FACTOR TEN
e c o - i n n o v a t i o n

Presentation
to the WA Works and Parks
Annual State Conference

14th August 2014

By
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The Product

PolyCom Stabilising Aid is a granular polymer-based product for stabilising any of the materials used in building and maintaining roads, airstrips and other earthworks.

It is used extensively with a wide variety of naturally occurring materials including pit gravel, clay, and both fine and coarse gravel.

PolyCom Stabilising Aid

- PolyCom is listed with Eco-Buy and Sustainable Choice NSW

- Factor Ten has estimated PolyCom's carbon footprint for the construction and maintenance using PolyCom Stabilising Aid and compared to traditional methods

- PolyCom's carbon footprint follows to PAS2050 standards (ISO14044)

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Barrick Gold – Plutonic Mine Airstrip @ 1200kms NW Perth
PolyCom vs. Cement GP

The Choices. The Differences.

Product	Cement GP	PolyCom Stabilising Aid
Product quantity	560 tonnes	252 bottles
Product transportation onsite	21 x 38 tonnes trucks over 960kms	1 x 1 ton ute over 960kms
Machinery on site	Roller Watercart Stabiliser (from Perth)	Roller Watercart Grader
Water usage	Over 7,000 kL	Over 3,120 kL
Quarry material	26,000 tons from nearby quarry (5kms)	
Surface treated	2100m (L) x 0.2m (D) x 30m (W)	

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Scarifying

Barrick Gold – Plutonic Mine Airstrip @ 1200kms NW Perth
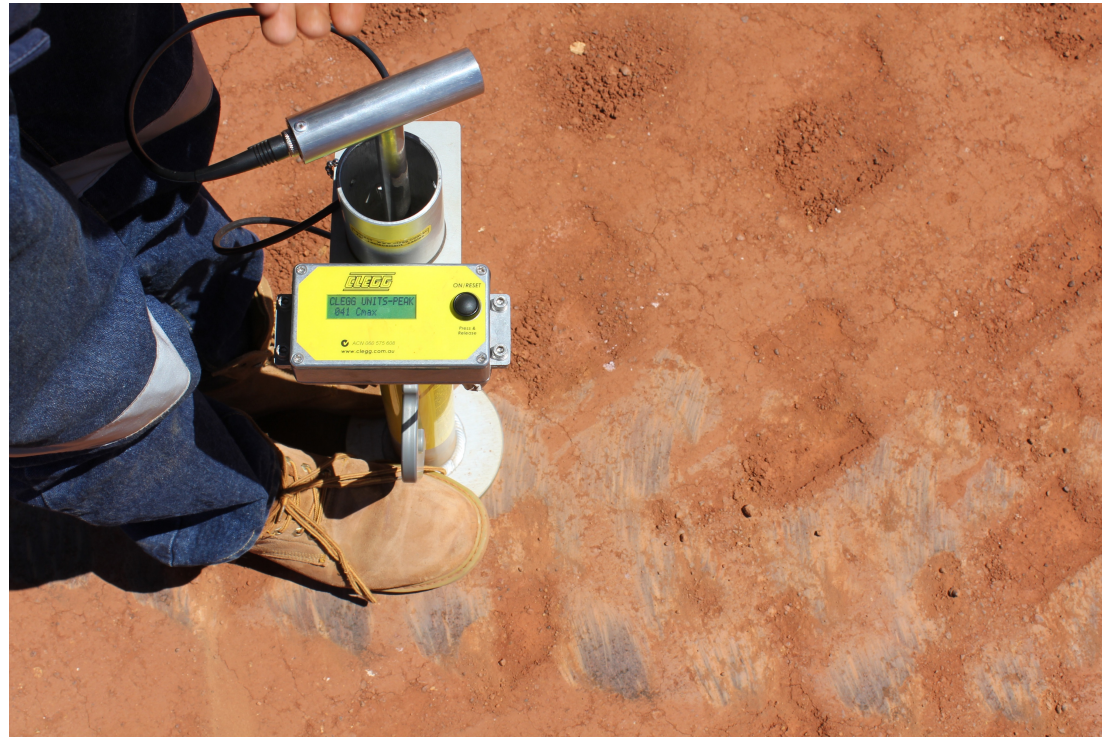## *PolyCom vs. Cement GP*

Compacting

Barrick Gold – Plutonic Mine Airstrip @ 1200kms NW Perth
PolyCom vs. Cement GP

Airstrip finished

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Barrick Gold – Plutonic Mine Airstrip
@ 1200kms NW Perth
PolyCom vs. Cement GP

CIV 57 - CBR 227 %

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Barrick Gold – Plutonic Mine Airstrip @ 1200kms NW Perth
PolyCom vs. Cement GP

CLEGG IMPACT VALUES REPORT

TO: SKIPPERS AVIATION CREW ROOM

FAX (08) 9479 7090 OR (08) 9479 7063

FOR PLUTONIC GOLD MINE

DATE READING TAKEN   06/01/14

TIME READING TAKEN   1000 HRS

N

32	31	35	0m
55	35	73	90m
43	43	71	180m
35	53	56	270m
38	48	40	360m
40	42	33	450m
42	66	43	540m
38	68	42	630m
49	72	27	720m
49	52	33	810m
40	62	35	900m
33	54	38	990m
40	65	26	1080m
35	70	39	1170m
50	53	62	1260m
54	56	55	1350m
59	61	48	1440m
38	48	51	1530m
34	48	56	1620m
42	59	62	1710m
52	49	39	1800m
62	31	52	1880m
53	43	40	1970m
34	62	50	2060m

NOTE:
Dash 8-100 (102 model): >14
Dash 8-100 (106 model): >16
Dash 8-300: >18
Metro: >10
Brasilia:
Centre line >20.
One isolated centre line reading may be <20 but >15.
Readings taken 10m either side of centre line must be >15

SITE CONTACT: Stijn Kuppers / Allison Welsh

SITE PHONE: 0899 810 700

TESTED BY: D NUNN

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CIV Test 12 months post treatment
- First intervention grade, wet and roll CIV's still high

Findings on comparison with cementitious stabilisation

Scenarios	Greenhouse gas emissions in t CO_2-e (1km / 6m width / 200mm depth)	Other impacts
Scenario 1 Portland 75 /Fly Ash 25	52.19	Emissions of airborne pollution organic and inorganic Arsenic, cadmium, mercury. Lead, byrellium, boron, chromium and other heavy metals released during production and throughout the life of the road (rain events)
Scenario 2 Slag 85 / Lime 15	21.25	Pollutants leaching out such as vanaidum
Scenario 3 PolyCom with mixer	3.06	Water savings 50% on average. Environmentally inert, food grade product,
Scenario 4 PolyCom no mixer	2.39	Water savings 50%, environmentally inert, food grade product, min. 45% bio-product

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Barrick Gold – Plutonic Mine Airstrip
@ 1200kms NW Perth
PolyCom vs. Cement GP

- Financial savings of 60-70% - over $105k

- Carbon emissions savings of 90% - over 500 tons of CO_2-e

- Water savings:

  - Over 50% estimated

- Other:

  - Avoid toxic chemicals (production and leaching)

  - Avoid 21 loaded trucks over 2,000kms

  - Avoid damage to adjacent roads

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Example compliance to legislation

New Strategic Cropping Land (SCL) Act in Queensland. The SCL Act has the following specific requirements:

" Water or liquid used for dust suppression or stabilisation on land that must be restored to SCL must satisfy the following"

1.   The maximum electrical conductivity (EC) must not exceed 1,300µ S/cm

2.   The maximum sodium adsorption ratio (SAR) must not exceed 6;

3.   The maximum bicarbonate ion concentration must not exceed 100mg/L; and

4.   The pH range must be between 6.5 and 9.0"

Block Reference	Polycom Soil Stabilizer			Payment Status	Invoiced
Report No.	HTS1829190-27062013			Date of Report	2/07/2013

Field Information

Crop	Default	Soil Texture	Default	Irrigation Type	
Variety	Default	Soil Structure		Treatment Area	0
Crop Stage	Default	Soil Colour		Yield Goal	0.00

Method	Element	LOD	Result	Units	Optimal Range	Comment
	pH		7.3		5 - 8.5	Optimal
	EC		0.03	mS/cm	0.28 - 0.9	low salinity
G3a	Nitrate-N (water)		0.0	mg/L	0.5 - 10	Low
	Phosphate-P		1.50	mg/L	0.5 - 2	Optimal
L3b	Potassium (water)		0.0	mg/L	0.5 - 15	Low
L1b	Calcium (water)		1.0	mg/L	10 - 60	Low
L2b	Magnesium (water)		0.0	mg/L	10 - 100	Low
L4b	Sodium (water)		8.0	mg/L	20 - 150	Low
J1a	Sulfate-S (water)		1.5	mg/L	5 - 50	Low
K1a	Zinc (water)		0.00	mg/L	0.5 - 2	Low
K1a	Copper (water)		0.00	mg/L	0.02 - 0.2	Low
K1a	Manganese (water)		0.00	mg/L	0.2 - 0.5	Low
K3b	Iron (water)		0.00	mg/L	0.01 - 0.3	Low
K5	Boron (water)		0.00	mg/L	0.02 - 0.5	Low
E1a	Chloride (water)		0.4	mg/L	20 - 350	Low
	Carbonate		0.00	meq/L as CaCO3	0.05 - 0.1	Low
	Bi-carbonate (HCO3)		0.57	meq/L as CaCO3	1.5 - 2	Low

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For more information:

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