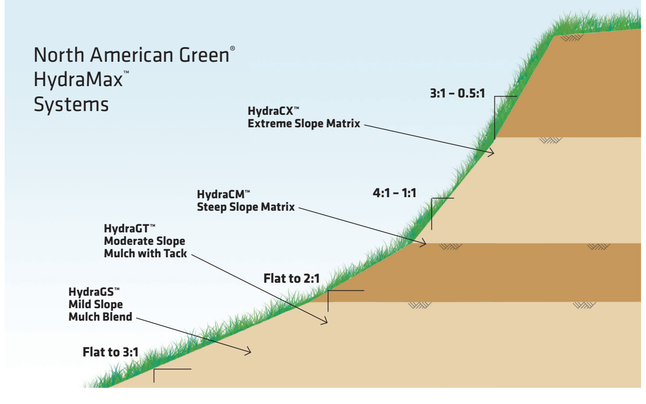
HydraMax™ Hydraulic Erosion Control Products

HydraMax™ Hydraulic Erosion Control Products (HECPs) include high-performance products like the HydraCX™ Extreme Slope Matrix and HydraCM™ Steep Slope Matrix. The HydraCX provides exceptional protection on construction site slopes with up to 0.5:1 (H:V) gradients in a simple one-step application. With their cross-linked insoluble hydro-colloidal tackifiers, they have proven unsurpassed erosion control effectiveness in large-scale AASHTO-NTPEP (American Association of State Highway and Transportation Officials – National Transportation Product Evaluation Program) slope testing.

HydraMax Systems' standard-performance HECPs include HydraGT™ Moderate Slope Mulch Blend and HydraGS™ Mild Slope Mulch Blend, formerly known as GeoSkin® and GeoSkin®XT. These HECPs offer one-step application and are designed for vegetation establishment on mild to moderate slopes. They are excellent alternatives to blown straw and wood/cellulose-based hydromulches, which may take two or three steps to apply with seed and fertilizer.



NORTH AMERICAN GREEN®

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HYDRAMAX™
HYDRAULIC EROSION CONTROL

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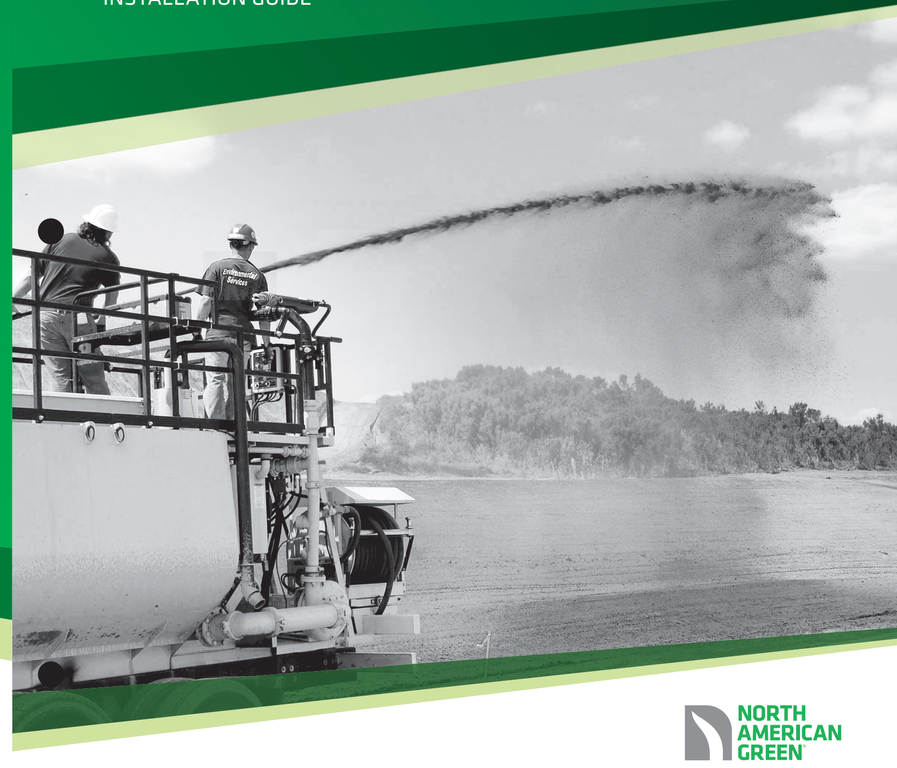
INSTALLATION GUIDE



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HECPs provide exceptional protection on construction site slopes with up to 0.5:1 (H:V) gradients in a simple one-step application.

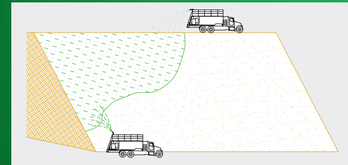

FIGURE 2A: Top and bottom application

FIGURE 2B: Left and right application

Installation and Application Guidelines

SUBSTRATE AND SEEDBED PREPARATIONS

1. Examine substrates and conditions where materials will be applied. Apply product to geotechnically stable slopes.

INSTALLATION

1. Strictly comply with manufacturer's installation instructions and recommendations. For optimum pumping and application performance use approved mechanically agitated, hydraulic seeding/mulching machines. Apply North American Green® HydraMax™ Systems HECPs from opposing directions to achieve maximum soil coverage.

MIXING

1. Fill tank of a mechanically agitated hydroseeding machine with sufficient water to suspend seed and fertilizers.
2. Add all soil amendments (seed, fertilizer, etc.)
3. Continue adding water slowly while adding the HydraMax HECPs at a steady rate.
4. Consult application (Figure 1) and loading charts below to determine the proper application rates. Mix at a rate of 50 lbs of HydraMax HECPs per 100 gallons of water. Confirm loading rates with equipment manufacturer.

HydraCX™ Extreme Slope Matrix		
Slope Conditions	**Rate (English)**	**Rate (metric)**
≥1H:1V	4,500 lbs/acres	5,100 kg/ha
≥2H:1V and <1H:1V	4,000 lbs/acres	4,500 kg/ha
≥3H:1V and <2H:1V	3,500 lbs/acres	3,900 kg/ha
<3H:1V	3,000 lbs/acres	3,400 kg/ha

HydraCM™ Steep Slope Matrix		
Slope Conditions	**Rate (English)**	**Rate (metric)**
≥2H:1V	4,000 lbs/acres	4,500 kg/ha
≥3H:1V and <2H:1V	3,500 lbs/acres	3,900 kg/ha
≥4H:1V and <3H:1V	3,000 lbs/acres	3,400 kg/ha
<4H:1V	2,500 lbs/acres	2,800 kg/ha

HydraGT™ Moderate Slope Mulch Blend with Tack		
Slope Conditions	**Rate (English)**	**Rate (metric)**
>3:1 and <2.5:1	2,500 lbs/acres	2,800 kg/ha
>4:1 ≤3:1	2,000 lbs/acres	2,250 kg/ha
≤4:1	1,500 lbs/acres	1,700 kg/ha

HydraGS™ Mild Slope Mulch Blend		
Slope Conditions	**Rate (English)**	**Rate (metric)**
>4:1 ≤3:1	2,000 lbs/acres	2,250 kg/ha
≤4:1	1,500 lbs/acres	1,700 kg/ha

FIGURE 1: Typical application rates

5. All mulch should be loaded when the tank is approximately ¾ full of water.
6. Agitate for a minimum of fifteen minutes after adding the last amount of the mulch.
7. If the application machine is equipped with variable speed agitation, then the agitation speed should be reduced prior to beginning to pump the material. Before the material is pumped, the agitator should be adjusted to a slow roll and should be spinning only fast enough to keep the mulch in a homogeneous slurry. Maintain high engine RPMs.

APPLICATION

1. Apply in a one-step process where seed, soil amendments and mulch are applied simultaneously. HECP can be applied in a two-step process where the seed and soil amendments are applied to the site followed by hydromulch secondly. The two-step process is not necessary with HECP but is acceptable if preferred by the applicator.
2. Apply a uniform layer from two opposing directions [top and bottom (2A) or left and right (2B)] in successive layers to reduce "shadowing" and to ensure complete soil coverage. Application rates may need to be increased on highly erosive soils or on irregular surfaces such as chiseled, disked, furrowed or tracked slopes.
3. Apply materials at the following minimum application rates. Consult the Erosion Control Materials Design Software (ecmds.com) for site-specific recommendations based on slope gradient and length.

FIGURE 3

4. Use fan tip nozzles with a 40 ft to 65 ft spray pattern. When using a hose, the flow rate allowed by the nozzle should be a minimum of 40 GPM (150 litres/min.). When applying the material from the cannon, the nozzle used should accommodate a minimum of 65 GPM (246 litres/min.) (Figure 3).

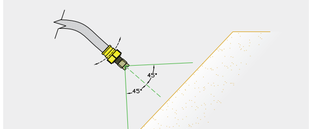

FIGURE 4

5. Position the nozzle perpendicular to the soil surface and spray back and forth, extending 45 degrees from the center (Figure 4).
6. The slurry should be sprayed directly into the soil so that the slurry is thoroughly mixed and incorporated into the soil (Figure 5).
7. It is acceptable to spray the material into the air and allow it to fall down onto the site (Figure 6) only after the majority of the material has been applied by incorporating the slurry into the soil as described in steps 5 and 6. This method of application should only be used to finish off an area, fill in tight application areas or "cap" the site.
8. Material should not be applied in channels, swales, or other areas where concentrated flows are anticipated, unless installed in conjunction with a temporary Erosion Control Blanket (ECB) or permanent Turf Reinforcement Mat (TRM). HydraMax Systems may be applied on saturated soils.

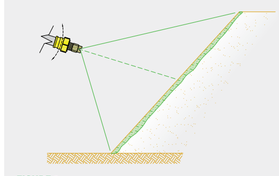

FIGURE 5

FIGURE 6

CLEANING AND PROTECTION

Clean equipment properly after use of this product to ensure that HydraMax™ HECP is removed from pump, tank and hoses. Clean spills promptly. Do not allow foot traffic or grazing on treated areas until vegetated. Be cautious of slippery surfaces while applying.

Warning: Do not store near an open flame or heat source. Use caution when stacking units.

EXPERIENCE YOU CAN RELY ON

North American Green is the industry leader when it comes to providing comprehensive erosion and sediment control and turf reinforcement solutions for site development challenges. We have developed integrated systems and products with the sole objective to ensure absolute customer satisfaction. Our products are backed by the most thorough quality assurance practices in the industry. And, we provide comprehensive design assistance for every North American Green system.

For additional installation assistance on North American HydraMax Systems, please call **800-772-2040**, visit **nagreen.com** or e-mail **info@nagreen.com** and we will be happy to put you in touch with your erosion control specialist who will can assist you.

LOADING CHART – ENGLISH UNITS

				HydraGS Application Rates				HydraCM Application Rates									
				HydraGT Application Rates				HydraCX Application Rates									
No. 50 lbs bales	HECP lbs	Water (gals)	Working Capacity (gals)	1500 lbs/acres		2000 lbs/acres		2500 lbs/acres		3000 lbs/acres		3500 lbs/acres		4000 lbs/acres		4500 lbs/acres	
				Sq Ft	Acres	Sq Ft	Acres	Sq Ft	Acres	Sq Ft	Acres	Sq Ft	Acres	Sq Ft	Acres	Sq Ft	Acres
1	50	100	115	1452	0.03	1089	0.03	871	0.02	726	0.02	622	0.01	545	0.01	484	0.01
2	100	200	230	2904	0.07	2178	0.05	1742	0.04	1452	0.03	1245	0.03	1089	0.03	968	0.02
3	150	300	345	4356	0.10	3267	0.08	2614	0.06	2178	0.05	1867	0.04	1634	0.04	1452	0.03
4	200	400	460	5808	0.13	4356	0.10	3485	0.08	2904	0.07	2489	0.06	2178	0.05	1936	0.04
5	250	500	575	7260	0.17	5445	0.13	4356	0.10	3630	0.08	3111	0.07	2723	0.06	2420	0.06
6	300	600	690	8712	0.20	6534	0.15	5227	0.12	4356	0.10	3734	0.09	3267	0.08	2904	0.07
7	350	700	805	10164	0.23	7623	0.18	6098	0.14	5082	0.12	4356	0.10	3812	0.09	3388	0.08
8	400	800	920	11616	0.27	8712	0.20	6970	0.16	5808	0.13	4978	0.11	4356	0.10	3872	0.09
9	450	900	1035	13068	0.30	9801	0.23	7841	0.18	6534	0.15	5601	0.13	4901	0.11	4356	0.10
10	500	1000	1150	14520	0.33	10890	0.25	8712	0.20	7260	0.17	6223	0.14	5445	0.13	4840	0.11
15	750	1500	1725	21780	0.50	16335	0.38	13068	0.30	10890	0.25	9334	0.21	8168	0.19	7260	0.17
20	1000	2000	2300	29040	0.67	21780	0.50	17424	0.40	14520	0.33	12446	0.29	10890	0.25	9680	0.22
25	1250	2500	2875	36300	0.83	27225	0.63	21780	0.50	18150	0.42	15557	0.36	13613	0.31	12100	0.28
30	1500	3000	3450	43560	1.00	32670	0.75	26136	0.60	21780	0.50	18669	0.43	16335	0.38	14520	0.33
35	1750	3500	4025	50820	1.17	38115	0.88	30492	0.70	25410	0.58	21780	0.50	19058	0.44	16940	0.39
40	2000	4000	4600	58080	1.33	43560	1.00	34848	0.80	29040	0.67	24891	0.57	21780	0.50	19360	0.44

LOADING CHART – METRIC UNITS

				HydraGS Application Rates				HydraCM Application Rates									
				HydraGT Application Rates				HydraCX Application Rates									
No. 23 kg bales	HECP lbs	Water (litres)	Working Capacity (litres)	1700 kg/ha		2250 kg/ha		2800 kg/ha		3400 kg/ha		3900 kg/ha		4500 kg/ha		5400 kg/ha	
				m2	Hectares (ha)	m2	Hectares (ha)	m2	Hectares (ha)	m2	Hectares (ha)	m2	Hectares (ha)	m2	Hectares (ha)	m2	Hectares (ha)
1	23	380	437	135	0.01	102	0.01	82	0.008	68	0.007	59	0.006	51	0.005	43	0.004
2	46	760	874	271	0.03	204	0.02	164	0.016	135	0.014	118	0.012	102	0.010	85	0.009
3	69	1140	1311	406	0.04	307	0.03	246	0.025	203	0.020	177	0.018	153	0.015	128	0.013
4	92	1520	1748	541	0.05	409	0.04	329	0.033	271	0.027	236	0.024	204	0.020	170	0.017
5	115	1900	2185	676	0.07	511	0.05	411	0.041	338	0.034	295	0.029	256	0.026	213	0.021
6	138	2280	2622	812	0.08	613	0.06	493	0.049	406	0.041	354	0.035	307	0.031	256	0.026
7	161	2660	3059	947	0.09	716	0.07	575	0.058	474	0.047	413	0.041	358	0.036	298	0.030
8	184	3040	3496	1082	0.11	818	0.08	657	0.066	541	0.054	472	0.047	409	0.041	341	0.034
9	207	3420	3933	1218	0.12	920	0.09	739	0.074	609	0.06	531	0.053	460	0.046	383	0.038
10	230	3800	4370	1353	0.14	1022	0.10	821	0.08	676	0.07	590	0.06	511	0.051	426	0.043
15	345	5700	6555	2029	0.20	1533	0.15	1232	0.12	1015	0.10	885	0.09	767	0.08	639	0.06
20	460	7600	8740	2706	0.27	2044	0.20	1643	0.16	1353	0.14	1179	0.12	1022	0.10	852	0.09
25	575	9500	10925	3382	0.34	2556	0.26	2054	0.21	1691	0.17	1474	0.15	1278	0.13	1065	0.11
30	690	11400	13110	4059	0.41	3067	0.31	2464	0.25	2029	0.20	1769	0.18	1533	0.15	1278	0.13
35	805	13300	15295	4735	0.47	3578	0.36	2875	0.29	2368	0.24	2064	0.21	1789	0.18	1491	0.15
40	920	15200	17480	5412	0.54	4089	0.41	3286	0.33	2706	0.27	2359	0.24	2044	0.20	1704	0.17