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Supersedes CAN/CGSB-98.2-2018



National flag of Canada (Indoor use)

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National flag of Canada

(Indoor use)

CETTE NORME NATIONALE DU CANADA EST DISPONIBLE EN VERSIONS
FRANÇAISE ET ANGLAISE.

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Preface

This National Standard of Canada CAN/CGSB-98.2-2023 supersedes the July 2018 edition.

Changes since the previous edition

- Added chromaticity coordinates and CIELAB space units recommendations for ornamental fringe.
- Added recommendations for components of ornamental fringe.
- Added figure 13 to illustrate components of ornamental fringe.
- Added figure 14 to illustrate attachment of fringe to flag.
- Stitching – chain stitch has been removed as an option.
- New section was added to help facilitate environmental considerations.
- Figure 9 – added an option for constructing subtypes 1A and 2A, integral header.
- Various editorial fixes related to the CGSB Style Manual.
- Added exact ranges for all tolerances.

The following definitions apply in understanding how to implement this National Standard of Canada:

- "shall" indicates a **requirement**;
- "should" indicates a **recommendation**;
- "may" is used to indicate that something is **permitted**;
- "can" is used to indicate that something is **possible**, for example, that an organization is able to do something.

Notes accompanying clauses do not include requirements or alternative requirements. The purpose of a note accompanying a clause is to separate explanatory or informative material from the text. Annexes are designated normative (mandatory) or informative (non-mandatory) to define their application.

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National flag of Canada

(Indoor use)

1 Scope

This National Standard of Canada applies to the design, colour, materials, construction and performance requirements of the National Flag of Canada intended for indoor use.

The testing and evaluation of a product against this standard may require the use of materials and/or equipment that could be hazardous. This standard does not purport to address all the safety aspects associated with its use. Anyone using this standard has the responsibility to consult the appropriate authorities and to establish appropriate health and safety practices in conjunction with any applicable regulatory requirements prior to its use.

Units of measurement – Quantities and dimensions used in this standard are provided in units from the International System of Units (SI units). Imperial equivalents may be shown in brackets.

2 Normative references

The following normative documents contain provisions that, through reference in this text, constitute provisions of this National Standard of Canada. The referenced documents may be obtained from the sources noted below.

Note: The contact information provided below was valid at the date of publication of this standard.

An undated reference is to the latest edition or revision of the reference or document in question, unless otherwise specified by the authority applying this standard. A dated reference is to the specified revision or edition of the reference or document in question.

2.1 Canadian General Standards Board

CAN/CGSB-4.2 — *Textile test methods:*

No. 2 — *Conditioning textile materials for testing* (withdrawn September 2019)

No. 4.1 — *Textiles — Fabrics — Determination of width and length* (withdrawn December 2016)

No. 5.1 — *Unit mass of fabrics* (withdrawn September 2019)

No. 18.3/ISO 105-B02 (R2010) — *Textiles - Tests for Colourfastness - Part B02: Colourfastness to Artificial light: Xenon Arc Fading Lamp Test* (withdrawn December 2016)

No. 19.1 — *Colourfastness to washing - Accelerated test - Launder-Ometer* (withdrawn September 2019)

No. 22 — 2004 (R2013) — *Colourfastness to rubbing (Crocking)* (withdrawn September 2019)

No. 25.1 — *Dimensional change in wetting* (withdrawn September 2019)

No. 27.1 — *Flame Resistance — Vertical Burning Test* (withdrawn December 2016)

No. 29.1 — *Colourfastness to Dry Cleaning Solvent* (withdrawn December 2016)

CAN/CGSB-54.1 Part 1/ISO 4915:1991 — *Stitches and Seams Part 1: Textiles - Stitch Types - Classification and Terminology* (withdrawn January 2022)

CAN/CGSB-86.1 — *Care Labelling of Textiles* (withdrawn October 2017)

2.1.1 Contact information

The above standards, whether active or withdrawn, may be obtained from the Canadian General Standards Board. Telephone: 1-800-665-2472. E-mail: ncr.cgsb-ongc@tpsgc-pwgsc.gc.ca. Web site: <https://www.tpsgc-pwgsc.gc.ca/ongc-cgsb/index-eng.html>.

2.2 ASTM International

ASTM D1388-18 — *Standard Test Method for Stiffness of Fabrics*

ASTM E308-18 — *Standard Practice for Computing the Colors of Objects by Using the CIE system*

2.2.1 Contact information

The above may be obtained from ASTM International. Telephone: 1-877-909-2786. Web site: <https://www.astm.org/>. They can also be obtained from IHS Markit Standards Store by S&P Global. Telephone: 613-237-4250 or 1-800-447-2273. E-mail: gic@ihscanada.ca. Web site: <https://global.ihs.com/>.

2.3 American Association of Textile Chemists and Colorists

AATCC EP 6 – *Evaluation Procedure for Instrumental Color Measurement*

2.3.1 Contact information

The above may be obtained from the American Association of Textile Chemists and Colorists. Telephone: 919-549-8141. Web site: <https://aatcc.org/>.

2.4 International Organization for Standardization

ISO/CIE 11664-1:2019 — *Colorimetry – Part 1: CIE standard colorimetric observers*

ISO/CIE 11664-2:2022 — *Colorimetry – Part 2: CIE Standard Illuminants*

2.4.1 Contact information

The above may be obtained from International Organization for Standardization, ISO Central Secretariat. Telephone: +41 22 749 01 11. E-mail: central@iso.org. Web site: <https://www.iso.org/about-us.html>. They can also be obtained from IHS Markit Standards Store by S&P Global. Telephone: 613-237-4250 or 1-800-447-2273. E-mail: gic@ihscanada.ca. Web site: <https://global.ihs.com/>.

2.5 International Commission on Illumination

CIE 015:2018 — *Colorimetry, 4th Edition*

2.5.1 Contact information

The above may be obtained from the CIE Central Bureau. Telephone: +43 1 714 31 87. E-mail: ciecb@cie.co.at. Web site: <https://cie.co.at/>.

2.6 United States Department of Defence

A-A-59826 — *Thread, Nylon*

A-A-59963 — *Thread, Polyester*

2.6.1 Contact information

The above may be obtained from DLA Document Services. Address questions to ASSIST Help Desk at 215-737-8000. Web site: <https://quicksearch.dla.mil/>.

3 Symbols, acronyms and abbreviated terms

The following abbreviations and acronyms are used in this National Standard of Canada.

AATCC – American Association of Textile Chemists and Colorists

ASTM – American Society for Testing and Materials

CIE – International Commission on Illumination

IHS – Information Handling Systems

ISO – International Organization for Standardization

SI – International System of Units

4 Classification

The flag shall be supplied in the following types, classes and sizes as specified.

4.1 Types

The flag shall be the types and subtypes specified in Table 1.

Table 1 — Flag types and subtypes

Type	Description	In accordance with figure(s)
1	Header with open sleeve	6
2	Header with open sleeve and tie tapes	7
3	Header with open sleeve and leather tabs	8
Subtype	Description	In accordance with figure(s)
1A	Integral header	9 – Sections A-A, B-B, D-D (options A or B)
1B	Separate header	11 – Sections A-A, B-B, D-D
2A	Integral header	9 – Sections A-A, B-B, C-C, E-E
2B	Separate header	11 – Sections A-A, B-B, C-C, E-E
3A	Integral header	9 – Sections A-A, B-B 10 – Section F-F
3B	Separate header	9 – Sections A-A, B-B 12 – Sections F-F

4.2 Classes

There are 2 classes of flags:

Class A — With ornamental fringe, cord and tassels;

Class B — Without ornamental fringe, cord and tassels.

4.3 Sizes

The flag shall be the sizes specified in Table 2.

5 General requirements

The flag shall be free of defects in materials and workmanship that may affect its appearance or serviceability.

6 Detailed requirements

6.1 Design

The flag shall be of the proportions two by length and one by width, containing in its centre a white square the depth of the flag, with a single 11-point red maple leaf centred therein, in accordance with figure 1.

6.2 Dimensions¹ of flag and header

The flag shall be the dimensions and tolerances specified in Table 2 by following the instructions for measuring the length (6.2.1) and the width (6.2.2) when measured in accordance with CAN/CGSB-4.2 No. 4.1. The header shall be the dimensions and tolerances specified in Table 3.

6.2.1 Length (L)

The length is measured by taking the average of the two outside edges and one additional horizontal measurement equally spaced across the flag.

6.2.2 Width (X)

The width is measured by taking the average of the two outside edges and three additional vertical measurements equally spaced across the flag.

¹ In the case of dispute, flags are to be conditioned in accordance with CAN/CGSB-4.2 No. 2 before they are measured.

Table 2 — National Flag dimensions and tolerances in centimetres

Flag size	Width (X) ^a (exact range)	Length (L) ^a (exact range)	Red (Y) ^a (exact range)	White (Z) ^a (exact range)
1	12 ± 0.3 (11.7 to 12.3)	24 ± 0.5 (23.5 to 24.5)	6.0 ± 0.2 (5.8 to 6.2)	12 ± 0.2 (11.8 to 12.2)
2	15 ± 0.3 (14.7 to 15.3)	30 ± 0.5 (29.5 to 30.5)	7.5 ± 0.2 (7.3 to 7.7)	15 ± 0.2 (14.8 to 15.2)
3	20 ± 0.3 (19.7 to 20.3)	40 ± 0.5 (39.5 to 40.5)	10.0 ± 0.2 (9.8 to 10.2)	20 ± 0.2 (19.8 to 20.2)
4	30 ± 0.5 (29.5 to 30.5)	60 ± 1.0 (59 to 61)	15.0 ± 0.3 (14.7 to 15.3)	30 ± 0.3 (29.7 to 30.3)
5	45 ± 0.5 (44.5 to 45.5)	90 ± 1.0 (89 to 91)	22.5 ± 0.3 (22.2 to 22.8)	45 ± 0.3 (44.7 to 45.3)
6	65 ± 1.0 (64 to 66)	130 ± 1.5 (128.5 to 131.5)	32.5 ± 0.5 (32 to 33)	65 ± 0.5 (64.5 to 65.5)
7	82 ± 1.0 (81 to 83)	164 ± 1.5 (162.5 to 165.5)	41.0 ± 0.5 (40.5 to 41.5)	82 ± 0.5 (81.5 to 82.5)
8	90 ± 1.0 (89 to 91)	180 ± 1.5 (178.5 to 181.5)	45.0 ± 0.5 (44.5 to 45.05)	90 ± 0.5 (89.5 to 90.5)

^a See figures 2, 3 and 4.

6.2.3 Header

The header of the flag shall comply with the dimensions and tolerances specified in Table 3.

Table 3 — Header dimensions and tolerances in centimetres

Flag size classification ^a	Header (W) ^b dimension in cm ± 2% (exact range)	
	Subtypes 1A, 2A, 3A W=V ^c	Subtypes 1B, 2B 3B W=V ^d
1 - 2	4.0 (3.92 to 4.08)	6.5 (6.37 to 6.63)
3 - 8	6.5 (6.37 to 6.63)	6.5 (6.37 to 6.63)

^a See Table 2.
^b See figures 2, 3, and 4 for location of header (W).
^c Figure 9*.
^d See figure 11.
^{*} Figure 9 – Section D-D has two options: A= with fold; B = without fold.

6.3 Fabric

The fabric properties and performance of the flag shall be in accordance with the requirements in Table 4.

Table 4 — Finished flag fabric and performance requirements

Property	Requirement		Test method CAN/CGSB – 4.2, Textile test methods ^a
Weave	Plain, 1 X 1		Not applicable
Mass – g/m ²	Minimum	60	No. 5.1
	Maximum	120	
Dimensional change in wetting – Maximum %	Warp	± 2	No. 25.1
	Weft	± 2	
Colourfastness, minimum	To light ^{b,c}	120 hours or 160 hours, Minimum Grey Scale 4	No. 18.3/ISO 105-B02
	To washing ^c - colour change for red portion - staining for white portion	Minimum Grey Scale 4 Grey Scale 5	No. 19.1, Test No.1 ^d
	To dry cleaning ^c - colour change for red portion - staining for white portion	Minimum Grey Scale 4 Grey Scale 5	No. 29.1 ^d
	To crocking, dry ^{c,e} - colour change - staining	Grey Scale 5	No. 22 ^d
Flammability (average of 5 samples)	Char length	100 mm	No. 27.1
	After flame	2 s	
	No burning drips or debris		
Flexural rigidity (stiffness)	—	No less than 200 mg/cm (Option A)	ASTM D1388

^a Unless otherwise indicated.

^b Soda-lime/borosilicate system.

^c Sample shall be half-red and half-white.

^d In this standard, the multi-fibre is not evaluated.

^e Repeat dry crocking test rubbing half-red and half-white each time. There shall be no observable streaking, smearing or staining onto the half-white rubbed parts.

6.4 Colours

The colour values contained in the Federal Identity Program Technical Specifications for corporate identity shall not supersede the CIE colour coordinates specified in this standard.

Table 5 shows the colour requirements of the flag. The red and white colours shall have CIE colour chromaticity coordinates (x , y) and luminance value (Y) or equivalent CIELAB values (L^* , a^* , b^*) when calculated in accordance with ASTM E308, using CIE Standard Illuminant D65 (see note 1) and the 1964 (10°) Standard Colorimetric Observer (see note 2) with specular reflection excluded.

Table 5 — CIE chromaticity coordinates (x , y), luminance value (Y) and CIELAB (L^* , a^* , b^*) units

Colour	CIE chromaticity coordinates (x , y) Luminance value (Y)			Equivalent CIELAB (L^* , a^* , b^*) units		
	x (exact range)	y (exact range)	Y (exact range)	L^*	a^*	b^*
Red	0.576 ± 0.028 (0.548 to 0.604)	0.315 ± 0.012 (0.303 to 0.327)	9.5 ± 1.5 (8 to 11)	36.93	55.61	28.98
White	0.328 ± 0.012 (0.304 to 0.34)	0.344 ± 0.015 (0.329 to 0.359)	78.0 ± 3.0 (75 to 81)	90.78	0.50	7.97

Note 1: ISO/CIE11664-2 – *Colorimetry – Part 2: CIE Standard Illuminants*.
Note 2: ISO/CIE 11664-1:2019 – *Colorimetry – Part 1: CIE standard colorimetric observers*.

6.4.1 Colour measurement

Colour measurements shall be performed using a hemispherical spectrophotometer or spectrocolorimeter with 0°:d or d:0° geometry or with 8°:de or de:8° geometry, with the specular (mirror reflection) component excluded, in accordance with CIE 015:2018 and ASTM E308.

6.4.2 Colourfastness

The colourfastness of the flag shall be in accordance with the requirements of Table 4.

6.5 Materials

6.5.1 Flag

The flag shall be made of woven fabric in accordance with Table 4.

6.5.2 Header

The header material shall be a white, woven fabric in accordance with Table 4.

6.5.3 Sewing thread

The flag shall be sewn with red and/or white thread in accordance with United States Department of Defence A-A-59826 and A-A-59963, unless otherwise specified.

6.5.4 Tie tapes (type 2 only)

There shall be two 16 x 400 mm woven or braided white tapes, with a mass of 3.50 ± 0.25 (3.25 to 3.75) g/m² when tested in accordance with CAN/CGSB-4.2 No. 5.1. The free length of the tie tape shall be approximately 18 cm.

6.5.5 Leather tabs (type 3 only)

The leather tabs shall be black or brown leather with the shape and dimensions specified in figure 8.

6.5.6 Ornamental fringe (class A only)

6.5.6.1 Type

The fringe shall be of bullion type, which is a narrow ornamental textile trim composed of a woven carrier tape from which the weft yarns extend a prescribed distance and are twisted back on themselves into the weave structure of the carrier tape, creating a fringe strand. This is repeated for the desired length. The fringe and carrier tape shall be composed of the same yarn, one with a soft sheen to resemble filament silk. The design of the fringe shall be specified by the procurement authority.

See figure 13 for an example of an acceptable bullion fringe.

6.5.6.2 Colour

The ornamental fringe colour shall be of a golden colour in the range of old gold or antique gold. Compliance with colour requirement should be determined using one of the following means:

- If the chromaticity data is available from the supplier, the fringe should be as close as possible to the chromaticity coordinates and CIELAB space units as shown in Table 6. If the supplier provides fringe colour expressed in Pantone notation, it shall not be used to determine compliance.
- In the absence of any chromaticity data from the fringe supplier, a sample should be requested from the procurement authority to match colour visually.

Table 6 — Ornamental fringe colour requirements

Chromaticity coordinates ^a			CIELAB space units ^a		
x^b	y^b	Y^b	L^*	a^*	b^*
0.475	0.455	39.02	68.76	11.92	69.77

^a The colour chromaticity coordinates or equivalent CIELAB space units shown in Table 6 were derived by measuring the colour of a golden-coloured fringe sample approved by the committee. The fringe sample was measured in accordance with AATCC EP 6, using illuminant D65 and the 1964 (10°) Standard Colorimetric Observer, as given in Table 6. The fringe may be prepared for measurement by winding, fastening or mounting to a card as described in A1.4.1 of AATCC EP6.

^b Tolerance shall be no more than 3.0 units $\Delta E_{CMC(2:1)}$.

6.5.6.2.1 Colourfastness requirement for the fringe should be the same as that for the flag fabric as shown in Table 4.

6.5.6.3 Components of the fringe

Components of the fringe shall be assessed visually and should be as close as possible to the properties shown in Table 7.

Table 7 — Ornamental fringe components

Property	Requirement
Width of carrier tape ^a	1.0 cm to 1.3 cm
Twisted fringe strand ^a	4.0 cm to 4.5 cm
Fringe strands ^a	9 to 10 strands per 2.54 cm
Total width of fringe including carrier tape and strands ^a	5.0 cm to 6.0 cm
Minimum 360-degree twists per 4 cm length of fringe strand	9 twists
Mass	Minimum 8.8 g per 30.5 cm
^a See figure 13.	

6.5.6.4 Attachment of fringe to flag

The fringe is sewn to the obverse side of the flag along the top, fly and bottom edges. The carrier tape is placed on top of the flag's hem and overlaps no deeper than the width of the hem. The carrier tape is sewn in place with two rows of lockstitch type 301 or type 401 in accordance with CAN/CGSB-54.1 Part 1/ISO 4915 with not less than 2.8 and not more than 3.6 stitches per centimetre with minimal puckering. Refer to figure 14 for a visual representation of the instruction.

6.5.7 Ornamental cord and tassels (class A only)

The ornamental cord shall be 3 ply, 6 mm diameter, golden in colour with a golden colour tassel 7 to 8 cm long at each end. The cord and tassels shall visually match the colour of the ornamental fringe.

6.6 Construction

6.6.1 General

The flag shall be screen-printed using an acid dye, or appliquéd. Construction of the flag shall be in accordance with the following:

- One-piece flag — Figures 2 and 5 (sections A-A and B-B);
- Three-piece flag — Figures 3 and 5 (sections A-A, B-B and C-C);
- Four-piece flag — Figures 4 and 5 (sections A-A, B-B and C-C).

6.6.2 Printed flags

For all flags printed in one piece, the length of the flag shall be parallel to the warp direction of the fabric. For flags of more than one piece, the length of the flag shall be parallel to the weft direction of the fabric.

The tolerance for bowing of the vertical red panel edges of printed flags are as follows:

- Size 1 (12 x 24 cm) through size 4 (30 x 60 cm): 6 mm;
- Size 5 (45 x 90 cm) through size 8 (90 x 180 cm): 12 mm.

6.6.3 Appliquéd flags

For all appliquéd flags, the appliqué shall be applied to both sides of the flag.

6.6.4 Seams and stitching

All seams shall be joined by lockstitch type 301 or type 401 in accordance with CAN/CGSB-54.1 Part 1/ISO 4915 with not less than 2.8 and not more than 3.6 stitches per centimetre. The ends of all stitchings and any breaks in the sewing thread during stitching shall be securely backstitched.

6.6.5 Attaching fringe to flag

For class A flags, the ornamental fringe shall be sewn to the top, bottom and fly edges of the flag in such a manner as not to pucker the flag fabric.

7 Special considerations

7.1 Environmental, health and safety

7.1.1 Recycled, recovered and/or environmentally preferable materials

Recycled, recovered and/or environmentally preferable materials should be used to the maximum extent possible, provided that the materials meet or exceed the operational requirements and promote economically advantageous life cycle costs.

7.1.2 Manufacturing processes

Manufacturing processes with minimal environmental impact are encouraged.

7.1.3 Materials and manufacturing methods

The use of environmentally preferable materials and manufacturing methods applies to the items covered by this standard as well as to any of the packaging and shipping materials and methods required for delivery.

Note: Packaging should be designed and packaging materials selected to minimize waste and environmental impact, both during transport to and recovery from the consumer. The reuse of packaging or the use of recycled or recyclable components should be incorporated where recycling facilities exist. Where possible, any plastic components in the packaging should be identified with a composition code to facilitate recycling.

8 Packaging, packing, labelling and marking

8.1 Packaging and packing

Unless otherwise specified, packaging and packing shall conform to normal commercial practice (see 7.1.3).

8.2 Labelling and marking

The flag shall have affixed to the header, a label upon which at least the following information and instructions², in both English and French, is printed in a type height not less than 6 mm and not more than 12 mm.

² Cleaning and drying instructions may be printed separately and enclosed in the package.

The label shall be legible and permanent to the conditions of use of the flag and shall have no detrimental effect on the flag.

Manufacturer's name and mailing address or CA number

"CANADA"

Size

Date of manufacture

Cleaning and drying instructions (in accordance with CAN/CGSB-86.1).

Nom et adresse du fabricant ou le numéro d'identification CA

« Canada »

Dimension

Date de fabrication

Directives de nettoyage et de séchage (conformément à la norme CAN/CGSB-86.1).

9 Inspection and sampling

Sampling for inspection and testing shall be left to the discretion of the inspection authority, unless a specific sampling plan is specified.

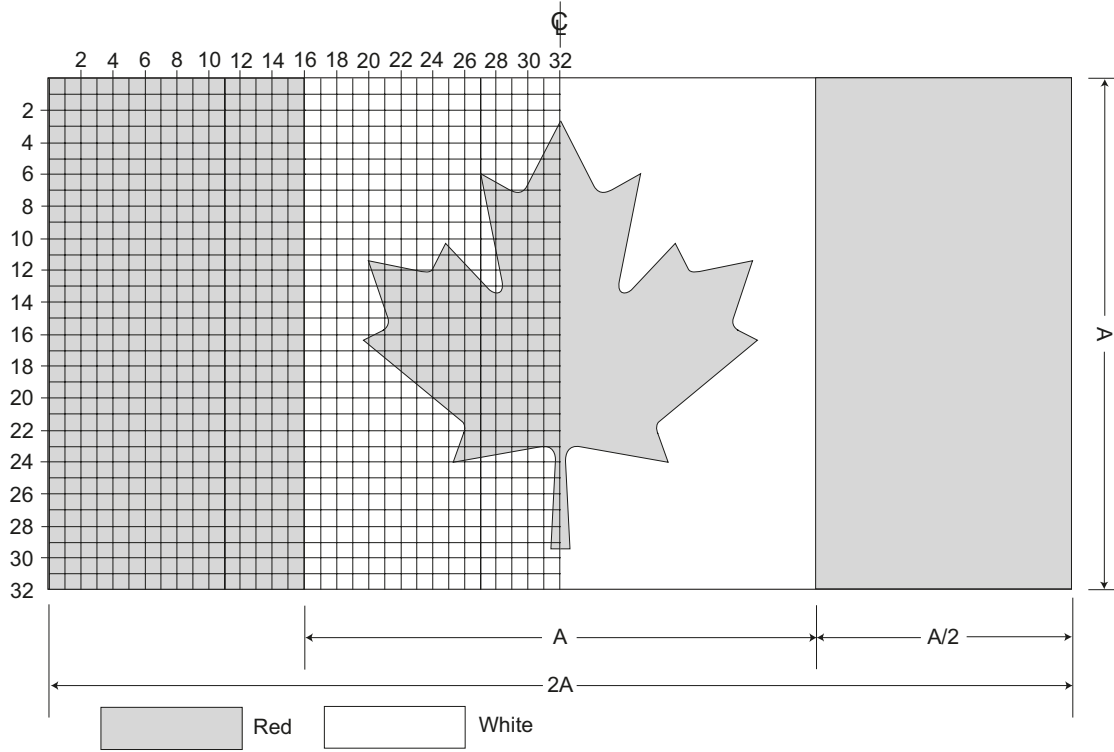


Figure 1 — Design of the National flag of Canada

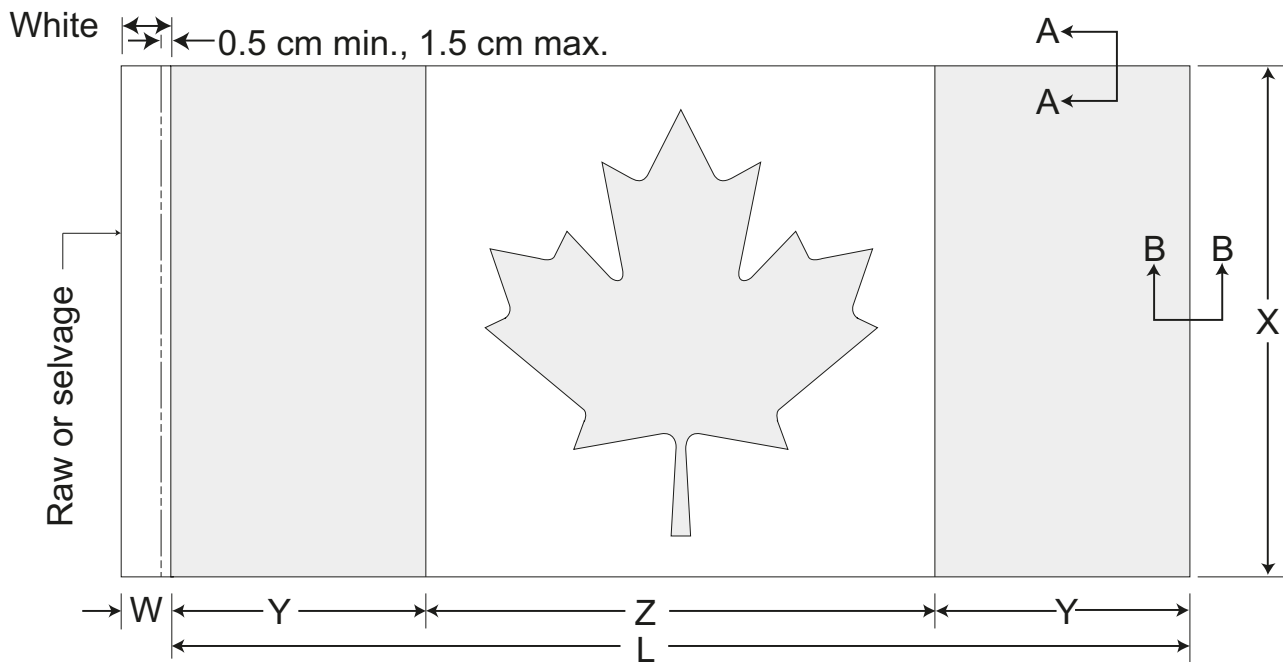


Figure 2 — One-piece flag construction

Note: Flag sizes 1 to 8: 12 x 24 cm to 90 x 180 cm. Refer to figure 5 for construction details.

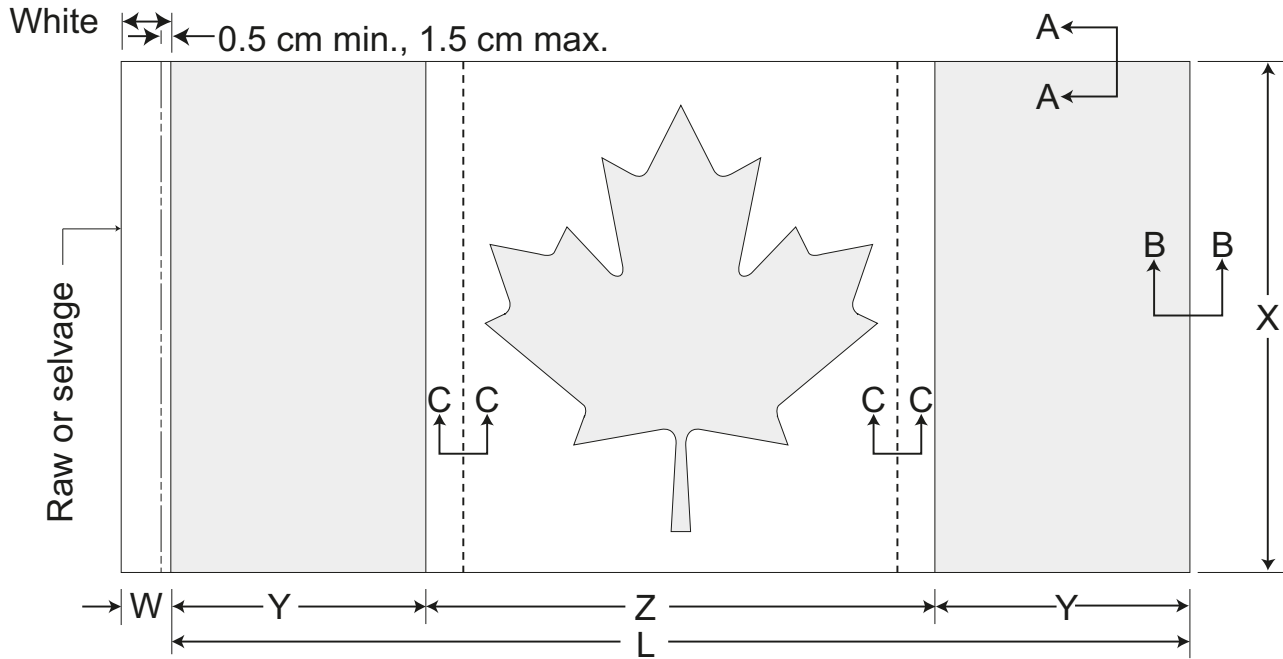


Figure 3 — Three-piece flag construction

Flag size 8: 90 x 180 cm. Refer to figure 5 for construction details.

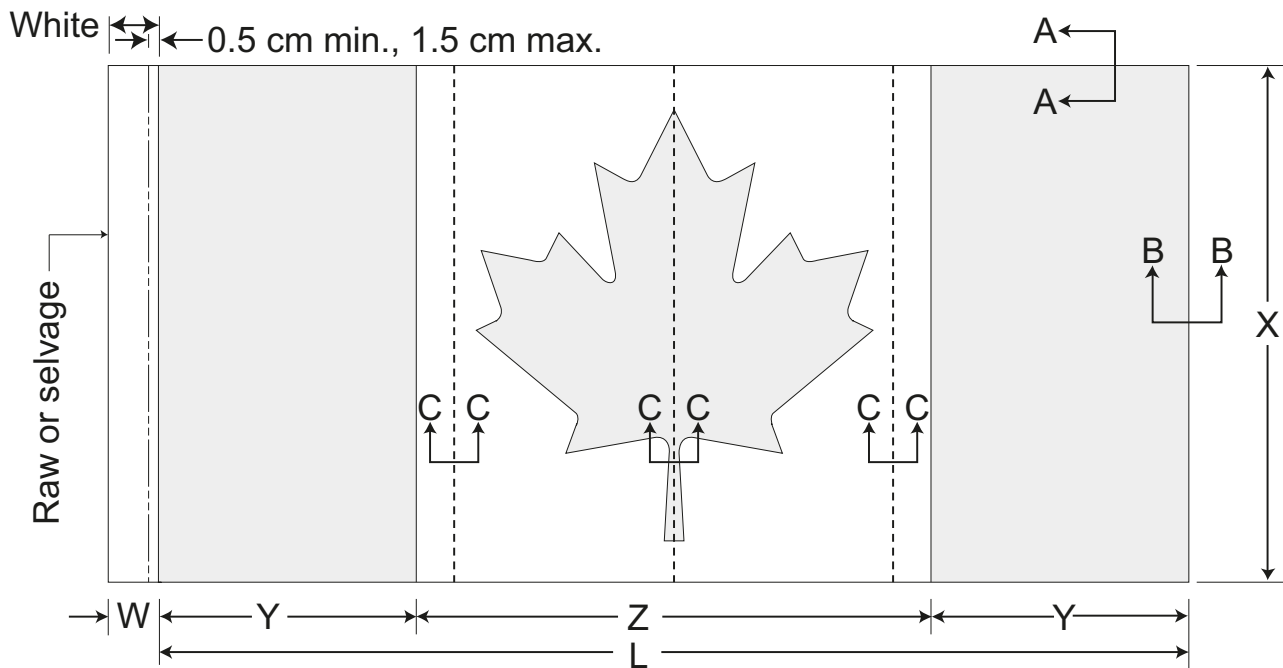
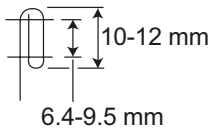
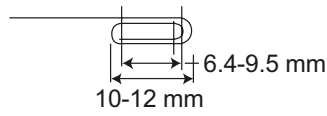


Figure 4 — Four-piece flag construction

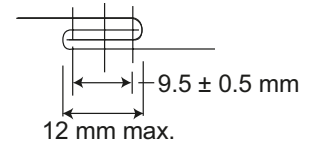
Refer to figure 5 for construction details.



Section A-A



Section B-B



Section C-C

Figure 5 — Construction details (for figures 2, 3 and 4)

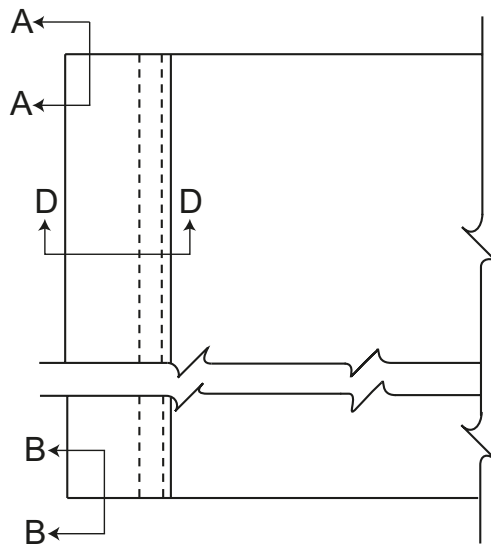


Figure 6 — Header, open-sleeve — Type 1

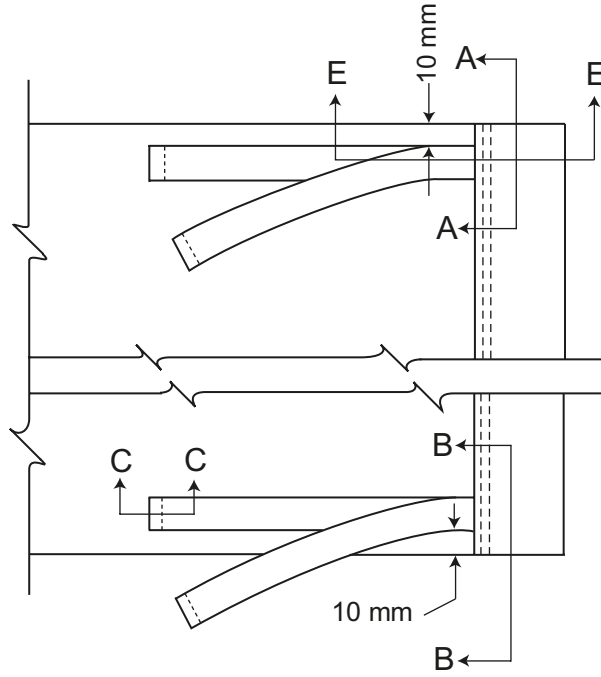


Figure 7 — Header, open-sleeve with tie tapes — Type 2

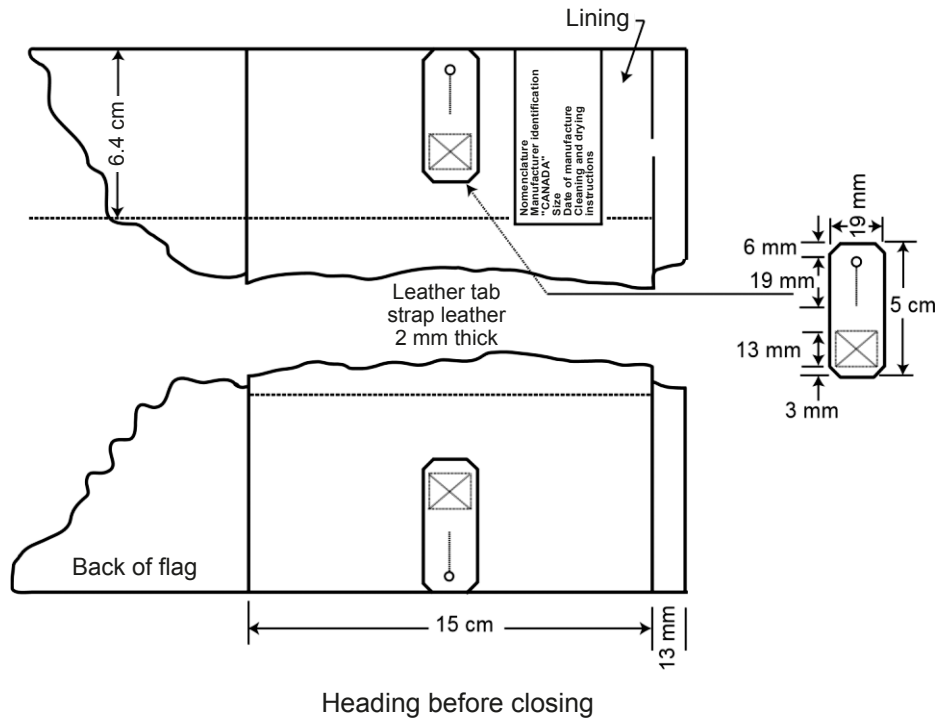


Figure 8 — Header, open-sleeve with leather tabs — Type 3

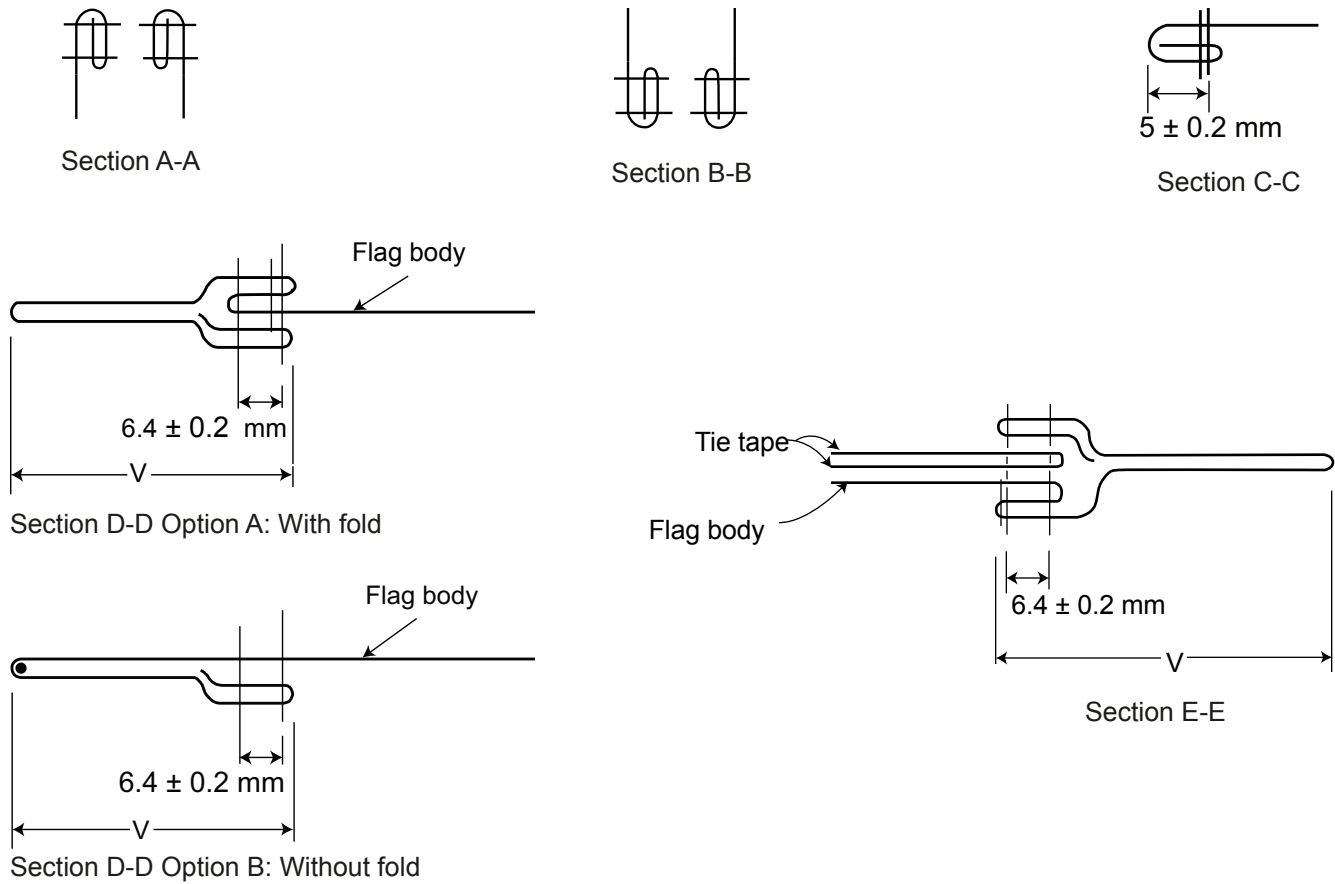


Figure 9 — Construction details — Subtypes 1A, 2A and 3A flags

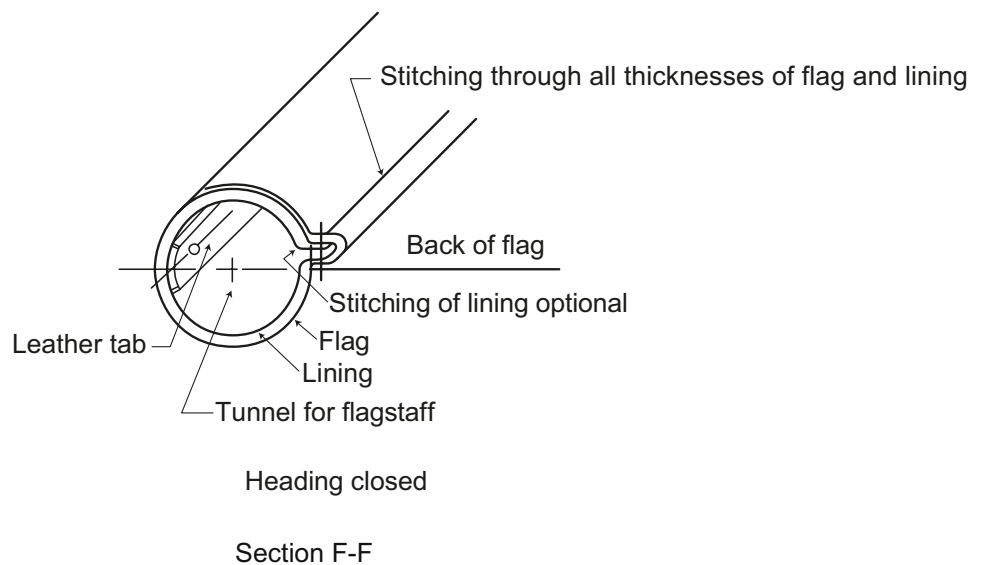


Figure 10 — Construction details for flag type — Subtype 3A flag

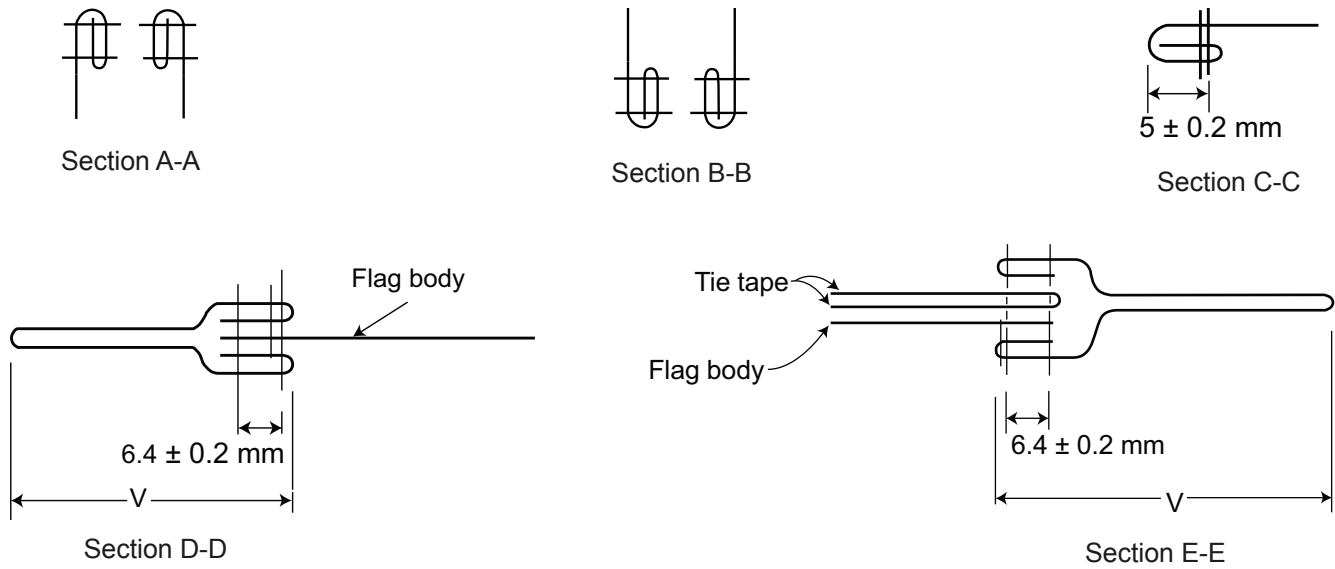


Figure 11 — Construction details — Subtype 1B, 2B and 3B flags

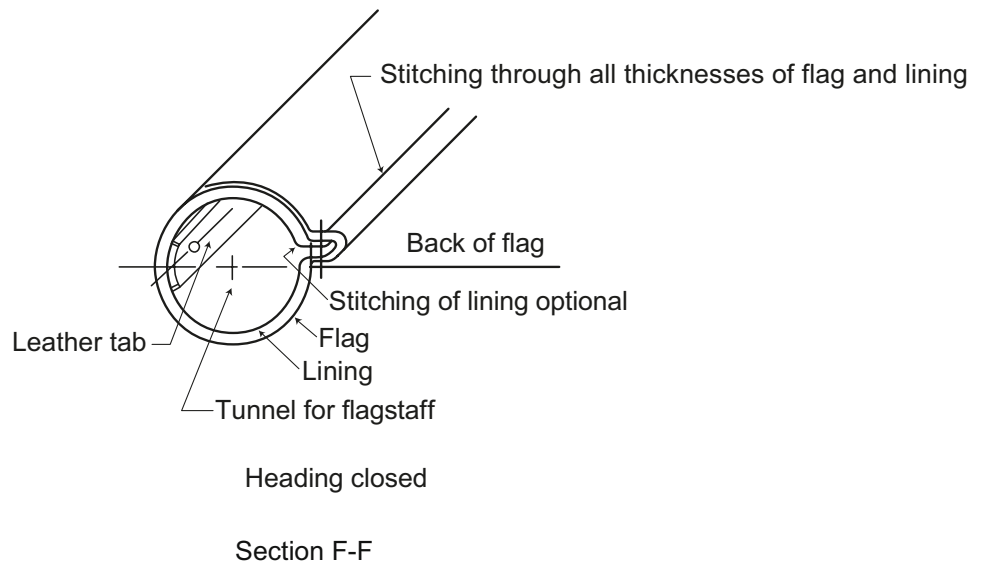


Figure 12 — Construction details for flag type — Subtype 3B flag

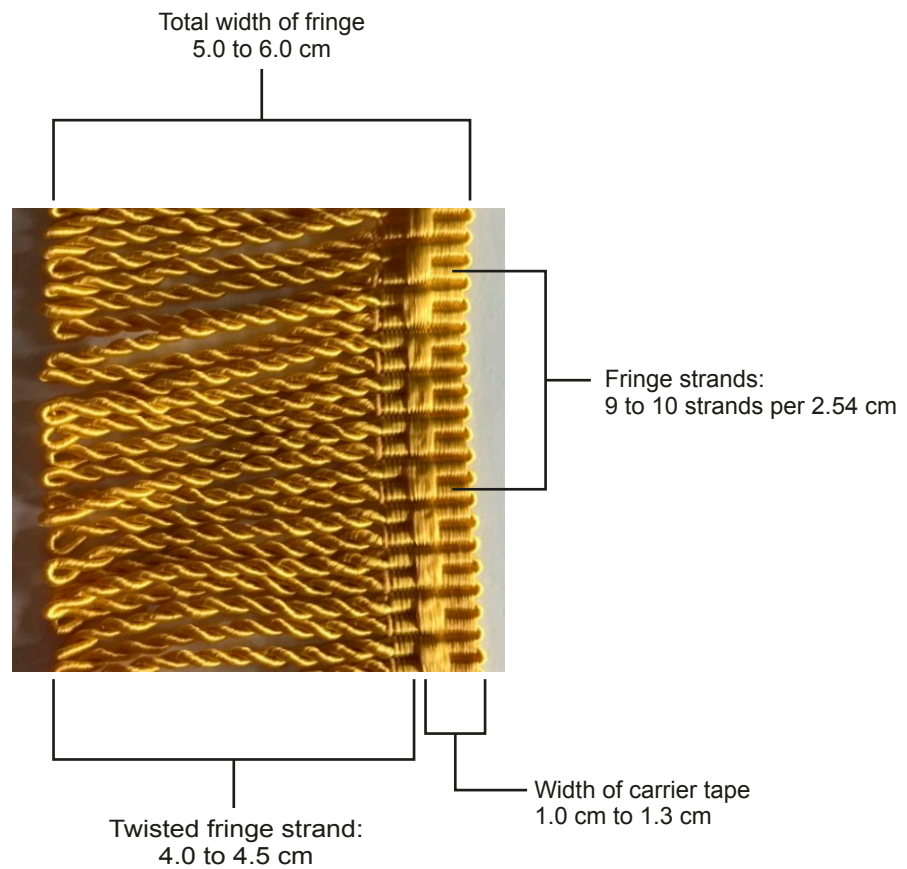


Figure 13 — Ornamental fringe components

Note: The golden colour of the fringe is for illustration purposes only; it does not meet colour requirements specified in this standard.

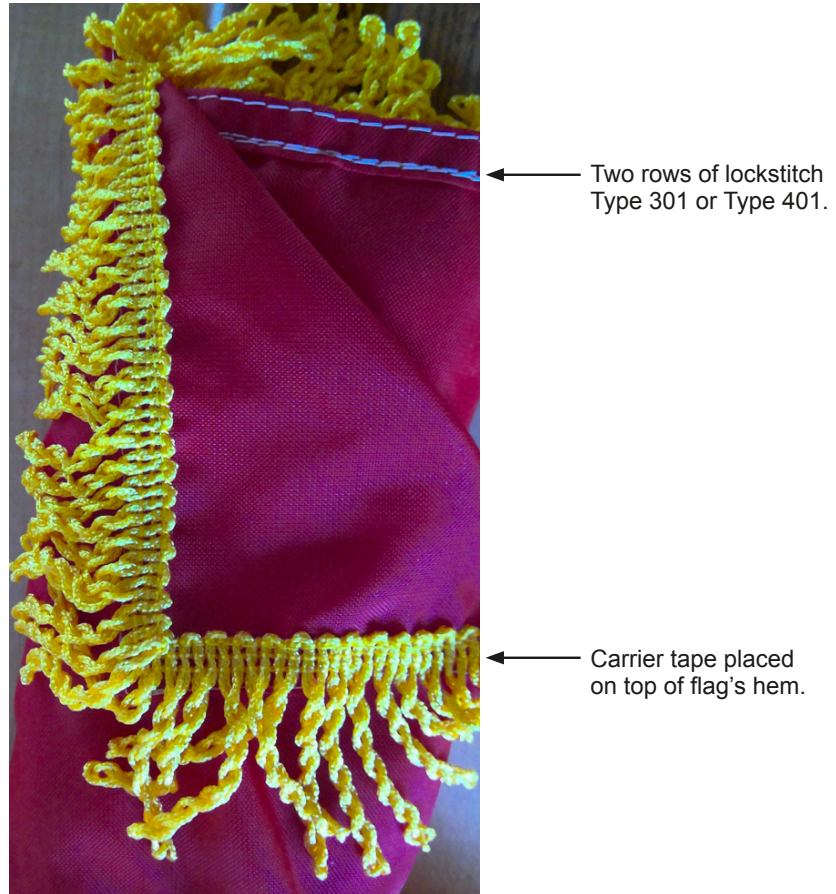


Figure 14 — Attachment of fringe to flag

Note: The golden colour of the fringe and the red colour of the flag are for illustration purposes only; they do not meet colour requirements specified in this standard.

Bibliography

- [1] Canadian General Standards Board, *Canadian General Standards Board Policy and Procedures Manual for the Development and Maintenance of Standards*. Revised February 2021. Available at ncr.cgsb-ongc@tpsgc-pwgsc.gc.ca.
- [2] Department of Justice Canada, *National Flag of Canada Manufacturing Standards Act*. Available at <https://laws.justice.gc.ca/eng/acts/N-9/page-1.html>.
- [3] Government of Canada. *National Flag of Canada etiquette*. Available at <https://www.canada.ca/en/canadian-heritage/services/flag-canada-etiquette.html>.