Helium Leak Testing

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‘Leak detection using Helium is many times more accurate than soapy water.’

“It is something we come across quite often, plant-operators using the soapy water method to test flanges and connections after a turn-around. It may be a very well-known test method, but we have to stress that there is a significant downside to this method, namely that it’s a very crude way of determining leak rates. A certain level of leakage simply will never be detected, with potentially disastrous consequences.”

About ITIS
ITIS: (short for Industrial Testing & Inspection Services) is an company, located in the South-West of the Netherlands.
The independent test facility and service provider is able to test versatile products such as valves, appendages, vessels, heat exchangers and gaskets for functionality, emission, endurance, leakage and (fire) safety. The test facility is a one stop shop for testing newly manufactured products, prototypes and revised valves also onsite leak testing, project supervision and consultancy can also be provided.

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Testing for leakage after a shut-down

Colin Zegers of ITIS B.V. in Goes knows what he is talking about.

With ITIS, an independent technical testing company, he is active in (among other industries) the chemical, the petro-chemical and other high-risk industries. "We are specialised in the business of leak detection. We have at our means experienced and certified specialists. We are even capable of rendering a complete industrial installation inert, dry its components and subsequently test the installation."
Testing for leakage after a shut-down.

Zegers and his colleagues are aware that a quick and efficient shut-down is beneficial for all parties involved. He explains that fugitive emission testing contributes to this effect. Furthermore, the costs of testing are only a fraction of the costs of a days delay or worse, shutting down the installation again. That's why increasingly more company's execute helium leak testing on installations after they have gone through a complete reassembly. "Our advice will always be to perform a helium leak test before re-starting the installation. Company's who neglect this, are taking a serious risk. We've come across many defects in the past, like missing seals, the use of wrong gaskets, lose and/or missing bolts etc. The results can be disastrous: leakage, emissions or even fire and explosions. Even leakage of relatively 'innocent' substances such as oxygen or steam can have a substantial effect. Sometimes the issue can be solved by simply tightening the bolts, but occasionally the installations re-start has to be cancelled to repair the faulty equipment."

Safety and environment

Not only 'after shut-down' testing is essential. Zegers explains the possibly to preventively test new components. "Sometimes we encounter industrial components, which are not equal to certain operational conditions. We frequently handle valves which pass room-temperature tests with flying colours, but fail or even seize functioning under specific operational conditions." According to Zegers the importance and extent of unwanted emission requirements has strongly increased. These increasing performance requirements are not only the result of economical consideration, but mostly due to increasingly stringent safety- and environment regulations.

SPOT LIGHT

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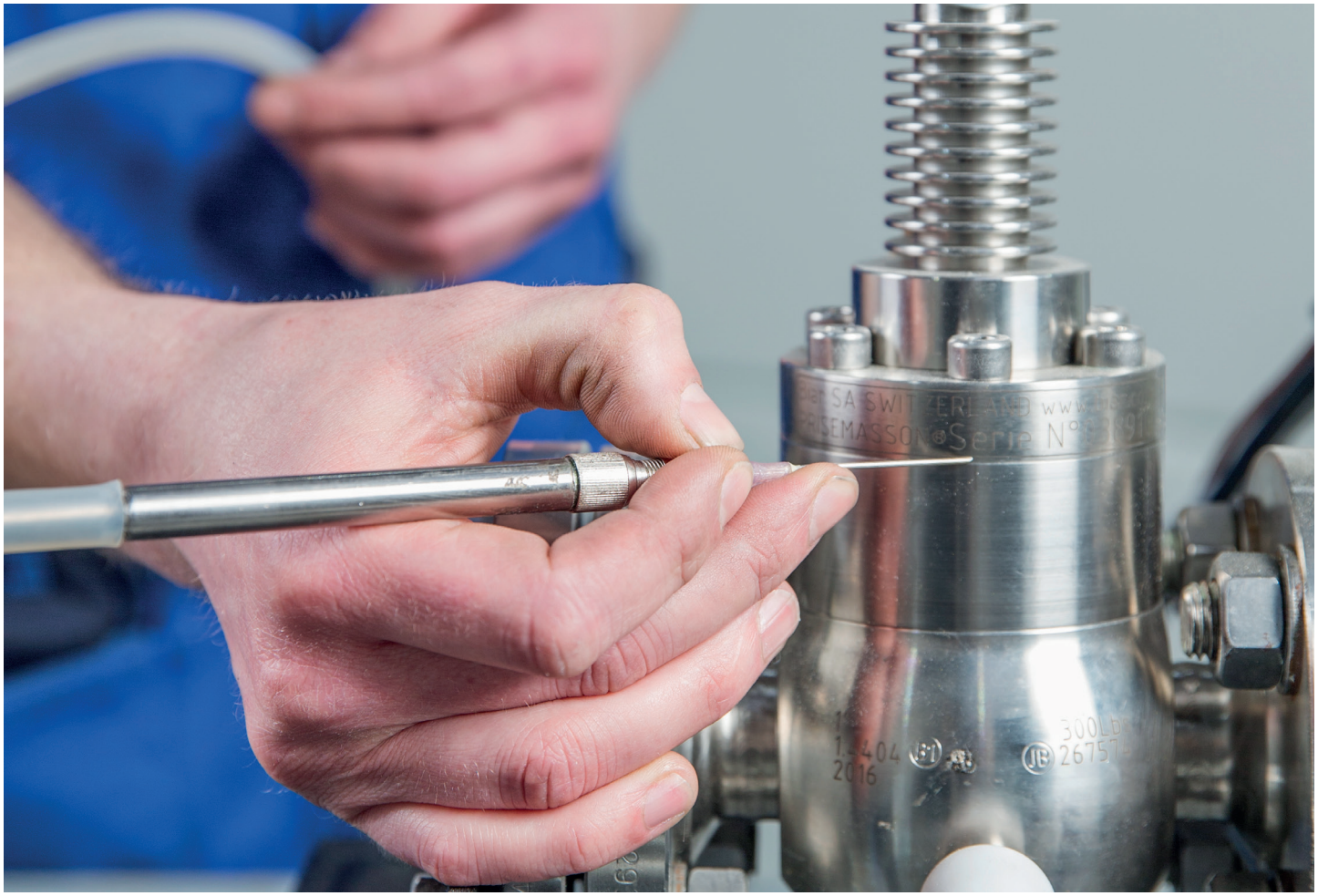

Do not take unnecessary risks

He is surprised he still encounters the soapy water method, even in capital intensive industries where the care for safety and environment is top priority. "This 'do-it-yourself' testing is simply insufficient to say the least. Companies take huge risks if they take reassurance on the result of these kind of tests. For example, with larger leakages there will be no forming of the foam that indicates a leak. The test liquid will be 'blown away' immediately, which means larger leakages are at the risk to be missed completely, especially in a noisy environment. Our helium test-method is insensitive to weather circumstances and is perfectly applicable in the dark", according to Zegers. "Moreover, we can play a role detecting and measuring unwanted emissions while an installation is in operation. The installation does not have to be shut down which is cost-effective. There have been occasions where we have found defects which saved the company a lot of money once repaired. In such figures that the cost of the test-operation was more than worth it. In this light of view, helium leak-testing pays itself. Next to cost-saving, this test method is relevant because of increasingly stricter legislation concerning the environment."

More information about Leak Testing? Check:

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