

## Instructions for the installation of pre-assembled cable tension members



### 1. Area of application

These instructions apply to PFEIFER cable tension members made of stainless steel in compliance with “Building Authority Approval Z-14.7-411” and to PFEIFER cable tension members made of non-alloyed steel in compliance with “General Building Authority Approval Z-14.7-413”.

### 2. Other applicable techn. documents:

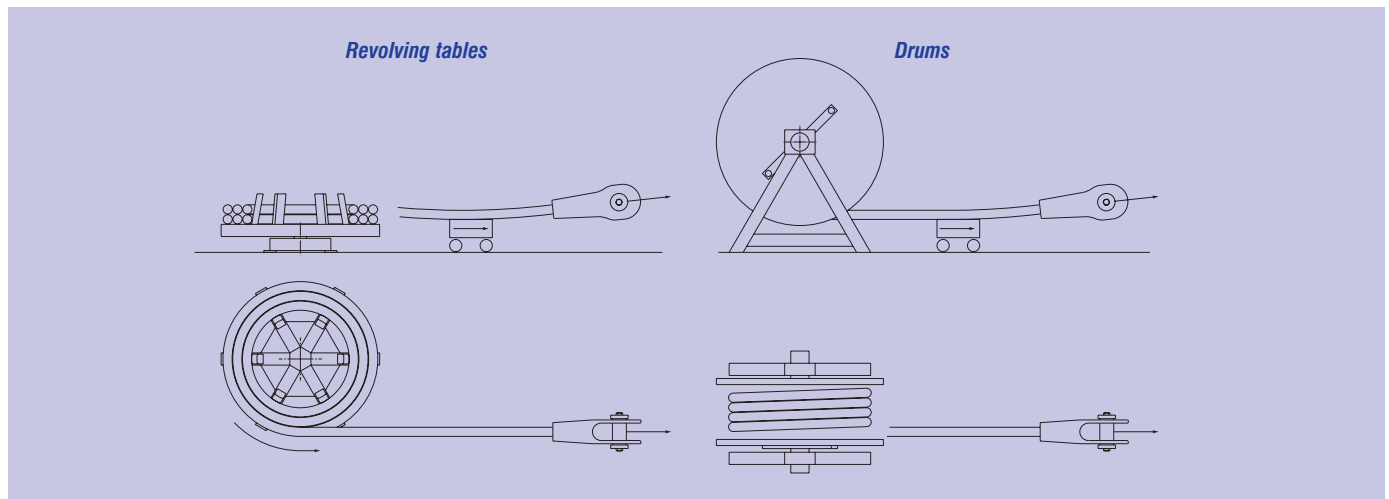
- General Building Authority Approval Z-14.7-411
- General Building Authority Approval Z-14.7-413
- PFEIFER Catalogue “Cable Structure” (section 3)
- DIN 1076 “Engineering construction work within the scope of roads and pathways”

### 3. Supply and laying out of cable tension members

Cable tension members are generally supplied to the site on rings or coilers (Pfeifer Catalogue “Cable Structures”, section 3). An appropriate revolving table has to be used for unwinding the rings and an appropriate winding frame for unwinding the coilers. The revolving tables or drums should be fitted with a braking device.

The following points must be observed when unwinding the cable tension members:

- Cable tension members must not be twisted (observe surface line!)
- Cable tension members must not be pulled over sharp edges.
- Cable tension members must not be buckled (cable tension members must be supported accordingly).  
Bending radius must not be less than  $R = 15 \times$  rope diameter.
- Corrosion protection must not be damaged.



### 4. Removing packing materials

In order to avoid soiling, any provided packing materials on rope end fittings or applied clamps should only be removed just before installation.

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### **5. Checking before installation**

All cable tension members must be checked thoroughly for any transport damage before installation.

Particular attention must be paid to the following points in this respect:

- Damage to corrosion protection
- Damage to thread
- Damage to rope wires

Damaged corrosion protection has to be repaired immediately.

Damages on galvanized surfaces have to be treated with zinc dust paint. If necessary an existing additional coating can be repaired afterwards.

### **6. Preparation for installation**

Any thread on cable connections must be cleaned thoroughly and greased prior to installation.

Damaged or dirty threads must not be assembled because this could lead to the tension member unfit for use.

Note for cable tension members made of non-alloyed steel:

Any provided thread on hot-galvanized and spray-galvanized rope end fittings are generally untreated and only provided with temporary corrosion protection.

For this reason, any such thread must be degreased immediately after installation and provided with lasting corrosion protection.

### **7. Installation**

Installation is generally carried out in compliance with an installation plan approved by a statics engineer.

This plan must stipulate all important points for installation (e.g. installation process, order of installation, tensioning force).

Assignment to the correct installation position is to be ensured by marking all cable tension members.

Cable tension members must not be installed twisted. A surface line is generally marked on each cable tension members as a method of control. This line must not be twisted upon completion of elements.

Cable tension members are generally pulled into installation position using a suitable hoisting device (e.g. winch) or using a suitable lifting device (e.g. suspension bar, spreading bar). As described under no. 3, particular attention must be paid while doing so that there is no damage to the cable tension members. In particular, pay attention that the cable tension members is not buckled while lifting into place with suspension or spreading bars. In the case of heavy cable tension members, buckling of the cables at the suspension points can be prevented by using appropriate means; e.g. deflection saddles (deflection radius min. 15 x rope diameter).

Appropriate devices (hydraulic cylinders) must be used for the application of pre-tension force. Any provided thread may only be used for adjustments and not for the application of pre-tension forces.

Minimum screw-in depths of threads must be observed. The actual screw-in depths are to be recorded.

Threads on cable tension members must be secured against unwinding after adjustment (e.g. with locking nuts or gluing with bolt lock) unless otherwise specified.

All seizing wires must be removed from the cable tension members after installation.

The seizing wires at the end of the ropes can stay in place during installation. They prevent individual wires from escaping from the rope binding if this is bent too much. The seizing wires must be removed after installation as otherwise it could have a negative effect on the corrosion protection.

### **8. Supervision of rope operating equipment**

Rope operating equipment must be kept under supervision and checked at regular intervals.

If no specific regulations exist for a construction, this supervision and inspection can be carried out in compliance with DIN 1076 "Engineering construction works within the scope of roads and pathways".