

## Superplast® stainless (≈ W 1.2099)

**Superplast® Stainless:** A patented prehardened and corrosion resistant steel that meets or exceeds standards for grade W 1.2085.

### 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 plastics but not suitable for halogen releasing plastics. Injection moulding, rubber injection moulding, extrusion, etc.

## Properties

### Chemical Analysis (% Weight).

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

### Mechanical Properties (typical values).

Superplast® stainless is delivered quenched and tempered to 280 – 325 HB (29 – 33 Hrc).

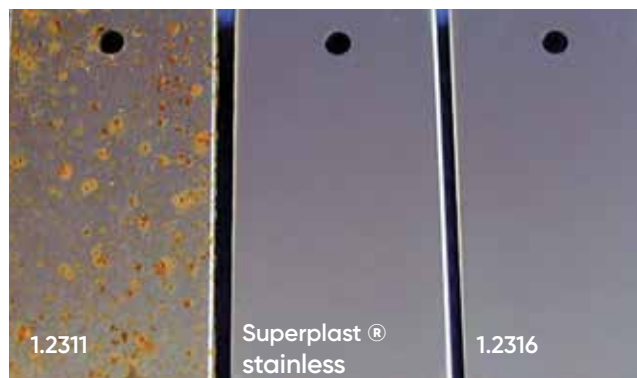
| Hardness | Rp 0.2 Yield Strength |     | Rm Tensile strength |     | Elongation | Reduction of area |
|----------|-----------------------|-----|---------------------|-----|------------|-------------------|
| HB       | MPa                   | ksi | MPa                 | ksi | %          | Z%      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

### Physical Properties (typical values).

| Thermal conductivity W.m <sup>-1</sup> .K <sup>-1</sup> | Thermal expansion Coefficient (10 <sup>-6</sup> .K <sup>-1</sup> ) |          |          |                       |
|---------------------------------------------------------|--------------------------------------------------------------------|----------|----------|-----------------------|
| 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                   |

## Corrosion resistance

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



Humid - dry alternated atmosphere test

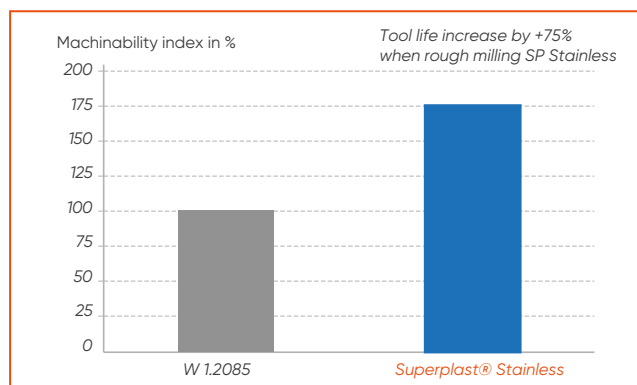
## Plate processing

### Machinability

**Superplast® Stainless** has been developed to provide better machinability than standard W1.2085.

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     |



## Dimensions

### Typical delivery sizes

| Manufacturing process | Thickness   | Width   |
|-----------------------|-------------|---------|
| Hot rolling           | 15- 150 mm  | 2000 mm |
| Hot forging           | 150 -350 mm | 2000 mm |

## Your contact

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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.

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