

## **International Association of Heat and Frost Insulators and Allied Workers 2018 Pre Budget Submission**

### **Executive Summary**

The Government of Canada has made substantial investments in improving the energy efficiency of buildings to reduce their environmental footprint. In 2015, buildings are estimated to have accounted for approximately 12% of total emissions in Canada.<sup>1</sup> These investments have been complemented by a commitment to support training and equipment for the skilled trades, particularly those who are working to innovate within the burgeoning green economy.

Supporting heat and frost insulators goes hand in hand with these commitments. By working with construction trades like ours, the federal government has the opportunity to improve productivity and competitiveness within the skilled trades, and contribute to environmental objectives, including reducing greenhouse gas emissions (GHGs).

It is also important to ensure that the money set aside for greening buildings is well spent, so that work is not being unnecessarily repeated in the future. For Canada's mechanical insulators, this means making use of qualified, certified tradespeople on all federal building projects. Supporting skilled trades that have been properly trained ensures that the work needed to upgrade buildings is done right the first time.

By investing in education and training, the Government of Canada can help skilled tradespeople be more productive working in their communities, while strengthening the competitiveness of Canadian industry. By requiring the use of properly trained and certified skilled tradespeople on worksites, the federal government can enable a productive workplace by ensuring work contracted is completed professionally and sustainably.

With this in mind, the International Association of Heat and Frost Insulators and Allied Workers is recommending the following measures be taken in Budget 2018:

- 1. Continue to support union-based training programs which support green trades, including mechanical insulation; and,**
- 2. Require the use of qualified, certified mechanical insulators on projects designed to support energy efficiency (including retrofits to existing infrastructure and in the construction of new infrastructure).**

### **What is Mechanical Insulation?**

Mechanical insulation is a practical, cost-effective solution to improving energy efficiency in new and existing buildings. Mechanical insulation (MI) reduces GHG emissions, saves money, and puts skilled tradespeople to work.

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<sup>1</sup> <https://www.ec.gc.ca/indicateurs-indicators/default.asp?lang=en&n=F60DB708-1>

Mechanical Insulation (MI) restricts heat loss or gain for mechanical systems, ultimately increasing the efficiency of heating and cooling systems. Mechanical systems that require insulation are primarily pipes, ducts, and equipment such as boilers, pumps and fans. MI has existed for hundreds of years and while it is simple in design, it can greatly reduce emissions and energy loss from heating and cooling systems.

## Who are Mechanical Insulators?

Mechanical insulators are experts in the installation and maintenance of mechanical insulation systems. They are industry leaders in health and safety, through hazardous waste removal (such as asbestos) and fire prevention. There are approximately 7,000 qualified, certified mechanical insulators across Canada. The mechanical insulation industry also includes the mining & manufacturing sector. Fibres used in modern insulation are made from raw materials mined in Canada, and there are three plants in Ontario that manufacture this insulation. Mechanical insulation is a made-in Canada solution that puts skilled tradespeople to work and is an important component of the country's manufacturing and construction sector.

Mechanical insulators are certified and trained in quality assurance, insulation materials, construction safety, technical specifications, blueprint and detail drawings, and also receive introductory training about the inspection and certification process in municipal, provincial and federal jurisdictions.

## Mechanical Insulation's Benefits

- **GHG Reduction:** Properly installed and maintained mechanical insulation can reduce a building's GHG emissions by as much as 30%.
- **Reduced Energy Consumption:** Mechanical insulation systems are more cost effective than virtually any other effort designed to reduce energy use and operating costs. Insulation upgrades are proven to generate better results than more traditional efforts like changing windows, light bulbs, timers, etc.
- **Return on Investment (ROI):** Upon installation, cost recovery can be achieved in as little as 6 months and typically less than 2 years based on the ratio of the financial value of energy saved and the installed cost of the insulation.
- **Supports Canadian Manufacturers:** Canada's insulation manufacturing industry ships \$600M worth of product annually, 80% of which is domestic. Insulation manufactured in Canada directly supports \$1.4B in economic activity (through installation and construction), and the indirect impacts of economic activity generated by the fiberglass and rock and slag wool industry is over \$3B each year.

## Why mechanical insulation is not consistently installed or maintained

As a project nears completion, builders face tighter budget considerations. Other parts of the project may have gone unexpectedly over budget. Mechanical insulation specifications – one of

the last components of a build - are often sacrificed in order to ensure the project does not go over budget. When faced with a choice of paying for proper insulation, which no one sees, or of delivering products such as interior painting, builders frequently choose the latter.

Mechanical insulation also requires regular inspection and maintenance to ensure its effectiveness. Many older buildings have missing or severely damaged mechanical insulation, and often existing insulation is no longer efficient. When mechanical insulation is removed to maintain heating and cooling systems, it is frequently not properly replaced, resulting in significant inefficiencies. While a building may have been properly insulated during initial construction, there is no guarantee that it remains insulated or efficient.

## What case studies exist?

There are a number of case studies which have demonstrated the effectiveness of mechanical insulation and its ability to reduce emissions. Here are a few examples:

**London Courthouse (London, Ontario):** Key findings from July 2015 audit found that while insulation was overall in good shape, bare pipe components cause year-round energy waste.

- Mechanical insulation upgrades would save \$10,000 - \$14,000 in annual energy costs.
- Installed cost of new insulation estimated at \$6,300 - \$9,600 - presenting a simple return on investment between 6 to 12 months.
- Upgrades to this site alone would eliminate 61 metric tons per year in GHGs.

**Western University (London Ontario):** Energy savings audit and work was conducted on a steam plant, medical sciences building, campus centre plus three other buildings.

- Projected annual energy (cost) savings: \$78,355.00
- Projected emission reductions (per year): CO<sub>2</sub> - 1,640,939 lbs; NO<sub>x</sub> - 3,312 lbs; CE: 447,168 lbs
- Payback Period: 9 months
- Cumulative Reductions (20 year building lifespan): GHG Emissions: 8,937 tons and Energy Cost Savings: \$1,259,374.00

## How can the federal government support this green trade?

The Heat and Frost Insulators and Allied Workers (the Insulators) have put forward several proposals for consideration that will help improve the competitiveness of the Canadian economy and support productivity in our skilled trade:

1. Continue to support union-based training programs which support green trades, including mechanical insulation; and,
2. Require the use of qualified, certified mechanical insulators on projects designed to support energy efficiency (including retrofits to existing infrastructure and in the construction of new infrastructure).