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JAPANESE INDUSTRIAL STANDARD

**High tensile strength steel tubes
for tower structural purposes**

JIS G 3474—1995

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High tensile strength steel tubes for
tower structural purposes

G 3474-1995

1. Scope This Japanese Industrial Standard specifies high tensile strength steel tubes (hereafter referred to as "tubes") used principally for transmission steel tower.

Remarks 1. The purchaser may specify the special quality requirements specified in Annex in addition to the items specified in this text in the case of STKT 590 by preliminary agreement between the purchaser and manufacturer.

Annex Z 12 Sensitivity of crack by hot-dipped zinc-coating

2. The standards cited in this Standard are given in Attached Table 2.

2. Classification and symbol The tubes shall be categorized into two classes, and their symbols shall be as given in Table 1.

3. Method of manufacture The manufacturing method of the tubes shall be as follows:

- (1) The tubes shall be manufactured by electric resistance welding or electric arc welding (straight seam).
- (2) The tubes shall be supplied as-manufactured conditions and, as a rule, shall not be heat-treated.

4. Chemical composition The tubes shall be subjected to the test of 9.1, and the cast analysis value thereof shall be as given in Table 1.

Table 1. Chemical composition

Unit: %

Symbol of class	C	Si	Mn	P	S	Nb+V
STKT 540	0.23 max.	0.55 max.	1.50 max.	0.040 max.	0.040 max.	-
STKT 590	0.12 max.	0.40 max.	2.00 max.	0.030 max.	0.030 max.	0.15 max.

- Remarks 1. The tubes of STKT 590 shall be of fine grain killed steel up to and including 25 mm in wall thickness.
2. Alloy elements other than those given in Table 1 may be added, if necessary.
3. The compositions of the tubes over 12.5 mm in wall thickness for STKT 540 and of over 22 mm in wall thickness for STKT 590 may be agreed upon between the purchaser and supplier.

5. Mechanical properties

5.1 Tensile strength, yield point or proof stress, elongation, flattening property, and tensile strength for welded zone The tubes shall be subjected to the tests of 9.2 and 9.3, and the tensile strength, yield point or proof stress, elongation, flattening property, and tensile strength for welded zone shall be as given in Table 2. For the flattening property, the wall of the tubes shall be free from flaws and cracks.

Table 2. Tensile strength, yield point or proof stress, elongation, flattening property and tensile strength for welded zone

Symbol of class	Tensile strength	Yield point or proof stress	Elongation (%)		Flattening property	Tensile strength for welded zone
			No. 11 test piece, No. 12 test piece	No. 5 test piece	Distance between flat plates <i>H</i> <i>D</i> is an outside diameter of tube	
			Longi- tudinal direc- tion	Trans- verse direc- tion		
	(N/mm ²)	(N/mm ²)				(N/mm ²)
	Electric resistance welding and electric arc welding				Electric resistance welding	Electric arc welding
	Total outside diameter	Total outside diameter	Over 40 mm in outside diameter		Total outside diameter	Over 350 mm in outside diameter
STKT 540	540 min.	390 min.	20 min.	16 min.	7/8 <i>D</i>	540 min.
STKT 590	590 to 740	440 min.			3/4 <i>D</i>	590 to 740

- Remarks 1. When the tensile test is carried out on No. 12 or No. 5 test piece for the tubes under 8 mm in wall thickness, the minimum value of elongation shall be calculated by subtracting 1.5 % from the value of elongation given in Table 2 for every 1 mm decrease in wall thickness from 8 mm, and rounded off to an integer in accordance with JIS Z 8401.