



Benefit Statement – Plasterboard Recycling Solutions (SA03/003)

EWC – 19 12 12 (Recovered gypsum)

Determinand	Nutrient content		Nutrient supplied¹
Total N	0.47 % w/w		28
Nitrate N	<10 mg/kg		0
Ammonium N	<10 mg/kg		0
Total Sulphur	183000 mg/kg		2745
Total Carbon	0.83% w/w		498
Total P	<50 mg/kg		1
Total K	1630 mg/kg		12
Total Mg	1350 mg/kg		13
Total Cu	3.5 mg/kg		0.02
Total Zn	14.5 mg/kg		0.09
Total Ca	223000 mg/kg		1338
Total Mo	<1 mg/kg		0.01
Total Pb	2.40 mg/kg		0.01
Total Cd	<0.1 mg/kg		0
Total Hg	<0.05 mg/kg		0
Total Ni	3.00 mg/kg		0.02
Total Cr	4.2 mg/kg		0.03
Total Na	294 mg/kg		1.76
Cl	12 mg/kg		0.07
F	96.6 mg/kg		0.58

¹ Kg/ha at the stated application rate



Total As	4.00 mg/kg		0.02
Total Se	1.03 mg/kg		0.01
Residual paper	0.1% w/w	pH	7.5

Application rate – 6 t/ha

Benefits:

Gypsum has unique soil conditioning properties that can greatly improve the physical structure of soils as well as maintain the calcium and sulphur levels available to the plant. It can also complement the application of organic materials as it will help synchronise nutrient release, in particular nitrogen, with plant demand, thereby reducing the risk of nutrients moving from the site. The calcium contained in the gypsum plays a vital role in the cation exchange capacity of the soil and will also improve the physical structure of the soil which enables healthier root development and improved rainfall infiltration. In soils with weak structure resulting from an imbalance between Na^+ and Ca^{2+} increasing soluble Ca^{2+} can improve aggregation, water infiltration, soil drainage and root penetration. Acid or acid-forming amendments are acceptable additives for increasing soluble Ca^{2+} in calcareous soils only. In all soils, regardless of pH, gypsum is a good Ca^{2+} additive when Ca^{2+} is needed.

Gypsum is readily soluble and after application to soil will dissolve in to a solution that can alter the ionic properties of a soil. Once the gypsum has dissolved both calcium and sulphate ions are released, this means that the sulphate ions are free to react with excess cations which adhere to the surfaces of organic matter particles.

Gypsum only has a small liming effect but it is very effective at neutralising subsoil acidity.

At the stated application rate incorporated through the soil profile, the gypsum will provide significant soil conditioning benefits. Concentrations of heavy metals in the receiving soil will remain below the maximum permissible concentrations as stated in The Sludge (Use in Agriculture) Regulations 1989.

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