

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

Date: January 6, 2021
Account #: 35231
Journal #: 77075

Attn: TSSA

Re: Application for Design Registration

The design, as detailed in your, 0D22419.5ADD1, for a Fitting is accepted for registration as follows:

Registered To: SWAGELOK COMPANY **CRN:** 0D22419.51

Drawing #: Swaged Swagelok TSeries

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 14-May-2030. 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# 0D22419.5ADD1 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 Caringview 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 Association for Rubber Products Manufacturers (ARPM) Hose Handbook
(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 D. Hose 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 _____ in the _____ of _____

the _____ day of _____ AD 20_____.

Commissioner for Oaths:

Unable to get a notary signature or seal due to COVID-19 situation
(Printed name)

(Signature)

DocuSigned by:

10/27/2020 | 7:50 AM EDT

C87CBBFFED3F14B7
(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 D.

CRN: 0D22419.5ADD1

Registered by:

Dated: NOVEMBER 19, 2020



This Document has been digitally signed. The stamp size has been optimized for 11 x 17 documents

Technical Standards and Safety Authority
Boilers and Pressure Vessels Safety Program

REGISTERED

C.R.N.: 0D22419.5ADD1

Signed:

Date: November 19, 2020.

NOTE: This registration expires on: **MAY 14, 2030**

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

SEE THE STAMPED ATTACHMENT A AND B FOR SCOPE OF REGISTRATION



Attachment B: Scope of Registration for Crimped and Swaged Swagelok T-Series PTFE Hose Assemblies (Category D)

This document represents the scope of the Swagelok PTFE (TH and TC) hose and crimped/swaged assemblies covered by this submission for CRN approval. These products have been evaluated in accordance with the Association for Rubber Products Manufacturers (ARPM) Hose Handbook.

Summary Table

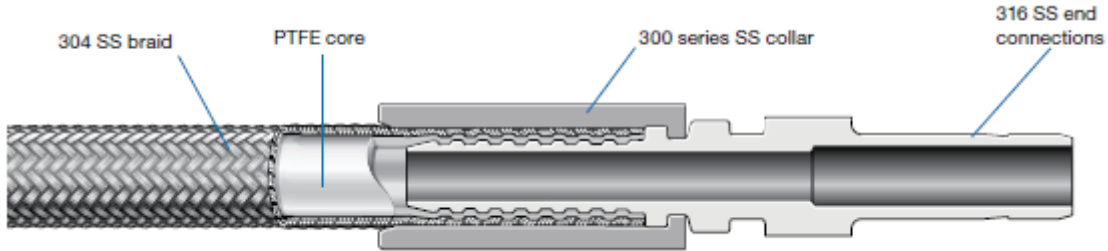
TH and TC Series Hose Size	Maximum Pressure (psig)			Pressure Retaining Material	End Connections and Sizes	Design Code of Construction
	At Minimum Temp. (-65°F)	At 65 to 100°F	At Maximum Temp. (450°F)			
1/4"	2250	3000	2250	Core Smooth Bore Virgin PTFE [TH]	Swagelok Tube Fitting [SL SM TA TM] 1/8" – 1" (6-25mm)	Association for Rubber Products Manufacturers (ARPM) Hose Handbook
3/8"	2250	2500	1875	OR Smooth Bore Carbon-Lined PTFE [TC]	Male and Female NPT Tapered Pipe Fitting [PM PF] 1/4" – 1"	
1/2"	2000	2000	1500	Braid 304 SS Braid Reinforcement	Male 37° JIC and Female 37° JIC with female swivel nut [AN AS] 1/4" – 1/2"	
3/4"	1500	1500	1125	End Connections 316 SS	Male and Female ISO/BSP Tapered (ISO 7) Pipe Threads [MT FT] 1/8" – 1"	
1"	1000	1000	750	Swage Collar 304 SS Crimp on Collar 316 SS	Male and Female VCR Metal Gasket Face Seal Fitting [VF VM] 1/4" – 1"	

Product Description

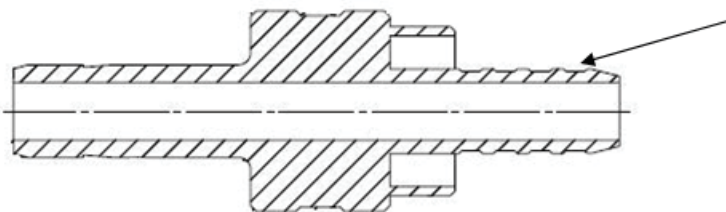
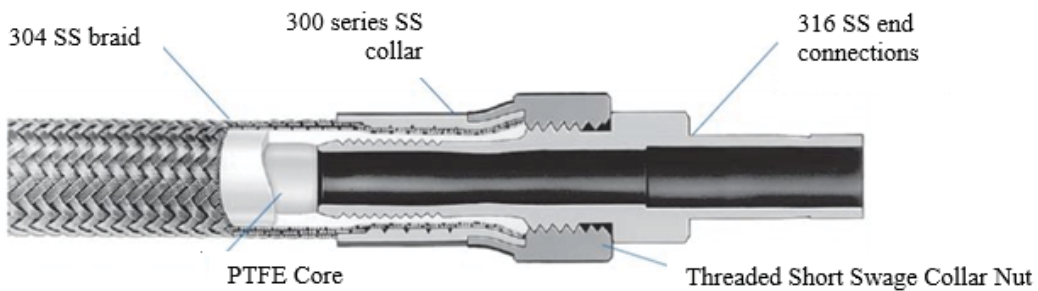
Swagelok's TH series hose is virgin PTFE-lined, 304 Stainless Steel braided hose. The TC series hose is carbon black filled PTFE-lined, 304 stainless steel braided hose. All TH and TC series hoses undergo production testing in accordance with ASTM D380 "Test Methods for Rubber Hose" (version current to hose production date).

Configurations

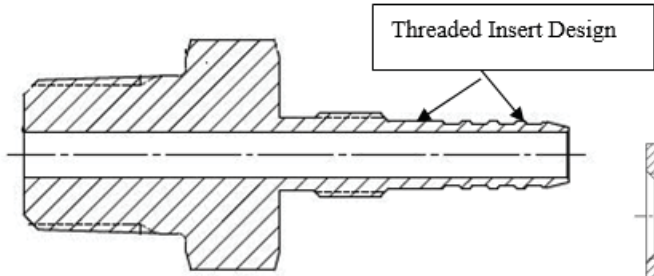
Crimped assembly method:



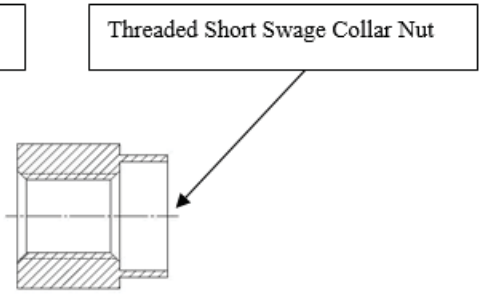
Swaged assembly method – There are two ways the hose end connections are supplied: Threaded end connection insert or non-threaded end connection insert:



Non-Threaded Insert Design, This design combined the thin swage collar section of the threaded short swage collar nut machined integral to the insert without the threads



Threaded Insert Design



Threaded Short Swage Collar Nut



Product Options:

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

- Polyolefin Cover over Spring-guard
- PVC tubing cover
- Silicone covered Fiber Glass Fire Jacket cover with SS clamps
- Spring guard under Silicone covered Fiber Glass Fire Jacket cover with SS clamps
- SS Tag, TFE Coated SS Lanyard, Aluminum Retaining clamp
- Stainless Steel Tag with TFE coated lanyard
- SS Tag, TFE Coated SS Lanyard, Aluminum Retaining clamp, and possibly pre-swaged
- Customer requested information listed on hose end connection non-critical surfaces
- Applicable material trace numbers marked on end connections.
- Pipe Threaded ends
- O-rings for VCO ends
- Proof Pressure Testing

Quality System

The Swagelok Company quality system complies with the requirements of ISO 9001:2015. The 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. Hose Assemblies, Bulk Hose, and End Connections Product Catalog MS-01-180.

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