

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

**Date:** August 20, 2019  
**Account #:** 35231  
**Journal #:** 73877

**Attn:** TANYA FRANCIS

**Re: Application for Design Registration**

The design, as detailed in your, CRN: 0A21395.5, for a Fitting is accepted for registration as follows:

**Registered To:** SWAGELOK COMPANY                      **CRN:** 0A21395.51

**Drawing #:** Scope of Registration

**Drawing Revision:** N/A

**Conditions Of Registration:**

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.

Scope of Registration: Attachment A and B, Gaugeable Tube Fittings and Adapter Fittings

**Reviewer's Notes:**

As required by CSA B51 4.2.1, this registration expires on 13-May-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# 0A21395.5 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. Fittings 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 14th day of March AD 20 19

Commissioner for Oaths:

Brenda Hammel  
(Printed name)

Brenda Hammel  
(Signature)

[Signature]  
(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: 0A21395.5

Registered by: [Signature]

Dated: May 13, 2019

NOTE: This registration expires on: May 13, 2029

Technical Standards and Safety Authority	Boilers and Pressure Vessels Safety Program
<b>REGISTERED</b>	
C.R.N.: <u>0A21395.5</u>	
Signed: <u>[Signature]</u>	
Date: <u>May 13, 2019</u>	

PV 09553 (06/16)

For scope of registration see attached stamped documents - Attachment A and B

## Attachment B. Scope of Registration for Swagelok Brass, (ASTM B16 / B283), Tube Fittings (Category A)

This document represents the scope of Swagelok Brass Tube Fittings covered by this submission for CRN approval. These Swagelok Tube Fittings have been evaluated in accordance with ASME B31.3-2016 for unlisted components and ASME B31.1 for unlisted components.

### Summary Table

Product Description or Series	Material	Port Connections and Sizes	Maximum Allowable Working Pressure		Design Code of Construction
			Up to 100°F	At maximum temperature	
Swagelok Gaugeable Tube Fittings and Adapter Fittings	Brass C36000 (ASTM B16) for straight fittings, hardware	Tube fitting 1/8" to 1-1/8", 6mm – 28 mm	See below Table	See below Table	ASME B31.3 (Unlisted Components)
		NPT Male 1/16" – 2"	5500-1900 psig	1100-380 psig @ 400°F	
		ISO-7 (tapered)(RT) Male 1/16" – 2"			3300-1900 psig
		NPT Female 1/16" - 2"	2284 – 907 psig	297 - 118 psig @ 400°F	
	ISO-7 (tapered)(RT) Female 1/16" – 2"	2500–1500 psig			500 - 300 psig @ 400°F
	UN / UNF(SAE) Stud (ST) 1/8" – 2"		2500–1250 psig	500 - 250 psig @ 400°F	
	Unified (UNJ) (AN) Male 1/8" – 1"				
	Unified (UNJ) (ANF) AN Female 1/8" – 1"				



**Brass Swagelok Tube Fitting Pressure Rating Table**

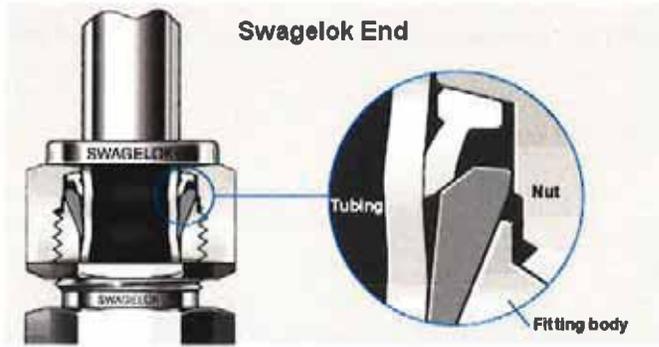
Swagelok End Connection Size	Maximum Allowable Working Pressure (1)		
	Up to 100°F	B31.3 maximum temperature 350°F	B31.1 maximum temperature 200°F
1/8	3600 psig	1800 psig	2916 psig
3/16	3400 psig	1700 psig	2754 psig
1/4	3500 psig	1750 psig	2835 psig
5/16	2700 psig	1350 psig	2187 psig
3/8	2200 psig	1100 psig	1782 psig
1/2	2100 psig	1050 psig	1701 psig
5/8	1900 psig	950 psig	1539 psig
3/4	1800 psig	900 psig	1458 psig
7/8	1500 psig	750 psig	1215 psig
1	1500 psig	750 psig	1215 psig
1 1/8	1200 psig	600 psig	972 psig
6 mm	220 bar	110 bar	178 bar
8 mm	160 bar	80 bar	130 bar
10 mm	130 bar	65 bar	105 bar
12 mm	140 bar	70 bar	113 bar
14 mm	120 bar	60 bar	97 bar
15 mm	120 bar	60 bar	97 bar
16 mm	120 bar	60 bar	97 bar
18 mm	110 bar	55 bar	89 bar
20 mm	110 bar	55 bar	89 bar
22 mm	100 bar	50 bar	81 bar
25 mm	100 bar	50 bar	81 bar
28 mm	90 bar	45 bar	73 bar

Note (1): Values based on C37700 / ASTM B283 forgings and thickest wall copper tubing per Swagelok Tubing Data Sheet MS-01-107. Thinner tubing may be used but in all cases the ratings are less than, or equal to, those shown in the table.

**Product Description**

Swagelok Fittings are furnished in a variety of configurations and shapes (straight, elbow, tee or cross). Swagelok Fittings consist of at least one Swagelok End – a proprietary two-ferrule mechanical-grip design. The "Configurations" section covers a variety of other end connections.

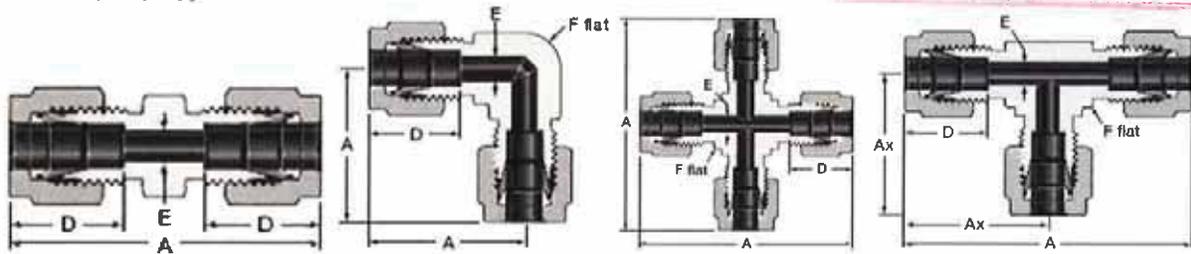




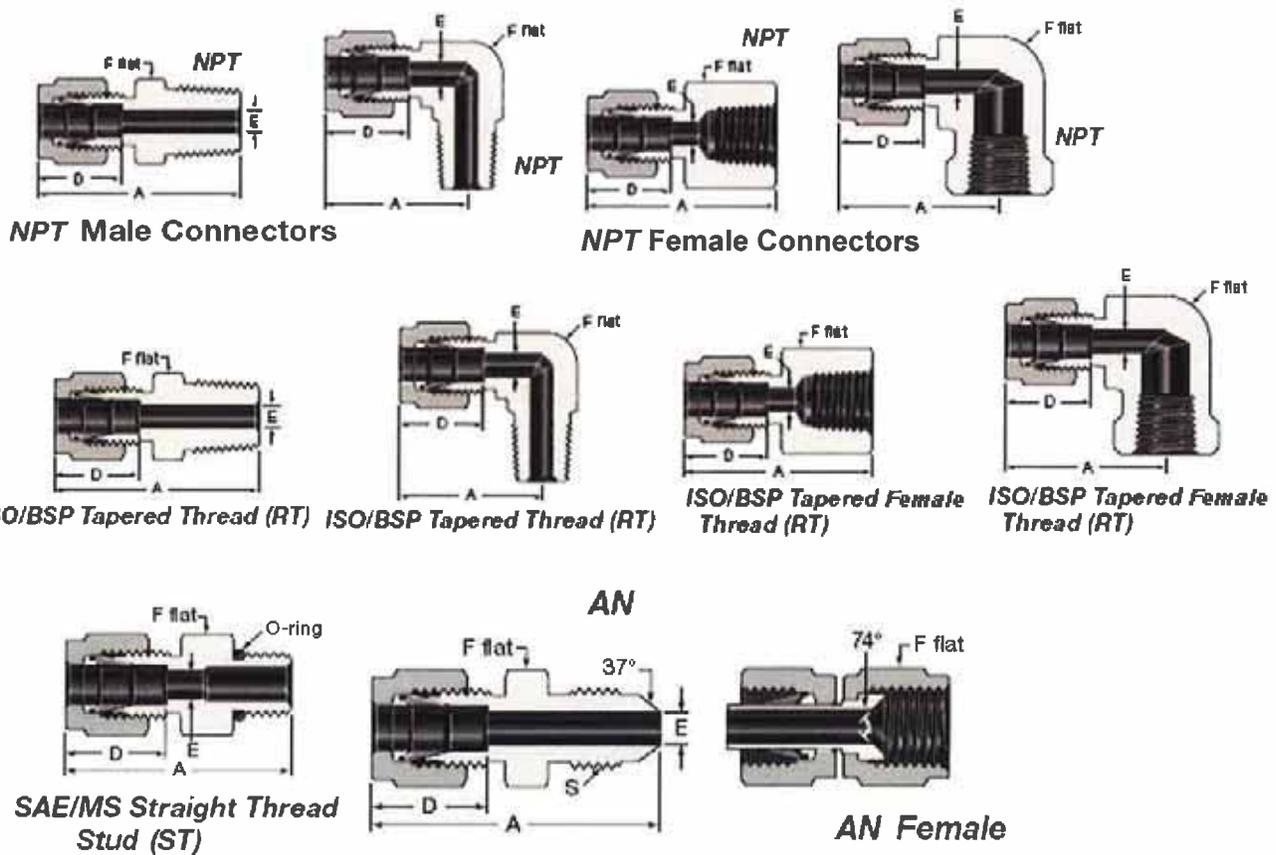
THIS IS PART OF  
 GRN 0A 21395.5  
 Related Standards & Safety Authority  
 Industrial & Pressure Vessels  
 Safety Program

**Configurations (For dimensions see catalog.)**

**1. Unions.**



**2. Male and Female connectors / adapters.**



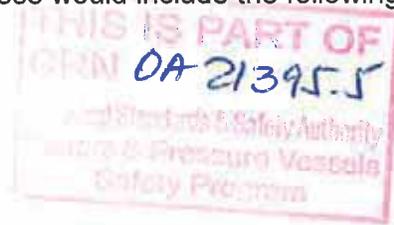
## **Product Options:**

Some of the product options listed below affect the pressure-temperature ratings in the "Scope of Registration" section above, but in all cases the pressure ratings are the same or less than those shown in the table.

1. Tapered pipe threads (NPT and ISO-7) with sealant
  - a. Curable resin with PTFE
  - b. PTFE tape
2. Bored through fittings
3. Plastic ferrules (Nylon, Teflon, Peek)

Additional options that do not affect pressure and/or temperature ratings may be made available within the scope of this approval. Examples of these would include the following:

1. Special marking
2. Special cleaning
3. Wire drills
4. bulkhead configurations
5. Snubbers/frits and orifice plates
6. Equivalent metric or fractional hex sizes



Other options, not shown above, with pressure/temperature ratings equal to or less than shown in the Summary Table or do not affect pressure/temperature ratings may be made available under the scope of this approval

## **Quality System**

The Swagelok Company quality system complies with the requirements of ISO 9001:2015. The Swagelok Company maintains BSI 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.

- Gaugeable Tube Fittings and Adapter Fittings MS-01-140 Rev. Y
- Swagelok Tubing Data Sheet MS-01-107, Rev Q

## 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

