

**BS 3602-1 STEEL PIPES AND TUBES FOR PRESSURE PURPOSES: CARBON AND CARBON MANGANESE STEEL WITH SPEIFIED
ELEVATED TEMPERATURE PROPERTIES
PART1-78 SEAMLESS AND ELECTRIC RESISTANCE WELDED AND INDUCTION WELDED TUBES**

1. SCOPE

Specification for seamless and electric resistance welded including induction welded tubes, includes room temperature and elevated temperature proof stress properties.

Grade	Mfg. Process	Chemical Composition (%)								
		C	Si	Mn	P	S	Ni	Cr	Mo	Others
HGS360	S	0.17Max	0.35Max	0.40~0.80	0.045Max	0.045Max	-	-	-	-
CFS360										
CEW360										
HFS430	S	0.21Max	0.35Max	0.40~1.20	0.045Max	0.045Max	-	-	-	-
CFS430										
ERW430										
HGS460										
CFS460	S	0.22Max	0.35Max	0.80~1.40	0.045Max	0.045Max	-	-	-	-
ERW460										
CEW460										
500Nb	S	0.23Max	0.35Max	0.80~1.50	0.045Max	0.045Max	-	-	-	Nb 0.015~0.10

Grade	Tensile Test MPa or N/mm ²		Remarks (Similar to JIS)
	Min Yield point	Tensile Strength	
HGS360	215	360~500	(STPT370)
CFS360			
CEW360			
HFS430	215	410~550	(STPT410) (STB4100) (STB(410))
CFS430			
ERW430			
HGS460			

CFS460	280	460~600	(STPT480)
ERW460			
CEW460			
500Nb	340	490~630	-

Material Comparison Tables (ASTM, KS, JIS, DIN, BS, NF, UNI)

ASTM Standard	UNS NO.	KOREA/JAPANES			GERMAN				BRITISH			FRENCH			ITALIAN		
		KS/JIS Symbol	KS/JIS Number	Remarks	DIN Type	DIN Number	Material Number	Remarks	B.S Number	B.S Grade	Remarks	AFNOR Type	NF Number	Remarks	UNI Type	UNI Number	Remarks
A 106 Seamless C-Steel Pipe for High Temperature Service																	
Grade A	K02501	SPHT 38 / STPT 370	D3570 / G3456	(16)(30)	St 35.8	17175	1.0305		3602	HFS 360		TU 37C	A49-213		C 14	5462	
Grade B	K03006	SPHT 42 / STPT 410	D3570 / G3456	(16)(30)	St 45.8	17175	1.0405		3602	HFS 410		TU 42C	A49-213		C 18	5462	

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	
G3456	STPT370 (STPT38)	C	A106	Gr A	C	3602	HFS360	C	17175	St35.8	C	A49-211	TU37b	C	2604/2	TS5	C	C004
						"	CFS360	C	17177	St37.8	C	A49-213	TU37c	C	2604/3	TW9H	C	
						"	ERW360	C				A49-243	TU37c	C				
						"	CEW360	C										
	STPT410 (STPT42)	C	A106	Gr B	C	3602	HFS410	C	17175	St45.8	C	A49-211	TU42b	C	2604/2	TS9H	C	
						"	CFS410	C	17177	St42.8	C	A49-213	TU42c	C				
						"	ERW410	C				A49-243	TU42c	C				
						"	CEEW410	C										
		C	A106	Gr C	C	3602	HFS460	C				A49-211	TU48b	C	2604/2	TS14	C	

					"	CEW 440	C										
					"	CFS 440	C										
STB510	C						C	17175	19Mn5	C	A49-213	TU52C	C	2604/2	TS18	C	
(STB52)							C				A49-248	TU52C	C				