

CASE FILE



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SITE CIVIL IMPROVEMENT ↔ EROSION CONTROL ↔ SURFACE WATER QUALITY

Geopro® Learning Tool

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Kent Career Tech Center - Grand Rapids, MI, Summer 2001

Bob Triick & Sons, Inc. [Triick] of Belmont, MI applied its first polyacrylamide-bound, hydraulically applied seed/mulch system at a residential development in Grand Rapids, MI in June 2001. The project involved seeding and mulching lawn areas of four homes, recently completed as part of a *Kent Career Technical Training Center* program. All four homes were situated to accommodate street-level main floors and lower-level walkouts on continuing, 3:1 slopes. Slope lengths of approximately 65' extended downward from the lower-level patio areas. Between homes, the slope length increased to approximately 95'. At two between-home locations, grading left mild concave areas with their inverted crowns running in an uphill to downhill orientation, enabling storm runoff to collect and concentrate.

1. 60-120 day slurry component binding,
2. 60-120 day slurry-to-soil binding,
3. Elimination of all organic tackifiers,
4. Stronger binding performance relative to organic tackifiers, and
5. Binding capability immediately upon soil contact.



Applying Silt Stop 705 as the tackifier/soil binder within slurry



Mulch condition on slope after 1" rainfall

The hydraulic pump of a Finn T270 hydraulic seeder provided the required mixing and slurry shoot via hoses. Coverage, in equivalent per acre quantities, averaged 1700 lbs. wood mulch and 10 lbs **Silt Stop 705** [maximum rate needed or allowed by MDEQ].

Gary Triick commented at the project's conclusion that the PAM binder caused no problems during the mixing, spraying or coverage project aspects. Subsequent discussions with Gary revealed that when left in equipment overnight [on-purpose to determine the results], **Silt Stop 705** causes no problems with tank, hose or nozzle operations.

Within 24 hours after spraying the PAM enhanced slurry, a 2 hour - 1" rainfall hit the entire project area. Careful inspection of three of the four homes [access problems prevented observation of the fourth] following this rain

The *Triick* crew mixed *Applied Polymer Systems, Inc.* [APS] **Silt Stop® 705** into their standard wood fiber and seed slurry. **Silt Stop 705** is an anionic polyacrylamide [PAM], available in granular form. Inclusion of this PAM offered:



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event revealed that mulch movement was inconsequential on the front yards and sloped back yards [one exception - a 1' wide by 6' long area near the base of a 65' slope]. In these areas, gravel capstones were not identifiable, again indicating that sheet flow had not significantly damaged the protective PAM-bound slurry. Mild to moderate rill formation had occurred in the areas between homes where flow concentration developed.



Mulch condition on slope after 1" rainfall

Within 7 days after spraying the PAM enhanced slurry, the project sustained a second significant rain event, this time dumping 3+'' of rain over a 12 hour period. On flat and most sloped areas, mulch movement was observed; the mulch appeared to wave as shown in the picture. However, slopes and flatter areas which sustained impact and sheet erosion only, remained without rill or gully erosion. All areas in which concentrated flow developed sustained mild to severe rill formation.



Mulch condition on front yards after 1" rainfall

Conclusions & Discussion:

1. **Silt Stop 705** provided outstanding binder performance characteristics under harsh erosion stress conditions.
2. While the performance longevity of **Silt Stop** was not fully demonstrated on this project, conventional, water-soluble organic tackifiers would not have been present at the beginning of the second rain event, resulting in significantly greater erosion than was realized.
3. **APS Silt Stop** PAM binders are less expensive than conventional organic tackifiers when applied per manufactures' suggestions.

Additional Information

The **Silt Stop** trade name represents a family of anionic polyacrylamides which provide unparalleled erosion reduction, sediment control and storm water quality improvement characteristics. To learn more about this product line, please call your *Price and Company, Inc. Sales Representative* or visit:

Silt Stop is a trademark of Applied Polymer Systems, Inc.



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