

+ Orange - 308L (AWS Spec. E 308L-16)

C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	Fe %	Y.S N./mm ²	UTS N./mm ²	Elongation % L = 4D	Impact / Joules at RT	Ferrite %
0.035	1.20	0.50	0.03	0.03	18.0	9.00	●	●	●	●	550-650	35-40	70-85	4-6%

Approved by:

Tata Projects

Application:

Ferrite steels of 13-17% Chromium, stainless steel of AISI 301, 302, 304 & 308 composition, Fabrication of equipments, used in food industry, Hospital apparatus, Pharmaceutical equipments etc.

+ Orange - 347L (AWS Spec. E 347-16)

C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	Fe %	Y.S N./mm ²	UTS N./mm ²	Elongation % L = 4D	Impact / Joules at RT	Ferrite %
0.035	1.00	0.45	0.03	0.03	18.0	9.00	●	●	Nb 0.55	●	570-640	3.30-40	60-90	4-8%

Application:

Recommended for welding stabilized & unstabilized steels to mild steels. It is recommended for welding stainless steel of AISI 304, 308, 321 & 347 compositions, also to be used where the material has to withstand high temperature.

+ Orange - 308H (AWS Spec. E 308H-16)

C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	Fe %	Y.S N./mm ²	UTS N./mm ²	Elongation % L = 4D	Impact / Joules at RT	Ferrite %
0.035	1.20	0.75	0.03	0.03	18.0	9.00	0.5	●	●	●	550-650	35-40	70-85	3-6%

Application:

Suitable for Welding AISI 308H & 304H type of stainless steel. It finds application in Paper, Paint, Petrochemicals & Nuclear Industries.

+ Orange - 316L (AWS Spec. E 316L-16)

C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	Fe %	Y.S N./ mm ²	UTS N./mm ²	Elongation % L = 4D	Impact / Joules at RT	Ferrite %
0.035	1.20	0.70	0.03	0.03	18.0	12.0	2.40	●	●	●	530-650	30-40	70-90	4-8%

Application:

Suitable for Welding AISI 316L & 317L type of stainless steels, also finds application in chemical plants, Tank manufacturing, Chemical Mixtures, Paints & dye industries, Paper & textile industries

+ Orange - 318L (AWS Spec. E 318L-16)

C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	Fe %	Y.S N./ mm ²	UTS N./mm ²	Elongation % L = 4D	Impact / Joules at RT	Ferrite %
0.035	1.20	0.70	0.03	0.03	18.0	12.0	2.40	●	Cb% 0.3-0.08	●	550-670	25-35	50-70	4-8%

Application:

Ideally suitable for welding stainless steel of AISI 318 & also non-stabilized steels of AISI 316 & 317. It finds application in paper mill equipment, Bleaching equipment, Chemical plants, Dying equipments and Pickling equipments.

+ Orange - 309L (AWS Spec. E 309L-16)

C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	Fe %	Y.S N./ mm ²	UTS N./mm ²	Elongation % L = 4D	Impact / Joules at RT	Ferrite %
0.035	1.75	0.70	0.035	0.035	23.5	12.0	●	●	●	●	560-660	30-40	55-75	1-4%

Application:

Recommended for welding AISI 309 type straight chrome steel & stainless steel. It is also used for joining stainless steel to low alloy & carbons steel.

+ Orange - 309L - MoL (AWS Spec. E 309 MoL-16)

C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	Fe %	Y.S N./mm ²	UTS N./mm ²	Elongation % L = 4D	Impact / Joules at RT	Ferrite %
0.04	1.50	0.70	0.03	0.03	23.0	12.0	2.50	●	●	●	550-650	30-40	55-70	2-4%

Application:

For Joining stainless steel to carbon steel and low alloy steel, used as a buffer layer for welding dissimilar steels.

+ Orange - 309 Cb (AWS Spec. E 309 Cb-16)

C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	Fe %	Y.S N./mm ²	UTS N./mm ²	Elongation % L = 4D	Impact / Joules at RT	Ferrite %
0.10	1.20	0.50	0.03	0.03	23.0	12.0	●	●	Cb 0.7%	●	550-650	30-40	●	●

Application:

For depositing 25/12 Columbium stabilised deposit, recommended for welding 309Cb steels and straight chrome steels

+ Orange - 317 L-16 (AWS Spec. E 317L-16)

C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	Fe %	Y.S N./mm ²	UTS N./mm ²	Elongation % L = 4D	Impact / Joules at RT	Ferrite %
0.04	1.00	0.30	0.035	0.035	18.0	12.0	3.0	●	●	●	550-650	30-40	●	4-9%

Application:

For welding of AISI 317 type stainless steel.

+ Orange - 310 L (AWS Spec. E 310-16)

C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	Fe %	Y.S N./mm ²	UTS N./mm ²	Elongation % L = 4D	Impact / Joules at RT	Ferrite %
0.10	1.80	0.50	0.03	0.03	26.0	21.0	●	●	●	●	600-670	30-40	50-80	●

+ Orange Chrome - 9 (AWS Spec. E 8018 B8)

C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	Fe %	Y.S N./ mm ²	UTS N./mm ²	Elongation % L = 4D	Impact / Joules at RT	Ferrite %
0.10	1.00	0.60	0.03	0.03	9.00	0.50	●	●	●	●	500-600	22-30	●	●

Application:

Ideally suited for turbine blades, valve sheets, low alloy steels, pump parts that are subjected to wear. Also suited for surfacing and overlaying application on alloyed and steel to resist corrosion

+ Orange Chrome - 13 (AWS Spec. E 410-15)

C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	Fe %	Y.S N./ mm ²	UTS N./mm ²	Elongation % L = 4D	Impact / Joules at RT	Ferrite %
0.10	1.00	0.60	0.03	0.03	13.0	0.50	●	●	●	●	450-550	20-40	●	●

Application:

Used for turbine blades, valve sheets, low alloy steels, pump parts subjected to wear, also suit for surfacing and overlaying application on alloyed steels to resist corrosion

+ Orange Chrome - 17 (AWS Spec. E 430-15)

C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	Fe %	Y.S N./ mm ²	UTS N./mm ²	Elongation % L = 4D	Impact / Joules at RT	Ferrite %
0.10	1.00	0.60	0.03	0.03	1.70	0.50	●	●	●	●	450-550	20-40	●	●

Application:

Ideally for tough wear resistant hard facing like on rail curves or parts of hydraulic engines subjected to cavitations and erosion. For applying buffer layers on difficult steels before hard facing etc.

+ Orange Chrome - N (AWS Spec. IS E-18.8)

C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	Fe %	Y.S N./ mm ²	UTS N./mm ²	Elongation % L = 4D	Impact / Joules at RT	Ferrite %
0.10	5.00	0.50	0.03	0.03	18.0	8.0	●	●	●	●	550-650	30-40	60-90	●

Application:

Recommended for welding austenitic manganese steel to mild steels & stainless steel, Ideally suited for tough wear resistant hard facing like on rail curves or parts of hydraulic engines subjected to cavitations & erosions