


## 111.ICE AXE

QUALITATIVE REQUIREMENTS	PICTURE OF EQUIPMENT
<p><b>SPECIFICATION REQUIERD FOR THE PRODUCT</b></p> <p>1. The dimension of leather cover shall be such as to fit the corresponding ice axe.</p> <p>2. The tolerance on intolerance dimension shall be according to best manufacturing practice.</p> <p><b>MATERIAL AND HARDNESS</b></p> <p>Head :- steel grade 40 Ni3cr 65 M055 confirming to IS 5517-1987 specification for steel for hardening and tempering (first revision) the sulphur or phosphorus content shall not exceed 0.05 %. The head shall be evenly hardened and tempered and shall have a hardness of 350 to 450 HV</p> <p>SPIKE :- steel 40 Ni3Cr65M055 of IS:5517-1978.The spike shall be evenly hardened and tempered to hardness of 350 to 450 HV.</p> <p>FERRULE :_ Steel type of D IS 513 1986 specification for cold filled low carbon steel and strips (third revision)</p> <p>HANDLE :_ Ash or high and medium density wood based laminated conforming to type V of IS :3513 (Part3)-1966 specification for high and medium density wood based laminates (compare) part general purpose.</p> <p>THONG (COMPLTE WITH RING) : Thong from nylon tape with a minimum breaking strength of 1900 N (190kg) and ring from steel C14 of IS : 1570- 1961 schedules for wrought steel for general engineering purpose.</p> <p>COVERS : leather buffalo curried.</p> <p>RIVETS :- shall confirm to IS :2155-1982 specification for cold forged solid steel rivets for hot closing (6 to 16mm diameter )first revision.</p> <p>MANUFACTRE :</p> <p>HEAD :- The head shall be soundly forged in one piece. The rivets holes shall be countersunk to receive the rivets heads. The serrations on the pick shall be subjected to crack detection test The rivets shall be securely clichéd and shall be finished flush with surface straps.</p> <p>SPIKE :-Forced in to the tapper at the bottom of the handel. The spike shall be forced into the taper at the bottom of the handle after fitting the ferrule so that the spike shall be tight fit thorough the length of shank without splinting or weakling the handle.</p> <p>FERRULE :_ The ferrule shall be either solid drawn or brazed or weded. The larger end of the ferrule shall be reasonably flushed with the handle after fitting with out wreakeing the handle at this point to achieve this undercutting of he handle may be avoided and at the broad end the inside of the ferrule may be given a small radius. The ferrule shall be further secured to the handle with screw. The ferrule shall be tight fit and shall be driven on the end of the handle before inserting the spike.</p> <p>HANDLE :- The blank for the handle shall be quarter sawn and free from defects. The timber shall have a growth rate of 4 to 10 rings per 25 mm measured radically and the proportion of the summer wood to spring wood shall be not less than 50% percent ( The timber ash meeting these requirementis expected to have a density of more than 0.65 per cubic centimeter at 15 % moisture content. The timber shall be straight grained and the maximuminclination of grain and fiber shall not exceed 1:2 and shall be properly seasoned to a moisture content of not less than 10 % and not more than 15% .</p> <p>The handle shall be made to the shape as shown in fig.6 and grooves provided</p>	

to accommodate the strap of the head without weakening the handle. The handle shall then be tightly fitted into the recess in the head. The straps of the head shall be snugly fitted and bedded down flush with the handle and securely riveted. Care shall be taken to ensure the rivet holes are at right angles to the growth rings of the timber. The rivets shall be countersunk and flush with the surface. After fitting, there shall be no looseness and all sharp edges and corners shall be removed. A very high standard of riveting is required to ensure that the timber of the handle is not weakened during riveting and the head is securely fitted to the handle.

**THONG :- (Complete with Ring ) :-** The ring of the thong shall be soundly forged. The ring shall slide freely on the handle from the under side of the head to the stopper. The tape shall be securely stitched to the ring. The stitching shall be even tension throughout.

A screw shall be fitted to the candle to prevent the thong falling off the ice axe.

**HANDLE COVER :-** The loop to take the strap of covers for pick end shall be sufficiently raised to take the strap easily the covers for adze end shall be securely fitted with line prong buckle normal size 16 mm according to IS 4274-1981 specification of buckles first revision alternatively the covers may be fitted with suitable instant fasteners.

The thread shall be used for the stitching shall be four ply thread flax undyed the thread shall be well twisted and black waxed .

**WORKMANSHIP AND FINISH :-** The head, spike, ferrule and the ring shall be free from cracks pits, rust flaws seams and other defect.

The brazing or welding of the ferrule shall be even continuous and sound.

The tape for the thong shall be free from all weaving defect.

The leather for covers shall be neatly and smoothly rubbed down and creased.

The stitching shall be even tension throughout with all loose end securely fastened off. The awl employed should not be too large for thread, sewing by hook awl method is prohibited.

The ring and buckles shall be suitable oil blanked.

The exposed surfaces at the handle shall be thoroughly waxed. The handle shall be finished smooth. The rivets shall be properly countersunk and finished flush with surface.

All sharp edges shall be removed.

The head ferrule and spike shall be finished bright the head shall be protected against corrosion by using suitable grease and waxed paper given any one of the following anti corrosive coating.

Nickel and chromium plating to service grade No. 2 of IS 1068-1985 specification for electroplated coating of nickel plus chromium and copper plus nickel plus chromium on iron and steel. (ii Service )

Cadmium coating to service grade NO 2 of IS : 1572-1968 Specification for electroplated coating of cadmium on iron and steel first revision.

The handle when finished to the dimension shall be coated a head end and spike end with bituminous paint before assembly.