

# GEM Ground Enhancement Material

## Power Utilities



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](http://erico.com).

### CARACTERÍSTICAS

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

## ESPECIFICACIONES

**Peso por unidad:** 11.360 kg

Table 1/1

| Número de catálogo | Número de artículo | Embalaje                             |
|--------------------|--------------------|--------------------------------------|
| GEM25A             | 163670             | Bolsa con asas                       |
| GEM25ABKT          |                    | Cubo de plástico con tapa de bloqueo |

Pies lineales estimados de cubierta de conductor de puesta a tierra con bolsa de GEM

| Ancho de zanja | Grosor total de GEM |         |         |
|----------------|---------------------|---------|---------|
|                | 10.2 cm             | 12.7 cm | 15.2 cm |
| 10 cm          | 1.0 m               | 0.8 m   | 0.7 m   |
| 15.2 cm        | 0.7 m               | 0.5 m   | 0.4 m   |
| 20.3 cm        | 0.5 m               | 0.4 m   | 0.3 m   |
| 25.4 cm        | 0.4 m'              | 0.3 m   | 0.3 m   |
| 30.5 cm        | 0.3 m               | 0.3 m   | 0.2 m   |

Especificaciones sugeridas

| Parámetro                     | Valores recomendados                                                                                                                                                                                                                                         | Método de prueba                                                                                                             |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| Cumplimiento con las normas   |                                                                                                                                                                                                                                                              | Cumplimiento total con Toxicidad de la EPA IEC 62561-7 Lixivación característica Procedimiento (TCLP), método de prueba 1311 |
| Lixivación                    | Arsénico < 1,5 mg/L, bario < 60 mg/L, cadmio < 0,15 mg/L, cromo < 3,0 mg/L, plomo < 1,5 mg/L, mercurio < 0,06 mg/L, elenio < 1,0 mg/L                                                                                                                        | EC 62561-7 EN 12457-2                                                                                                        |
| Contenido de azufre           | < 2 %                                                                                                                                                                                                                                                        | ISO 14869-1                                                                                                                  |
| Resistividad                  | <2 Ω-cm para polvo <20 Ω-cm para material mezclado y curado                                                                                                                                                                                                  | Polvo comprimido de conformidad con ASTM G187-12 Mezclado y curado de conformidad con ASTM D991-89                           |
| Desempeño contra la corrosión | Para los electrodos a tierra con recubrimiento de cobre, la resistencia a la polarización debe ser > 8 Ω x m2 para ambientes agresivos Para electrodos a tierra galvanizados, la resistencia a la polarización debe ser > 7.6Ω x m2 para ambientes agresivos | IEC 62561-7, Sección 5.5, ambiente agresivo                                                                                  |
| Resistencia a la flexión      | 300-450 psi [2070-3100 kPa]                                                                                                                                                                                                                                  | ASTM C293                                                                                                                    |
| Resistencia a la compresión   | 100-200 psi [690-1390 kPa] después de 672 horas de tiempo de curado                                                                                                                                                                                          | ASTM C109                                                                                                                    |

| Bolsas estimadas de GEM para llenar alrededor de las varillas de puesta a tierra, a una densidad de 1017 kg/m <sup>3</sup> (63,5 lb/ft <sup>3</sup> ) |             |    |     |    |     |    |     |    |   |    |     |    |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----|-----|----|-----|----|-----|----|---|----|-----|----|-----|
| Diámetro del orificio                                                                                                                                 |             | ft | m   | ft | m   | ft | m   | ft | m | ft | m   | ft | m   |
| Pulgadas                                                                                                                                              | Centímetros | 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 |     |

## ADVERTENCIA

Los productos nVent deben instalarse y usarse solo como se indica en las hojas de instrucciones y materiales de capacitación del producto nVent. Instruction sheets are available at [www.nvent.com](http://www.nvent.com) and from your nVent customer service representative. La instalación incorrecta, el mal uso, la aplicación incorrecta u otras fallas en el seguimiento completo de las instrucciones y advertencias de nVent pueden causar el mal funcionamiento del producto, daños a la propiedad, lesiones corporales graves y la muerte y/o anular la garantía.

**⚠ WARNING:** This product can expose you to chemicals including silica and hexavalent chromium, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



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