



ANAMET Canada Inc.

100 years of flexible safety

**TO CONNECT
AND PROTECT**

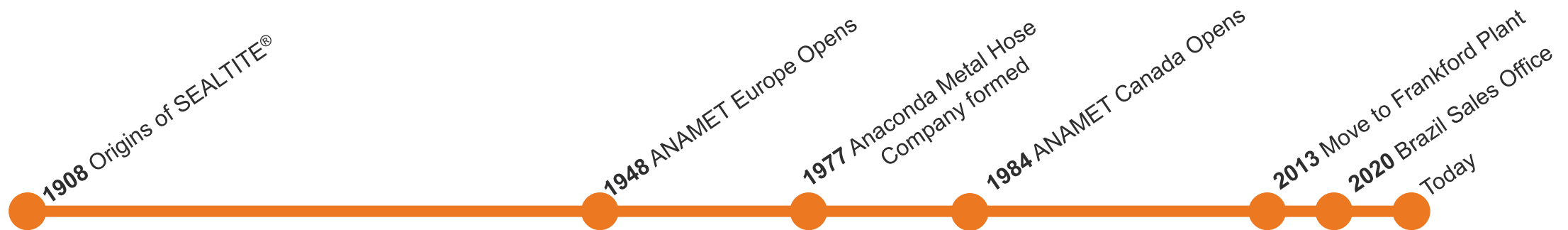


Who we are -

ANAMET is the manufacturer of Anaconda SEALTITE® conduit systems – flexible conduits and fittings as well as specialty products like FIRETECH and ANA-QUICK® nylon corrugated conduit system.

With manufacturing in three locations, including production in Canada located in Frankford, ON.

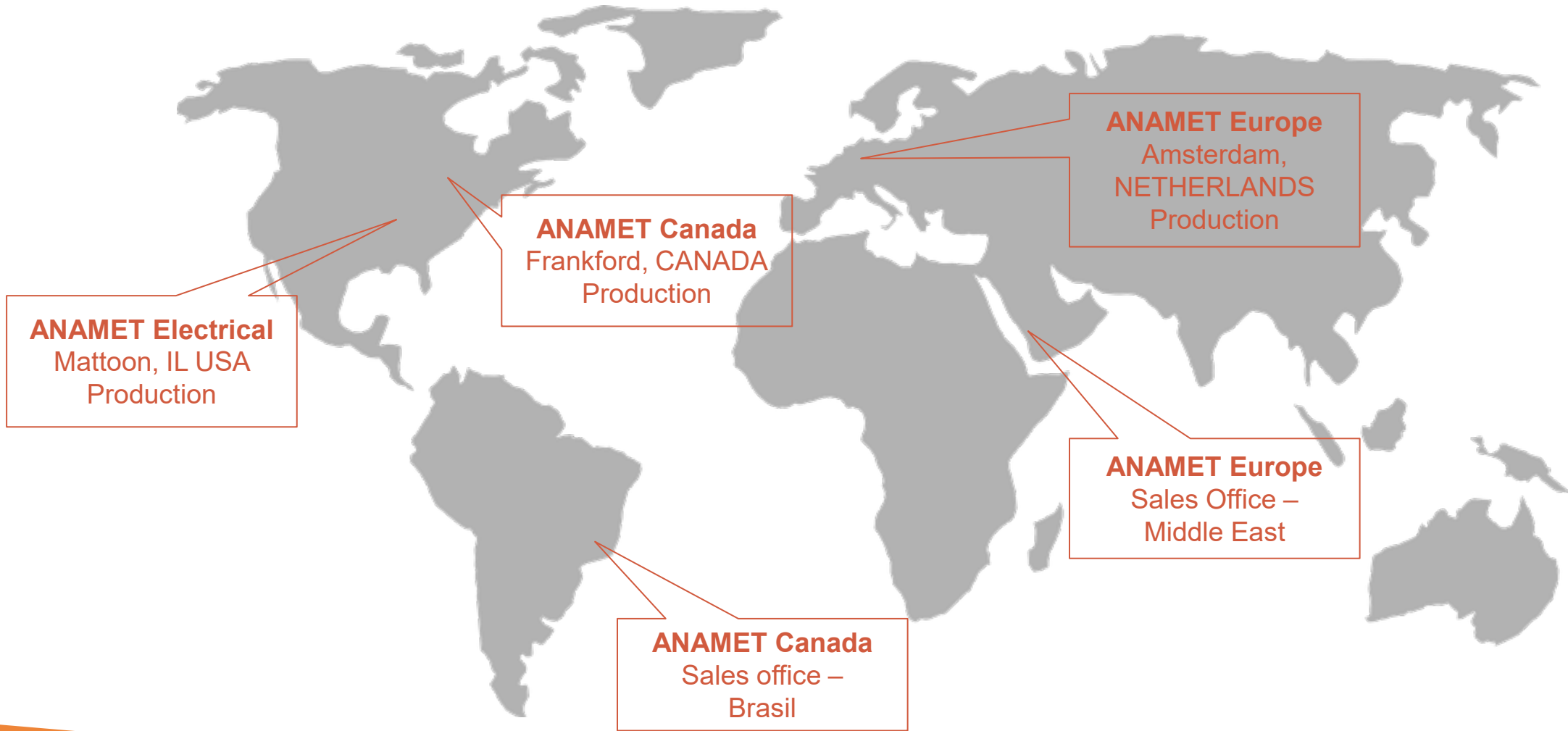
With a history going back to **1908** in the US, ANAMET has worldwide recognition as the leader in flexible conduits.





Global Presence

Anaconda SEALTITE®





Why use Flexible Conduit?

- In today's cabling applications there are numerous risks and hazards to protect against.
 - Impact, abrasion, crush
 - Vibration and shock
 - UV, temperature and other environmental conditions
 - Ingress protection, chemical damage and corrosion
 - Theft and vandalism, animal damage
- Replacement of cabling due to damage from the above causes down time and potential safety hazard.
- Grouping of wiring in a conduit allows easier replacement or adding of cables/circuits.



Product Overview

- Anaconda SEALTITE®:
 - CSA and UL Approved conduits for various applications
 - Non-approved specialty conduits for specialty applications
- Unjacketed Conduits:
 - Aluminum Flex as well as Galv. Steel and Stainless Steel
- Fittings:
 - Available for all conduits
 - Available in Steel, Nickel Plated Brass and Stainless Steel



Anaconda SEALTITE®



CEC Code Changes



Direct Burial allowed – CEC 2015 onwards

- Prior to the release of CEC 2015, Direct Burial of Liquid-tight was not allowed in Canada.
- Because it is allowed under the NEC in the US, many of our ‘dual-listed’ products were already marked ‘DIR BUR’, a requirement in the NEC.
- In 2015 the CEC was changed to allow Direct Burial to better align the CEC with the NEC.



Direct Burial – CEC 2021 details

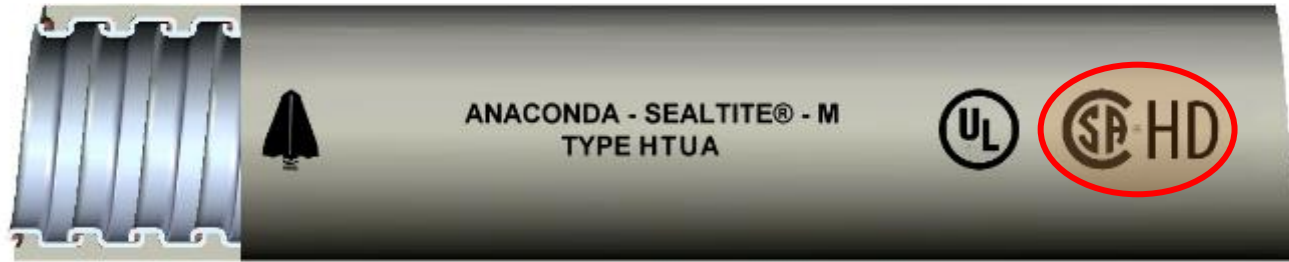
- Liquid-tight flexible conduit permitted for direct burial in accordance with Rule 12-012 when marked for the purpose (12-1302-4)
- Rule 12-012 states that any Direct Burial raceways must be installed with min. coverage of 450mm (<750v, non-vehicular-Table 53)
- This min. coverage can be reduced by 150mm where mechanical protection is added. (12-012-2)
- Mechanical protection can be: treated planking, poured concrete, concrete slabs or encasement in concrete. (12-012-3)

Direct Burial – ANAMET Products

- The following products have direct burial approval:
 - SEALTITE CSA – CSA Approved
 - SEALTITE NMUA – CSA and UL Approved, Non-metallic
 - SEALTITE UA – CSA and UL Approved
 - SEALTITE HTUA – CSA and UL Approved, high/low temperature
 - SEALTITE ZHUA – CSA and UL Approved, Low Smoke/Zero Halogen



New CSA 'Heavy Duty' Requirements – CEC 2018



- CEC 2018 introduced a new liquid-tight requirement for Hazardous Locations. This is continued in CEC 2021 just released.
- Where LT is permitted – conduit and fittings must be marked with “Heavy Duty” or “HD” (Section 18, Appendix J)
- Removed the note that indicated that LT could only be used where flexing was required. (Zone 2, 22) This allows LT to be used in more applications.



New CSA 'Heavy Duty' Standard

- CSA C22.2 No.56-17 (Annex A) improves capability of Heavy Duty LT over regular CSA LT and UL 360 LT:
 - **Crush Test** – improved to match UL requirements of 6,672-8,896 N (1,500-2,000 lbf) (681-907 KGf).
 - **Cold Flexibility** – 300% increase in testing cold exposure (4 hours), then tested to tighter bend radius.
 - **Tension** – Tested to 2,224 N (500 lbs), much higher than standard CSA/UL requirements.
 - **Fittings** – tested to 1,556 N (350 lbs) pull-out, over double standard LT.

New CSA 'Heavy Duty' – Zone Classification

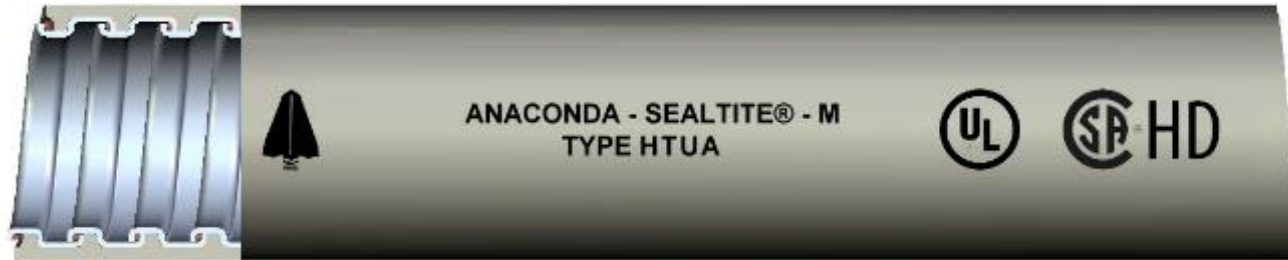
- Per CEC 2021:
 - Zone 0 – LT not permitted (18-092)
 - Zone 1 – LT not permitted unless Intrinsically Safe (18-102)
 - Zone 2 – LT allowed if marked 'HD' (18-152-1-i)
 - Zone 20 – LT marked 'HD' permitted 'where flexible connections are necessary' (18-192-3)
 - Zone 21 – LT marked 'HD' permitted 'where flexible connections are necessary' (18-202-4)
 - Zone 22 – LT allowed if marked 'HD' (18-252-1-i)



New CSA 'Heavy Duty' – Div. Classification

- Per CEC 2021:
 - Class I, Div 1 – LT not permitted (J18-106)
 - Class I, Div 2 – LT allowed if marked 'HD' (J18-152-1-j)
 - Class II, Div 1 – LT marked 'HD' permitted 'where flexible connections are necessary' (J18-204-4)
 - Class II, Div 2 – LT allowed if marked 'HD' (J18-254-1-i)
 - Class III, Div 1 – LT allowed if marked 'HD' (J18-304-1-g)
 - Class III, Div 2 – LT allowed if marked 'HD' (J18-354-i)

ANAMET SEALTITE HTUA – HD Approved



- SEALTITE HTUA:
 - CSA Approved to new Heavy Duty standard (CSA C22.2 No.56)
 - UL Listed per UL 360
 - Temperature range of -46°C to +105°C
 - Galvanized Steel core with PVC jacket

ANAMET Compact Fittings – HD Approved



- SEALTITE Compact HD Fittings:
 - CSA Approved to new Heavy Duty standard (CSA C22.2 No.18.3)
 - UL Listed per UL 514B
 - Temperature range of -45°C to +105°C
 - Marked 'HD' as required by CEC 2021.
 - Available in Nickel-Plated Brass and Stainless Steel.



CEC details on LT usage in buildings (not new)

- Liquid-tight flexible conduit installed in a building must comply with Rule 2-132. (12-1302-5)
- Rule 2-132 relates to flame spread requirements and refers to the National Building Code of Canada Art 3.1.5.23.
- Summary: (per Appendix B of CEC 2021)
 - Not totally enclosed installation:
 - Min FT1 required (which is required to meet CSA)
 - In total enclosed (ie inside walls):
 - Non-combustible building – FT4 required and marked on LT
 - Plenum area in combustible building – FT4 required and marked on LT
 - Plenum area in non-combustible building – FT6 required (not available).

ANAMET FT rated conduits

- Any of our CSA approved SEALTITE conduits are at least FT-1
- SEALTITE CSA is FT-4 rated.



- No manufacturer that I am aware of has a LT that is FT-6 rated.
- For FT-6 Plenum areas, use Al Flex CSA with has no plastic jacket.
 - Permitted under CEC Rule 12-1002-1:
 - “Flexible metal conduit shall be permitted to be install in or on building or portions of building of either combustible or non-combustible construction.”

