

TORRES DE TELECOMUNICACIONES



A landscape photograph showing two telecommunication towers on a grassy hill. The towers are metal lattice structures with several large, circular satellite dishes. The hill is covered in green grass and leads down to a valley filled with a thick layer of white clouds. The sky is a clear, bright blue with a few birds in flight. The overall scene is captured during the day, likely in the late afternoon or early morning given the lighting.

Telecommunication Towers EN



Project

The towers are designed according to European standards and regulations:

- NP EN 1990: 2009 - Eurocode 0: Basis of structural design;
- NP EN 1991-1- 1 : 2009 - Eurocode 1-1- : Actions on structures;
- NP EN 1991-1-4 - Eurocode 1-1-4: Wind actions;
- NP EN 1993-1-1 - Eurocode 3-1-1: Design of steel structures;
- NP EN 1993-1-8 - Eurocode 3-1-8: Design of joints;
- EN 1993-3-1 - Eurocode 3-3-1: Design of steel structures - Towers and masts.

All towers are designed in accordance with the safety standards and variables that influence their behaviour in the most diverse scenarios - wind action, terrain category, purpose, location and other actions to which they are subjected.

In addition to the types currently developed and manufactured, FISOLA designs all kinds of projects according to customer requirements.

Finish

The towers are hot-dip galvanised, a process in which the steel parts are immersed in a molten zinc bath, in accordance with EN ISO 1461. This finish acts as a barrier, preventing corrosion. In addition, at the customer's request and in compliance with ISO 12944, the zinc coating can be painted over. Using duplex coating, the most durable solution against corrosion.



LIGHT TUBULAR MASTS

Features	<ul style="list-style-type: none">- Tubular mast of polygonal section with decreasing diameter- Flange joint or Slip joint fitting- Slim design- Lightweight load capacity
Maximum equivalent load on top (m ²)	5m ²
Maximum height (m)	30m
Basic wind velocity (maximum)	27m/s
Additional data	<ul style="list-style-type: none">- Antennas can be protected by a dome for a better visual appearance of the structure.- Foundations can be made by using pre-cast stabilizing blocks



MEDIUM-LOAD TUBULAR MASTS

Features	<ul style="list-style-type: none">- Tubular mast of polygonal section with decreasing diameter- Flange joint or Slip joint fitting- Slim design- Medium load capacity
Maximum equivalent load on top (m ²)	10m ²
Maximum height (m)	50m
Basic wind velocity (maximum)	30m/s



REINFORCED TUBULAR MASTS

Features	<ul style="list-style-type: none">- Tubular mast of polygonal section with decreasing diameter- Flange joint or Slip joint fitting- Slim design- High load capacity
Maximum equivalent load on top (m ²)	15m ²
Maximum height (m)	50m
Basic wind velocity (maximum)	30m/s



EXTRA REINFORCED TUBULAR TOWERS

Features	<ul style="list-style-type: none">- Tubular mast of polygonal section with decreasing diameter- Flange joint or Slip joint fitting- Slim design- Very high load capacity
Maximum equivalent load on top (m ²)	20m ²
Maximum height (m)	50m
Basic wind velocity (maximum)	30m/s



LIGHT SQUARE STEEL LATTICE TOWERS (CONTINUOUS CROSS-SECTIONS)

Features	<ul style="list-style-type: none">- Network configuration- 4-legged structure- Structure are made using angles profiles- Lightweight load capacity
Maximum equivalent load on top (m ²)	5m ²
Maximum height (m)	30m
Basic wind velocity (maximum)	27m/s
Additional data	The tower will be supported by stabilizing concrete blocs. A container for the equipment is installed under the tower.



MEDIUM-LOAD SQUARE STEEL LATTICE TOWERS (CONTINUOUS CROSS-SECTIONS)

Features	<ul style="list-style-type: none">- Network configuration- 4-legged structure- Structure are made in equal leg angles profiles- Medium load capacity
Maximum equivalent load on top (m ²)	10m ²
Maximum height (m)	50m
Basic wind velocity (maximum)	30m/s



REINFORCED TUBULAR TOWERS (CONTINUOUS CROSS-SECTIONS)

Features	<ul style="list-style-type: none">- Network configuration- 4-legged structure- Structure are made in equal leg angles profiles- High load capacity
Maximum equivalent load on top (m ²)	15m ²
Maximum height (m)	50m
Basic wind velocity (maximum)	30m/s



EXTRA REINFORCED SQUARE STEEL LATTICE TOWERS (CONTINUOUS CROSS-SECTIONS)

Features	<ul style="list-style-type: none">- Network configuration- 4-legged structure- Structure are made in equal leg angles profiles- Very high load capacity
Maximum equivalent load on top (m ²)	20m ²
Maximum height (m)	50m
Basic wind velocity (maximum)	30m/s



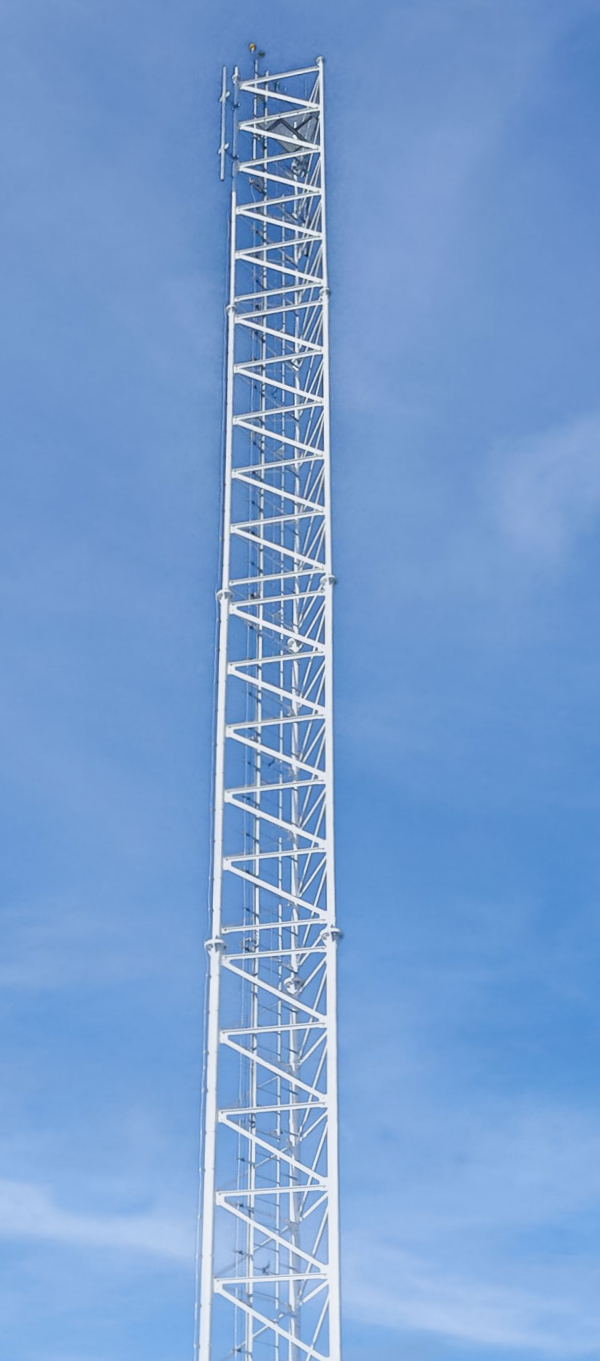
MEDIUM LOAD SQUARE STEEL LATTICE TOWERS (VARIABLE CROSS-SECTIONS)

Features	<ul style="list-style-type: none">- Network configuration- 4-legged structure- Structure are made in tubular profiles (CHS) or equal angles profiles.- Medium load capacity
Maximum equivalent load on top (m ²)	10m ²
Maximum height (m)	100m
Basic wind velocity (maximum)	30m/s



EXTRA-REINFORCED SQUARE LATTICE TOWERS (VARIABLE CROSS-SECTIONS)

Features	<ul style="list-style-type: none">- Network configuration- 4-legged structure- Structure are made in tubular profiles (CHS) or equal leg angles profiles.- Very high load capacity
Maximum equivalent load on top (m ²)	20m ²
Maximum height (m)	100m
Basic wind velocity (maximum)	30m/s



SLIMLINE TRIANGULAR LATTICE TOWERS

Features	<ul style="list-style-type: none">- Network configuration- 3-legged structure- Legs sections in tubular profiles (CHS), diagonals and bracings sections in equal angles profiles.- Lightweight load capacity
Maximum equivalent load on top (m ²)	5m ²
Maximum height (m)	50m
Basic wind velocity (maximum)	30m/s



MEDIUM-LOAD TRIANGULAR LATTICE TOWERS

Features	<ul style="list-style-type: none">- Network configuration- 3-legged structure- Legs sections in tubular profiles (CHS), diagonals and bracings sections in equal angles profiles.- Medium load capacity
Maximum equivalent load on top (m ²)	10m ²
Maximum height (m)	50m
Basic wind velocity (maximum)	30m/s



REINFORCED TRIANGULAR LATTICE TOWERS

Features	<ul style="list-style-type: none">- Network configuration- 3-legged structure- Legs sections in tubular profiles (CHS), diagonals and bracings sections in equal angles profiles.- High load capacity
Maximum equivalent load on top (m ²)	20m ²
Maximum height (m)	100m
Basic wind velocity (maximum)	30m/s

*Engineering and
metalworking solutions*





LIGHTWEIGHT GUYED TOWERS

Features	<ul style="list-style-type: none">- Network configuration- Triangular or square cross sections- Slim design- Structure made in tubular profiles (CHS)- Lightweight load capacity
Maximum equivalent load on top (m ²)	5m ²
Maximum height (m)	100m
Basic wind velocity (maximum)	30m/s
Additional data	<ul style="list-style-type: none">- Towers for mounting small weather instruments, radio antennas, etc.- Towers without access stairs (climbing the structure is done via the mast)



MEDIUM-LOAD GUYED TOWERS

Features	<ul style="list-style-type: none">- Network configuration- Triangular or square cross sections- Structure made in tubular profiles (CHS)- Medium load capacity
Maximum equivalent load on top (m ²)	10m ²
Maximum height (m)	100m
Basic wind velocity (maximum)	30m/s



REINFORCED GUYED TOWERS

Features	<ul style="list-style-type: none">- Network configuration- Triangular or square cross sections- Structure made in tubular profiles (CHS)- High load capacity
Maximum equivalent load on top (m ²)	15m ²
Maximum height (m)	60m
Basic wind velocity (maximum)	30m/s



ACCESSORIES

Basic Accessories	Standard Accessories	Optional Accessories
Stairs	Yes	-
Anti-climbing doors	Yes	-
Spikes / anti-climbing platform	Yes (only lattice towers)	-
Exterior cable trays	-	Yes
Rest platforms every 10m	Yes	-
Working platforms	-	Yes
Antenna support interfaces	-	Yes
Lightning rod and/or flashing beacon support	Yes	-
Fall prevention system (Lifeline or fall arrest rail system)	-	Yes



