

TH-900 ESR =1.2900 ESR

Special grade(NADCA Grade E)

Hot wear resistance



Heat toughness



TH-900 ESR is a Cr-Mo-V alloyed hot-work steel that differs from other hot-work steels due to its very good mechanical and thermo-physical properties, such as optimal

hot strength and high toughness, and is therefore suitable for applications involving large tools and the highest levels of stress. This material is manufactured exclusively using the ESR process and thus achieves the highest levels of steel purity, homogeneity and, thanks to a special heat treatment, the excellent properties required to meet the requirements of the DGM guidelines and NADCA.

Chemical composition

(Directional analysis in %)

C	Si	Mn	Cr	Mo	V
0,36	0,25	0,35	5,15	1,90	0,55

Characteristics

- high toughness in longitudinal and transverse directions
- very good resistance to thermal shock
- special hardening properties
- excellent degree of purity
- highest homogeneity
- extra fine structure (EFS)
- lowest proportion of trace elements
- very good polishability

Application

- die casting tools
- extrusion tools
- hot forming

Delivery condition

- soft annealed max. 235 HB
- hardening possible on request

Heat treatment

	Temperature	Cooling down	Hardness
Soft annealing	800 – 850 °C	Slow oven cooling	max. 235 HB
Stress-relief annealing	600 – 650 °C	Slow oven cooling	
Hardening	1000 – 1030 °C	Oil, polymer, vacuum with gas quenching	see tempering diagram

Tempering diagram:

Austenitising temperature: 1010 °C

Cooling medium: oil

