes** does not only depend on certain geometry criteria or thickness distribution. Sockets are expected to maintain the excellent properties attained during molecular orientation.

- Socket conformed at the same time as the orientation process.
- **Maximum orientation degree guaranty**
- No extra maintenance, time for changing, etc.

For that reason it is important to attain the right orientation degree on each part of the socket, since it is known how stresses are different along the different sections of the socket. The socket is the most sensitive part of the pipe.

Socket geometry is complexer than in the rest of the pipe, and stresses are higher, mainly in the axial direction. Moreover, its extra dimension compared to the barrel makes it more exposed to impacts, scratches and other damages during installation.

Hoop orientation confers excellent qualities such as impact resistance and internal pressure resistance.



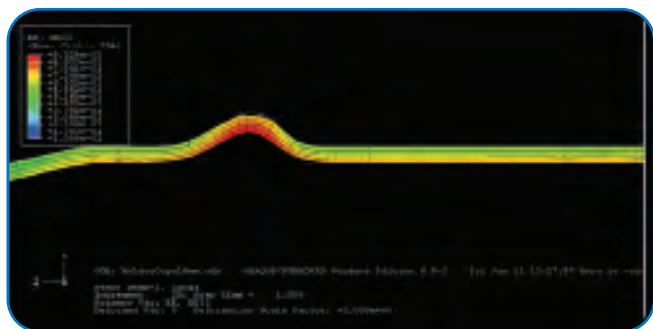
Axial orientation is particularly relevant in the socket, where axial strains could be produced.

### Smooth air molding

Socket shaping is done with air, thus providing marks of mold unions and scratches on the inner surface, which provides perfect leak tightness and very easy gasket positioning.

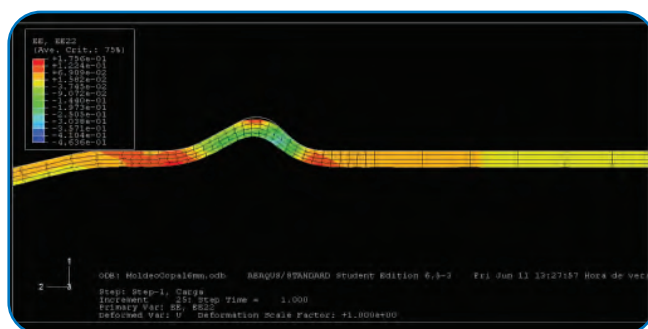
**Molecor** has enhanced the classical socket shape to give it extra security with an extra large depth of engagement to enable safer installation. **Molecor** special design includes an open lip with a bell shape that improves the pipe's assembly process. Furthermore, **Molecor** provides local orientation to reinforce the stress concentration areas.

### Hoop deformation



FEM simulation of a PVC-O pipe behaviour with axial and hoop orientation

### Axial deformation



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## ISS+ Integrated Seal System

**Molecor** has developed a new system, patent pending, to manufacture **PVC-O pipes** with **Integrated Seal System**. The joining of PVC-O pipes is achieved by means of a rubber sealing ring seated on the pipe bell to effectively prevent leakage between the two adjoining pieces of the pipe after the spigot (male end) is inserted into the bell (female end).

**Molecor** has implemented an **Integrated Seal System** in order to introduce a reinforced rubber gasket inside the pipe right after orientation, keeping the excellent mechanical properties of PVC-O pipes especially in the socket.



The **Integrated Seal System, ISS+**, applied to PVC-O pipes presents improvements in the pipe's behaviour, especially in larger diameters and high pressures. Up to now, this technology had not been applied to PVC-O pipes.



- 100% automatic system.
- Rubber reinforced socket.
- Excellent mechanical properties in the socket.
- It does not require extra labor.
- It can be easily integrated into the standard factory settings.
- The system is part of the latest developments of Molecor®.

### Steps:

1- Gasket Positioning    2- Heating up    3- Cooling down    4- Extraction

