

# WHAT'S IN A SKI?

WE USE AN ANGLE GRINDER TO PEEP BELOW THE GRAPHICS

**O**NCE UPON a time wood was the only component in skis. Designers and engineers soon did away with that boring idea, threw a whole heap of other stuff into the melting pot and came up with a load of fascinatingly complex stuff that, unfortunately, you can't see. That's why we've gone to the trouble of bringing an angle grinder into work and sawing a ski into chunks. It was very therapeutic but we're experts and we suggest you don't try this at home. Some skis are light and bouncy like a five-year-old at Christmas, others have a more mature response to the white stuff, gliding with smooth finesse. The different materials in a ski, where they are placed and the space between them are what give a ski its character. Read on for more!

## WOOD CORE

Wood is a 'dynamic' core. It softens blows, adds springiness and controls vibrations. Laminated strips of it are generally joined together in different combinations to create whichever blend of density, stiffness and flex is required.

### POPLAR AND ASPEN

are mid-hard woods. Aspen is more commonly used in America, poplar in Europe.

### BEECH, MAPLE AND ASH

are stiff, hard woods used in strategic areas of a ski to optimise performance and weight.

### ABACHI AND Balsa

are very light, soft woods used to cut down on weight.

## OTHER CORES

**FOAM** is very lightweight and can be injected into a ski to separate the top, bottom and sides of the ski from each other. A ski with a foam core is responsive and easy to manoeuvre. Foam is generally used with other materials because it isn't very strong.

### HONEYCOMB STRUCTURES

made from a strong, lightweight material such as aluminium, can be used to create air pockets within a core. Skis made in this way are light yet have excellent tensile strength. **SYNTHETIC CORES** made from lightweight materials such as carbon, graphite and Kevlar are often used within the wood laminates at strategic points in the ski. A mixture of wood and synthetics cuts down on weight without compromising on performance.

**METALS** such as aluminium or titanium aluminium can be used as load-carrying membranes on the top and bottom of a core structure. Metals add torsional stiffness and improve stability and edge hold but need to be used in conjunction with vibration-dampening materials.

## STRUCTURAL LAYERS

are what surround a core. Designers can get especially creative here, using different materials to get the riding feel they want. Fibreglass is the most common; carbon fibre and Kevlar can be found in more exotic skis, used for their strength, lightness and stiffness. Too much carbon fibre can transmit a lot of vibration and excessive Kevlar affects a ski's liveliness, though.

## BASES

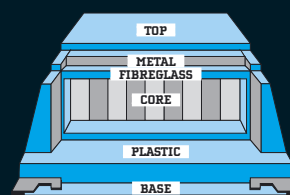
are either extruded or sintered.

**EXTRUDED** Melted polyethylene granules are forced through an extrusion form under pressure to create a sheet base material. A good, inexpensive sliding surface.

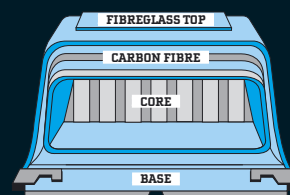
**SINTERED** High quality polyethylene granules are melted under pressure, producing a block of hardened porous material which is then cut to size. It absorbs wax easily and is strong but makes the ski pricier.

**REINFORCEMENTS** Some manufacturers add a second edge or reinforce the middle of the base of their freestyle skis to protect against railslide damage.

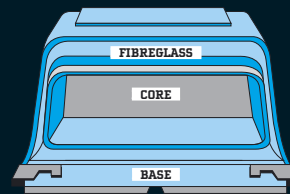
## CONSTRUCTION METHODS



**SANDWICH** Different structural layers are built in a mould and bonded together with glues and heat. Sandwich constructions transmit more pressure to the edge of the ski, giving increased edge grip and response. Commonly used in race and high performance skis.



**CAP** The core components are encased in a pre-printed and finished cap resulting in a ski with no sidewall or top edges. This lighter weight construction is also more durable against impacts, so it's often used on recreational skis and twin-tips.



**SINGLE SHELL** The base, edge, bottom and top components are placed in the mould, then foam is injected between, gluing the ski together for a very lightweight ski. Often used on race skis.

WE SET THE SKI ON FIRE TOO! AND A SNOWBOARD GOT A ROUGH DEAL. SEE [WWW.FALL-LINESKIING.CO.UK](http://WWW.FALL-LINESKIING.CO.UK)