Steel Grade	Mass fraction, % based on heat and product analyses									Carbon Equiv a	
	C	Si	Mn	P	S	V	Nb	Ti	Other	CE IIW	CE PCM
	max b	max	max b	max	max	max	max	max		max	max
	Seamless and Welded Pipe										
X42R	0.24	0.4	1.2	0.025	0.015	0.06	0.05	0.04	e,l	0.043	0.25
X42N	0.24	0.4	1.2	0.025	0.015	0.06	0.05	0.04	e,l	0.043	0.25
X46N	0.24	0.4	1.4	0.025	0.015	0.07	0.05	0.04	d,e,l	0.043	0.25
X52N	0.24	0.45	1.4	0.025	0.015	0.1	0.05	0.04	d,e,l	0.043	0.25
X56N	0.24	0.45	1.4	0.025	0.015	0.10f	0.05	0.04	d,e,l	0.043	0.25
X60N	0.24f	0.45f	1.40f	0.025	0.015	0.10f	0.05f	0.04f	g,h,l	As agreed	
X42Q	0.18	0.45	1.4	0.025	0.015	0.05	0.05	0.04	e,l	0.043	0.25
X46Q	0.18	0.45	1.4	0.025	0.015	0.05	0.05	0.04	e,l	0.043	0.25
X52Q	0.18	0.45	1.5	0.025	0.015	0.05	0.05	0.04	e,l	0.043	0.25
X56Q	0.18	0.45f	1.5	0.025	0.015	0.07	0.05	0.04	e,l	0.043	0.25
X60Q	0.18f	0.45f	1.70f	0.025	0.015	g	g	g	h,l	0.043	0.25
X65Q	0.18f	0.45f	1.70f	0.025	0.015	g	g	g	h,l	0.043	0.25
X70Q	0.18f	0.45f	1.80f	0.025	0.015	g	g	g	h,l	0.043	0.25
X80Q	0.18f	0.45f	1.90f	0.025	0.015	g	g	g	i,j	As agreed	
X90Q	0.16f	0.45f	1.9	0.02	0.01	g	g	g	j,k	As agreed	
X100Q	0.16f	0.45f	1.9	0.02	0.01	g	g	g	j,k	As agreed	
	Welded Pipe										
X42M	0.22	0.45	1.3	0.025	0.015	0.05	0.05	0.04	e,l	0.043	0.25
X46M	0.22	0.45	1.3	0.025	0.015	0.05	0.05	0.04	e,l	0.043	0.25
X52M	0.22	0.45	1.4	0.025	0.015	d	d	d	e,l	0.043	0.25
X56M	0.22	0.45f	1.4	0.025	0.015	d	d	d	e,l	0.043	0.25
X60M	0.12f	0.45f	1.60f	0.025	0.015	g	g	g	h,l	0.043	0.25
X65M	0.12f	0.45f	1.60f	0.025	0.015	g	g	g	h,l	0.043	0.25
X70M	0.12f	0.45f	1.70f	0.025	0.015	g	g	g	h,l	0.043	0.25
X80M	0.12f	0.45f	1.85f	0.025	0.015	g	g	g	i,j	.043f	0.25
X90M	0.1	0.55f	2.10f	0.02	0.01	g	g	g	i,j	-	0.25
X100M	0.1	0.55f	2.10f	0.02	0.01	g	g	g	i,j	-	0.25

a. SMLS t>0.787", CE limits shall be as agreed. The CEIIW limits applied fi C > 0.12% and the CEPcm limits apply if C ≤ 0.12%

b. For each reduction of 0.01% below the specified max. concentration for carbon, and increase of 0.05% above the specified max. concentration for Mn is permissible, up to a max. of 1.65% for grades ≥ B, but ≤ = X52; up to a max. of 1.75% for grades > X52, but < X70; and up to a maximum of 2.00% for X70.

c. Unless otherwise agreed Nb = V ≤ 0.06%

d. Nb = V = Ti ≤ 0.15%

e. Unless otherwise agreed, Cu ≤ 0.50%; Ni ≤ 0.30% Cr ≤ 0.30% and Mo ≤ 0.15%

f. Unless otherwise agreed

g. Unless otherwise agreed, Nb + V + Ti ≤ 0.15%

h. Unless otherwise agreed, Cu ≤ 0.50% Ni ≤ 0.50% Cr ≤ 0.50% and MO ≤ 0.50%

i. Unless otherwise agreed, Cu ≤ 0.50% Ni ≤ 1.00% Cr ≤ 0.50% and MO ≤ 0.50%

j. B ≤ 0.004%

k. Unless otherwise agreed, Cu ≤ 0.50% Ni ≤ 1.00% Cr ≤ 0.55% and MO ≤ 0.80%

For all PSL 2 pipe grades except those grades with footnotes j noted, the following applies. Unless otherwise agreed no intentional addition of B is permitted and residual B ≤ 0.001% .