

Classifications

EN ISO 14343-A	AWS A5.9 / SFA-5.9	EN ISO 14174
S 22 9 3 N L	ER2209	S A AF 2 DC

Characteristics and typical fields of application

Thermanit 22/09 - Marathon 805 is a wire flux combination for submerged arc welding of duplex stainless steels such as 1.4462 / UNS S32205, S31803. Solid wire of S 22 9 3 N L / ER2209 type primarily designed for welding 22Cr duplex grades used in offshore, shipyards, chemical tankers, chemical/petrochemical, pulp & paper, etc. Over-alloyed in nickel. The resulting microstructure is austenite with 45 – 55% ferrite. The weld metal has very good resistance to pitting and stress corrosion cracking in chloride containing environments. The former product name of the SAW wire was "Avesta 2205".

Marathon 805 is an agglomerated basic flux that ensures good welding properties with nice bead appearance and good slag detachability. The flux avoids excessive Cr-burn-out (Cr-support). For more information regarding this sub-arc welding flux, see the separate datasheet. The former product name of the SAW flux was "Avesta Flux 805".

Base materials

Similar duplex stainless steels, also combinations of duplex, ferritic and austenitic steels

1.4462 X2CrNiMoN22-5-3, 1.4362 X2CrNiN23-4, 1.4162 X2CrNiMoN21-5-1

UNS S32205, S31803, S32304, S32101

2205, 2304, LDX 2101®, SAF 2205, SAF 2304

Typical analysis

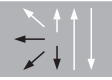
wt.-%	C	Si	Mn	Cr	Ni	Mo	N	PRE _N
wire	0.015	0.40	1.5	23.3	8.8	3.2	0.15	
all-weld metal	0.015	0.50	1.1	23.5	8.8	3.2	0.14	35

Mechanical properties of all-weld metal - typical values (min. values)

Condition	Yield strength R _{p0.2}	Tensile strength R _m	Elongation A (L ₀ =5d ₀)	Impact energy ISO-V KV J	
	MPa	MPa	%	20°C	-40°C
u	590 (≥ 450)	800 (≥ 690)	29 (≥ 20)	100 (≥ 80)	70 (≥ 40)

u untreated, as-welded

Operating data

	Dimension mm	Current A	Voltage V
	1.6	200 – 300	23 – 30
	2.4	300 – 500	28 – 33
	3.2	400 – 600	29 – 34
	4.0	425 – 575	30 – 34

No preheating.

Suggested heat input is max. 2.0 kJ/mm and interpass temperature max. 150°C.

Post-weld heat treatment generally not needed. In special cases, solution annealing can be performed at 1050°C followed by water quenching.

Polarity: DC+

Approvals

DNV GL, LR, TÜV (05546), CE