

**CONNECT AND PROTECT**

# Earthbridge Assemblies for Rail

nVent ERICO Earthing Solutions for Tunnels and Bridges

  
nVent

**ERICO**

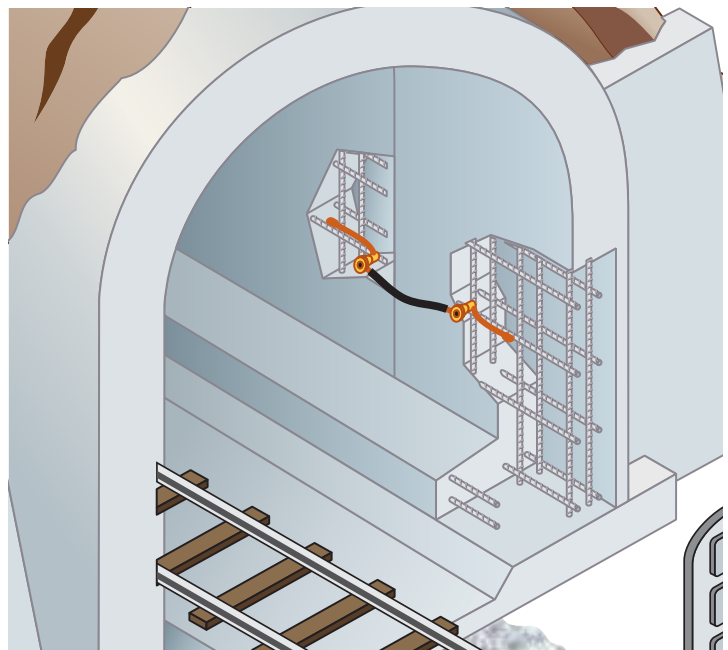
# nVent ERICO Earthbridges: Earthing for Tunnels and Bridges



Railways, especially passenger transit networks with electrical traction and signaling systems, require a comprehensive, integrated grounding system. A special ground wire and earth terminal are absolutely necessary for earthing railway tunnels and bridges.

nVent ERICO is the premier supplier of Earthbridge solutions in rail, **offering high quality assemblies that are electrically and mechanically reliable and long-lasting, easy to install and provide superior conductivity, low ground resistance and impedance.**

- nVent ERICO provides a comprehensive line of Bonds and Connectors for grounding and earthing applications in station platforms, tunnels, bridges, sound barrier walls and slab tracks.
- Also referred to as an Earthbridge, bonds are made from a choice of galvanized or copper cables. Connectors and Earth Plates are joined with nVent ERICO Cadweld Plus, **establishing a permanent welded bond that is the best solution for making connections inside concrete.**
- **nVent ERICO earthing bonds can be custom manufactured to meet any customer specification**



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# nVent ERICO Earthbridges: Earthing for Tunnels and Bridges

## COMPREHENSIVE EARTHBRIDGE CONNECTION SOLUTIONS FOR RAILWAYS



Earthbridge DB, One Stud,  
Cable to Solid Round Steel



Earthbridge DB, One Stud,  
Insulated Cable, Straight



Earthbridge B162, Two Stud,  
Cable to Solid Round Steel



Earthbridge B162, Two Stud,  
Solid Round Steel, 90° Angle



Earthbridge DB, One Stud,  
NYY Cable to Tape, 45° Angle



Earthbridge DB, One Stud,  
Solid Round Steel, 90° Angle



Earthbridge B161, Four Stud,  
Insulated Cable, Straight



Earthbridge B161, Four Stud,  
Solid Round Steel, 90° Angle



Earthbridge B161, Four Stud,  
Solid Round Steel, 90° Angle



Earthbridge B161, Four Stud,  
Solid Round Steel, Straight



Earthbridge DB, One Stud,  
Steel Tape, 90° Angle



nVent ERIFLEX  
MBJ braids

Earthbridge Jumper

## CERTIFICATIONS

**Deutsche Bahn Research and Technology Centre**, Technical release applies to the supply of the following equipment to the DB AG: FDBC-16 earthing bonds, FDBS-16 earthing bonds. The following documentation, test certificates and other details were checked, and form the basis of the technical release:

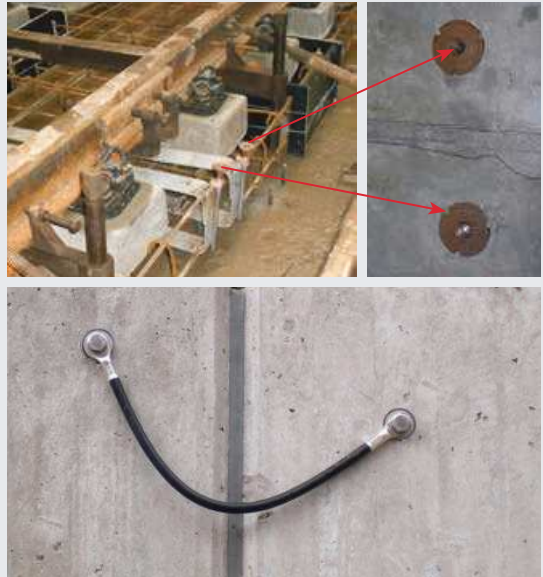
- EBA authorization for electronic systems no.: 201090/8
- Investigation of the short circuit behavior, Report no.: 98471638.000-HVL 99-1322, of the KEMA Netherlands B.V.
- Separation testing by the company nVent ERICO, Test report no.: PN0023T1
- Drawing 3 Ebs 15.03.19 Sht. 1

# nVent ERICO Earthbridges: Earthing for Tunnels and Bridges

## INSTALLING EARTHBRIDGE CONNECTIONS IN CONCRETE

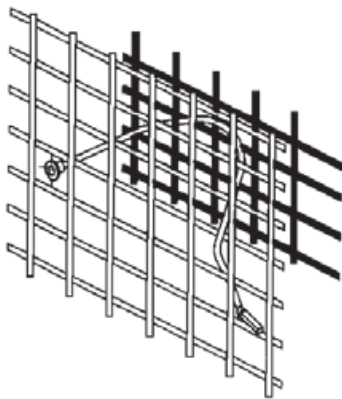
The connection is made to reinforcing bars prior to pouring the concrete. The steel connection plate is connected to the steel reinforcing bars by welding in place. The earthing plate is temporarily bolted or nailed to the internal surface of the formwork. When the formwork is removed, only the contact surface of the earthing plate appears. The earthing plate is equipped with a threaded hole in order to connect a standard cable lug of an earthing conductor. When the reinforcing bars are discontinued (for example expansion joints), earthing bonds connect them electrically by the use of prefabricated jumpers, made from an insulated flexible cable equipped with a standard cable lug on each end.

In the top picture, nVent ERICO Earthbridges are installed for stray current collection in a slab track application. Pictured are two Earthbridges, shown before and after the concrete is poured, that will later be used as bonding points to ensure continuity between the expansion joints for the structure. The bottom right picture, After the concrete is poured, a bonding jumper will be installed to insure a continuous path of the collection system back to the source. The bottom picture shows a bonding jumper (black cable) bolted to bonding points similar to those depicted in the above picture.



## ATTACHMENT METHODS

nVent ERICO Earthbridges consists of bonds made from galvanized or copper cables, where one end of the bond has an earth plate and the other end has a steel connection plate. Depending on the specific application, these ends can be connected using nVent ERICO Cadweld exothermic bonds, mechanical connections, or arc welding.



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