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PRODUCT DATA SHEET

18% Chromium Ferritic Steels for Water Heaters

	JIS G4305 SUS 444	Nisshin 444N	Nisshin 445M2 Spec	Nisshin 445M2 Typical	EN10088 1.4521 X2CrMoTi18-2	JIS G4305 SUS 316L
Carbon, % x	0.025	0.020	0.03	0.01	0.025	0.030
Silicon, % x	1.00			0.18	1.00	1.00
Manganese, % x	1.00			0.20	1.00	2.00
Phosphorus, % x	0.040				0.040	0.045
Sulphur, % x	0.030				0.015	0.030
Chromium, %	17.00 - 20.00	17.50 - 20.0	21.0 - 23.0	22.1	17.00 - 20.00	16.00 - 18.00
Nickel, % x						12.00 - 15.00
Molybdenum, %	1.75 - 2.50	1.75 - 2.50	0.50 - 1.50	1.20	1.80 - 2.50	2.00 - 3.00
Nitrogen, % x	0.025	0.02	0.03		0.030	
Titanium + Niobium, %	8x(C+N) - 0.08			Aluminium 0.09	4 x (C+N) - 0.08	
Niobium, %		10x(C%+N) - 0.08	0.30 - 0.80	0.23		
Pitting Resistance Equivalent (PRE) (Cr+3.3Mo+18N)	24	24	24	26	24	24
0.2% Proof Stress, MPa, minimum	245	245	205	350	300 (L) 320 (T)	175
Tensile Strength, MPa, minimum	410	410	450	520	420 – 640	480
Elongation, % min	20	22	22	30	20	40
Hardness HV maximum	230	200	200	170	-	200

x = maximum

Notes:

1. SUS 444 has equivalent corrosion resistance to 316L in hot water systems, without being subject to stress corrosion cracking, sensitisation or inter granular corrosion.
2. European grade X2CrMoTi18-2, 1.4521, is substantially identical to 444.
3. Nisshin 445M2 uses more chromium, less molybdenum, and contains copper. It has superior corrosion resistance to 444.