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Leveraging and Developing Domestic and Global Industry Standards in Canada

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White Paper

With Canadians convening a working group at the International Organization for Standardization (ISO) in the field of Intelligent Transportation Systems¹, and chairing the ISO technical committee on hydrogen technologies², Canada is no stranger to the world of global industry standards.

At the same time, Canada continues to develop domestic standards through organizations such as the Canadian General Standards Board (CGSB), the Canadian Standards Association (CSA), the Standards Council of Canada (SCC), the Underwriters' Laboratories of Canada (ULC), among others. Whether it is Canada's first consensus-based occupational health and safety (OHS) management standard from the CSA³, or a new Canadian national standard for flammability of mattresses from the ULC⁴, domestic standards work to improve the nation's services, processes, and products.

From engineering to aerospace, and manufacturing to electronics, Canadian businesses today increasingly deal with both domestic and global industry standards, whether international or U.S. in origin. This white paper will explore what these standards represent for Canadian businesses, including:

- the benefit of transfer of knowledge in order to enhance both products and processes
- help in streamlining international trade and standards compliance
- an opportunity to contribute to the standards development process itself

In addition, tools and techniques will be discussed that simplify the challenging process of standards research, identification, procurement, and management in today's global marketplace.



Transfer of Knowledge: Minimizing Costs While Maximizing Value and Innovation

The use of industry standards is largely about the sound business practice of not re-inventing the wheel. By leveraging industry standards, businesses enjoy cost savings through transfer of knowledge while gaining other measurable benefits.

For example, in 2005, the UK Department of Trade and Industry (DTI) released a report that studied the impact of standardization on economics, productivity, and innovation. The report concluded that 13% of Britain's post-WWII labor productivity growth could be attributed to standards – or approximately £2.5 billion per year of Britain's current economy⁵. Clearly, businesses benefit from standards for several reasons.

First, standards help minimize costs in a number of ways: reducing unnecessary variety of product parts; increasing control over business processes, such as customer billing; managing regulatory compliance. Through previously gained knowledge, codified as standards, businesses can speed their research and development (R&D) endeavors, while anticipating maintenance and replacement issues.

Second, standards help increase the overall value of products. Consumer patterns have long been swayed, for good reason, by the supportable claim that a product is ‘up to standard’. Beyond the inherent value of a product, by complying with international and U.S. industry standards, a product takes on the added value of being exportable to the global marketplace.

Third, businesses benefit from standards encouraging innovation. Rather than constricting businesses to prescribed approaches, standards provide proven templates that serve to increase speed to market of new products. All newly developed products still incorporate previous technologies, parts and components, all of which are more easily managed through the application of standards.

Streamlining International Trade and Standards Compliance

Beyond minimizing costs while maximizing value and innovation, standards also facilitate trade relations and the approval of imported or exported products. For example, the Canadian government, private businesses in Canada, and businesses exporting to Canada, all take advantage of standards developed by the Canadian General Standards Board (CGSB). As a federal government organization, the CGSB offers services to support standards compliance⁶.

The Standards Council of Canada (SCC), a federal Crown corporation, is also involved in smoothing international standards issues surrounding conformity assessment by establishing mutual recognition arrangements with other countries. The SCC also acts as the Canadian representative at the International Electrotechnical Commission (IEC), and as the member body of the ISO, coordinating the nation’s participation in 300+ technical committees and subcommittees⁷.

In addition, Canada as a nation is active in aligning and harmonizing standards between trading nations through being a signatory to the North American Free Trade Agreement (NAFTA), and the World Trade Organization (WTO) Agreement on Technical Barriers to Trade (TBT)⁸.

Contributing to Canada’s Standards Development Tradition

As already mentioned, Canada is contributing to the development of international standards through such channels as the ISO. At the same time, Canadian businesses and organizations are also continuing the tradition of developing domestic standards. By developing “home grown” standards, the nation and its businesses give back to their industries, while gaining industry prestige and recognition at domestic and international levels.

Standards Developing Organizations (SDO) follow an established standards development process that is both formally documented and controlled. Whether an SDO is working alone or in collaboration with businesses and/or experts from the industry or industries in question, the standards development process involves seven stages, as outlined by the following Canadian Standards Association (CSA) flowchart⁹:



After a standard is developed and disseminated, an eighth and ongoing maintenance stage begins in order to keep it current and technically valid, and may include amendments, interpretations, and systematic five-year reviews⁹.

Tools and Techniques that Simplify Using Standards

From lowering costs to facilitating trade, the benefits of using domestic, international and U.S. industry standards have long been clear. What is often less clear is how to research, identify, procure, and manage those standards that apply to a given business in today's domestic and global markets. In response, Canadian businesses can apply proven tools and techniques to facilitate meeting and maintaining standards compliance.

One technique Canadian manufacturers and suppliers can use to reduce the time required to identify specific domestic, international, or U.S. standards involves researching which standards are most commonly procured by other businesses working with similar products or processes.

For example, the table below lists a partial collection of the most common electronics and electrical standards and regulations acquired from a third-party standards supplier. Incidentally, for each of the standards listed, the SDO that created the standard in question is recognized internationally, such as the IEC, which represents over 60 countries, or the Institute of Electrical and Electronics Engineers (IEEE), which represents 150+ countries.

While publicly accessible information, such as the list below, can ease the process of standards use, of even greater benefit to Canadian businesses are the tools currently offered by third-party standards suppliers. For example, up-to-date databases with powerful search and document management tools simplify the process of standards research, identification and procurement.

Such standards management solutions can provide a 24/7 international access point to the full spectrum of domestic, international and U.S. standards and regulations produced by the various standards-related bodies pertaining to every active industry in Canada today.

Standard/Requirement	Description
<p>NEMA C119.1 Electric Connectors Sealed Insulated Underground Connector Systems Rated 600 Volts</p>	<p><i>This standard covers sealed, insulated underground connector systems rated at six hundred (600) volts for utility applications and establishes electrical, mechanical, and sealing requirements for sealed underground connector systems.</i></p>
<p>API RP 500 Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class I, Division 1 and Division 2</p>	<p><i>This document applies to the classification of locations for both temporarily and permanently installed electrical equipment. It is intended to be applied where there may be a risk of ignition due to the presence of flammable gas or vapor, mixed with air, under normal atmospheric conditions.</i></p>
<p>IEC 60529 Degrees of Protection Provided by Enclosures (IP Code)</p>	<p><i>This standard applies to the classification of degrees of protection provided by enclosures for electrical equipment with a rated voltage not exceeding 72,5 kV. The object of this standard is to give: a) Definitions for degrees of protection provided by enclosures of electrical equipment, b) Designations for these degrees of protection, c) Requirements for each designation, and, d) Tests to be performed to verify that the enclosure meets the requirements of this standard.</i></p>
<p>IEEE C63.4 American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment</p>	<p><i>This standard specifies U.S. consensus standard methods, instrumentation, and facilities for measurement of radio-frequency signals and noise emitted from electrical and electronic devices in the frequency range 9 kHz to 40 GHz. Where possible, the specifications herein are harmonized with other national and international standards used for similar purposes.</i></p>

How IHS Simplifies Global Standards Compliance

IHS (<http://www.ihs.com>) is an industry-leading third-party standards supplier providing solutions for companies using international and U.S. standards and specifications, as well as Canadian standards from CGSB, CSA, ULC, SCC, and others. Whether leasing access to a set of documents through a subscription, or purchasing individual retail documents, IHS has the solutions your company needs to address its domestic, international and U.S. standards needs. For immediate assistance, call 1.888.752.0334 or email moreinfo@ihs.com and a sales specialist will be happy to help you. Or, you can personally review our [document services](#) and determine the best options for your needs.

¹“Canadian at the wheel of international transportation standards.” Standards Council of Canada. 14 Nov. 2006. 17 Nov. 2006. <http://www.scc.ca/en/news_events/features/featuresindex_86.shtml>.

²“Canadian fuelling development of hydrogen technology standards.” Standards Council of Canada. 14 Nov. 2006. 17 Nov. 2006. <http://www.scc.ca/en/news_events/features/featuresindex_85.shtml>.

³“Canadian Standards Association Unveils Workplace Safety Management Standard.” Canadian Standards Association. 6 Sept. 2006. 17 Nov. 2006. <<http://www.csa.ca/news/releases/Default.asp?articleID=8840&language=english>>.

⁴“CAN/ULC-S137 Standard Method of Test for Fire Growth of Mattresses (Open Flame Test).” Underwriters’ Laboratories of Canada. 8 Oct. 2006. 17 Nov. 2006. <http://www.ulc.ca/About_ulc/news_detail.asp?News_ID=118>.

⁵British Standards Institution. 27 Oct. 2006. <<http://www.raisingstandards.com/html/index.htm>>.

⁶“Canadian General Standards Board.” Government of Canada. 31 Oct. 2006. 17 Nov. 2006. <<http://www.pwgsc.gc.ca/cgsb/home/index-e.html>>.

⁷“Dr. Trevor Smith appointed Chair of ISO TC 176 (Quality Management and Quality Assurance).” Standards Council of Canada. 15 May 2006. 17 Nov. 2006. <http://www.scc.ca/en/news_events/pr/pr_details_36.shtml>.

⁸“Canadian General Standards Board International Activities.” Government of Canada. 18 May 2006. 17 Nov. 2006. <<http://www.pwgsc.gc.ca/cgsb/intact/intact-e.html>>.

⁹“Standards Development: Development Process.” Canadian Standards Association. 17 Nov. 2006. <<http://www.csa.ca/standards/default.asp?load=development&language=english>>.

“CGSB – Canadian General Standards Board.” IHS. 17 Nov. 2006. <<http://canada.ihs.com/products/standards/canadian-standards/canadian-general-standards-board.htm>>.

