

Chemical composition

Corroplast FM				
C	Mn	S	Cr	Additions
0.22	1.60	0.12	12.80	+

Physical properties in as-delivered condition

Coefficient of thermal expansion at °C (10 ⁻⁶ m/(m • K))				
20-100	20-200	20-300	20-400	20-500
8.5	10	15.2	14.6	14.3

Thermal conductivity at °C (W/(m • K))				
20	150	350		
22.2	22.6	23.2		

Density at °C (kg/dm ³)				
20				
7.6				

Mechanical properties in as-delivered condition

Heat treatment diameter mm round	Yield stress in MPa R _{0.2} min.	Tensile strength in MPa R _m	Elongation at fracture in % A min.	Reduction of area at fracture in % Z min.
13	720	900	10	26

Stock sizes Corroplast FM

1000 x 50 mm
1000 x 60 mm
1000 x 65 mm
1000 x 70 mm
1000 x 80 mm
1000 x 90 mm
1000 x 100 mm
1000 x 130 mm
1000 x 155 mm
1000 x 400 mm

General Advice (Liability)

Details on property, condition or applicability of materials and/or products serve for description only. Any consent regarding particular properties or intended application of the material need separate written agreement. Misprints, errors and modifications excepted.

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Corroplast FM
The corrosion-resistant steel for complex plastic moulds



“All stainless“- mould construction

Moulds made of corrosion-resistant tool steel are indispensable in the plastics processing industry. The tools, which are used in an environment characterised by heat, condensation and coolant, must meet highest standards. But this is not all: The trend to increasingly processed moulds with numerous cavities and borings presents the mould makers with additional challenges. With Corroplast FM, Deutsche Edelstahlwerke present the solution for mould makers, who do not want to make compromises when it comes to corrosion-resistance or the machinability of the raw material.

Compared to proven plastic mould steels, Corroplast FM sets new standards with regard to its machinability with unchanged corrosion-resistance. For this reason, it is optimally suited to complex base and mounting plates, mould frames and plastic moulds with common surface finish. With the newly developed analysis based on simulation technology and the improved microstructures of Corroplast FM, the users thus have new possibilities for their own process cost optimisation.

Corroplast FM at a glance: benefits for plastic manufacturers

- High profitability and efficiency:
The very good machinability and even microstructures of Corroplast FM result in increased productivity without loss of quality
- Good stability despite time-consuming machining of the raw material:
Even for filigree components and limited cavity spacing
- Consistent corrosion-resistance:
Even when additional corrosion-resistant materials are used, which combined with other steels would have triggered a contact corrosion
- No obstruction of the water flow rate and heat dissipation due to corrosion products or algae growth in the cooling bore holes
- Good thermal conductivity results in a high clock rate
- Easy maintenance:
Even in difficult climatic conditions like high humidity or salt-laden coastal air

Well packaged with Corroplast FM

Each year, more than 230 million tons of plastic are used worldwide. The largest proportion is used by the packaging industry. Plastic has made unparalleled progress here, which is set to continue. So much so that the growing, international requirement of plastic packaging forces the plastic manufacturers to be increasingly efficient in their production. Adding to this are growing expectations of packaging design and quality. In order to stay on top in the highly competitive markets, plastic manufacturers thus require tools that support them in meeting these demands.

The outstanding machining properties and the stable corrosion-resistance make the Corroplast FM the ideal material for the packaging industry.

Here are some application examples:

PET bottle production

Corroplast FM as build-up material for injection moulds in which preforms are produced.

Packaging for drugs

Corroplast FM for rubber processing moulds.

Liquid food packaging

Corroplast FM as steel for blow moulds in which containers for drinks are produced.

General food packaging

Corroplast FM as build-up material for injection moulds in which lids of containers are injected.

Packaging in the cosmetics industry

Corroplast FM as plastic mould steel for tools in which cosmetic bottles are realised with most diverse design requirements.

Furthermore, the Corroplast FM is also suited to the production of plastic and vulcanised rubber parts within the automotive industry.

Your application was not included?

Then find out from our experts how you can also benefit from Corroplast FM!

	Hobbing/ slot milling	Face milling	Round plate	Drilling solid carbide
Tool	Ø 25 mm	Ø 45	Ø 66	Solid carbide
Cutting material	K 15	P 40 cut	P 40 cut	Ø 18,5
Cutting speed vc [m/min]	80,0	160,0	160,0	80
Feed per tooth fz [mm]	0,4	0,8	0,7	0,3
Depth of cut ap [mm]	5/10	2,5/3,5	2/3	55
Width of cut ae [mm]	25,0			18,5
Stability of the machine, clamping and workpiece	+++	+++	+++	+++

Machining
reference values
Corroplast FM:
Hardness
270-315 HB