

Blacksmithing Safety Rules

Dallas Makerspace

5/18/2022

Blacksmithing is an inherently dangerous hobby. You are dealing with hot metal that can easily burn you if you are careless. You will be hammering, cutting and bending hot metal, which could send metal flying in various directions damaging your eyes or unprotected skin. It is very important that you read and understand all the safety rules at DMS blacksmithing and obey them. There is a brief written quiz at the end of these rules. All the answers to the quiz are in the Safety Manual below. Read it carefully and you will have no problem with the quiz. Good Luck and Safe Smithing!

Appropriate Clothing:

All participants must wear non-synthetic clothing preferably denim or cotton. NO SYNTHETIC MATERIALS on your person. They can melt and burn skin. Leather aprons or aprons of other heavy natural material can also help reduce the risk of injury. The shop has a few aprons available for use but it is advisable to acquire your own if you intend to do any regular blacksmithing. You can find pretty cheap ones at Harbor Freight or better ones online.. Long hair should be tied back. Nothing protruding which could catch fire.

Eye Protection:

Protecting your eyes should be your number one concern. One small piece of flying debris can blind you for life. Safety glasses are a must. Please bring safety glasses with you anytime you're going to be blacksmithing. You must wear your SAFETY GLASSES at all times while in the blacksmithing area! Absolutely NO EXCEPTIONS

Shoes: Absolutely NO OPEN TOED SHOES allowed! No flip flops, sandals etc. Leather boots or shoes are the best footwear for blacksmithing. No synthetic sneakers, running shoes, or other footwear. We have a limited number of foot covers, but it is essential that you wear the appropriate foot wear. Hot scale can easily find its way to your feet. You should also ensure that your pants legs are on the OUTSIDE of your footwear.

Leather work gloves: Gloves are not required, but you can wear them if you chose. Many blacksmiths wear a glove on their non hammering hand. Gloves should be loose fitting, so if they get hot, you can flip them off with one hand. Gloves will not protect you from a burn, so if they get hot, you need to be able to get them off quickly. Gloves can help reduce the risk of scrapes, cuts and blisters that are often times associated with blacksmith work. If you get scale inside your glove it can cause serious burns to your hands or wrists.

Hot Metal:

The Blacksmith shop is full of metal, some of which is very HOT. When dealing with forging metal, red hot metal will obviously be hot. But, as it cools, it will turn grey or black and no longer appear hot. This is known as a black heat. A piece of metal at a black heat can still hold enough heat to give you a serious burn. (900 to 1000 degree heat) Always assume all metal in the shop, on the forge, or on the ground is hot until you know otherwise. When in doubt, quench the iron in the quench bucket and be sure it is cool enough to touch. Always remember...ALL METAL IS HOT UNTIL YOUKNOW IT IS NOT! Also remember...Tongs and tools get hot with use and can burn you. You can quench these also if necessary.

One quick way to know if metal is too hot to handle is to place the back of your hand over the hot metal and if you feel any heat at all assume it is too hot to pick up. The back of your hand is more sensitive to heat than the palm. Still, assume all metal is hot.

If you have heated a piece of metal and then cut it ensure that the unused portion of the stock is placed at the foot of your anvil out of the way from someone stepping on it.

Lastly, if a piece of heated metal falls just let it drop and get out of the way then retrieve it with your tongs.

Walking with Hot Metal:

While blacksmithing, you should always limit walking with hot metal as much as possible. It is best to have your anvil placed just a step away from the forge so you can go straight from the forge to the anvil. However, it may sometimes be necessary to walk from the forge to an anvil or vise with a piece of hot metal. Carry the hot metal in front of you so that you can see it at all time. As a safety precaution, when walking from the forge to an anvil or vice, the person carrying the hot metal should loudly say "HOT IRON", letting everyone in the vicinity know you are walking with a hot piece of metal. The person saying "HOT IRON" has the right of way in the shop. Everyone else need to stay out of their way! Do not be the person who brands another student or instructor.

Sharp Metal:

Many tools in the Blacksmith shop will be very sharp. Chisels, hot cut hardy tools, hacksaws and others are designed for cutting and as such are very sharp. Care must be taken not to cut yourself when using these tools. Steel, after cutting, can also be sharp. Care must be taken when dealing with sharp metal. Do not leave a piece of sharp metal sticking out where another Person could walk into it causing injury.

After using a hardy tool remove the tool from your anvil before any further hammering on the anvil. Failure to do so can result in your hand striking the tool and causing injury.

Coal Forge Safety:

The Coal Forge is where we heat up the metal so we can hammer it into the desired shape. It gets VERY HOT. The coal forge gets hot enough to weld pieces of metal together and even

burn steel! Do not put your hands around or in a fire pot while there is a fire present! Each forge has a fire rake and a shovel. Use them to maintain the fire. Do not use your hands!

Propane Forge Safety:

The propane forge is a great tool, but can be dangerous if used improperly. Please take caution when lighting the forge or when working around the forge. It is always a good idea to ensure that all fittings are properly tightened. Stay away from the front of the forge. Always use tongs to insert or withdraw your stock. The front of a propane forge is called “dragon’s breath” for a reason.

Hearing Protection:

Blacksmithing can be a very loud hobby. Hammering on an anvil produces a loud ring, which over time, can cause damage to one’s hearing. It is highly recommended to bring EARPLUGS or other hearing protection any time you blacksmith.

Air quality:

Blacksmithing can be a very dusty and dirty hobby. When shoveling coal from the coal bin to the forge, it is not uncommon for a lot of coal dust to be stirred up. It is not recommended that you breathe this coal dust. Stay out of the smoke from a coal forge. It is not good for your lungs.

NEVER FORGE COATED METALS:

Never heat galvanized metal or metal with a bright finish in your forge. The fumes from these coatings contain zinc and are very TOXIC. Never forge galvanized or coated metals!

Blacksmithing Area:

The blacksmithing area is for DMS, instructors, and member who have filled out the liability waiver. Observers will need to remain on the outside of the blacksmithing area. This is for insurance reasons.

Proper Hydration:

Blacksmithing is an extremely HOT hobby. Especially in summer. You should always bring some type of water bottle to each blacksmithing event so you can stay properly hydrated. You can also bring things such as Gatorade or other sports drinks, but water works just fine. The main thing is STAY HYDRATED! Heat stroke is very dangerous.

Injuries:

All injuries must be reported to the instructor/DMS leadership immediately. In order to treat a burn, any burn, tap water is your friend. If you are burned and there is a water bucket nearby quench your burn in the bucket quickly, if possible, then go to the sink/fountain inside DMS and run cold water over the burn for 10 minutes. Remove your burn from the water and if it still hurts run water for another 10 minutes. Do this until the burn no longer hurts.

If you have a severe enough burn call 911, but continue to run cold water over the burn until the paramedics arrive. Running water will likely prevent any permanent damage and will promote rapid healing.

Blacksmithing Safety Quiz

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1. During blacksmithing, you should never wear clothes made of _____ materials, because they can melt to your skin and injure you. Natural materials like cotton, denim or canvas are best to wear while blacksmithing.
2. Protecting your eyes should always be a concern. You must always wear _____ to protect your eyes while blacksmithing.
3. If you have to walk with hot metal, walk with it in front of you and say “_____” loud enough so everyone in the area can hear you. This lets everyone know they need to get out of your way. The person carrying hot metal always has the right of way!
4. Blacksmith shops can be very loud. You should wear _____ to protect your hearing. (Optional but very highly recommended)
5. Protecting your feet is important. You should never wear “_____toed shoes” in the blacksmith shop. Leather boots or shoes are recommended. No flip flops!
6. You should never heat galvanized steel or other coated metals in the forge. Fumes from galvanized steel are very _____.
7. If you don't know, you should always treat all metal in the shop as if it is _____. When in doubt, you can quench it to be sure it is cool to the touch. Remember, sometimes even metal that is not red can be hot enough to burn you.
8. List the three (3) things you should bring to every blacksmithing event: _____, _____, _____
9. What do you do if you should get burned? Quench your hand in the nearest water _____, notify your instructor and _____.
10. What should you never do in front of the “dragon's breath” or propane forge? - _____
11. Why should you always stay hydrated while blacksmithing? - _____

Member Signature: _____

Printed name: _____

Date: _____

