



ALPHA 4 (ESR)

Forged High Speed Steel

Chemical composition

| | C | Cr | Mo | W | Co | V |
|---------------|------------|------------|------------|------------|----|------------|
| ALPHA4 | 1.3 | 4.2 | 4.5 | 5.5 | - | 4.0 |
| ALPHA1 | 0.8 | 4.0 | 8.5 | 1.7 | - | 1.2 |
| ALPHA2 | 0.9 | 4.2 | 5.0 | 6.5 | - | 1.9 |
| ALPHA3 | 1.2 | 4.1 | 5.0 | 6.2 | - | 3.0 |
| ALPHA7 | 1.0 | 4.0 | 8.6 | 1.8 | - | 1.9 |

Standards; AISI M4. Werkstoff 1.3395. JIS SKH54

Properties

| | Hardness HRC |
|---------------|-----------------|
| ALPHA4 | ≤ 66 |
| ALPHA1 | ≤ 65 |
| ALPHA2 | ≤ 64 |
| ALPHA3 | ≤ 66 |
| ALPHA7 | ≤ 66 |

| | Density g/cm ³ | Young's modulus GPa |
|---------------|------------------------------|---------------------------|
| ALPHA4 | 8.0 | 225 |

Comparative properties

| | Wear resistance | Toughness | Grindability |
|---------------|--------------------|-----------|--------------|
| ALPHA4 | ————— | ——— | ——— |
| ALPHA1 | ——— | ————— | ————— |
| ALPHA2 | ————— | ————— | ————— |
| ALPHA3 | ————— | ————— | ——— |
| ALPHA7 | ————— | ——— | ————— |

Description

Conventional high speed steel manufactured according to Union Electric Åkers specification.

ALPHA4 is also available further refined by ESR (Electro Slag Remelting).

ALPHA4 is supplied in through hardened condition.

Applications

Work rolls in 20-high mills for cold rolling of ferrous and non ferrous products.

Features & Benefits

- Extremely high wear resistance.
- Suitable for rolling very thin gauges.
- ALPHA4 has a moderate grindability and CBN grinding wheels are recommended.