

# Arosta® 307

EMR  
SAHARA®

SMAW

## CLASSIFICATION

<b>AWS A5.4</b>	E307-16*	<b>A-Nr</b>	8	<b>Mat-Nr</b>	1.4370
<b>ISO 3581-A</b>	E 18 8 Mn R 12	<b>F-Nr</b>	5		
*:Deviation,see remarks		<b>9606 FM</b>	5		

## TEMPERATURE RANGE

Pressurized parts :-60...+350°C  
Oxidation resistance : n.a

## GENERAL DESCRIPTION

A rutile- basic all position 5%Mn-alloyed stainless steel electrode  
Especially developed for steels difficult to weld, such as armour lates and austenitic high Mn-steels  
Often used as a buffer layer in hardfacing applications  
Weldable on AC and DC+ polarity

## WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PF/3Gu



PE/4G



PH/5Gu

## CURRENT TYPE

AC/DC +

## APPROVALS

<b>TÜV</b>	<b>DB</b>
+	+

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

C	Mn	Si	Cr	Ni	FN (acc.WRC 1992)
0.09	5.0	0.6	18.5	8.5	0

## MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

Condition	0.2% Proof strength [N/mm <sup>2</sup> ]	Tensile strength [N/mm <sup>2</sup> ]	Elongation [%]	Impact ISO-V[J]	
				+20°C	-60°C
Required: AWS A5.4 ISO 3581-A Typical values	not required min. 350 450	min. 590 min. 500 650	min. 30 min. 25 35	not required not required 110	- - 75

## PACKAGING AND AVAILABLE SIZES

Carton + PE foil	Diameter (mm)	2.5	3.2	4.0
	Length (mm)	350	350	350
Pieces / unit	Net weight/unit (kg)	125	135	85
		2.6	4.7	4.6

Identification Imprint: AROSTA 307

Tip Color: dark blue

Arosta®307: rev. C-EN23-01/02/16

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## EXAMPLES OF MATERIALS TO BE WELDED

Various steel grades, such as:

- Armour plate
- Hardenable steels including steels difficult to weld
- Non-magnetic austenitic steels
- Work hardening austenitic manganese steels
- Dissimilar joints
- Problem steels

## CALCULATION DATA

Sizes Diam. x length (mm)	Current range (A)	Current type	Arc time	Energy	Dep. rate	Weight/ 1000 pcs (kg)	Electrodes/ kg weldmetal B	kg electrodes/ kg weldmetal 1/N
			- per electrode at max. current - (S)*	E(kJ)	H(kg/h)			
2.5 x 350	70-80	DC+	52	108	0.74	20.4	94	1.92
3.2 x 350	90-120	DC+	56	148	1.2	34.7	54	1.87
4.0 x 350	110-140	DC+	84	251	1.3	53.6	33	1.77

\*Stub end 35mm

## WELDING PARAMETERS, OPTIMUM FILL PASSES

Diameter (mm)	Welding positions					
	PA/1G	PB/2F	PC/2G	PF/3Gup	PE/4G	PH/5Gup
2.5	80A	80A	80A	80A	80A	80A
3.2	100A	100A	100A	90A		
4.0	140A	115A	130A	110A		

## REMARKS / APPLICATION ADVICE

Deviations: chemical composition

Mn = 4.5 - 6.0%

AWS: Mn = 3.30 - 4.75%