

Superplast[®]400

Superplast[®] 400: Patented mould steel that meets or exceeds standards for grades W 1.2711 and W 1.2714.

Material properties

40 HRC pre-hardened standard grade designed for the plastic mold industry. High resistance to wear, high toughness, good polishing properties.

For which applications

Plastic injection or compression mould cores and cavities, large - size moulds with high quality finish, compression dies under high mechanical and thermal stresses.

Thermoplastics (PE, PS, PP), LFT, thermosetting plastics, ABS, transparent melts.

PROPERTIES

CHEMICAL ANALYSIS (TYPICAL; IN WEIGHT%)

| C | Mn | Si | Ni | Cr | Mo | Others |
|------|------|-----|------|----|-----|--------|
| 0.25 | 1.15 | 0.1 | 0.75 | 2 | 0.6 | B, V |

MECHANICAL PROPERTIES

Superplast[®] 400 is delivered **quenched and tempered to 350 - 390 HB (37 - 41.8 HRC)**.

| Hardness | Rp 0.2 Yield Strength | | Rm Tensile strength | | KCV 20 °C | Elastic modulus | |
|----------|-----------------------|-----|---------------------|-----|-----------|-----------------|-------|
| | MPa | ksi | MPa | ksi | J | GPa | ksi |
| 370 | 1000 | 145 | 1215 | 176 | 20 | 205 | 29733 |

Typical values

PHYSICAL PROPERTIES

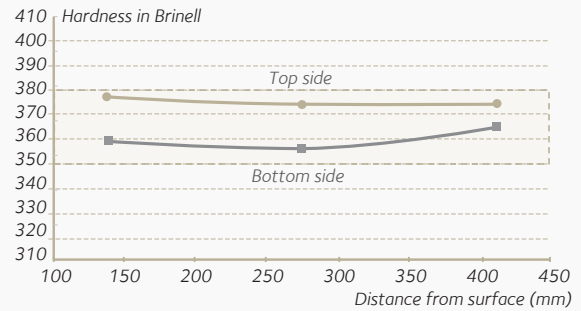
| Thermal conductivity W.m-1.K-1 | Thermal expansion Coefficient (10-6.K-1) | | | |
|--------------------------------|--|-----------|-----------|-----------|
| | 20 °C | 20-100 °C | 20-200 °C | 20-300 °C |
| 38 | 10.8 | 11.2 | 12.9 | 460 |

Typical values

PROPERTIES

THROUGH HARDENABILITY

The optimized balance of alloying elements confers to Superplast® 400 a **very consistent hardness through block section** (up to 600 mm - thick blocks).



DELIVERY CONDITIONS

TYPICAL DELIVERY SIZES

| Manufacturing process | Thickness | Width |
|-----------------------|--------------|----------------|
| Hot rolling | 15 - 150 mm | 1000 - 2500 mm |
| Hot forging | 150 - 610 mm | 1000 - 2000 mm |



PLATE PROCESSING

WELDING

Cores and cavities can be polished and/or textured on welded areas if the welding datas provided below are respected. Please consult the user guide for detailed information.

| Process | Filler material | Preheating | Post heating | PWHT |
|---------|-----------------|------------|--------------|-------|
| GTAW | SP300 WELD - E | min. 325°C | 325°C - 2h | 550°C |

YOUR CONTACTS

Perrine Lavalley
 Tel. +33 3 85 80 52 56
perrine.lavalley@arcelormittal.com

<https://industeel.arcelormittal.com>

Industeel France
 Le Creusot Plant
 56 rue Clemenceau
 F - 71 201 Le Creusot Cedex

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.