

TWS-420-S

/TF-81

Characteristics and Applications:

TWS-420-S is a submerged arc flux-cored wire that matches with TF-81 neutral flux to produce the weld metal of AISI 420 martensitic stainless steel. It offers excellent resistance to fire cracking, corrosion and unlimited deposition thickness.

It is used for workpieces such as continuous casting rolls and steel mill rolls for high temperature service.

Notes on usage:

1. When the carbon content of the carbon steel workpiece is over 0.8 wt% or that of low alloy steel workpiece is over 0.35 wt%, a buffer layer using mild steel filler metal (root-pass welding by TWH-31-S or TWH-34-O with around 300~400°C pre-heat treatment) is helpful for further hardfacing.
2. To prevent weld crack, the pre-heat and inter-pass temperatures should be between 200-420°C for massive workpieces, heavy cylinders and highly stressed workpieces.

Typical chemical composition (wt%):

C	Mn	Si	Cr
0.21	1.3	0.6	13.7

Typical hardness of weld metal (on mild steel):

Hardness (HRC)	46-52
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Suggested welding parameter (DC<+>):

Parameters	Diameter (mm)	3.2
Voltage (Volt)		25-32
Current (Amp)		300-450
Stick out (mm)		30-40

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