

REGISTRATION OF A PRESSURE FITTING DESIGN

May 2, 2025

TSSA
345 Carlingview Dr.
Toronto, ON
Canada
M9W 6N9

Attention: Cecylia Garbacz

File Number: 102805

Re: Manufacturer: Aflex Hose Ltd.
Item: Flexible Hose Assemblies
Catalog or Drawing: Per Scope of Registration (March 26, 2025) & Design Report R-2121 Rev. 0

TSASK Codes and Standards Compliance has registered the design listed above in accordance with The Boiler and Pressure Vessel Act and Regulations and CSA B51. The Canadian Registration Number (CRN) is:

0D25821.53

Expiry Date: 2035-04-11

Please note that every fitting shall be constructed in strict accordance with the registered design.

Fitting registrations are required to be resubmitted for validation after ten (10) years from the registration date in accordance with CSA B51, Clause 4.2.1.

Should you require anything further, please do not hesitate to contact the Codes and Standards Compliance Office at your convenience.

Yours truly,



Athan Syrgiannis, P.Eng.

Codes and Standards Compliance

Remarks:

CRN issuance based upon registration by another province under the interprovincial agreement. Conditional upon compliance with the notes on the TSSA registration.

A valid quality control program must be maintained at the production facilities for the fitting registration to remain valid until the expiry date.

See Worldwide Locations Appendix (rev. November 19, 2024) for list of manufacturing locations.

Statutory Declaration (Registration of Fittings)

TSK-1008

I. Declaration Information

I, Dr. Leigh Mulvaney-Johnson PHD CENG (MIMECHE)

Technical Manager

(company title, e.g. vice president, plant manager, chief engineer)
(must be in a position of authority in the manufacturing plant where the fitting is produced)

of: Aflex Hose Ltd.

(name of manufacturer)

In this space, show facsimile of
manufacturer's logo or trademark as it will
appear on the fitting.



or
"AFLEX"

located at: Bradley Business Park, Dyson Wood Way, Bradley, Huddersfield, HD2 1GZ, United Kingdom

(Plant Address - Apt/Street)

(City, Prov)

(Postal Code)

do solemnly declare that the fittings listed hereinunder, which are subject to the **Saskatchewan Boiler and Pressure Vessel Safety Act** (check one)

☒ Comply with the requirements of ASME B31.3, ASME BPE, ARPM IP-2 which specifies the dimensions,
(title of recognized North American Standard)
Materials of construction, pressure / temperature ratings and identification marking of the fittings, 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, materials of construction, pressure / temperature ratings and the basis for such ratings, and the marking of the fittings for identification.

I further declare that the manufacturer of these fittings is controlled by a quality control program which has been verified by the following authority, ISO 9001:2015 bsi, TUV as being suitable for the manufacturer of these fittings to the stated standard. The fittings covered by this declaration, for which I seek registration, are CATEGORY D - FLEXIBLE HOSE ASSEMBLIES

In support of this application, the following information, calculations and / or test data are attached:

SCOPE OF CRN REGISTRATION, REPORTS, DRAWINGS, CALCULATIONS

II. Declaration

DECLARED before me at Heddon Brook In the Can of West Yorkshire
this 2nd day of October, 2024 CH21

MARY MAHON
(print name)

MARY MAHON
(Signature)

tel: 01422 844997 fax: 01422 844797
email: mary@marymahonsolicitor.co.uk

8 Wragley House, Valley Road
Heddon Brook, West Yorkshire HX7 7BN

(Signature of Commissioner of Oaths)

III. Office Use Only

To the best of my knowledge and belief, the application meets the requirements of the **Boiler and Pressure Vessel Safety Act** and CSA B51, Clause 4.2, and is accepted for registration in Category _____



**Technical
Safety Authority
of Saskatchewan**

Registration No. 0D25821.53

File No. 102805

Registered

Date: May 2, 2025

Expiry Date: April 11, 2035

Codes & Standards Compliance Office

(Date Registered - MM DD YYYY)
(For the Administrator / Chief Inspector)

(Expiry Date - MM DD YYYY)

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Rev. 10/2012
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AFLEX HOSE LTD.
BRADLEY BUSINESS PARK
DYSON WOOD WAY
BRADLEY, HUDDERSFIELD
HD2 1GZ, UNITED KINGDOM



Registration No.	0D25821.53
File No.	102805
Registered	
Date:	May 2, 2025
Expiry Date:	April 11, 2035
Codes & Standards Compliance Office	

March 26, 2025

SCOPE OF CRN REGISTRATION

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Hose Type(s)

Bioflex Ultra, stainless steel braid, PTFE lined fittings
 Bioflex Ultra, stainless steel braid, EPDM or silicone cover, PTFE lined fittings
 Fabline, stainless steel braid, EPDM or silicone cover, PTFE lined fittings
 Corroline+, stainless steel braid, EPDM with or without helix, PTFE lined fittings

Important: The CRN Pressure-Temperature Ratings listed in this document are the hose maximum CRN ratings. Consult hose product literature for recommended hose maximum operating conditions.

The maximum CRN ratings are applicable to the following Service Types:

Service Type **Group 1**: Water and all other liquids, solid materials suspended in liquids or air, compressed air and other gases.

Service Type **Group 2**: Liquid media that immediately changes into gas under standard atmospheric conditions.

Service Type **Group 3**: Steam

Product Description	Design Code	Material Specifications	MDMT	Report Number
Flexible Hose Assemblies	ASME B31.3, ASME BPE, ARPM IP-2	ASTM A479-304/304L, ASTM A479-316/316L ASTM A240-304/304L, ASTM A240-316/316L Stainless Steel meeting the requirements of ASTM A478 and ASTM A580, PTFE Hose and lined fittings.	- 73°C / -100°F	R-2121 Rev. 0

PRESSURE - TEMPERATURE RATINGS

Process Connections		DIN 11851 Female Process Connections				
Service Type	Group 1		Group 2		Group 3 (Note 2 - Important)	
Process Connection Size x Hose Size	MAWP at 300°F (psig)	MAWP at 150°C (barg)	MAWP at 300°F (psig)	MAWP at 150°C (barg)	MAWP at 300°F (psig)	MAWP at 150°C (barg)
1/2" DIN 11851 x 1/2" Hose	580.2	40.0	464.1	32.0	232.1	16.0
3/4" DIN 11851 x 3/4" Hose	580.2	40.0	464.1	32.0	232.1	16.0
1" DIN 11851 x 1" Hose	580.2	40.0	464.1	32.0	232.1	16.0
1-1/4" DIN 11851 x 1-1/4" Hose	580.2	40.0	464.1	32.0	232.1	16.0
1-1/2" DIN 11851 x 1-1/2" Hose	507.6	35.0	406.1	28.0	203.1	14.0
2" DIN 11851 x 2" Hose	362.6	25.0	290.1	20.0	145.0	10.0
2-1/2" DIN 11851 x 2-1/2" Hose	290.1	20.0	232.1	16.0	87.0	6.0
3" DIN 11851 x 3" Hose	217.6	15.0	174.0	12.0	87.0	6.0

SCOPE OF CRN REGISTRATION**PRESSURE - TEMPERATURE RATINGS**

Process Connections						
DIN 11851 Female Process Connections						
Service Type	Group 1		Group 2		Group 3 (Note 2 - Important)	
Process Connection Size x Hose Size	MAWP at 400°F (psig)	MAWP at 204°C (barg)	MAWP at 400°F (psig)	MAWP at 204°C (barg)	MAWP at 400°F (psig)	MAWP at 204°C (barg)
1/2" DIN 11851 x 1/2" Hose	539.5	37.2	431.6	29.8	215.8	14.9
3/4" DIN 11851 x 3/4" Hose	539.5	37.2	431.6	29.8	215.8	14.9
1" DIN 11851 x 1" Hose	539.5	37.2	431.6	29.8	215.8	14.9
1-1/4" DIN 11851 x 1-1/4" Hose	539.5	37.2	431.6	29.8	215.8	14.9
1-1/2" DIN 11851 x 1-1/2" Hose	472.1	32.6	377.7	26.0	188.8	13.0
2" DIN 11851 x 2" Hose	337.2	23.3	269.8	18.6	134.9	9.3
Process Connection Size x Hose Size	MAWP at 400°F (psig)	MAWP at 204°C (barg)	MAWP at 400°F (psig)	MAWP at 204°C (barg)	MAWP at 327°F (psig)	MAWP at 164°C (barg)
2-1/2" DIN 11851 x 2-1/2" Hose	269.8	18.6	215.8	14.9	87.0	6.0
3" DIN 11851 x 3" Hose	202.3	14.0	161.9	11.2	87.0	6.0

Process Connections						
ASME BPE / DIN 32676 Process Connections						
Service Type	Group 1		Group 2		Group 3 (Note 2 - Important)	
Process Connection Size x Hose Size	MAWP at 300°F (psig)	MAWP at 150°C (barg)	MAWP at 300°F (psig)	MAWP at 150°C (barg)	MAWP at 300°F (psig)	MAWP at 150°C (barg)
1/2" Ferrule x 5/8" Hose	580.2	40.0	464.1	32.0	232.1	16.0
1" Ferrule x 7/8" Hose	232.1	16.0	185.7	12.8	92.8	6.4
1" Ferrule x 1" Hose	232.1	16.0	185.7	12.8	92.8	6.4
1-1/2" Ferrule x 1-3/8" Hose	232.1	16.0	185.7	12.8	92.8	6.4
1-1/2" Ferrule x 1-1/2" Hose	232.1	16.0	185.7	12.8	92.8	6.4
2" Ferrule x 1-7/8" Hose	232.1	16.0	185.7	12.8	92.8	6.4
2" Ferrule x 2" Hose	232.1	16.0	185.7	12.8	92.8	6.4
2-1/2" Ferrule x 2-1/2" Hose	232.1	16.0	185.7	12.8	87.0	6.0
3" Ferrule x 3" Hose	217.6	15.0	174.0	12.0	87.0	6.0

Process Connections						
ASME BPE / DIN 32676 Process Connections						
Service Type	Group 1		Group 2		Group 3 (Note 2 - Important)	
Process Connection Size x Hose Size	MAWP at 400°F (psig)	MAWP at 204°C (barg)	MAWP at 400°F (psig)	MAWP at 204°C (barg)	MAWP at 400°F (psig)	MAWP at 204°C (barg)
1/2" Ferrule x 5/8" Hose	539.5	37.2	431.6	29.8	215.8	14.9
1" Ferrule x 7/8" Hose	215.8	14.9	172.7	11.9	87.0	6.0
1" Ferrule x 1" Hose	215.8	14.9	172.7	11.9	87.0	6.0
1-1/2" Ferrule x 1-3/8" Hose	215.8	14.9	172.7	11.9	87.0	6.0
1-1/2" Ferrule x 1-1/2" Hose	215.8	14.9	172.7	11.9	87.0	6.0
2" Ferrule x 1-7/8" Hose	215.8	14.9	172.7	11.9	87.0	6.0
2" Ferrule x 2" Hose	215.8	14.9	172.7	11.9	87.0	6.0
Process Connection Size x Hose Size	MAWP at 400°F (psig)	MAWP at 204°C (barg)	MAWP at 400°F (psig)	MAWP at 204°C (barg)	MAWP at 327°F (psig)	MAWP at 164°C (barg)
2-1/2" Ferrule x 2-1/2" Hose	215.8	14.9	172.7	11.9	87.0	6.0
3" Ferrule x 3" Hose	202.3	14.0	161.9	11.2	87.0	6.0

SCOPE OF CRN REGISTRATION

PRESSURE - TEMPERATURE RATINGS						
Process Connections		CL150 ASME B16.5 Flanged Type 304SS				
Service Type	Group 1		Group 2		Group 3 (Note 2 - Important)	
Process Connection Size x Hose Size	MAWP at 100°F(psig)	MAWP at 38°C(barg)	MAWP at 100°F(psig)	MAWP at 38°C(barg)	MAWP at 100°F(psig)	MAWP at 38°C(barg)
1/2" Flange x 1/2" Hose	275.0	19.0	275.0	19.0	232.0	16.0
3/4" Flange x 3/4" Hose	275.0	19.0	275.0	19.0	232.0	16.0
1" Flange x 1" Hose	275.0	19.0	275.0	19.0	232.0	16.0
1-1/4" Flange x 1-1/4" Hose	275.0	19.0	275.0	19.0	232.0	16.0
1-1/2" Flange x 1-1/2" Hose	275.0	19.0	275.0	19.0	203.0	14.0
2" Flange x 2" Hose	275.0	19.0	275.0	19.0	145.0	10.0
2-1/2" Flange x 2-1/2" Hose	275.0	19.0	232.0	16.0	87.0	6.0
3" Flange x 3" Hose	218.0	15.0	174.0	12.0	87.0	6.0
Process Connection Size x Hose Size	MAWP at 200°F(psig)	MAWP at 93°C(barg)	MAWP at 200°F(psig)	MAWP at 93°C(barg)	MAWP at 200°F(psig)	MAWP at 93°C(barg)
1/2" Flange x 1/2" Hose	230.0	15.9	230.0	15.9	230.0	15.9
3/4" Flange x 3/4" Hose	230.0	15.9	230.0	15.9	230.0	15.9
1" Flange x 1" Hose	230.0	15.9	230.0	15.9	230.0	15.9
1-1/4" Flange x 1-1/4" Hose	230.0	15.9	230.0	15.9	230.0	15.9
1-1/2" Flange x 1-1/2" Hose	230.0	15.9	230.0	15.9	203.0	14.0
2" Flange x 2" Hose	230.0	15.9	230.0	15.9	145.0	10.0
2-1/2" Flange x 2-1/2" Hose	230.0	15.9	230.0	15.9	87.0	6.0
3" Flange x 3" Hose	218.0	15.0	174.0	12.0	87.0	6.0
Process Connection Size x Hose Size	MAWP at 300°F(psig)	MAWP at 149°C(barg)	MAWP at 300°F(psig)	MAWP at 149°C(barg)	MAWP at 300°F(psig)	MAWP at 149°C(barg)
1/2" Flange x 1/2" Hose	205.0	14.1	205.0	14.1	205.0	14.1
3/4" Flange x 3/4" Hose	205.0	14.1	205.0	14.1	205.0	14.1
1" Flange x 1" Hose	205.0	14.1	205.0	14.1	205.0	14.1
1-1/4" Flange x 1-1/4" Hose	205.0	14.1	205.0	14.1	205.0	14.1
1-1/2" Flange x 1-1/2" Hose	205.0	14.1	205.0	14.1	203.0	14.0
2" Flange x 2" Hose	205.0	14.1	205.0	14.1	145.0	10.0
2-1/2" Flange x 2-1/2" Hose	205.0	14.1	205.0	14.1	87.0	6.0
3" Flange x 3" Hose	205.0	14.1	174.0	12.0	87.0	6.0
Process Connection Size x Hose Size	MAWP at 400°F(psig)	MAWP at 204°C(barg)	MAWP at 400°F(psig)	MAWP at 204°C(barg)	MAWP at 400°F(psig)	MAWP at 204°C(barg)
1/2" Flange x 1/2" Hose	190.0	13.1	190.0	13.1	190.0	13.1
3/4" Flange x 3/4" Hose	190.0	13.1	190.0	13.1	190.0	13.1
1" Flange x 1" Hose	190.0	13.1	190.0	13.1	190.0	13.1
1-1/4" Flange x 1-1/4" Hose	190.0	13.1	190.0	13.1	190.0	13.1
1-1/2" Flange x 1-1/2" Hose	190.0	13.1	190.0	13.1	189.0	13.0
2" Flange x 2" Hose	190.0	13.1	190.0	13.1	135.0	9.3
Process Connection Size x Hose Size	MAWP at 400°F(psig)	MAWP at 204°C(barg)	MAWP at 400°F(psig)	MAWP at 204°C(barg)	MAWP at 327°F (psig)	MAWP at 164°C (barg)
2-1/2" Flange x 2-1/2" Hose	190.0	13.1	190.0	13.1	87.0	6.0
3" Flange x 3" Hose	190.0	13.1	162.0	11.2	87.0	6.0

SCOPE OF CRN REGISTRATION

PRESSURE - TEMPERATURE RATINGS						
Process Connections		CL150 ASME B16.5 Flanged Type 316SS				
Service Type	Group 1		Group 2		Group 3 (Note 2 - Important)	
Process Connection Size x Hose Size	MAWP at 100°F(psig)	MAWP at 38°C(barg)	MAWP at 100°F(psig)	MAWP at 38°C(barg)	MAWP at 100°F(psig)	MAWP at 38°C(barg)
1/2" Flange x 1/2" Hose	275.0	19.0	275.0	19.0	232.0	16.0
3/4" Flange x 3/4" Hose	275.0	19.0	275.0	19.0	232.0	16.0
1" Flange x 1" Hose	275.0	19.0	275.0	19.0	232.0	16.0
1-1/4" Flange x 1-1/4" Hose	275.0	19.0	275.0	19.0	232.0	16.0
1-1/2" Flange x 1-1/2" Hose	275.0	19.0	275.0	19.0	203.0	14.0
2" Flange x 2" Hose	275.0	19.0	275.0	19.0	145.0	10.0
2-1/2" Flange x 2-1/2" Hose	275.0	19.0	232.0	16.0	87.0	6.0
3" Flange x 3" Hose	218.0	15.0	174.0	12.0	87.0	6.0
Process Connection Size x Hose Size	MAWP at 200°F(psig)	MAWP at 93°C(barg)	MAWP at 200°F(psig)	MAWP at 93°C(barg)	MAWP at 200°F(psig)	MAWP at 93°C(barg)
1/2" Flange x 1/2" Hose	235.0	16.2	235.0	16.2	232.0	16.0
3/4" Flange x 3/4" Hose	235.0	16.2	235.0	16.2	232.0	16.0
1" Flange x 1" Hose	235.0	16.2	235.0	16.2	232.0	16.0
1-1/4" Flange x 1-1/4" Hose	235.0	16.2	235.0	16.2	232.0	16.0
1-1/2" Flange x 1-1/2" Hose	235.0	16.2	235.0	16.2	203.0	14.0
2" Flange x 2" Hose	235.0	16.2	235.0	16.2	145.0	10.0
2-1/2" Flange x 2-1/2" Hose	235.0	16.2	232.0	16.0	87.0	6.0
3" Flange x 3" Hose	218.0	15.0	174.0	12.0	87.0	6.0
Process Connection Size x Hose Size	MAWP at 300°F(psig)	MAWP at 149°C(barg)	MAWP at 300°F(psig)	MAWP at 149°C(barg)	MAWP at 300°F(psig)	MAWP at 149°C(barg)
1/2" Flange x 1/2" Hose	215.0	14.8	215.0	14.8	215.0	14.8
3/4" Flange x 3/4" Hose	215.0	14.8	215.0	14.8	215.0	14.8
1" Flange x 1" Hose	215.0	14.8	215.0	14.8	215.0	14.8
1-1/4" Flange x 1-1/4" Hose	215.0	14.8	215.0	14.8	215.0	14.8
1-1/2" Flange x 1-1/2" Hose	215.0	14.8	215.0	14.8	203.0	14.0
2" Flange x 2" Hose	215.0	14.8	215.0	14.8	145.0	10.0
2-1/2" Flange x 2-1/2" Hose	215.0	14.8	215.0	14.8	87.0	6.0
3" Flange x 3" Hose	215.0	14.8	174.0	12.0	87.0	6.0
Process Connection Size x Hose Size	MAWP at 400°F(psig)	MAWP at 204°C(barg)	MAWP at 400°F(psig)	MAWP at 204°C(barg)	MAWP at 400°F(psig)	MAWP at 204°C(barg)
1/2" Flange x 1/2" Hose	195.0	13.4	195.0	13.4	195.0	13.4
3/4" Flange x 3/4" Hose	195.0	13.4	195.0	13.4	195.0	13.4
1" Flange x 1" Hose	195.0	13.4	195.0	13.4	195.0	13.4
1-1/4" Flange x 1-1/4" Hose	195.0	13.4	195.0	13.4	195.0	13.4
1-1/2" Flange x 1-1/2" Hose	195.0	13.4	195.0	13.4	189.0	13.0
2" Flange x 2" Hose	195.0	13.4	195.0	13.4	135.0	9.3
Process Connection Size x Hose Size	MAWP at 400°F(psig)	MAWP at 204°C(barg)	MAWP at 400°F(psig)	MAWP at 204°C(barg)	MAWP at 327°F (psig)	MAWP at 164°C (barg)
2-1/2" Flange x 2-1/2" Hose	195.0	13.4	195.0	13.4	87.0	6.0
3" Flange x 3" Hose	195.0	13.4	162.0	11.2	87.0	6.0

SCOPE OF CRN REGISTRATION

Note 1: MAWP = Maximum Allowable Working Pressure, MAWT = Maximum Allowable Working Temperature, MDMT = Minimum Design Metal Temperature.

Note 2: In all cases the Group 3 Steam Service MAWP stated shall be further limited, where applicable, to the steam saturation pressure at temperature.

Note 3: Linear interpolation of pressure ratings between temperatures is allowed.

Note 4: The Maximum Allowable Working Pressure (MAWP) is the maximum allowed under this CRN. Aflex may limit certain hose applications to lower pressures than specified above. Please consult Aflex literature.

Note 5: For low temperature operation the products shall conform to the rules of the applicable codes under which they are used.

Note 6: The ASME BPE / DIN 32676 Ferrule connection shall be used with a clamp, however the assembly clamp is not part of this CRN. Pressure-Temperature ratings may be limited by the clamp type used in the joint assembly. The clamp used to complete the joint shall have its own CRN and shall have pressure-temperature ratings the same or higher than the product ratings.

Note 7: See attached Worldwide Locations Appendix for the manufacturing locations applicable to this CRN.



WORLDWIDE LOCATIONS APPENDIX

AFLEX HOSE MANUFACTURING LOCATIONS & CERTIFYING AUTHORITIES

(rev. November 19, 2024)

Aflex Hose Ltd.

Bradley Business Park
Dyson Wood Way
Bradley
Huddersfield
HD2 1GZ
United Kingdom

ISO 9001 Certified by bsi

In addition, in accordance with CSA B51 paragraph 4.2.5 Aflex Hose Ltd. is taking responsibility for the product covered under this CRN that is manufactured at:

Watson-Marlow, Inc.

37 Upton Technology Park
Wilmington, MA, 01887
USA

ISO 9001 Certified by TUV

Watson-Marlow America Manufacturing Inc.

16 Bulge Road
Devens MA 01434
USA

ISO 9001 Certified by TUV

	Technical Safety Authority of Saskatchewan
Registration No.	0D25821.53
File No.	102805
	<div>Registered</div>
Date:	May 2, 2025
Expiry Date:	April 11, 2035
Codes & Standards Compliance Office	