

1. Pocinkovalnica, d.o.o. performs hot-dip galvanizing of steel articles in accordance with the provisions of the standard SIST EN ISO 1461:2009 - Hot dip galvanized coatings on fabricated iron and steel articles.
2. Elements and constructions need to be prepared in accordance with the standard EN ISO 14713-2 or with the documentation issued by Pocinkovalnica, d.o.o.; the General and Technical Provisions of Hot-dip Galvanizing and the Guidelines for Correct Construction prior to Hot-dip Galvanizing, published at our website [www.pocinkovalnica.si](http://www.pocinkovalnica.si).
3. Maximum weight of the articles, acceptable for hot-dip galvanizing is 7000 kg, the maximum article dimensions are 12600 x 1700 x 2900 mm. When articles to be hot-dip galvanized exceed 10 m in length or 2.5 m in height, the client needs to consult with the provider of hot-dip galvanizing prior to issuing an order.
4. The appearance, thickness and quality of the zinc coating depend on the chemical composition and surface condition of the steel. When ordering steel it is therefore necessary to require "steel category for hot-dip galvanizing" from the supplier. This category is defined in Chart 1 of the standard EN ISO 14713-2, and needs to be Category A for up to 3 mm thick steel (chemical content of silicon must be under 0.03%, chemical content of phosphorus must be under 0.02% and silicon content (in %) + 2.5-times phosphorus content (in %) must be under 0.04%). As the standard dictates somewhat thicker zinc coating for steel between 3 and 6 mm thick and for steel more than 6 mm thick, this steel needs to be more reactive – Category B (silicon content between 0.14% and 0.25%, phosphorus content up to 0.03%). The thickness of zinc coating – because of zinc and steel diffusion – is linked to the silicon and phosphorus content in the steel. In general both types of steel (A and B) consume less zinc and therefore have a lower price of hot-dip galvanizing and at the same time a good-looking and more quality zinc coating with good grip and sufficiently long life span. Consequences of inappropriate chemical composition of steel (Categories C and D in Chart 1 of the EN ISO 14713-2) are greyness, grey spots, intense roughness or even peeling of the zinc layer. When the client requires hot-dip galvanizing according to requirements by the Motorway Company in the Republic of Slovenia (DARS), all segments of the welded article, regardless of the wall thickness (including the walls less than 3 mm thick), must be composed of Category B steel. The provider of hot-dip galvanizing has no influence on the chemical composition of steel, thus the provider does not take responsibility for its unsuitability and rejects eventual complaints. If the steel is more than 3 mm thick and of Category A, the required coat thickness is not achievable. Therefore, the provider can issue a certificate only conditionally, with an appropriate remark. A greater content of aluminium in Al-killed steel as a rule generates many small not-galvanized spots.
5. The surface of the steel must not contain flaws caused by rolling (standard EN ISO 10163-1).
6. Articles to be hot-dip galvanized must not have paint residue, paint markings, old surface protection or old zinc coating on the surface. The surface of articles must also be free of welding sprays, oils and greases, which inorganic degreasers cannot remove.
7. Oxy-fuel cutting of sheet metal and plasma or laser cutting modifies the surface structure of the steel. Therefore, the zinc layer in such areas can be much thinner (too thin), and the grip of the zinc coating is very poor at the sharp edges – peeling (EN ISO 14713-2). Subsequently the manufacturer must grind the cut surfaces and trim the edges. If this is not the case, the provider of hot-dip galvanizing does not accept complaints due to peeling of zinc layer at the edges and due to insufficient thickness of the layer at the cut surfaces.
8. The constructions need to be – in accordance with the SIS EN ISO 14713 standard – equipped with openings (boreholes, cut-outs and similar) for the outflow of air and zinc from closed pipes, corners and pockets. Each pipe needs two openings – each opening must be just next to the weld on both sides of the pipe. The two openings are placed on the diagonal line of the pipe and the size of openings must be in accordance with the table with necessary diameter for aeration boreholes. Closed volumes between two flat surfaces, which are entirely welded among themselves, need to be aerated. Constructions, pipes or profiles need to have hanging points (boreholes, ears, etc.). Examples are given in the EN ISO 14713 standard, in the Guidelines for Correct Construction and in the Little Handbook of Preparation of Material (see [www.pocinkovalnica.si](http://www.pocinkovalnica.si)). In the event of invisible ("hidden") boreholes, the client needs to confirm in writing, that all openings are prepared.
9. Welds need to be non-porous, finished and free of welding scales and droplets. Otherwise, these areas are not galvanized and can subsequently leak acid (rust). The provider of hot-dip galvanizing has no influence on this and therefore does not accept complaints.
10. Two pieces of sheet metal or two profiles, laid flat against one another, form a closed volume. Whereas zinc cannot reach this area, pre-galvanizing media (fluids) reach it. These internal surfaces therefore remain not galvanized. Regardless if the surfaces are welded together completely or partially, in a few days after galvanizing pre-galvanizing media can start leaking out in the form of brown stains. This is not an error during galvanizing, so the stains are to be removed with an appropriate brush by the client.
11. Zinc ashes often remain in the hollow profiles and hollowware. The provider of hot-dip galvanizing does not remove these ashes. When the ashes are disturbing, the demanding cleaning is to be carried out by the client. The connections on the hollowware must not extend inside the hollowware.
12. Hot-dip galvanizing is a procedure of dipping articles into a bath of molten zinc at temperatures that cause a release in the inner tensions in the material; therefore, it can cause major or minor thermal distortion of the article. Major thermal distortion occurs with thinner sheet metal with larger dimensions, casings made from sheet metal, frames, frames with wiring, pipes welded from several parts, sliding doors, wired fences, covers, poles, etc. The provider of hot-dip galvanizing has no influence on the occurrence of thermal distortion, cannot predict or foresee it, therefore the provider is not responsible for the consequences and does not accept complaints regarding thermal distortion.
13. In the event of special requirements regarding the zinc layer thickness (e.g. for motorways) the client must inform the provider of hot-dip galvanizing in time, consult with the provider and indicate the special requirements on the order form. Otherwise, the provider of hot-dip galvanizing will carry out the procedure in accordance with the EN ISO 1461 standard and will not accept eventual complaints. If the client requires a certificate with measurements of zinc layer thickness, they must indicate this on the order form for the hot-dip galvanizing service – the certificate cannot be obtained at a later stage. Any special requirements regarding packing and/or storing of galvanized articles must be indicated on the order form.
14. Threads must be re-cut after hot-dip galvanizing or shielded prior to hot-dip galvanizing.
15. Constructions with hinges and sliding elements are hot-dip galvanized disassembled. We do not recommend hot-dip galvanizing of lathed and milled elements.
16. Riveted fences must have welded contacts; otherwise, they sag or lose the diagonal balance during hot-dip galvanizing.
17. Hot or cold transformation of articles after hot-dip galvanizing is not allowed, as it can permanently damage the zinc coating.
18. Fresh zinc coating is very sensitive to formation of white rust. The client can order passivation, which reduces the formation of white rust, although it does not completely prevent it. This service is charged according to the price list. When passivation is not carried out, we recommend storing the articles in a covered outdoors area until they are used. If passivation is not ordered, we do not accept complaints due to white rust.
19. When articles will be painted after hot-dip galvanizing, the client must take into account the additional work and cost for smoothing and sweeping the zinc coating. The coating in this case needs to be much smoother than the hot-dip galvanizing standard requires. Sweeping helps with removal of white rust and creates the roughness for the necessary grip. White rust and reactive steel (thicker coating) as a rule cause blistering effect of the varnish on the zinc coating. In the event of subsequent painting, the client should consult with Pocinkovalnica, d.o.o. on the implementation of passivation, which reduces the formation of white rust, but can reduce the bonding of the paint. The client should also consult with Pocinkovalnica to disallow repair of not galvanized areas with zinc paste, which can disable an adequate bond to the varnish coat.
20. Pocinkovalnica, d.o.o. is a holder of the DAST 022 certificate. Therefore, the client must inform Pocinkovalnica, d.o.o., when their delivery is in accordance with this directive or when they were instructed to follow its clauses by the constructor or the person, issuing the order.
21. Deliveries to be hot-dip galvanized must be properly palletized, so it is possible to unload them with a forklift without damaging the articles. Wooden boards or blocks need to be placed between heavier articles and between sharp parts of the articles to prevent chafing or peeling of the coating, predominantly around the edges. In the event of inadequate palletization articles may be damaged during transport. Pocinkovalnica, d.o.o. palletizes a hot-dip galvanized shipment in the same manner as it was delivered or was palletized by the client. In these cases Pocinkovalnica, d.o.o. does not accept responsibility for any damages on the zinc coating.
22. Complaints regarding visual errors must be reported in 8 days after the receipt of the shipment, and complaints regarding mechanical damage must be reported the same day the shipment is handed over by the provider.
23. Pocinkovalnica, d.o.o. reserves the right to make boreholes, necessary for the execution of hot-dip galvanizing. Boreholes and additional work are charged according to the price list.
24. Unaerated closed hollow profiles on both ends or on one end and volumes of two flat fully welded sheet metals can cause an explosion during hot-dip galvanizing. Such an explosion causes material damage and can present a risk of severe workplace accident. When the boreholes are declared to be "hidden", but they are in fact non-existent, the client shall bear all consequences of an explosion.
25. When a delay in the service of hot-dip galvanizing occurs due to the condition of the steel or the technological preparation of articles (suitability of the articles depends on the client), Pocinkovalnica, d.o.o. does not accept eventual delay penalty. Pocinkovalnica, d.o.o. also reject delay penalty in the event when the transport is carried out by the logistics department of Pocinkovalnica, d.o.o.
26. We charge a daily storage charge in the amount of 1.00 EUR/100 kg for shipments, not taken over in 14 days after the date of invoice.
27. Pocinkovalnica, d.o.o. charges a waiting fee for its trucks on the customer's premises or at a facility, when transshipment lasts more than 2 hours. The cost of waiting fee is 50.00 EUR for each subsequent hour.
28. For more technical information contact us by e-mail on [info@pocinkovalnica.si](mailto:info@pocinkovalnica.si) or by telephone on 051 653 972 or 051 370 991; for commercial information contact us by telephone on 03 426 32 28; you will find information regarding the status of your shipment on [www.pocinkovalnica.si](http://www.pocinkovalnica.si).