

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

**Date:** November 18, 2020  
**Account #:** 35231  
**Journal #:** 76871

**Attn:** TSSA

**Re: Application for Design Registration**

The design, as detailed in your, 0D22735.5, for a Fitting is accepted for registration as follows:

**Registered To:** SWAGELOK COMPANY                      **CRN:** 0D22735.51

**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: Crimped Swagelok FC series PTFE- Attachment A and B.

**Reviewer's Notes:**

As required by CSA B51 4.2.1, this registration expires on 14-Oct-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# 0D22735.5 registration shall apply to BC registration.

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

Emilia Tam

emilia.tam@technicalsaftybc.ca  
Design Administration

**cc:**



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



## 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 - September 17, 2020**  
(Printed name)  
(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 C

CRN: 0D22735.5

Registered by:

Dated: OCTOBER 14, 2020

NOTE: This registration expires on: OCTOBER 14, 2030



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.: 0D22735.5	
Signed:	
Date: October 14, 2020.	

For scope of registration see the attachment A and B.

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

The hoses service application is for Liquid, Air or Gas Service.



**THIS IS PART OF CRN**  
 0D22735.5  
 Technical Standards and Safety Authority  
 Boilers and Pressure Vessels Safety Program

Canadian Registration Number Submittal  
 Category D Crimped Swagelok FC series PTFE Hose

September 1, 2020  
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## Attachment B: Scope of Registration for Crimped Swagelok FC series PTFE Hose Assemblies (Category D)

This document represents the scope of the Swagelok Coreflex FC series hose and crimped 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

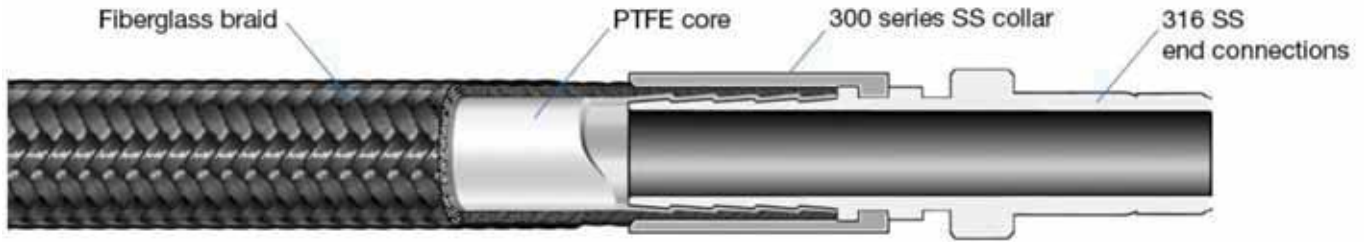
FC series Hose Size	Maximum Pressure (psig)			Pressure Retaining Material	End Connections and Sizes	Design Code of Construction
	At Minimum Temp. (-65°F)	Room temperature (0°-100°F)	At Maximum Temp. (450°F)			
1/4"	455	800	160	<b>Core</b> Carbon Black filled virgin PTFE  <b>Braid</b> Fiberglass Braid Reinforcement  <b>End Connections</b> 316 SS  <b>Crimp on Collar</b> 304 SS	Swagelok Tube Fitting <b>[SL, SM]</b> 1/8" – 2" (3-50mm)	Association for Rubber Products Manufacturers (ARPM) Hose Handbook
3/8"	480	650	170		Male & Female NPT Tapered Pipe Fitting <b>[PM, PF]</b> 1/8" – 2" Male & Female ISO/BSP Tapered (ISO 7) Pipe Threads <b>[MT, FT]</b> 1/4" – 1"	
1/2"	450	450	225		Male 37° JIC & Female 37° JIC with female swivel nut <b>[AN, AS]</b> 1/4" – 2" Tube Butt Welds <b>[TB]</b> 1/2" – 1"	
3/4"	325	325	160		Male & Female VCO O-ring Face seal Fitting <b>[VF, VM]</b> 1/8" - 2"	
					Male & Female VCR Metal Gasket Face seal Fitting <b>[RF, RM]</b> 1/8" – 2" Female ISO/BSP Parallel Threads (ISO 228) <b>[FS]</b> 1/4" – 1"	

## Product Description

Swagelok's FC series hose is a carbon black filled virgin PTFE liner with fiberglass braid reinforcement. All FC series hoses undergo production testing in accordance with ASTM D380 "Test Methods for Rubber Hose" (version current to hose production date).

## Configurations

All end connection inserts are crimped onto the hose using crimp collars.



## 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:

### Cover Options

- Armor guard - Interlocking, flexible 302 stainless steel.
- Fire jacket - Woven fiberglass coated with specially compounded aerospace-grade silicone rubber
- Spiral guard - Helical HDPE plastic

### Tag and Marking Options

- Mat tag - Polyester tag with customer-specified text
- Lanyard tag - Stainless steel tag with customer-specified text

### End Connection Seals or Sealants Options

- VCO – O-rings
- Pipe Thread ends – thread sealant

## 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