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quali-
steel
coat

A Guide

to Quality Conscious
Contracting in
Industrial Coatings



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1 Preliminary note

The QIB Qualitätsgemeinschaft Industriebeschichtung e.V. is a voluntary association of quality-conscious industrial coaters. The member companies ensure their consistent quality standards by complying with and documenting the specifications of the regulations. Compliance with the regulations is checked annually by an independent testing institute. The QIB is the general licensee of the QUALISTEELCOAT quality mark in Germany. QUALISTEELCOAT is aimed at coaters of steel and galvanized steel in the interior, exterior and architectural sectors, and in particular at duplex coaters. The QIB monitors these companies for compliance with the QIB and QUALISTEELCOAT quality regulations.

We have noticed in many areas that clients of coating orders are often overtaxed to formulate tenders or inquiries technically. Therefore, we provide you with the leaflet „Ordering correctly“ to give you appropriate help, because the statement „Make it green“ is not a professional order.

This leaflet deals with the awarding of contracts. Once a professional invitation to tender has been issued (color shade, structure, base material, corrosion protection, etc.), the next step is to obtain the bids or evaluate them.

In many cases, a contract is awarded solely on the basis of the price offered, but from our point of view, there is no technical verification. Often, the clients are not even able to make a technical evaluation of the offer. As a result, contracts are awarded to coating service providers without the necessary technical prerequisites and thus do not fulfill the object of the contract.

Here, savings are made in the wrong place, because complaints also have their price!

When awarding a contract, the technical feasibility of the coating company should always be checked before comparing prices. If apples are compared with oranges, a price comparison makes no sense.

As a client, ask yourself: „Am I in a position to judge whether my coating service provider can meet our corrosion protection requirements with his plant technology and pretreatment?“

If you answer „no“ to this question, then the QIB offers you a simple, transparent and, above all, independently verified tool for selecting a suitable coating company.

This fact sheet is intended to help you, as a contracting authority for coating services, to distinguish „apples and oranges“ and to show you a simple way to make your bidding process easy and to verify the coaters.

2 How can I simplify my tender by the QIB?

The QIB certification system represents a very simple and transparent way for the client to simplify the tendering process for corrosion protection and technical feasibility testing. The client only has to define the corrosion protection or the QIB stress group in the tender. In the following chapter you will find a comprehensive explanation of how to select the right corrosion protection or QIB stress group. Further details on the design of tenders can be found in the QIB leaflet „Ordering correctly“.

2.1. General explanations of the corrosivity categories

The coating must reliably protect the part against corrosion. Here, too, the following applies: The higher the required corrosion protection, the higher the expense and thus the price. If possible, the design measures of QIB leaflets 2-2 and 2-3 or other normative specifications (DIN 55633, 55634) must be observed. The coater must be informed of the required corrosion protection (corrosivity category and protection duration) or at least the subsequent conditions of use so that he can define the necessary corrosion protection.

Depending on the corrosion protection required, it must be checked whether a multi-layer structure consisting of primer and top coat is necessary.

The required corrosivity category basically depends on the load to which the part to be coated will later be exposed. The protection period tells how long the part should last in the specified corrosivity category until the first repair.

To simplify matters, the QIB has divided the material into six stress groups, which are very closely based on DIN EN ISO 12944, DIN 55633 and DIN 55634. The QIB stress groups I - V apply to all base materials, whereby the test requirements of the QIB are more narrowly defined than in the standards. Thus, the corrosivity categories (C1 - C5) in conjunction with the expected protection time „high“ (H) are specified for the stress groups I - V. Another exception is the base material aluminum. Here, independent requirements are specified for stress groups I - VI. Further explanations can be found in chapter A.1.4. of the QIB quality specifications.

2.1.1. What does the QIB stress group say?

Determination of the QIB stress groups. In the following, the QIB has classified the stress groups on the basis of the corrosivity categories of DIN EN ISO 12944, DIN 55633.

Stress group I:

The parts are only used indoors without humid or corrosive stress.

Stress group II:

The parts are occasionally resp. for a short term exposed to temperature or humidity stress. However, parts which have been pre-treated in such a way are mostly used indoors.

Stress group III:

The parts have a conversion layer allowing to expose them to slightly corrosive and humid stress for longer time.

Stress group IV:

Due to the high requirements on the applied conversion layers it is possible to expose these parts to usual corrosion as well as to humidity all over their service life. Special corrosion stress such as filiform corrosion resistance and the like is the only exception. This requires additional pre-treatment and protection measures for steel as well as for aluminum.

Stress group V:

Steel and aluminum parts are treated with mostly multi-layered coating systems due to the very high requirements for industrial, coastal, and offshore regions with a term of protection of more than 15 years. In the case of aluminum this is only possible by pre-anodizing or 2-layer structure.

Stress group VI:

Steel and aluminum parts are treated with mostly multi-layered coating systems due to the very high requirements for industrial, coastal, and offshore regions with a term of protection of more than 25 years. In the case of aluminum this is only possible by pre-anodizing.

A comparison of the QIB stress groups with the corrosivity categories and protection times of DIN EN ISO 12944 Part 6 „Corrosion protection of steel structures by coating systems“ and the test times of the neutral salt spray test required therein is shown in the following table:

Stress group according to QIB	Test period acc. to QIB stress group (h)	Test period acc. to DIN EN ISO 12944 part 6 (h)	Short term corrosivity category and term of protection acc. to DIN EN ISO 12944-6:2017
I	125	120	C1 (very high) C2 (high) C3 (low)
II	250	240	C2 (high) C3 (medium) C4 (low)
III	500	480	C2 (very high) C3 (high) C4 (medium) C5 (low)
IV	1.000	720	C3 (very high) C4 (high) C5 (medium)
V	1.500	1.440	C4 (very high) C5 (high)
VI *	2.200	-	C5 (very high)

* only for coatings on galvanized base material with a CDP priming respectively pre-anodizing for aluminum

The higher the corrosion protection required, the more likely it is that a multi-layer coating structure will be used. As a general rule, a single-layer structure is sufficient for interior areas (without severe corrosive loads). However, depending on the base material and the type of pretreatment, multi-layer structures must be used to achieve corrosion protection when corrosive loads increase.

2.1.2. Which coating structure is required for the respective stress group?

Depending on the base material, the following table shows the layer structures to be used for the respective stress groups. These must be observed.

Base material	Layer structure powder coating	I	II	III	IV	V	VI
Aluminum	1						
	2						
Aluminum with pre-anodizing	1						
Steel	1						
	2						
Continuously hot dipped steel (strip galvanized)	1						
	2						
Hot-dip galvanized steel (batch galvanized)	1						
	2						
Steel coated by thermal spraying	1						
	2						
Aluminum, steel and hot-dip galvanized steel with CDP priming	0						
Aluminum with CDP priming	1						
	2						
Steel with CDP priming	1						
	2						
Galvanized steel (batch or strip galvanized) with CDP priming	1						
	2						

Practice Tip:

Please note that a piece of furniture in the living area definitely requires less corrosion protection compared to parts that are used outdoors. Here, excessive safety thinking costs very, very much money. A system that is not suitable for corrosion protection will in turn lead to considerable renovation costs.

2.1.3. Conclusion on corrosion protection

If you have read the data sheet carefully, you should now be able to select the corrosion protection required for your product. To simplify your tender, you can also refer to the QIB stress group.

For example, if you have a steel component for outdoor use (higher corrosive stress), you can select QIB stress group IV. If the corrosive stress is lower, you can use level III. For components with a slightly corrosive load, you can select level II, and for components for indoor use without a corrosive load, you can select level I.

2.2. Contract award / technical feasibility study?

And now we come to the crucial question, "What does all of this mean for me when it comes to choosing a coating company?"

You have now defined the corrosion protection and other requirements in a tender and are now obtaining the offers. In order to be able to compare them, the question of technical feasibility now arises, as a corresponding assessment is not always easy even for experts. Corrosion protection depends on a great many factors, one of the most important of which is proper preparation/pretreatment. Assessing whether a pretreatment is suitable for the required corrosion protection requires a high level of expertise and is not possible without more in-depth information on the coating process.

And this is exactly where QIB certification offers you a simple and transparent way.

QIB members must undergo an annual audit by an independent, accredited testing institute. In addition to the inspection of the factory production control, „coating samples“ are taken from all certified processes and tested in the likewise accredited test laboratory for corrosion protection or the stress group.

The results are shown very transparently on the QIB certification document and can also be found on the QIB homepage in the overview of the achieved stress groups, as well as in the deposited certificate.

This means that the QIB has already done the technical feasibility check for you when selecting the coating company, if you tender according to the QIB stress group and award to a QIB member.

If you are tendering for QIB Stress Group IV, you can very easily verify with a QIB-certified coater via this route whether the corrosion protection requirements can be proven to be met.

Practice Tip:

The search function on the QIB homepage allows a very targeted search for suitable coatings. Here, for example, the base material, the desired stress group, but also the postal code area can be selected as search parameters. In this way, you can also select suitable coating companies in advance and specifically request them to submit an offer.

Conclusion

Since the certificates of all our QIB members are transparent and publicly available on the homepage, technically suitable coating companies can be specifically requested or selected.

QIB member companies stand for competence, reliability, trust and high-quality services.

Choose your coating company wisely - Because quality is no coincidence - and coating damage leads to high follow-up costs and hassle.

3 Further information

If we have aroused your interest, we recommend you to read our leaflet series.

Leaflets 2-2 „Heavy-duty corrosion protection - information on design and preparation suitable for coating“ and 2-3 „Improving corrosion protection by design measures“ contain detailed explanations of the design requirements needed to achieve a high level of corrosion protection and the design measures that can be used to improve corrosion protection.

Leaflet 3-1 „Visual assessment of organic, coated, decorative surfaces“ provides information and specifications for the tendering of visual specifications and their inspection.

Leaflet 3-2 „Ordering correctly“ provides further assistance on technically correct tendering.

For your notes



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