

BS 3604-78 STEEL PIPES AND TUBES FOR PRESSURE PURPOSES FERRITIC ALLOY STEEL WITH SPECIFIED ELEVATED TEMPERATURE PROPERTIES

PART 1

Specification for seamless and electric resistance welded tubes

Requirements for plain end tubes, room temperature properties and elevated temperature proof stress properties are specified.

PART 2

Specification for longitudinally arc welded tubes, includes specified room and elevated temperature properties

Grade	Mfg. Process	Chemical Composition (%)								
		C	Si	Mn	P	S	Ni	Cr	Mo	Others
JFS620-460	S	0.10-0.15	0.10-0.35	0.40-0.70	0.040Max	0.040Max	-	0.70-1.10	0.45-0.65	Al: 0.02Max
CFS620-460										
ERW620-460	E	0.10-0.15	0.10-0.35	0.40-0.70	0.040Max	0.040Max	-	0.70-1.10	0.45-0.65	Al: 0.02Max
CEW620-460										
HFS620-440	S	0.10-0.18	0.10-0.35	0.40-0.70	0.040Max	0.040Max	-	0.70-1.10	0.45-0.65	Al: 0.02Max
CFS620-440										
ERW620-440	E	0.10-0.18	0.10-0.35	0.40-0.70	0.040Max	0.040Max	-	0.70-1.10	0.45-0.65	Al: 0.02Max
CEW620-440										
HGS621	S	0.15Max	0.50-1.00	0.30-0.60	0.040Max	0.040Max	-	1.00-1.50	0.45-0.65	Al: 0.02Max
CFS621										
ERW621	E	0.15Max	0.50-1.00	0.30-0.60	0.040Max	0.040Max	-	1.00-1.50	0.45-0.65	Al: 0.02Max
CEW621										
HFS660	S	0.10-0.15	0.10-0.35	0.40-0.70	0.040Max	0.040Max	-	0.30-0.60	0.50-0.70	V: 0.22-0.28 Al: 0.02Max
CFS660										
HFS622	S	0.08-0.15	0.50Max	0.40-0.70	0.040Max	0.040Max	-	2.00-2.50	0.90-1.20	Al: 0.02Max
CFS622										
HFS625	S	0.15Max	0.50Max	0.30-0.60	0.030Max	0.030Max	-	4.00-6.00	0.45-0.65	Al: 0.02Max
CFS625										
HFS629-470	S	0.15Max	0.25-1.00	0.30-0.60	0.030Max	0.030Max	-	8.00-10.00	0.90-1.10	Al: 0.02Max
CFHS629-470										

HFS629-590	S	0.15Max	0.25~1.00	0.30~0.60	0.030Max	0.030Max	-	8.00~10.00	0.90~1.10	Al: 0.02Max
CFS629-590										
HFS752	S	0.17~0.23	0.50Max	1.00Max	0.030Max	0.030Max	-	10.00~12.50	0.90~1.10	V: 0.25~0.35
CFS762										W 0.70Max

Grade	Tensile Test MPa or N/mm ²		Remarks (Similar to JIS)
	Min Yield point	Tensile Strength	
JFS620-460	18 460~610 <N>		(STPA22) (STBA22)
CFS620-460			
ERW620-460			
CEW620-460			
HFS620-440	295 440~590 <N+T>		(STPA22) (STBA22)
CFS620-440			
ERW620-440			
CEW620-440			
HGS621	275 420~520 <N+T>		(STPA23) (STBA23)
CFS621			
ERW621			
CEW621			
HFS660	305 460~610 (N+T)		-
CFS660			
HFS622	275 490~640 (N+T)		(STPA24) (STBA24)
CFS622			
HFS625	170 450~600 (A)		(STPA25) (STBA25)
CFS625			
HFS629-470	190 470~620 (A)		(STPA26) (STBA26)
CFHS629-470			
HFS629-590	410 590~740		-

Service																		
P1	K11522	SPA 12 / STPA 12	D 3573 / G 3458	(16)	16 Mo 5		1.5423	(3a)			(3)	TU 15 D 3	A49-213		16Mo 5	5462		
P5	K41545	SPA 25 / STPA 25	D 3573 / G 3458	(16)	12CrMo 19 5		1.7362	WBL-590(3b)	3604	FHS 625	CAT.2	TU Z12 CD 5-05	A49-213					Dalmine234(3b)
P9	S50400	SPA 26 / STPA 26	D 3573 / G 3458	(16)				(3)		FHS 629-470	CAT.2	TU Z 10 CD 9	A49-213					
P11	K11597	SPA 23 / STPA 23	D 3573 / G 3458	(16)	13CrMo 44	17175	1.7335	(8)	3604	HFS 621	CAT.2	TU 10 CD 5.05	A49-213					Dalmine227(3b)
P12	K44562	SPA 22 / STPA 22	D 3573 / G 3458	(16)	13CrMo 44	17175	1.7335		3604	HFS 620-440	CAT.2			(3)	14CrMo 3	5462		(3b)
P22	K21590	SPA 24 / STPA 24	D 3573 / G 3458	(16)	10CrMo 9 10	17175	1.7380		3604	HFS 622	CAT.2	TTU 10 CD 9.10	A49-213		12CrMo 9 10	5462		(3b)

JIS Number and Corresponding Foreign Standards

JIS			ASTM			BS			DIN			NF			ISO			Index Number
Standard Number	Grade	Type	Standard Number	Grade	Type	Standard Number	Grade	Type	Standard Number	Grade	Type	Standard Number	Grade	Type	Standard Number	Grade	Type	
G3458	STPA12	Mo	A335	P1	Mo													C006
	STPA20	CrMo	A335	P2	CrMo							A49-213	TU15CD205	CrMo				
	STPA22	CrMo	A355	P12	CrMo	3604	HFS620-460	CrMo	17175	13CrMo44	CrMo							
						"	CFS620-460	CrMo										
						"	ERW620-460	CrMo										
						"	CEW620-460	CrMo										
						"	HFS620-440	CrMo										
						"	CFS620-440	CrMo										
						"	ERW620-440	CrMo										
					"	CEW620-440	CrMo											
	STPA23	CrMo	A355	P11	CrMo	3604	HFS621	CrMo				A49-213	TU10CD5.05	CrMo				

