# SUGGESTED PROCEDURE FOR ICE LUGGING PREMIUM CARBON & BORON HEAT TREATED STEEL

CONSIDERATIONS BEFORE STARTING:

a) Choose a pattern for placing lugs on pads that gives the maximum grip with the minimum number of lugs.
b) Select a size of lug that gives the minimum amount of distance from the pad face to top of lug and still grips adequately.
c) Choose longest ice possible.
d) There must be no arc strikes on finished pad as this may cause breaking in pad. If they do occur, thoroughly grind the area to remove the arc damage.
e) The principle of high heat input and slow cooling will provide optimum weld performance.

REQUIREMENTS:

a) Clean dry pads. If re-grousering, it is best to apply lugs as re-grousering while pads are still hot.
b) 3/16" E7018-1 electrodes either from freshly opened container or holding ovens @ 250 degrees F. (Keep electrodes hot.)
c) Ice lug to be welded on pad in horizontal position.

PROCEDURE:

a) Select 3/32" or 1/8" electrode size for the job.
b) Place ice lug on grouser in such a position that the ends of the ice lugs do not line up with rail recesses in back of pad.
c) To fully ensure successful ice lugging, preheat of the grouser bar to 250oC is necessary. Preheat should be checked with the use of a thermal crayon (Tempil Stick).
d) To position ice lug on the grouser, place tacks in the middle of the lug of ½" in from each end of lug with a gap of 1/8" left after tacking. (Tacks must cover their own arc strikes.) Clean slag from tacks.
e) Ensure preheat of 250oC is achieved in both the Ice Lug and also the material at least 2 inches from the weld region. (Check with Tempil Stick)
f) To start fill pass, strike arc on the tack closest to the outside edge of pad. Then move the bead out to the ice lug only, without breaking the arc allow time for weld deposit to completely fill groove, the return over bead and tack to the other edge of the ice lug, again allowing time for crater to fill in, then return bead back 1". (Make sure no craters are left on ends of welds.) Complete weld with one stop and start if possible.
g) Allow to cool as slowly as possible: do not allow weld to be quenched with snow or water.

NOTE: The method described above is a practical solution to help reduce the breakage problems encountered in ice lugging. It is not a guaranteed procedure.

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