

# Operating Instructions for ELAFLEX Hose Assemblies and Rubber Expansion Joints

## Manufacturer

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Additionally to notes below, please observe relevant hints in the Elaflex catalogue – especially catalogue pages 106, 476 and 480 – as well as recognised industry standards and regulations such as DIN 20066, ISO 17165-2, DIN 7716, ISO 2230, EN ISO 8331, technical leaflet 'T 002' of BG RCI (Germany) and relevant accident prevention regulations.

## Assembly

In order to ensure operational functionality of hose assemblies and expansion joints and not to shorten its service life by additional strain, please observe the following:

- When installing hose assemblies, please make sure not to obstruct the natural position and movement of the hose.
- In operation, hose assemblies shall not be exposed to any strain by tension, torsion and compression through external influences, unless they have been specifically constructed for this purpose.
- Observe the minimum bending radius of hoses, specified by the manufacturer – see Elaflex catalogue.
- Protect hoses from kinking, especially at the joint end. Anti-kinking protection accessories are available from Elaflex.
- Protect hose assemblies and expansion joints against damages caused by external mechanical, thermal or chemical influences.
- During pipework construction, already installed but not operational expansion joints shall be protected against strain (abrasion, movement, temperature, ozone).
- Before putting into service, check all detachable connections for tightness.
- In case of visible external damages, do not put the hose assembly/the expansion joint into service.
- Before putting a hose assembly into service, it might be necessary to clean it in a suitable manner.
- If electrical conductivity of hose assemblies or expansion joints is required, test and ensure it in accordance with applicable regulations.
- If hoses have to be laid across traffic routes, they shall be protected by hose bridges.
- Installation location: hose assemblies and expansion joints shall be installed to enable permanent monitoring and easy replacement.
- When installing expansion joints, ensure that they do not rub against adjacent construction parts and that they are not exposed to unacceptably high external heat radiation.
- Ensure that the mating flanges of expansion joints have satisfactory sealing surfaces. Protruding pipe ends, grooves or tongues are not allowed as they can destroy the elastomer sealing surface of the expansion joint.
- Expansion joints must not be exposed to torsion in the installed position.
- Elastomer parts of hose assemblies and expansion joints must not be painted as these can damage the rubber surface and prevent proper visual inspection.

## Intended Use of Hose Assemblies/Expansion Joints

- **Pressure:** Observe the maximum working pressure or permissible vacuum – see Elaflex catalogue.
- **Temperature / Chemical Resistance:** Materials shall be resistant to the medium under operating conditions. Do not exceed the maximum working temperature depending on the respective medium. Please check the Elaflex resistance charts of the components. In case of doubt, please be sure to contact us.
- Abrasive media (i.e. liquids containing abrasive solids) may lead to significantly increased wear.
- To ensure safe operation, take technical and organisational protection measures. Make sure to provide and use effective personal protective equipment (PPE).

## Storage

- Store hoses and expansion joints in a cool, dry and dust-free environment; avoid direct sunlight/UV light; protect from nearby heat sources; hose assemblies and expansion joints should not come into contact with any materials that could have an impairing or damaging effect on them.
- Always store hoses/hose assemblies free of kinks, twists or compression and in a horizontal position. When stocking in coils, the bending radius must not be smaller than the bending radius specified by the manufacturer – see Elaflex catalogue.
- To avoid deforming the coil at the bottom, do not stack the coils too high. For complete hose assemblies, please make sure to avoid fittings pressing against the soft hose wall.
- Open ends of hoses/hose assemblies must be plugged (capped) to protect the lining from ozone and other contamination. This is especially important for hoses with a highly specialized rubber lining, e.g. aviation and solvent hoses. Hoses stored outdoors must be protected with caps at all times.

## Service, Maintenance, Inspection

### Cleaning

Please clean and rinse the hose assembly/expansion joint after each use and before each inspection with suitable cleaning agents. When cleaning with steam or chemical additives, please pay attention to the respective component resistances. Note: do not use steam lances to clean hoses, steam cleaning only admissible with open end system.

### Inspection intervals

As per European Directive 2009/104/EC 'Use of work equipment', the safe operating condition of hose assemblies and expansion joints shall be inspected by a qualified person:

- prior to initial operation.
- at regular intervals. Higher strain levels call for shorter inspection intervals, i.e. in case of increased mechanical, dynamic or chemical stress.
- after repairs and maintenance.

### Scope of inspection

Type and extent of the inspection (i.e. pressure test, visual inspection, check of electrical conductivity etc.) shall be conducted according to European Directive 2009/104/EC. The results shall be documented. The visual inspection shall be effected at regular intervals, including examination for damages like blisters, surface cracks, moisture penetration and irregular deformations.

### Repairs

Only a qualified person as defined by European Directive 2009/104/EC is allowed to perform repairs (e.g. shortening hoses and reassembly), including subsequent checks, marking and documentation.

## Special Hints for Steam Hose Assemblies

- Use steam hoses only for wet saturated steam and hot water. Overheated (dry) steam, also below the indicated maximum working temperature, will shorten hose lifetime.
- Ensure complete drainage of condensate (do not close both hose ends immediately after use with steam) to prevent structural damage ("popcorning"), caused by the ingress of water into the lining and evaporation with the fresh application of steam.
- Do not let hose cool off with both ends closed to avoid vacuum.
- Take protective measures against the risk of burns due to the high surface temperatures.
- Only use EN 14423 safety fittings with collar and bolted clamps, suitable for re-tightening. Optional anti-kinking spirals may prolong lifetime.

For bitumen hoses please see special hints on catalogue page 136.