RAINCOAT INCLUDED

SHOT BLASTED AND PRIMER COATED HEAVY PLATES

DILLINGER

YOUR HEAVY PLATE IN BLASTED AND PRIMERED CONDITION

Primered plate (shop primer) with customized marking and side label

To prevent your valuable heavy plate from being attacked by wind and weather during transport and storage, Dillinger can apply temporary ex-works corrosion protection, consisting of steel-shot blast-descaling on both sides, followed by coating with a so-called shop primer.

Shop primer (Prefabrication primer)

Prefabrication primer according to EN 10238:
thin coating which is automatically applied to blast cleaned steel and serves to provide temporary corrosion protection for steel components during their processing, transport and storage.

Under correct storage conditions, this will prevent corrosion from your heavy plate material for up to six months. At the same time, the shop primer can represent the preparatory coat for the ultimate anti-corrosion system that will be applied to the plate after its further working and installation. We can, of course, also supply your heavy plate without primer coating if you just attach particular importance to the surface cleanliness and quality produced by blast-descaling in accordance with ISO 8501 SA 2 ½ as standard. We must, however, point out that you should then process and install your heavy plate as quickly and as carefully as possible – in only blasted state, this material is extremely susceptible to rust.
Blasting and primering are performed in continuous-flow automatic systems in accordance with EN 10238.
The table below shows you the maximum dimensions up to which Dillinger is able to apply temporary corrosion protection to your heavy plate. Other, larger, dimensions can also be treated upon separate agreement.

Overview of weight and dimension parameters

Automatic blast-descaling (steel shot) with works coating (shop primer)	**Thickness**	**6**	**to**	**200**	**mm**
	Width	**900**	**to**	**4,500**	**mm**
	Length	**3,000**	**to**	**28,000**	**mm**
	max. per-meter weight			**4**	**t/m**
	max. item weight			**32**	**t**

Other dimensions and higher item weights are possible upon agreement up to 40 t unit weight.

SELECT YOUR PRIMER

In case you wish the application of a shop primer, but you do not specify the shop primer in detail, Dillinger offers the following shop primers as standard:

- Quenched DILLIDUR and DILLIMAX brand steels as well as quenched and tempered high strength steels with a nominal yield strength > 500 MPa:
  Proven 2-component ethyl-silicate zinc dust primer (ESIZ, designation in accordance with EN 10238), colour reddish grey, dry film thickness according to manufacturer's specification 15 - 20 μm. This primer is characterized by an excellent cuttability and weldability and offers a high corrosion protection.
- Other heavy plates with shop primer without further specification:
  Proven 2-component epoxy iron oxide primer (EPF, designation in accordance with EN 10238), colour reddish brown, dry film thickness according to manufacturer's specification 15 - 25 μm. This primer is characterized by an excellent cuttability and weldability and offers a medium corrosion protection.

Primer type	Product example	Colours [4]	Dry film thickness recommended by the primer manufacturer [µm] [3]	Corrosion resistance (qualitative)
Standard for DILLIDUR and DILLIMAX as well as quenched and tempered high strength steels with a nominal yield strength > 500 MPa if the primer is not specified by the customer				
two-component ethyl-silicate zinc dust ESIZ [5]		reddish grey	15-20	high [1]
Standard for all other grades (DILLIDUR and DILLIMAX as well as quenched and tempered high strength steels with a nominal yield strength > 500 MPa see above) if the primer is not specified by the customer				
two-component epoxy primer with zinc phosphate and iron oxide pigments EPF [5]		reddish brown	15-25	medium [2]

Further common shop primers, type ESIZ and EPF are listed below and can be specified explicitly. Further types and brands, also shop primers with a very high corrosion protection can be agreed for an additional charge. Please note, that you might have a loss in cutability and weldability. All shop primers deviating from the table below have to be agreed before ordering. The same applies if dry film thicknesses are needed which are different from the data below.

Primer type	Product example	Colours [4]	Dry film thickness recommended by the primer manufacturer [µm] [3]	Corrosion resistance (qualitative)
Selection of further common shop primers at Dillinger (which have to be specified explicitly by the customer); Other shop primer types, products and colours, e.g. two-component epoxy zinc dust EPZ or polyvinyl butyral are possible on request and explicit specification.				
two-component ethyl-silicate zinc dust ESIZ [5]	Hempel ZS 15890	reddish grey, grey	15-20	high [1]
	Muki Z 2001	red, grey		
two-component epoxy primer with zinc phosphate and iron oxide pigments EPF [5]	Hempel E15280 / E1527C	reddish brown, grey	15-25	medium [2]
	PPG Sigmaweld 120	reddish brown		

In general: Is the shop primer supposed to remain on the plate as basis for a coating system, a consultation of the shop primer manufacturer is necessary.

[1] Temporary prefabrication corrosion protection with durability of 6 - 8 months (indication by the manufacturer: at moderate corrosiveness, class C3 according to ISO 12944)
[2] Temporary prefabrication corrosion protection with durability of 3 - 5 months (indication by the manufacturer: at moderate corrosiveness, class C3 according to ISO 12944)
[3] To set the recommended dry film thickness, the Dillinger coating facilities apply an approximately 5 μm thicker film before evaporation of the solvents. The measurements are documented according to EN 10238.
[4] The shown colours have an indicative character and are only qualitative.
[5] Designation according to EN 10238

HOW FURTHER WORKING AND PROCESSING INFLUENCES PRIMER SELECTION

Generally, primered plates can be torch-, plasma- and laser-cut without difficulty. A slight reduction of cutting speed is generally recommendable to assure high-quality cut edges. In addition, extensive data on approvals and handling can be obtained from primer manufacturers and research institutions.

Ethyl-silicate zinc dust and epoxy iron oxide shop primers can be cut and overwelded without difficulty. The greater susceptibility to porosity in the weld should be noted in general for processing of primered plates. Preparatory welding tests usually make it possible to set the welding parameters in such a way that porosity is reduced to a minimum. Alternatively, it is also possible to remove the protective coat of primer along the edge to be welded prior to welding.

Please notice that regulations like ZTV-ING forbid an overwelding of the primer coat and therefore the shop primer has to be removed before welding.

Please also note that it is necessary to adhere to special environmental and health-safety provisions during cutting and welding of primered plates due to the fumes emitted. Please contact the primer manufacturer in case of doubt.

Primered plate (shop primer) with customized marking

Correct handling of primered plates

Please ensure that the coating is not scratched during transport, handling or working, or otherwise damaged by impacts, collisions or movement (slipping) of the individual plates relative to one another. Extra care is therefore necessary, particularly when handling with lifting equipment.

Please also consider that the primer applied is only a temporary protection system which cannot protect against severe corrosive attack. During the sea transport with contact to salt water, white rust can occur even at plates with two-component ESIZ primers which offer a relative high corrosion protection.

For this reason, always store the plate material indoors if at all possible. If this is not possible, it is advisable to implement provisions to reduce the effects of the weather. To protect against ground moisture and accumulated water (puddles, etc.), it is useful to store primered plates at a slight slope on suitable supports. Primered plates should also be stored separately from unprimered steel material, in order to prevent contact corrosion.

EN 10238 provides recommendations for handling of plate material with an anti-corrosion coating.

HOW THE TEMPORARY CORROSION PROTECTION SYSTEM IS APPLIED TO YOUR HEAVY PLATE

The continuous blasting and coating machines installed at the works Dillingen, Germany and Dunkirk, France are extremely similar. The example below shows the system used in Dillingen:

In the pre-dryer, the heavy plate is dried and preheated. It is then bombarded with steel shot by turbines in the blasting machine. The result is a surface of maximum quality, totally free of scale and dust. The plate is then moved at constant speed through the spraying zone, where it is coated with primer on both sides. The coating is then dried in the after-dryer at 80 °C sufficiently to ensure that it adheres to the plate. The film thickness is measured in accordance with ISO 2808 at regular intervals.

The organic solvents of the spraying zone and the after-dryer are aspirated, filtered and finally cleaned in a thermal afterburning system in order to remove the solid particles according to the legal environmental regulations.

The entire continuous blasting and coating facility is supported by online monitoring systems that ensure maximum possible energy-efficiency and emission levels that meet the legal limits. The complete system is certificated in conformity to ISO 9001, ISO 14001, ISO 45001 and ISO 50001. All components and elements are grouped together into an integrated management system.

An employee measuring the film thickness

REFERENCES

Standards and rules:	DASt 006	Welding of prefabrication primers in constructional steelwork
	EN 10238	Automatically blast-cleaned and automatically prefabrication primed structural steel products
	ISO 2808	Paints and varnishes – Determination of film thickness
	ISO 8501	Preparation of steel substrates before application of paints and related products – Visual assessment of surface cleanliness
	ISO 9001	Quality management systems – Requirements
	ISO 12944	Paints and varnishes – Corrosion protection of steel structures by protective paint systems
	ISO 14001	Environmental management systems – Requirements with guidance for use
	ISO 45001	Occupational health and safety management systems – Requirements with guidance for use
	ISO 50001	Energy management systems – Requirements with guidance for use
	ZTV-ING	Zusätzliche Technische Vertragsbedingungen – Ingenieurbau (additional technical guidelines for civil engineering constructions in Germany)

Further information (www.dillinger.de):	Delivery program

Disclaimer:

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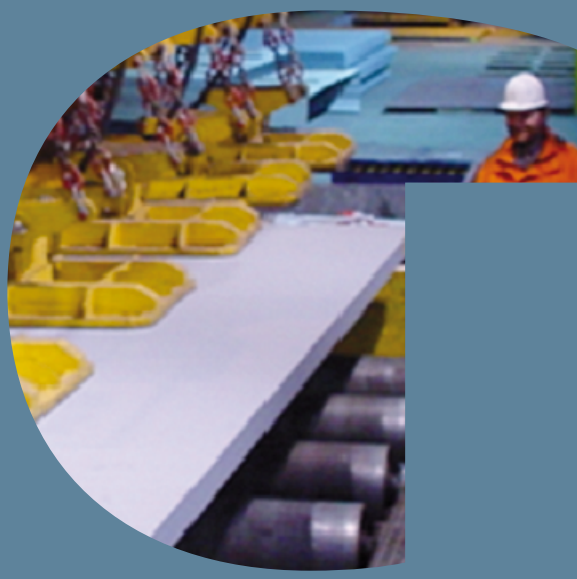

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