

## **INTRODUCTION**

There are four distinct sectors using chainsaw boots:

- FORESTRY WORKERS primarily ground workers but may be in remote and environmentally challenging conditions.
- ARBORISTS which may be independent companies, local authorities or parks services and this category can be further sub-divided into 'climbers' and 'ground crew'
- UTILITY companies working mostly from aerial platforms or 'cherrypickers' to clear power and/or telecom lines
- EMERGENCY SERVICES using chainsaws on the ground, in aerial platforms and very occasionally climbing but usually in response to a storm or environmental threat and less frequently to an extrication impact or impale.

Whichever sector you're in this is a market absolutely dominated by Italian and German manufacturers. Oddly, there are very few US models, in fact, the venerable Matterhorn from military specialists Cove Shoe Company remains one of the few US home grown boot along with Labonville's leather model and Carolina Shoe's Kevlar models intended more for fire resistance than chainsaw protection and invariably all based on a more traditional design. Canada seems to be a little more active with several models by Viking Wear and one by boot company Royer. The absence of major US brands is evident from the stocks held by US key suppliers like Tree Stuff, Wesspur and Sherrilltree who only have a handful of boots between them and these are virtually all imported from Europe. Even within Europe, what looks like a huge range of companies making boots is actually just a handful of specialist companies, some manufacturing for everyone else. Nothing wrong with that. These companies have decades of experience so if you're looking to get into the boot selling business who better to make your latest models and especially where it concerns something as difficult to protect against as a chainsaw? Stihl for instance use Steitz Secura and Arbortec, one of the most prolific modern companies uses Elten in Germany amongst others. These are all excellent boots and the features on the Alpine style boots in particular (as per the garish model on the title page) are a veritable index of specialist features with multi-layered soles, multi-layered protection, multi-layered insoles, multi-layered linings, in fact, I don't know why there isn't a boot called the 'Multi-layer'. That vivid purple boot in the titles has ball-bearing rollers on the lace up hardwear to make it easy to tighten, then it has mini locking 'cleats' to keep the lace tight while you go through that 'rabbit goes round the tree and into the hole' routine. There may also be eyes positioned to pull the heel in firmly. Either way, we don't see many simple round eyes any more. More on this later. Then there are the soles – if they were good enough for mountaineers requiring grip and durability, they're sure as hell good enough for arborists and

foresters so there are many Vibram soles with self-cleaning treads and even screw-in instep crampons to give you extra grip in icy weather. These kinds of features will be why you're going to pay £200/\$350 for a pair of boots and the kids are going to go without the latest Play-station this year.

We've divided our arborist boots into 3 separate guides starting with the greatest chainsaw protection and ending with the increasingly popular climbing boots with no active cut-protection at all. The latter has seen a growing demand because it offers comfort, support, flexibility and grip for climbing but relatively few models to choose from at the

moment; you will have seen the ArbPro Clip'nStep on the cover of issue 6 which was designed specifically to work with a rope ascending system. This climbing-integrated system has now evolved to include the Cervino Wood Quick Step from ArbPro, available as a climbing boot in Yellow or a class 3 protective boot in grey with mounting brackets for a foot ascender as well as

a web loop on the laces for attaching an ascender rig. But pure lightweight climbing boots will also continue to evolve. Drayer's Tango VI climbing boot amongst others, pre-dates the Clip'nStep and by the time we get to publication date for that particular guide we fully expect the available dedicated arborist climbing boots to have increased. We say 'dedicated' because there are a huge number of primarily three-season sport climbing boots that could be utilised for tree climbing and indeed that is where many of these have originated.

No such problems with chainsaw protective boots – if it's intended to resist the attentions of a sharp chain, whether intended for arborists, foresters or firefighters, it's a boot we have included:

- This issue: Chainsaw Protective Class 1,2 & 3 pt1
- Issue 9: Chainsaw Protective Class 1,2 &3 pt2
- Issue 10: Climbing (no chainsaw protection)
- Issue 11: Wellington Style chainsaw boots

Wellingtons often meet class 3 and have their own guide but they are a ground boot rather than for climbing even though there are some die-hards who swear by them. 'Die-hard' could be a most appropriate term for anyone climbing in wellies? Wellies aren't necessarily rubber. Firefighter wellies like the Jolly Fire Profi Evo are full spec leather. This is also the only style of boot where we've seen the unicorn of chainsaw classes – the class 4 boot. We say unicorn, not because it's mythical (and pink) but because it was a short-lived part of the cut-resistance classifications that now runs from 1 to 3. Which is a shame because we remain frankly sceptical of the true merits of selling chainsaw boots that only withstand a glancing blow from a saw on run-out so the 34m/sec category had some merit. We'll come onto that next but before we do, a word on boot height. The higher the boot the greater the protection, both in terms of chainsaw nicks and anatomical support of the foot and lower leg. Although as far as chainsaw protection goes, most active protection only covers the top and front up to about 6-8 inches/200mm. Above that it's just the leather and lining, tongue materials and lace hardware that protect you. Active climbing boots tend to end just above the ankle to allow more flex while firefighter boots are the tallest ending mid calf. This is quite restrictive of active tree climbing but fine for ground work or aerial platforms where they invariably offer an enhanced degree of all-around protection and support.

## **CUT RESISTANCE**

We've primarily referenced and used the European standards for cut resistance because in the USA, OSHA's rather vague statement reads:

"If the employee uses a chain saw, the footwear must be constructed with cut-resistant material that will protect against contact with a running chain saw"

it then references an ASTM test standard (F1818-13) which costs you \$44 dollars to find out exactly what it is you need to comply with. I defy you to find it written anywhere exactly what US boots can deal with in terms of cut-protection without paying that \$44. for a copy of the standard. It shouldn't be that difficult. Consequently US companies tend to reference the CE cut classes as well.

ALL chainsaw boots are general safety boots first so they all meet CE 20345 for general safety boots and EN15090 in the case of a box in the 'Firefighting' column. It's the specific application of chainsaw protective material that sets them apart and gives them CE ISO 17249 classification. This is further divided into classes of cut resistance – the class '0' you see in catalogues really only applies to gloves and clothing. Since we've given the numeric cut-class in the tables we don't have to be quite so specific about the huge great EN codes and have simply listed 'CE' and 'KWF' or the slightly higher 'KWF Pro'. This latter is a forestry testing award by a German laboratory that some companies opt to apply to their boots. Absence of this therefore doesn't signify anything, but boots that have actually been awarded the KWF stamp are clearly fit for purpose according to a more rigorous and applicable standard than simply being a safety boot or having some level of chainsaw protection. We don't normally say this but given the dearth of high-end chainsaw protective boots in the US we would advise you looking at the European models, many of which of imported by the key arb supply companies. Haix USA however have their own models shipped over and these comply with the US ASTM test and Canada's CSA.

Chainsaw boot protection is available in three classes or levels (it was four for a while and still is if you include class 0 for gloves etc. This is virtually always printed or embossed on the side

of the boot: Class 1: 20m/sec Class 2: 24m/sec

Class 3: 28m/sec or 63 mph

(Class 4: 34m/sec)



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48

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Many arborists value comfort and flexibility over chainsaw protection which is why pure climbing boots with no protection are gaining favour. However, many class 1 boots are lightweight and flexible like the Stein Werewolf are far better suited to modern climbing styles. Just don't have expectations of protection that are too high. None are intended to withstand a full speed, high power, Texas Chainsaw Massacre style attack with a chainsaw. Not even Class 3. But Class 1 will generally only withstand a glancing chain on run-out. Indeed, as our friends from Tree Stuff in Indiana rightly state in reference to certain class 1 technical boots like the Stein Werewolf: "under the 'Recommendation for Use' document issued by the Vertical group number CNB/P/10.155a. They are to be used for Tree Climbing Operations and Restricted use by competent, trained operators who confine them to off-ground work in trees. They are NOT FOR USE WITH HANDHELD CHAINSAWS ON THE GROUND. And before you reach for the chainmail socks it's also been said by men in white coats that every extra pound of weight in your boot is like carrying 6.4 lbs on your back such is the transference of stress. Not entirely sure about that but you get the point. Lightweight is the new black.

The most efficient chainsaw protection are boots with ballistic nylon or Keylar fibre bundles rather than lightweight keylar sheets but these are also the heaviest and are restricted to class 2 and 3. As previously mentioned the only class 4 we could find were of the wellington style, ironically from a new Zealand manufacturer but nowhere near Wellington.

# **BOOT FEATURES**

#### **UPPER MATERIALS**

Leather and suede are the universal material APART from some ballistic nylon materials and the 'rubber' of wellington style boots. Another thing that is rubber is a rand, that black strip you often see encircling the boot immediately above the sole. Our tests indicated that thick leather is a great first line of defence against chainsaw intrusion and therefore thickness of leather is very important but we also found that a rand was a useful additional level of protection as well as helping to keep water out and protect the seams from wear. Usually, when it comes to any performance/professional boot we would say that 'quality' of leather is as important as its thickness but we're not so sure about that in chainsaw boots. Good quality leather is generally more supple, flexible and soft. Lovely to have next to the skin but not so good at warding off a sharp chain. It's ironic that a hard, rough, gnarly, poorly maintained leather may not keep the rain out any more but it will probably slow up a cutting chain more than a well oiled calf leather! It's also ironic that the higher quality boots will use a single piece of leather, cheaper boots generally have multiple panels using smaller sections of leather. However, these overlapping stitched panels will also present slightly better chainsaw protection simply in terms of the thickness of material that a chain has to penetrate before it hits the kevlar. Nevertheless, the newer generation of suede and full grain leather boots are a thing of beauty and something

to be cherished much as they always were when introduced into mountaineering in the 80s. There are a handful of boots by Italian maestros Andrew Shoes that use a ballistic nylon upper or 'polymer' as they prefer to call it. Theirs is branded as 'Super-Fabric' and features abrasion-resistant coated fibres in a woven sheet that we also see in military footwear. Arbortec has a fabric that is actually coated in ceramic particles. Not sure if that resists a chainsaw any better than thick leather but it is

We've shown leather thickness's for some models and these will usually be the better quality leather. Some of those listed simply as 'Leather' may also be high quality but could equally be the cheaper 'printed' leathers – you'll know the difference from the price of the boot. In terms of anatomical features, there are a wealth of neat ideas and manufacturers will give scientific sounding names and provide diagrams on their websites to

lighter and more breathable.

Pull-on tab. Some boots

Breathable **Suede** leather in this boot Stable, non-slip sole edge. Not entirely sure about this one – it's on Haix's diagram so we'll let them have it. Could be improved adherence

> laver (orange). normally an EVA foam or even a propriety brand like Sorbothane. Facing fabric should offer

durability and comfort. Haix Secura also offers anti-wrinkling or anti-ruckina.

Heel counter, in this case leather, creates a 'form' which provides support and protection. Not present in this boot but some alpine-style boots like the Z3 on the title page, retain

explain why it is such an important feature. We'll leave you to peruse the intricacies of construction. However, one thing to look out for is a low cut collar if you're going to be driving in your boots and a flexible achilles if you suffer in that area. These features may present as a cut-away of the actual leather and a much deeper collar or softer foam insert at the achilles that can compress as your foot

#### **INNER LININGS**

bends.

The most basic leather boot and those seeking to be 'lightweight' will have no inner linings so the inner face will be 'brushed' leather making it softer than the outer leather. More technical boots have a waterproof breathable layer together with a sweat-wicking comfort layer like Andrew Shoe's Wintherm and Haix Secura (pic left) to insulate and/or keep moisture away from the foot - similar to a nappy and feels good against the skin. Cambrelle has long been the market leader as a facing fabric for technical membranes but some have their own lining or harderwearing options but

these generally sacrifice the comfort and performance of softer-faced fabrics. The waterproof, breathable membrane is layered between the leather or outer fabric and the protective facing fabric. Best known membranes are GoreTex and Sympatex with various subtypes but there are many other efficient membranes - there is almost certainly already one called AquaTex but if not, can I patent the name? Outdry is a more unusual 'membrane' because it is effectively a single sheet bonded to the entire inner surface of the boot stopping water penetration before it even reaches an internal sheet membrane with seams.

Boots that are waterproof when new get a solid black box in our 'Waterproof' column. If the boot is water 'resistant', it's usually because it is a simple, externally treated leather with no technical lining, this will have an outline box in the 'waterproof' column indicating that it is water-resistant rather than water proof but the true degree of waterresistance or proofing will be determined by how well you treat them.

666

### FOOTBEDS/INSOLES

Not included in our table because they are invariably interchangeable but a vital element of any boot. The insole or footbed is that footshaped thing in the dark and smelly recesses that keeps riding up when you pull your sweaty foot out and tends not to stay in place once it gets a bit worn. If it's a simple flat insert then it's old-school and probably not doing very much for your foot. Much better are formed 'Memory' foams and shock absorbing materials like Sorbothane. These provide greater support by more closely imitating the shape of your foot unless you already have fallen arches in which case you might as well stick with the cheap, flat ones. Sorbothane and other shock absorbers have been around for decades and really are high performers. Arborists don't tend to be stomping great distances on hard surfaces which is when you would appreciate shock absorption more but if your boot already has this it's a bonus. If it doesn't you can easily buy technical insoles from outdoor shops and some arb suppliers and replace the rubbish your boot might have come with. Remember that sizing may be affected if you replace a flat insole with a preformed or contoured one. Indeed, if your boot is not quite the right size consider adapting the insole accordingly. The better insoles also have options like cold insulation, moisture-wicking, antibacterial or deodorising properties but this latter feature will undoubtedly be overwhelmed within minutes of coming into contact with your particular feet. Some use fleece and are washable so a couple of extra sets will keep you fresh.

#### **MIDSOLE & INGRESS RESISITANCE**

Sandwiched between the grippy outsole and the bacteriainfested insole/inner surface of the boot should be a steel, aluminium, Kevlar, composite or polypropylene/polyurethane layer to resist puncture by nails or sharp objects and to provide extra rigidity. Steel is the toughest but makes the boot quite



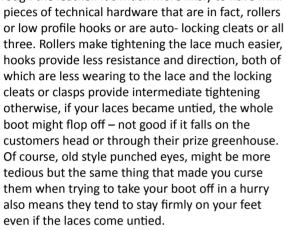
of the boot as well as protection from being impaled by a nail or thorns

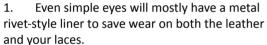
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heavy so climbers have moved more towards aluminium and Kevlar but Poly or nylon-related materials remain the commonest midsole material – sometimes in addition to the tougher materials but by itself is a more flexible and cheaper option. We may see the tactical trend towards more expensive but immensely light and tough carbon-fibre composites creeping into chainsaw boots but they're not yet in much evidence although the SIP Loggers have a Kevlar midsole so expect to see more.

#### **LACING EYES**

Don't expect a modern chainsaw boot to have a simple hole punched through the leather. It's much more likely to have mini





- 2. hooks are open, making loading of the lace much easier but they can snag on branches and bend or even snap off altogether. This example is actually a little too closed to be a simple hook and is probably more of a 'clasp' or locking hook.
- 3. Cleats/Clasps tend to be hooks that have been squashed down so that they pinch the lace when you load it in.
- 4. Eyelets can be a swivelling mini D-ring or a fixed closed loop, in effect a hook that's bent all the way over to create an in-line eye. The lace needs to be fed through and the entry or exit angle will increase friction and may make tensioning more difficult - you may have to tighten each horizontal section of lacing all the way to the top of the boot.
- 5. Mini rollers alleviate this so you can tension whole sections of boot simply by pulling at the top

where there will hopefully be a cleat to stop it all running away from you the second you release tension.

#### **SOLE GRIP and RIGIDITY**

Climbers like flexible boots with tactile grip but may conversely appreciate rigid soles when spiking. Some trial and error will be needed to find a boot that really suits your climbing style. Ground workers in cold climates increasingly use 3-season hiking and alpine style boots for use in snow and ice and on brush that tries to skewer you in retaliation for you torturing it to death with your chainsaw. Rubber compounds provide

varying degrees of grip – the grippier the boot the faster it will wear out but you can simply resole a good quality boot when the time comes. Or, if your boot came with some rubbish, own brand industrial sole that resists hydrochloric acid but couldn't grip a tree frog's face, ask your local cobbler or whatever the modern equivalent is if it can be replaced with a Vibram or Skywalk sole.

There are some very good unknown sole brands so test it out thoroughly before dismissing it.

#### INSULATING

this refers to the ability of the upper boot to keep your feet warm rather than the ability of the sole not to crack which is listed as 'Cold-Resist' under Sole features. The mountain orientated boots have a head start in this regard since they are designed for use in snow but others have layered foam and lining materials to keep your feet toasty. Not a problem in New Mexico and outback Australia where the simpler, lighter leather or ballistic nylon boots with a sweat-wicking layer would be preferable.

#### **RUBBER TOE**

Not necessarily part of the structure of the sole so it doesn't get into the highlighted part of the tables. This refers to an outer protective cap over the leather at the front of the boot that helps to protect from wear and tear at the most abused part of your boot. Some are a moulded extension of the sole while some are an extension of the rubber rand that runs around the entirety of the mountain-style boots in particular. One or two like the firefighter boots have thickest protection which is an armadillo style layering of the rubber.

#### **PULL-ON AID**

Nothing is likely to start the day with a grumble quite like straining to pull your rain-stiffened boots on – especially with your freshly moisturised hands slipping on the top collar. Enter the pull-on aid – either a full finger loop which is the best option or a simple flap on the back of the boot which you grip and pull.

#### **FIREFIGHTING**

Fire and chemical resistant footwear that meets firefighter standards but also has chainsaw resistance unlike most firefighter boots. Why wouldn't you? Well for one thing, they tend to be much higher than regular chainsaw boots and this isn't conducive to acrobatic climbing. Nevertheless, if you're looking for something different or are a volunteer at the local fire station you could kill two birds with one stone.

#### WATERPROOF

This relates to the whole boot and the uppers in particular as we would hope that every sole would be watertight. The vast majority of uppers are waterproof simply because leather is waterproof but there are degrees of.... look for higher quality leathers or specialist waterproof membranes like Sympatex and GoreTex in addition to a water resistant outer. Also look for a full wrap-around rubber rand - this not only provides excellent extra protection it seals water ingress points because all the waterproof leather in the world is no use if the seams leak. Some leathers are treated with wax or oil to maintain water resistance and this needs to be maintained to keep them in tiptop condition. However, the softer the leather the easier it will succumb to having big gouges carved out of it. A dilemma.

#### **COLOURS**

As with all of our 'GUIDES' different colour options are separated by a comma. Where is more than one colour on a boot the primary colour is listed first with a capital letter with secondary colours shown after a forward slash with all lower case lettering eg. Black/red. Some of our GUIDES show the primary colour in all upper case but when space is limited on these more complex guides we only have room for one capital! In the case of leather boots the higher quality mountain boots are invariably a coloured suede-like leather while black or brown boots may have a secondary colour that is only on the

### **SIZING**

Almost as varied as every other conversion we need to make in our Guides based on information supplied by manufacturers! There shouldn't really be any excuse for these differences because sizing is actually an exact science. But European sizing is around three quarters that of a UK/US size so you'll see some discrepancies. It's generally best to use the European sizes since these are smaller increments and the vast majority of boots are made in mainland Europe. We've listed sizing as they are quoted by manufacturers so don't blame us for some of them being out by half a size.

### **SOLE FEATURES**

- •STEEL TOE Steel toe cap and by far the best protection against chainsaw intrusion and heavy weights. It does however add to weight and bulk of a boot.
- •COMP TOE Composite toe and is a plastic or rigid composite material that provides slightly more protection than the leather alone but virtually no protection against a cutting chain. It will help to slow it up if it's a glancing blow but anything more direct than that and your toe(s) are toast.
- •ANTI-SHOCK in terms of absorbing impact and protecting your joints (rather than electricity which is actually covered by an 'anti-static' rating in some boots but not shown here. Next there are four features of the sole but there will be some quality soles from Vibram which don't tick these boxes but may actually still be superior.
- •HEAT-RESIST It's not so much that you will be able to walk on hot embers and impress the customers it's that rubber-like materials tend to 'decompose' and wear out far easier in higher temperatures. Heat-resistant soles are a more specialised, harder compound but be careful that this doesn't also mean that the sole is less tactile i.e. less grip.
- •COLD-RESIST if you're having to worry about the integrity of your boots in extreme cold you probably shouldn't be using a chainsaw aloft but maybe you're forced to leave them outside of the house because of the smell and the night temperatures are way below zero.
- •OIL/CHEMICAL RESISTANT- We've tested these for decades and can honestly say that we have never noticed any improvement in traction when walking on an oil-covered surface. What this feature really means is that your sole will be less likely to decompose after walking through industrial fuels,

chemicals and acids. It would be as well not to expose any of your rope safety equipment to such contamination though! •CRAMPONS - All boots can take some kind of strap-on crampon but bear in mind that you will struggle to keep articulated crampons on a sole that is too flexible. More rigid soles can take 8/10 point crampons and alpine legends Stubai actually have a model for chainsaw boots called the Forestry Crampon. Up from this are 10 or even 12-point (front-point) auto or step-in crampons - similar to ski bindings - boots that can take these are obvious from the little 'ledge' that protrudes front and back. There aren't yet any ski-binding style treeclimbing spikes/spurs so this feature is again for approach or ground work on slippery terrain. In some cases the boot either

**CHAINSAW BOOTS** 



Alpin sole above there is a an oval of spikes. There are some screw-in additions like the one shown on the Pfanner Matterhorn sole above that sits on the outer heel but can be swung away into the instep when less grip is required. In the case of Treeme they've

gone one step further (so to speak) and have an optional rear step-in crampon called the 'Slide-Stop' shown above which levers back from the heel instep and is a neat and very quick option for extra grip if your boot has a black box in this column. Boots that can take a step-in crampon fitting are indicated by a solid box ■. Boots that have an integral grip-plate or the option of a screw-in instep crampon have an outline box in the case of some like the Arbortec Scafell boot shown in the titles – they

Part 2 of this Guide will be Chainsaw Boots Class1,2&3 from J to Z including, Robusta, Stihl, Rockall, Prabos, Pfanner, Stein SIPS, Lavoro, Steitz Secura, Meindl, NoRisk, Trueno, Royer, Viking and



The most comprehesive collection of chainsaw footwear globally



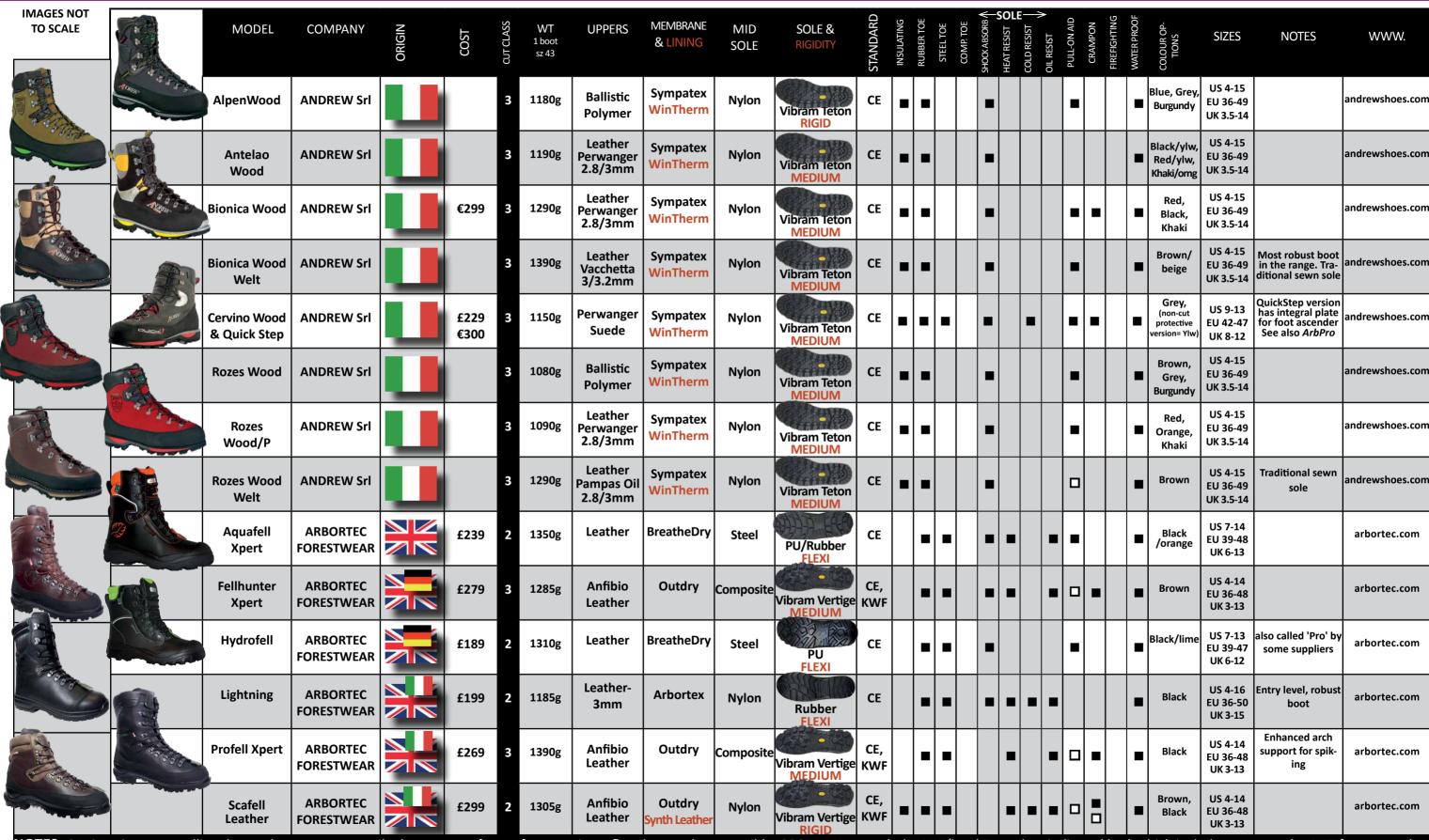
Arbortec knows that with the correct footwear you can get the maximum out of your day. We have a comprehensive collection of chainsaw footwear ranging up to EN ISO 17249 Class 3, tested and approved to the KWF Profi Standard. Whether you spend your day working at height, on the ground or in the wet we have the perfect boot.

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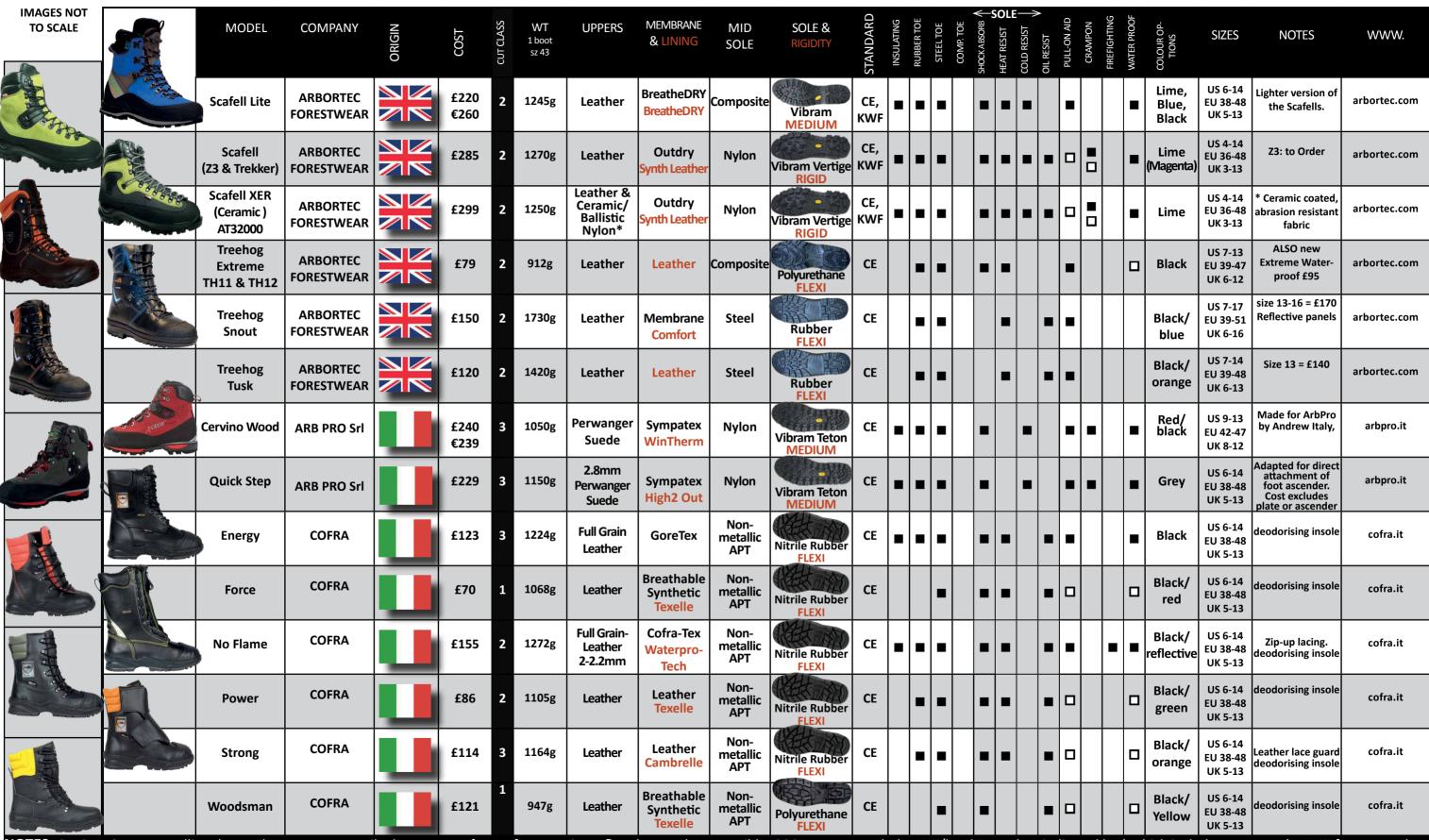
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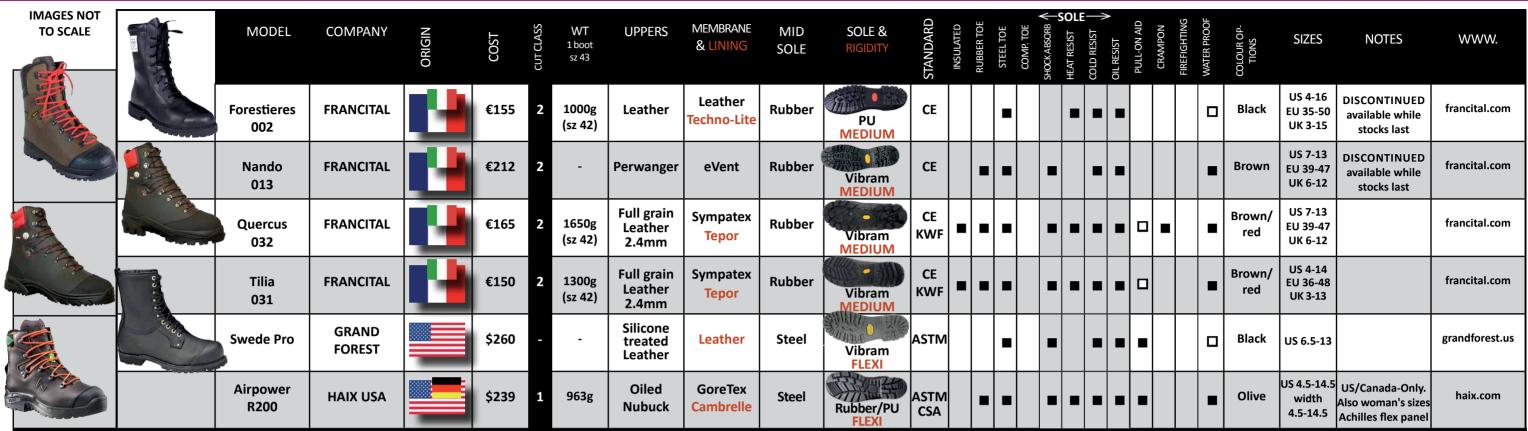


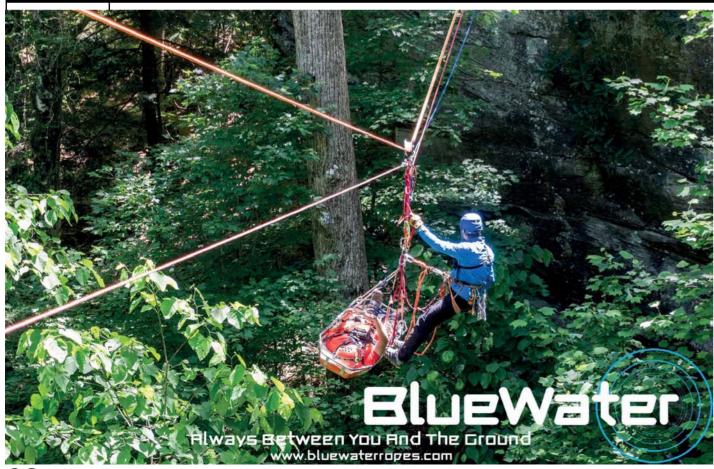
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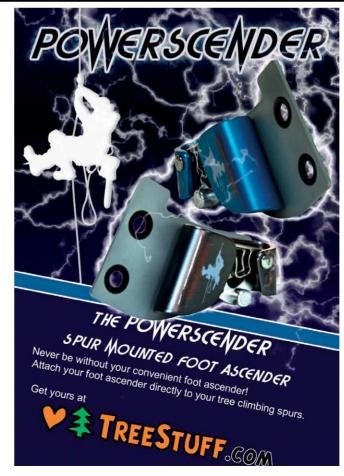
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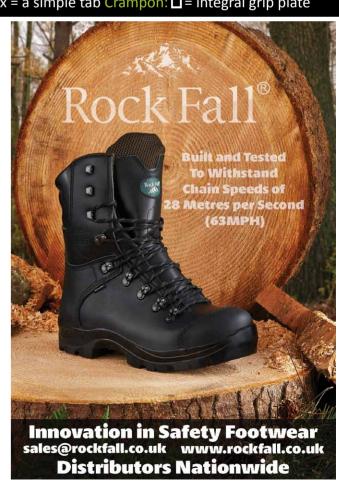


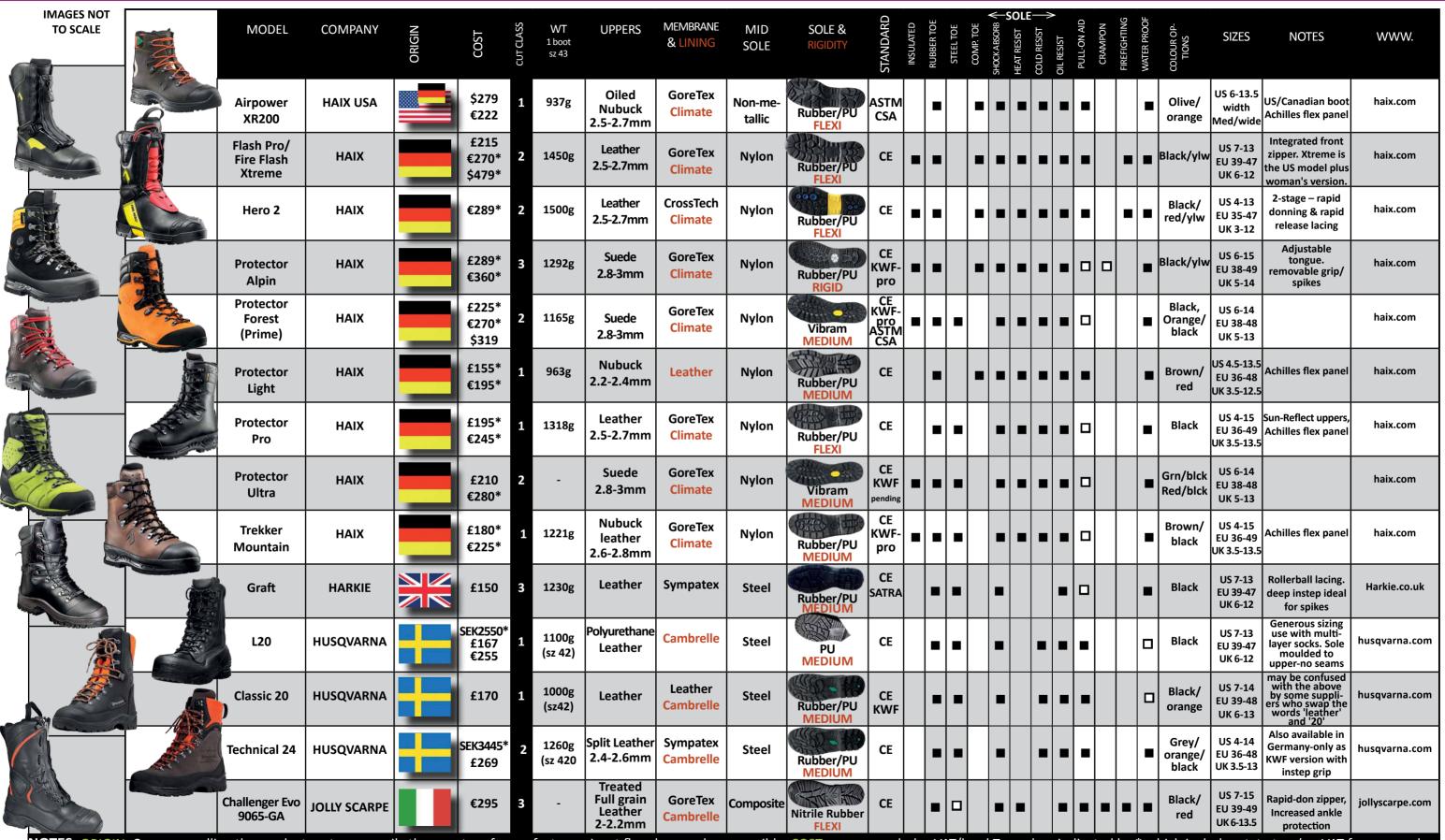


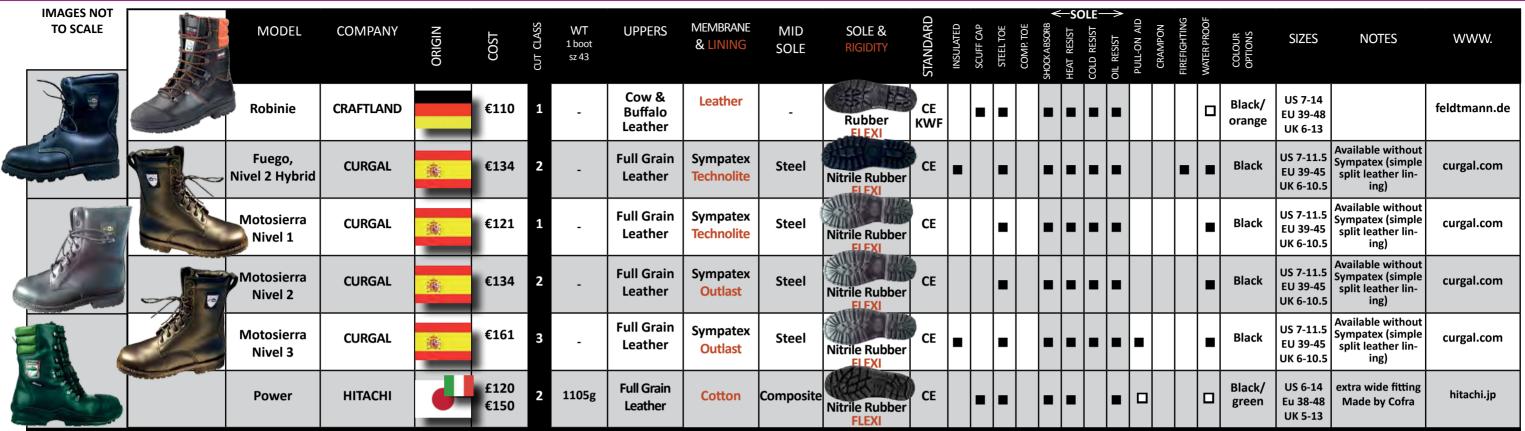








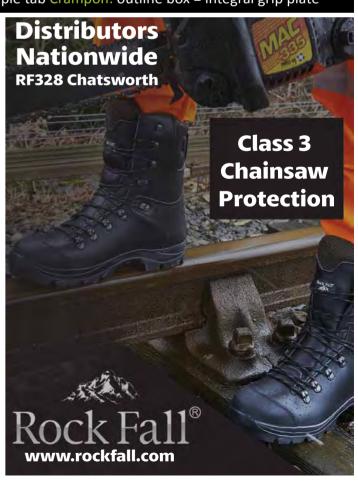














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USES: Toe = Alluminium not steel - Anti-shock = shock absorbing sole insert, normally a layer and/or heel wedge Pull On Aids = A black box = finger loop, an outline box = a simple tab Crampon: outline box = integral grip plate

53



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