

Joint CCBFC/PTCBS Task Group on the Future of Standards
Referenced in the National Model Codes

Final Report

March 1997

Executive Summary

A Task Group was jointly established by the Canadian Commission on Building and Fire Codes (CCBFC) and the Provincial/Territorial Committee on Building Standards (PTCBS) to study the current trends in standards development in Canada, internationally and the implications of these trends for the referencing of standards in the national model codes. The national model codes reference over 300 documents directly and many more indirectly.

In recent years, as a result of international trade agreements, globalization of markets and manufacturing and fiscal pressures, Canadian Standards-Development Organizations, governments and industry groups are having to take a serious look at the construction-related standards to determine the documents' future viability.

Although focusing on actions that could be undertaken by the CCBFC and the PTCBS, the Task group also attempted to identify actions that others could be encouraged to undertake.

- On the issue of international trends the Task Group identified several areas of concern including the trend to use international or harmonized standards; the need for better support and coordination of Canadian participation in international and non-Canadian standards development; and the effect of trade agreement obligations.
- Funding for standards development was identified as the most critical challenge to the sustainability of the process. In particular the Task group noted the lack of financial support for regulatory-driven standards; uneven funding by industry; difficulties in ensuring adequate volunteer participation; opportunities to enhance standards products and delivery; the issue of the lack of standards development support from certification and testing activities; the high cost of participation in International and Non-Canadian Standards development; and the need for greater efficiencies in standards development.
- The lack of understanding by governments, industry and the public of the value of construction-related standards is seen to be a major deficiency in the standards development systems.
- Given that Canada is a bilingual country, the fact that many standards are not available in French is a major concern.
- Given the role of standards in the building regulation process, the participation of provincial/territorial regulatory authorities in the standards development process is seen as a key element. Deregulation pressures and a move in some jurisdictions to alter enforcement methods further reinforces this view.
- The move to objective-based codes may have a major impact on standards development in the future as scope and objective of building and fire codes are examined and clarified.

Several specific actions are proposed. A few key ones are listed below in no particular order of importance.

- The CCBFC should establish criteria against which non-Canadian standards proposed for referencing should be judged. If the process of development is not consensus-based and/or if

the acceptability of the document is in doubt, the CCBFC should ask that a Canadian consensus committee evaluate the document according to the Canadian situation.

- The SCC should initiate and act as a facilitator of a process to determine which construction-related Canadian standards require support and/or preservation; which should be harmonized or displaced, the degree of Canadian participation required and the organization responsible for taking the lead role for that participation.
- The SCC should establish an infrastructure for coordination and support of input into construction-related non-Canadian standards development where such participation is in the national interest.
- The CCBFC, PTCBS and the SCC should issue a joint statement of clarification with respect to the effect of NAFTA and the WTA on Canadian construction-related codes and standards.
- SDOs, Industry and the SCC should together look for innovative opportunities to jointly support standards development in both technical and administrative areas.
- PTCBS members should bring to the attention of provincial governments the importance of the National Standards System and the importance of regulatory authorities' participation.
- The SCC should consider imposing, as a condition of accreditation for certification, testing and quality registration organizations, a scheme by which each time a Canadian test method, standard or procedure is used to assess a product, a fee or royalty be paid to the organization responsible for its maintenance.
- All involved should consider the possibility of imposing levies or surcharges on document sales, sales of related products and services, building permits, association dues to be devoted to the development of code-related standards development.
- All involved should recognize the importance of good communication links between regulatory authorities committees and the standards writing committees, and develop and use the various channels of communications available.
- Regulatory authorities should create a document describing the hierarchy of building regulations with the goal of ensuring that standards writing committees understand the relationship between codes and referenced standards. Unless the standards are compatible with the parent documents, they will not be referenced and will not be used.
- The SCC should take the lead role in identifying ways of ensuring that resources and mechanisms exist so that standards referenced in codes and other similar documents are available in both official languages.
- The SCC should take the lead role in developing and implementing a communication/promotion plan to inform Canadians of the nature and role of construction-related standards, the value derived from such standards by industry, the economy and individuals, and the consequences of standards ceasing to exist.
- The CCBFC and the PTCBS should agree on factors that will be used to evaluate the suitability of standards referenced, or proposed for referencing.

INTRODUCTION

This is the Final Report of a Task Group jointly established by the Canadian Commission on Building and Fire Codes (CCBFC) and the Provincial/Territorial Committee on Building Standards (PTCBS). The mandate of this Task Group included the following activities.

1. To study the current trends in standards development in Canada and the implications of this for the referencing of standards in the national model codes.
2. To study international trends in standards development and standards harmonization.
3. To study Canadian participation in national and International Standards development activities.
4. To recommend a strategy to the CCBFC and PTCBS in response to the situations studied in items noted above.

The Task Group membership was drawn from the PTCBS or their representatives, the CCBFC, the Standards Council of Canada (SCC), Standards-Development Organizations (SDOs) and industry associations involved in standards (see Appendix A for the membership list). Technical and administrative assistance was provided by the Institute for Research in Construction (IRC). Over a period of eight months five meetings were held in Ottawa, Toronto and Montreal.

The Task Group acknowledges with appreciation, the contribution of the Ontario Ministry of Housing which funded a study to determine the cost to Canadian SDOs of maintaining domestic standards and participating in international activities.

BACKGROUND

The national model codes reference over 300 documents directly and many more indirectly. Generally, these are standards prepared by the standards development organizations accredited by the Standards Council of Canada. US documents are called up in cases where these have been accepted in Canada as suitable for use.

Although the national model codes could conceivably cover all aspects within their scope, referencing of standards can eliminate much of the detail applicable to a manufacturing or installation process and which may be of interest only to those specifically involved with the process, such as specialty trades. Referencing also eliminates the need to provide highly technical test procedures required to ascertain conformance with specified performance requirements. Provided standards are kept updated, referencing of standards helps to ensure that the National Codes reflect the latest technology in specialized areas.

By referencing of standards, the national model codes place reliance on documents produced by organizations competent to develop standards, particularly those produced under the auspices of the highly admired and successful National Standards System (NSS). This is a system that works well and deserves continued support.

In recent years, as a result of international trade agreements and globalization of markets and manufacturing, Canadian Standards-Development Organizations are confronted by challenges to the NSS. In particular, Canadian SDOs are having to take a very hard look at the construction-related standards to determine the documents' future viability and whether they can be adequately maintained.

Industry groups are asking whether non-Canadian standards can't meet their needs and, if a Canadian standard is essential, where is the best place to develop it and how will it be funded. Manufacturing is becoming global in nature and many multi-national companies are concentrating their operations in the US or elsewhere. Some of these firms have chosen not to participate in Canadian standards development, thus reducing available industry support and committee balance.

Fiscal pressures on industry, government and the general public are affecting the ability of individuals to volunteer time and resources to participate on standards committees. Some Canadian industries and groups do not invest in standards development in Canada.

Because an ever increasing number of referenced standards are being withdrawn, and because of the uncertainty over the acceptability of their replacements, resolving these issues has been identified by the Canadian Commission on Building and Fire Codes as critical to the future of the national codes system

STANDARDS DEVELOPMENT IN OTHER COUNTRIES

Concerns over sustainability of national standards systems are not exclusive to Canada.

For example, Standards **New Zealand** reported that standards in that country were facing a “market failure” and recommended that standards development be placed on a user-pay principle funded by a combination of:

- sales of standards and related services
- contracts with prime beneficiaries of standards development
- levies from key sectors, including levies on new building activity
- top-up by government for public good standards.

The Technology Assessment Board of the **United States** Congress identified several issues pertaining to standards development including:

- lack of government support, both politically and economically
- lack of business appreciation for standards
- lack of an information infrastructure to support standards development processes.

In **Australia** most of the 5000 standards are published by Standards Australia, an independent not-for-profit organization. Standards Australia is incorporated under a Royal Charter and its Council is made up of representatives from federal and state governments, universities, associations, consumers and community interest groups.

Standards Australia has three major sources of income. The bulk of its revenue is derived from the sale of its publications and education services. Secondly, the Federal Government provides substantial grant, principally to support agreed national interest activities including participation in international standardization. The 1992-1993 breakdown of Standards Australia's income is as follows:

Total Revenue: \$29M

Sales of publications and educational services	69%	\$20.0M
Government Grant	13%	\$3.8M
Membership Subscriptions	8%	\$2.3M
other	10%	\$2.9M

TRENDS, ISSUES AND RECOMMENDED ACTIONS

The Task Group identified the major trends and issues in the areas specified in its terms of reference. In most cases, possible actions and strategies were recommended and were categorized in the following manner:

- actions that CCBFC can undertake on its own
- actions that PTCBS can undertake on its own
- actions that CCBFC and PTCBS can undertake jointly
- actions that CCBFC and PTCBS can encourage others to undertake

A. INTERNATIONAL TRENDS

1. Trend to international or harmonized standards

Terminology

Throughout this report, the distinction is made between “International Standards” and “Non-Canadian Standards.” Reference is also made to “harmonized” standards.

Construction-related “**International Standards**” are developed under the auspices of the International Organization for Standardization (ISO) or the International Electrotechnical Commission (IEC). Both organizations have extensive and comprehensive policies, procedures and methods for standards development, including provision for broad consensus. Many ISO and IEC standards are internationally accepted. Canada is represented on both bodies by the SCC, which coordinates Canadian participation.

“**Non-Canadian Standards**” are any standard, other than “International Standards”, developed outside Canada. These may or may not be produced using the broad consensus principle required for standards produced under Canada’s NSS.

The “**consensus process**,” according to CSA-SDP-1-96, means the development and approval procedures followed in order to achieve consensus and involves; inclusive, not exclusive, participation; respect for diverse interests; accountability; and consensus achievement. Consensus means substantial agreement, implying more than a simple majority, but not necessarily unanimity.

NAFTA defines “**harmonize**” as the bringing of different standards-related measures of the same scope approved by different standards-development bodies to a level such that they are either identical, equivalent, or have the effect of permitting goods or services to be used in place of one or another or fulfill the same purpose.

ISO/IEC defines “**harmonized standards**” as standards on the same subject, approved by different standards-development bodies, that establish interchangeability of products, processes, and services, or mutual understanding of test results or information provided according to these standards.

Although there are, in many instances, benefits to the economy in using International, non-Canadian or harmonized Standards, there are potential pitfalls as well. There is a resulting fiscal impact on Canadian Standards Development Organizations. There is less revenue from sales, and even though SDOs may produce their own version of International Standards, cost of Canadian participation in their preparation can be expected to be significantly higher than for Canadian standards.

A critical issue is that many non-Canadian standards, including some produced in the US, are not developed using the “consensus process.” The credibility of a standard or product demands adherence to this principle. The international situation is increasingly demanding evidence of a consensus process for standards development, but this will take time to take effect.

The whole philosophy of Canadian codes and standards development is based on this consensus principle. It is vital that this philosophy not be compromised in the rush to harmonize or adopt the standards of other countries. The Canadian system is a positive factor in the country’s competitiveness and must be maintained.

Possible CCBFC Actions

- Establish criteria against which non-Canadian standards proposed for referencing should be judged. Issues to be taken into consideration should include:
 - Is the standard consensus-based?
 - Is there a sufficient Canadian presence?
 - Will NAFTA or other agreements be violated if the standard is rejected or accepted?
 - Is the standard technically correct for Canadian conditions, and up to date?
- If the process of development is not consensus-based and/or if the acceptability of the document is otherwise in doubt, the CCBFC should ask that a Canadian consensus committee evaluate the document according to the Canadian situation. An accredited SDO could be the vehicle for this procedure. If the standard is ruled not acceptable, it could be referenced conditionally, rejected, or some effort could be made to influence appropriate revisions in the country of origin. It is recognized that this activity requires additional resources. A possible source would be the proponent, usually an industry group.

Possible PTCBS Actions

- Endorsement of the CCBFC policy.

Possible Actions by Others

- The SCC should endorse the CCBFC policy

2. Support and Coordination of Canadian Participation in International and Non-Canadian Standards Development

Adequate support and coordination of Canadian participation in International Standards activities is missing. The failure to muster all affected parties can result in an inadequate Canadian presence. Participation is often on a sporadic, and usually, individual basis. Often, little effort is made to get a broad-based Canadian position on issues. On many committees, participation has been reduced to observer status.

The SCC has a major role to play in this activity, however there are limits as to what can be expected from the SCC. Other bodies with a vested interest, including industry, government departments, the CCBFC and SDOs should take leadership positions where appropriate, under the coordinating role of the SCC.

Not all products, systems and designs require a unique Canadian standard. Nor do all require an extensive participation by Canadian interests. Many Canadian standards are considered superior or reflect particular Canadian conditions. Others have a vital influence but in other cases, it is immaterial if a Canadian version of a document exists. Industry could benefit for trade purposes if some standards were harmonized or if International Standards were used. However, it is only Canadians who can decide this.

International Standards by nature are often profound compromises because of the number of countries involved, and the varied interests and conditions they must account for.

There is a need to identify critical standards and the appropriate level of Canadian support. Canadian participation requires, in most cases, a mechanism to develop a Canadian consensus position.

Possible CCBFC Actions

- Remind the SCC of the importance of standards referenced in the model codes, including non-Canadian and international documents. Although procedures exist for Canadian participation in International Standards, the administration of the system is not as expeditious as it could be. Given the size of the construction industry and its importance to the Canadian economy, construction-related standards are not given a sufficiently high profile in SCC activities.

Possible Actions by Others

- The SCC should initiate and act as a facilitator of a process to determine which construction-related Canadian standards require support and/or preservation; which should be harmonized or displaced, the degree of Canadian participation required and the organization responsible for taking the lead role for that participation. Contributors to that process should include industry, SDOs, the design professions, the CCBFC, regulators and trade associations.
- The SCC should establish an infrastructure for coordination and support of input into construction-related non-Canadian standards development where such participation is in the national interest. This infrastructure should include such items as funding provisions, support of necessary committees, national advisory organizations and monitoring mechanisms. These activities need not be carried out directly by the SCC, but it should be a responsibility of the SCC to see that they occur.

3. Trade Agreement Obligations and Barriers

There is a misconception that recent trade agreements such as the North American Free Trade Agreement (NAFTA) and the World Trade Agreement (WTA) require that Canada must use international or harmonized standards.

NAFTA and the WTA dictate that first consideration be given to International Standards and encourage the use of common or harmonized standards. However, the signing parties are not prohibited from ensuring that any standard adopted as regulation meets the legitimate needs of

Canadian society. Where an international or North American standard is found to be unsatisfactory, a separate Canadian document may be the only appropriate solution.

The key point is that while neither agreement prevents the participating countries from establishing their own standards or levels of protection in areas such as safety, health, the environment, or consumer protection, both prohibit the use of codes and standards as non-technical barriers to trade. Where such standards are more stringent than those of the other countries, the reasons for doing so must be justifiable and defensible.

A further important point is that standards-related measures in the agreements apply only to the standards mandated by the federal governments of the signing parties. Therefore, provinces and territories, which have responsibility for building regulations in Canada, are not bound by the provisions of the agreements. Under the agreements, however, the Canadian Federal Government has agreed to make efforts to ensure provincial governments observe these.

Possible Joint CCBFC/PTCBS Actions

- Issue a joint CCBFC/PTCBS/SCC statement of clarification with respect to the effect of NAFTA and the WTA on Canadian construction-related codes and standards.

Possible Actions by Others

- See above.

4. Structural Design Standards

The Canadian structural design standards (steel, concrete, wood and masonry) referenced in the NBC are believed by many to be the most advanced in the world. As pressures mount for harmonization with US design methods, there is a danger that these assets may be lost or diminished. Special attention may be needed since structural design is considered as a fundamental feature of any building code.

Possible Joint CCBFC/PTCBS Actions

- Communicate, to all concerned (designers, manufacturers, constructors, owners) the positive features of these vital elements to Canada's technology infrastructures articulating the ramifications of their loss and suggesting possible solutions. Professional designer associations, together with specific major materials interests, should be made aware of the critical roles they have to play.

B. FUNDING

Funding for standards development is the most critical issue facing the regulatory community at present and for the foreseeable future. In tight economic times, Canadian SDOs must operate on cost recovery basis. Traditional sources of funding for standards development have been:

- pooled revenue from certification operations within the same organization
- sales of documents
- funds from sustaining memberships
- on-going contributions from industry/government/user groups
- direct funding for specific standards from beneficiaries (e.g. federal government sponsorship of energy related standards)

Many of these are diminishing or disappearing. Additional and innovative funding methods must be explored. Adjustments to the role of the SCC in this area require consideration.

A study commissioned for the Task group estimates that direct costs to SDOs for standards production activities such as technical research, testing, production, maintenance, support, distribution and translation of standards, as well as participation in International Standards development is in the order of \$2.7M.

Although many standards recover their cost through sales, it must be remembered that sometimes there is no direct relationship between the value or importance of documents and their sales volume. For example, for a given product to be adequately regulated it may be sufficient for a only handful of producers and testing agencies to possess the standard.

1. Financial Support for Regulatory-Driven Standards

In accordance with the user-pay principle, it is easy to conclude that public bodies that mandate standards in referenced codes and other regulations, should have some responsibility to contribute towards their creation and upkeep. The Public is the ultimate beneficiary of construction standards referenced in the NBC. Provincial building codes and regulations, by reference, use standards to achieve their mandate of providing for public safety and therefore become the users of standards.

The PTCBS has agreed as policy that where the provinces and territories have requested that a standard be created, they will share in the development cost, provided no certification program is involved. Standards development involving certification is considered to be self funding (see issue B-5). However, to date no standard has been requested by the PTCBS and any future requests are unlikely.

2. Funding by Industry.

While some industry groups and associations have made significant technical contributions to standards development over the years, funding for industry-driven standards has been inconsistent among industry sectors and success in raising financial support has been mixed. Many SDOs are considering more direct industry funding for new standards development, although there is a fear of undue influence over the outcome. However, since the contribution is mostly research work and for the creation of a “Draft Zero,” and since a balanced consensus committee makes the decisions, this fear is unwarranted.

Industry funding for upkeep of existing standards has been less successful as there have been instances where a decision has been made for economic and market reasons to “pull the plug” and rely on a US standard. There have also been industry concerns over the inefficiency and lack of flexibility in the existing standards development process. On the other hand, there have been instances where industry support for standards upkeep has been highly successful, such as the secretariat for CSA O86 provided by the Canadian Wood Council.

Possible Actions by Others

- SDOs, Industry and the SCC should together look for innovative opportunities to jointly support standards development in both technical and administrative areas.
- As a principle SDOs should require that the initiator of a new standard be expected to fund the development with a commitment to support upkeep for a minimum 5 year period.

3. Volunteer Participation

There is evidence of diminishing volunteer ability and/or willingness to cover rising costs of participation in standards development activity, including travel expense and time taken away from normal activities. There also may be a lack of understanding of the importance of this activity, hence lessened interest in participating.

Provincial and municipal governments are becoming reluctant to permit their staff to be absent from work in order to participate in standards work. It is becoming difficult for public servants to get permission for out-of-province travel for meetings activities, even where expenses are paid.

The value of volunteer contributed time needs formal recognition. For example the value of contributed time to the 5-year national code development cycle has, in the past, been conservatively estimated to be at least \$6 million.

Solutions could include raising the profile of the activity and better recognition of the contribution.

Possible PTCBS Actions

- PTCBS members should bring to the attention of provincial governments the importance of the NSS and the importance of regulatory authorities participating.
- Provinces should consider pooling resources nationally and designating representatives from one or more of the provinces to act on behalf of provincial authorities to ensure regulatory input.

Possible Actions by Others

- SDOs should consider advertising for volunteers in publications such as SDO, IRC and SCC newsletters, as well as the Internet.
- SDOs should consider holding more meetings across the country as opposed to central Canada to increase regional input. Meetings should be scheduled to take advantage of cheaper air fares.
- SDOs should consider ways of subsidizing travel costs for individuals who require this support to ensure appropriate participation by all sectors needed to meet the committee matrix.

4. Standards -Products and Delivery

(See also **C-2. Electronic Communication**)

Users of standards have changed their expectations as to how information contained in the documents is available. The traditional printed formats are being displaced with demands for availability of standards in other forms including an electronic format which eliminates the inconvenience of going to another document (secondary references). There is a growing need for ancillary support documents including handbooks and guides. A market seems to be opening for multiple-document CD-ROMs as a possible solution, especially for structural design which could contain design standards, building codes, commentaries and handbooks.

Such value-added products would promote sales and improve service to users, and reduce anxiety over the perceived high cost of documents.

The traditional approach used by Standards Development Organizations for producing and publishing standards requires a re-examination. SDOs require strategic partnering with industry and public agencies to develop and recognize new and more efficient delivery tools. There are advantages and efficiencies in a partnership approach and opportunities for synergy.

Possible Actions by Others

- SDOs should pursue opportunities for value-added joint products with other SDOs, NRC, industry and the SCC.
- The SCC should initiate discussion of the issue of strategic partnership opportunities with the SDOs.

5. Standards Support from Certification and Testing Activities

Many Canadian and international organizations accredited by the SCC conduct certification, testing and quality registration programs using standards, procedures and methods without contributing to their creation and development. Some organizations that do both standards development and certification/testing, require each part of the operation to be independently funded. This has been exacerbated as a result of non-Canadian Certifying Organizations having been accredited by the SCC.

Possible Actions by Others

- The SCC should consider imposing, as a condition of accreditation for certification, testing and quality registration organizations, a scheme by which each time a Canadian test method, standard or procedure is used to assess a product, a fee or royalty would be paid to the organization responsible for its maintenance. This also would apply between standards development divisions and certification divisions within the same organization. It would be expected that this cost would be passed on to the manufacturer of the product, and ultimately the purchaser, in accordance with the user-pay principle. Since the cost would apply to all equally, problems with NAFTA or WTA are not anticipated.

6. SCC levy

The SCC has a sales copyright on International Standards in Canada. It imposes a levy on sales of International Standards and controls who can sell these documents. This affects International Standards produced in Canada and can result in a situation where the costs incurred by the Canadian SDO providing the secretariat necessary to produce the international standard cannot be recovered by sales.

Possible Actions by Others

- The SCC should re-examine its policy on this issue taking into account the above concern.

7. Cost of Canadian vs. International and Non-Canadian Standards

There is a misconception that the use of International Standards or non-Canadian standards is a less expensive way to develop suitable standards than to maintain Canadian documents. Effective

participation in International Standards development, which would ensure Canadian concerns are accounted for, will usually cost more to the system than a made-in-Canada document.

8. Need for greater efficiencies in standards development

The traditional approach to standards development which involved committee meetings, physical distribution for public review, paper based decision making, etc. needs re-examination in light of alternate methods. Many organizations are making greater use of innovative techniques including E-mail and the Internet to conduct committee business, provide for widespread public input, ballot decisions, and promulgate the final products.

While improvements are possible, there is a need to preserve what is good in the present broad consensus approach. These new techniques should not completely replace the existing procedures, but can be used to enhance the system and introduce efficiencies. Such efficiencies will help with the problem of diminishing volunteer availability for standards development committees by reducing the need to travel, shortening the length of meetings and reducing their frequency. These will also help deal with time pressures resulting from the demand to change or create standards faster to account for new products being developed and marketed quickly.

Possible Actions by Others

–SDOs should consider the use, if appropriate, of innovative policies and procedures in place or being developed at other organizations or in other countries.

9. Funding Options

The adequate funding for standards development activities emerges as the largest single threat to this activity in Canada. A range of funding options must be investigated. A “universal” source or levy system may be preferable to a “balkanized” approach.

It is recognized that because of different regulatory frameworks in the provinces and territories, a universal building permit levy may be problematic, however, there are cases where it has been done. For example, Alberta funds the activities of its Safety Codes Council through building permit levies.

Other fund-raising methods exist. Some organizations, such as Ontario’s professional engineers’ association (PEO) include an opportunity to make voluntary contributions to an education fund.

Possible CCBFC Actions

- Discuss with NRC the possibility of collecting a levy or surcharge on code sales and sales of related products and services, to be devoted to the development of code-related standards development.

Possible PTCBS Actions

- Study the feasibility of building permit levies or similar mechanisms for funding standards.

- Reconsider the PTCBS position on funding for standards development and examine the possibility of direct funding by adopting authorities

- Consider the possibility of collecting a levy or surcharge on provincial code sales and sales of related products and services, to be devoted to the development of code-related standards development.

Possible Actions by Others

- Organizations, such as professional and industry associations should consider a surcharge or voluntary contribution on annual dues invoices to support Canada's standards system.
- The SCC should impose royalties or fees on certification or testing usage as part of the Certifying Organization (CO) and Testing Organization (TO) accreditation process (see B-5).
- SDOs should consider the possibility of collecting a levy or surcharge on code-related standards sales and sales of related products and services, to be devoted to the development of code-related standards development.

10. Central Coordination of Code-Related Standards Development

If the funding-related measures identified above are implemented, there will be a need for a central body responsible for identification and management of alternate funding mechanisms, distribution of funds as well acting as a facilitator to reach national consensus on establishment of priorities for standards referenced in the national codes. Exploring ways directed at ensuring volunteer participation in code-related standards development activities would be a key part of its mandate. Testing, certification and quality management activities would not be part of its mandate.

It is important to understand that such an arrangement would not be intended to affect the structure of SDOs nor to affect in any way the successful infrastructure of the NSS. The goal would be to consolidate funding activities for construction-related standards, although the notion of this central body acting as an SDO of last resort should be explored.

The SCC might not be the most appropriate organization for this activity because of its political nature, and because of its focus on international activities and emphasis on information technology and environmental issues, and because its scope is much broader than construction. NRC is a possible candidate because of its arm's length position and its building code activities via the CCBFC.

C. COMMUNICATION

1. The need for better communication.

Poor communication among SDOs, code development committees and regulatory authorities has created problems. There has been unnecessary duplication of effort and subject matter and conflict between codes and standards on technical issues and jurisdiction. Referenced standards have been terminated or amended significantly without sufficient notice to, or input from, code officials or committees. Existing communication channels, in many circumstances, have not been used.

While some formal mechanisms may exist, or could be created to prompt this activity, the most value will probably be derived through informal contact and discussions among all involved.

Possible CCBFC Actions

- Issue a directive to staff and standing committees (including Task Groups) reaffirming the importance of good communication links between CCBFC committees and the standards writing committees, and instructing them to develop and use the various channels of communications available.
- Assign an individual CCBFC committee member or staff person to monitor developments for each standard referenced in the national codes.
- Require all standing committee agendas to include for each meeting an item reporting on issues relating to referenced standards.
- Update the “Guidelines for Standards Referenced in the National Model Codes,” accounting for observations and recommendations contained in this report. Attention should be given to conflict resolution, referencing of new standards, procedures to deal with removal/replacement of existing references, and appropriate structure to allow partial reference.
- Encourage informal ongoing relationships among all affected organizations to improve communication.
- Request SDOs to provide summaries of changes proposed to referenced standards to the appropriate standing committee.

Possible PTCBS Actions

- Prepare a document describing the hierarchy of building regulations with the goal of ensuring that standards writing committees understand the relationship between codes and referenced standards. Unless the standards are compatible with the parent documents, they will not be referenced and will not be used. Endorsement should be sought from the other advisory boards (Canadian Advisory Council on Plumbing (CACP), Council of Canadian Fire Marshals and Fire Commissioners (CCFM&FC), Interprovincial Gas Advisory Council (IGAC), Canadian Advisory Committee on Electrical Safety (CACES).
- Prepare policy statements regarding adoption of new standards and the abandonment of existing standards.

Possible Actions by Others

- SCC should consider including specific mention in CANP-1010 of standards intended for reference in documents such as building and electrical codes.
- SDOs should assign an individual technical committee member or staff person to monitor code developments for each standard referenced in the national codes.
- SDOs should require all technical committee agendas for referenced standards to include for each meeting an item reporting on issues relating to the referring document.
- SDOs should encourage informal ongoing relationships among all affected organizations to improve communication.

2. Electronic Communication

It is obvious that the knowledge of the contents and value of standards is enhanced by ease of access and availability. Electronic information technology, such as CD-ROM and the Internet is providing opportunities for vastly improved distribution of information.

In an ideal world, all codes and standards would be available in English and French, and free of charge in an electronic form such as the Internet. In reality, as long as the sale of documents or intellectual property provides a significant source of funding for codes and standards development, this situation is unlikely to occur. Nevertheless, development work should continue to create integrated electronic codes and standards delivery mechanisms in case that day should arrive; and in the name of better products and service in the short term.

Unfortunately, it is expensive to convert all existing documents to a format suitable and compatible for electronic distribution. Technology in use would allow SDOs to sell access to individual documents on a CD-ROM and CSA and NRC have agreed to include all CSA standards referenced in the national codes on NRC's CD-ROM. This has been delayed due to lack of resources. It is hoped that emerging technology will bring the costs down.

Possible CCBFC Actions

- Encourage inclusion on NRC's CD-ROM of all referenced documents, commentaries, user's guides, as well as support publications produced by industry and training materials.
- Consider a fee-for-use Internet access to national code documents.

Possible PTCBS Actions

- Encourage provinces and territories to include provincial/territorial code variations on NRC's CD-ROM
- Consider a fee-for-use Internet access to provincial code documents.

Possible Actions by Others

- Encourage all SDOs to include their documents on NRC's CD-ROM.
- SDOs should consider a fee-for-use Internet access to standards documents.

3. Availability of Standards in French.

Since all regulations, or documents referenced by regulations in Québec are required by law to be available in French, the existence of English-only standards referenced in the national codes becomes problematic from a legal standpoint. SDOs are not able to produce all standards as National Standards of Canada, or are having to drop National Standards of Canada status, because of the cost and delays inherent in producing a French version. This problem is exacerbated as more US standards replace Canadian ones.

There is a fear that, should groups such as the CCBFC demand that referenced standards be available in both languages without a mechanism to provide accompanying resources, Canadian standards development in many subjects would come to a halt. It would also be inconsistent with a policy of referencing US standards, where no suitable Canadian standard exists. Simple

translation is not sufficient as it is necessary to ensure that the intent of technical requirements in codes and standards is expressed identically in both versions.

Since Canada is an officially bilingual country, the availability of referenced documents in both languages is a matter of principle, and not a matter for question. Therefore, any solutions proposed on the issue of funding must also account for this need.

The introduction of objective-based codes offers opportunities in this area. As presently seen, standards would become identified acceptable solutions as opposed to being cited as a mandatory part of the code. In such circumstances, conformity assessment becomes the key issue and authorities could rightfully demand that reports, certification notices, evaluations, listings and other attestations of compliance be in their language of choice.

Possible CCBFC Actions

- Prepare a policy statement that referenced documents should be available in both languages.

Possible PTCBS Actions

- Prepare a policy statement that referenced documents in the National model codes should be available in both languages.

Possible Actions by Others

- The Standards Council of Canada should take the lead role in identifying ways of ensuring that resources and mechanisms exist so that standards referenced in codes and other similar documents are available in both official languages.
- The SCC, with the participation of the Province of Québec, should create criteria for standards that must be National Standards of Canada and be in both official languages. Adherence to these criteria should be part of the SDO Accreditation rules.

4. Importance and value of standards

Regulators, manufacturers, designers and the general public lack awareness of the important positive role these documents play in ensuring the health, safety and well being of Canadians, as well as their value to Canadian society, industry and the economy. Codes and standards are also important vehicles to bring new and innovative technology into use.

There is also a lack of awareness of the importance of having control or influence in the establishment of provisions of these documents to help ensure the social and economic values of Canadian society are reflected.

The old adage that “you don’t know what you’ve got until you lose it” has never found a better application than to Canada’s National Standards System in its current form.

Possible CCBFC Actions

- Participate in communication/promotional efforts led by SCC

Possible PTCBS Actions

- Participate in communication/promotional efforts led by SCC

Possible Actions by Others

- The SCC should take the lead role in developing and implementing a communication/promotion plan to inform Canadians of the nature and role of construction-related standards, the value derived from such standards by industry, the economy and individuals, and the consequences of standards ceasing to exist. The plan should enlist the involvement of the SDOs, the SCC Provincial Advisory Council, CCBFC, PTCBS, industry and professional associations; and should emphasize the importance of participating in and sponsoring standards development activities.

5. Global Competitiveness of Canadian industries

The existence of a rational, coordinated, integrated and comprehensive standards development system in Canada has been found to be of great value by Canadian manufacturers trying to market their products abroad. It is important that the message of the excellence of Canada's standards and regulatory system is highly visible to those involved, and that the same message is consistently given when the Canada's regulatory system is described.

A paper describing this framework has been prepared for PTCBS and it should be given wide distribution by all.

D. STANDARDS COUNCIL OF CANADA

1. New SCC Legislation.

The Standards Council of Canada is governed by recently passed legislation. The impact on construction-related Canadian standards is unknown at the time of writing. The SCC itself is reduced to 15 members, and it has a broader mandate. The National Standards System is now mentioned in the Act.

The emphasis of the SCC still seems to be on international trade issues. The fear is that construction, which has not been identified as a major trade issue, will not be given due attention.

Possible PTCBS Actions

- Request that the SCC Provincial/Territorial Advisory Committee establish and maintain a priority for construction-related interests.

Possible Joint CCBFC/PTCBS Actions

- Bring the importance of building codes issues to the attention of the new SCC early in its new mandate.

2. Relationship between CCBFC and SCC.

The SCC recognized the Associate Committees On the National Building and Fire Codes (ACNBC & ACNFC) (precursors of the CCBFC) as "Organizations in Liaison." This agreement acknowledged the respective roles of both organizations and provided for liaison, cooperation and mutual assistance. This agreement lapsed with the creation of the CCBFC and attempts to have it renewed have not succeeded due to internal issues at both NRC and the SCC.

The ACNBC membership included an ex-officio place for a SCC representative. This situation was not carried over to the CCBFC because of concerns over the size of the new Commission and because there seemed to be few issues at that time where formal liaison was necessary.

In view of the present situation, consideration should be given to reviving the previous relationship.

Possible CCBFC Actions

- Pursue renewal of recognition status by the SCC (e.g. as an “organization in liaison” or as an “other recognized organization”).
- Consider inclusion of an SCC representative on the CCBFC, preferably a SCC council member.

Possible Actions by Others

- SCC should consider participation on the CCBFC.

E. REGULATORY AUTHORITIES

1. Provincial Buy-in to Consensus Decisions

It is the authority of Provinces and Territories to agree or refuse to recognize standards, or revisions to standards proposed for reference in the codes. There would be benefit, however, if the SDOs were advised if a standard is refused, and why, so corrective action could be taken.

Difficulties arise in industry and the regulatory community as a result of the time lag between the date when new or revised codes and standards are released, and the date when they come into effect.

This situation is a fact of life. However, some efforts should be made to minimize the effect and eliminate unnecessary delays.

Possible Joint CCBFC/PTCBS Actions

- Prepare a policy statement that SDOs will be advised when an authority having jurisdiction refuses to accept a standard, including those referenced or proposed for reference in building or fire regulations.
- Refer the matter of the time lag for adoption of standards to the CCBFC/PTCBS Joint Task Group studying the NBC Development Process.

Possible Actions by Others

- SDOs should prepare a technical summary of new standards intended for referencing in the national model codes, and changes to standards already referenced, and distribute these to the CCBFC and PTCBS.
- SDOs should keep the code revision cycle in mind when preparing their standards development and revision timetable.

2. Deregulation pressures

Regulatory authorities are challenging current requirements to see if they are appropriate, justifiable and still needed. The following factors need to be considered to determine if standards referenced in regulations are appropriate. Standards should:

- focus on results to be achieved,
- minimize administrative requirements,
- not adversely affect the competitiveness of business,
- be cost effective,
- be enforceable,
- be clear and understandable,
- be beneficial, and
- be necessary

Possible CCBFC Actions

- Use these factors to determine if new standards should be referenced. Retroactively apply the tests to existing standards (say on a 5-year interval) and revise or remove any that no longer fit.

Possible Joint CCBFC/PTCBS Actions

- Agree on the factors that will be used to evaluate standards for referencing and advise the SDOs that these tests will be used by incorporating this information in the revised “Guidelines for Standards Referenced in the National Codes.”

3. Enforcement of codes and standards

Traditionally writers of codes and standards rely on those applying their provisions to provide feedback on technical shortcomings, enforceability problems, and failures that may occur. Building officials and inspectors play an important role as members of technical committees. This helps to ensure the technical currency, enforceability and applicability of the standards.

As enforcement authorities face financial constraints and pressures to rationalize and reform regulation, many are considering changes to the enforcement mechanisms. Some are adopting the view that the responsibility to ensure compliance with building regulations, should lie with those doing the work. Thus designers, builders, and manufacturers would have the responsibility to make sure what they design, build or sell meets the applicable regulation. Recognizing that government cannot reasonably be expected to inspect or supervise all aspects of construction, legislation exists or is contemplated that assigns the role of provinces and municipalities as auditors of the process and not enforcers. Some enforcement authorities are also considering greater reliance on third-party verification such as certified individuals/professionals and accredited agencies to act on behalf of government for enforcement purposes.

Thus new and additional individuals and agencies may become involved with the standards interpretation process and in the evaluation of equivalencies. The move to objective-based codes may exacerbate this situation if the result is greater use of equivalencies. In most provinces and

territories, only government (provinces/territories/municipalities) can legally interpret the regulations.

There is real concern that the traditional feedback may be lost to the technical committees and that standards development will suffer.

Possible PTCBS Actions

- Where provinces and territories are contemplating defining the role of municipalities to be one of auditor, and/or where greater use of third party verification and certified professionals or agencies is contemplated, provision should be made aimed at ensuring that those involved participate in the standards process, including making SDOs aware of field problems or shortcomings in the standards.

F. OBJECTIVE-BASED CODES

1. Impact on Standards

(Information on objective-based codes can be found in the publication “Objective-Based Codes: A Canadian Approach to Building and Fire Codes for the 21st Century” available from the Institute for Research in Construction)

The CCBFC, together with industry, regulators and the design community, has begun the conversion of the National Model Codes into an objective-based framework. Such codes will be organized according to agreed-upon objectives, with the clear intent of all provisions clearly spelled out. The codes will indicate to users what must be done, why it must be done, and how the requirements may be met.

Standards fit into the last category. Solutions and products meeting referenced standards will be cited as acceptable solutions to the codes. The initial impact on standards will be slight, however, as objectives of codes are articulated, only requirements that can be linked to such objectives will have to be followed. Thus provisions presently included in standards (e.g. workmanship, aesthetics, investment protection, etc.) may not fit into a document’s objective structure and may have to be excluded from reference in codes.

On the other hand, this activity provides an opportunity to align the objectives of standards with the referring document.

Initially the objective-based codes will specify the existing provisions in the 1995 NBC, NFC and NPC as acceptable solutions meeting the code requirements. However, it is foreseen that the new codes, by making their objectives clear, will encourage the use of more innovative solutions. There may be, as a consequence, an increasing reliance on standards or other approved documents.

The introduction of objective-based codes will emphasize the existence of the “Equivalence” option. While this will not have an immediate effect on referenced standards, which will be designated in their present form as “Acceptable Solutions” or “Approved Documents,” there will eventually be pressures on SDOs to introduce the same spirit of flexibility into the standards. Additionally, this new approach will encourage the development of true quantifiable and verifiable performance based requirements and solutions. It is expected that this philosophy will also be part of standards development activities.

Should standards themselves become objective-based, conformity assessment may be more crucial in the long term.

The transition to objective-based codes has already had a significant positive impact on a number of standards that are currently under-going revision. Some standards are following the example of the national model codes: though the product may not be as comprehensive as in the case of the codes, the new editions are intended to be much more objective-based and are intended to include intent statements in their appendices. With other standards, a conscious effort is being made to keep in mind the objectives of the national model codes as those objectives develop in order to maximize the effectiveness of the standards and to ensure consistency with the codes

Possible CCBFC Actions

- Bring the objective-based code activity to the attention of SDOs for appropriate action.

Possible Actions by Others

- SDOs should keep abreast of the objective-based code activity.

G. CONFORMITY ASSESSMENT

Although the Terms of Reference for the Task Group asked that the need for certification requirements in the national codes be part of the work, the Task Group came to the conclusion that this subject was too extensive and off topic to be examined in detail. Requirements for conformity assessment, including certification, are administrative in nature and are within the jurisdiction of the provinces and territories. They are not normally considered appropriate in the National Codes, which consist of minimum technical requirements.

Some authorities having jurisdiction have expressed the concern that they may not be in a position to judge the degree of conformity assessment necessary for each standard. Consideration will be given to adding some guidance on this subject in the codes or in the appendices. This will be particularly critical as Objective-Based Codes are introduced. It is recommended that the mechanisms and procedures for identifying “Acceptable Solutions” or “Approved Documents,” include an evaluation and declaration as to the degree of conformity assessment deemed necessary considering the nature of the product, assembly or system in question (e.g. third party certification, quality program, qualification, evaluation, labeling, test report, on site-inspection, self-certification, or nothing).

Possible CCBFC Actions

- Forward the above recommendation to the Task Group on Objective-Based Codes.
- In the Interim, the present lists of referenced standards should be reviewed and an “unofficial” level of expected conformity assessment assigned.

Appendices

- A. List of Committee members
- B. Tables of Reference Standards in the NBC and NFC
- C. List of reference documents consulted by the Task Group.(copies available on request),
- D. Copy of NBC Appendix note A-2