



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, David H. Peace, 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 B31.3 for unlisted components where applicable
(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, Hose Catalog (FX Series), Attachment A, Attachment B, and other supporting documents
(drawings, calculations, test reports, etc.)

Declared before me at Solon in the State of Ohio
 the 13th day of November AD 2017.

Commissioner for Oaths:

Jamie L Ristan
(Printed name)
Jamie L Ristan
(Signature)
 Jamie L. Ristan
 Resident Portage County
 Notary Public, State of Ohio
 My Commission Expires: 03/06/2018

[Signature]
(Signature of Declarer)

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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: OD20522.5

Registered by: [Signature]

Dated: July 11, 2018

NOTE: This registration expires on: July 11, 2028

Technical Standards and Safety Authority
 Boilers and Pressure Vessels Safety Program

REGISTERED

CRN: OD20522.5

Signed: [Signature]

Date: July 11, 2018

See attached the scope of registration (Attachment A and B)

**Attachment B: Scope of Registration for Swagelok FX Series Hose Assemblies
(Category D)**

Product Scope

The table below represents the scope of Swagelok FX series hose assemblies covered by this submission for CRN approval. These hose assemblies have been evaluated in accordance with ASME B31.3 and ISO 10380. The referenced product catalogues do not represent the full scope of the submission but rather detail some of the most common options.

Summary Table

Product Series	Pressure Retaining Material	End Connection & Sizes	Nom. Hose Size (in.)	Maximum Working Pressure in (Psig)		Design Code of Construction
				@ Min. Temp.	@ Max. Temp.	
FX Series Metal Hose	<p>Core: 316L SS (ASTM A240)</p> <p>Braid: 321 SS (ASTM A478) Or 316L SS (ASTM A240)</p> <p>Weld Collar: 304 SS (ASTM A269)</p> <p>End Connections: Strain-Hardened 316 SS (ASTM A479)</p>	Tube Fitting 1/4" – 1/2", 4-10 mm [TA, TM, SL, SM]	1/4	6000 @ -325°F	4236 @ 1000°F	ASME B31.3, ISO 10380
		NPT Female 1/8" – 1/4" [PF] NPT Male 1/8" – 1/2" [PM] Female VCO Fitting 1/4" Male ISO/BSP Tapered threads (ISO 7) 1/4" – 1/2" [MT] Female ISO/BSP Tapered Threads (ISO 7) 1/4" [FT]		6000 @ -60°F	5640 @ 400°F	
		Male Swivel Nut VCR 1/4" [RM] Female VCR Fitting 1/4" [RF]		5500 @ -325°F	3883 @ 1000°F	
		Tube Fitting 12mm [TM]		5365 @ -325°F	3787 @ 1000°F	
		NPT Female 3/8" [PF]		5300 @ -60°F	4982 @ 400°F	
		Tube Butt Weld 1/4" [TB]		5100 @ -325°F	3600 @ 1000°F	
		NPT Female 1/2" [PF]		4900 @ -60°F	4606 @ 400°F	
		Tube Butt Weld 1/2" [TB]		3700 @ -325°F	2612 @ 1000°F	
		Male Swivel Nut VCR 1/2" [RM] Female VCR Fitting 1/2" [RF]		3000 @ -325°F	2118 @ 1000°F	





Product Series	Pressure Retaining Material	End Connection & Sizes	Nom. Hose Size (in.)	Maximum Working Pressure in (Psig)		Design Code of Construction
				@ Min. Temp.	@ Max. Temp.	
FX Series Metal Hose	<p>Core: 316L SS (ASTM A240)</p> <p>Braid: 321 SS (ASTM A478) or 316L SS (ASTM A240)</p> <p>Weld Collar: 304 SS (ASTM A269)</p> <p>End Connections: Strain-Hardened 316 SS (ASTM A479)</p>	Tube Fitting 1/4" – 1/2", 4-12 mm [TA, TM, SL, SM] Female VCO Fitting 1/2" [VF] Male Swivel Nut VCR 1/4" [RM] Female VCR Fitting 1/4" [RF]	3/8	5000 @ -325°F	3530 @ 1000°F	ASME B31.3, ISO 10380
		NPT Female 1/4" – 1/4" [PF] NPT Male 1/4" – 1/2" [PM] Male ISO/BSP Tapered threads (ISO 7) 1/4" – 3/8" [MT]		5000 @ -60°F	4700 @ 400°F	
		NPT Female 1/2" [PF]		4900 @ -60°F	4606 @ 400°F	
		Tube Butt Weld 1/2" [TB]		3700 @ -325°F	2612 @ 1000°F	
		Tube Butt Weld 3/8" [TB]	3300 @ -325°F	2329 @ 1000°F		
		Male Swivel Nut VCR 1/2" [RM] Female VCR Fitting 1/2" [RF]	3000 @ -325°F	2118 @ 1000°F		
		Tube Fitting 1/4" – 3/4", 6-18 mm [TA, TM, SL, SM] Male Swivel Nut VCR 1/4" [RM] Female VCR Fitting 1/4" [RF] Female VCO Fitting 1/2" [VF]	1/2	4500 @ -325°F	3177 @ 1000°F	
		NPT Female 3/8-1/2" [PF] NPT Male 1/4" – 3/4" [PM] Female VCO Fitting 1/4"		4500 @ -60°F	4230 @ 400°F	
		Male ISO/BSP Tapered threads (ISO 7) 3/8" – 1/2" [MT] Female ISO/BSP Tapered Threads (ISO 7) 1/2" [FT]		4400 @ -60°F	4092 @ 400°F	
		NPT Female 1" [PF]		3700 @ -325°F	2612 @ 1000°F	
		Tube Butt Weld 1/2" [TB]		3000 @ -325°F	2118 @ 1000°F	
		Male Swivel Nut VCR 1/2" [RM] Female VCR Fitting 1/2" [RF]		2800 @ -325°F	1976 @ 1000°F	
		Male Swivel Nut VCR 3/4" [RM] Female VCR Fitting 3/4" [RF]				

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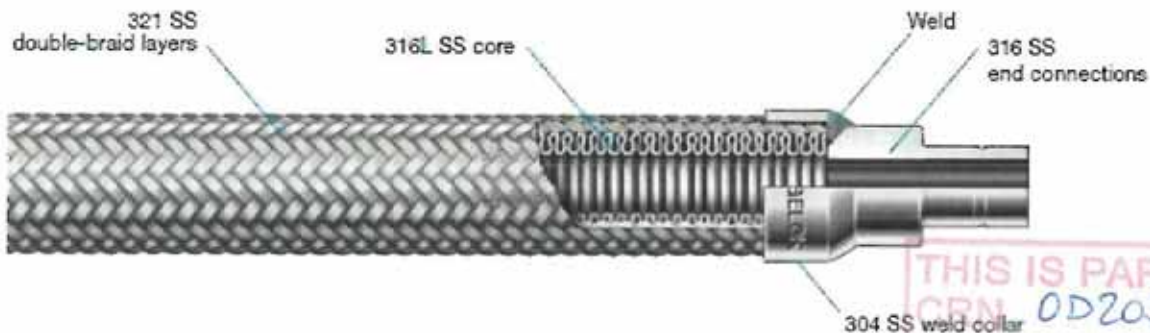
Product Series	Pressure Retaining Material	End Connection & Sizes	Nom. Hose Size (in.)	Maximum Working Pressure in (Psig)		Design Code of Construction
				@ Min. Temp.	@ Max. Temp.	
FX Series Metal Hose	<p>Core: 316L SS (ASTM A240)</p> <p>Braid: 321 SS (ASTM A478) Or 316L SS (ASTM A240)</p> <p>Weld Collar: 304 SS (ASTM A269)</p> <p>End Connections: Strain-Hardened 316 SS (ASTM A479)</p>	Tube Fitting 1/2" – 1", 12-20 mm [TA, TM, SL, SM] Female VCO Fitting 1/2" – 3/4" [VF]	3/4	3600 @ -325°F	2541 @ 1000°F	
		NPT Female 1/2"-3/4" [PF] NPT Male 1/2" – 1" [PM] Female VCO Fitting 1/4" Male ISO/BSP Tapered threads (ISO 7) 1/2"-1" [MT] Female ISO/BSP Tapered Threads (ISO 7) 3/4"-1" [FT]		3600 @ -60°F	3384 @ 400°F	
		Male Swivel Nut VCR 1/2" [RM] Female VCR Fitting 1/2"-1" [RF]		3000 @ -325°F	2118 @ 1000°F	
		Male Swivel Nut VCR 5/8"-3/4" [RM] Female VCR Fitting 3/4" [RF]		2800 @ -325°F	1976 @ 1000°F	
		Tube Butt Weld 3/4"-1" [TB]		2400 @ -325°F	1694 @ 1000°F	
		Tube Fitting 1/2" – 1-1/4", 16-28 mm [TA, TM, SL, SM] Male Swivel Nut VCR 1" [RM] Female VCR Fitting 1" [RF] Female VCO Fitting 1" [VF]	1	3000 @ -325°F	2118 @ 1000°F	
		NPT Female 1" [PF] NPT Male 1/2" – 1" [PM] Female VCO Fitting 1/4" Male ISO/BSP Tapered threads (ISO 7) 1" [MT] Female ISO/BSP Tapered Threads (ISO 7) 1" [FT]		3000 @ -60°F	2820 @ 400°F	
		Male Swivel Nut VCR 3/4" [RM] Female VCR Fitting 3/4" [RF]		2800 @ -325°F	1976 @ 1000°F	
		Tube Butt Weld 3/4"-1" [TB]		2400 @ -325°F	1694 @ 1000°F	

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Canadian Standards & Safety Authority
Liquefied Gas & Pressure Vessels
Section 416-967000

Product Series	Pressure Retaining Material	End Connection & Sizes	Nominal Hose Size (in.)	Maximum Working Pressure in (Psig)		Design Code of Construction
				@ Min. Temp.	@ Max. Temp.	
FX Series Metal Hose	Core: 316L SS (ASTM A240) Braid: 321 SS (ASTM A478) or 316L SS (ASTM A240) Weld Collar: 304 SS (ASTM A269) End Connections: Strain-Hardened 316 SS (ASTM A479)	Tube Fitting 1-1/4" - 1-1/2", 28-32 mm [TA, TM, SL, SM]	1-1/4	2600 @ -325°F	1835 @ 1000°F	ASME B31.3, ISO 10380
		NPT Female 1-1/4" [PF] NPT Male 1" - 1-1/4" [PM] Male ISO/BSP Tapered threads (ISO 7) 1-1/4" [MT]		2600 @ -60°F	2444 @ 400°F	
		Tube Butt Weld 1-1/4" [TB]		2400 @ -325°F	1694 @ 1000°F	
		Tube Fitting 1-1/2", 38 mm [TA, TM, SL, SM] Tube Butt Weld 1-1/2" [TB]	1-1/2	2200 @ -325°F	1553 @ 1000°F	
		NPT Female 1-1/2" [PF] NPT Male 1" - 1-1/2" [PM] Male ISO/BSP Tapered threads (ISO 7) 1-1/2" - 2" [MT]		2200 @ -60°F	2068 @ 400°F	
		Tube Fitting 2" [TA, SL] Tube Butt Weld 2" [TB]		2	1675 @ -325°F	
		NPT Male 1-1/2" - 2" [PM] Male ISO/BSP Tapered threads (ISO 7) 2" [MT]	1675 @ -60°F		1574 @ 400°F	

Product Illustration

All end connections are welded onto the hose using weld collars.



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 Technical Standards & Safety Authority
 Boilers & Pressure Vessels
 2014-01-01

Product Options:

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:

Braid Options

- 316L SS

Cover Options

- Armor guard - Interlocking, flexible 302 stainless steel.
- Fire jacket - Woven fiberglass coated with specially compounded aerospace-grade silicone rubber
- Thermosleeve - Braided fiberglass with saturated synthetic material coating.

Tag and Marking Options

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

End Connection Seals or Sealant Options

- VCO - O-rings
- VCR - Gasket
- 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. The Swagelok FX series hose assemblies are manufactured at Hose Master and at Swagelok Company location in Solon, Ohio.

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 Company A.G. (European Technology Center) St. Gallerstrasse 84 Lachen, Switzerland 8853 Switzerland
Swagelok Limited Ballafletcher Road Tromode IM4 4RA Isle of Man	

