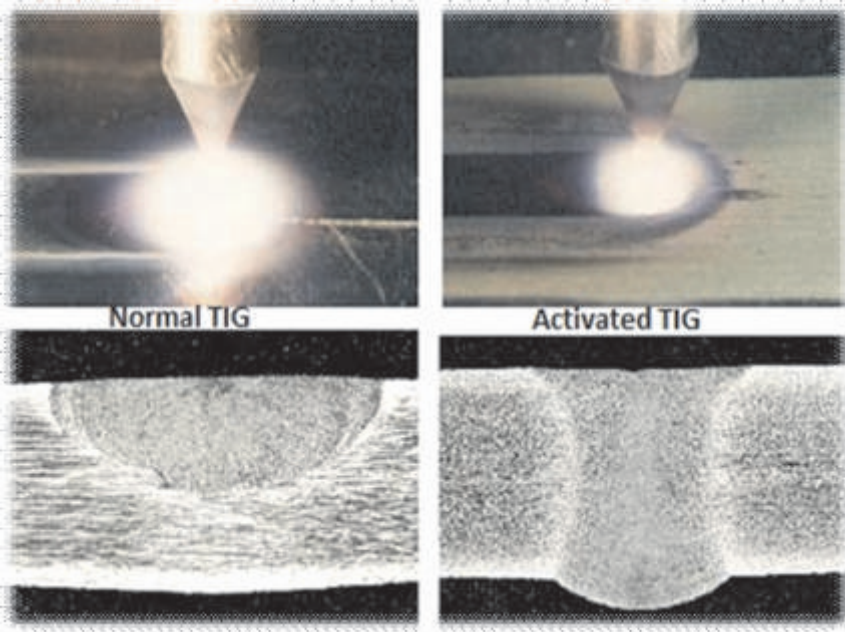


ACTIVATED TIG PROCESS (A –TIG Process)

TIG welding process, which is being predominately being used extensively in sectors such as nuclear, Oil & gas , aerospace etc. faces major challenge to improve productivity . The thickness of austenitic stainless steel that can be welded in single pass is normally restricted to 3mm with argon as shielding gas.



A novel variant of the TIG welding process called A-TIG process overcomes this limitations. This process involves applying a thin coating of the activated flux on the joint prior to welding. The use of activated flux produced a significant increase in penetration of 10 – 12 mm in single pass .

It has been established that with use of A-TIG process ,significant improvement in penetration of 304LN and 316LN stainless steels is feasible.

The significant improvement in penetration is possible due to combined effect of constriction of the arc and the reversal of Marangoni flow. Effect of these two mechanisms lead to increased penetration by as much as 300% in 304LN and 316LN stainless steels produced in A-TIG welding.

The weld produced with A TIG process meets radiographic ,chemical & mechanical requirements including bend tests

Process:

The flux in the form of powders is made into a paste by mixing with acetone and the paste is applied on the surface to be welded by means of a brush. The acetone evaporates within seconds leaving a layer of flux on the surface. The A-TIG process is suitable for any position welding.

By employing A-TIG process, overall welding costs can be reduced considerably These economics in fabrication costs can be achieved through:

- Reduction in bevel preparation requirements
- Decrease in number of weld passes
- Shortening of welding times
- Reduced consumption of welding filler wire
- Elimination of back gouging and grinding
- Reduced distortion

Typical applications include pipes and tubes in nuclear industry ,Fabrication of pressure vessels and tube to tube sheets in heat exchangers in the power and chemical industries, hydraulic cylinders and undercarriage legs in aerospace industry.

Currently ADOR WELDING offers activated flux under brand name – ADOR A - TIG Flux.

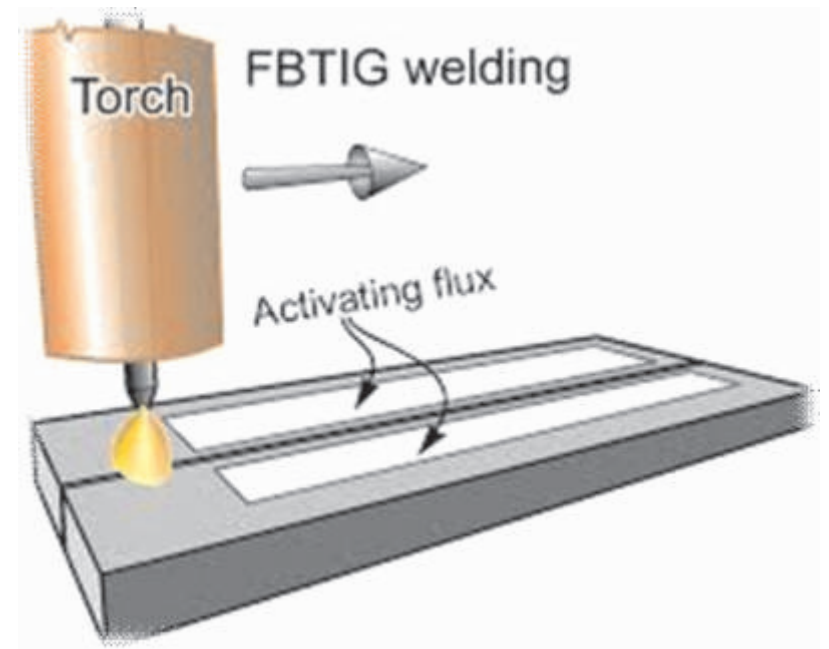
Existing welding machine similar welding procedure but greatly improve productivity.

Usage of this flux results in 1.5 to 3 times increase in weld penetration compared to single pass regular TIG welding.

Overall heat input in to joint significantly reduces ,giving extra security against sensitization of low carbon stainless steel.

Higher penetration welds obtained using this satisfactorily meets non-destructive tests – DPI, UT & RT.

Mechanical properties of weld metal meets the requirement.



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