

GEM Ground Enhancement Material – GEM25A (163670)



Ground Enhancement Material (GEM) is a superior conductive material that solves your toughest grounding problems. It is the ideal material to use in areas of poor conductivity, such as rocky ground, mountain tops and sandy soil. GEM dramatically reduces earth resistance and impedance measurements. Furthermore, GEM may reduce the size of the grounding system where conventional methods are unsatisfactory. Once installed, GEM is maintenance-free, not requiring periodic charging or the presence of water to maintain its conductivity. Third-party testing has been completed to verify that GEM conforms to IEC® 62561-7. This standard introduces a benchmark for electrical performance and corrosion of earth enhancement materials that has been absent from the industry to date. nVent ERICO offers GEM Calculator software that provides resistivity values for common GEM applications and can help estimate the amount of GEM required for an installation. It operates in four languages - English, Spanish, French and German - and performs calculations in Imperial or Metric units. The GEM Calculator is available for download on our website at erico.com.

- Maintains constant resistance for the life of the system once in its set form
- Performs in all soil conditions even during dry spells
- Does not require periodic charging treatments or placement
- Does not require the continuous presence of water to maintain its conductivity
- Fully sets within 3 days, fully cures within 28 days
- Does not dissolve, decompose, or leach out with time
- Non-corrosive
- Reduces vandalism and theft since conductors are hard to remove from concrete
- Easy-to-handle 25 lb (11.3kg) bags or buckets
- Requires only one person to install
- Exceeds IEC® 62561-7 which sets the benchmark for corrosion, leaching, sulfur content, and other environmental regulations
- Complies to the U.S. Environmental Protection Agency (EPA) Toxicity Characteristic Leaching Procedure (TCLP), EPA test method 1311
- Can be installed using trench or ground rod backfill methods



Part Number	GEM25A
Article Number	163670
Unit Weight	11.36 kg
Packaging	Bag with handles
Complies With	IEC® 62561-7
Certifications	Qualifoudre
Standard Packaging Quantity	1 pc
UPC	78285632296
EAN-13	8711893001389

Suggested Specifications		
Parameter	Recommended Values	Test Method
Standards Compliance		Full compliance to IEC 62561-7 EPA Toxicity Characteristic Leaching Procedure (TCLP), test method 1311
Leaching	Arsenic < 1.5 mg/L, Barium < 60 mg/L, Cadmium < 0.15 mg/L, Chromium < 3.0 mg/L, Lead < 1.5 mg/L, Mercury < 0.06 mg/L,	EC 62561-7 EN 12457-2

Suggested Specifications		
	Elenium < 1.0 mg/L	
Sulfur Content	< 2%	
Resistivity	<2 Ω-cm for powder <20 Ω-cm for mixed and cured material	
Corrosion Performance	For copper-plated earth electrodes, the polarization resistance shall be > 8 Ω x m ² for aggressive environments For galvanized earth electrodes, the polarization resistance shall be > 7.6Ω x m ² for aggressive environments	
Flexural Strength	300-450 psi [2070-3100 kPa]	
Compressive Strength	100-200 psi [690-1390 kPa] after 672 hours curing time	
	ISO 14869-1	
	Compressed powder according to ASTM G187-12 Mixed and cured per ASTM D991-89	
	IEC 62561-7, Sec 5.5, aggressive environment	
	ASTM C293	
	ASTM C109	

Estimated Linear Feet of Ground Conductor Covering with Each Bag of GEM							
Trench Width		Total Thickness of GEM					
		in	cm	in	cm	in	cm
Inches	Centimeters	4	10.2	5	12.7	6	15.2
4	10	3.5	1.0m	2.8	0.8m	2.3	0.7m
6	15.2	9.3	0.7m	1.8	0.5m	1.5	0.4m
8	20.3	7	0.5m	1.4	0.4m	1.1	0.3m
10	25.4	5.6	0.4m	1.1	0.3m	0.9	0.3m
12	30.5	4.7	0.3m	0.9	0.3m	0.7	0.2m

Estimated Bags of GEM for Backfilling Around Ground Rods to a Density of 63.5 lb/ft ³ [1,017 kg/m ³]													
Diameter of Hole		ft	m	ft	m	ft	m	ft	m	ft	m	ft	m
Inches	Centimeters	5	1.5	6	1.8	8	2.4	10	3	15	4.6	20	6.1
4	10.2	2		2		2		3		4		5	
6	15.2	3		3		4		5		8		10	
8	20.3	5		6		8		9		14		18	
10	25.4	7		9		12		14		21		28	
12	30.5	10		12		16		20		30		40	

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WARNING

nVent products shall be installed and used only as indicated in nVent's product instruction sheets and training materials. Instruction sheets are available at www.erico.com and from your nVent customer service representative. Improper installation, misuse, misapplication or other failure to completely follow nVent's instructions and warnings may cause product malfunction, property damage, serious bodily injury and death and/or void your warranty.

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