



SURFACE SOLUTIONS FOR
MISSION CRITICAL **EQUIPMENT**

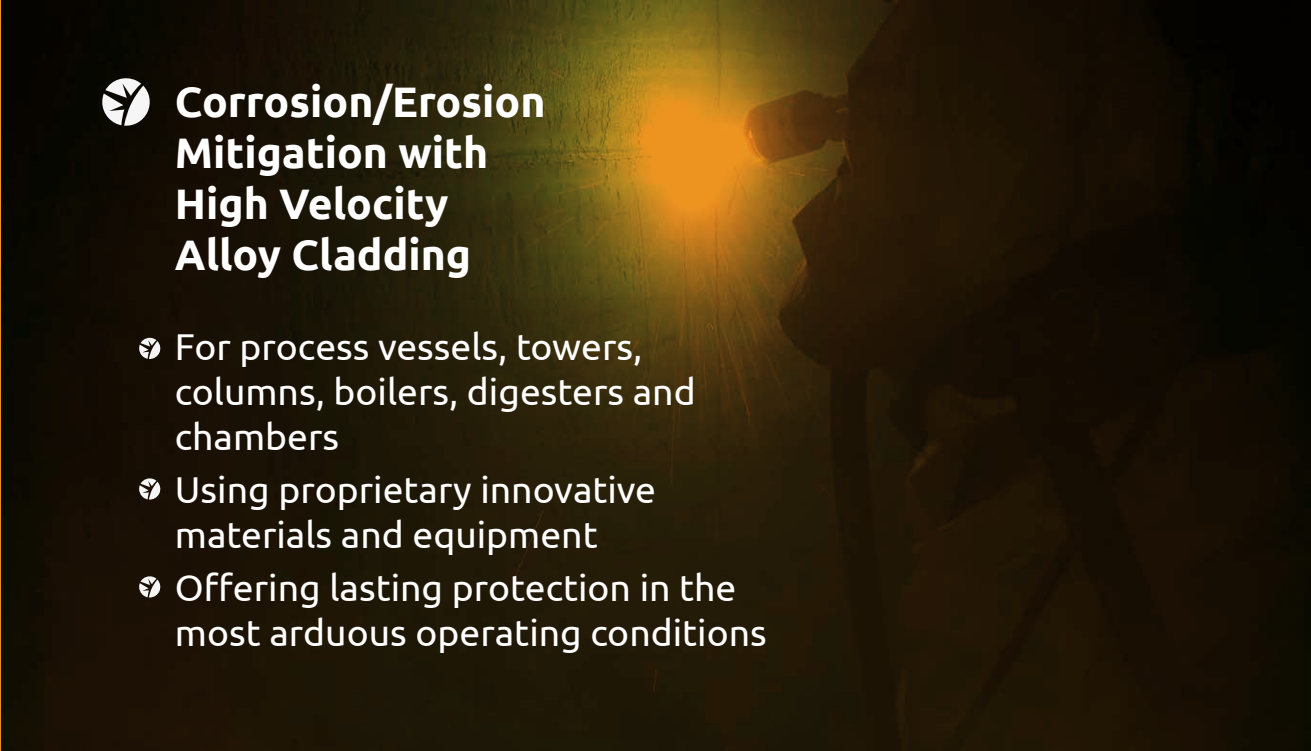
IGS has unmatched knowledge and experience addressing metal wastage in mission critical equipment



We offer reliable, turnkey surface protection solutions where alternative technologies fall short. Above all, we value safety. For us, safety is not about compliance. Instead, it's an integral part of our DNA, our culture, and the way we work.

- Rich Crawford, IGS President and CEO

Our Global Services



Corrosion/Erosion Mitigation with High Velocity Alloy Cladding

- For process vessels, towers, columns, boilers, digesters and chambers
- Using proprietary innovative materials and equipment
- Offering lasting protection in the most arduous operating conditions

Ceramic Coatings for Fired Heaters

- Increase radiant efficiency and minimize throughput
- Applicable to process tubes and refractory
- Reduce CO₂ and NOx emissions and prevent fouling

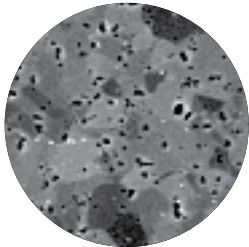
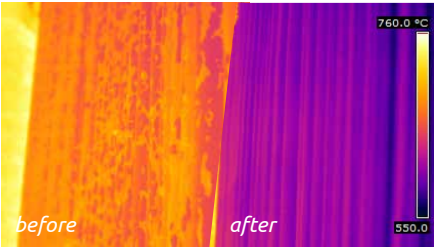
Maintaining Fired Heaters without Shutdown

- Hot maintenance, inspection and cleaning services
- Performed while the fired heater is in operation
- Prevent costly shutdowns

Cleaning and Maintenance Solutions for SCR Units

- Air cannons and filtration screens
- Turnkey installation service, supervision and site inspections
- Full project management services

IGS Success Timeline



Taking the shop to the field

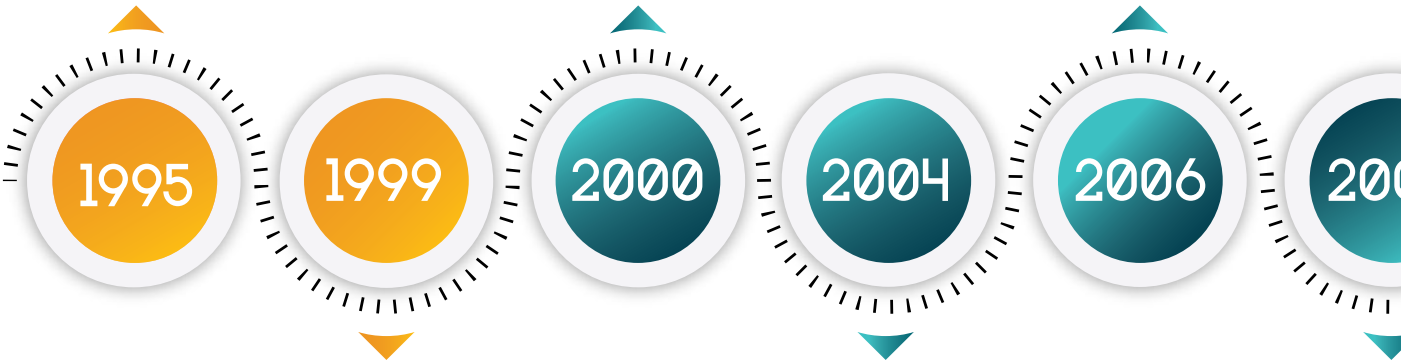
Technology designed to perform high velocity thermal spray (HVTS) applications is invented and applied for Sasol in South Africa.

Fired heater solution identified

First Cetek applications in the early 2000s saw process engineers report 4-10% efficiency increases.

Arduous conditions call for material development

Operating conditions in the Downstream, Petrochem, Pulp & Paper, Waste to Energy and Biomass sectors called for alloy modifications.



The HVTS innovation goes global

Used extensively in Sasol and Chevron facilities, other Upstream Oil and Gas assets and Coal Power plants

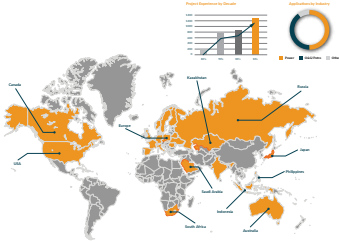
Introducing: Clean Guarantee

IGS now provides an environmental product offering, including LPA filtration, turning vanes and air cannons.

Some like it hot

Hot-Tek offering facilitating maintenance and cleaning services for heaters without the need to shut them down.





Extending our global reach

300 service people and 200 HVTs systems available in 15 countries.



Hot vacuuming

First application of Hot-Tek hot vacuuming delivered.



Continued success bears fruit

IGS high velocity alloy cladding business has grown exponentially leading to further investments in material research and project management.



See it hot

IGS is developed
performance, inspection
services for fired
the need to shut
down.

New State-of-the-Art Technology Centre

IGS opens a Research & Development facility in Richmond, USA, where work continues on material development and equipment innovations.

Millions in fired heater savings delivered

Cetek process tube and refractory coatings continue to deliver savings for process engineers globally.

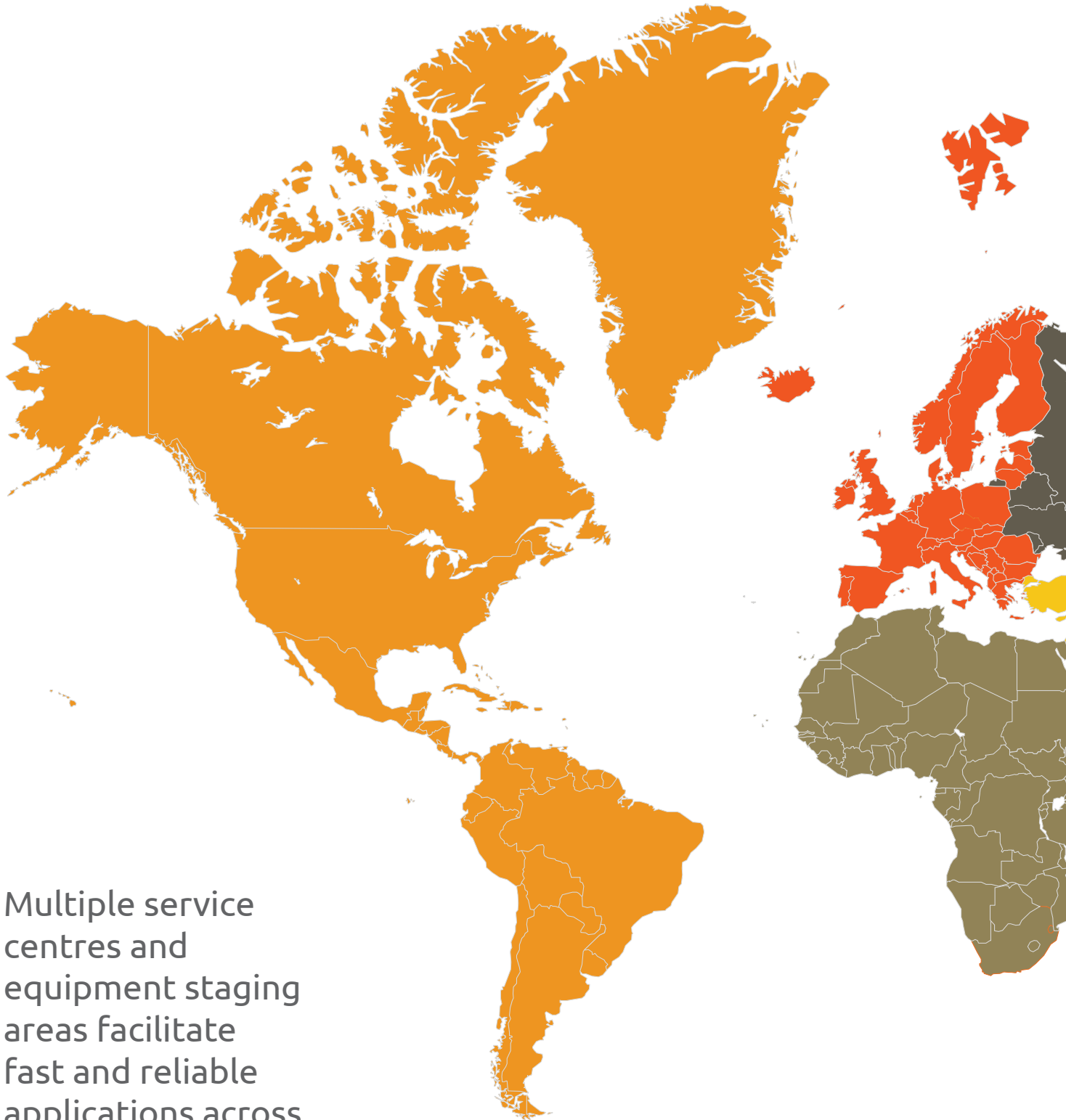


See it in
action



THE GLOBAL SOURCE for Reliable Surface Protection

Our purpose is to partner with our customers to solve challenging metal wastage problems in mission critical equipment



Multiple service centres and equipment staging areas facilitate fast and reliable applications across the globe.

OUR CUSTOMERS include:



Why is **IGS** the first choice for mission critical equipment protection?

Expertise

IGS understands the repercussions of extended or unplanned shutdowns. Everything we do is aimed at reducing critical path and ensuring reliability. From extensive training and safety programs, to bespoke application equipment and media, we are recognized as undisputed experts globally.

Experience

IGS has over 35 years' experience in on-site mission critical equipment protection across the globe. We have successfully provided over 400,000 M² of surface protection in over 30 countries on 5 continents.

Commitment to Quality, Safety and Reliability

IGS have extensive training and safety programs in place, designed to ensure the safety of everyone on site as well as the reliability of the solution being applied. Our zero-incident safety philosophy is a priority and a part of our everyday focus, and sets us apart from most industrial contractors.

Flexibility and Collaboration






We work in close cooperation with our customers and can adjust our scope and procedures to facilitate changing and emergent requirements.

OVER 400,000 M²
OF SURFACE AREA
PROTECTED

HVTS Alloy Cladding

IGS's High Velocity Thermal Spray Alloy Cladding solutions upgrade existing metallurgy to higher alloys that provide a barrier to mitigate corrosion and/or erosion in mission critical equipment.

Why Asset Owners Choose HVTS

-  HVTS is significantly faster to apply than weld metal overlay providing substantial up-front cost reduction and long-term ROI.
-  HVTS does not create a Heat Affected Zone (HAZ) and therefore will require no Post Weld Heat Treatment (PWHT), saving time and eliminating stresses.
-  HVTS does not require any curing time or bake out. HVTS is also insensitive to atmospheric temperature and humidity, thus reducing critical path turnaround time.
-  HVTS does not have the low service temperature limitations that organic coatings do, as metal claddings can withstand much harsher environments, and are resistant to impact damage that may commonly occur during a turnaround.
-  IGS HVTS differs from any other thermal spray providers and offers greater reliability, proven by thousands of successful projects.



See it in
action

Cetek Ceramic Coatings



IGS's Cetek coatings improve radiant efficiency of fired heaters and reduce fuel consumption and/or boost production, while reducing CO₂ and NOx emissions.

Unmatched Global References | Local Service

Numerous fired heater applications have been completed over 20 years. Process engineers see a 4-10% increase in fired heater efficiency, leading to \$millions in fuel savings and increased profits. Reduced harmful emissions help asset owners and operators meet current and future environmental legislations.

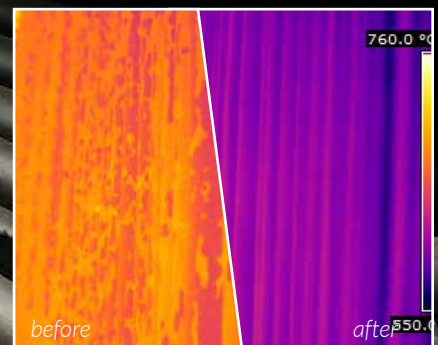
Process Tube Coating

Unprotected process tubes will oxidize and scale will grow, inhibiting conductive heat transfer to the feed. Excess firing to overcome this leads to high bridgewall temperatures which ultimately limit the production. Cetek coatings eliminate oxidation for approximately 2 turnaround cycles and maintain peak heat transfer efficiency.

Refractory Lining

Cetek's high emissivity coatings for refractories create a near 'Black Body Enclosure' inside the fired heater, which maximizes radiant heat transfer efficiency to the process tubes.

See it in action



500+

*fired heaters
serviced to date*

100%

*of applications meet or
exceed the proposed
efficiency improvement*

Online Fired Heater Services



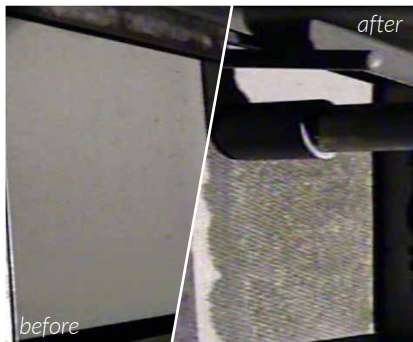
IGS's Hot-Tek services facilitate maintenance, inspection and cleaning of the fired heater while it is in operation. No Shutdown required!

See it in
action



Hot-Tek Online Fired Heater Services Include:

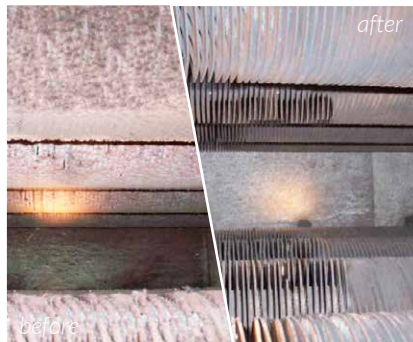
Hot
Vacuum
Service



Hot Tube
Descaling



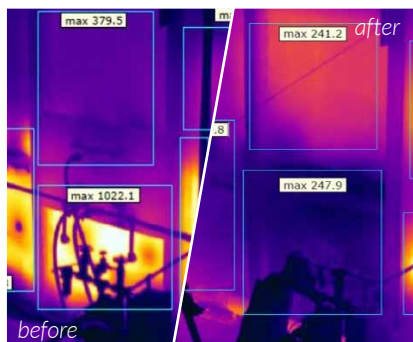
Hot
Convection
Cleaning



Hot
Access
Creation



Hot
Refractory
Repairs



Hot
Inspection
Service



100+

*applications
carried out
every year*

24h

*Immediate global
response to address an
emergency*

Our People

At IGS, people are our greatest assets. We pride ourselves in doing things the IGS Way, focusing on our four core values: Excellence, Reliability, Respect and Innovation. By doing things the IGS Way, we create a work environment that we can all be proud to be a part of.

Application Technicians and Project Managers

Our fully trained technicians, stationed in 15+ countries, perform over 2300 hours of work every year during plant shutdowns and turnarounds. We focus on retaining talent and help our people progress. With over 5000 hours of field experience, our project managers organize and coordinate IGS projects, responding quickly to any emerging needs and maintaining our outstanding safety program.

Industry Experts and Consultants

We work with multiple industry experts, enabling us to fully understand the problems faced by various industrial sectors. Recognizing problems and limitations helps us propose the best solution for every situation.

Research & Development

In our Technology Solutions Laboratory we continuously develop our materials and process technologies in anticipation of our clients' industry requirements.

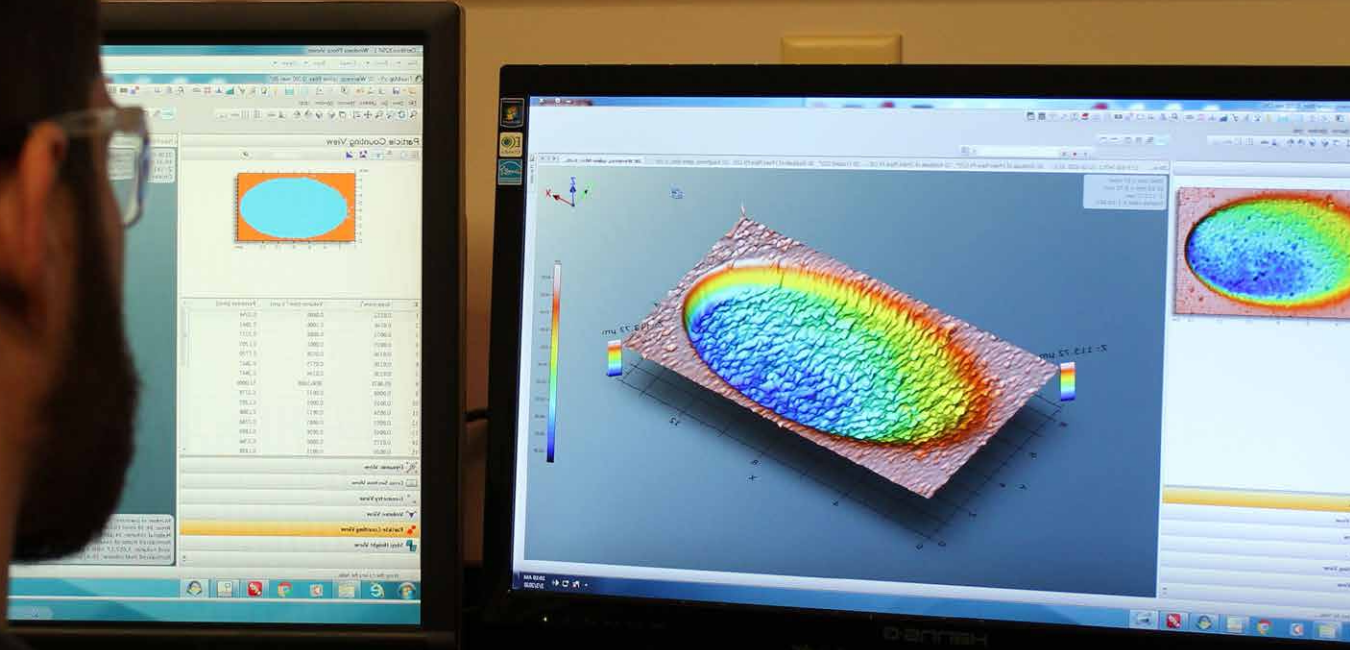
Partners

We work in collaboration with many vendors in the value chain, from inspection companies to EPC contractors, ensuring smooth project management during shutdowns and turnarounds.



IGS Technology Solutions Laboratory

We continue to invest in material innovation and perform extensive Research and Development work in our HQ in Richmond, USA.



This State-of-the-Art Laboratory features:

- ❶ Scanning Electron Microscope (SEM)
- ❷ Laser surface profilometer
- ❸ Potentiostatic testing
- ❹ High temperature corrosive gas test chamber
- ❺ Chemical exposure and immersion testing
- ❻ Heat transfer analyzer
- ❼ High temperature erosion tester
- ❽ High temperature thermal cycling furnaces
- ❾ Liquid and steam impingement tester
- ❿ Salt Spray Chamber
- ⓫ Anaerobic chamber
- ⓬ Microvickers hardness tester
- ⓭ Metallurgical microscope
- ⓮ High Pressure Corrosion autoclaves
- ⓯ Blast and spray booths

"This is the way IGS operates. By making sure we understand our customers' problems right from the get-go. We develop technologies that are going to give us the solutions and performance that we need down the line. We do that by operating side-by-side with asset owners and operators to achieve our joint mission – the reliable and safe operation of your equipment."

Iain Hall, IGS Chief Technology Officer

Contact your local IGS representative to book a tour of this facility to experience behind-the-scenes work, which makes IGS solutions so robust and long-lasting.

See it in action



Industries We Serve:



Oil and Gas (Upstream and Downstream)

High Velocity Alloy Cladding for process vessels, towers and columns
IGS can offer a long-term barrier (typically in excess of 10 years), freezing the internal metal condition of the shell and nozzles. As a result, future shutdowns and maintenance requirements are reduced, increasing process productivity and availability.

IGS is the leader in materials, application technology, installation, refurbishment and operating methods for successful application of our HVTS claddings in O&G facilities.

Over the past two decades, we have leveraged this experience and knowledge to develop unique materials and application methods to provide reliable and predictable protective corrosion barriers in the most challenging O&G process assets and environments globally.

Cetek and Hot-Tek Services

IGS's Cetek coatings improve radiant efficiency of fired heaters and reduce fuel consumption and/or boost production, while reducing CO₂ and NO_x emissions. IGS's Hot-Tek services facilitate maintenance, inspection and cleaning of the fired heater while it is in operation. No Shutdown required!





Power (Coal)

We offer services for CFB, PC boilers, FGD (Flue Gas Desulfurization) Units, Economizers, Soot blowers, and SCR. With a full variety of services including Mechanical and Refractory Services, High Velocity Alloy Cladding, Catalyst Protection Options and Cetek anti-slagging ceramic technology, IGS provides life extension solutions that minimize operating costs and maximize asset value.



Power (Biomass, Waste to Energy and Heavy Fuel Oil)

We provide corrosion-resistant metal alloy protection for Waste Incinerators, Biomass- and Waste-to-Energy and HFO Boilers. High Velocity Alloy Cladding effectively resists fire side corrosion, sulphidation or hot corrosion from Chlorine, Sulfur, other alkali and heavy metals, generated when fuel containing plastics and other chemicals is used.



Pulp and Paper

IGS provides solutions to address operators' problems within critical boilers and pressure vessels used in the pulp and paper manufacturing process, including Black Liquor Recovery Boilers, Batch and Continuous Digesters. Our field and shop services ensure lasting surface protection.



Mining and Mineral Processing

Our High Velocity Alloy Cladding successfully minimizes failures and repairs caused by corrosion-erosion metal wastage of heat recovery boilers and ducts in zinc and copper smelters.



Our People

At IGS, people are our greatest assets. We pride ourselves in doing things the IGS Way, focusing on our four core values: Excellence, Reliability, Respect and Innovation. By doing things the IGS Way, we create a work environment that we can all be proud to be a part of.

Application Technicians and Project Managers

Our fully trained technicians, stationed in 15+ countries, perform over 2300 hours of work every year during plant shutdowns and turnarounds. We focus on retaining talent and help our people progress. With over 5000 hours of field experience, our project managers organize and coordinate IGS projects, responding quickly to any emerging needs and maintaining our outstanding safety program.

Industry Experts and Consultants

We work with multiple industry experts, enabling us to fully understand the problems faced by various industrial sectors. Recognizing problems and limitations helps us propose the best solution for every situation.

Research & Development

In our Technology Solutions Laboratory we continuously develop our materials and process technologies in anticipation of our clients' industry requirements.

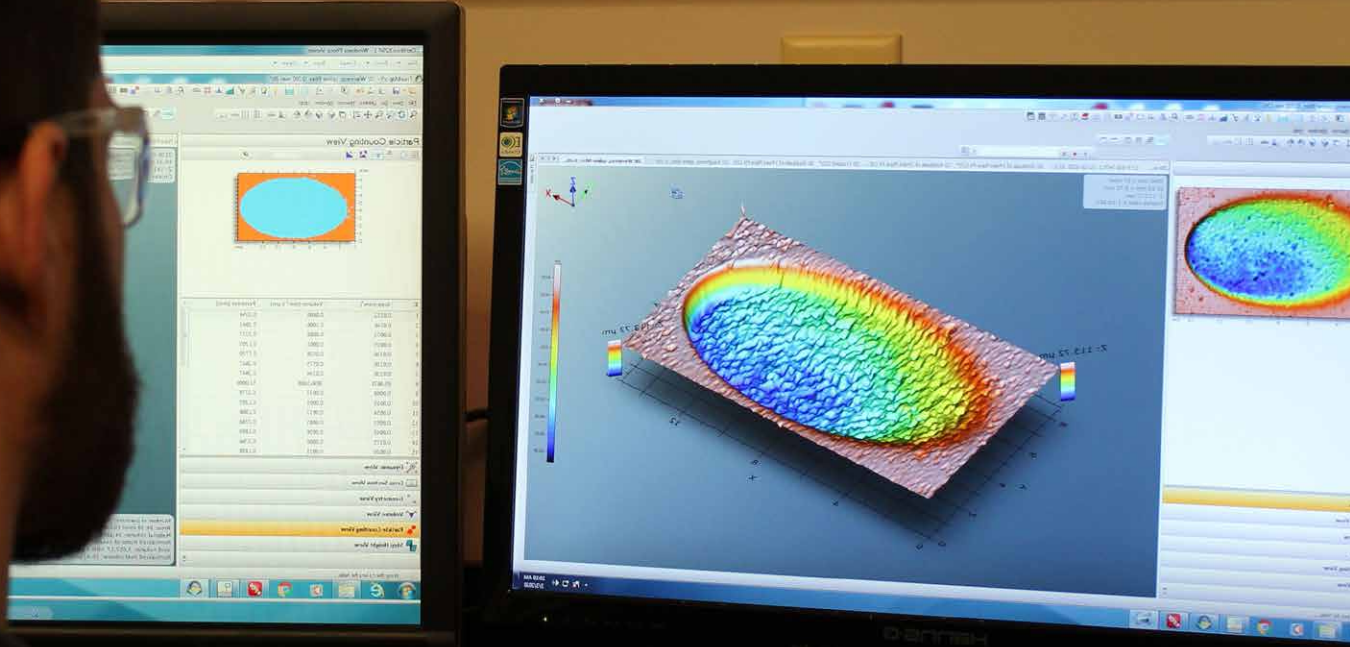
Partners

We work in collaboration with many vendors in the value chain, from inspection companies to EPC contractors, ensuring smooth project management during shutdowns and turnarounds.



IGS Technology Solutions Laboratory

We continue to invest in material innovation and perform extensive Research and Development work in our HQ in Richmond, USA.



"This is the way IGS operates. By making sure we understand our customers' problems right from the get-go. We develop technologies that are going to give us the solutions and performance that we need down the line. We do that by operating side-by-side with asset owners and operators to achieve our joint mission – the reliable and safe operation of your equipment."

Iain Hall, IGS Chief Technology Officer

TITLE

"This is the way IGS operates. By making sure we understand our customers' problems right from the get-go. We develop technologies th

TITLE

"This is the way IGS operates. By making sure we understand our customers' problems right from the get-go. We develop technologies th

TITLE

"This is the way IGS operates. By making sure we understand our customers' problems right from the get-go. We develop technologies th

TITLE

"This is the way IGS operates. By making sure we understand our customers' problems right from the get-go. We develop technologies th

See it in
action

Contact your local IGS representative to book a tour of this facility to experience behind-the-scenes work, which makes IGS solutions so robust and long-lasting.





SURFACE SOLUTIONS FOR MISSION CRITICAL **EQUIPMENT**

Email : info@integratedglobal.com
www.integratedglobal.com
+1 804-794-1646