



## **BRIEFING NOTES RE ISSUES CONCERNING**

- **USE OF “SBS/TORCH-ON ROOFING” WITHIN BC**
- **“ROOFING CONTRACTORS ASSOCIATION OF BC”**
- **“BC HOUSING AUTHORITY”**

**Released April 4<sup>th</sup>, 2022**

## Summary

Information provided in the following briefing notes support positions that:

- Roofing Contractors Association of BC (RCABC)
- BC Housing Authority
- Various Government Ministries

are currently pursuing policies and actions related to BC's roofing industry that are incompatible with the BC Government's stated Climate Change and Sustainability objectives as set out in its "Environment and Climate Change Strategy" and "CleanBC Roadmap to 2030".

Action items the BC Government may wish to consider as follow up include investigations as to:

- Why, as opposed to the rest of North America, use of SBS Modified Bitumen/Torch-on membrane, continues to be heavily promoted by the RCABC and is being used exclusively by the BC Housing Authority and Government Ministries for their roofing projects. The outcome of any investigation conducted on an independent, objective basis is certain to conclude that use of SBS/Torch-on membrane should be banned from use in Province except perhaps for some special-use cases.
- Whether or not the RCABC operates in the best interests of BC's public and environment. Evidence supports that it does not and that reforms are needed. It is suggested that RCABC membership should be expanded to include all BC roofing companies, to no longer function primarily to promote the financial interests of its small membership group. One primary mandate of a reformed RCABC should be to objectively determine which flat/low slope roofing membranes best conform to BC's stated Climate Change and Sustainability objectives.
- Why BC Housing via its policies restricting its flat/low-slope roofing projects to only installing SBS/Torch-on membrane, and why BC Housing mandates that all its roofing installations be covered by expensive RCABC "RoofStar Guarantees". Further, why has BC Housing been effectively refusing to consider use of alternate flat/low slope membranes. And finally, was it involved in the manufacturer of one alternative membrane having had its RCABC membership cancelled?

## Briefing Notes Concerning

### Use of “SBS Modified Bitumen/Torch-on” Membrane Roofing in BC

#### 1. SBS Modified Bitumen (i.e. Torch-on) Membrane

- Asphalt based “SBS Modified Bitumen” (commonly referred to as “Torch-on”) roofing membrane was introduced to the North American and BC markets in the late 1980s as a replacement for “Built Up/Tar and Gravel” (commonly referred to as “BUR”) roofing.
- SBS/Torch-on membrane is installed using powerful open flame propane torches.



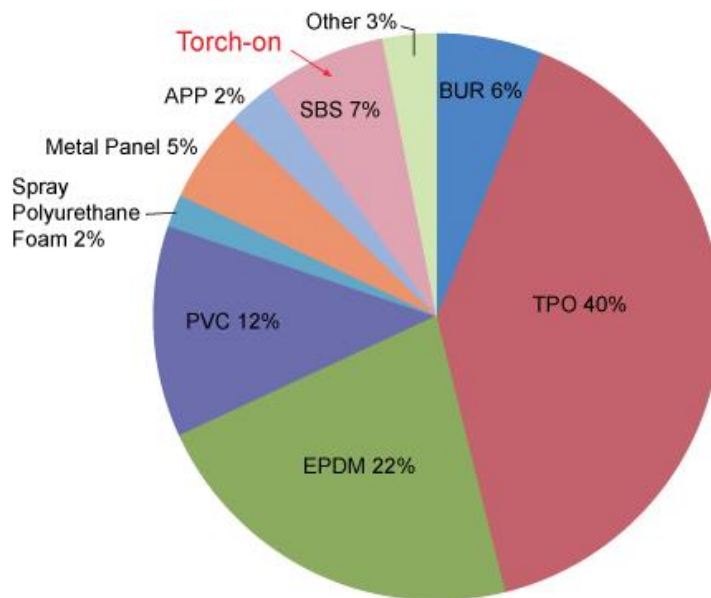
- After its introduction, SBS/Torch-on membrane rapidly came to dominate the BC flat/low slope roofing market, largely due its being heavy promoted by the BC Roofing Contactors Association (RCABC). The RCABC consists of BC’s largest roofing contractors, affiliated roofing consultants and inspectors, local product distributors, and product manufacturers.
- Ten years ago, SBS/Torch-on membrane reportedly accounted for up to a 90% market share of BC “flat/low slope” roofing membranes. Today SBS/Torch-on’s market share has been reduced somewhat to 75% due to a slow increase in the use of “single-ply” TPO, EPDM and PVC membranes. The following information was provided in a November 2020 roofing presentation to PAMA (Professional Association of Managing Agents) by J. Pitre of Trimstyle Consulting Inc, an RCABC

affiliated roofing consulting firm. During the presentation it was stated that these were the RCABC's most recent market share figures.

<p style="font-size: 1.2em; margin: 0;">Better Understanding of Roofing Assemblies</p> <p style="font-size: 0.8em; margin-top: 10px;">Low sloped</p>	<ul style="list-style-type: none"> <li>• The roof membrane is the most important component of the roof because it is the waterproofing layer. Roof membranes can be divided into three major categories.</li> </ul> <p style="margin-top: 20px;">B.U.R.'s or Tar &amp; Gravel ( less than 5% ) 2 ply's SBS ( 75% ) Single Ply's ( 20% )</p>
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<p style="font-size: 1.2em; margin: 0;">Better Understanding of Roofing Assemblies</p> <p style="font-size: 0.8em; margin-top: 10px;">Low sloped- Single Ply</p>	<p>As mentioned, single ply roof membranes became more vogue after the rise of oil pricing in 1973.</p> <p>Presently there are 3 main membrane types:</p> <ol style="list-style-type: none"> <li>1. EPDM ( 70% BC market share )</li> <li>2. TPO ( 25% )</li> <li>3. PVC ( 5% )</li> </ol>
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- While SBS/Torch-on membrane may dominated the BC market, this is not representative of the rest of North America. While data for Canada is not available, the below information was developed by the US "National Roofing Contractors Association" (NRCA), North America's largest roofing association.



Product mix of new low-slope construction sales by roof system type. Source NRCA, 2016.

- Adjusting this NRCA chart to eliminate the non SBS/Torch-on and single-ply products in order to put the chart on a comparable basis to the percentages provided for the BC, US single-ply combined shipments accounted for a 91% market share as opposed to BC's 20%.
- The question is why BC is so opposite to the rest of North America? One response often heard is that BC has a marine climate and that SBS/Torch-on membrane is the better choice in this environment. To judge the validity of this response, one need only Google Map view Vancouver and Seattle and note the much higher number of white roofs seen in Seattle. Reportedly there are now only a handful of Seattle roofing companies still offering to install SBS/Torch-on membrane.

Another interesting fact concerns the 2010 Vancouver Winter Olympics for which sustainability was a featured aspect. An RCABC magazine article titled "A Close Encounter with TPO" highlighted that of 24 roofing projects associated with the Vancouver Olympics, 23 were single-ply TPO installations, [https://issuu.com/rcabc/docs/084553\\_rbcfall2010](https://issuu.com/rcabc/docs/084553_rbcfall2010). While SBS/Torch-on was judged not to be compatible with the Vancouver Olympics' sustainability objectives, after the Games the BC roofing industry immediately reverted back to SBS/Torch-on being the dominant flat/low slope roofing membrane installed in BC.

## 2. Issues Concerning SBS/Torch-On Membrane

- There are five main categories of concern pertaining to SBS/Torch-on roofing:
  - **Poor Investment:** While initial project costs can be similar, single-ply membranes provide much better value due to their being able provide much longer service lives than SBS/Torch-on. The following is from a 2014 "Facility Condition Report - Roofing" prepared for strata by a RCABC affiliated roofing consultant, "Newer asphalt assemblies are presently being observed as lasting only 15-18 years due a drop in asphalt quality". More likely than not the majority of SBS/Torch-on roofs being installed today will need replacement in less than 15years.

Concerning single-ply membranes, one research study concludes "EPDM Easily Lasts More Than 30Years", <https://roofingmagazine.com/epdm-service-life/>, and another study concluded that 90mil EPDM can provide a service life of 50years or more. Extended services lives are also provided by TPO and PVC membranes with manufacturers offering combined material and workmanship "system warranties" of up to 30 years.

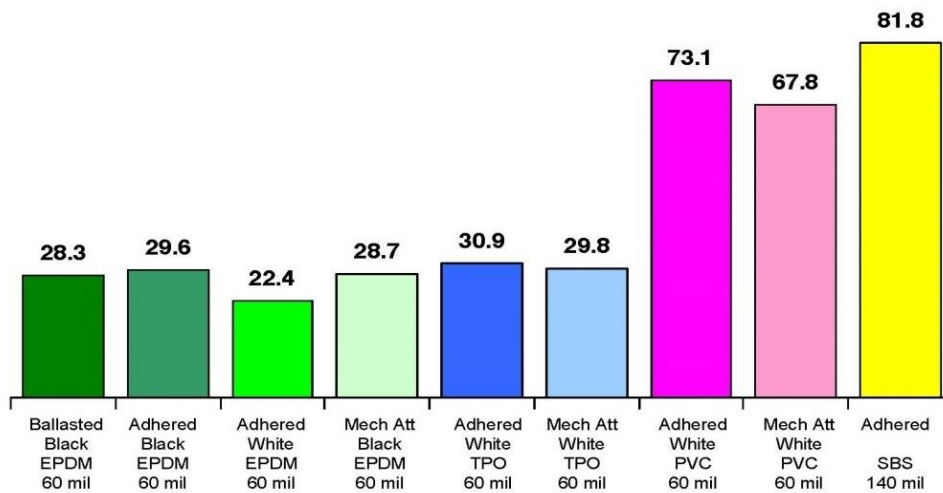
- **Inferior Warranties:** One reason for SBS/Torch-on providing a short service life is that it does not stand up well when subjected to ponded water. Due to

this reason SBS/Torch-on manufacturer warranties are short and voidable if a roof does not incorporate sufficient slope or has areas that allow ponding water to stand for any length of time. From the Soprema website:

- *“SOPREMA will not be held liable in the following cases” one of those being, “Insufficient positive slope or inappropriate drainage, causing premature loss of granules”.*
- *In all cases, roofing systems must have a minimum slope value of 1%. Premature granule loss due to stagnant water is not considered a defect of materials provided, but a result of insufficient slope. It is therefore not covered by the warranties.*

None of the single-ply membranes are affected by standing water and as such do not have this type of restriction associated with them. In fact, the greatest alternate use for EPDM membrane is pond and gutter lining. Prior to being used for roofing, PVC membranes were first used as swimming pool liner. This is to emphasize the point that single-ply membranes are in fact more suitable for BC’s West Coast Marine Climate than is SBS/Torch-on membrane.

- **Most Environmentally Harmful:** Of the available alternatives, SBS/Torch-on roofing is the most environmentally harmful product to both produce and dispose of. The following table highlights that SBS/Torch-on is the most harmful membrane to produce in terms of “Contribution to Global Climate Change”. See: [https://epdmroofs.org/wp-content/uploads/2018/04/2010\\_05\\_30\\_LifeCycleInventoryAssessmentOfSelectedLowSlopeRoofingSystemsInNorthAmerica.pdf](https://epdmroofs.org/wp-content/uploads/2018/04/2010_05_30_LifeCycleInventoryAssessmentOfSelectedLowSlopeRoofingSystemsInNorthAmerica.pdf)



**Global Warming Potential (GWP) for Widely-Used Low-Slope Roofing Systems**  
 Kg CO<sub>2</sub> Equivalent per M<sup>2</sup> of Installed Membrane  
 Source: “EPDM Roofing Association Life Cycle Inventory & Assessment..” The GreenTeam, Inc. (2009)

As shown by the below table, in comparison to the single-ply membranes, SBS/Torch-on needs to provide a much longer service life (i.e. of nearly 55years) to reach a carbon footprint breakeven point. The table further shows that only the service lives provided by TPO and EPDM membranes are of sufficient length to exceed their calculated breakeven points.

**FIGURE 1. ROLE OF SERVICE LIFE**

	Membrane	System	Global Warming (Kg. CO <sup>2</sup> )	Min. Service Life to Achieve Equivalency <sup>1</sup>
EPDM	60 Mil Black	Ballasted	28.3	19 Years
	60 Mil Black	Adhered	29.6	19.8 Years
	60 Mil Black	Mech. Att.	28.7	19.2 Years
	60 Mil White	Adhered	22.4	15 Years
TPO	60 Mil White	Adhered	30.0	20.7 Years
	60 Mil White	Mech. Att.	29.8	20 Years
PVC	60 Mil White	Adhered	73.1	49 Years
	60 Mil White	Mech. Att.	67.8	45.4 Years
SBS	140 Mil	Adhered	81.8	54.8 Years

<sup>1</sup>Using a comparative service life of 15 years for the lowest GWP system (fully adhered white EPDM)

The implication here, is that a first installed SBS/Torch-on roof will have been in a landfill for some 40 years (along with two other replacement roofs for shorter periods of time) before the first roof will have reached its calculated 55year carbon footprint breakeven point.

- **Non-Recyclable:** While recycling is not generally available in BC, it can potentially be done for single-ply membranes. Currently, the best opportunity for recycling is Duro-Last PVC where old membrane can be recycled into a variety of products such as gymnasium flooring. One recent Fraser Valley re-roof project resulting from a fire saw four tons of Duro-Last PVC returned to the US for recycling. For the 2012 London Summer Olympics, where PVC was widely used, the requirement was that installed PVC membranes needed to incorporate a minimum of 30% recycled material.

Recycling is not currently or nor is it likely to ever be an option for SBS/Torch-on. Once in a landfill SBS/Torch-on commences to leach asphalt and “modifier” chemicals into the environment for decades and potentially centuries thereafter.

Accompanying this document is a PDF titled “EPDM – A Roof For Every Climate” that is no longer available online. The series of articles contained in this document is the source for the forgoing table and other information.

- **Fire Risks:** SBS/Torch-on roof fires are a common occurrence. When noticed quickly, most are extinguished by the roofing crew. A smaller number require the assistance of the local fire department to extinguish but never receive any press coverage. The smallest number are the truly large fires that have received media coverage. Following are pictures of three of these.



**2018 Kelowna “Waters Edge” Strata Fire**



**2015 Vernon Federal Government Office**



**2013 New Westminster Columbia Street Fire**

Perhaps the most dangerous fire threat posed by SBS/Torch occurs with respect to reroofing projects. The issue involved is that of torch flames being allowed to lick down into old, dry attic space to then smolder for hours before erupting. This is suspected to have been the case concerning the above pictured 2013 New Westminster Columbia Street fire, said to be the City's largest in over 100years. This fire wasn't noticed until it had finally erupted around 3:00am in the morning and ended up leveling two historic buildings. This was also the case regarding a 2004 Abbotsford Mennonite Church fire which didn't erupt until approximately 10:00pm resulting in the total loss of the building. In this case, a 2010 BC Supreme Court decision assessed a \$2.3million judgment against the roofing company involved, for details see: <https://www.bccourts.ca/jdb-txt/SC/10/02/2010BCSC0223.htm>

Other relevant points concerning SBS/Torch-on fire risk:

- Over 20years ago New York City banned the use of propane torches on roofs stating that: "The penalty for violating these rules, built into the rules themselves, became arrest for reckless endangerment of property. Further, anyone sanctioning the illegal use of propane on roofs, including board members, lawyers, engineers, or architects, attorneys who draw up contracts, managing agents and roofing companies, can all be subject to arrest", see: <https://www.thefreelibrary.com/New+law+affects+entire+roofing+industry+in+city.-a063017880>

- Within the past several years, in recognition of the fire risks involved with SBS/Torch-on roofing, the NRCA finally took the position of no longer supporting its use on combustible roof decks.



**NRCA no longer recommends designers specify torch-applied polymer-modified bitumen sheet products over combustible roof decks even if a thermal-barrier insulation layer is installed over a combustible roof deck.**

While there remain valid uses of SBS/Torch-on membrane for such things as waterproofing below ground concrete walls and other concrete surfaces, there are simply no valid reasons for needing to accept the fires risks associated with installing it over combustible roof surfaces as is now formally recognized by the NRCA.

### **3. Need for Legislation to Restrict the Use of SBS/Torch-on Within BC**

- Materials used for roofing are significant with respect to the issue of Climate Change. It is estimated that building construction accounts for up to 39% of the factors contributing to Climate Change. By comparison vehicles are estimated to contribute 22%. As well, its estimated that buildings cover up to 25% of a typical town or city's land area. As such, within the context of fight Climate Change, the materials we are using to provide roofing, and in particular flat/low slope roofing, matters.

- In addition to all its other negative aspects, there simply isn't any way the continued use of SBS/Torch-on roofing can be considered compatible with the Government's stated Climate Change and Sustainability objectives.
- As such, to eliminate the use of SBS/Torch-on within BC to the extent possible, it is suggested that the BC Government consider enacting laws and penalties similar to New York City's example, as this is not something BC's roofing industry led by the RCABC is going to do on its own accord.

## **Briefing Notes Concerning**

### **“Roofing Contractors Association of BC”**

#### **1. RCABC Background**

- The origins of the “RCABC” date to 1958.
- The RCABC is private, non-governmental organization.
- As with many commercial associations, the RCABC primary functions to promote the financial interests of its members.
- Over the years the RCABC has grown to assume secondary roles of establishing standards for BC’s roofing industry and the providing of roofer educational training and certifications services.
- The RCABC plays a key role in the promotion of roofing materials to BC architects and others involved in providing roofing project specifications.

#### **2. RCABC Membership**

- StatsCan data indicates there are over 23,000 roofing companies with Canada. On a per capita basis this would suggest there are somewhere between 2,000 and 3,000 roofing companies within BC.
- The RCABC’s membership of roofing companies is currently 51, these being BC’s largest roofing contractors handling the Province’s largest roofing projects.
- Obtaining RCABC membership is restrictive in terms of both cost and capriciousness:
  - \$3,800 non-refundable fee to apply.
  - \$25,000 fee should membership be accepted.
  - \$1,400 annual membership fee.

Membership acceptance/rejection is based solely on Board of Director approval with no reasons needing to be given concerning a basis for rejection. Basically, membership is granted only if the applying company is seen as being supportive of RCABC interests.

- Roofing companies and manufacturers have had their RCABC memberships cancelled for not complying with RCABC interests:

- One recent example was the RCABC’s cancellation of the membership of Duro-Last Inc., North America’s leading manufacturer of PVC roofing membrane. The cancellation stemmed from Duro-Last’s local marketing agent having made a series of social media comments concerning the BC Housing Authority and others for essentially ignoring the BC Government’s stated Climate Change and Sustainability objectives. The marketing agent’s social media comments were the sole reason cited by the RCABC for cancelling Duro-Last’s membership, with the cancellation having most likely being initiated by a BC Housing complaint to the RCABC. BC Housing is an important RCABC client in that bidding for BC Housing projects is restricted to RCABC member companies only, and the RCABC receives substantial revenues from BC Housing due to its requirement that all BC Housing roofing project be covered by expensive RCABC 10year “RoofStar Guarantees”.
- Another recent example of an RCABC membership cancellation was that of Burnaby based “Pacific Waterproofing & Restoration Inc” for having used sub-contractors on one or more of its projects. It is difficult to understand why the RCABC considers this type of restriction as being of such importance as to warrant membership cancellation. It is speculation, but one reason could be that as only a limited number of RCABC companies have inhouse single-ply installation capabilities, the RCABC could be attempting to use this restriction as one method of limiting the market share growth of single-ply membranes. Whatever the reason, this restriction works to limit the opportunity for smaller BC roofing companies to gain experience and financially benefiting though being able to participate in RCABC related projects. This is a restriction that should not be allowed to stand without a clear explanation by the RCABC as to its purpose and supposed benefit to the BC roofing industry and public.

### **3. Issues Concerning SBS/Torch-on and the RCABC**

- Within BC, according to RCABC statistics SBS/Torch-on membrane currently holds a 75% market share, with single-ply TPO, EPDM and PVC membranes accounting for the remaining 25%. This stands in stark contrast to the rest of North America where single-plys represent a greater than a 90% market share and SBS/Torch likely now holding less than 5%.
- Within BC, its is thought that “Soprema” manufactured SBS/Torch-on membrane represents up to 90% of product shipments.
- Soprema is a French company with its Canadian head office located in Drummondville, Quebec.
- Soprema is 100% owner of “Convoy Supply Ltd” and is the only BC distributor through which Soprema “SBS/Torch-on” can be purchased.

- Given this situation, it is not hard to understand that Soprema/Convoy has a substantial vested interest in seeing the dominant market share of SBS/Torch-on being maintained as far into the future as possible.
- Soprema/Convoy have in the past and continue work to maintain the dominant market share of SBS/Torch-on by exerting influence over and working through the RCABC. This is accomplished via RCABC Board of Director participation, and the relationships Convoy maintains with RCABC member companies, most of whom principally purchase their materials through Convoy.
- Several years ago, it was reportedly stated in a RCABC membership meeting that up to 85% of the RCABC's annual funding comes from SBS/Torch-on related activities. As such, the financial importance of Soprema/Convoy to the RCABC and vice versa should be obvious.
- Currently only Soprema holds an RCABC Board of Directors seat but over an extended period in the past both Soprema and Convoy have together held seats. Beyond Board of Director participation there has been a long history of mutually beneficial intertwined financial relationships between Soprema/Convoy and various RCABC member companies.
- Virtually everyone within the RCABC membership sphere have, for one reason or another, has a vested financial interest in seeing the dominance of SBS/Torch-on within BC continue, be they be a manufacturer, local distributor, roofing consultants/inspector, or a member roofing company.
- In many industries, inherent issues arise between the financial interests of the companies involved and the public good. The tobacco, oil, and drug industries being prime examples. Such a situation currently exists within the BC roofing industry...where an inferior, poor performing and warrantied, unnecessarily dangerous due to fire risk, environmentally harmful to both manufacture and dispose of product, which SBS/Torch-on membrane is provable to be, continues to be promoted to the BC Government, the Province's businesses, and BC the public at large for the purpose of continuing to enable a limited number of RCABC member and affiliated companies to benefit financially. Perhaps worst of all, this situation represents a substantial roadblock standing in the way of BC achieving its stated Climate Change and Sustainability objectives. Time for things to change.

#### **4. The RCABC Funding Issue**

- A major obstacle inhibiting change at the RCABC is that of funding. At present the RCABC is very highly dependant on revenues associated with SBS/Torch-on roofing, the most important of these being the selling of its "RoofStar Guarantees".

- The RCABC promotes its “RoofStar Guarantees” by offering sales commission to approximately 90 affiliated roof consultants, and by encouraging organizations such as BC Housing and Government Ministries mandating their projects be covered by “RoofStar Guarantees”.
- The question here is whether the RCABC’s continued promotion of an inferior and environmentally harmful product, and provision of excessively priced “RoofStar Guarantees” is the best means of its funding requirements being met.

**5. RCABC “RoofStar Guarantees”**

- Compared to the “system warranties” provided by single-ply manufacturers, “RoofStar Guarantees” are extremely expensive. RoofStar Guarantees are available in 5, 10 and 15year term lengths and while the price of these is not published, industry information is that the rates for them are, respectively, 4%, 8% and 12% of a project’s total cost.

For the sake of comparing a “RoofStar Guarantee” against a single-ply manufacturer “system warranty”, consider the example of a 50,000 sq. ft. TPO or EPDM roof priced at \$10 per square foot for a total project cost of \$500,000. The cost for a 15year “RoofStar Guarantee” for this system based on 12% of the total system price would be **\$60,000**. As shown by the below table, the typical manufacturer price for a 15year “system warranty” covering both materials and workmanship is \$.08/sq, ft., for a total cost of **\$4,000... a cost difference of \$56,000.**

**RED SHIELD™ WARRANTIES (All System Types)\***

WARRANTY TYPE	TERM	\$ PER SQ FT	MIN. \$	\$ LIMIT
RED SHIELD PLATINUM**	30 Years	0.17	1,275	No Dollar Limit (NDL)
RED SHIELD***	25 Years	0.14	1,050	
	20 Years	0.12	900	
	15 Years	0.08	600	
	10 Years	0.05	375	
5 Years	0.02	150		
HAIL****	5-30 Years Restrictions Apply	+0.02	N/A	Varies
CUT & PUNCTURE****	5-30 Years Restrictions Apply	+0.02	N/A	
UPCHARGE RATES FOR WARRANTIES THAT INCLUDE APPROVED SPECIAL CONDITIONS*****	25 Years	0.05	375	Varies
	20 Years	0.04	300	
	15 Years	0.03	225	
	10 Years	0.02	150	

- Because “RoofStar Guarantees” are primarily intended to provide coverage for SBS/Torch-on installations (currently representing a 75% BC market share due to RCABC promotion), qualifying for a “RoofStar Guarantee” will generally involve additional material and labour costs beyond what is needed for a single-ply roof. A primary example is “RoofStar Guarantee” coverage requiring that roofs need to have a minimum 2% slope to its drains. This requirement, while not affecting new construction projects as much, can significantly increase the cost of reroofing projects where the installation of additional tapered insulation to create a 2% slope and will often also require the height of a roof’s parapets to be increased. By comparison, because single-ply membranes are unaffected by water, TPO, EPDM and PVC membranes can be installed without the need to create additional slope, with the roof still typically qualifying for up to 20years of extended “system warranty” coverage.
- Should there be a warranty issue with a roof covered by a “RoofStar Guarantee”, the remediation costs involved will be the responsibility of either the installing contractor or the membrane manufacturer ... not the RCABC to whom the “RoofStar Guarantee” fee has been paid.

#### **6. Suggested Alternate Approach to Addressing RCABC Funding Issue**

- One scenario for addressing the RCABC’s funding issue could be, as part of an effort to reform the RCABC, to mandate that all BC companies providing roofing services become RCABC members and charged a reasonable annual association fee. For example, a base annual \$500 membership fee paid by 2,000 roofing companies would provide for \$1,000,000 of operating budget. To provide for additional operating budget, increased fees could be assessed against larger, higher revenue companies.
- The BC Government could also consider providing additional supplemental funding if needed to support a reformed RCABC. Anything would be better than that of allowing the significant negative impacts attributable to SBS/Torch-on to continue to occur simply because the RCABC is currently dependent on revenues related to it.

#### **7. RCABC Relations With Non-RCABC Roofing Contractors**

- As part any Government review of the operations and functioning of the RCABC, the gathering of information from non-RCABC roofing contractors should be undertaken.

- The results of such a gathering of information will likely be revealing. One example was a recent warning given to the owner of a roofing company by an RCABC Director that they “need to watch themselves” with respect to that company wanting to provide the installation of PVC membrane in its market area. This individual stands ready to share his experience, and a wider investigation is likely to reveal other instances of the RCABC exerting influence over non-RCABC companies.

## **8. Reforming the RCABC**

- Based on the facts, it should be evident that the RCABC is functioning principally to promote the financial interests of itself and its small membership group, and not necessarily the greater interests of BC’s public and environment. With the impacts of Climate Change becoming increasingly apparent and mitigation goals not being met, the functioning of organizations such as the RCABC can no longer be tolerated, and corrective governmental initiatives need to be taken.
- There are important benefits the RCABC can continue to provide BC. These include:
  - The establishment of roofing standards and best practises.
  - The training and certification of roofing tradesmen and other professionals.
  - The evaluation and recommendation of which products are superior in terms of long-term performance, are best able to mitigate installation risks (such as fire in the case of SBS/Torch-on) and provide the least environmental impact in terms of production, disposal, and recyclability.

Currently the RCABC can be seen as doing a good job with respect to the first two above points, but totally failing with respect to the third because it is choosing to continue to pursue a course of action with respect to SBS/Torch-on that is provably contrary to what is in the best interests of BC’s residents and environment.

- It is therefore suggested that the role of the RCABC should be reoriented away from that of protecting the financial interests of some 51 member companies and other affiliates, to that of having its membership open to all BC roofing companies. The RCABC’s mandate could then become that of encouraging best roofing practises and the installation of superior performing, low environmental impact, ultimately recyclable products that are more consistent with BC’s stated Climate Change and Sustainability objectives.
- Should the BC Government see fit to mandate that all BC roofing companies become RCABC members, annual membership fees need to be sufficient to provide the RCABC with an acceptable operating budget. Fees should be scaled by company size and BC Government may be required to provide financial support.

- Another possible course of action the BC Government might wish to consider is taking over responsibility for the RCABC to have it begin functioning as, or similar to, a crown corporation acting for the common public good, something that certainly is not occurring under current circumstances.
- One task a BC Government controlled RCABC might wish to undertake is development of long-term recycling programs for TPO, EPDM, PVC and potentially other roofing membranes. Because there is currently so small a volume of each of these membranes within BC, coupled with the fact they provide long service lives, the volumes will not be there to support local recycling for many years to come. As such, shipment out of out-of-Province to recycling facilities such as now occurs with Duro-Last PVC membranes will likely be the only option for the foreseeable future.

## **Briefing Notes Concerning** **BC Housing Authority**

### **1. BC Housing and RCABC Relationship**

- Bidding for BC Housing Authority roofing projects is currently restricted to RCABC member companies. This, however, is a de facto situation in that during BC Legislature discussion it has been stated that there exists no legal or policy requirement for BC Housing or any Government Ministry to restrict roofing project bidding in this manner. The question is why is BC Housing choosing to do so?
- The number of roofing companies holding RCABC membership is currently 51. This is as opposed to the more than 2,000 roofing companies estimated to be operating in BC.
- In a restrictive bidding situation such as currently exists with BC Housing and Government Ministries, when all bidders are associated with a single entity, i.e. the RCABC, the potential exists for bidding processes to be organized for the purpose of increasing profits. This can occur by a successful bidder being preselected and other bidders providing higher bids in support. It is not being alleged here that this is occurring with respect to RCABC member company bids, but simply to point out that with the RCABC's infrastructure and control, there certainly exists the potential to occur and that such potential is not in the best interests of BC taxpayers.

### **2. Ability of RCABC to Handle All BC Housing Projects**

- With respect to asphalt shingle and most other forms of steep slope roofing RCABC member companies generally do not have the inhouse capabilities necessary to handle this type of project and as a result utilize sub-contractors. The cost issue here is that in a subcontract situation there is a level of (unearned?) markup profit going to the RCABC member company, this representing an avoidable layer of extra cost. There is some indication that the RCABC is aware of their exposure to questioning in this regard and have begun attempting restrict member companies from utilizing sub-contractors. The RCABC has in fact cancelled one company's RCABC's membership for having done so. However, a better means of correcting this situation would be to open BC Housing and Government Ministry projects to bids from non-RCABC companies, the likelihood being that bids from companies not needing to subcontract should be lower.

### 3. RCABC Promotion of SBS/Torch-on Roofing to BC Housing

- The type of projects RCABC member companies generally specialize in and are staffed to handle are flat/low slope installations. The below table compares RCABC provided market share information regarding BC use of flat/low slope membranes compared to those indicative of the rest of North America:

Flat/Low Slope Membrane Types	British Columbia	North America *
SBS/Torch-on	75%	9%
BUR	5%	
TPO	5%	49%
EPDM	14%	27%
PVC	1%	15%
Total	100%	100%
* NRCA provided for 2016, adjusted for direct comparison		

- The issue highlighted by the table is why should BC be so different than the rest of North America? The answer is that in pursuit of providing the greatest financial returns to itself and its member and affiliated companies, the RCABC is choosing to continue to heavily promote the use of “SBS/Torch-on” roofing within the Province.
- But there are issues in this regard. Compared to other available products, SBS/Torch-on membrane:
  - Is a poor investment in that while installation costs can be similar, the expected service life of an SBS/Torch-on roof is only approximately 15years, a much shorter service life that can be provided by single-ply membranes.
  - Due to factors that limit SBS/Torch-on to providing a short service life, product manufacturer warranties are correspondingly short, restrictive, and potentially voidable.
  - Represents a significant fire risk when being installed. Over the years this has resulted in many millions of dollars in property losses within BC, a factor that has contributed to major increases in liability insurance rates for both roofing companies other entities such stratas.
  - Is the most environmentally harmful of all the alternatives to manufacture in terms of “Contribution to Global Climate Change”.
  - After providing a short service life must go to a land fill for disposal. Each year 75% of the flat roofs installed within the Province will be in a landfill within

15years to begin leaching asphalt and other “modifier chemicals” into the environment.

- Given the RCABC is fully aware of the foregoing issues with SBS/Torch-on roofing, the question is why it continues to promote this product to BC Housing and Government Ministries. Beyond the reason of greater profitability accruing to its members and affiliates when SBS/Torch-on systems are installed, the RCABC itself has an important reason of its own. That reason is the revenues it receives from providing RCABC “RoofStar Guarantees” for the SBS/Torch-on systems installed by its member companies. As the manufacturers of all the alternate single-ply systems provide warranties that are more comprehensive and are provided at significantly lower cost than RCABC “RoofStar Guarantees”, this not insignificant revenue source would potentially be lost to the RCABC.

While using an excuse otherwise, one potential reason why the RCABC cancelled the membership of Duro-Last Inc, a PVC manufacturer, is that it had begun directly marketing to BC Housing based on the compatibility of its product with the BC Government’s Climate Change and Sustainability objectives, with which SBS/Torch-on is not. Direct evidence via a recorded phone conversation exists supporting the RCABC’s overriding concern that its BC Housing and Government Ministry “RoofStar Guarantee” revenues not be interfered with. When Duro-Last’s local marketing agent declined to stop marketing directly to BC Housing and Government Ministries, cancellation of Duro-Last’s RCABC membership followed shortly thereafter.

#### **4. BC Housing Compatibility with BC Government Climate Change and Sustainability Objectives**

- Are the current policies and actions being pursued by BC Housing compatible with the BC Government’s stated Climate Change and Sustainability objectives? Most certainly they are not given the Authority’s willingness to de facto continue to only approve the use of SBS/Torch-on roofing for its flat/low slope projects. This is despite having been provided with ample evidence that other better performing, and in the case of Duro-Last PVC readily recyclable, membranes are available that are much more compatible with the Province’s stated objectives.
- BC Housing’s issued “Design Guidelines and Construction Standards”, makes no reference to use any other flat/low slope membrane other than SBS/Torch-on and states that a 10year “RoofStar Guarantee” must be provided. The document does state that alternate membranes and warranties can be considered subject to BC

Housing approval but as evidenced by the Duro-Last case, the Authority has not in practice been willing to consider use of a membrane other than SBS/Torch-on. Further, the requirement that “RoofStar Guarantees” must be provided limits bidding to RCABC member companies. See:

<https://www.bchousing.org/publications/BCH-Design-Guidelines-Construction-Standards.pdf>

- BC Housing policies and practices stand in stark contrast to the BC Government’s “CleanBC” Initiative:

***“A better future through fighting climate change:*** Announced in December 2018, the CleanBC climate action plan puts our province on the path to a cleaner, better future by building a low-carbon economy with new clean energy jobs and opportunities, protecting our clean air, land and water and supporting communities to prepare for carbon impacts. As part of the accountability framework established in CleanBC, and consistent with the Climate Change Accountability Act, please ensure your organization aligns operations with targets and strategies for minimizing greenhouse gas emissions and managing climate change risk, including the CleanBC target of a 50 per cent reduction in public sector building emissions and a 40 per cent reduction in public sector fleet emissions by 2030. Your organization is expected to work with government to report out on these plans and activities as required by legislation.” See CleanBC “Roadmap to 2030”:

[https://www2.gov.bc.ca/assets/gov/environment/climate-change/action/cleanbc/cleanbc\\_roadmap\\_2030.pdf](https://www2.gov.bc.ca/assets/gov/environment/climate-change/action/cleanbc/cleanbc_roadmap_2030.pdf)

- It is suggested that concerning the information provided by this document, there is a clear need for the BC Government to review the functioning of BC Housing with respect to its relationship with the RCABC and its conformance to the Province’s stated Climate Change and Sustainability objectives.