

# THIRD RAIL CONTACT HEATING

## DE-ICE SOLUTION

NIBE Element's third rail heater solution is a deicing application. The third rail will be heated enough to create a thin film of water between the rail and the ice/snow above it. When the rail car's third rail shoe passes over the third rail it will push the ice/snow off of the rail creating a clean conductive surface. This de-icing application is best applied with as much heat as possible, the fiberglass channel and position of the heater maximize heat.

### FIBERGLASS CHANNEL

#### Improved Efficiency

Optimizes thermal conductivity by pushing the heater against the rail.

#### Energy Reduction

Better thermal conductivity provides energy reduction.

#### Simple to Install

The dedicated knock-on clips ensure the installation is securely completed in seconds. The dedicated clips replace the standard heating strip clips

#### No Maintenance

Only a visual inspection is required. There is no need to remove NIBE Element's fiberglass channel before tamping

#### Easy to Remove

NIBE Element's fiberglass channel can easily be removed if work on the track is required



NIBE Element's third rail heater and fiberglass channel ensures the full length of the heater element (strip) remains in contact with the rail for the entire duration of the installation. It also provides mechanical protection for the strip heater, especially at the toe of the tongue which is prone to frequent damage.

NIBE Element's third rail heater and fiberglass channel acts to focus heat from the heating strip directly into the rail thereby reducing the time to achieve the target temperature.

As a result of the improved thermal conductivity, energy savings will be realized.

The NIBE Element fiberglass channel comes in 8ft lengths. It is recommended that a minimum of 1 clip per 18" is used when installing each 8ft segment of fiberglass with NIBE Element's third rail heater.



40 WATTS PER FOOT @ 625 VDC

NUMBER OF CONDUCTORS: 2  
 AWG/STRAND: 10 AWG(37/26) NICKEL PLATED COPPER  
 INSULATION: PFA  
 PRIMARY O.D.: .150" (+/- .002")

LAY (2) PRIMARIES PARALLEL

BINDER: PFA BINDER

SKIVE AT APPROPRIATE INTERVALS ALTERNATING  
 BETWEEN TWO BUSS WIRES

ZONE LENGTH: 72"  
 ZONE RESISTANCE: 1628 OHMS/ZONE

HEATING ELEMENT: NICHROME RESISTANCE WIRE

SOLDER CONNECTIONS AT EACH SKIVE

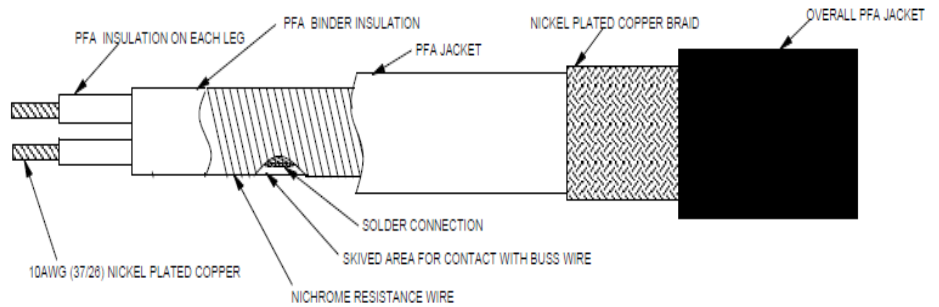
INNER JACKET: PFA

SHIELD: NICKEL PLATED COPPER BRAID (80% COVERAGE)

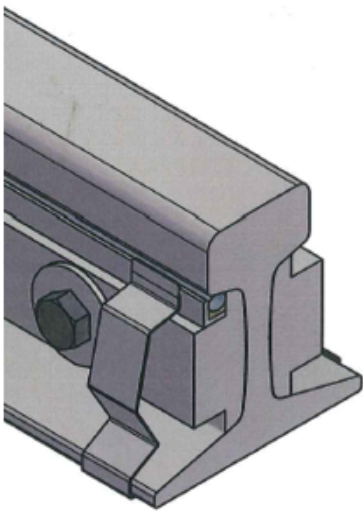
FINAL JACKET: PFA

FINAL O.D.: .470" X .320" NOMINAL

The heating system is a multi-layer design. It consists of an electrical insulated constant wattage heater surrounded by a heat transfer material. The outer sheath is a PFA jacket that is immune to fungus growth found on silicone jackets that are subject to avian and pest damage.



### THIRD RAIL KNOCK-ON HEATER CLIPS



#### Simple to Install

The dedicated NIBE Element's Knock-on Clips ensure the installation is securely completed in seconds. The dedicated clips replace the standard heating strip clips

#### No Maintenance

Only a visual inspection is required. There is no need to remove NIBE Element's Knock-on Clips before tamping

#### Easy to Remove

NIBE Element's Knock-on Clips can easily be removed if work on the track is required

NIBE Element's third rail heater clips are a Knock-On design that provides a quick, non-invasive approach to third rail heater and thermal channel attachment to the rail.

In addition to these benefits, it is made to last with corrosion-resistant alloys.

