ERICO Europe BV
Jules Verneweg 75
5015 BG Tilburg
The Netherlands
+31 13 5835 100 main

Declaration of Conformity

nVent ERICO declares that the following products comply with the technical requirements specified below.

Product Description: **nVent ERICO GEM Ground Enhancement Material**

Product Name: **GEM25A, GEM25ABKT**

Business Trade Mark/Brand Name: **nVent ERICO**

Applicable Standards : **EN IEC 62561-7:2018**
Lightning Protection System Components (LPSC) –
Part 7: Requirements for earthing enhancing compounds

Test Reports and Criteria: **Leaching per EN 12457-2**
Sulphur per ISO 14869-1
Resistivity less than 20 ohm-cm per ASTM G57-06
Corrosion per ASTM G59-97 and G102-89

Authorized by: Ward Judson

Ward Judson **Date**

Engineering Manager **December 1, 2021**

GEM25A: Specifications

IEC 62561-7 TESTING	GEM25A
Leaching: For IEC 62561-7, samples prepared per EN12457-2, toxicity per EPA TCLP limits. Additional samples tested per EPA test method.	PASSED - not toxic
Metals: For IEC 62561-7, samples of Fe, Cu, Zn, Ni, Cd, Co, Pb prepared and tested per EN 12457-2. Additional samples of As, Be, Cd, Cr, Pb, Se, Ag prepared and tested per ICP, TCLP.	PASSED - not toxic
Sulphur: Samples prepared per IPC6010. Passing criteria - less than 2%.	PASSED - 2% or less
Corrosion: Samples prepared per ASTM G59-9 and G102-89. Passing polarization resistance criteria: non-aggressive environments > [4 Ω × m2] aggressive environments > [8 Ω × m2] Loss of Cu for 30 years exposure	PASSED - not corrosive PASSED PASSED 86 [µm]
Resistivity: Cured material samples prepared in Miller Box per ASTM G57	<20 [Ωcm]
ADDITIONAL TESTING	**GEM25A**
Resistivity: Compressed powder samples prepared per ASTM G1867-12.	0.0091 [Ωcm] typical
Resistivity: Cured material samples prepared per ASTM D991.	6.4 [Ωcm] typical
Density: Loose powder	769.4 [kg/m^3] = 48.0 [lb/ foot3] typical
Density: Compressed	1,051 [kg/m3] = 65.6 [lb/$foot^3$]
Weight/bag:	25 [lb] =11.3 [kg]
Mixing Ratio:	1.5 [gal] to 2.0 [gal] (5.7 [l] to 7.6 [l]) / bag or bucket.
Flexural strength: Tested per ASTM C293	96 [psi] typical
Compressive Strength: Tested per ASTM C109	515 [psi] typical
Alkalinity/Acidity Tested per EPA1311 and EN12457-2 Acidity (mg/l) Alkalinity, Total (mg/l)	 alkaline -2058 2270
Packaging	Paper bag with plastic lining with handles or plastic bucket with locking lid. Both packaging options and weight allows for efficient/dual package carrying at the job site. Tracking numbers printed on each bag or bucket.
MSDS	Available on www.erico.com/library.asp
Shelf life	1 year
Installation Setting Consistency	Cementitious, solidifies in 5 days, matures in 28 days. Do not install in subzero temperatures.

GEM25A: IEC 62561-7, Sec. 5.4 Determination of Resistivity, Sec.5.5 Corrosion Test

LPR TESTING FINAL SUMMARY REPORT FOR GROUND ENHANCMENT MATERIAL GEM25A

Report prepared for:

Pentair / ERICO Pty. Ltd.

Prepared by:

Dr. Xiaojian Xia and Prof. Nick Birbilis

Department of Materials Science and Engineering,

Monash University

Clayton, VIC, 3800

Australia

Phone: +61399054919

24 June, 2016

Signed..... N.Birbilis .....

ERITECH

Ground Enhancement Material (GEM) Now Conforms to IEC 62561-7 Standard

ERICO offers Ground Enhancement Material (GEM) – a superior conductive material that solves your toughest grounding problems. Third party testing has been completed to verify that GEM conforms to IEC 62561-7. This new standard introduces a benchmark for corrosion and electrical performance that has been absent from the industry to date.

GEM is a low-resistance, non-corrosive, carbon dust-based material that improves grounding effectiveness, especially in areas of poor conductivity. Its resistivity factor is less than 2 ohm-cm, which is less than 1% the resistivity value for bentonite clay.

GEM contains portland cement, which hardens when set, to become a conductive concrete that is permanent, maintenance-free and will never leach or wash away. GEM improves grounding effectiveness regardless of soil conditions. It is the ideal material to use in areas of poor conductivity, such as rocky ground, mountain tops and sandy soil.

- GEM is **effective**
- GEM is **permanent**
- GEM is **easy to use**

GEM is also the answer in situations where ground rods can't be driven or where limited land area makes adequate grounding difficult with conventional methods.

For vertical applications, GEM can be installed in slurry (wet) form or dry. GEM sets the standard for reducing earthing resistance, maintaining a permanent low resistance and for providing high conductivity for the life of the grounding system. In addition, GEM does not adversely affect soil and will not leach ions or contaminate ground water. It meets all EPA requirements for landfill (USA).

Part Number	Description
GEM25A	25-lb. (11.36 kg) bag with handle

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