

CHEMICAL ANALYSIS

| Typical: | C | Si | Mn | S | Ni | Cr | Mo | B |
|-------------|------|------|------|-------|-----|-----|------|---|
| In Weight % | 0.26 | 0.10 | 1.40 | 0.002 | 0.3 | 1.4 | 0.45 | + |

Superplast® 300: A patented mold steel that meets or exceeds standards for grades W 1.2311 and W 1.2738

MATERIAL PROPERTIES

Prehardened steel for medium and very large size molds and tools with good machinability. Consistent texturing and polishing improved by very low sulphur content and hardness homogeneity. Reliable repair welding and high thermal conductivity.

FOR WHICH TOOLS

Plastic injection mold cores and cavities, large size molds for bumpers, dashboards, television panels, bottle crates, etc.

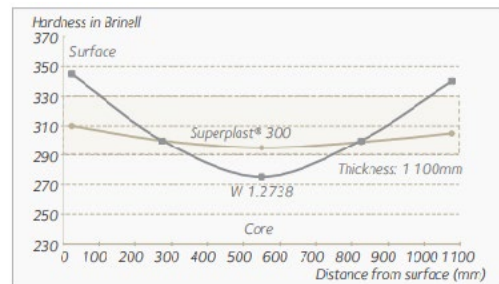
FOR WHICH PLASTICS

Thermoplastics, thermosetting plastics (PE, PP, PS), transparent melts. Injection molding, compression molding, RIM molding, etc.

THROUGH HARDENABILITY

Thanks to an optimal balance of alloying elements (especially Boron metallurgy) and high-quality heat treatment, Superplast® 300 exhibits a **very consistent hardness through large sections**. On the opposite the hardness of standard W 1.2738 is highly heterogeneous from surface to core.

A hardness delta of max 30HB all over the block is guaranteed.



MECHANICAL PROPERTIES

Superplast® 300 is delivered quenched and tempered to 290-330 HB (30 – 35 HRC)

| Hardness | Rp 0.2 Yield Strength | | Rm Tensile Strength | | Elongation | Reduction of Area | K C V 20°C | Elastic Modulus | |
|----------|-----------------------|-----|---------------------|-----|------------|-------------------|------------|-----------------|--------|
| | MPa | Ksi | MPa | Ksi | | | | GPa | Ksi |
| 300 | 895 | 130 | 1000 | 145 | 16 | 60 | 35 | 205 | 29,733 |

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 |
| 68°F | | 68 - 212°F | 68 - 392°F | 68 - 572°F | |
| 41.5 | | 11 | 12.5 | 12.8 | 480 |

Typical Values

DELIVERY CONDITIONS

| Manufacturing Process | Thickness (mm / inches) | Width (mm / inches) |
|-----------------------|----------------------------|---------------------------------|
| Hot rolling | 15-150 mm / 0.59 - 5.9" | 1000 - 2000 mm / 39.37 - 78.74" |
| Hot forging | 150-1200 mm / 5.9 - 47.24" | 1000 - 2000 mm / 39.37 - 78.74" |

PLATE PROCESSING

WELDING

Cores and cavities can be polished and / or textured on welded areas if the welding data provided below are respected. Please consult your Swiss Steel USA representative for detailed information.

| Process | Filler Material | Preheating | Post heating | PWHT |
|---------|------------------------------|------------------------|--------------------------|---------------------------|
| GTAW | SP300 WELD-E DIN 25 CrMo4 | Min 150°C Min 302°F | 150°C – 2h 302°F – 2h | 550°C – 2h 1022°F – 2h |

GENERAL NOTE

All statements regarding the properties or utilization of the materials or products mentioned are for the purpose of description only. Guarantees regarding the existence of certain properties or a certain utilization are only valid if agreed upon in writing.

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