

# ERTEC Environmental Systems

Protecting the Integrity of Global Lands and Waterways™

## Case Study

Combo Guard™



- > Lower Costs
- > Better Performance



Rapid installation



Post storm—easy to monitor, clean, remove. The gravel bags serve to slow water velocity, fostering greater sediment removal

**Application:** Drain Inlet Protection—New Home Development

**Product:** ERTEC Combo Guard™ for curb-grate combination inlets

**Location:** Stockton, California

**Customer:** Award Homes

**Project dates:** 2006-2008

**Combo Guard** is a low cost, four layer filter designed to reduce sedimentation and debris into combination curb & grate storm drain inlets during construction. The one-piece system protects both the horizontal grate and vertical curb opening. The system is designed to optimize the important trade-off between safety (allowing storm water to flow off the street) and removing sediment. The integrated filter has a vertical height of 2 inches to allow water to bypass for high flow conditions. The system filters storm water above the ground easing visual inspection and maintenance. Because the system is above ground, installation and maintenance is rapid. During installation, the grate does not need to be removed, reducing incidences of installer back strain. Four standard sizes fit most combo storm drains. The system has a long life, is resistant to traffic, and highly reusable.

**The Challenge:** Award Homes previously used drain insert bags which were found to be expensive, difficult and unsafe to maintain.

**Alternatives:** Current best practices include insert filters, or filter bags that envelop the grate, or various other non-technical methods (wattles, sandbags, etc). Insert filters and filter bags require the removal of the grate which is often difficult, requires more than one person, and can lead to the possibility of back, foot and finger injury. Insert systems can present difficulties when they need to be cleaned—it is often a difficult or impossible undertaking. The non-technical approaches can lead to back-ups at the drain inlet and extra debris inside the storm drain.

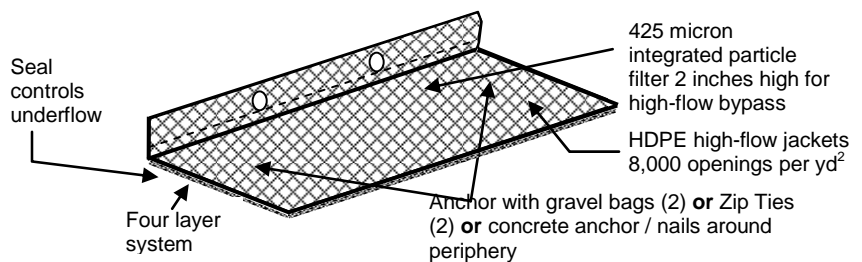
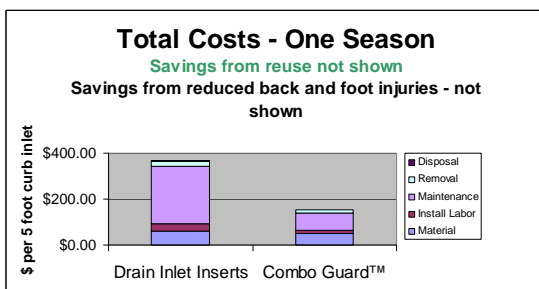
**Solution:** Combo Guards are installed with gravel bags on each side of the grate. The gravel bags serve to anchor the system, and slow water before it reaches the filter.

**Summary and results:**

“Combo Guards made it possible to change the entire process of protecting drain inlets, while improving sediment control. We’ve cut our total costs by more than 50%, eliminated injuries from lifting the grates, improved visibility of sediment buildup at the drain. We’ve found that Combo Guards will last the entire project and we expect further savings to reuse these on following projects” Kip Scott—Award Homes.

**Economics:** Combo Guards and Drain Insert Bags have a similar first cost—around \$75 per inlet for material, accessories and labor. However, Combo Guards allowed Award Homes to significantly reduce the maintenance costs associated with drain insert bags. Drain inlet bags often need to be replaced when damaged after cleaning. Cleaning of Combo Guards is done by Award Homes personnel because it is rapid and easy.

|   | Drain Insert Bag | ERTEC Combo Guard™ |
|---|------------------|--------------------|
| Installation requires less than two people?               | No               | Yes                |
| Maintain without monthly service fee and mechanized crew? | No               | Yes                |
| Low risk of back, foot or hand injury?                    | No               | Yes                |
| Single piece for both curb inlet and grate?               | No               | Yes                |
| Keeps sediment and debris above ground for easy cleaning? | No               | Yes                |
| Easy to inspect and maintain?                             | No               | Yes                |



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