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PRESS INFORMATION

Over 500 Flanges Protected with New Encapsulating Technology

Peelable and resealable system tackles severe weathering and galvanic corrosion at gas supplier site

Over the years, the repair and maintenance industry has employed many different techniques to combat the problem of flange corrosion. Conventional paints, mechanical covers and clamps, polymer tapes, hot-melt thermoplastics, polymer bags with VCIs all offer solutions to protect flanges from corrosion, but they are not without their drawbacks. These techniques can be costly and complicated to install, and can also fail to provide the level of corrosion resistance required to successfully protect flanges and pipework within harsh environments.

Indeed, due to the cost and time implications of deploying a specialist application team to reinstall a spray protection system on hundreds of flanges at a gas supplier in Oman, the owner sought an alternative solution that would bypass these expenses, as well as the lengthy downtime that would be incurred.

Flanges damaged by corrosion

Corrosion-resistant system overcomes drawbacks of conventional methods

As Belzona 3411 (Encapsulating Membrane) facilitates a quick and simple installation and inspection method- which can be completed with minimal manpower by the company's own maintenance staff- the gas supplier decided to commission this system for the protection over 500 flanges on the site.

Following an inspection by Belzona representatives, this flexible and peelable coating was chosen as it will completely encapsulate the several hundred flanges no matter the size or shape, protecting them from moisture as well as crevice, galvanic and atmospheric corrosion. When used in conjunction with the corrosion inhibitor Belzona 8411, the brush and cold applied system will successfully fortify the flanges with long-term corrosion protection.

*Further press information from **Marina Silva** at:*

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In terms of inspection, this solvent free coating can be easily cut and peeled back to allow access to fastenings and on completion of the maintenance work, it can simply be reinstated with the application of a further layer of material.

Fast and simple application technique

1) Firstly, the surfaces were cleaned with Belzona 9111 (Cleaner Degreaser) and the surfaces were thoroughly abraded with abrasive paper to remove any gloss. Once surface preparation was completed, the bond area was degreased again with Belzona 9111.
2) To seal the gap between the flange faces, a strip of Belzona 9431 (Instant Bridging Tape) was used. Masking tape was applied over the two bond areas to protect these sections of pipe from accidental overspray of Belzona 8411.
3) Belzona 8411 was then applied onto the flange, pipe and fastenings ensuring the film coverage was even and complete. Once the Belzona 8411 was touch dry after one hour, the masking tape was removed and plastic caps were fitted over the nuts and bolts.

Surface prepared, Belzona 8411 applied and bolt caps installed

4) A further strip of Belzona 9311 (Reinforcement Sheet) was applied to bridge the gap between the flange faces and two strips were applied to the bond area.
5) Belzona 3411 was mixed and using a short bristled brush, the material was applied over the area to be protected at a thickness between 30 and 40 mils (750-1000µ). While the first layer of Belzona 3411 was still wet, strips of Belzona 9311 (Reinforcement Sheet) were embedded into the Belzona 3411 around the flange circumference and at both ends of the repair where it bonds to the pipe to add strength to the system.

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Application of first coat of Belzona 3411

6) Once the first coat had cured after one hour, the second coat of Belzona 3411 was mixed and applied to the same thickness as the first coat (in grey colour) and was left to cure.

Belzona 3411 successfully installed on over 500 flanges with different shapes and configurations

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Peelable system facilitates easy inspection

Had the owner decided to use the previous spray applied system, this would have required a specialist application team to carry out the reinstallation. Not only would this have required significant financial expenditure to mobilise the installers, but this would have also incurred lengthy shutdowns and downtime, leading to further costs. The cold-applied Belzona flange protection system on the other hand, was able to protect the 520 flanges in just 45 days, a fraction of the time that would have been required had the flanges been protected with the sprayable system.

As Belzona 3411 enables simple inspection by just cutting the system at the flanged joint and peeling it back, this allows the company's own maintenance staff to carry out any future inspection work. Maintenance staff can also reseal the flange protection themselves by simply adding a further layer of Belzona 3411, successfully eliminating the need to deploy specialist applicators and saving the company valuable downtime as well as capital expenditure.

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Notes to Editor-

About Belzona:

- Established in 1952, Belzona has pioneered innovative polymer technology that has revolutionised industrial repair and maintenance procedures.
- Belzona is a leading company in the design and manufacture of polymer repair composites and industrial protective coatings for the repair, protection and improvement of machinery, equipment, buildings and structures.
- At Harrogate, the full Belzona product range is manufactured to stringent quality and environmental control guidelines complying with the requirements of ISO 9001:2008 and ISO 14001:2004.
- Belzona has over 140 Distributors in more than 120 countries ensuring not only the availability of Belzona materials, but also specification support, project management, application and supervision services. Distributorships and their teams are supported by Belzona Corporate offices in Europe, North America and Asia.

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- High resolution images, if not supplied with the email, are available on request.
- The article can be altered, lengthened or shortened upon request.
- Can we contribute to the article you are writing? We can provide images, technical data, case studies or an interview with one of our technical service representatives. Please let us know if this would be of interest.
- Do you have an upcoming topic that we could contribute an editorial on? Please let us know the topic, preferable length and the material submission deadline.

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