



conGraph
CP-20

DATA SHEET

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DESCRIPTION

conGraph CP-20 is a mortar that combines carbonaceous and cement-based materials, which make it possible to achieve a product with high electrical conductivity.

Due to its conductive properties and its low consumption rate is used as **backfill for cathodic protection systems**, providing a 4 times more durable solution compared with traditional materials.

conGraph CP-20 once is cured presents a high mechanical strength.

conGraph CP-20 is supplied in a 20 Kg paper bag.

BENEFITS

- Reduces corrosion and increases anode life
- Minimizes the total cost of the installation
- Does not require vent pipe
- Easy to use by pouring or pumping
- Excellent contact with the surrounding soil
- Maintains constant performance
- Withstands heavy currents
- Does not require maintenance
- Does not crack after curing
- Non harmful to the environment

TECHNICAL FEATURES

Designed to comply with NSF / ANSI 60 standard: Drinking water treatment chemicals

Fully compliance with UNE-EN IEC 62561-7:2018: Requirements for earthing enhancing compounds

Property		Typical value	Test method
Consumption rate (Kg/A.year)		0,4	ITE M135
Resistivity (Ω.m)		<5,0	UNE 83988-2:2014
Compressive strength (MPa)	28 days	15,0 ± 2,0	UNE-EN 196-1:2018
Flexural strength (MPa)	28 days	2,0 ± 0,5	UNE-EN 196-1:2018
Solid - Water ratio		0,38 ± 0,02	UNE-EN 12350-8:2020
Density (kg/ m ³)	Slurry	1700 ± 100	-
	Powder	900 ± 100	
Slurry workability time (min)		350	-
pH		12,5	UNE-EN 16192-2:2012
Sulphur content (%)		<1,0	ISO 4689-3:2017
Permeability to water (cm/s)		1,9·10 ⁻⁷	UNE-EN ISO 11275
Corrosion rate (µm/year)		<1,2	ASTM G59 - 97 ASTM G102 - 89 UNE-EN ISO 10111:2020
Leaching		See breakdown	UNE-EN 12457-2:2003 UNE-EN 16192-2:2012

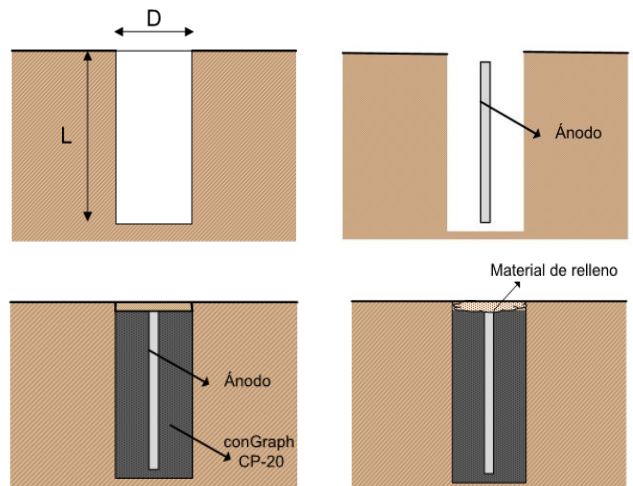
LEACHING BREAKDOWN RESULTS

Elements determined	Value (ppm)	Limit Values
Arsenic	0,008	According to the national or international regulation applicable
Barium	1,67	
Beryllium	<0,005	
Cadmium	<0,005	
Copper	<0,01	
Silver	<0,01	
Fluorides	0,064	
Mercury	0,00006	
Nitrates	0,15	
Nitrites	0,15	
Lead	<0,01	
Selenium	0,026	
Cyanide	<0,001	

HOW TO USE CONGRAPH CP-20

TYPICAL VERTICAL INSTALLATION

1. Drill a hole in the ground to the required depth.
2. Center the anodes in the hole and insert them into position.
3. Mix conGraph CP-20 with water until a slurry is obtained. For each bag, use between 7.5 and 8.0 liters of water (2 US gal). Do not use salt water.
4. Pour or pump the conGraph CP-20 mixture with water until the anodes are completely embedded, and make sure there are no air gaps.
5. When the product is solidified, fill the upper part of the hole with conGraph CP-20 powder or part of the ground removed.



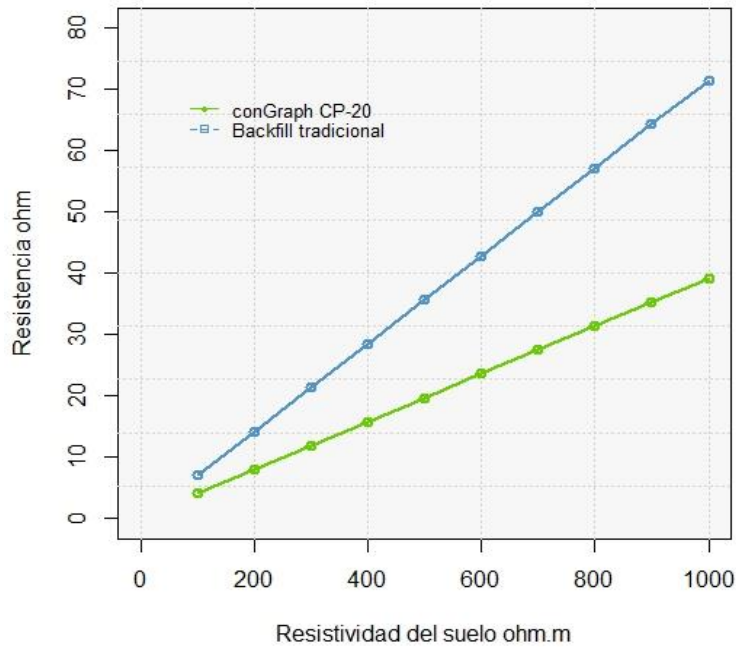
NUMBER OF BAGS TO USE

Prof. (m)	Depth (ft)	Diámetro de la perforación (mm)					
		Hole Diameter (in)					
		60	100	150	200	250	300
		2,4	3,9	5,9	7,9	9,8	11,8
6	19,7	2	3	7	12	19	27
15	49,2	3	8	17	30	47	67
30	98,4	6	15	34	59	93	133
60	196,8	11	30	67	118	185	266
90	295,2	16	45	100	177	277	398
120	393,6	22	59	133	236	369	531
240	787,2	43	118	266	472	737	1061

CONGRAPH CP-20 vs. CONVENTIONAL BACKFILL

Calculation example of the resistance for a **25 cm hole diameter and 20 m depth**

Resistencia en instalaciones verticales



Calculation example of the resistance for a **25 cm hole diameter and 50 m depth**

Resistencia en instalaciones verticales

