



THE NEW FONSIDER TECHNOLOGY FOR STEEL FOUNDATIONS



Speed of execution

Time reduced by 70% since there is no need to wait for the concrete to be poured and mature.



Cost savings

Less material is involved and thanks to the speed, we have cost savings in the order of 30-40%.



Lower CO2 emissions

Environment friendly, 40% reduction of CO2 emissions better ESG index for users (Environment, Social, Governance).



No water needed

Fonsider foundations don't require any water: the installation is completely dry.



LOWER CO2 EMISSIONS

Lower CO2 emissions than traditional concrete foundations, both during production and construction, improving the ESG (Environment, Social, Governance) index.

The comparison between the concrete foundation and the Fonsider foundation showed a significant reduction in CO2 emissions as can be seen in the table on the right (produced by one of our customers in the TLC sector).

Being made of steel only, Foundations are also 100% recyclable: not only can they be easily removed but they can also be completely reused or recycled. Conventional concrete foundations, on the other hand, require demolition to remove and cannot be reused.

CO₂ EMISSIONS OF CONCRETE FOUNDATIONS

Quantificazione consumi CO₂

Attività	unità	Consumo (kg CO ₂ e*)
Pulizia area	2 h	0,47
Trasporto in sito scavatore	50 km	114
Scavo	6 h	352,04
Casseratura plinto/platea	50 mq	9,63
Trasporti casseri A/R	50 km	119,35
Armatura plinto/platea	1600 kg	9,63
Trasporti armatura	50 km	119,35
Produzione CLS C25/30	62,5 mc	13.437,5
Trasporto CLS	20 km	44,88
Trasporto terra in discarica	160 km	364,8
Finiture		9,63
Trasporti personale	10 km/g per 5 gg	9,65
Montaggio palo	100 km	317
Trasporti personale	60 km/g per 5 gg	57,9

Fonti:

- **SNAM RETE GAS** - Adeguamento impianto di Itrana (TV)
- <https://www.borsa-gei.adnline.it/en/infocategorie/donners-consultra/chele-categorie>
- <https://data.worldbank.org/indicator/NY.ATM.CO2L.AC?locations=IT>
- <https://publintonazionale.org/en/publintonazionale>

TOT. 14.965,83
Kg CO₂e*

CO2 EMISSIONS OF FONSIDER

Quantificazione consumi CO₂

Attività	unità	Consumo (kg CO ₂ e*)
Pulizia area	2 h	0,47
Trasporto in sito scavatore	50 km	114
Scavo di sbancamento	2 h	117,35
Trasporto terra in discarica	40 km	91,2
Lavorazione Lamiere (n.4) in stabilimento	0,41 mc	5.419,63
Trasporti lamiera	100 km	228
Infissaggio lamiera	6 h	352,04
Produzione solette prefabbricate in stabilimento (acciaio)	400 kg	676
Produzione solette prefabbricate in stabilimento (calcestruzzo)	5,51 mc	1.184,65
Trasporto solette in cantiere e montaggio	100 km	228
Finiture		9,63
Trasporti personale	10 km/g per 2 gg	3,86
Montaggio palo	100 km	317
Trasporti personale	60 km/g per 2 gg	23,16

Fonti:

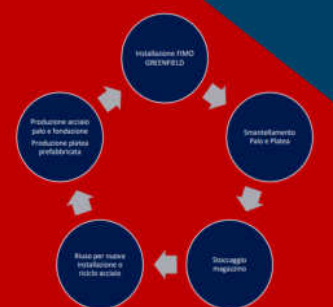
- SNAM RETE GAS - Adeguamento impianto di Istrana (TV)
- <https://www.hispani-gas.it/en/la-nuova-piana-dell'energia-contra/che-sar-societa>
- <https://www.worldbank.org/italiano/EN/ATM.CO2E.PC.locations-IT>
- <https://buildingtransmission.org/ec2/buildingtrans>

TOT.	8.764,99
	kg CO ₂ e*

CIRCULAR ECONOMY

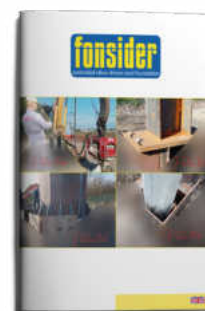
Economia circolare

- La scelta dei materiali per la realizzazione del FIMO Greenfield si è basata su due fattori principali : riciclabilità e modularità
- Si è deciso quindi di utilizzare acciaio per la fondazione per il palo ed i vari accessori, mentre per la platea si è optato per una soluzione in cemento armato prefabbricata di facile rimozione e riutilizzo
- Una volta rimossi palo e platea i materiali possono essere stoccati per un eventuale riutilizzo per la realizzazione di un altro sito oppure nel caso dell'acciaio possono essere riciclati per altri usi industriali
- Il ciclo di vita dell'impianto è di 50 anni che corrisponde a quanto viene garantito per durata di palo e fondazione



GENERAL DESCRIPTION:

1. For a **general description of Fonsider technology**, see Fonsider general booklet



SPECIFIC APPLICATIONS:

2. Foundations for **telecommunications monopoles**, see TLC presentation
3. Foundations for **noise barriers**, see noise barriers presentation
4. Foundations for **lighting poles**, see Slim booklet
5. Foundations for **lattice towers for overhead powerlines, TLC and television**, see lattice towers - energy, telecommunications and television - presentation
6. Foundations for **light towers**, see light towers presentation
7. Foundations for **utility poles**, see utility poles presentation
8. Foundations for **catenary poles**, see catenary poles presentation
9. Foundations for **prefabricated fences**, see Faster booklet
10. Foundations for **above ground pipeline**, see pipeline presentation



fonsider

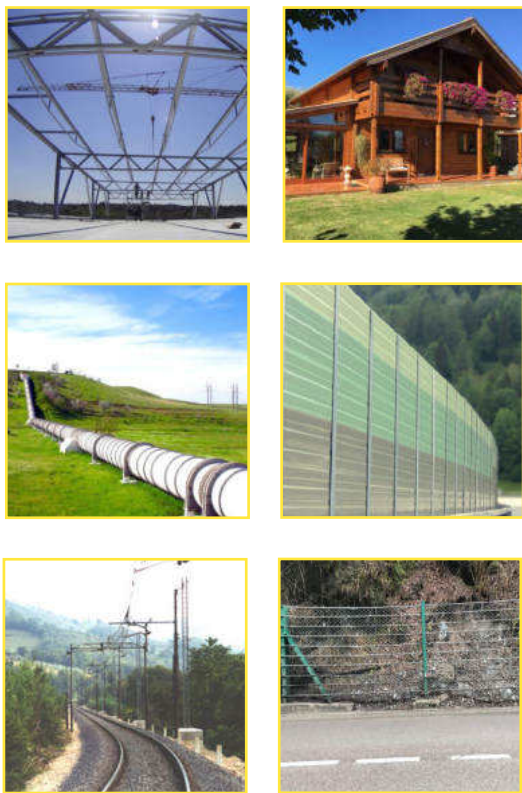
controlled vibro-driven steel foundation



SMART SYSTEM FOUNDATION F2C

APPLICATIONS:

- Foundations for noise barriers of any type
- Foundations for steel structures in general
- Foundations for rockfall protection barriers
- Steel building foundations
- Foundations for electric traction poles for railways and trams
- Foundations for wooden houses and structures in general
- Foundations for above ground oil pipelines
- Foundations for fences and partitions
- Foundations for temporary structures (in case of disasters)



COSTS AND TIME OF EXECUTION F2C

COMPARISON WITH CONCRETE SOLUTION

Example of a noise barrier foundation $h = 4\text{ m}$ and $L = 100\text{ ml}$:



Material transport



Installation



End of foundations work

fonsider times

- 80%

traditional solution times

Excavation for plinth housing



Transport of excavated material



Iron working/reinforcement for castings



Concrete casting



Concrete curing time waiting



End of foundations work

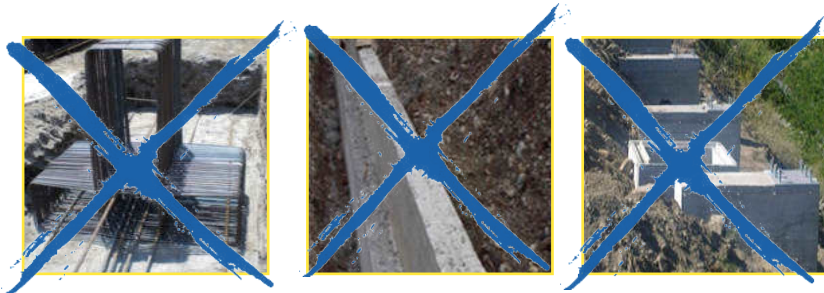


START TIME 8:00 a.m.



END TIME 8:30 a.m.

- Fonsider technology replaces traditional concrete foundations



OUTDATED SOLUTION

Supply and vibrodriving of 20 sheets of 520 kg for a total of about 10,000 kg

Supply and installation of 20 joints of 150 kg for a total of about 3000 kg

fonsider costs

- 50%

traditional solutions costs

Excavation $3.5 \times 1.2 \times 100 = 420\text{ mc}$

Supply and lean laying $2,35 \times 0,1 \times 100 = 23,5\text{ mc}$

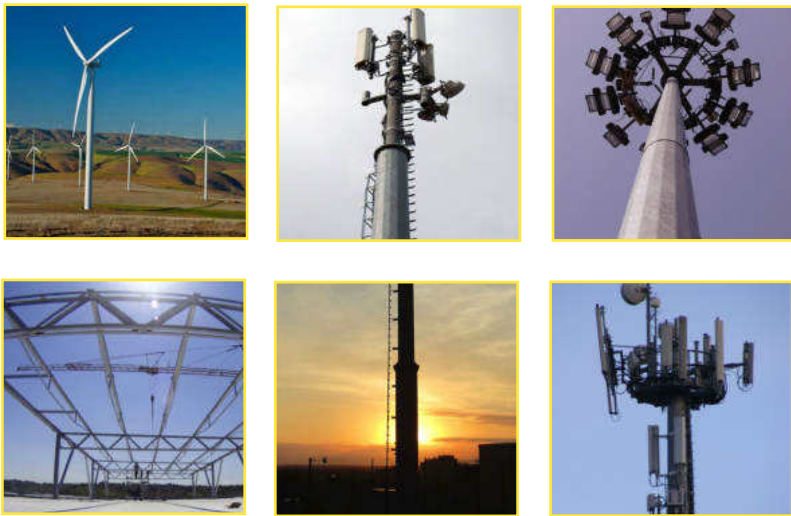
Supply and laying of formworks to contain the jet of the inverted beam
 $2 \times 0,5 \times 100 + 2 \times 1,65 \times 100 = 430\text{ sqm}$

Supply and installation of reinforcement iron approx. 14,600 kg

Concrete delivery and casting 190 mc










APPLICATIONS:

- Foundations for light towers
- Foundations for telecommunications towers
- Foundations for mini wind turbines
- Foundations for generic base flanged poles
- Foundations for steel structures in general



COMPARISON WITH CONCRETE SOLUTION

Example of a telecommunication tower foundation $h = 30\text{ m}$

	Material transport	fonsider times	traditional solution times	Excavation for plinth housing	
	Installation			Transport of excavated material	
	End of foundations work			Iron working/reinforcement for castings	
		- 80%		Concrete casting	
				Concrete curing time waiting	
				End of foundations work	

START TIME 8:00 a.m.



END TIME 9:30 a.m.

- Fonsider technology replaces traditional concrete foundations



OUTDATED SOLUTION

Supply and vibrodriving of sheets for a total of about 2600 kg

Supply and installation of joint for about 590 kg

fonsider costs

- 50%

traditional solution costs

Excavation of about 36 mc

Casting of a layer of lean for about 1.6 cubic meters

Supply and installation of plinth reinforcement iron for a total of about 2000 kg

Realization of formworks to contain the plinth jet for a total of 20 square meters

Supply installation of 16 anchor bolts + counter plate

Supply and casting of about 21 mc of concrete

Backfill for about 15 mc


APPLICATIONS:

- Foundations for lighting poles
- Foundations for utility poles
- Foundations for traffic light poles
- Foundations for canopy poles
- Foundations for road signs poles
- Foundations for video surveillance poles
- Foundations for generic not flanged poles




COMPARISON WITH CONCRETE SOLUTION


Example of lighting pole foundation



Material transport



Installation



End of foundations work

fonsider times

- 80%

traditional solution times

Excavation for plinth housing







Transport of excavated material

Iron working/reinforcement for castings

Concrete casting

Concrete curing time waiting

End of foundations work



START TIME 8:00 a.m.



END TIME 8:30 a.m.

- Fonsider technology replaces traditional concrete foundations



OUTDATED SOLUTION

Mini Excavation 40 x 40 x 80 cm

Vibrodriving of 76 kg metal sheet including joint

Pole and cockpit installation

fonsider costs

- 50%

traditional solution costs

Excavation 150 x 100 x 120 cm

Supply and laying of gravel/sand layer 150 x 100 x 10 cm

Supply and installation of the 120 x 80 x 90 cm plinth

Pole laying

Sand casting for pole grouting

Cockpit installation and masonry of the manhole

Backfill

ADVANTAGES F2C, F4L, FL

- Exceptional speed of execution with more than 20 foundations per day
- Cost savings of more than 40% compared to concrete solutions
- Less floor space than concrete solutions
- Absence of excavations
- Absence of concrete castings: the waiting times for concrete curing are avoided
- Possibility of removal leaving the ground unaltered
- Possibility of reuse, it can be removed with a vibrodriver without any damage
- Possibility of use for temporary structures (in case of disasters or events-shows)
- Antiseismic
- Ecological, all components are made of steel so 100% recyclable
- Possibility of installation in all weather conditions and ground conditions
- Dry installation, no landfill material, no soil changes
- Ideal for sloping terrain with guarantees of stability for the depth of penetration

TECHNICAL DATA F2C, F4L, FL

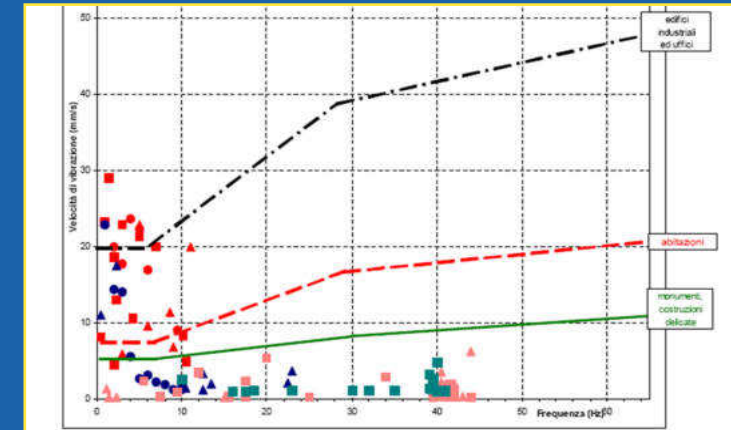
- Vibrodriven with a duration of less than 5'
- The vibrodriver is mounted on a 250-300 q excavator
- Safety against excavator's pressure losses is guaranteed by a chain
- Total dispersion of ground vibrations already at 20-30 m
- The vibrodriver is mounted on a 250-300 q excavator
- The "open" section of the sheet metal allows it to be driven into any terrain
- Calculations and verifications according to uni en, uni cnr, dm standards
- Possibility of driving adjacent to buildings with variable vibration machines and/or with trench
- The vibration of the sheet metal momentarily breaks up the ground facilitating the insertion after which, when the vibration is finished, the ground recompacts, cancelling any possibility of movement of the sheet metal fixed (similarly for the extraction).



Table 4-1: Recommended value for the loss of thickness (mm) due to corrosion for piles and sheet piles in soils, with or without groundwater

Required design working life	5 years	25 years	50 years	75 years	100 years
Undisturbed natural soils (sand, silt, clay, schist, ...)	0,00	0,30	0,60	0,90	1,20
Polluted natural soils and industrial sites	0,15	0,75	1,50	2,25	3,00
Aggressive natural soils (swamp, marsh, peat, ...)	0,20	1,00	1,75	2,50	3,25
Non-compacted and non-aggressive fills (clay, schist, sand, silt, ...)	0,18	0,70	1,20	1,70	2,20
Non-compacted and aggressive fills (ashes, slag, ...)	0,50	2,00	3,25	4,50	5,75

Notes:
 1) Corrosion rates in compacted fills are lower than those in non-compacted ones. In compacted fills the figures in the table should be divided by two.
 2) The values given for 5 and 25 years are based on measurements, whereas the other values are extrapolated.



- Design standardization according to stress and ground parameters
- Reduction of costs and design time thanks to design standardization
- Production standardization with the possibility of products in stock
- Reduction of costs and times thanks to production standardization
- Ease of construction thanks to the single work step with a single operator
- Ecologically integrated design optimization of the Ica index (eco-balance of the work) because either removal and reuse or total removal and recycling of all components that are made of steel

- For the guarantees of durability, the thickness of the sheets is dimensioned according to the ec 3-5 standard (en1993-5) for untreated steel structures driven into the ground.
- Even though the underground is oxygen-free, even in the presence of a water table, a galvanising treatment is foreseen as an additional element to guarantee durability, in addition to the application of the above standard.
- The vibrations induced in the ground are of an intensity comparable to that generated by the passage of a truck, as shown in the attached table.

TECHNOLOGY TRANSFER:

1. Thanks to its patented technology, Fonsider gives the customer the opportunity to have an exclusive product or limited to a few operators.

2. Fonsider enables the customer to use the fonsider technology independently for the application of his interest.

- Technical documentation of each technological application:
 - drawings
 - calculation reports
 - structural tests
- Illustrative documentation of photos and videos to illustrate the method of installation
- Training in Italy of technicians sent by the client for a period of 2 weeks
- Demonstrative installations, on request, in Italy
- Telephone and email support for questions and clarifications
- Annual technical update reports

N° 3 POSSIBLE CONTRACT OPTIONS:

OPTION 1

Royalty contract for each piece sold with minimum annual warranty for 20 years with a deposit to the signature.

OPTION 2

Royalty contract for each piece sold with a minimum guaranteed advance lump sum.

OPTION 3

Contract without royalties, only an advance lump sum.

- **Data analysis:** Università di Pisa
- **Misurations:** Laboratorio 4m – Bolzano-Florence
- **FEM modelling:** UTP engineering – Pisa
- **Inventor:**

Eng. Giampaolo Tizzoni

Fonsider was born from the experience of engineer Giampaolo Tizzoni. In 2012, Eng Tizzoni patented a solution of foundations in vibro-insertion steel, which could only be used for a particular type of noise barrier.

The patent was then acquired by the main Italian motorway companies: Autostrade per l'Italia Spa, Gavio Group - Sias Spa (SALT, CISA, SATAP, ATS, SITAF)

From 2012 to 2017 Eng Tizzoni perfected his knowledge in the field of foundations with vibro-driven plates, working in a company of the Gavio-Sias group for the application of the patent in the motorway network.

In 2018 he patented a foundation solution in steel with controlled vibroinfision that allows its use for all types of steel structures, from which the company Fonsider was born, for the development and marketing of this technology.

In 2019 Fonsider performs all the tests and trials with the University of Pisa and begins the commercialization of the technology.

In 2020 Fonsider begins the commercialization of the technology.



- Prices starting from 30.000€ for one application and one area unit.
- Full price list to be requested at: sales@fonsider.it
- List of area units still available to be requested at: technical@fonsider.it

- **Patent consulting:** Notarbartolo e Gervasi spa – Milano
- **Licensing consulting:** N&G Consulting - Milano - Avv. Foà
- **References:** To date, various Italian companies use Fonsider technology. To be requested at sales@fonsider.it

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Controlled vibro-driven steel foundations



Fonsider srl

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fonsider

controlled vibro-driven steel foundation

FOUNDATIONS FOR TELECOMMUNICATIONS



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DEMO VIDEO

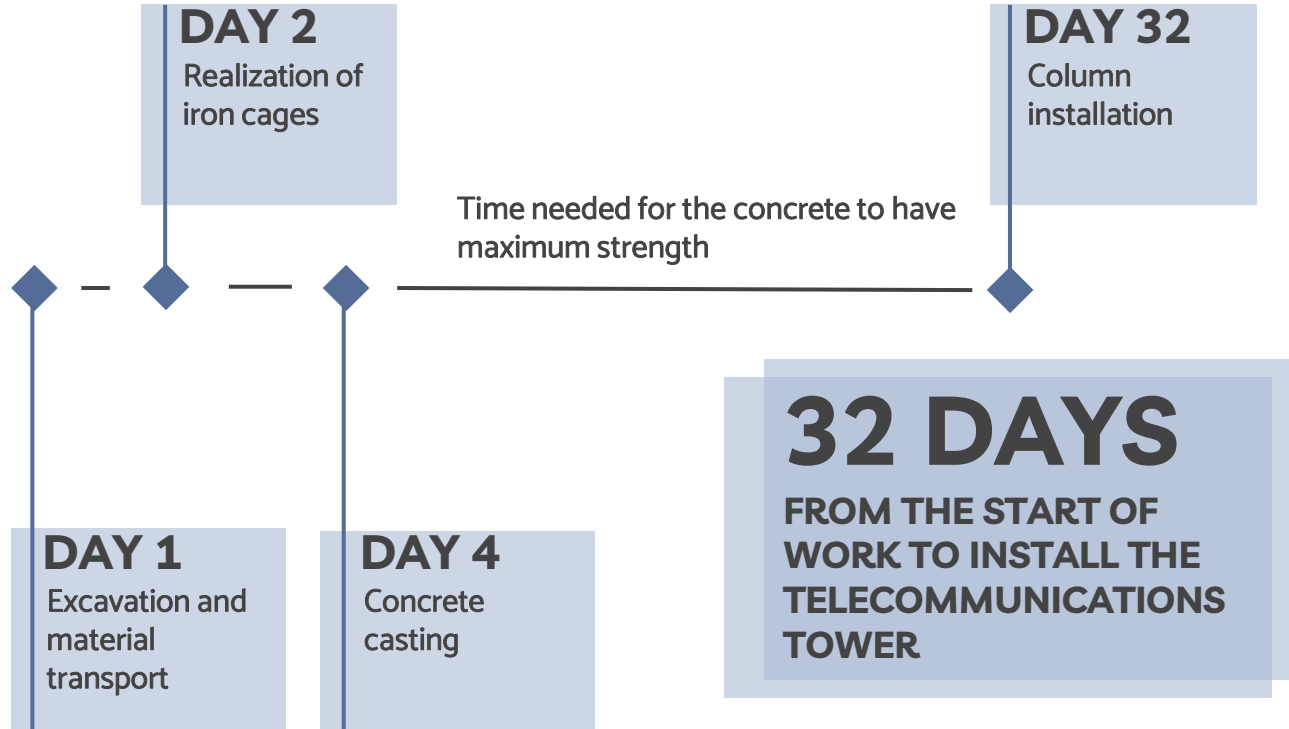
FOUNDATIONS UNTIL TODAY



**THE FOUNDATION REPRESENTS THE HIGHEST
COST AND THE LONGEST CONSTRUCTION
TIME OF THE ENTIRE INSTALLATION**



FOUNDATIONS UNTIL TODAY



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controlled vibro-driven steel foundation

THE FONSIDER REVOLUTION

8:00 AM: START OF WORK



9:30 AM: TOWER INSTALLATION



02

DAY 1

Vibrodriving the
foundation and
column installation

1 DAY

TO BUILD THE FOUNDATION
AND INSTALL THE
TELECOMMUNICATIONS TOWER

FONSIDER'S REVOLUTIONARY APPROACH, WHICH ALLOWS THE CONSTRUCTION TO BE COMPLETED WITHIN 24 HOURS, USES THE FOLLOWING ELEMENTS:

- Steel sheets foundations which are driven using our patented technique.
- The new Fonsider technology:
 - allows to vibrodrive the sheets with a controlled error of ± 7 cm at most
 - allows to correct said error with specific Fonsider joints.
 - allows the column to be simply bolted onto the cap of said foundation.
- The patents are granted internationally making Fonsider truly exclusive.

ADVANTAGES



Speed of execution

Time reduced by 70% since there is no need to wait for the concrete to be poured and mature.



Cost savings

Less material is involved and thanks to the speed, we have cost savings in the order of 30-40%.



Lower CO2 emissions

Environment friendly, 40% reduction of CO2 emissions better ESG index for users (Environment, Social, Governance).



No water needed

Fonsider foundations don't require any water: the installation is completely dry.

FONSIDER TECHNOLOGY FOR THE TELECOMMUNICATIONS FOUNDATIONS

**FONSIDER'S VIBROBOX
FOR INSTALLATION**



**STRUCTURAL TESTS HAVE
BEEN CARRIED OUT WITH
THE UNIVERSITY OF PISA**

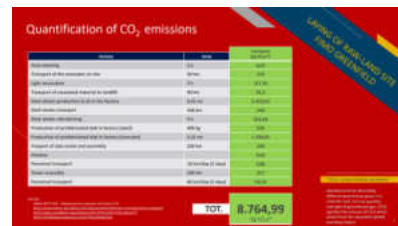


FONSIDER PLATE

PARTNERSHIP IN THE TELECOMMUNICATIONS INDUSTRY

Fonsider has already signed a partnership in Italy with FIMO. (<https://www.fimoworld.com>) in relation to the telecom tower sector.

FIMO is an Italian based company, with over 80 years of trading, that specialises in the design and production of equipment and related components for telecommunications and towers. In July 2020, FIMO was acquired by Italian private equity group, Wise Equity. With the support of its new owners, FIMO is aggressively looking to expand its product offering, to include the provision of technology/services for Mobile Tower foundations.

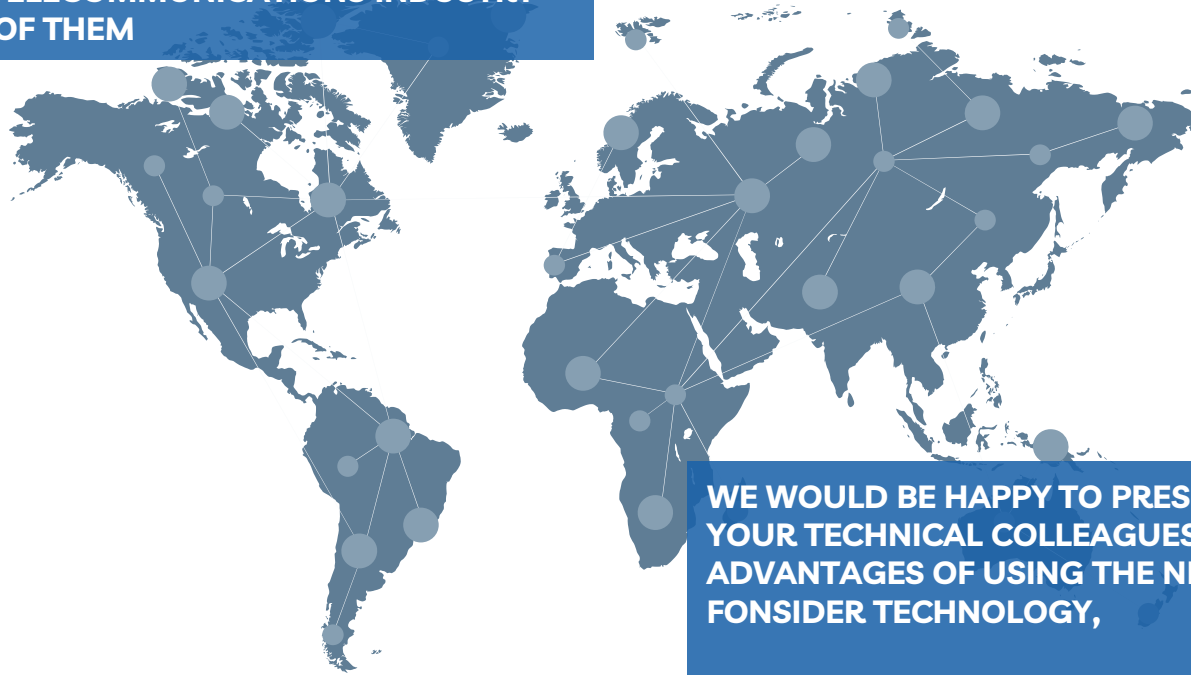


FIMO has undertaken its own analysis of Fonsider's technology with specific reference to the CO₂ benefits. Its independent analysis shows the Fonsider solution has a carbon footprint of just 50% of a traditional concrete foundation. Please see separate summary deck for details of FIMO's analysis.

**FONSIDER IS LOOKING FOR LEADING
ORGANIZATIONS IN EVERY INDUSTRY TO
PARTNER WITH.**

**THE TELECOMMUNICATIONS INDUSTRY
ONE OF THEM**

**FONSIDER
ABROAD**



**WE WOULD BE HAPPY TO PRESENT TO
YOUR TECHNICAL COLLEAGUES THE
ADVANTAGES OF USING THE NEW
FONSIDER TECHNOLOGY,**

**OF WHICH A DEMO VIDEO IN THE
FOLLOWING PAGE.**

05



SPEED



COST SAVING



NO WATER



LESS CO2



Source: video and more details on request



fonsider

controlled vibro-driven steel foundation

FOUNDATIONS FOR NOISE BARRIERS

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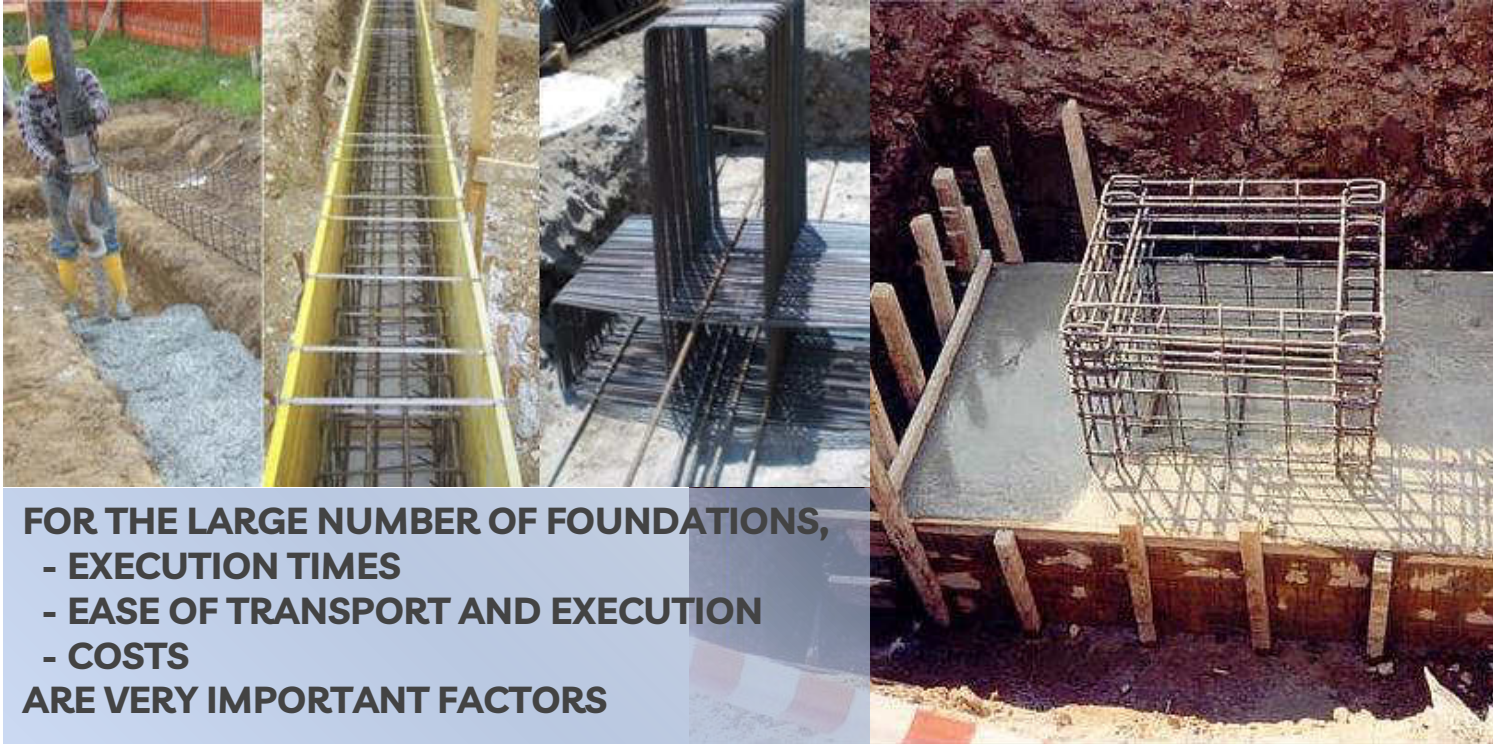
04

FONSIDER ABROAD

05

DEMO VIDEO

FOUNDATIONS UNTIL TODAY



**FOR THE LARGE NUMBER OF FOUNDATIONS,
- EXECUTION TIMES
- EASE OF TRANSPORT AND EXECUTION
- COSTS
ARE VERY IMPORTANT FACTORS**

fonsider

controlled vibro-driven steel foundation

THE FONSIDER REVOLUTION

8:00 AM: START OF WORK



9:00 AM: UPRIGHT INSTALLATION

02

START

Vibrodriving the
foundation and upright
installation

AFTER

1 HOUR

WE CAN ALREADY INSTALL THE
NOISE BARRIER SECTION

FONSIDER'S REVOLUTIONARY APPROACH, WHICH ALLOWS THE CONSTRUCTION TO BE COMPLETED WITHIN 1 HOUR, USES THE FOLLOWING ELEMENTS:

- Steel sheets foundations which are driven using our patented technique.
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 - allows to vibrodrive the sheets with a controlled error of ± 7 cm at most
 - allows to correct said error with specific Fonsider joints.
 - allows the upright to be simply bolted onto the cap of said foundation.
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NOISE BARRIERS: COMPARISON BETWEEN DIFFERENT FOUNDATION SOLUTIONS

02

Noise Barrier H = 4 m	Various types of foundations	  	 	 
	Aluminium panels elevation			
Implementation cost comparisons		-30/40%	+40%	+30%
Continuous and simultaneous execution possible (foundation and elevation)		Yes	No	No
Execution time for 1,000 ml		10 days	40 days	40 days
Cost of the construction site on the highway		5,2 €/lm	40 €/lm	40€/lm

NOISE BARRIERS: COMPARISON BETWEEN DIFFERENT FOUNDATION SOLUTIONS

	 controlled vibro-driven steel foundation	concrete with kerb and foundation beam on micropiles	concrete with plinth on single pile
Reduction of CO2 emissions with improvement of the dealership's ESG index (see related slide)	-40%	No	No
Water consumption to build the foundations	No water required	A lot of water required because of concrete	A lot of water required because of concrete

CONSIDER TECHNOLOGY FOR NOISE BARRIERS FOUNDATIONS



**CONSIDER'S VIBROBOX
FOR INSTALLATION**



CONSIDER JOINT

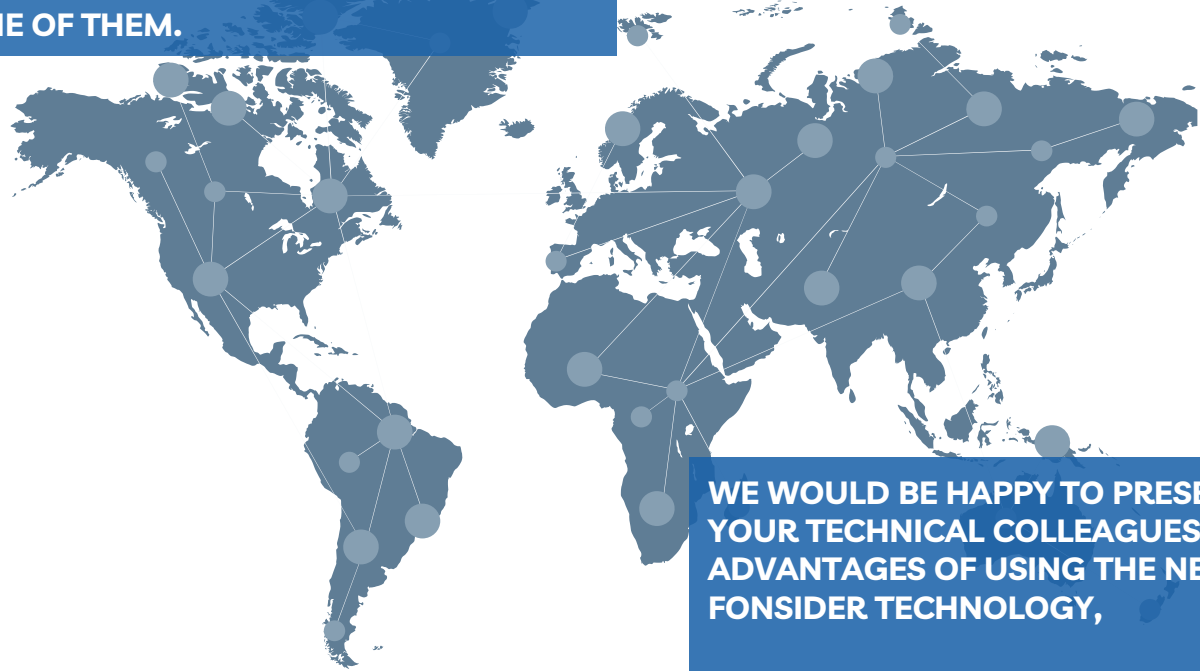


**STRUCTURAL TESTS HAVE
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FONSIDER IS LOOKING FOR LEADING ORGANIZATIONS IN EVERY INDUSTRY TO PARTNER WITH.

THE NOISE BARRIERS INDUSTRY IS ONE OF THEM.

**FONSIDER
ABROAD**



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OF WHICH A DEMO VIDEO IN THE FOLLOWING PAGE.

DEMO VIDEO



SPEED



COST SAVING



NO WATER



LESS CO2



Source: video and more details on request

05

A large, brown metal lattice tower, likely for power lines or telecommunications, stands against a clear blue sky. The tower's structure is a complex of interconnected beams and cross-braces. In the background, some trees and a distant horizon are visible.

fonsider

controlled vibro-driven steel foundation

**FOUNDATIONS FOR
LATTICE TOWERS
(ENERGY,
TELECOMMUNICATIONS,
TELEVISION)**

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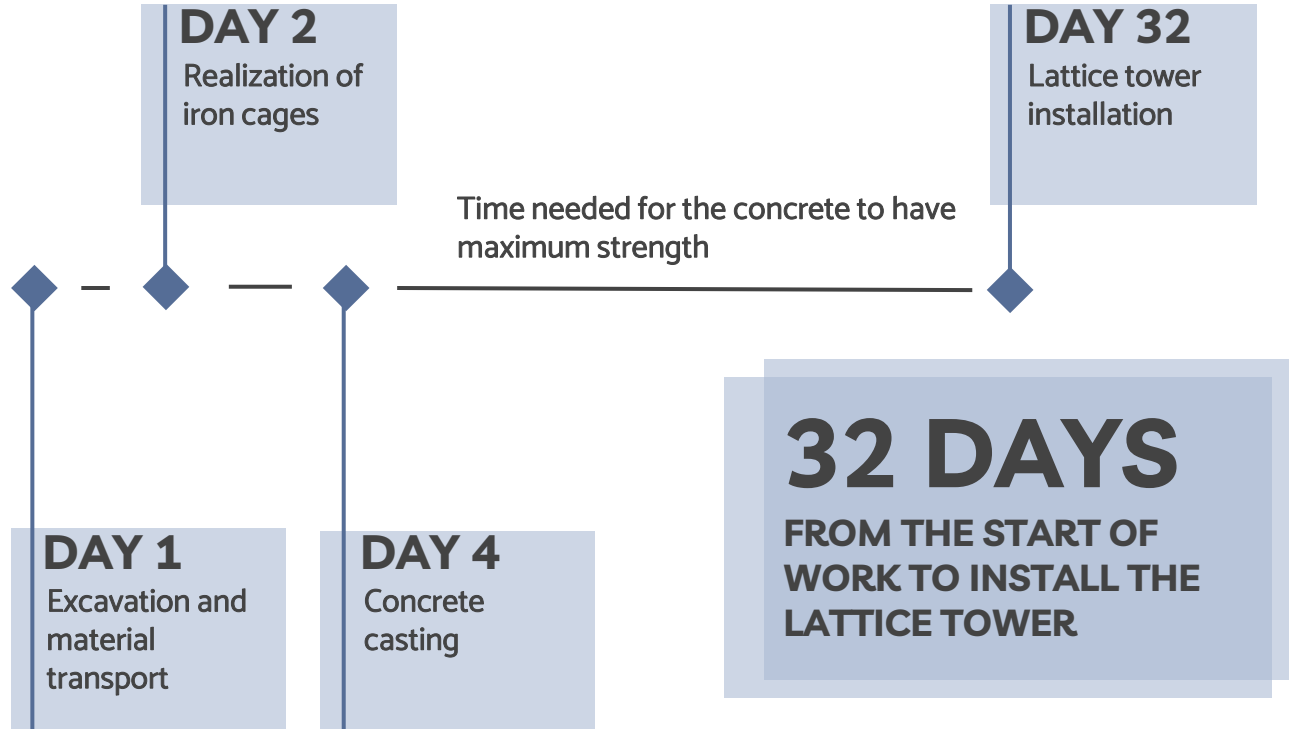
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Fonsider foundations don't require any water: the installation is completely dry.

FONSIDER TECHNOLOGY FOR LATTICE TOWERS FOUNDATIONS



VIBROBOX

**FONSIDER'S VIBROBOX
FOR INSTALLATION**



FONSIDER JOINT

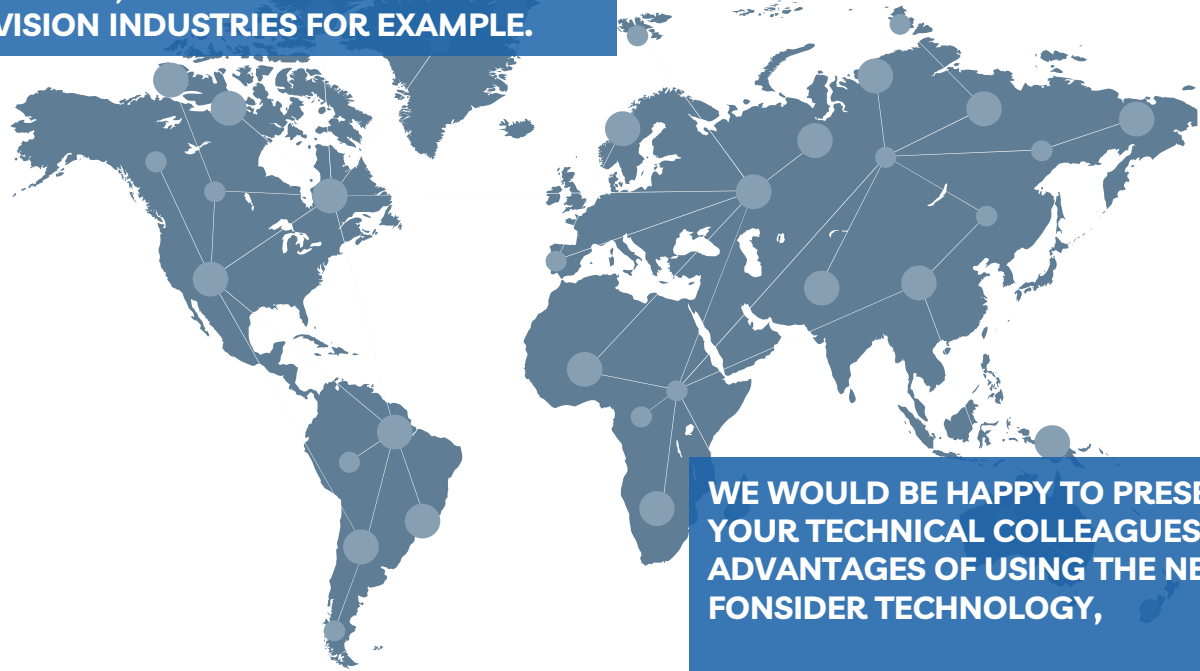


**STRUCTURAL TESTS HAVE
BEEN CARRIED OUT WITH
THE UNIVERSITY OF PISA**

FONSIDER IS LOOKING FOR LEADING ORGANIZATIONS IN EVERY INDUSTRY TO PARTNER WITH.

THE ENERGY, TELECOMMUNICATIONS AND TELEVISION INDUSTRIES FOR EXAMPLE.

**FONSIDER
ABROAD**



WE WOULD BE HAPPY TO PRESENT TO YOUR TECHNICAL COLLEAGUES THE ADVANTAGES OF USING THE NEW FONSIDER TECHNOLOGY,

OF WHICH A DEMO VIDEO IN THE FOLLOWING PAGE.

DEMO VIDEO



SPEED



COST SAVING



NO WATER



LESS CO2



Source: video and more details on request

05

fonsider

controlled vibro-driven steel foundation

FOUNDATIONS FOR UTILITY POLES



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DEMO VIDEO

FOUNDATIONS UNTIL TODAY



FOR THE LARGE NUMBER OF FOUNDATIONS,

- EXECUTION TIMES
- EASE OF TRANSPORT AND EXECUTION
- COSTS

ARE VERY IMPORTANT FACTORS

fonsider

controlled vibro-driven steel foundation

THE FONSIDER REVOLUTION

8:00 AM: START OF WORK

9:00 AM: POLE INSTALLATION



02

START

Vibrodriving the
foundation and pole
installation

AFTER

1 HOUR

WE CAN ALREADY INSTALL THE
UTILITY POLE

FONSIDER'S REVOLUTIONARY APPROACH, WHICH ALLOWS THE CONSTRUCTION TO BE COMPLETED WITHIN 1 HOUR, USES THE FOLLOWING ELEMENTS:

- Steel sheets foundations which are driven using our exclusive know-how.
- The new Fonsider technology:
 - allows to vibrodrive one L-shaped sheet with specific designs
 - allows the pole to be simply driven in said foundation.

ADVANTAGES



Speed of execution

Time reduced by 70% since there is no need to wait for the concrete to be poured and mature.



Cost savings

Less material is involved and thanks to the speed, we have cost savings in the order of 30-40%.



Lower CO2 emissions

Environment friendly, 40% reduction of CO2 emissions better ESG index for users (Environment, Social, Governance).



No water needed

Fonsider foundations don't require any water: the installation is completely dry.

CONSIDER TECHNOLOGY FOR UTILITY POLES FOUNDATIONS



**PILEDRIVER FOR
INSTALLATION**



CONSIDER JOINT



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THE ENERGY INDUSTRY IS ONE OF THEM.

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DEMO VIDEO



SPEED



COST SAVING



NO WATER



LESS CO2

THE IMAGES REFER TO THE GENERAL
CONCEPT OF THE NEW TECHNOLOGY, EASILY
CUSTOMIZABLE FOR THE RAILWAY SECTOR.



Source: video and more details on request

05

fonsider

controlled vibro-driven steel foundation

FOUNDATIONS FOR CATENARY POLES



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FOUNDATIONS UNTIL TODAY



**THE FOUNDATION REPRESENTS THE HIGHEST
COST AND THE LONGEST CONSTRUCTION
TIME OF THE ENTIRE INSTALLATION**



01

fonsider

controlled vibro-driven steel foundation

THE FONSIDER REVOLUTION

8:00 AM: START OF WORK



9:00 AM: POLE INSTALLATION

02

START

Vibrodriving the
foundation and pole
installation

IT TAKES

1 HOUR

TO BUILD THE FOUNDATION
AND INSTALL POLE

FONSIDER'S REVOLUTIONARY APPROACH, WHICH ALLOWS THE CONSTRUCTION TO BE COMPLETED WITHIN 24 HOURS, USES THE FOLLOWING ELEMENTS:

- Steel sheets foundations which are driven using our patented technique.
- The new Fonsider technology:
 - allows to vibrodrive the sheets with a controlled error of ± 7 cm at most
 - allows to correct said error with specific Fonsider joints.
 - allows the column to be simply bolted onto the cap of said foundation.
- The patents are granted internationally making Fonsider truly exclusive.

ADVANTAGES



Speed of execution

Time reduced by 70% since there is no need to wait for the concrete to be poured and mature.



Cost savings

Less material is involved and thanks to the speed, we have cost savings in the order of 30-40%.



Lower CO2 emissions

Environment friendly, 40% reduction of CO2 emissions better ESG index for users (Environment, Social, Governance).



No water needed

Fonsider foundations don't require any water: the installation is completely dry.

FONSIDER TECHNOLOGY FOR CATENARY POLES FOUNDATIONS



**FONSIDER'S VIBROBOX
FOR INSTALLATION**



FONSIDER JOINT

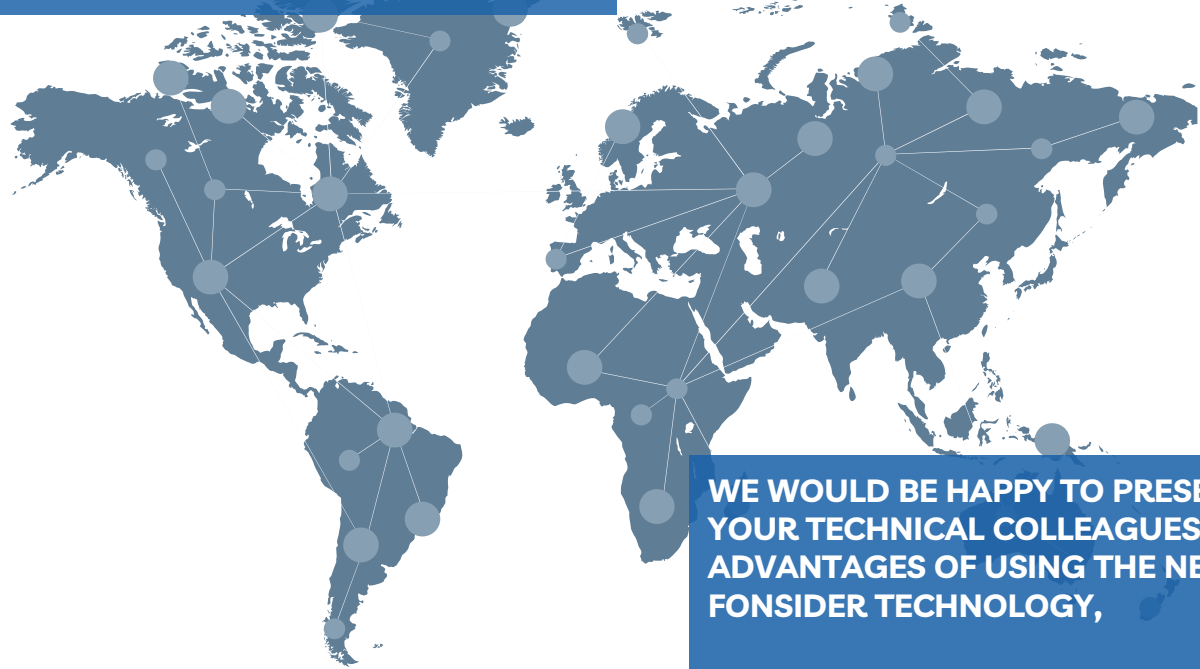


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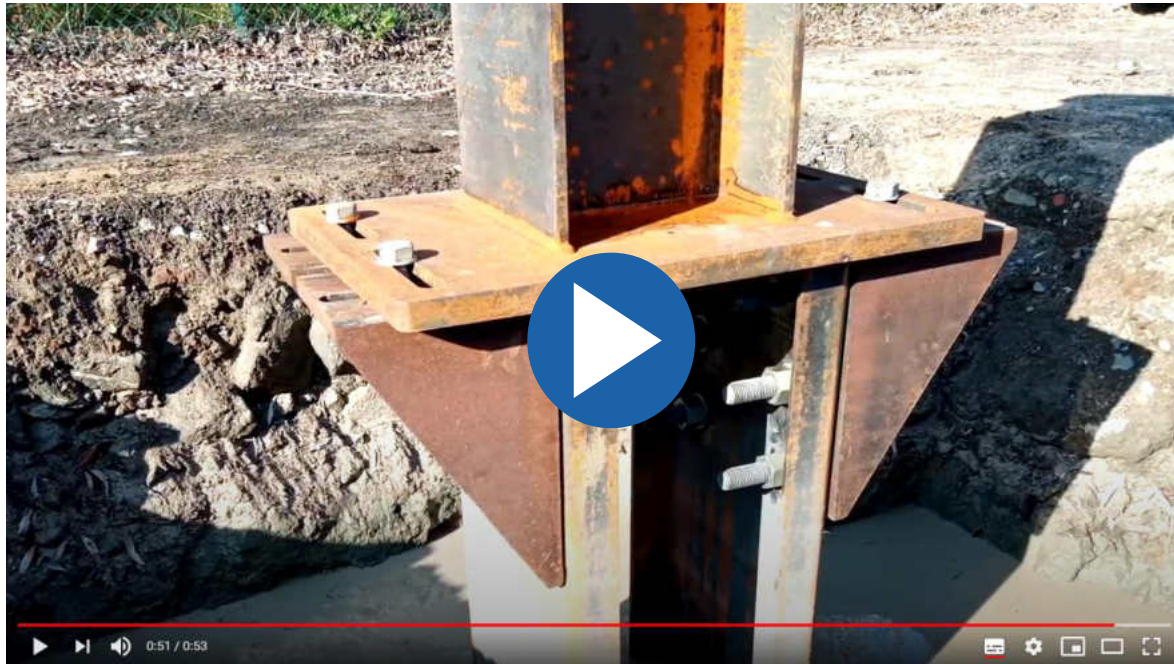
COST SAVING



NO WATER



LESS CO2



Source: video and more details on request

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