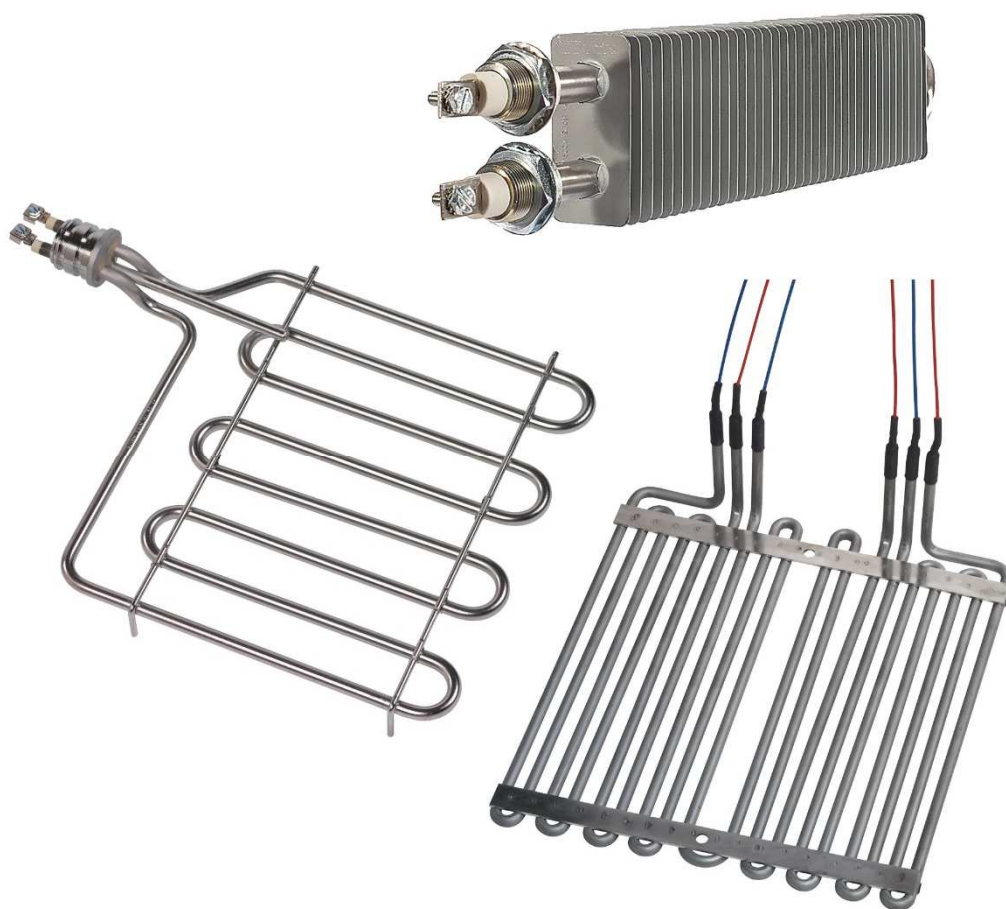


Heating elements

Storage, installation and maintenance instructions



* Non contractual picture



Warning

It is imperative to read these instructions carefully before installing or maintaining the equipment.

General information

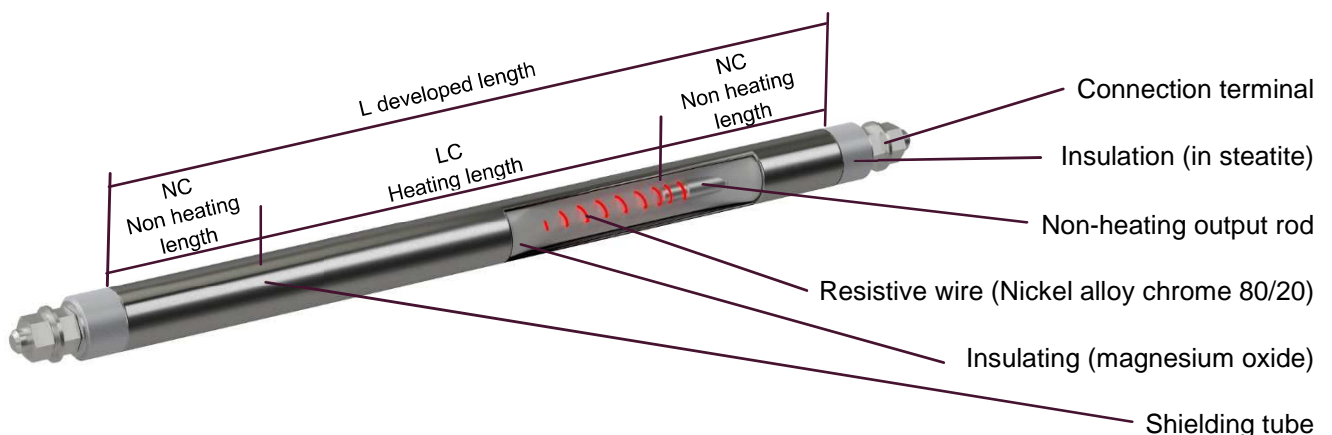
CETAL electric heating elements are used for the heating of liquids, gases or solids by convection, conduction or radiation. They are cold-formed according to drawings, samples or customer specifications and are the basic elements for customized heating systems.

For air heating convection or forced air circulation, the heating elements can be provided with fins to adapt the surface load to the application.

Technical characteristics :

The heating element are made of heating resistive wire made of nickel alloy 80/20 chromium centered in a tube (made of copper, stainless steel, incoloy or inconel) filled with an insulating material (magnesium oxide) ensuring heat transfer.

The watt density is adapted to the application.



Important

The choice of the tube is the responsibility of the customer. The material to be selected depends on the composition of the medium to be heated and the temperature of use.

The heating element integrator is responsible for the installation.

Storage

- Store the heating element in its original packaging protected from rain, sun, shock and moisture.
- Unpack the heating element only before installation and check its general condition.

- Any material, even without fret and packing, travels at the recipient's own risk. The recipient must make written reservations on the carrier's delivery note if he finds damage caused during transport (confirmation to the carrier according to local and national regulations).
- Inform CETAL for any warranty default (a defective product must not be put into service).

Installation



Attention

Any electrical or mechanical intervention on the heating element must be carried out by qualified people for electrical operations in accordance with local and national regulations.

- Before working on the installation, make sure that it is switched off and on consignment.
- Check that the characteristics of the heating element match the requirements.
- The use of the heating element to heat a medium for which it was not designed will result in the loss of warranty.
- The electrical installation to which the CETAL heating element is connected must be sized for safe and full operation.
- Check the supply voltage. (See the informations on the heating element).
- Electrical protective devices must be installed in accordance with the regulations in force and the rules of the art.
- The heating element must be mounted in accordance with the specifications (horizontal or vertical mounting).
- A supporting or hanging system must be provided for large heating elements.



Important

Monitoring and temperature control may be necessary depending on the surface load of the heating element, the conditions of use and the environment of use.

Wiring



Warning

Any electrical work on the heating element must be carried out only when power is switched off and by qualified and authorized operators.



Important

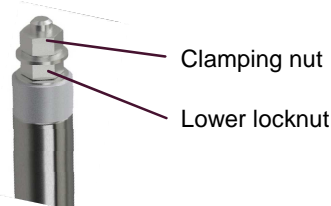
In all cases, the installer must comply with the requirements of applicable standards, local and national regulations and CETAL recommendations.

Make the electrical connection with suitable electrical wire for maximum current and appropriate environment.

Connect the wires to the connection terminals (smooth rod, flat terminal, tongue, threaded rod, ...)

Special attention must be paid to the connection terminals with threaded rods. Tighten the nut while maintaining the lower locknut (to avoid any risk of deterioration of the heating element). The correct tightening torque (table below) must be observed and the supplied washers (flat and locking) must not be removed from the assembly. Loose connections may cause overheating.

Ø	Tightening Torque [Nm] (±10%)
M4	2.0
M5	3.8
M6	6
M8	10



Connection terminal with threaded rod

Condition of use



Important

The user shall check as often as necessary the conditions of use and the equipment itself to ensure that the essential safety requirements are not altered.

Monitoring and temperature control may be necessary depending on the surface load of the heating element, the conditions of use and the environment of use.

Otherwise, overheating may occur and damage the heating element.

1. The material is under the responsibility of the user.
2. Do not use the heating element at a voltage higher than that indicated on the product. Excessive voltage will shorten the life of the heating element.

Maintenance



Warning

Make sure that the heating element is switched off for every maintenance operation.

All maintenance work should only be carried out by qualified operators.

Only the user is responsible for the periodicity of the maintenance based on the experience, the heated medium, the operating conditions of the heating element as well as the local standards and rules.

1. The heating element is intended to be installed as it is. The manufacturer's liability in case of failure can not be incurred for any modification occurring after delivery. Repair or modification may only be carried out by the manufacturer.
2. Check the surface condition of the heating elements, which must be free of any deposits of scale, limestone or any other fouling which is a source of poor heat exchange and / or corrosion.
3. Check the tightness of all electrical connections (if applicable). Check the ohmic value and insulation between the phase and the shielding tube.

Warning

All modification work on the heating element such as cutting, heating, grinding, welding or modification of equipment without analysis and written agreement of the company CETAL is prohibited.

Comply the medium and the technical characteristics (pressure, flow and operating temperature) specified. They can not be changed without prior agreement.

The manufacturer can not be held responsible for failures in the event that the electrical equipment has to withstand particular stresses in service (eg sudden handling, effects of moisture, variation in ambient temperature, effects of chemical agents, corrosion) if these had not been provided at order stage.

Due to the evolution of the standards and the material, the characteristics indicated by the texts and the pictures of this document can change from time to time. Please ask the company CETAL for confirmation of the given information.