

TECHNICAL STANDARDS & SAFETY AUTHORITY
345 CARLINGVIEW DRIVE
TORONTO ON M9W 6N9

Date: December 5, 2019
Account #: 35231
Journal #: 74755

Attn: TANYA FRANCIS

Re: Application for Design Registration

The design, as detailed in your, CRN: 0A21840.5, for a Fitting is accepted for registration as follows:

Registered To: SWAGELOK COMPANY **CRN:** 0A21840.51

Drawing #: Scope of Registration

Drawing Revision: N/A

This design was registered based on a technical review performed by the province of initial registration in accordance with the Association of Chief Inspectors policy on reciprocal recognition of design review.

Reviewer's Notes:

As required by CSA B51 4.2.1, this registration expires on 04-Oct-2029. This CRN is valid until the expiry date as long as the Manufacturer maintains a valid quality control program verified by an acceptable third-party agency until that date. Should the certification of the quality control program lapse before the expiry date, this registration shall become void. Any additional conditions of registration stated in TSSA CRN# 0A21840.5 registration shall apply to BC registration.

Contact me if you have any questions. The invoice for registration will be forwarded under separate cover.

Janina Mihailescu

janina.mihailescu@technicalsaftybc.ca
Design Administration

cc:



Technical Standards and Safety Authority
 345 Carlingview Drive
 Toronto, Ontario M9W 6N9
 www.tssa.org

Show facsimile of manufacturer's logo or trademark, as it will appear on the fitting, in the space below

Swagelok

STATUTORY DECLARATION Registration of Fittings

I, Joel Feldman, Vice President of Engineering
(Name and Position, e.g. President, Plant Manager, Chief Engineer)

of Swagelok Company
(Name of Manufacturer)

Located at 29500 Solon Road, Solon, Ohio 44139 USA (440) 248-4600 (440) 349-5970
(Plant Address) (Telephone No.) (Fax No.)

do solemnly declare that the fittings listed hereunder, which are subject to the **Technical Standards and Safety Act**, Boilers and Pressure Vessels Regulation, comply with all of the requirements of ASME B31.1 for unlisted components, and ASME B31.3 for unlisted components
(Title of recognized North American Standard)
 which specifies the dimensions, materials of construction, pressure/temperature ratings, identification marking the fittings and service;

or are not covered by the provisions of a recognized North American standard and are therefore manufactured to comply with _____ as supported by the attached data which identifies the dimensions, material of construction, pressure/temperature ratings and the basis for such ratings, the marking of the fitting for identification and service.

I further declare that the manufacture of these fittings is controlled by a quality system meeting the requirements of ISO 9001:2015 which has been verified by the following authority, BSI

The items covered by this declaration, for which I seek registration, are category A. Fitting type fittings. In support of this application, the following information and/or test data are attached as follows:
ISO 9001:2015 Certificate, Attachment A, Attachment B, Catalog Information and other Support Documents
(drawings, calculations, test reports, etc.)

Declared before me at Solon in the state of Ohio
 the 10th day of June AD 2019.

Commissioner for Oaths:

Brenda Hammel
(Printed name)
Brenda Hammel
(Signature)

Joel Feldman
(Signature of Declarer)

FOR OFFICE USE ONLY

To the best of my knowledge and belief, the application meets the requirements of the **Technical Standards and Safety Act**, Boilers and Pressure Vessels Regulation, and CSA Standard B51 and is accepted for registration in Category A

CRN: DA21840.5

Registered by: [Signature]

Dated: October 4, 2019

NOTE: This registration expires on: October 4, 2029

Technical Standards and Safety Authority
Boilers and Pressure Vessels Safety Program

OFFICE REGISTERED

C.R.N.: DA21840.5

Signed: [Signature]

Date: October 4, 2019

*Information provided in this application is releasable under the Freedom of Information and Privacy Protection Act and may be disclosed upon request.

Stamped attachment A and B of registration

Attachment B: Scope of CRN Registration for Swagelok ATW, MW, and TB Series Weld Fittings (Category A)

This document represents the scope of Swagelok® Automatic Tube Weld (ATW), Micro-Fit Weld (MW), and Tube Butt Weld (TB) Fittings covered by this submission for CRN registration. These weld fittings were designed and evaluated in accordance with ASME B31.1-2016 for unlisted components and ASME B31.3-2016 for unlisted components.

Table 1 – Summary Table – ATW FITTINGS

Product Series* (Size)	Material (Standard)	End Connections and Sizes	Maximum Allowable Working Pressure (psig)		Design Code of Construction
			Up to 100°F	At Maximum Temperature (850°F)	
-4 ATW (1/4")	316L SS (ASTM A479) for straight fittings, hardware	Tube Fitting 1/4", 3/8", 1/2" Tube Butt Weld 1/4"	5100	2390	ASME B31.1 (Unlisted Components)
-6 ATW (3/8")		Tube Fitting 3/8" Tube Butt Weld 1/4" 3/8"	3300	1550	
-8 ATW (1/2")		Tube Fitting 1/4" 1/2" Tube Butt Weld 1/4", 3/8", 1/2"	3700	1730	
-12 ATW (3/4")		Tube Fitting 3/4"	2400	1120	
-16 ATW (1")		Tube Fitting 1"	2400	1120	
-6 MATW (6mm)	F316L SS (ASTM A182) for shaped fittings	N/A	6095	2860	ASME B31.3 (Unlisted Components)
-8 MATW (8mm)			4499	2110	
-10 MATW (10mm)			3483	1630	
-12 MATW (12mm)			2902	1360	
-18 MATW (18mm)			2902	1360	

* "MATW" denotes metric sized Automatic Tube Welds



Table 2 – Summary Table – MW FITTINGS

Product Series* (Size)	Material (Standard)	Maximum Allowable Working Pressure (psig)		Design Code of Construction
		Up to 100°F	At Maximum Temperature (850°F)	
-2MW (1/8")	316L SS (SEMI F20)	8500	3990	ASME B31.1 (Unlisted Components) and ASME B31.3 (Unlisted Components)
-4MW (1/4")		5100	2390	
-6MW (3/8")		3300	1550	
-8MW (1/2")		3700	1730	
-12MW (3/4")		2400	1120	
-16MW (1")		2400	1120	
-6MMW (6mm)		6095	2860	
-8MMW (8mm)		4499	2110	
-10MMW (10mm)		3483	1630	
-12MMW (12mm)		2902	1360	

* End connections are all micro-fit weld end connections. "MMW" denotes metric sizes.

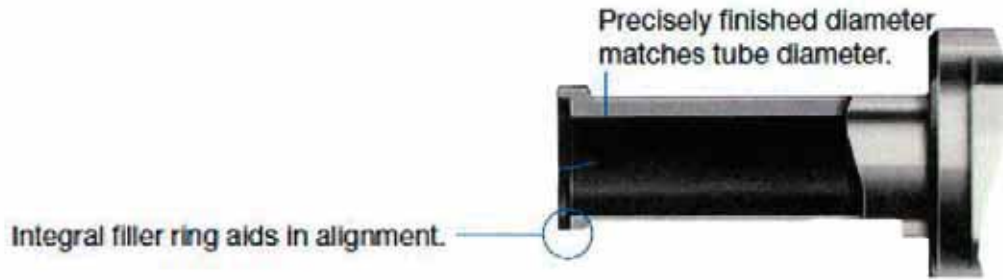
Table 3 – Summary Table – TB FITTINGS

Product Series* (Size)	Material (Standard)	Maximum Allowable Working Pressure (psig)		Design Code of Construction
		Up to 100°F	At Maximum Temperature (850°F)	
-2TB (1/8")	316L SS (ASTM A479) for straight fittings F316L SS (ASTM A182) for shaped fittings	8500	3990	ASME B31.1 (Unlisted Components) and ASME B31.3 (Unlisted Components)
-4TB (1/4")		5100	2390	
-6TB (3/8")		3300	1550	
-8TB (1/2")		3700	1730	
-12TB (3/4")		2400	1120	
-16TB (1")		2400	1120	
-6MTB (6mm)		6095	2860	
-8MTB (8mm)		4499	2110	
-10MTB (10mm)		3483	1630	
-12MTB (12mm)		2902	1360	
-18MTB (18mm)		2902	1360	

* End connections are all tube butt weld end connections. "MTB" denotes metric sizes.



Figure 1 – ATW Product Illustration



ATW Fitting Configurations

<p>ATW Straights</p>	
<p>ATW Crosses</p>	
<p>ATW Tees</p>	
<p>ATW Elbows</p>	

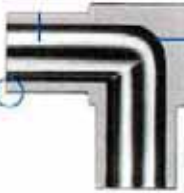
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ATW Body End Connections

<p>Swagelok Tube Fittings</p>	<p>1/4 in – 1 in</p>
<p>Tube Butt Weld</p>	<p>1/4 in – 1/2 in</p>

Figure 2 – MW Product Illustration

Square, sharp, burr-free tube weld ends enhance alignment, maintain tube wall uniformity, and promote weld repeatability.



Radius junction allows for a smooth flow transition and eliminates pockets and entrapment zones.

MW Fitting Configurations

MW Straights	
MW Tees	
MW Elbows	
MW Tribows and Quadbows	
MW Crosses	

Figure 3 – TB Product Illustration

Tube ends are machined with a square face and corners to enhance alignment and maintain tube wall uniformity.



Precisely finished diameter matches tube diameter.

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 Technical Standards & Safety Authority
 Boilers & Pressure Vessels
 Safety Program

TB Fitting Configurations

TB Straights	
TB Tees	
TB Crosses	
TB Elbows	

Quality System

The Swagelok Company quality system complies with the requirements of ISO 9001:2015. Swagelok Company maintains BSI Certificate of Registration Number FM 01729, which applies to all locations listed on the Certificate.

References

The product catalog does not represent the full scope of the registration but rather details some of the most common options.

- Weld Fittings Product Catalog MS-01-149 Rev. M



Attachment A. Swagelok Manufacturing Locations

This document lists the Swagelok locations where end item or component level manufacturing activities take place.

Swagelok Company 29500 Solon Road Solon, Ohio 44139 USA	Swagelok Company (Falon 1) 348 Bishop Road Highland Heights, Ohio 44143 USA
Swagelok Company (Highland) 318 Bishop Road Highland Heights, Ohio 44143 USA	Swagelok Company (Falon 2) 358 Bishop Road Highland Heights, Ohio 44143 USA
Swagelok Company (OFC) 29495 F.A. Lennon Drive Solon, Ohio 44139 USA	Swagelok Company (HPF) 6050 Cochran Road Solon, Ohio 44139 USA
Swagelok Company (Atlantic) 26651 Curtiss Wright Parkway Willoughby Hills, Ohio 44092 USA	Swagelok Company (Snow Metal) 6060 Cochran Road Solon, Ohio 44139 USA
Swagelok Company (Micro) 26653 Curtiss Wright Parkway Willoughby Hills, Ohio 44092 USA	Swagelok Company (Alfred) 29500 Ambina Drive Solon, Ohio 44139
Swagelok Hose Services Company (SHSC) 29900 Solon Industrial Parkway Solon, Ohio 44139	Swagelok Company (Strongsville) 15400 Foltz Road Strongsville, Ohio 44119
Swagelok (China) Fluid System Technologies Ltd. Changshu Export Process Zone Changshu Economic Development Zone Changshu, Jiangshu 215513 China	Swagelok Limited Ballafletcher Road Tromode IM4 4RA Isle of Man

