

**Pantafix®****CLASSIFICATION**

AWS A5.1 : E6013  
 ISO 2560-A : E 38 0 RC 11

**GENERAL DESCRIPTION**

**Rutile general purpose, all position electrode, including vertical down**  
**Soft arc therefore suitable for relative thin plates and bridging wide gaps**  
**Excellent in pipe welding and construction**  
**Good start and restart behaviour**  
**Also weldable with low Open Circuit Voltage transformers (min. OCV 42V)**  
**Good X-ray soundness**

**WELDING POSITIONS****CURRENT TYPE**

AC / DC -

**APPROVALS**

TÜV

+

**CHEMICAL COMPOSITION (W%), TYPICAL, ALL WELD METAL**

C	Mn	Si
0.09	0.5	0.4

**MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL**

Condition	Yield strength (N/mm <sup>2</sup> )	Tensile strength (N/mm <sup>2</sup> )	Elongation (%)	Impact ISO-V(J) 0°C
Required: AWS A5.1 ISO 2560-A	min. 331 min. 380	min. 414 470-600	min. 17 min. 20	not required min. 47
Typical values AW	500	540	24	60

**PACKAGING AND AVAILABLE SIZES**

	Diameter (mm)	2.0	2.5	3.2	4.0
	Length (mm)	300	350	350	350
Unit: carton box	Pieces / unit	235	145	155	120
	Net weight/unit (kg)	2.4	2.8	4.8	5.4

Identification Imprint: 6013 / PANTAFIX Tip Color: none

Pantafix®: rev. EN 23

# Pantafix®

## MATERIALS TO BE WELDED

Steel grades/Code	Type
<b>General structural steels</b>	
EN 10025	S185, S235, S275
<b>Ship plates</b>	
ASTM A 131	Grade A, B, D
<b>Cast steels</b>	
EN 10213-2	G P 240R
<b>Pipe material</b>	
EN 10208-1	L210, L240, L290
EN 10208-2	L240, L290
API 5LX	X42, X46
EN 10216-1/EN10217-1	P235, P275
<b>Boiler &amp; pressure vessel steel</b>	
EN 10028-2	P235, P265, P295
<b>Fine grained steels</b>	
EN 10025 part 3	S275
EN 10025 part 4	S275

## CALCULATION DATA

Sizes		Current range (A)	Current type	Arc time	Energy	Dep. rate	Weight/ 1000 pcs (kg)	Electrodes/ kg weld-metal	kg electrodes/ kg weldmetal
Diam. x length (mm)	(S)*			E(kJ)	H(kg/h)	B		1/N	
2.0x300	40-75	AC	41	58	0.5	10.4	178	1.98	
2.5x350	50-90	AC	60	130	0.7	17.8	88	1.57	
3.2x350	70-130	AC	66	206	1.0	29.5	53	1.58	
4.0x350	130-175	AC	72	333	1.3	43.6	37	1.61	
4.0x450	130-175								
5.0x450	185-230								

\*Stub end 35mm

## WELDING PARAMETERS, OPTIMUM FILL PASSES

Diameter (mm)	Welding positions					
	PA/1G	PB/2F	PC/2G	PF/3G up	PG/3G down	PE/4G
2.5	80A	75A	75A	75A	75A	75A
3.2	120A	115A	125A	115A	125A	115A

## REMARKS / APPLICATION ADVICE

Vertical down only applicable for "clean" structural steel