



## Pressure Vessel Engineering Ltd.

ASME Calculations - CRN Assistance - Vessel Design - Finite Element Analysis  
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[www.pveng.com](http://www.pveng.com) 519-880-9808

### **Qualifications Resume: Laurence Brundrett B.Sc. P.Eng. President, Founder**

Laurence Brundrett is a pressure vessel engineer with 22 years industry related experience. He is president and founder of Pressure Vessel Engineering Ltd (PVEng). He is licensed to practice engineering in the Canadian provinces of Alberta, Ontario, New Brunswick, and Newfoundland and Labrador. Mr. Brundrett is also a member of ASME.

### **Experience**

#### **1999 to Present - Pressure Vessel Engineering Ltd. - President and Founder**

Mr. Brundrett founded PVEng in 1999. It has since grown to 14 people as of 2011. Using a wide variety of commercial and custom design software PVEng has designed and registered thousands of pressure vessels and pressure devices for use in Canada and around the world. PVEng has helped hundreds of customers deal with Canada's unique CRN registration system where our work is reviewed in detail by multiple provincial agencies.

#### **Highlights:**

- The analysis of pressure equipment using FEA (Finite Element Analysis) began at PVEng in 2002. Since then Mr. Brundrett has authored or reviewed thousands of reports. He is involved in writing or modifying many of the tools PVEng uses to analyze FEA results from fatigue and fracture tools to linearization methods. Many of these tools are developed to bridge the gap between the abilities of standard FEA software and the requirements of pressure vessel design to ASME codes, including unique Canadian CRN requirements.
- Mr. Brundrett developed many of PVEng's proprietary pressure vessel analysis spreadsheets which have been written to multiple codes including VIII-1/2/3, B31.1, B31.3, EJMA, TEMA, IBC, NBC and more. He also works and reviews designs done using industry standard tools like PVElite, APV, NozzlePro and SolidWorks Simulation.
- Mr. Brundrett has been intimately involved in the reviewed and analysis of thousands of diverse vessels and fittings designed to ASME codes for use around the world. Design methods vary from burst testing, code calculations, FEA, and hand calculations.
- Mr. Brundrett has been extensively documenting the unwritten and continually evolving Canadian CRN requirements that vary between jurisdictions. Much of this ongoing work can be found at [www.pveng.com](http://www.pveng.com) under the CRN menu.

#### **1994 to 1999 - Alloy Welding Centre Ltd. - Engineering Manager**

After designing expansion joints for Sudbury International (see below), Mr. Brundrett moved to Alloy Welding Centre Limited where he supervised the fabrication of the same expansion joints. Alloy Welding Center is a CWB Structural and a B51 Code Vessel Shop. He was heavily involved in developing Alloys pressure vessel capabilities, from shop sales to design to shop floor supervision. Successfully obtaining an ASME U stamp was a major accomplishment. In his daily activities he supervised an engineering department of 4 people.

#### **Highlights:**

- Mr. Brundrett wrote ASME VIII-div 1 stress analysis software for pressure vessel design and estimation.

- He designed and registered filtration and separation vessels, many for water treatment systems.
- Mr. Brundrett did vessel drafting and code calculations and review of work done by others.
- He wrote software for burn table control and communication, and automation methods to manufacture fabric expansion joint frames for Sudbury International (below).
- He was engineering team leader for Visual Manufacturing MRP software go-live and daily use.
- He drafted and reviewed thousands of CNC burn table templates.

## **1988 to 1994 - Sudbury International Engineered Products Ltd. - Engineer**

Mr. Brundrett's engineering career started at Sudbury International designing custom metal and fabric expansion joints in round and rectangular configurations. He estimated, sold, designed and supervised the construction of expansion joints of all shapes and sizes, working in the office and the field. He worked to ASME, EJMA and many other design standards.

### **Highlights:**

- Mr. Brundrett wrote stress analysis software to standards of EJMA and ASME VIII-1 for analysis of round and rectangular metal expansion joints
- He formulated stress analysis methods for cases not covered by ASME and EJMA using methods found in Roark's or other sources or developed by him.
- He designed fabric expansion joints for high temperature low pressure services using varieties of exotic metal frames and high temperature fabrics and insulations. Applications included: gas turbine exhaust; power station exhaust; scrubber applications and metal and oil refineries.
- He designed metal expansion joints for high pressure and high temperature services. Applications included turbine steam extraction; refinery catalytic cracking towers; chemical plants and district heating.
- Mr. Brundrett became a licensed professional engineer in the province of Ontario while working at Sudbury International.

## **Education**

### **Graduated with Honours 1987 University of Guelph B.Sc. Engineering**

Mr. Brundrett's best courses included:

System and Control Theory,  
Heat and Mass Transfer,  
Mechanical Design,  
Mechanics of Deformable Bodies,  
Engineering Design,  
Engineering Economics,  
and Fluid Mechanics

His work term experience included greenhouse controller programming in assembler, greenhouse construction, high school laboratory equipment repair, and the design of truck bodies.

## **Interests**

Mr. Brundrett's interests include Lego robotics, computer programming, web site development, camping, drawing, photography and building kites.