

ISO 559-77 WELDED OR SEAMLESS STEEL TUBES FOR WATER SEWAGE AND GAS

1. Chemical Composition

Grade	Mfg. Process	Chemical Composition (%)								
		C	Si	Mn	P	S	Ni	Cr	Mo	Others
TSO	S	-	-	-	0.060Max	0.060Max	-	-	-	-
TWO	W	-	-	-	0.060Max	0.060Max	-	-	-	-
TS1	S	0.16Max	-	0.30-0.70	0.050Max	0.050Max	-	-	-	-
TW1	W	0.16Max	-	0.30-0.70	0.050Max	0.050Max	-	-	-	-
TS4	S	0.17Max	0.35Max	0.40-0.80	0.045Max	0.045Max	-	-	-	-
TW4	W	0.17Max	0.35Max	0.40-0.80	0.045Max	0.045Max	-	-	-	-
TS9	S	0.21Max	0.35Max	0.40-1.20	0.045Max	0.045Max	-	-	-	-
TW9	W	0.21Max	0.35Max	0.40-1.20	0.045Max	0.045Max	-	-	-	-

2. Mechanical Properties

Grade	Tensile Test MPa or N/mm ²		Remarks (Similar to JIS)
	Min Yield point	Tensile Strength	
TSO	-	320-520	-
TWO	-	320-520	(SGP)
TS1	195	320-440	-
TW1	195	320-440	-
TS4	215	360-480	(STPG370)
TW4	215	360-480	(STPG370)
TS9	235	410-530	(STPG410)
TW9	235	410-530	(STPG410)

JIS Number and Corresponding Foreign Standards

JIS			ASTM			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	

G3452	SGP	C	A53	Type F	C	1615	St 33-2	C	A49-145	TS34-1	C	65	TW	C	C001
						2441	St33-2	C	A49-146	TS334-a	C	559	TWO	C	

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		
G3454	STPG370 (STPG38)	C	A135	Gr A	C	3601	ERW360	C	1626	St37.0	C	A49-112	TS27b	C	559	TS4	C	C002	
			A587	-	C	"	S360	C	1629	St37.0	C	A49-141	TS37a	C	2604/2	TS4	C		
										17172	StE210.7	C	A49-142	TS37a	C	2604/3	TW4		C
													"	TS37b	C				
													A49-150	TSE235	C				
													A49-212	TS37c	C				
													A49-242	TS37c	C				
													A49-250	TAE24a	C				
												A49-400	TSE220	C					
		STPG410 (STPG42)	C	A135	Gr B	C	3601	ERW410	C	1626	St44.0	C	A49-112	TS42b	C	559	TS9	C	
			A524	-	C	"	S410	C				A49-141	TS42b	C	2604/2	TW9	C		
													A49-212	TS42c	C	2604/3	TW9	C	
													A49-242	TS42c	C	3183	E24-1	C	
													A49-250	TSE26b	C	"	E24-2		
												A49-400	TSE250	C					