

## WILLBRANDT Guide Sleeves

### Guide sleeve

Rubber expansion joints are elastic tubular elements with an integrated corrugation. This shaft can cause turbulence in the expansion joint at high flow velocities, resulting in increased pressure loss. The bellow can also be damaged. We also recommend the use of a guide tube to protect the bellow in the case of media containing solids. For normal liquids, a guide tube should be used from a flow velocity of 4 or 5 m/s and for gases from 20 m/s. The use of a guide tube is generally recommended as wear protection for pipes carrying solids.

The guide sleeves are manufactured in different shapes. If the expansion joint only absorbs axial movement, a close-fitting cylindrical guide sleeve can be selected. If the expansion joint is to absorb lateral movement, the guide sleeve must be cranked at the inlet, or a conical guide sleeve is recommended for large lateral expansions.

For expansion joints with a sealing bead and swivelling flanges, the guide sleeves are manufactured as slide-in sleeves with a collar. For expansion joints with solid flanges, the guide tube has also a flange.



### PTFE guide sleeve

This material is used if high chemical resistance to aggressive media is required.

### Important note

The standard material for guide sleeves is 1.4571 stainless steel. Guide sleeves can also be made from 1.4539 stainless steel for seawater or hardox for abrasive materials. Other materials are available upon request. Guide sleeves must be fitted with additional seals.

In order to prevent vacuums forming or dust settling between the guide sleeve and the bellow, guide sleeves are manufactured with corresponding relief holes.

- Cylindrical version for axial movement only
- Cylindrical version with conical neck (inlet) for axial and lateral movement
- Telescopic guided sleeve for axial and lateral movement and complete bellow protection
- Conical version for large inlet opening and for axial and lateral movement

We recommend guide sleeves for:

	Liquids	Gases
• Type 49	up from 4 m/s	up from 20 m/s
• Types 39, 50, 51, 52, 55	up from 5 m/s	up from 30 m/s
• Type 40	up from 5 m/s	up from 30 m/s

Please note that the standard guide sleeve (type 49, 50 and 55) is designed for axial movement. The max. lateral movement absorption is +/- 5 mm. If higher lateral movement is required, please note that the sleeve is reduced by double the value of the lateral movement in the external diameter of the pipe in order to prevent contact between the bellow and the guide sleeve at maximum load.

## WILLBRANDT Potential equalisation

Rubber expansion joints have different electrically conductive resistances. It can be seen in the data sheets, there are rubber compounds that are electrically conductive and those that only have a low conductive electrically surface. The rubber compounds made of CSM, CR and NBR white have an insulating effect.

In order to achieve conductivity of non-conductive or only low conductive expansion joints, we recommend flange-to-flange potential equalisation. This guarantees that the corresponding levels can be tolerated in the piping system and that the system is earthed.

