

ISO 3304-85 PLAIN END SEAMLESS PRECISION STEEL TUBES

1. Chemical Composition

Grade	Mfg. Process	Chemical Composition (%)								
		C	Si	Mn	P	S	Ni	Cr	Mo	Others
R28	S	0.13Max	-	0.060Max	0.050Max	0.050Max	-	-	-	-
R33	S	0.16Max	-	0.070Max	0.050Max	0.050Max	-	-	-	-
R37	S	0.17Max	0.35Max	0.8Max	0.050Max	0.050Max	-	-	-	-
R42	S	0.21Max	0.35Max	1.2Max	0.050Max	0.050Max	-	-	-	-
R50	S	0.23Max	0.35Max	1.5Max	0.050Max	0.050Max	-	-	-	-

①Cold- finished ②Lightly Cold-Worked ③Annealed ④Normalized

2. Mechanical Properties

Grade	Tensile Test MPa or N/mm <sup>2</sup>		Remarks (Similar to JIS)
	Min Yield point	Tensile Strength	
R28	① -	400Min	(STKM11)
	② -	350Min	
	③ -	275Min	
	④155	285Min	
R33	① -	420Min	(STKM12)
	② -	370Min	
	③ -	325Min	
	④199	325Min	
R37	① -	450Min	(STKM12)
	② -	400Min	
	③ -	340Min	(STC38)
	④215	360Min	
R42	① -	520Min	(STKM14)

	② - ③ - ④235	450Min 400Min 410Min	
R50	① - ② - ③ - ④285	600Min 550Min 480Min 490Min	(STKM19)

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	
G3445	STKM11A	C	A512	MT1010	C	1717	ERWC1	C	2391	St30Si	C				3304	R28	C	C017
			A513	MT1010	C					St30A1	C				3305	"	C	
									2393	St28	C				3306	"	C	
										RSt28	C							
									2394	St28	C							
										USt28	C							
										RSt28	C							
	STKM12A	C	A512	MT1015	C	1717	ERWC2	C	2391	St37-2					3304	R33	C	
			A513	MT1015	C	6323	HFS3	C		RSt37-2					3305	"	"	
	STKM12B	C	A512	MT1015	C				2394	St37-2					3306	"	"	
			A513	MT1015	C					Ust38-2								
			A519	MT1015	C					RSt-2								
	STKM12C	C				1717	CEWC2	C				A49-322	TU37b	C				
						"	CFSC3	C				A49-327	TU37b	C				

						6323	CFS3	C											
						"	CFS3A	C											
	STKM13A	C	A312	MT1020	C	1717	ERWC3	C	2391	St45	C	A49-324	TU37b	C	2937	TS4	C		
			A513	MT1020	C				2393	St44-2	C	A49-330	TU37b	C	3304	R37	"		
									2394	St44-2	C	A49-343	TU38b	C	3305	"	"		
	STKM13B	C	A513	MT1020	C										3306	"	"		
	STKM13C	C				1717	CEWC3	C											
						"	CFSC4	C											
						6323	CFS4	C											
	STKM14A	C	A513	MT1020	C	6323	HFS4	C							2937	TS9	C		
															3304	R42	"		
	STKM14B	C				6323	HFS5	C							3305	R42	C		
	STKM14C	C													3306	"	"		
	STKM15A	C	A513	1030	C														
			A519	1030	C														
	STKM15C																		
	STKM16A	C	A519	1040	C							A49-311	TUXC35	C					
												A49-312	TUXC35	C					
	STKM16C	C																	
	STKM17A	C	A519	1050	C	6323	HFS8	C											
	STKM17C	C				6323	CFS8	C											
	STKM18A	C	A519	1518	C	1717	ERWC5	C				A49-310	TU52b	C					
												A49-311	TU52b	C					
												A49-312	TU52b	C					

