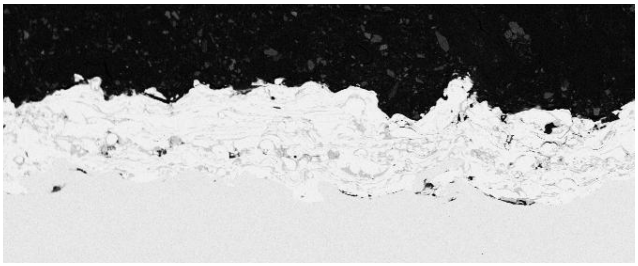
F154-16 – APS Hastelloy Project

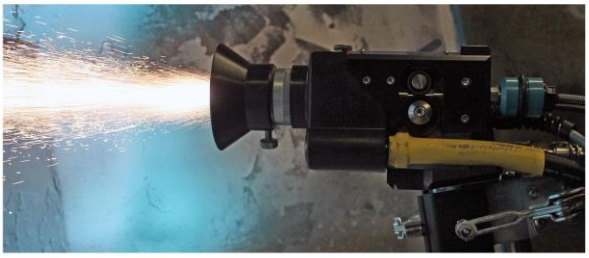
Metallisation Equipment Used Successfully in Middle East Facility

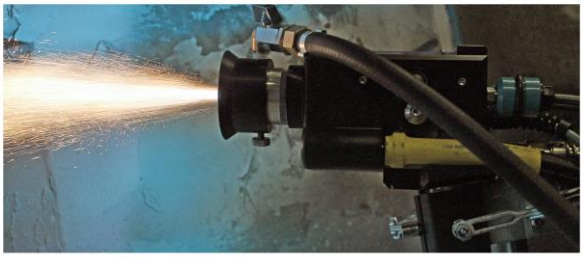
Metallisation equipment is used around the globe on a daily basis to protect various structures and substrates from corrosion. One recent project saw the Metallisation Arcbeam spray concentrator used successfully at a Middle Eastern oil refinery.

Metallisation's customer, Anti Corrosion Protective Systems (APS), based in Dubai, has been using Metallisation Arcspray equipment for over twenty years across a variety of projects. APS has been the contractor of choice for many of the region's more notable projects including Dubai's iconic Burj Al Arab Hotel and the world's tallest building, the Burj Khalifa Tower. This latest project is significant in that APS has successfully used the Arcbeam spray concentrator where High Velocity Arc Spray (HVAS) has been previously specified. The Arcbeam produces very dense coatings with low levels of porosity and was an ideal solution for the oil refinery project. Typical porosity levels lower than 2% are achievable with the Arcbeam unit, which is key to enhancing the performance of the applied coating in harsh refinery applications.



Typical Inconel 625 coating with Arcbeam x200 (0.6% porosity)





APS was founded in 1978 and offers a wide range of specialist coating services to the construction, oil, gas, power and utility sectors throughout the Middle East and Asia, through its Coatings, Linings and Pipeline Rehabilitation service offering.

In this latest project the internal shells of two absorber columns, which were 5.2metres in diameter and two cooling columns, 5.4 metres in diameter, were treated on the inner shell and at the bubble cap and support ring areas. The surfaces were prepared by grinding to remove sharp edges and smooth out any heavily pitted areas. The coating areas were blasted to SA .3 cleanliness, to a minimum of 90µm profile, with garnet. The final surface preparation involved a sweep blast with Aluminium Oxide.

The internal shells of the absorber and cooling columns were coated with two layers of Hastelloy® 73E at 225-250µm per coat using the Metallisation Arcbeam ARC140 system. The surface coating was finished with one coat of Sprayseal F, which was applied by brush until full penetration was achieved. The area coated was approximately 80m^2 per column.

In the Metallisation Arcspray process the raw material, in the form of a pair of metallic wires, is melted by an electric arc. This molten material is atomised by a cone of compressed air and propelled towards the work piece. The molten spray solidifies on the component surface to form a dense, strongly adherent coating suitable for corrosion protection or component reclamation. Sprayed coatings may also be used to provide wear resistance, electrical and thermal conductivity or freestanding shape. The ARC140 is a flexible system with medium throughput for good controllability, which offers a range of benefits including a long supplies pack. The ARC140 pistol with Arcbeam delivers a fine coating with a very dense structure, ideal for highly corrosive environments. Major advantages of the Arcspray process are that the coatings are available for almost instant use, with no drying or curing times, and there is no risk of damaging the component.

Stuart Milton, Sales Director at Metallisation, says: “This is a great project for APS. The Arcbeam coating has been providing strong, dense coatings for many years, which we are really proud of. Its low porosity levels makes it the perfect solution for use in this type of vessel and on boiler applications. The success of this project further proves the flexibility and diverse nature of the Arcspray process.”

For more information on Metallisation, or the thermal spray process, visit www.metallisation.com, or call Stuart Milton on +44 (0)1384 252 464,