

# **S-401HF**

SUBMERGED ARC WELDING FLUX  
FOR WELDING OF STAINLESS 400 SERIES HARDFACING WIRE

2023.05



## ❖ Specification

Flux	JIS Z3352	EN ISO 14174	KS B ISO 14174
S-401HF	S A AB 2	S A AB 2	S A AB 2

## ❖ Applications

Multi layer cladding fluxes for Submerged type stainless 400 series Hardfacing products

## ❖ Characteristics on Usage

The usability with stainless 400 series hardfacing wire is good. It provides smooth bead appearance and excellent slag removal. Neutral flux that will not produce any significant changes in the all-weld metal composition as a result of a large change in the arc voltage.

## ❖ Note on Usage

1. Dry the flux at 300~350°C (572~662°F) for 60 minutes before use.
2. When the flux height is excessive, poor bead appearance may occur.
3. Add new flux periodically to prevent the weld defects and bad bead appearance which occurs when continuously reusing the flux.



## Welding Consumables for Test

### ❖ Flux

Product Name	Chemical Composition, wt%			
	SiO <sub>2</sub> +TiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub> +MnO	MgO+CaO	CaF <sub>2</sub>
S-401HF	10	30	35	15

Product Name	Particle Size (Mesh)	Type of Flux	B.I	H <sub>2</sub> O <sub>1000°C</sub> / CO <sub>2</sub> (wt%)
S-401HF	10 × 48	Agglomerated	2.5	0.05/0.180

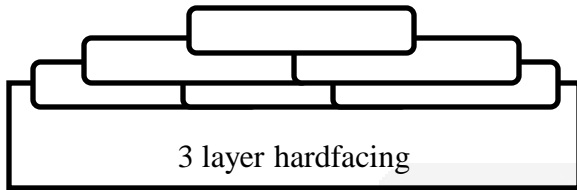
### ❖ Wire

Wire	Dia. (mm)	Hardness (HRc)	Use
SC-414S	2.4/3.2	43 – 47	Hardfacing layers for the rolls of Iron making equipments
SC-423S	3.2	-	
SC-420S	3.2	52 – 56	
SC-420SG	3.2	52 – 56	
SC-430	2.4/3.2	-	



## Mechanical Properties & Chemical Composition of All Weld Metal

### ❖ Welding conditions



<b>Particle size</b>	: 10 X 48
<b>Flux type</b>	: Agglomerated
<b>Amp./ Volt./cpm</b>	: 380 / 30 / 35
<b>Stick-Out(mm)</b>	: 30
<b>Pre-Heat(°C)</b>	: R.T .
<b>Interpass Temp.(°C)</b>	: < 150
<b>Polarity</b>	: DC+

### ❖ Chemical composition (wt.%) of weld metal

Wire	Chemical Composition(wt.%)								
	C	Si	Mn	Ni	Cr	Mo	Nb	W	V
SC-414S	0.10	0.6	1.2	2.6	14.8	1.0	0.20	-	0.4
SC-423S	0.05	0.4	1.0	2.5	16.7	1.2	0.20	-	0.4
SC-420S	0.33	0.8	1.8	0.5	12.6	1.9	0.18	1.4	0.4
SC-420SG	0.29	0.6	1.5	0.2	13.9	-	0.17	-	-
SC-430S	0.06	0.7	1.1	-	17.4	-	-	-	-

### ❖ Hardness test of weld metal (HRc)

Wire	Hardness (HRc)					Avg.
SC-414S	43	46	46	43	45	45
SC-420S	54	51	50	56	55	53
SC-420SG	52	54	55	52	52	53