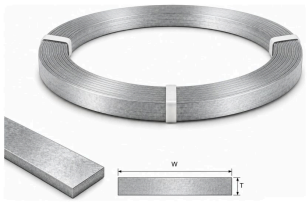
Galvanised steel tape (galvanised earth tape) for foundation earthing and lightning protection



KALOT Group galvanised earth tape is a solid 30 × 3 mm steel tape with a 90 mm² cross-section and a 70 micron hot-dip galvanised coating, used in earthing and lightning protection as earthing conductor, bonding conductor and down conductor. Its flat width gives a large contact area with concrete and soil, and it clamps firmly between the flat jaws of a clamp with no drilling. It is used most for foundation earthing inside the foundation concrete and as the buried conductor of earthing networks whose parts are all galvanised steel.

- Solid steel tape, 30 × 3 mm; cross-section 90 mm²
- 70 micron hot-dip galvanised coating; rounded edges; supplied in rolls
- Foundation earthing, galvanised earth networks and down conductors
- Same material as KALOT galvanised earth rods, round wire and clamps

Technical specifications

Product type	Solid steel tape with a galvanised coating; earth conductor, bonding conductor and down conductor
Material	Steel with a hot-dip galvanised (zinc) coating
Coating thickness	70 microns
Dimensions	30 × 3 mm, with rounded edges
Cross-section	90 mm²
Weight per metre	0.73 kg
Supply form	Roll
Order code	GST 303
Clamps	Galvanised U clamp (tape up to 30 wide on an earth rod or reinforcing bar with a diameter over the ribs of 14 to 34 mm), galvanised clamp for connecting tape to earth rod and round wire (25 to 30 tape on a round conductor of 8 to 16) and galvanised multi-purpose clamp for tape-to-tape connections; inside concrete, the stainless steel multi-purpose clamp is also used
Compatibility	With galvanised earth rods, round wire and clamps; inside concrete, with reinforcing bars and stainless steel clamps; no copper or brass
Main application	Foundation earthing; all-galvanised earth networks in soil; bonding of reinforcing bars and structures; down conductors on towers and galvanised steel structures
Design basis	Nominal cross-section and thickness based on the requirements of IEC 62561-2:2018, IEC 60364-5-54 and Part 13 of the Iranian National Building Regulations

Galvanised earth tape code, dimensions and weight

Order code	Width W (mm)	Thickness t (mm)	Cross-section (mm²)	Weight per metre (kg)
GST 303	30	3	90	0.73

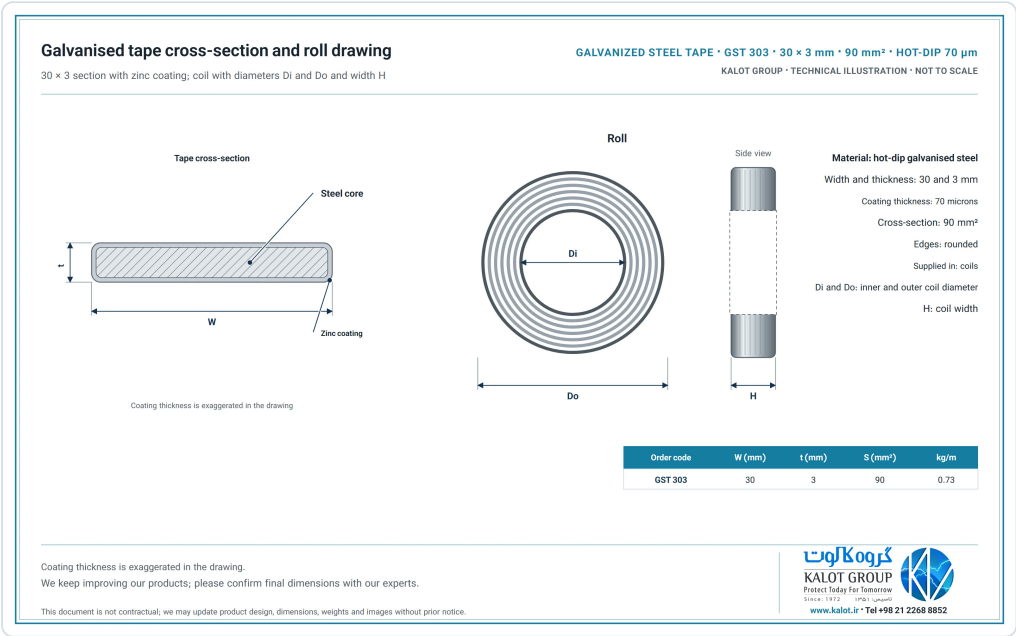
Galvanised tape is supplied on reels; W is the width and t the thickness of the tape. The weight per metre is calculated from the nominal dimensions, with rounded edges and a 70 micron hot-dip galvanised coating. Our products are continually improved; please confirm final specifications with our specialists before purchase.

This document is not contractual; we may update product design, dimensions, weights and images without prior notice.

Structure and supply form of galvanised tape

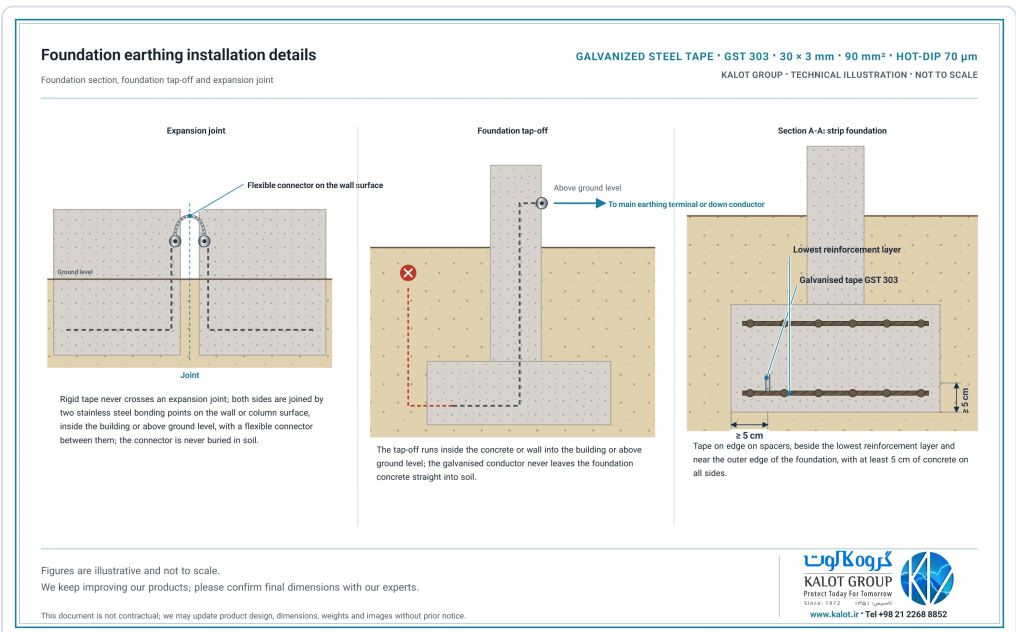
GST 303 is a solid steel strip with rounded edges, 30 mm wide and 3 mm thick, covered by a 70 micron hot-dip galvanised coating. In soil and air, zinc is more active than steel and protects it sacrificially; if the coating is scratched somewhere, the surrounding zinc keeps protecting the steel. The tape is supplied on reels and is uncoiled, straightened and cut to length on site; touch up cut ends with zinc-rich paint. A 90 mm² cross-section and 3 mm thickness is the size IEC 62561-2:2018, IEC 60364-5-54 and Part 13 require for hot-dip galvanised steel tape in soil, and its 70 micron coating exceeds the 63 micron minimum required by IEC 60364-5-54 and Part 13; the minimum size required for tape in concrete and for down conductors is smaller than this.

Section and roll drawing

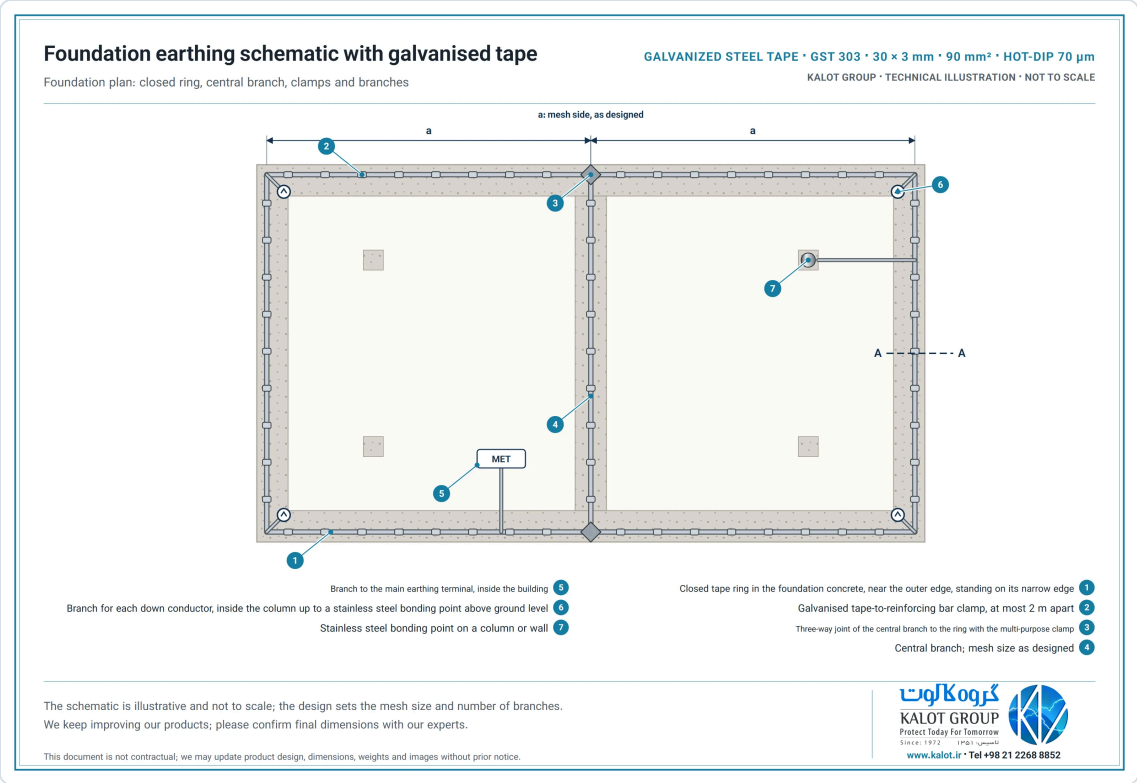


The full print-quality version of this drawing (PDF) can be downloaded from the product page at www.kalot.ir.

Foundation earthing installation details



Foundation earthing schematic



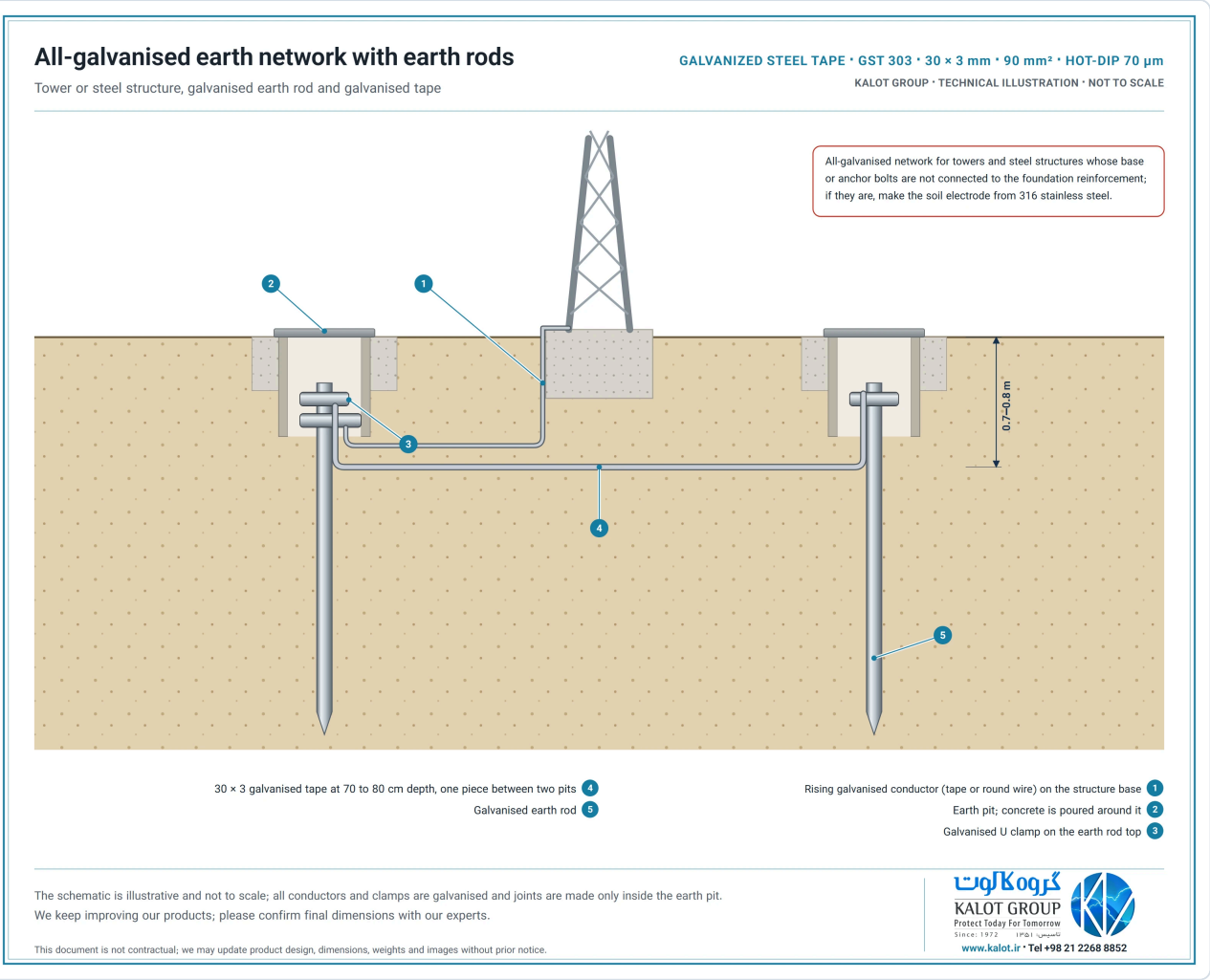
The full print-quality version of this drawing (PDF) can be downloaded from the product page at www.kalot.ir.

Uses of galvanised earth tape in earthing and lightning protection

- Foundation earthing (foundation electrode): a closed ring in the foundation concrete, with at least 5 cm of concrete cover and connected to the reinforcement; see Foundation earthing systems.
- Bonding reinforcement and structure: connecting the foundation and column reinforcement to the earthing system; see Bonding and equipotential bonding.
- Buried conductor of a galvanised earthing network: connecting galvanised earth rods to each other at a depth of 70 to 80 cm in soil.
- Earth ring for towers, fences and galvanised steel structures: where no steel inside concrete, including tower foundation reinforcement connected to the anchor bolts or the structure base, is connected to the buried conductor.
- Horizontal electrode in rocky or high-resistivity soil: where an earth rod cannot be driven, the tape is laid in a trench and can be surrounded with GIM ground improvement material.
- Down conductor: on towers and galvanised steel structures, of the same material as the structure; for down conductors on walls and façades, we recommend galvanised wire. Never install a copper conductor above galvanised parts.
- Riser conductor in a galvanised system: galvanised steel instead of green and yellow conductor, from the earth pit to the structure or measuring point.

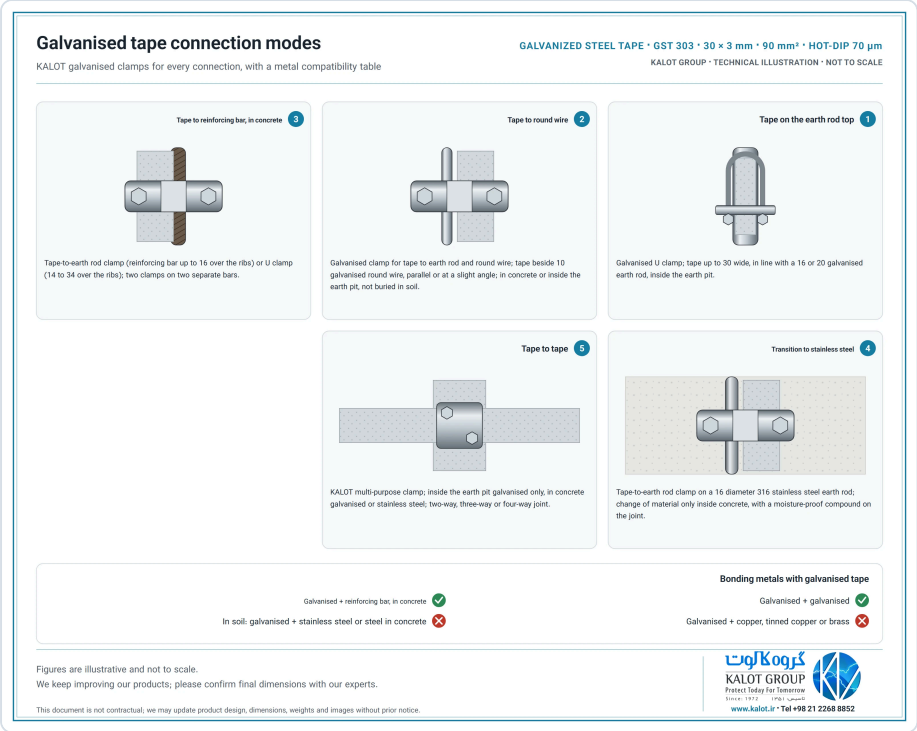


Galvanised earthing network schematic



The full print-quality version of this drawing (PDF) can be downloaded from the product page at www.kalot.ir.

Connection modes



The full print-quality version of this drawing (PDF) can be downloaded from the product page at www.kalot.ir.

Galvanised tape installation steps

۱. Mark out the tape route according to the earthing drawing: a closed loop in the building foundation, or a buried conductor between galvanised earth rods. Choose all network components (earth rod, conductor and clamp) in galvanised steel, and mark the position of each branch and joint before you start.

۲. Unroll the tape and straighten it without hammering the coating. At corners and changes of direction, bend the tape with a bending tool to a gentle radius rather than cutting and rejoining it; one joint fewer is one weak point fewer.

۳. In the foundation: secure the tape on spacers so that at least 5 cm of concrete covers it on all sides; placing the tape on edge helps concrete fill beneath it. Fix the tape to the reinforcing bars at intervals of no more than 2 m, and make joints that stay in concrete with two clamps on two separate reinforcing bars. Connect tape branches and crossings inside the concrete with the KALOT galvanised or stainless steel multi-purpose clamp, two-way, three-way or four-way. Avoid wedge connections and fixing the tape with tying wire alone.

۴. Take branches up inside a concrete column or wall to above ground level or into the building; galvanised conductor does not pass straight from foundation concrete into soil. Wherever the route must pass through soil, use a 16 mm grade 316 stainless steel earth rod or 35 × 3 grade 316L stainless steel tape, and make the change of material inside the concrete: to the earth rod with the galvanised clamp for connecting tape to earth rod, and to the tape with the KALOT multi-purpose clamp; fully cover this joint with a moisture-proof compound before pouring concrete.

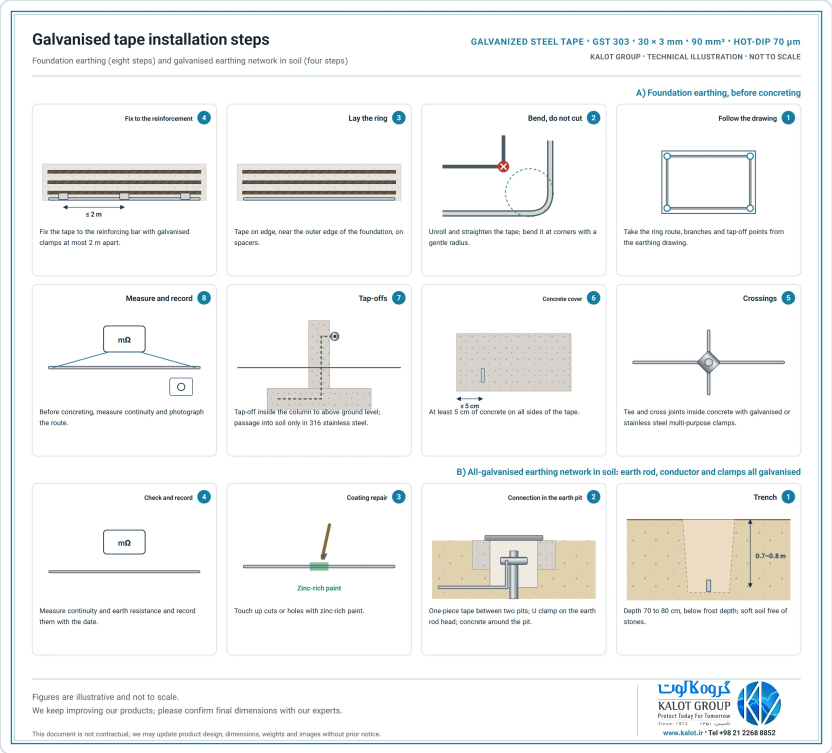
۵. Before pouring the concrete, measure the electrical continuity of the loop and branches, and record the tape route and every joint with a drawing and photos.

۶. Galvanised earthing network in soil: dig the trench 70 to 80 cm deep and below frost depth, lay the tape on the bottom, cover it with soft, moist soil free of stones, building rubble and charcoal, and compact. In rocky or high-resistivity soil, surround the tape with GIM ground improvement material.

۷. Run the tape in one piece between two earth pits and make joints only inside an earth pit: fix the tape to the top of the galvanised earth rod with a galvanised U clamp and pour concrete around the earth pit. Tighten the nuts to the manufacturer's instructions and use no copper or brass clamps or conductors.

۸. Repair every cut, hole or weld with zinc-rich paint; the zinc coating has been lost at these points.

Steps



The full print-quality version of this drawing (PDF) can be downloaded from the product page at www.kalot.ir.

Choosing the tape by its role in the design

Conductor role	Installation location	Minimum hot-dip galvanised steel tape size in the standards	Our recommendation
Down conductor	On towers and galvanised steel structures	50 mm² tape (recommended thickness 2.5)	GST 303
Bonding conductor and earthing conductor	In concrete and in air	Steel, 50 mm²	GST 303
Foundation electrode (the loop inside concrete and its branches)	In concrete	75 mm² tape, 3 thick	GST 303
Buried conductor and earth ring in soil	Soil, 70 to 80 cm deep	90 mm² tape, 3 thick, with a 63 micron coating	GST 303, in all-galvanised networks with no steel inside concrete connected to them

Sizes from IEC 62561-2:2018, IEC 62305-3:2010, IEC 60364-5-54 and Part 13 of the National Building Regulations; the design sets the final size of each conductor. For conductor and electrode materials, see Earth electrode materials.

Choosing and pricing galvanised tape

For a galvanised tape quotation, send our specialists the order code GST 303, the length needed in metres and the accessories required (galvanised earth rod, galvanised U clamp, galvanised clamp for connecting tape to earth rod, galvanised wire, GIM ground improvement material and earth pit). If you also send the installation location (in foundation concrete, in soil or on a structure), the soil type and the earthing drawing, our specialists at KALOT Group will help you choose the size and matching-material clamps. If the project is in a coastal area or has saline groundwater, consult our specialists before choosing galvanised parts.