



Superplast® Stainless (2099 mod.)

Superplast® Stainless: A patented prehardened and corrosion resistant steel that meets or exceeds standards for grade W 1.2085 (AISI 420 FM).

Material properties

Corrosion resistant mould steel with excellent machinability, high dimensional stability, consistent hardness and improved thermal conductivity.

For which tools

Mould holders, support plates, hot runners, mould components.

For which plastics

Chemically aggressive and acid - releasing plastics (PVC). Injection moulding, rubber injection moulding, extrusion, etc.

PROPERTIES

CHEMICAL ANALYSIS (TYPICAL; IN WEIGHT%)

C	Si	Mn	S	Ni	Cr	N
0.07	0.15	1.40	0.12	0.50	12.0	+

MECHANICAL PROPERTIES

Superplast® Stainless is delivered **quenched and tempered to 280 - 325 HB (29 - 33 HRC).**

Hardness	Rp 0.2 Yield Strength		Rm Tensile strength		Elongation	Reduction of area
	MPa	ksi	MPa	ksi		
HB					%	Z%
310	890	129	1000	145	12	23

PHYSICAL PROPERTIES

Thermal conductivity W.m-1.K-1	Thermal expansion Coefficient (10-6.K-1)			
20°C	20-100°C	20-200°C	20-300°C	Specific heat J/kg.°C
27.4	10.6	10.7	10.9	460

Typical value

DELIVERY CONDITIONS

TYPICAL DELIVERY SIZES

Manufacturing process	Thickness	Width
Hot rolling	15 - 150 mm - 0.59 - 5.90"	2000 mm - 78.74"
Hot forging	150 - 350 mm - 5.90 - 13.77"	2000 mm - 78.74"

IN SERVICE CONDITIONS

CORROSION RESISTANCE

Thanks to both high chromium and low carbon contents, Superplast® Stainless exhibits a good corrosion resistance against aggressive moulding conditions (PVC) or humid environments.

Humid - dry alternated atmosphere test

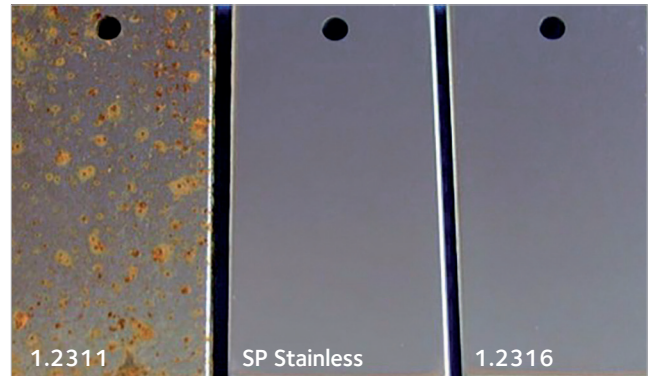
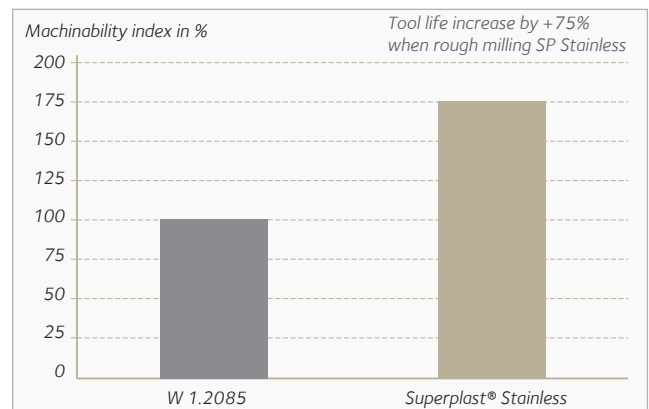


PLATE PROCESSING

MACHINABILITY

Superplast® Stainless has been developed to provide better machinability than standard AISI 420FM (W 1.2085). Milling tests were performed to compare tool life of Superplast® Stainless versus W 1.2085.

Milling Cutter	Insert	Width of cut	Depth of cut	Feed per tooth	Cutting speed
AJX502 Mitsubishi	Coated insert	13 mm (0.51")	1 mm (0.04")	2.5 mm (0.1")	100 m/min



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Technical data and information are to the best of our knowledge at the time of printing. However, they may be subject to some slight variations due to our ongoing research programme on steels. Therefore, we suggest that information be verified at time of enquiry or order. Furthermore, in service, real conditions are specific for each application. The data presented here are only for the purpose of description, and considered as guarantees when written formal approval has been delivered by our company. Further information may be obtained from the address opposite.