## AL-6XN® Alloy Advantages

- The 6% moly alloys are utilized for their greatly improved pitting and crevice resistance in chlorides compared to 316/316L and 904L stainless steels.

- Increased levels of chromium, molybdenum, and the addition of nitrogen are responsible for improving the resistance of stainless steels and nickel alloys to pitting.

- AL-6XN has a lower copper content. Through field testing, copper is believed to be detrimental and decrease an alloy's resistance to chlorides.

- AL-6XN possesses approximately 5-10% greater strength than 254 SMO and is also ASME approved up to 800°F, whereas 254 SMO is approved up to 700°F.

- AL-6XN has been assigned to P Number 45 in Section IX of the ASME Boiler & Pressure Vessel code, Group 4 and uses 625 weld filler as well.

Chemical Composition, %

	Cr	Ni	Mo	Si	Mn	N	C	Cu	Fe
AL-6XN® UNS N08367	20.5	24	6.3	0.4	0.3	0.22	0.02	0.1	48
254 SMO® UNS S31254	20	18	6.1	0.4	0.7	0.2	0.015	0.7	54

PRE$_N$ Table
PRE$_N$ = Cr + 3.3Mo + 16N

PRE$_N$ Number
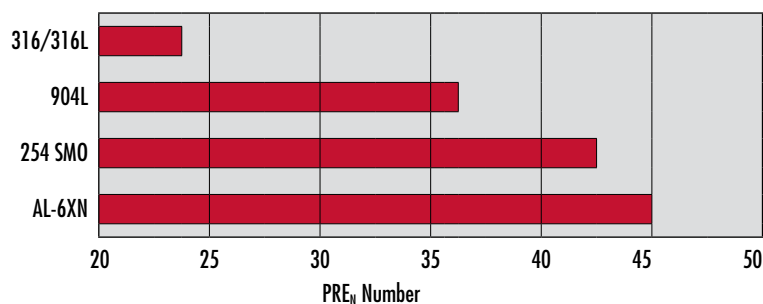
Critical Crevice Corrosion Temperature (CCCT) in NaCl
Source: SINTEF Norway

Temperature, °F
W = Welded Sample • A = Average for Base Metal
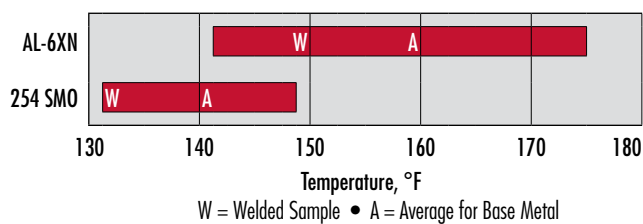
Effects of Copper Content on Crevice Corrosion Resistance in Seawater
Source: LaQue Center for Corrosion Technologies
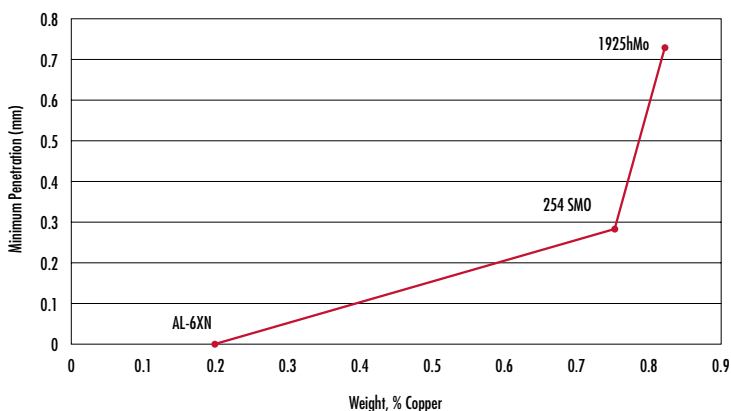
Crevice Corrosion in Seawater
Source: LaQue Center for Corrosion Studies

Crevice Corrosion Tests in Seawater - Percentage of Sites Attacked

	UNS	% Sites Attacked
AL-6XN	N08367	0
C-276	N10276	0
254 SMO	S31254	6
1925hMo	N08926	6
316/316L	S31603	75

ASME Design Stresses

Temperature	°F	100	200	300	400	500	600	700	800
AL-6XN	ksi	27.1	26.2	23.8	21.9	20.5	19.4	18.6	18.0
254 SMO	ksi	26.9	23.9	21.4	19.8	18.6	17.9	17.4	–

AL-6XN Inventory Range

Form	Size Range	Types
Sheet	10, 11, 12, 14, 16, 18, 22, 24 (gauge)	–
Plate	3/16" - 4"	–
Round Bar	3/8" - 4"	–
Conc Reducers	1 1/2" x 1" - 6" x 4"	Schedule 10, Schedule 40
Elbows (45°/90°)	1/2" - 8"	Schedule 10, Schedule 40
Tees	3/8" - 8"	Schedule 10, Schedule 40
Couplings (3000#)	1/4" - 2"	Schedule 10, Schedule 40
Flanges (150#)	3/4" - 8"	RF, RFWN, RFSO, Blind, Schedule 40

ROLLED ALLOYS
The Global Leader in Specialty Metals