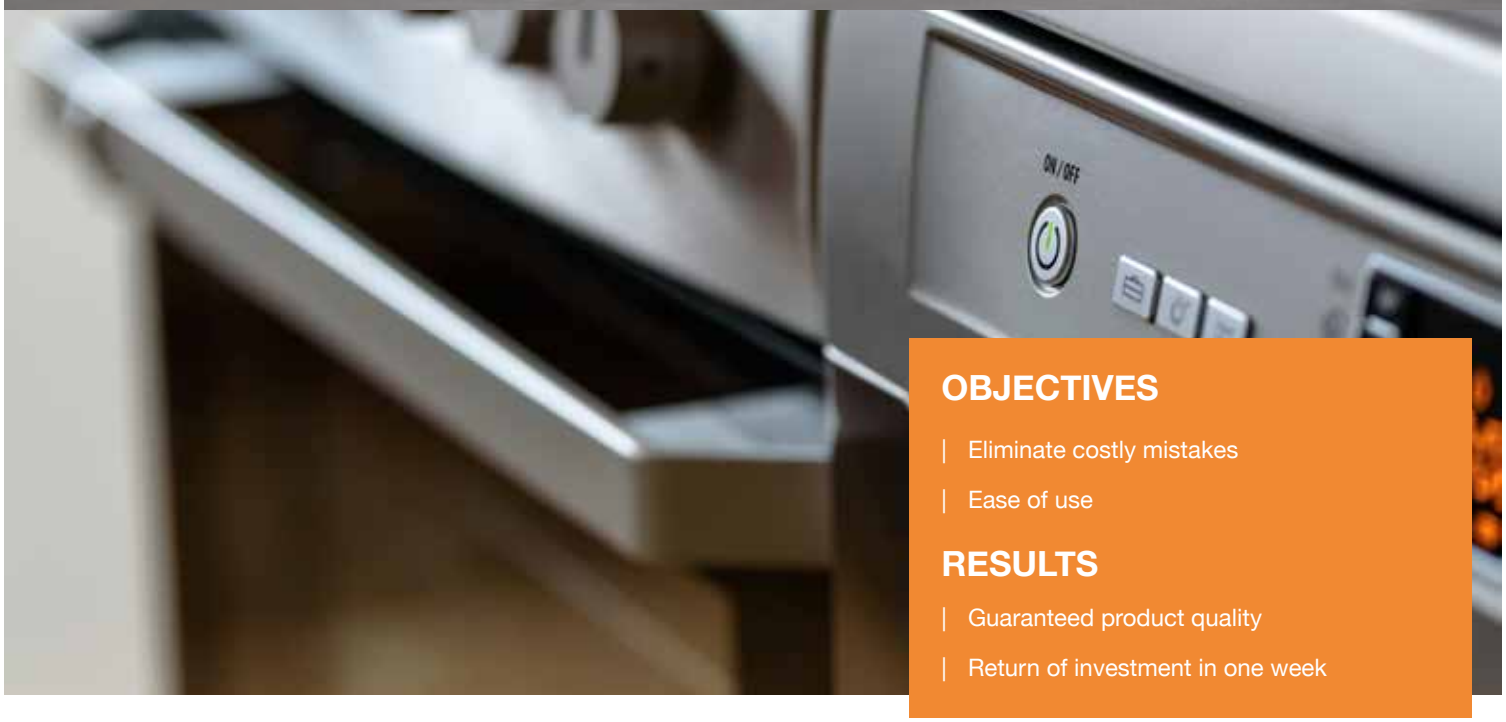
CASE STUDY

HITACHI
Inspire the Next

X-MET



OBJECTIVES

- Eliminate costly mistakes
- Ease of use

RESULTS

- Guaranteed product quality
- Return of investment in one week

Multinational appliance manufacturer streamlines quality control of coatings with the X-MET XRF analyzer

For their high-end stainless steel cook tops, a leading global appliance manufacturer has developed a revolutionary protective coating that resists stains. Where this innovative coating requires an anti-stain property, the applied weight must meet a defined specification. To ensure proper coating during production, this appliance manufacturer introduced Hitachi High-Tech's X-MET handheld XRF (X-ray fluorescence) analyzer into their quality control program in the USA.

NON-DESTRUCTIVE TESTING WITH XRF FOR PREMIUM PRODUCTS

Traditional stainless steel appliances typically show smudges, stains, and fingerprints over the course of their lifetime, diminishing the aesthetic value of the appliance. On stovetops it's common for the steel to become discolored around the burners due to the extreme heat. The manufacturer found that a clear coating on these high-end appliances eliminates stains associated with everyday use.

For this coating to attain its unique properties, an applied weight must meet a pre-defined specification. To ensure proper coating during production, they introduced Hitachi's X-MET into their quality control program.

> **"By avoiding costly mistakes when producing stove tops that are coated outside of specification, we've recouped the X-MET's cost in as little as seven ten-hour shifts."**

Their manufacturing engineer, in charge of this coating process, said, “After implementing this new coating process, we needed to find a method to test whether the coating was applied in the correct manner and quantity. When we explored options, we came across many methods of destructive testing. Our main goal wasn’t to sacrifice parts with destructive analysis. We found handheld XRF analysers to be an exceptional option for a non-destructive quality inspection method.”

THE X-MET AS PART OF A COATINGS QUALITY CONTROL PROCESS

The appliance manufacturer is renowned for providing high quality products to their customer base. This commitment to customers and stakeholders means that producing products outside of specification isn’t an option.

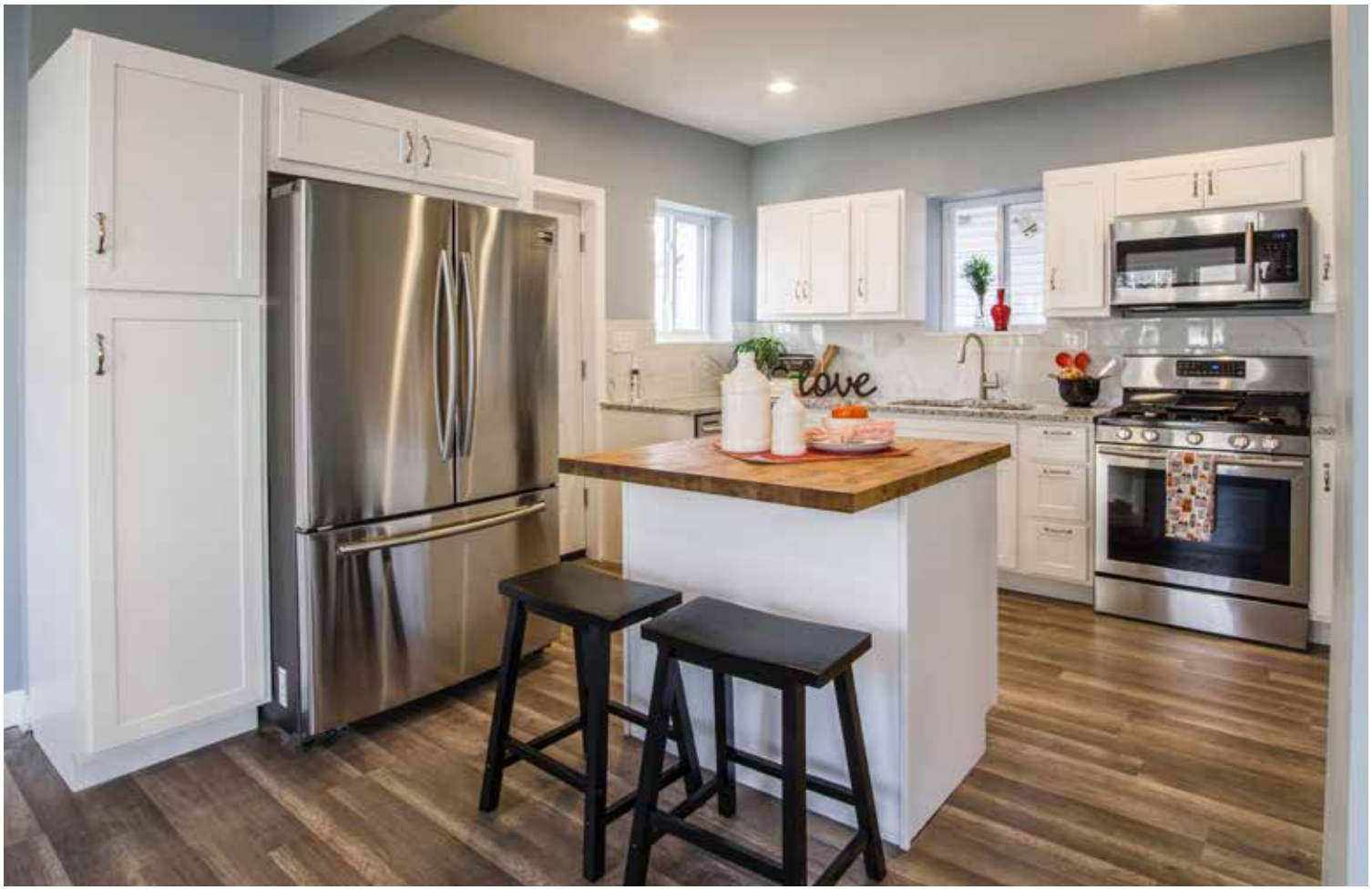
The manufacturing engineer continued, “Our production processes are focused on protecting our customer’s safety and producing appliances without defects. Putting the X-MET in our quality control process ensures that we can guarantee we’re producing a stove top with the desired aspects, and ensures our customers are getting the high quality product they paid for.”

The adoption of the X-MET into their production has greatly improved quality control. The X-MET is used to test the first and last production pieces during a ten hour work shift, and it’s also used periodically on parts produced throughout the shift.

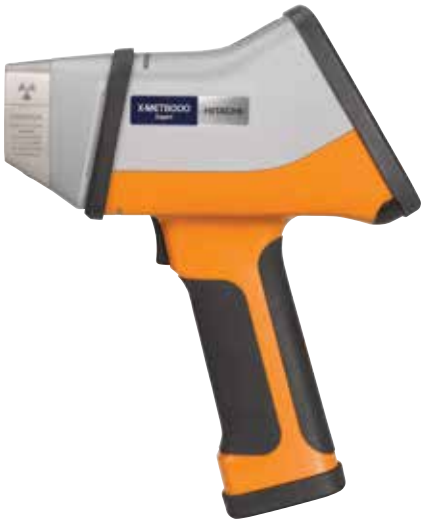
The manufacturing engineer added, “If we produce these stove tops out of spec, we’ve just spent a significant amount of money and time to produce nothing more than scrap steel. Using the X-MET is a quick way for us to easily check and report on production performance. It’s extremely easy to use compared to other testing methods. It’s as simple as pulling the X-MET out of the case, turning it on, and in just 30 seconds we have a result. We don’t have to fool around with any complex systems…just pull the trigger and shoot.”

This testing method allows the manufacturer to determine if the coating weight needs to be increased or decreased. The X-MET can easily detect maintenance or raw material issues that likely wouldn’t have been caught otherwise by visually inspecting the piece. The X-MET allows the production team to know when to shut down and rectify the process before a product is mass produced outside of specification. Because the coated stovetops are a premium product, costing hundreds of dollars more than uncoated stovetops, controlling the coating to specification is an extremely important part of this process. The X-MET helps to significantly reduce costs by avoiding over plating and having to scrap materials as the product cannot be reworked.

”We saw a very fast return on investment using the X-MET. It helped to avoid and eliminate costly mistakes during the production of our stovetops, the cost of the X-MET was recouped in seven ten-hour shifts,” said their manufacturing engineer.



WHY HITACHI HIGH-TECH AND THE X-MET?



The manufacturing engineer said, “I received suggestions on different companies to contact from our corporate team. When I got a hold of the Hitachi High-Tech sales representative we scheduled a discussion. We moved swiftly from scheduling a discussion, to an onsite demo, to application proof of concept, to purchasing the unit and then onto training. It all happened very quickly and seamlessly. It was a very easy part of this project, which was an integral part of a complex and larger overall project.”

After seeing demonstrations from the selected leading providers of handheld XRF technology, the engineer found that the X-MET was the only instrument that demonstrated that it was able to produce the optimal results. This was important because they wanted the analyzer to be as simple as possible for operators to use. They found the cost to be similar to other units on the marketplace. The X-MET was the only instrument that could be customized for their need and proved capable of making the analyses necessary for this application.

They also favored ease of use, the integrated large color touchscreen, and the ability to transfer and work with data on a computer. The X-MET’s 4.3” touchscreen was attractive, and the USB and wireless connectivity made it easy to interface with any computer. It’s also very simple to download results from the instrument directly into a customized report template, or to a USB stick, or even a network location.

“After we completed the training, the X-MET went back in the box until it was needed. When the X-MET is needed, we take it out of the box and use it right away, there is no downtime trying to figure it out. It’s so simple to use,” the engineer commented.

CONCLUSION

This appliance manufacturer found the X-MET’s real value in its ability to quickly and accurately determine the stain resistant coating weight applied on their high-end stove tops. They now have confidence that they are supplying the premium quality products that their customers expect.

“We would recommend Hitachi High-Tech’s X-MET to anyone because in a project of this scope where we’re bringing in new technology and equipment from around the world, it’s something we expected to work out of the box, and it did. The X-MET was simple and reliable, making it one less thing we had to worry about.”

If you would like to see the X-MET8000 analyser in action visit www.hitachi-hightech.com/hha or email contact@hitachi-hightech-as.com to book a demo.

Hitachi High-Tech Analytical Science

X-MET8000 RANGE

Our range of handheld XRF analysers, the X-MET8000 series, delivers the speed and performance required even in the most demanding applications. Suitable for all analysis needs from scrap metal analysis, precious metals and jewellery analysis to positive material identification (PMI) for inspection and manufacturing applications, and regulatory compliance screening.

If you would like to see the X-MET8000 analyser in action visit www.hitachi-hightech.com/hha or book a demo.