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TECHNICAL STANDARDS & SAFETY AUTHORITY 14TH FLOOR CENTRE TOWER-3300 BLOOR STREE TORONTO ON M8X 2X4 Date: February 16, 2016

Account #: 35231 Journal #: 64631 Our File #: 5577191

Attn: TANYA FRANCIS

Re: Application for Design Registration

The design, as detailed in your, TSSA SR No. 1794412, for a Fitting is accepted for registration as follows:

Registered To: SWAGELOK COMPANY CRN: 0D14205.51

Drawing #: MS-01-180 Product Catalog

Conditions Of Registration:

Registration of revision to Coreflex W Series Hoses as per scope of registration sheets (attachment B). 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 December 21, 2025. 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.

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

SHARON PETERS

boiler.designregistration@safetyauthority.ca Design Administration

cc:

Attachment B. Scope of Registration for Swagelok Coreflex PTFE (WC) Hose Assemblies (Category D)

Product Scope

This document represents the scope of Swagelok Coreflex WC PTFE Hose Assemblies covered by this submission for CRN approval. These Swagelok Coreflex WC PTFE Hose Assemblies have been evaluated in accordance with the Rubber Manufacturer's Association (RMA) Handbook and ASTM D380 Test Methods for Rubber Hose.

Summary Table

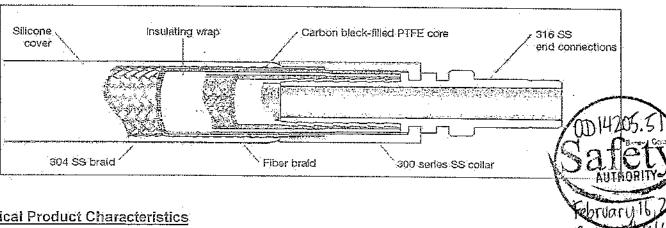
Product Description	Pressure Retaining	End Connection & Sizes	Nom, Hose	Waximum Wor in (P	Design Code of	
or Series	Material		Size (in.)	@ Min65°F	@ Max. 450°F	Construction
	Core: Carbon Black-filled (PTFE) [WC] Covered by: Fiber Braid & Insulating Wrap & 304 Series Stainless Steel Braid & Siling Course	Swagelok Tube Fitting: 1/8" to 2" & 3, 6,10,12,18,25,38,50 mm Swagelok Tube Adapters:1/8" to 2" & 3, 6,10,12,18,25,38,50 mm Female Pipe Threads NPT:1/8" to 2" Male Pipe Threads NPT: 1/8" to 2" Tube Stubs: 1/8" to 2" & 3, 6,8,10,12,18,25, 38, 50 mm *Sanitary KwikClamps: 1/2" to 2" Tube Butt Welds: 1/2" to 2" Female VCO 0-ring Face Seal Fitting: 1/8" to 2"	3/8"	OD14205 Safe Author	0014 150	20J.JPJ
VV 'Series	Silicon Cover With: Annealed 316 Stainless Steel End Connections OR 316 Strain Hardened End Connections OR 316L Stain Hardened Stainless Steel End	Female VCR Metal Gasket Face seal Fitting: 1/8" to 2" *TS series Sanitary Clamps: 1/2" to 1" Male Pipe threads, ISO/BSP Tapered (ISO 7): 1/4" to 1" Male ISO/BSP Parallel Threads W/ 60° Male cone (ISO 228): 1/4" to 1" Female Pipe Threads, ISO/BSP	1/2"	6CSAJ 64631 2" 750 750		Rubber Manufacturers Association Handbook
-	Connections & 300 Stainless Steel Crimp on Collar	Tapered (ISO 7): 1/4" to 1" Female ISO/BSP Parallel Threads (ISO 228): 1/4" to 1" Female Swivel ISO/BSP Parallel Threads W/ 30" Cone: 1/4" to 1/2" Female Swivel ISO/BSP Parallel Threads W/ 60" Cone: 1/4" to 1/2" *ANSI 150 LB Lap Joint Flange: 1/2" to 2"	3/4"	75 @ Room To		

^{*} All sanitary clamps including Kwik clams and ANSI 150 Lb flanges have pressure rating lower than the bulk hose. For exact rating of these fitting see Swagelok hose and flexible tubing catalog.

Hose		Temperature in (°F)						
Size (in)		-65 to 100	200	300	400	450		
3/8"	Max. Working Pressure (PSIG)	750	750	750	750	750		
1/2"	Max. Working Pressure (PSIG)	750	750	750	750	750		
3/4"	Max. Working Pressure (PSIG)	l NA	NA	NA	NA	NA NA		

Product Illustration

WC series is standard Swagelok virgin PTFE-lined hose with fiber braid reinforcement, ceramic wrap insulation, 304 stainless steel reinforcement, and a silicone cover. All end connection inserts are crimped onto the hose using crimp collars.



Typical Product Characteristics

Some of the product options listed below do not affect the pressure-temperature ratings shown in the Summary Table. All of the following options are within the scope of this registration:

Cover Options

- Armor guard Interlocking, flexible 304 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
- Perma tag Polyester tag encapsulated in platinum-cured silicone 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
- Flange and Sanitary Ends gaskets

All of the above options are within the scope of this approval.

Quality System

The Swagelok Company quality system complies with the requirements of BS EN ISO 9001:2008. The Swagelok Company maintains British Standards Institution Certificate of Registration Number FM 01729, which applies to all locations listed on the Certificate. The Swagelok Coreflex PTFE Hose Assemblies (WC) are manufactured at a 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

