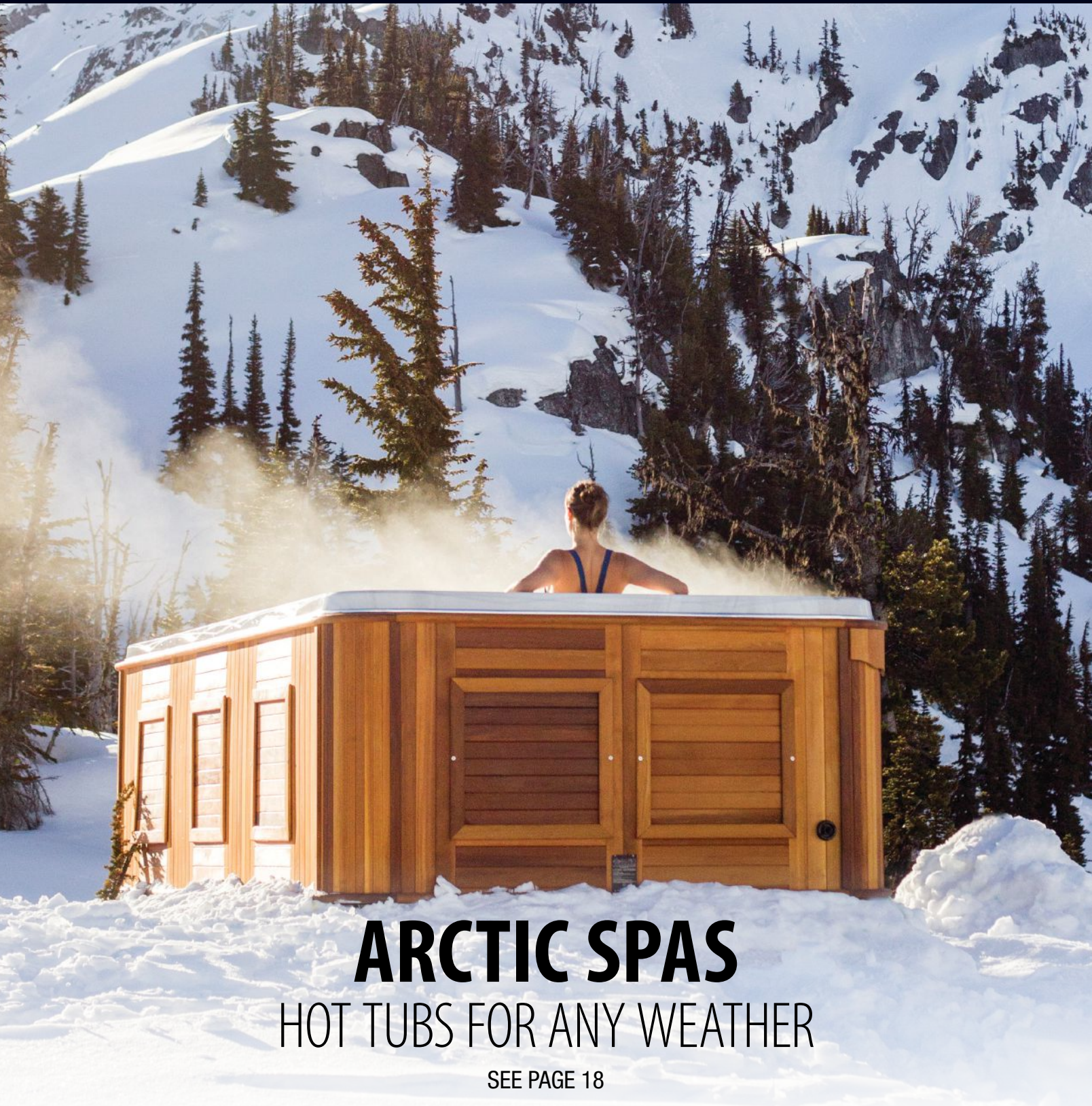


NAC DELIVERING Performance

FALL 2019

A publication of North American Composites

www.nacomposites.com



ARCTIC SPAS

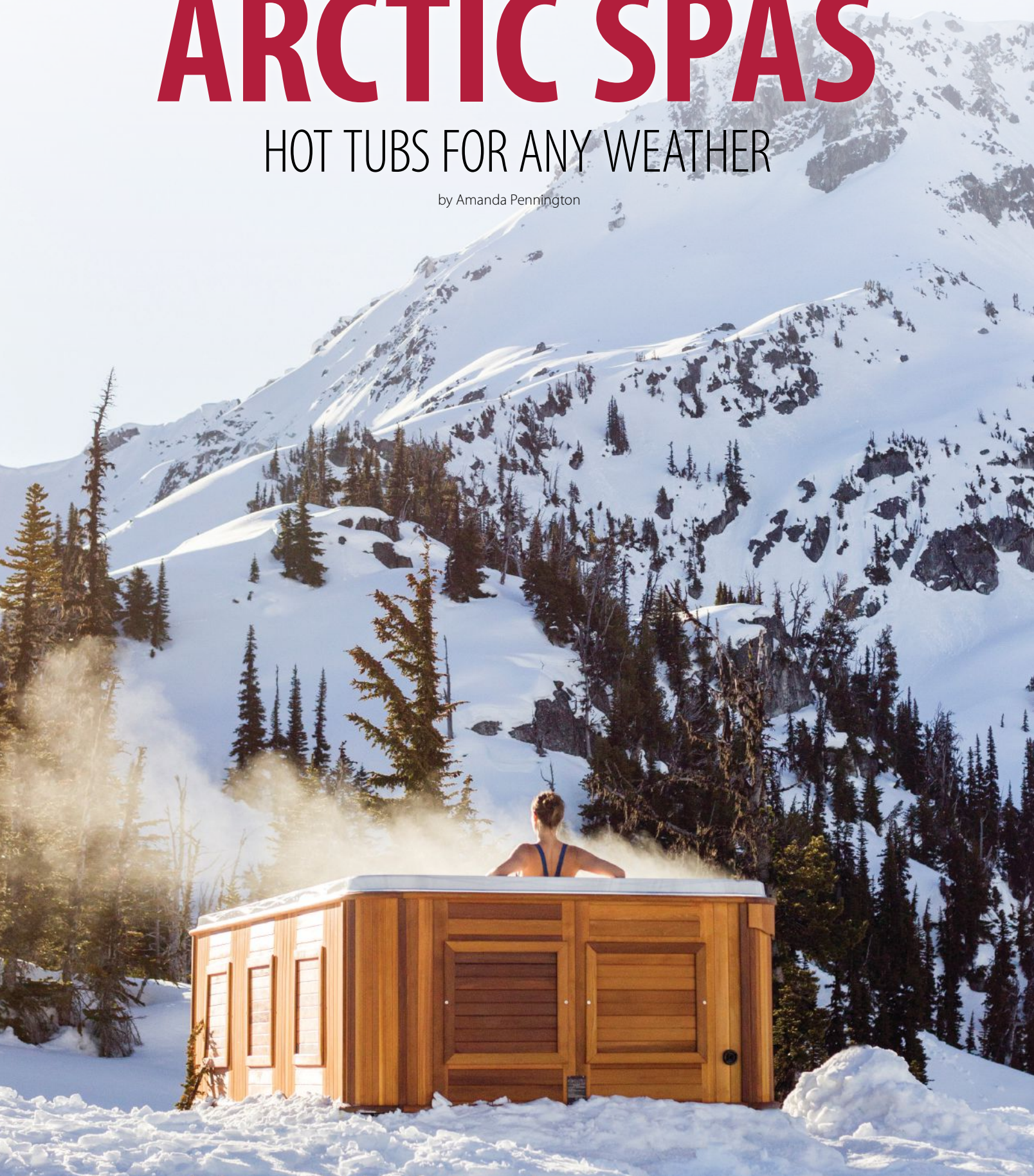
HOT TUBS FOR ANY WEATHER

SEE PAGE 18

ARCTIC SPAS

HOT TUBS FOR ANY WEATHER

by Amanda Pennington





Canada is famous for maple syrup, moose, politeness and hockey. What is Canada not famous for? Hot tubs. Arctic Spas, part of Blue Falls Manufacturing, wants to change that.

Established in Edmonton, Alberta, and Spokane, Washington, in 1994, Arctic Spas produces hot tubs that can withstand the harshest climates in the world. Not only are these hot tubs functional — they're comfortable, energy efficient and dependable. For the last 25 years, the company has created new market differentiators and product innovations nearly every year. That equals almost 25 unique features for Arctic Spas hot tub customers, and the world is taking note: Arctic Spas products are currently sold in 58 stores in Canada, 50 stores in the U.S. and 17 stores in Europe.

"Research and development is ongoing," Dave Andersen, Arctic Spas research and development manager, said. "Like cars, we're constantly tweaking; adding features; upgrading technology; coming up with new, better, innovative ways to build spas [and] improve user experience. We're also involved with manufacturing and manufacturing processes, making it safer and being more environmentally conscious ... We're constantly trying to push the envelope as far as technology and incorporating technology in hot tubs, and our niche is making spas built for the world's harshest climates. We're the northernmost manufacturer that I know

of in Edmonton, Alberta. We make hot tubs built for cold weather climate that can withstand minus 30 C [minus 22 F] and heavy snow loads and stand the test of time. Our goal is that the hot tub will be a one-time purchase for your backyard and will be there as long as the house."

As Arctic Spas develops new, long-lasting designs, NAC offers support and materials. Brian Allan, NAC representative, first took on the Arctic Spas account in 2013. "I've been there a long time. They know me well. Too well," Allan laughed. "They are more of a high-end product. These spas start at about \$10,000 and go up to about \$30,000."

The team trusts NAC to provide all of the raw materials that are needed for the hot tubs. "We do a good job with maintaining inventory and keeping them in product at a good price," Allan said. "We are their sole fiberglass supplier. A lot of companies wouldn't solely source all of their fiberglass needs from one distributor, but they do."

"Our rep is very helpful," Andersen said. "It's been necessary to have a good, hands-on rep to help us work through some parameters and issues."



Because of catering to areas with extremely harsh climates, Canada is the perfect location for Arctic Spas' research and development; something as simple as pouring a concrete slab for a hot tub can be a problem for customers in the far north. "We can only pour concrete six months of the year," Andersen said. "So the other six months prior to this, to get a concrete pad underneath your hot tub, because they didn't have floors ... it was just a sheet of plywood," which was prone to decay.

The team developed a solution: a gelcoat fiberglass floor. "It was portable and could be set on any level surface — it could be grass or mud — and it's never going to rot," Andersen said. "That was a big innovation. Since then we've purchased SMC molds, so we do SMC and stamp floor pads for most of our spas."

The first unique product that Arctic Spas designed was a self-supporting fiberglass hull. Using vinyl ester and polyester resin backing, designers manually sprayed and rolled out the acrylic shell. The final product supports both water weight and human weight inside the hot tub.

Along with developing innovations, Arctic Spas makes quality a top priority: The team stopped using fillers in their resins and haven't looked back for "probably over 10 years," Andersen said.

"Their process is a little bit unique," Allan said. "Every other spa manufacturer that I've ever been involved with fills their resins. The derogatory term is 'they put dirt in their resins.' It's not dirt, it's a filler, usually like calcium carbonate or calcium sulfate. What that does is it cheapens the resins. Resin is expensive, and the fillers that they put in them are cheap. If you have a five-gallon pail of resin, and if you put it on a surface, if you add filler to it, you can spread it a lot further." To illustrate, "It's kind of like what my mother did to me when I was a child; when the ketchup was running low, she used to put a



little water in it and shake it up, which I hated," Allan laughed. "That's what most people do to their resins."

The Arctic Spas team adds an extra benefit for customers. "We do perimeter insulation on the walls and the floors, and no insulation around the spa shell," Andersen said. "It's waste heat from the motors, and it helps to heat the water. We utilize that heat transferred into the cabinet, equipment area and then the spa water. And that works in two ways. It's more energy efficient because 50 percent of the energy moves the water and 50 percent of it is giving off heat. We use that to heat the water. Then it works the other way as well. If you live in Saskatchewan, where there are lots of power outages for five to six hours, the heat from the hot tub helps to keep the equipment warm and then prevents it

from freezing until you can get the power back on or a technician can come out and help."

Without any fillers, Arctic Spas' team has a challenging job. "The manufacturing of the shell is a labor intensive and a grueling process, but it's important for our overall story and the overall product design," Andersen said. "We are working on alleviating some of that and incorporating robotics and automation."

To simplify the production process, NAC worked with Arctic Spas to develop a new product. "There's a specific type of resin that we solely engineered for them," Allan said. "We brought in technical people that went to their factory, looked at their process, and specifically engineered a resin that's solely for them, and that gives them the highest quality product

HOW TO MAKE AN ARCTIC SPAS **HOTTUB 101**

"You take a big flat sheet of acrylic (which is the surface you then see inside of a hot tub, but it starts off as a big flat sheet) and you put that sheet in an oven. You soften it, so you hit it with a lot of heat so it's gooey. Then you vacuum it on top of a mold to put it into its shape. Once you've made the shape of the acrylic sheet to the shape of your tub, it doesn't have any rigidity. [NAC] products are really good to rigidize that sheet or to give it stiffness, so when you hop in your hot tub, you don't go through the floor or the side of it. It doesn't flex, and it doesn't bend. It becomes a solid piece.

"One of the challenges is that bond between the resin and the acrylic sheet. You spray on the vinyl ester resin first, which is the contact point — if there's going to be failures or warranty claims down the road, that piece is one of the most important bonds that happens. We specifically engineered a vinyl ester resin for that that specifically gives [Arctic Spas] the properties that they need to give them these world-renowned, high quality tubs. So then you put on this vinyl ester resin, and you let that cure, and then you put the other resin on top of that, and that's, again, just to add to it extra stiffness. That's where most people fill the resins, and that's why we think our vinyl ester resin adds to the uniqueness ... because it's not touching the acrylic, and it's just a filler that some customers put in to save money. [Arctic Spas] doesn't save any money by not filling the resin."

— Brian Allan, NAC Representative

in the end. It's called a vinyl ester resin and it bonds to the acrylic ... Specifically, it's the vinyl ester resin that helps create a quality tub."

Regular visits are key to the new material. Allan makes monthly half-day visits to Arctic Spas for employee training. "If they've got some new employees," Allan said, "I take them aside and do a one-on-one course on some of the products that I'm selling them. Every time I'm there, I review. In my mind, I call it a process audit. When I'm there once a month, one of the main things I'm doing is reviewing their application of my product to make sure that they are using them correctly," keeping NAC and Arctic Spas on the same page with the products used in manufacturing.

Designing hot tubs for the harshest climates in the world is the company's tagline, but it's also a challenge. "We get all four seasons," Andersen said. "We get minus 30 C [minus 22 F] in the winter and 30 C [86 F] in the summer. It can be extremely humid and it can be extremely dry." This is a challenge for R&D and production. "All those parameters change the way the products react and behave."

Looking to the future, Arctic Spas has big ideas for what's coming next. "There are lots of innovations coming out but nothing I really want to publish before it's available," Andersen said. "We're working on our [hot tub] cover. The cover is still one item that needs to be replaced every three to five years, so it's the next item that we need to tackle, with the goal that the spas last 20-plus years. The cover should be part of that."

Arctic Spas also aims to improve current processes. "We're always looking at ways to



"Our goal is that the hot tub will be a one-time purchase for your backyard and will be there as long as the house."

– Dave Andersen, Arctic Spas Research and Development Manager

produce molds quicker, have them stronger, last longer," Andersen said. "They go from when you vacuum form a sheet of acrylic, when they're at 150 C [302 F] and they can go outside and be at minus 30 C [minus 22 F]. That expansion-contraction causes a lot of maintenance in the molds."

"The thing that they do is that it's always more, more, more," Brian Allan said. "More jets in the hot tub, more features in your tub, like stereo systems. I think some of them have TVs built into them. There's a bunch of features and bells

and whistles," and to make these innovations feasible, Arctic Spas continues to work with NAC for raw materials.

"We strive to be not necessarily the biggest," Andersen said, "but the best, and make the best spas that we can."

www.arcticspas.com



ARCTIC SPAS **SMART SOLUTIONS**

"Three years ago we released the first automated water care system for a hot tub. We were the first ones to have spas connect to the internet so people could control them from anywhere. We wanted our dealers to have the ability to monitor spas for their customers. Our kind of thing is while the rest of the industry was trying to put in more jets and have a thousand-jet hot tub, we were working on a better shell. While everybody was trying to put in a pop up television and things like that, we're working on a better cover. While they're trying to put 10 pumps underneath the spa, we're working on a better floor that will last long. That's kind of our mantra. We want to make the best product that will be the longest lasting and the best bang for your buck, and have our customers come from referrals."

– Dave Andersen, Arctic Spas Research and Development Manager