

CALTRANS STRUCTURAL VEGETATION MANAGEMENT SOLUTIONS FOR ROADSIDES

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Caltrans vegetation control specialists and advisors implemented an Integrated Vegetation Management Program that consists of seven distinct methods for vegetation control. This document focuses on the “structural” method for vegetation control. Historically, structural applications have been the most expensive and least utilized method at Caltrans, but currently structural methods show the most promise for Caltrans’ future.

When choosing an appropriate vegetation management strategy, Caltrans considers safety for our highway maintenance workers, safety for the traveling public, and increased mobility. Structural methods can also decrease sight distance concerns. Generally, structural methods involve higher costs during initial installation, but they lead towards reduced maintenance needs and costs in the long run. Structural elements can also help Caltrans with its herbicide reduction goals. Hardscaping can unify and tie elements together while also being aesthetically pleasing – due to the wide variety of treatments, colors and patterns available.

Hardscaping and Structural methods can be interchangeable terms. Basically, hardscaping is the use of hard inert material surfaces such as asphalt, concrete and rock – in comparison to living soft material surfaces such as organic mulches and plants. Caltrans typically utilizes ten different highway hardscaping treatments. Last year I covered three products in detail – fiber weed control mats, polyureas, and rubber weed control mats. Today, I will cover two products in detail – CRMConcrete and Cullet.

CRMConcrete is short for Crumb Rubber Modified Concrete. CRMConcrete is a concrete-based product that includes recycled scrap tire crumb rubber material and homopolymer polypropylene high performance reinforcing fibers, all blended into a slurry. Placement is similar to that of concrete and stamped concrete. Typical installation includes pouring CRMConcrete into place, tamping and leveling as necessary. Applications may also include adding a stamped texture to the top finish or including a concrete color stain to match nearby items.

CRMConcrete benefits include:

- Wide variety of colors to match soil colors by utilizing concrete stains
- Formwork is not always necessary
- Higher daily production rates – faster than other surface treatments
- Fairly easy installation
- Uses standard equipment and concrete mixes
- Reduces the number of tires going into landfills

CRMConcrete limitations include:

- Consistency of mix may limit its use on slopes
 - Limited history of maintainability and life cycle costs
 - Repairs are difficult to match to the original color, if you use a concrete stain
 - It is rigid and requires a 150 millimeter gap between the product and nearby guardrails/sign posts
- Product will be crash-tested this year

Caltrans then decided to combine two vegetation control methods together by installing a ‘Mowable Median Project with CRMConcrete’. The site originally had many obstructions in the median such as raised drop inlets, culvert pipes sticking out, survey monuments, signage, posts

and pullboxes. There were many obstacles that obstructed the efficiency of the mowing crew. This project made everything flush with the existing finish grade by relocating all of the obstructions and resetting them with CRMCrete. By placing CRMCrete around the appurtances, chemical spraying was also reduced. The mowers can now swath the median easily and quickly while also reducing the amount of time our employees spend in a dangerous location, thus improving our safety.

The next product is known as Cullet. Cullet is the professional term used for recycled glass mulch. Cullet is applied like you would apply wood mulch. It is recommended to lay some sort of a barrier between the soil and the recycled glass mulch (just in case you ever need to remove it). We have tried Visquene and the typical black weed fabric. Caltrans has also installed cullet in one location (under the guardrail) that doesn't have any underlayment underneath it. Then you dump the glass mulch on top and spread it out evenly.

Cullet Benefits include:

- Shimmers and sparkles

Works great for flat areas

- Does not decompose, since it is glass

There are a wide variety of sizes available from the glass recycling companies

- Cullet comes in a wide variety of colors – practically every color is available

Cullet also reduces the amount of waste going into our landfills

Cullet Limitations include:

- Never use it on a slope

Reflective – glare issue and reflects the underlayment

- Tumbling is required

- A border may be necessary

- Clear glass tends to look white

- Costs or maintainability in the long-term are unknown

- Heat and soil temperatures are unknown