



## Cleaning of sealing surfaces

# Clean flanges keep tight in a better way

**Flange connections are found at nearly every location in the chemical industry. Of course, these interfaces must be leak-tight to prevent not only material losses but also negative effects on human life and the environment. This applies especially if the fluids in the pipe and hose assemblies are governed by emissions-limiting measures according to the German Air Quality Control regulations "TA Luft".**

**T**he rated proof of leak-tightness of a flange system, consisting of a flange, bolts and gasket, is performed on the basis of VDI Guideline 2290. Calculating the sealing system is one thing; implementing it in reality is another matter. According to the guideline's introduction, "Transferring the sealing system into practice is only possible if a qualified assembly is ensured". Qualified assembly includes, amongst other things, the use of plane and parallel flanges, an undamaged gasket, centred installation of the gasket, correct application of the torque, lubrication of the friction surfaces and the provision of clean sealing surfaces. This last item, in particular, is addressed

below in more detail since clean sealing surfaces are also critical for tight flange connections in the long term.

The need for a clean sealing surface has been addressed in a number of rules, standards and publications. VDI Guideline 2290 states, for example: "When installing new gaskets in an old flange connection, cleaning of the sealing surfaces, e. g. from adhering gasket residues, is imperative." The VCI Guide for the assembly of flange connections in process plants recommends: "Care must be taken that the flange sealing surfaces are clean, undamaged and plane." Furthermore, "Care must be taken when replacing gaskets that the old gasket is completely

removed from the flange sealing surface without damaging this surface".

### Contamination on sealing surfaces

What form can contamination take on flange sealing surfaces? Adhering residues of the old gasket during replacement probably come to mind first here. This problem can be prevented or reduced by selecting gaskets that are already equipped with a release coat in the standard version to facilitate dismantling. However, residues of the operating medium may also contaminate the sealing surfaces; these could be liquid, viscous or solid, e. g. due to crystallisation. Furthermore, paint splashes or other dirt, such

Pictures: Reinz



Clean sealing surfaces are a basic prerequisite of an optimally functioning flange system. Contamination of the kind shown here must therefore be completely removed.



RE-Move can be applied precisely via the metering unit. A stable, adhering, foam-like film is hereby produced.



RE-Move does not contain any substances harmful to health that require GHS/CLP labelling

as dust, may have settled on the sealing surface. The surfaces may additionally have been treated with anticorrosive agents, especially in the case of new flanges. These agents, too, must be removed prior to assembly.

### Cleaning the sealing surfaces

The sealing surfaces can be cleaned mechanically with a wire brush or scraper; care should be taken not to damage them. The material of the cleaning tool should therefore be softer than that of the sealing surface. The cleaning process can be made easier, and damage to the sealing surfaces avoided, by utilising liquid cleaning agents. Cleaning agents must satisfy many requirements. Applying the correct amount to the surfaces to be cleaned, for example using a spray system with an appropriate metering unit, should be simple and precise. Moreover, the liquid film that is created should adhere to the surface to prevent it from draining off; this will also allow it to be used on inclined surfaces without any problems. Stable foam is the key here.

RE-Move cleaning spray from Reinz prepares the sealing surfaces optimally for assembly: contamination such as gasket residues can be removed just as conveniently as traces of the operating medium. The liquid active cleaning film can be applied precisely via the metering unit. A stable, adhering, foam-like film is hereby produced, which can also be applied to inclined surfaces. In addition, a protective coat forms on this film, preventing premature evaporation of

the solvent. The solvent can therefore act for a sufficient period of time at the desired location on the substances to be dissolved, so that they can be removed easily. Apart from these functional requirements of the cleaning agent, the classification of the health risk for users is another aspect which is important for any overall consideration.

### Identification with pictograms

The classification and labelling of chemicals follows the United Nations Globally Harmonised System (GHS). The European implementation of the GHS is the so-called CLP (Classification, Labelling and Packaging) Ordinance. Pictograms indicating a health hazard include an exclamation mark and the health hazard symbol. To avoid health risks for users, care should be taken when choosing agents for cleaning sealing surfaces that a hazard-free formulation is used. This can be easily recognised by the absence of the above pictograms. RE-Move does not contain any substances harmful to health that require GHS/CLP labelling.

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Online search: **cpp0218rein**

Hall 8.0, Booth G61



**AUTHOR**  
**VOLKER ETZEL**

Application Engineer,  
Reinz