ASTM A106-89 / ASME SA106 Seamless Carbon Steel Pipe for High Temperature Service

This standard is issued under the fixed designation A 106; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (2) indicates an editorial change since the last revision or reapproval. This specification has been approved for use by agencies of the Department of Defense. Consult the DoD Index of Specifications and Standards for specific year of issue which has been adopted by the Department of Defense.

1.Scope

1.1 This specification covers seamless carbon steel pipe for high-temperature service (Note 1) in NPS 1/8 to NPS 48 inclusive, with nominal (average) wall thickness as given is ANSI B36.10. Pipe having other dimensions may be furnished provided such pipe complies with all other requirements of this specification. Pipe ordered under this specification shall be suitable for bending, flanging, and similar forming operations, and for welding. When the steel is to be welded, it is presupposed that a welding procedure suitable to the grade of steel and intended use or service will be utilized (Note 2).

NOTE 1 A Consideration should be given to possible graphitization of the material at the higer temperatures at which it may be used.

NOTE 2 A Grades A rather than Grades B or Grades C pipe should be used for close coiling, or cold bending. The purpose for which the pipe is to be used should be stated in the order. This note is not intended to prohibit the cold bending of Grades B seamless pipe.

1.2 Supplementary requirements (S1 to S4) of an optional nature are provided for seamless pipe intended for use in applications where a superior grade of pipe is required. These supplementary requirements call for additional tests to be made and when desired shall be so stated in the order.

1.3 When these products are to be used in applications conforming to ISO Recommendations for Boiler Construction, the requirements of Specification A 520 (Mechanical Property Requirements Section) shall supplement and supersede the requirements of this specification.

1.4 The values stated in inch-pound units are to be regarded as the standard.

NOTE 3 A The dimensionless designator NPS (nominal pipe size) has been substituted in this standard for such traditional terms as "nominal diameter", "size", and "nominal size".

1.5 The following precautionary caveat pertains only to the test method portion, Sections 11, 12, 13, 14, and 15, of this specification; This standard does not purport to address all of the safety problem, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

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

ASTM Standard	UNS NO.	KOREA/JAPANES			GERMAN				BRITISH			BELGIAN			FRENCH			ITALIAN		
		KS/JIS Symbol	KS/JIS Number	Remarks	DIN Type	DIN Number	Material Number	Remarks	B.S Number	B.S Grade	Remarks	NBN Type	NBN Grade	Remarks	AFNOR Type	NF Number	Remarks	UNI Type	UNI Number	Remarks
A 106 Seamless Carbon 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		D 37-2	629	(3b)(9)	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		D 42-2	629	(3b)(9)	TU 42C	A49-213		C 18	5462	

JIS Number and Corresponding Foreign Standards

JIS			ASTM			BS			DIN			NF			ISO			Index Number
Std.No	Grade	Type	Std.No	Grade	Type	Std.No	Grade	Type	Std.No	Grade	Type	Std.No	Grade	Type	Std.No	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										
	STPT480 (STPT42)	C	A106	Gr C	C	3602	HFS460	C				A49-211	TU48b	C	2604/2	TS14	C	
						"	CFS460	C				A49-213	TU48c	C				
						"	ERW460	C										
						"	CEEW460	C										