



FullService

GREEN SOLUTIONS

*Systems, products and know-how
for a better environment*



CoWaste

TECHNOLOGICALLY ADVANCED SOLUTIONS
TO COVER LANDFILLS & CONTAMINATED SITES



CoWaste

Despite what you may have heard, no single cover can solve every problem. Depending upon your unique needs, we have the most robust and versatile line of covers available in the industry – geared for your specific applications and needs.

CoWaste is one of the greenest and safest range of products in the world because it is composed of technologically advanced, biodegradable, non-flammable, and non-toxic products based on polymers and recycled fibers.

When mixed with water those products create an even and thick slurry that can be applied also on irregular surfaces with steep slopes even vertical. They provide reliable protection and form a barrier that not only controls Volatile Organic Compounds (VOC), dust particulates, odors, and

Contaminated sites recovery

Full Service identifies new systems in order to solve specific issues regarding the reclamation of contaminated sites such as:

- **LAND RECOVERY** in planting projects
- **REDUCTION OF LEACHATE PRODUCTIONS**
- **REDUCTION OF BIOGAS EMISSIONS INTO THE ATMOSPHERE**
(biogas emissions cause pollution (hazardous waste) and bad smells)
- **DECREASE OF "TRANSPORT PHENOMENA"** due to the wind

radon, but also prevents runoff up to 12 months.

CoWaste products are applied on solid waste landfills, on special waste landfills, and on contaminated areas and materials.



STANDARD COVER WITH PLASTIC SCRIMS...



...the alternative is **CoWaste!**



COVER THICKNESS



✓ LESS MAINTENANCE COSTS

✓ NO REMOVAL COSTS

✓ NO DISPOSAL COSTS

✓ FAST APPLICATION

✓ PERFECT ADHERENCE



CoWaste D System

THE EFFECTIVE DAILY COVER AS ALTERNATIVE TO SOIL

CoWaste D is a patented, technologically advanced blend of polymers and recycled fibers that forms an even slurry when mixed with water.

CoWaste D creates an even, encapsulating barrier that can last up to some days, even under the most difficult weather conditions.

CoWaste D is fast and easy to apply, with a one-bag system that lets you use regular hydroseeding equipment.

CoWaste D is used especially on solid waste landfills to create a blanket that controls disease vectors, fire, odor and more.



BENEFITS

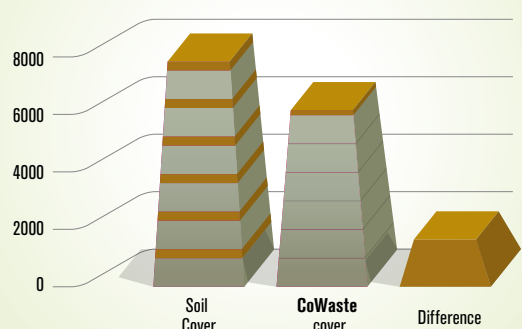
- ✓ **Effective cover up to 3-5 days as alternative to soil**
- ✓ **Saves space and extends the life of a landfill - 3-4 mm of CoWaste vs. 12-15 cm of traditional cover**
- ✓ **Suppresses costs related to diggings, transport and laying of the soil**
- ✓ **Controls blowing litter and dust "transport phenomena" due to the wind**
- ✓ **Suppresses odor emissions and controls birds**
- ✓ **Non-toxic, biodegradable and fireproof**
- ✓ **Protects from fires, disease vectors and erosion**

CoWaste D SYSTEM

Unit	1 unit = 25 kg bag
Coverage/m ²	70-90 m ² /unit
Water per Unit	400 lt/unit

SOIL VS COWASTE

Comparison: Soil Cover vs. Cowaste Cover



CoWaste MT System

THE MOST INEXPENSIVE AND EFFECTIVE MEDIUM TERM SOLUTION, EVEN UNDER THE MOST ADVERSE AND DIFFICULT CONDITIONS

WASTE COVER DETAIL



CoWaste MT is one of the greenest and safest product in the world used to cover wastes, prevent fires and control odors emanated by contaminated materials. When mixed with water, it forms a slurry that creates an uniform and encapsulating barrier that can last up to 6-8 months.

CoWaste MT is the perfect intermediate cover for remediation, landfills, and for long term seeding and erosion control projects.

Covering inactive areas of the landfill's working face with **CoWaste MT** will economically reduce the amount of soil being used for cover, thus decreasing the amount of fuel, maintenance and labor used to operate heavy equipment for excavating, moving and placing this soil covering.

It doesn't provide for the use of an additional layer of plastic scrim or geotextile material, or for a continuous maintenance

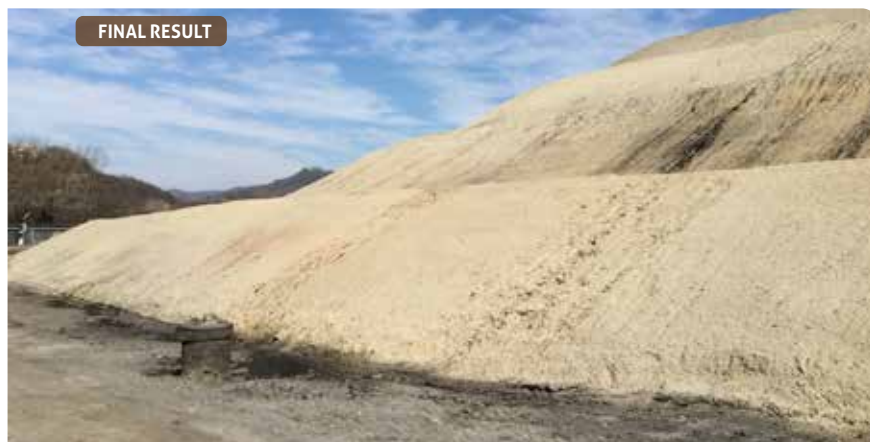
BENEFITS

- ✓ Intermediate or temporary cover from 6 to 8 months of hazardous wastes on solid waste landfills, contaminated sites and excavations.
- ✓ No soil cover needed - costs reduction
- ✓ Alternative to soil as initial waste layer cover in a new cell
- ✓ Horizontal cover layer minimizing the penetration of oxygen into the soil
- ✓ Ideal for active gas collection systems
- ✓ Good impermeability to gas and water
- ✓ Non-toxic, biodegradable and fireproof
- ✓ Suppresses odors and radon gas and controls fugitive dust
- ✓ Steep slope stabilization and erosion control

APPLICATION



FINAL RESULT



CoWaste MT SYSTEM

Available Colors	Green
	Blue-Green
	Light-Brown
Coverage/m ²	110-130 m ² /unit
Water per Unit	400 lt/unit

IMPERMEABILITY TEST



The BACK of the wet cover is **COMPLETELY DRY**



Water does not penetrate!



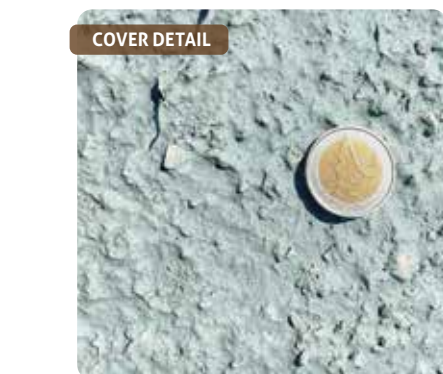
CoWaste LT System

**THE LONG TERM COVER TO GET THE BEST PROTECTION
AT THE LOWEST PRICE, EVEN UNDER THE MOST DIFFICULT CONDITIONS**

When your landfill or waste areas won't be used for 9 to 12 months, then it's time for long term covers, and **CoWaste LT** is the best choice because it is simpler to apply and easier to maintain than all other products, and you don't even have to remove it before adding more wastes to the area.

CoWaste LT is an ecofriendly two-component system composed of polymers and recycled natural fibers that suppresses odors from contaminated sediments and that creates a cover that minimizes the ingress of oxygen into methane collecting cells.

Another important characteristic of **CoWaste LT** is that it has slight exothermic reaction driving off moisture to cure which allows the product to be applied during heavy rain events.



BENEFITS

- ✓ Effective cover from 8 to 12 months that keeps VOCs, dust, odor, and radon from escaping into the environment
- ✓ Less expensive alternative to geomembrane covers
- ✓ Alternative to soil as initial waste layer cover in a new cell
- ✓ Horizontal cover layer minimizing the penetration of oxygen into landfill landfills
- ✓ Ideal as a temporary remediation cover and as an alternative cover for contaminated sediment and hazardous waste excavation.
- ✓ Best technology to control odors when excavating old waste
- ✓ Has survived hurricanes, including a 3-day underwater submersion
- ✓ Thanks to its impermeability rating of 10-7 it keeps water out of the areas of the landfill, ash piles and contaminated sediments.
- ✓ Non-toxic, biodegradable and fireproof
- ✓ Steep slope stabilization and erosion control – it adheres to all kinds of soil, even to extreme surfaces

CoWaste LT SYSTEM

Available Colors	Green Blue-Green Light-Brown
Coverage/m ²	80-100 m ² /unit
Water per Unit	200 lt/unit



CoWaste

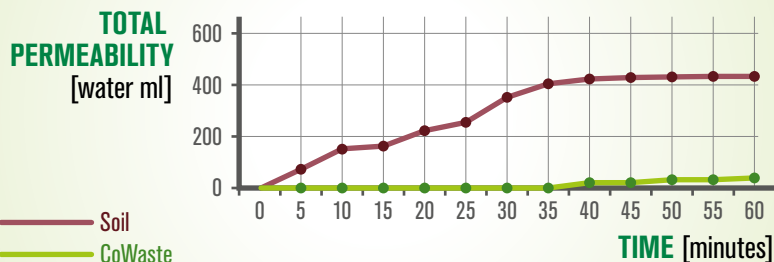
TECHNOLOGICALLY ADVANCED SOLUTIONS TO COVER LANDFILLS & CONTAMINATED SITES

WHY CHOOSE OUR **COWASTE** PRODUCTS?

- ✓ They stick to plastic, metal, wood... **almost to all materials**.
- ✓ They adhere to **extreme and irregular surfaces**.
- ✓ They create a **thick vapor-suppressing layer** that minimizes escaping odor carried by evaporating moisture
- ✓ When dry, our mixture **won't easily wash off** because of the quality and types of organic polymers used.
- ✓ They provide an **excellent visually looking cover material**. The cover is uniform and it doesn't bother the environment.
- ✓ They can be applied both on **wide areas** and **little spots**.
- ✓ They fill your areas' contours far more effectively than other products on the market, allowing for a evenly **spread cover**.
- ✓ **No maintenance** and **disposal costs**.

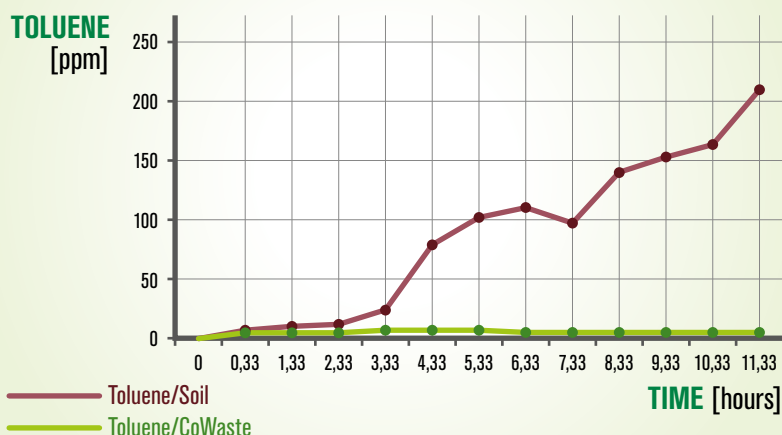
WATER PERMEABILITY TEST

15 CM OF SOIL VS OUR PRODUCTS



TEST: RESISTANCE TO GASES (TOLUENE) PENETRATION OF OUR PRODUCTS

Chronological Diagram: concentration / gas suppression time



COVERAGE STATISTICS COWASTE SYSTEMS

CO.WA.MAC. WATER CAPACITY	COWASTE D		COWASTE MT		COWASTE LT	
	unit no./batch	m ² /batch	unit no./batch	m ² /batch	unit no./batch	m ² /batch
1000 liters	2 ½	180 - 230	-	-	-	-
2000 liters	6	360 - 460	6	660 - 780	2	180
3000 liters	9	540 - 690	9	990 - 1170	3	270
6000 liters	18	1080 - 1380	18	1980 - 2340	6	540
8000 liters	24	1440 - 1840	24	2640 - 3120	8	720



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