

We Plug Holes!



Foam Plugg'r

Winter 2010

Drum use, protection and readiness

EFS is available in both portable bags and also in 50 gallon drum "sets," one A (isocyanate) and one R (polyol resin). Often the drums make economic sense on projects where access is easy. Jobs with fewer, larger features also lend themselves to using drums.



EFS drum set, using PVC ball valves, with "R" and "A" clearly labeled.

There are some tradeoffs. Drum sets make around 14 yards, but if you need 16 yards (requiring two sets) you will have considerable remaining chemical. Drums are heavy (about 500lbs) and you need buckets to measure and mix the two components. You also need a way to dispense of the chemicals, some valves or pumps.

Safety concerns are different with drums. Because you are metering and mixing the chemicals in buckets, you are more exposed to contact with the A and, to some extent, the vapors. There is much concern about inhalation

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Field Forum Safety and economy of Helicopters on the job site

By Ed Winchester, President
Frontier Environmental Solutions, Inc.

Part II: Specifics of safety with lift work

Part I (see last issue) addressed some of the economic and safety considerations for choosing a helicopter to reach vertical or otherwise remote sites. Though helicopters can be efficient and help us avoid certain dangers, they present another set of risks. Preparation, training and understanding and adhering strictly to the limits of the ship and the rigging devices at hand is crucial for a safe operation.

Lift work is a very specialized skill that requires a great deal of experience and judgment. A typical pilot performing lift work will have more than a thousand hours, and some clients may require more than 500 hours of lift work logged before approving a service provider.

When planning a project with helicopters, a thorough safety brief is mandatory. If you haven't worked with a helicopter before, you might consider visiting the helicopter's home base and receiving training from the operator before mobilizing to the site. When you are on the clock at \$15 per minute it is not the time to be learning safety tips; it's the time to be working. Make sure all employees who are on the site are familiar with the operation of the hook and how to release it. Make sure you have plans for emergencies and thoroughly discuss the hazards and protocols for any incidents that might occur.

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Photo by Ed Winchester

Boxed EFS being lowered to site in a cargo bag.

Preparation leads to successful helicopter operation

Now that you have settled on the helicopter, the last and possibly most important detail is how to transport the material to the site. What works on a hoist in the shop may not work with a helicopter. Remember, the helicopter has to deal with air currents and will likely travel at 60 knots or so with the load. Using cargo nets or bags are a popular method, but you must include their weights in your weight calculations. Always inspect any slings, nets, bags and shackles before each use. All devices to be used for lift work will have legible tags stating the Safe Working Load (SWL). Even though the SWL is 20% of the load needed to cause a failure of the material, NEVER exceed the SWL of the device. Make sure you review the specifications and understand the difference between the various configurations such as basket loads, choker loads, etc.

With proper planning, helicopters are a great way to quickly mobilize and demobilize from a job site. They may be expensive, but they can quickly pay for themselves in productivity and risk reduction.

Presentation on stemming horizontal holes available for review

Foam Concepts staffed tradeshow booths at both the Mid-America Blasting Conference and the Kentucky Blasting Conference this fall. In addition, a presentation on stemming horizontal holes was delivered at the Kentucky conference held in Lexington. The talk covered aspects of

why stemming horizontal holes is important, different products and techniques for stemming and what some expected outcomes from stemming underground might be. The presentation is available as a pdf file. Contact sales@foamconceptsllc.com to request a copy.

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DRUM USE, *continued from Page 1*

exposure to MDI, but dermal (skin) contact is more of an issue. At Foam Concepts, we take skin and eye protection seriously, as should everyone who uses EFS. Long sleeves and pants (chemical resistant, such as Tyvek® is best), gloves (nitrile or latex) and goggles or glasses are necessary. Every job site should have an eyewash station as part of the safety supplies, too. These recommendations apply to using bags as well. Work gloves and street clothes are poor substitutes for chemical resistant materials. While they may protect you initially, ultimately they get logged with Iso and then actually hold the chemical against your skin. Wearing nitrile or latex gloves under your work gloves is recommended.



Typical portable emergency eyewash station, with two saline bottles.

The inhalation risk of MDI vapors is fairly low when hand mixing in bags or even in buckets at temperatures under 125F. The vapor pressure is low and normal ventilation is generally adequate. We test quarterly for MDI at our filling facility and have never detected any airborne. Outside, hot weather can raise the risk a bit, but poor ventilation in adits or low spots (like shafts) are bigger

issues. We have taken measurements on job sites and have detected some MDI, usually around adits, but always well below the OSHA allowed limit. But, if you must work in a shaft or adit, use forced ventilation whenever possible.

Half-mask air purifying respirators (APRs) can also be used with organic vapor cartridges and the dust particulate filters. Our Sure-Spot MDI tester is available for your use if you are concerned about MDI exposure. We can also provide gloves and other PPE.

One BIG difference between bags and drums (about 47 gallons different) is spill preparedness. If you break a bag, you spill about three gallons, and since both components are present, it may react and foam anyway. In fact, reacting spilled A with R (or visa versa) is an acceptable remediation technique. But if you drop or otherwise spill a drum, that is 50 gallons of one component! The drums are tough, but it has happened. So be prepared with absorbent and maybe booms or waddles to contain a large spill. The R side is water-soluble and can be diluted and washed away. The A side, however, needs to be cleaned up with absorbent, reacted with R, or can be neutralized with a solution of 94% water, 5% detergent and 1% ammonia. The good news is that the previous solution neutralizes 15 times its weight in Iso. So about 5 gallons of the mixture would neutralize an entire drum of A. Learn more at <http://www.polyurethane.org>, search on "MDI Transportation Guidelines."

So, take skin and eye protection seriously at all times and be prepared to react in the event of a spill: you will be ready should a chain or strap break or some other incident occur.