INITIATIVE NOTICE

Impact Resistant Roofing

Calgary, Alberta, Canada
Impact resistant roofing

Institute for Catastrophic Loss Reduction (ICLR)

Hazard(s):
- Hail

Type of action:
- Incentives programs & codes update

Type of actor:
- Local government & Insurers

Description
The Impact Resistant Roofing Project, led by the Institute for Catastrophic Loss Reduction (ICLR), aims to mitigate the extensive damage caused by hailstorms in Canada. Hailstorms are one of Canada's most significant natural hazards, costing approximately $400 million annually, primarily due to roof repairs. Following a severe hailstorm in Calgary in 2020, ICLR's study revealed that using impact-resistant asphalt shingle roofs could substantially reduce damage and repair costs. This finding prompted the city of Calgary to launch a subsidy program incentivizing homeowners to upgrade their roofing. The program's simplicity and cost-effectiveness contributed to its success, with a benefit-cost ratio reaching as high as 7:1 in some cases. This initiative not only reduces individual and collective financial burdens but also enhances the overall resilience of communities against hail damage.

The Institute for Catastrophic Loss Reduction (ICLR) is an independent, not-for-profit research institute affiliated with the engineering department of Western University of Toronto and was established by Canada's property and casualty insurance industry. It focuses its work where quantifiable disaster loss is accounted for to foster change in impact assessment in Canada, especially in understanding the vulnerability of low-rise buildings.

Audience
- Insurers: To develop financing mechanisms and policies that support the adoption of impact-resistant roofing.
- Local Authorities and Policy Makers: To encourage the implementation of higher standards in building codes and to facilitate subsidy programs.
- Homeowners: To increase awareness about the benefits of impact-resistant roofing and encourage proactive upgrades.
- Contractors: To raise awareness about the benefits of higher-standard roofing materials and promote their use during repairs and installations.

Timeline
- June 2020: Calgary experiences a devastating hailstorm, resulting in $1.3 billion in insured losses, making it the fourth costliest natural disaster in Canadian history.
- Post-Event Analysis: ICLR conducts a study demonstrating the cost-effectiveness of using impact-resistant shingles, highlighting significant reductions in damage and repair costs.
- Campaign Launch: ICLR collaborates with the city of Calgary to launch a campaign promoting the benefits of upgrading to impact-resistant roofing.
- Program Development: Calgary and several insurers develop a subsidy program to incentivize homeowners to replace their existing roofs with hail-resistant materials.
- Program Implementation: The program is implemented, leading to the successful upgrade of at least 1600 roofs. Reports from roofing contractors indicate a significant increase in the adoption of higher-standard shingles, rising from 25% to 75% of all roof repairs.
- Ongoing Efforts: The project continues to promote awareness and adoption of impact-resistant roofing materials, aiming to extend the benefits across more regions prone to hailstorms.
Impact resistant roofing

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How does the initiative address the 10 Principles?

1. **Urgency**
The increasing frequency and intensity of hailstorms due to climate change necessitate immediate action. The use of impact-resistant shingles is a quick and effective solution to reduce the risk of roof damage. Calgary’s high-risk area for hailstorms emphasizes the urgency, as a direct hit could lead to insured losses exceeding $10 billion.

2. **Stakeholders**
Leading a successful grassroot upgrading campaign requires involvement of the whole value chain: insurance companies need to understand the cost benefits of favouring higher standards, homeowners should recognize the gain despite the marginal costs and local authorities and contractors should help with raising awareness and giving incentives.

3. **Process**
By requiring higher standards for shingles and offering insurance premium incentives, the project integrates adaptation measures into both the design and construction phases. Homeowners are also encouraged to upgrade their roofing, ensuring continuous adaptation over the asset’s lifecycle.

4. **Mitigation**
While this project primarily focuses on adaptation, it also contributes to mitigation by reducing the ecological costs associated with frequent roof repairs, material production and waste treatment.

5. **Data**
The ICLR study explicitly integrated climate change assumption on the variation of hailstorms frequency and other parameters in their hazard analysis (hailstorms are indeed directly correlated with air temperature). Cost benefits ratio over the next 10 years are therefore highly integrated with climate change projections, showing the project’s effectiveness in addressing future risks.

6. **Scale**
The success of this project can only be fully appreciated at a neighbourhood or city-wide level. Lower insurance costs for homeowners and reduced insurance losses make economic sense when considered on a larger scale. By implementing these roofing upgrades throughout a community, the collective impact leads to significant financial benefits and increased resilience for the entire area.

7. **Green**
The project does not directly involve nature-based solutions, as it focuses on using impact-resistant shingles, which are a highly engineered products.

8. **People**
The project adapted its approach to meet the needs of diverse communities, such as the Southeast Asian diaspora in Northeast Calgary. Tailoring actions to the specific needs and interaction patterns of these communities ensured more effective engagement and participation.

9. **Finance**
The financial aspect is critical, with the city and insurance companies covering the additional costs of impact-resistant shingles. Overcoming initial financial hurdles, such as depreciation of roof value over time, was addressed by some insurers waiving this as part of their subsidy.

10. **Local**
The study provided a cost-benefit analysis map to highlight where different types of shingles would be most relevant, tailored to local conditions and hailstorm risks in Alberta and across Canada. This localization ensures the measures are both effective and economically viable.