How-To Guide
Choosing Your Secondary Containment Fabric

Containment Operations Must Meet All Regulations!

Getting it right the first time can make a significant difference in the success of your secondary containment operations. Compare for yourself as we pit SEI's proprietary Arctic-Shield™ fabric against the 8228 ORLTA fabric (see table below).

Consumer's note: Although some companies promote the use of 8228 ORLTA fabric for low temperature, above-ground secondary containment of fuels, this material is best suited only as an in-ground berm liner for waste water.

- ORLTA fabric has not been tested for diffusion or permeance, therefore does not meet CCME guidelines or Canadian regulations.
- ORLTA fabric was not intended for above-ground, self- supporting secondary containment berms.
- ORLTA fabric was not designed for exposure to fuels.
- ORLTA fabric was actually designed as a liner material for moderate chemical resistant uses such as storm water and domestic wastewater containment.

Comparison Table		
Type of Test	Arctic-Shield™	8228 ORLTA
Strip Tensile	363/373 lb/in	200/140 lb/in
Adhesion	40 lb/in	10 lb/in
Diffusion	0.019 g/m2/h	N/A
Chemical Resistance: Mass Loss	<3.0%	<5.0%
Chemical Resistance: Duration	30 days	7 days

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How-To Guide
Understanding the Numbers

Arctic-Shield™ vs. 8228 ORLTA Fabric

Make an informed decision about your secondary containment fabric! To make the right choice, you'll need to understand some key specifications:

Strip Tensile (ASTM D-751) This specification is used to determine how well a fabric will perform when it is pulled in opposite directions (the higher the test result, the better). When a berm is full of liquid, a force pulls on both sides of the fabric which means a low strip tensile strength may result in a fabric tear under these conditions.

Adhesion (ASTM D-751) This specification is used to determine how strong the bond "weld" between the layers of fabric is (again, a higher test result is better because above-ground berms need to support the full hydrostatic load they are subjected to when storing liquid, without a seam pulling apart).

Cold Crack (ASTM D-2136) This specification is used to determine how well a fabric will work in cold weather. In this case, the lower the temperature, the better.

Diffusion (ULC-ORD-C58.9 & MIL-T-52983) This number is perhaps the most important and most misunderstood. This test determines how much fuel transfers through the fabric and potentially enters the environment in the event of a spill. In Canada, the Canadian Council of Ministers of the Environment (CCME) requires secondary containment to meet a minimum permeability rate and refers to the ULC-ORD-C58.9 which states that permeance or diffusion rate that can be determined (by conducting a MIL-T-52983 test) cannot exceed 5g/m2/h for below-ground secondary containment and 10g/m2/h for above-ground secondary containment materials. Certain provinces, territories or aboriginal lands have lower diffusion rates and any area near waterways may have a lower rate as well.

Chemical Resistance (ASTM D471) Chemical resistance is tested by the immersion of the fabric in a liquid then by measuring any mass loss to determine the fabric's capability. The mass loss (typically, plasticizer loss) during the exposure to a liquid over time is measured as a percentage. The lower the percentage of loss and the longer the exposure time, the better.

Now that you know the numbers, talk to a qualified representative to learn more what secondary containment fabric is best suited for your arctic operations.

Arctic-Shield™ is not a fabric that was developed for one application while being used for another. It was purposely engineered by SEI specifically for above-ground secondary containment of fuels in arctic climates at remote sites.

Arctic-Shield™ has a high strip tensile and adhesion strength because it was specifically designed to support the hydrostatic load when the berm is completely full.

Arctic-Shield™ has a low cold crack temp below -50° C.

Arctic-Shield™ has low diffusion rates well below the CCME and ULC requirements because it was designed specifically for long duration fuel exposure that may occur if a fuel spill were to happen at a remote site that is unmanned for the winter.

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