

Technical Article

How to Purge and the Dangers of Argon

Weld purging carried out correctly can be the way to obtain oxide free welds with no discolouration.

The top 10 tips to follow are:

1. Use the best possible gas which is called Five Nines Argon. This is 99.999% Argon and 0.001% impurities, which is 10 ppm max Oxygen.
2. Ensure the best hoses and hose connections are used to avoid absolutely any leakage, where outside air can be drawn in.
3. Thoroughly clean the inside of the volume being purged. Use Iso-propyl alcohol or MEK (methyl,ethyl,ketone) if permissible, then use distilled water to wash out, finally drying off with a hair dryer or similar.
4. Don't use masking tape or any normal tape to seal any root gap. Ask for the HFT® purging tape and the correct taping method to ensure that the seal is leak tight and that no adhesive is facing the root gap.
5. Because Argon is heavier than air, feed it into the bottom of the air space, very slowly until the argon covers the purging inlet. After this, the purge rate can be increased. This will avoid turbulence and prevent air and argon from being mixed.
6. Make the exhaust at the highest point.
7. Use a Weld Purge Monitor®. Use a probe to take samples of the air just above the purge inlet, until your purge monitor indicates 0.00. After this the purge flow can be increased.
8. Continue to use your Weld Purge Monitor® attached to the exhaust line, until the oxygen level falls below 100 ppm.
9. Don't use an oxygen monitor because it is calibrated to read oxygen at 20.94% which is atmospheric pressure. The Weld Purge Monitors® are calibrated at the 100 ppm level or the 10 ppm level, depending upon which one is selected.
10. Do not under any circumstances sniff the argon to see whether it is coming out of the container correctly. Argon is colourless and odourless and is a silent killer if the head is immersed in the gas.

If you are purging a large diameter vessel or pipe, or a number of large diameter items, that means a lot of gas is going to be released into the environment at some stage.

Because it is heavier than air, it can fall into holes or pits where people may be working.

Ensure that there is powerful ventilation to disperse argon being released.