



Footwear

By Andrea Scott

Ask any shoe lover about shoes and you will often get a lengthy answer about their favorite pair, when they got them, how much they paid, and the name of the designer that made them. But while some can easily go on at great length about the variety of shoes in their collections, construction workers have different needs—color and style are not the most important concerns. Members of the shotcrete crew are on their feet all day. They need a great pair of well-fitting boots to wear daily that are comfortable, protective, and don't make their back ache.

To achieve this, care should be taken when selecting work boots. Purchase a pair that are comfortable and

durable and satisfy the requirements of the job, OSHA, and the employer.

For a work boot to be OSHA-approved, it must abide by ASTM and ANSI standards.

Because foot-related injuries make up 25% of all disabling workplace injuries, well-fitting, well-made work boots are imperative for the safety of construction workers. OSHA requires that “the employer shall ensure that each affected employee uses protective footwear when working in areas where there is a danger of foot injuries due to falling or rolling objects, objects piercing the sole, or electrical hazards.”

As part of the most basic safety equipment, a crew member's personal protective equipment (PPE) should include quality footwear. With uneven terrain on the jobsite, as well as climbing up and down scaffolding, work boots make up the solid base required to provide traction and protect against a twisted ankle or fall. Athletic shoes are never an option. There are many brands of appropriate work boots available, and they all fit differently. Personal preference and needs will determine the best pair for each worker. Bear in mind that cost doesn't always correlate to quality and durability.

At a minimum, crew members need to have boots that provide plenty of ankle support for stability, arch support for comfort, and a nonskid sole to prevent slipping. The option of a steel toe or sole will be a matter of personal preference, but may be required by the employer. While on site, employees work in an environment with exposure to wet concrete, mud, and concrete dust; therefore, care must be taken to select boots that are best suited for the jobsite. They should be constructed of materials that will not degrade or easily become saturated. Boots that become saturated with cement-laden moisture create a highly alkaline environment in contact with the skin that can lead to cement burns. Wearing rubber boots over the leather work boots can be helpful, but will make moving around more difficult and can increase the tripping hazard. Pant cuffs should be taped over the boots or taped and tucked in, so that cement burns don't occur where cement-laden materials fall into the top of the boot and expose the skin to high alkalinity. The start of cement burns is generally not felt immediately, so precautions must be taken BEFORE being exposed to concrete materials to prevent damage to the skin. Working in wet conditions such as rain or even just in high humidity can lead to cement burns if concrete dust settles on the skin.



One of many hazards safety boots can protect you from



Examples of burns from cement seeping into boots

Some key features to look for when selecting your footwear are:

STEEL TOES

These contain protective reinforcement made of steel and are the original safety-toe work boots. Their benefits include the best puncture protection from sharp and falling objects and their affordability. Composite toes are a more recent development, and contain no metal. Instead, they're crafted from materials such as plastic, carbon fiber, and rubber. Their benefits are better electrical resistance and temperature regulation in addition to being significantly lighter in weight. Composites may be better for colder climates and to reduce leg fatigue. Steel toe or composite toe are both acceptable; choosing one instead of the other will come down to personal preference. Steel soles can help to protect your feet from accidental puncture wounds commonly caused by sharp objects (ever see nails sticking up from lumber on a jobsite?) that you may step on.

SLIP RESISTANCE

Slips, trips, and falls are responsible for some of the most common workplace injuries. Slip resistance offers a simple yet effective way to maintain everyday safety. Design, tread pattern, and material used in the outsole will affect gripping ability. Check to see that outsole materials are resistant to the environment you'll be exposed to on the project. Some materials are more resistant to oils or chemicals than others.

CONSTRUCTION AND FIT

The amount of use provided by a pair of boots will depend on how well constructed they are and how well they fit. There should be sufficient ankle support for stability. The shoe must grip the heel firmly to prevent chafing and slipping, with the forepart allowing free movement of the toes. The boots should have a low, wide-based heel. When purchasing shoes, have both your feet measured. Most people have different sized feet, so purchase shoes that fit the larger foot. Also, purchase footwear late in the afternoon when feet are at their largest, and while wearing the same kind of socks you will wear daily to prevent blisters. Don't buy footwear that is too tight, expecting it to break in, but do allow a few days of wearing your boots for short periods before wearing them for a full day's work. Shock-absorbing insoles and orthotics can also be helpful for preventing calluses and ingrown toenails. They can also delay the onset of foot fatigue from working on hard surfaces, which has been proven to be a contributing factor of accidents. Having more than one pair of work boots will allow them to dry fully each day and help them last longer. Boots should also be cleaned regularly and replaced when they start to show signs of excessive wear.

Taking all these factors into account should help extend the useful life of your work boots and get the most value from your investment. Selecting the right boot is an important choice for your workplace productivity and safety. Your feet will thank you when you make the right choice!



STEEL TOE



WATERPROOF



Examples of safety boots



Andrea Scott is the Director of Safety and Quality Control for Hydro-Arch, Henderson, NV. She has over 20 years of experience in the construction industry with a background in special inspection of reinforced concrete, reinforced masonry, structural steel and welding, and nondestructive testing. She is a member of ASA, Chair of the ASA Safety Committee, and a former member of the ASA Board of Direction. Scott is also a longtime ACI member, and member and Past President of the Las Vegas Chapter – ACI.