

# Retain Drain Filtration Results

## Method

The tests were performed using guidelines described in ASTM Method F726-81, "Sorberent Performance of Adsorbents." This test method measures the maximum adsorption of oils and floating immiscible liquids. The materials tested were representative samples of ADSorb-it bulk material. The oils used were 30W motor oil and a liquid vegetable oil. Three replicates were performed for each type of oil.

## Retain Drain with Adsorb-it: Motor Oil - 30W

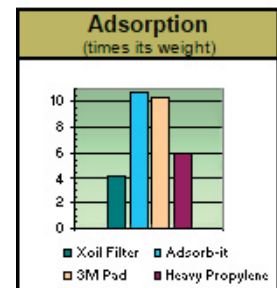
ADsorb-it Bulk Material	ADsorb-it weight in grams	Sorbed Oil weight in grams	ADsorb-it Ratio to Sorbed Oil
Replicate #1	3.44	70.17	20.4x
Replicate #2	3.30	72.33	21.9x
Replicate #3	3.46	69.10	20.0x

## Method

ASTM Method F726-81, "Sorberent Performance of Adsorbents" measures the maximum adsorption of oils and floating immiscible liquids. Testing under these ASTM guidelines, representative samples of the media to be tested were treated with three different solutions of 50 weight motor oil, #2 diesel fuel, and a 50/50 solution of motor oil and diesel fuel. Each media was tested 3 times with each solution and the results of the 3 tests were averaged for each tested media to obtain an accurate representation of the adsorption capacity.

## Results: Motor Oil

weight in grams	Xoil Filter	ADsorb-it	3M Pad	Heavy Polypropylene
Dry Weight of Media	0.9886	0.7128	0.7935	0.98045
Oil-Saturated Weight	5.2013	8.3665	8.9828	6.80125
Weight of Oil	4.2128	7.6536	8.18925	5.8219
Adsorbition (times its weight)	4.26	10.74	10.32	5.94



## Conclusions

Test results clearly show that the Retain Drain with ADSorb-it out-performed the other filtration media with an adsorption factor in excess of 10 times the weight of the ADSorb-it geo-textile filtration fabric. 3M Polypropylene Pads ran second to the ADSorb-it. However, it should be noted that 3M Polypropylene Pads cannot be used as a filtration media because water will not readily pass through the polypropylene pad, nor can they be re-used as the ADSorb-it can be.

## Stormwater Sample

Parameter	Method #	Result Unfiltered	Result Retain Drain Filtered	Detection Limit	Units
Oil & Grease	EPA 1664	> 1000	6	5	ppm
Total Suspended Solids	EPA 160.2	230	10	5	ppm
#2 Diesel Fuel	NWTPHDX	910	3.4	.02	ppm
Motor Oil	NWTPHDX	15000	3	0.4	ppm
Arsenic	EPA 6020	ND*	ND*	0.006	ppm
Cadmium	EPA 6020	0.0018	ND*	0.0005	ppm
Chromium	EPA 6020	0.013	0.0044	0.001	ppm
Copper	EPA 6010	0.077	ND*	0.01	ppm
Lead	EPA 6010	0.011	ND*	0.01	ppm
Zinc	EPA 6010	2.1	0.85	0.01	ppm

### Conclusions

As can be seen in the table above, the Retain Drain with Adsorb-it sorbent was highly effective in removing organic pollutants and suspended solids from the sample. Especially notable is the reduction in oil and grease, diesel, and motor oil between the filtered and unfiltered samples.



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