Datasheet Ergste® 1.4845ZA
Precision Strip

Zapp is certified to ISO 9001

Grade Ergste® 1.4845ZA
Heat resisting – austenitic – steel

Typical Applications
- thermal power plant

Standard description
DIN EN 10095: X12CrNi25-21

Chemical description

Typical analysis *

C	Si	Mn	P	S	Cr	Ni	N	Others
max 0.10	max 1.50	max. 2.00	max 0.045	max 0.015	24-26	19-22	max. 0.11	-

* Average value in weight-%

Mechanical properties

Typical mechanical values at room temperature, solution annealed:

	Short symbol	Value at room temperature	Unit
Tensile strength	Rm	500 - 700	MPa
Rp $_{0,2}$–Yield strength	Rp $_{0,2}$	200-330	MPa
Elongation	A80	> 30	%

Physical properties

	Short symbol	Value at room temperature	Unit
Density	ρ	7.9	$\frac{kg}{dm^3}$
Modulus of elasticity	E	200	GPa
Max. application temperature	Ta	max. 1050	°C

Creep properties

Estimated average values of the strength for 1 % elongation at elevated temperatures (values in parentheses involve time and/or stress extrapolation / condition solution annealed)

1 % Elongation for 1,000 h/ Values given in MPa

500 °C	600 °C	700 °C	800 °C	900 °C	1000 °C
-	100	45	18	10	-

1 % Elongation for 10,000 h/ Values given in MPa

500 °C	600 °C	700 °C	800 °C	900 °C	1000 °C
-	90	30	10	4	-

Creep properties

Estimated average values of the strength for rupture at elevated temperature (values in parentheses involve time and/or stress extrapolation/ condition solution annealed)

1 % Rupture for 1,000 h/ Values given in MPa

500 °C	600 °C	700 °C	800 °C	900 °C	1000 °C
-	170	80	35	15	-

1 % Rupture for 10,000 h/ Values given in MPa

500 °C	600 °C	700 °C	800 °C	900 °C	1000 °C
-	130	40	18	8,5	-

1 % Rupture for 100,000 h/ Values given in MPa

500 °C	600 °C	700 °C	800 °C	900 °C	1000 °C
-	80	18	7	3	-

Physical properties

Density	Coefficient of linear thermal expansion 10^{-6} K^{-1}				
g/cm³	200 °C	400 °C	600 °C	800 °C	1000 °C
7.9	15.5	17.0	17.5	18.5	19.0

Thermal conductivity W/(m*K)		Specific heat capacity kJ/(kg*K)	Electrical resistivity Ωmm²/m	Magnetizability
at 20 °C	at 500 °C	at 20 °C	at 20 °C	-
15	19	0.5	0.85	yes, after cold work

Zapp Precision Metals GmbH
PRECISION STRIP
Hochstraße 32
59425 Unna
P.O. Box 21 29
59411 Unna
Phone +49 2304 79-508
Fax +49 2304 79-7979
precisionstrip@zapp.com
www.zapp.com

Further information regarding our products and locations are available in our image brochure and under www.zapp.com

Last revision: December 2019