

UTP A 696

Standards :

| | |
|--------------|-------------------|
| Material-No. | : I.3348 |
| DIN 8555 | : W/MSG 4-GZ-60-S |
| EN 14700 | : S Z Fe4 |
| AWS A5.13 | : R Fe 5-A |

Wire with properties of high-speed steel

Application field

UTP A 696 is used for the production and repair of tools made of Mo alloyed high-speed steel, such as tools and planing tools, formcutters, broaching tools, reamers, twist drills etc. **UTP A 696** is suitable for the following base materials:

| | |
|--------------|-----------|
| Material-No. | DIN 17007 |
| I.3316 | S 9-1-2 |
| I.3333 | S 3-3-2 |
| I.3344 | S 6-5-3 |
| I.3346 | S 2-9-1 |

A further application field is the production of wear protection coating on non-alloyed or low-alloyed base material.

Special properties of the weld deposit

The weld deposit of **UTP A 696** is equivalent to a high-speed steel with high cutting performance. After cooling the weld deposit is only machinable by grinding. Machining with tungstene carbide tools is only possible after soft-annealing.

Hardness of the pure weld deposit

| | | |
|---|---|----------------|
| untreated | : | 60 - 64 HRC |
| soft annealed 800° C | : | approx. 250 HB |
| hardened 1230° C / oil + tempered 540° C 2 x | : | 62 - 66 HRC |

Weld metal analysis in %

| C | Si | Mn | Cr | Mo | V | W | Fe |
|-----|-----|-----|-----|-----|-----|-----|---------|
| 1,0 | 0,2 | 0,2 | 4,0 | 8,5 | 2,0 | 1,8 | balance |

Welding instruction

Preheating to 350 - 650° C, depending on the dimension of the workpiece. This temperature should be maintained during the whole welding process. This stick electrode is weldable with very low amperage settings and subsequent slow cooling to 100° C in an oven or under asbestos.

Heat treatment

| | | |
|---------------|---|--|
| hardened | : | 1190 - 1240° C, quenchant: oil, warm bath : 450 - 500° C |
| tempered | : | 450 - 500° C, 2 x 1 h, cooling in still air |
| soft annealed | : | 800 - 850° C, 2 - 4 h |

Welding procedure and availability

| Ø (mm) | Current type | Shielding gas EN ISO 14175 | | | | | Availability | |
|-----------|-----------------|-------------------------------|------|------|------|-----|----------------------|--------------------|
| | | I 1 | M 12 | M 13 | M 21 | C 1 | Spools EN ISO 544 | Rods EN ISO 544 |
| 1,2 * | DC (+) | | x | x | x | x | x | |
| 1,6 | DC (-) | x | | | | | | x |

* available on request