

# TIG<sup>er</sup> technology

## Weld overlay cladding with TIG<sup>er</sup> technology

### Introduction

The TIG<sup>er</sup> technology is the outcome of a technological development by POLYSOUDE, a variant of TIG Hot Wire welding. The basic principle involves the juxtaposition of two TIG arcs, organised and controlled so as to combine into one single arc with the calorific value of the combination of both powers, but with characteristics which are unusual for such intensities.

The addition of the wire preheated using the Joule effect via the control of a third current source enables the special profile of the weld pool to be used and to considerably improve the efficiency of the procedure.

Depending on the requirements, it is possible to optimise the thickness of the layers to within a range between 1.5 and 3.5mm. This flexibility enables the quantity of weld metal to be adjusted to strict requirements and thus allows significant savings to be made taking into account the costs of filler products (generally the noble alloys). The optimised welding speeds are of the order of 70 to 90cm/min with deposition rates of between 2.5 and 6kg/h i.e. about three times more than the TIG Hot Wire technology.

Complete control over dilution is provided with a rate of the order of 12% on the first layer and the order of 1.5 to 2% from the second layer deposited.

A machine fitted with the TIG<sup>er</sup> technology will prove to be profitable and economical allowing a 20 to 50% drop in operating costs per kilogram of weld metal.

### Areas of application

- Horizontal Cladding (internal and external cladding of tubes and pipes)



# Advantages of the process



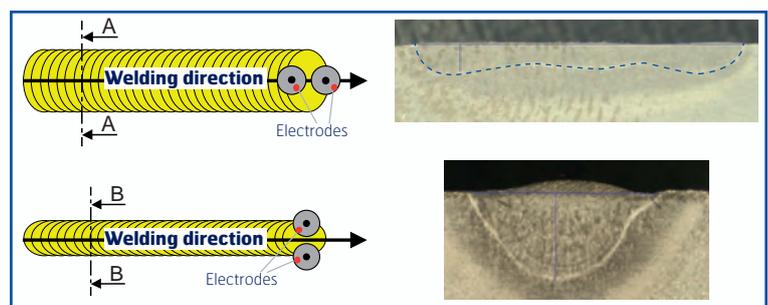
- ▶ A welding quality identical to that of conventional TIG welding



- ▶ Low arc pressure allows high speed welding even with applying strong welding current intensities

Welding process	Welding position	Welding speed cm/min	Deposition rate kg/h
TIG <sup>er</sup> Bi-cathode	PA - 1G	85	5,8
TIG <sup>er</sup> Bi-cathode	PC - 2G	85	4,4

- ▶ Asymmetrical shape of the arc column and melting bath depending on the position of the electrodes



# Areas of application

- Vertical Cladding (internal and external anti-corrosion weld overlay cladding of manifolds for petrochemical and gas industries)

