

# HYDROMULCHING

## Ref : HMC "DUAL



### CCTP BASE DUAL HYDRO-MULCH

#### Typology :

For erosion with significant pedological and/or climatic constraints on slopes  $> 45^\circ$  and  $< 60^\circ$  and with a slope development  $< 5\text{m}$ .

#### WARNING :

*Each project has its own specific features, which sometimes require the input quantities to be refined. The data contained in this document are averages used on similar projects.*

*Euro-Tec technicians will be happy to provide you with further information and help you prepare your seed mix - [www.euro-tec.fr](http://www.euro-tec.fr)*

#### Scope of application :

This SCC describes the procedure for revegetation by HYDROMULCHING combined with the prior application of a "Pedogenesis Accelerator".

contrast to HYDROSEEDING, HYDROMULCHING is a technique that prevents seeds and fertilisers from being washed away, but also soil erosion before vegetation has even become established.

HYDROMULCHING characterised by the quantity of fibrous material added (mulch)  $> 60 \text{ gr/m}^2$  -  $600 \text{ kg/ha}$  also provides a favourable environment for germination and rapid establishment of the herbaceous layer.

## 1 - HYDROMULCHING EQUIPMENT

Seeding will be carried out by HYDROMULCHING using specific equipment of the EuroMulcher type, complying with the EC directive defining the requirements in terms of health and safety ( Directive 2002/95/UE ) and compatibility of worksite equipment with electromagnetic waves ( Directive 2014/53/UE ). ***An EU plate certifying compliance with these directives must be affixed to equipment, and a certificate of approval must be provided to the SPS (health and safety coordinator).***

The equipment will preferably be fitted with a petrol engine, which is fully in line with a CSR approach that aims to protect people by limiting emissions that are sources of fine particles in particular and by limiting noise.

To ensure a "neat" application that respects the works and ancillary facilities, the equipment will also be fitted a semi-rigid hose reel, a shut-off valve and removable nozzles.

A description of the equipment and the certificate of approval must be attached to the offer.

## 2 - DESCRIPTION OF SUPPLIES

### 2-1 Description of "Pedogenesis accelerator" supplies

- VALOR-SOIL pedogenesis accelerator or equivalent.

VALOR-SOIL is a fibrous complex that acts as a pedogenesis accelerator, applied at the same time as hydromulching seeding to establish a herbaceous layer on poor, leached, draining substrates or as an alternative to a massive addition of topsoil.

Composition

- \* Bark fibre defibrated using the method 60 %
- \* Wood fibre defibrated using the HORTIFIBRE method : 33 %
- \* Mycorrhizal TRILLIS biochar : 4 %
- specific surface area >420 m<sup>2</sup>/g according to the *Emett and Teller* method
- minimum of 50 propagules per gram of Glomus intraradices
- \* Freezing agent (Cyamopsis tetragonoloba) : 3 %

Carbon sequestration :

Biochar at a dosage of 150 kg/ha enables 364 kg/ha of CO<sub>2</sub> to be sequestered in the soil. Certification of biochar carbon credits by PURO EARTH

## **2-2 Description of "Hydromulching" supplies**

### **2-2-1- Seeds**

The company will prove the origin of the herbaceous species in the mixtures by means of the certificates of origin issued by the Service Officiel du Contrôle des semences (SOC) and marked on the seed bags.

These certificates, which are less than 3 months old, indicate for the certified species :

- The supplier's name or code,
- The batch number
- Species and variety

After each job, the contractor must provide the client or project manager with all the information needed to check the quality and quantity of the seeds used (SOC labels).

### **2-2-2-Soil conditioners**

All fertilisers and soil improvers must comply with EEC regulations.

- Germination activator: VEGE-MAX or equivalent  
Concentrated liquid supply of humic and lignosulphonic acids.  
100% soluble.

VEGE-MAX is a soil improver with a high C/N ratio that maintains, improves and protects the physical and chemical properties, structure and biological activity of the soil.

At the soil-root interface, VEGE-MAX strengthens the clay-humus complex, improving the soil's air/water balance, water retention capacity and cation exchange capacity (CEC).

#### Composition:

Dry matter	21 %
Organic carbon (corg)	10.1 %
Corg/N	20.2
Total potassium oxide (K <sub>2</sub> O)	5 %
Electrical conductivity	150 mS/m
pH value	13

- Organo-mineral fertiliser (NFU 42-001) type VERT-EXPERT NATURE or equivalent.

Obtained from plant and animal organic matter including algae, castor oilcake, vegetable oilcake and C3 sterilised animal powders.

#### Composition:

Dry matter content (weight of OM / raw product)	90%
(fruit cake and pulp, composted poultry manure, etc.)	
Organic matter on raw product (rate)	50%
Organic mineral fertiliser NPK 6-3-6 + 0.5 FER	NF U42-001
Total nitrogen (N) :	6 %
Of which organic :	5.5 %
Phosphorus :	3%
Potassium :	6%

### **2-2-3- Hedging products**

- EURO-MAT "FGM" fibrillar erosion-resistant membrane or equivalent

A EURO-MAT fibrillar membrane is a fibrous complex applied by hydromulching, composed of fibrous materials stabilised binders and colloids - germination and growth activators are also incorporated.

#### Formulation :

Raw materials :	Betula payrefera / Populus tremuloides / Pinus
% wood fibre :	75 % +/- 2%
% Interlocking reinforcement fibre:	bio 9% +/- 1
% Binder / activator :	15 % +/- 1 %
% Tracer :	1% Green or Natural
% Water retention capacity / dry weight (ASTM D7322)	1500

### **2-3 The water in the hydraulic mixture**

The water used to make up the hydraulic mixture must have chemical characteristics  
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compatible with the germinative activity of the seeds and the emergence of the seedlings.

The Company is responsible for obtaining the necessary authorisations to pump water.

Before the start of the worksite, the Company must provide the project owner, without the latter being held liable, with proof of the pumping authorisations obtained from the competent authorities.

### **3- IMPLEMENTATION DESCRIPTION**

HYDROMULCHING "DUAL is applied in 2 passes, leaving some drying time between the two.

- 1<sup>st</sup> pass with "Pedogenesis accelerator" supplies
- 2<sup>nd</sup> pass with "Sowing by hydromulching" supplies

A third "reinforcement" pass will be made 6 to 12 months after the "SEMIS" pass, using supplies from art 1-3-2 "second pass".

#### **3-1 - Dosages per hectare PASSAGE "Pedogenesis accelerator"**

Application is a one-step process:

	<b>First pass</b>
VALOR-SOIL pedogenesis accelerator (Bt/ha)	260

#### **3-2 - Dosages per hectare PASSAGE "Sowing by hydromulching"**

The application is made in two applications with a "reinforcement" 6 to 12 months after the initial HYDROMULCHING.

	<b>First pass</b>	<b>Second pass</b>
Euro-seeding mixture ref (Kg/ha)	250	-
VEGE-MAX growth activator (L/ha)	50	50
Organo-mineral fertiliser VERT-EXPERT "NATURE" (kg/ha)	600	1 000
Fibrillar anti-erosion matrix EURO-MAT FGM (Bt/ha)	176	

#### **4- RECEIPT OF SUPPLIES**

To to promote the control of supplies, these must be delivered in a single delivery.

#### **5- METRAGES DES OUVRAGES**

The surface area of the sites to be grassed will be agreed before the work begins, so that supplies can be delivered all at once.

#### **6- GUARANTEE**

The guarantee covers the following points:

- \* Density & uniformity: 1 month after the first germinations, as long as the conditions have been favourable, a seedling count will be carried out - The expected result must be at least 40 u / dm<sup>2</sup> - The areas counted will be used as a standard to assess uniformity - Any peeling or poorly grown area (excluding mineral areas or areas > 40%) will be repeated - A peeling is considered to be an area where the density of seedlings is less than 20 u / dm<sup>2</sup>.
- \* Stability: No gullies will be tolerated - These gullies will have to be reseeded.
- \* Quality of the plant cover: At the end of one growing season after sowing and fertilisation, the plant cover must show no signs deficiency or disease that would endanger the survival of the established grass layer. If this is the case, fertilisation or treatment must be carried out as soon as possible, after approval by the project manager.