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Research & Innovation Implementation Program

Identifying Innovations for Statewide Implementation

Communicating Research Results & Innovations throughout PennDOT

Facilitating Practical Use of Innovative Tools and Methods

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BUREAU OF PLANNING AND RESEARCH INNOVATION INFORMATION

Spill Absorbents

Spills of oils (motor oil, transmission fluid, hydraulic fluid), fuels (gasoline, diesel fuel) and similar petroleum-based substances are common hazards in garages and on roadways. These spills pose threats to the safety and health of anyone exposed to them. Dangers arise from their toxicity, combustibility, and injuries from falls on slick surfaces. Proper clean-up of spills is essential to protect the public and the environment.

In recent years, innovations in spill absorbents provide products that offer significant advantages over traditional clay-based products. This Innovation Information Sheet is provided to make you aware of some essential information you should know if you regularly purchase, are interested in purchasing, or use spill absorbents.

Types of Absorbents

There are two basic kinds of spill absorbents. The type currently most commonly used by PennDOT is a clay-based product that absorbs all types of spills, including water. Clay-based spill absorbents have been in widespread use for many years. They can be purchased at most auto supply stores. You may be familiar with such brand names as **Speedy Dry** and **Oil Dry**. A newer type of water absorbing product that is not clay-based is **StarDust Super Absorbent**. This product is used in PennDOT's District 8.

Recently, an alternative type of spill absorbent has been introduced that absorbs petroleum-based spills but does not absorb water. For certain uses, there can be significant advantages of non-water absorbing products over water-absorbing products.

Two non-water absorbing products are **Spill Shark** and **Absorbent W**. These can be used to clean up petroleum-based spills. If a petroleum spill occurs where water is present, such as on a rain-soaked road or on a pond, Spill Shark and Absorbent W will absorb the spill but not the water.

There can be significant advantages of non-water absorbing products over water absorbing products. When water is present, a non-water absorbent will produce less material to pick up and dispose. Because only the spill is absorbed, less product is needed to do the job. Because less product is needed, and there is less material to dispose, less material handling is required, less storage space is needed, and disposal costs are lower.



INNOVATION INFORMATION

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Spill Absorbents (Cont'd)

What Are the Benefits?

Consider these comparisons



StarDust

Spill Shark

Absorbent W

When you apply a water-absorbing product to a spill, everything will be absorbed – the substance spilled plus any water or other liquid that may be present. In some situations, this may be desirable, as in a garage where you wish to clean everything up. In a field setting, such as a rain-soaked highway, it may be preferable to clean up only the substance spilled, and not the water that is also present. Use of a non-water absorbing product in these situations will require less absorbent, and will produce less material for disposal.

Because there are costs for both purchasing absorbents and disposing of them once used, savings can be realized by choosing the best absorbent for the specific situation. Less material for disposal requires less landfill space, so choosing a hydrophobic absorbent can be the environmentally-friendly choice as well.

How Do I Choose Which Type of Spill Absorbent to Use?

You can save money by using the right product for the job. In addition to purchase price, you should consider disposal costs of used products. It's true that non-water absorbing products such as Spill Shark and Absorbent W are more expensive to purchase than water absorbing products such as Speedy Dry

Non-Water Absorbing Products

Work quickly
Do not absorb water, so less material for disposal
Easier to handle
Disposal requires less landfill space
Less disposal volume = less disposal cost

VS.

Water Absorbing Clay-Based Products

Work less quickly
Absorb water, producing more bulk and material for disposal
Harder to handle
Disposal requires more landfill space
More disposal volume = more disposal cost

and Oil Dry. However, Lehigh County's experience indicates that you will have up to 10 times less material for disposal if you use Spill Shark rather than clay-based products to clean up spills in the field. This adds up to significant cost savings for disposal that help offset the higher cost of the product. Plus, clean-up will be easier and faster.

The manufacturers of Spill Shark and Absorbent W state that their products safely remove petroleum-based spills from the environment. The Material Safety Data Sheets

(MSDS) for these products, available from the manufacturers, provide additional technical information. Once used, of course, these products assume some of the hazards posed by the materials absorbed and must be treated accordingly.

In addition, StarDust Super Absorbent is a water-absorbing product but is not clay-based (it is made of alumina silicate). It is a granular powder that works quickly to absorb spills. It can be reused several times until completely saturated and ready for disposal.

<u>Spill Shark</u>	<u>Absorbent W</u>	<u>StarDust Super Absorbent</u>
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