

MATERIALS AND CORROSION CONSULTING



INNOVATION

ENGINEERING

OPTIMIZATION

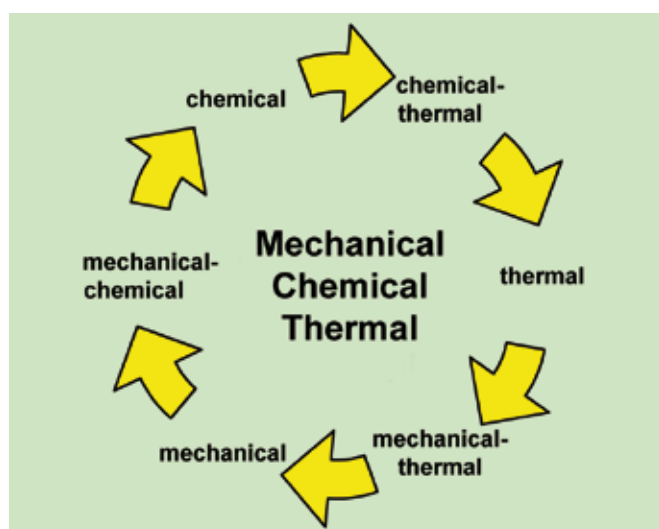
Materials Selection Support – Tailor-Made Materials

Demand of Smart Materials Selection

As processes are optimized and pushed to new operating limits, selecting the best materials for an application may require a high level of knowledge and experience.

The process to select the most suitable material for your chemical and economical requirements becomes a key-factor for reliability and sustainability.

Bayer Technology Services guides you through the entire Materials Selection process. We screen conventional and new alloys for suitability in your application, test and confirm their performance, and make an appropriate recommendation based on total lifetime costs. Our experts can help in making tailor made material for the job, especially with regard to an appropriate corrosion resistance.



Load Combination Aspects for Material Selection

Delivering customized economical selection of compatible metallic and non-metallic materials is our goal.

Methods like testing and simulation or even the prediction of corrosion behavior of materials and the suitability of corrosion protection measures in different operational situations become crucial to achieving high-performance in equipment operations.

Materials Selection Support – Our Approach

Since corrosion properties may change at different fabrication stages, we take their impact on the equipment performance into account. This also includes effects caused by heat treatments during fabrication or surface conditions produced by inadequate fabrication.

Furthermore our toolbox includes the application of:

- Immersion testing in our laboratory or at your plant
- Autoclave testing
- Electrochemical testing methods
- Corrosion monitoring for in-situ materials surveillance (baycorroxxion®)
- Corrosion database KIS with over 80,000 sets of data from tests and further sources
- Corrosion prediction software (PRINCE Xperience™)

To determine the optimum material for your application complete and accurate data is necessary. Our corrosion database KIS stores a variety of different tests performed. Those tests document the corrosion performance of a broad collection of metals in solutions of strong acids, caustic, organics and high purity chemicals, among others.



Bayer Technology Services
Powering Your Performance

If we do not have the corrosion data handy to make a recommendation, our corrosion laboratory can generate data to characterize and document alloy corrosion resistance. We can create and test to specific conditions with reagent grade or less pure chemicals, or you may supply the media and be assured of full confidentiality.

In addition to being resistant in extreme conditions, all materials must be economically viable. While some metals may have higher initial costs than others, side-by-side comparisons must include lifetime maintenance, repair and replacement costs to measure their true cost-effectiveness.

We maintain continuous exchange of knowledge with both internal and external specialist bodies in which we are active participants. Our team works with materials manufacturers regarding your own individual materials requirements.

The Right Material Decisions to Improve Your Bottom Line

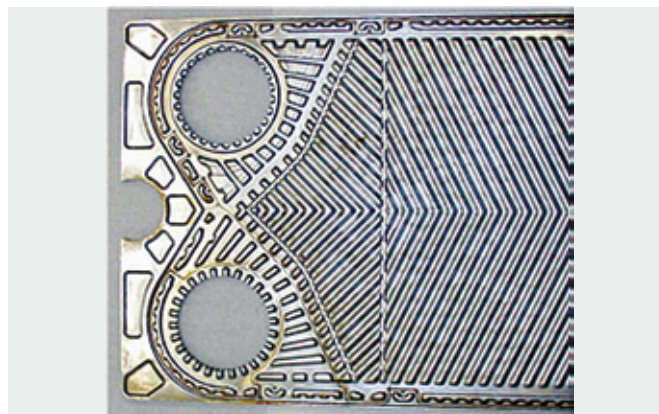
Our Materials Selection Support services are beneficial for many different parties – equipment fabricators, operators, designers, and engineering services providers. The right decisions will save money and improve your bottom line.

Our universal approach to materials engineering forms the basis of targeted and systematic Material Selection Support also taking economic factors into account.

This means that:

- Materials engineering solutions avoid the need for complex and costly over-designs and
- Proven materials-based approaches increase both the availability and the safety of your plant.

Our work is both comprehensive and interdisciplinary in its approach. From metals to non-metallic materials, from filler materials to coatings, we will find the optimal material for you.



Sheet of a Plate Heat Exchanger

Bayer Technology Services – The Materials Experts

The engineers at Bayer Technology Services have been making smart suggestions for Materials Selection for over 50 years. Due to our experience within the daily business operations of a global chemical-pharmaceutical company – the Bayer Group – we know how important it is to make the right choice when selecting materials for construction.

Our high level of experience in supporting manufacturing processes in the chemical and pharmaceutical industry has resulted in an unparalleled knowledge of material performance.

A multi-disciplinary team, consisting of

- materials specialists,
- corrosion specialists,
- mechanical engineers,
- chemists,
- process technologists,
- physicists,
- and staff of our accredited testing laboratory.

Our specialists have years of experience in material selection for chemical process engineering applications. This wide experience of Bayer Technology Services is at your disposal for finding a material design that fulfills your needs in the most efficient way.

In conjunction with BayOpX® – our Operational Excellence approach – you get access to our full portfolio of services targeting optimum plant reliability and efficiency.

Our accredited laboratory (DIN EN 17025) applies testing methods that comply with recognized and proven standards.

Our value-adding services have been turned into successful business improvements for many of our customers. A wide variety of industry professionals, from equipment fabricators and OEMs to process owners and end-users have used our Materials Selection services, in applications as varied as chemical processing and automotive.