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Agway Metals Case Study | WEATHERING STEEL PROJECTS, NS

Ask a Maritimer, and they will tell you a million stories about the weather. Hurricanes, snow-storms, gale-force winds – it's part of the deal you make for living on the rugged and beautiful North Atlantic coast.

This is the sort of environment that presents unique challenges to architects, contractors, and engineers. The sort of challenges that limit the effectiveness of most staple building materials. It's not just the wind and the snow – it's the salt. Permeating the air itself, the salt speeds up corrosion and rust, weakening materials and stripping them bare. The closer you get to the ocean, the worse this effect is.

A climate that doesn't take it easy on its inhabitants – or its buildings – demands hardy materials and unique solutions. One that is rapidly growing in popularity – almost as quickly as it develops its recognizable brown-and-purple patina – is Indaten™ Weathering Steel.

For the uninitiated, these buildings look battered by the elements, immediately looking weathered and aged. But those in the know recognize Indaten™ as being uniquely useful for North Atlantic construction projects.

Just west of Halifax, the Hallmark Dental Lab sits amongst mostly-empty lots in what will one day be a new commercial development. For now, though, its neighbours are mostly rocks and conifer trees, scraggly and bent from the wind in a way that seems uniquely Canadian.

The Dental Lab looks like a typical commercial building: mostly rectangular, with black and white cladding. It isn't until you turn into the parking lot that you see the accent: a jutting protrusion of brown steel that bursts from the building.





Where other buildings – those in drier, more sheltered climates – would use a painted steel for a noticeable accent, the Hallmark Dental Lab relies on Indaten™ steel to achieve the same effect.

“We wanted to use Indaten™ because of the colour – it’s very warm and inviting,” says Catherine MacQuarrie, architect with Michael Napier Architects. “Its texture and colour really stands out when juxtaposed with the cooler greys and whites of the cladding materials.”

As in all places, architects look to create visual interest in their work. “Architects love Indaten™ because it’s striking, it’s beautiful, it’s a pop of colour,” says Gil Mulligan of Agway Metals, which supplied the 1 tonne of Indaten™ steel used for the Hallmark Dental Lab project. “Colour is what architects like.”

And colour is something fairly rare here on the Nova Scotia coast, where salt and sea air wreaks havoc on most painted finishes and materials.



“The traditional building material out here is cedar shingles,” explains Lawrence Tupper, also of Agway. “And you’ll see that for a lot of houses with cedar shingles, that the ocean side doesn’t get painted. They leave it raw, because paint isn’t going to stick to it. You kind of have nowhere to go but downhill.”

That’s where Indaten™ comes into the conversation. The specialized weathering steel quickly develops a unique patina when exposed to the elements. But unlike “normal” rust, the brown-and-purple sheen of Indaten™ is actually protecting the metal beneath. “It’s the protective layer on top of the steel that’s doing the rusting,” Mulligan explains. “And underneath it, the steel is untouched.”

So, not only does the metal look great, it will actually last longer, too. About twice as long as unprotected steel, says Mulligan.

Indaten's striking colour and resiliency has made it an attractive choice, even for architect's marquee projects. Nowhere displays this blend of aesthetics and durability more than the East Dover House, a private residence that hovers above a granite outcrop overlooking the Atlantic Ocean, just a few minutes drive from the iconic Peggy's Cove Lighthouse. Almost the entire exterior of the 2000 square foot home is made of large panes of glass and Indaten™ steel – nine tonnes of Indaten™, in fact.

If East Dover House looks like something from an architecture magazine, there's a reason: built for an expat couple returning to Canada – one of whom is a retired landscape architect – architecture firm MacKay-Lyons Sweetapple Architects were given directions to design a dwelling that seemed to be a part of the natural landscape. Their response was to rely heavily on Indaten™ to create a striking silhouette against the Nova Scotian sky, with the browned steel drawing on natural colours while highlighting the remote location.

Construction took almost two years, slowed by COVID and the unique circumstances of building on the North Atlantic coast. The house levitates over the bedrock, suspended by structural steel drilled directly into the granite.



Gordon Maclean – the now-retired construction manager for the project – was in charge of artificially weathering the Indaten™ steel before it made its way to the construction site. This was especially important for the portions of Indaten™ that were used on the interior of the house.

In three years since construction, East Dover House has already weathered two hurricanes – and it's still looking great.

“Indaten™ is usually only used on exteriors,” Maclean says. But since the entire exterior – including the roof – used Indaten™, the architects wanted to draw some of the same colours and textures inside the house. “So, the woodstove is in this little nook made with Indaten™ panels,” explains Maclean.

For weeks, Maclean had to manually help speed the weathering process up – especially since, under ideal circumstances, the interior steel wouldn't ever encounter the conditions to weather at all. After applying boiled linseed oil to the steel's surface, Maclean sprayed the metal panels with a mixture of peroxide, salt, and water every day to encourage the patina's development





PROJECTS

East Dover Residence

Hallmark Dental Lab

ARCHITECT

MacKay-Lyons Sweetapple
Architects

Michael Napier Architects

AGWAY PRODUCTS USED

7/8" Corrugated

Finish: Indaten™

7/8" Corrugated

Finish: Indaten™

Galvalume

“Watching the process was like, ‘Wow, what are we doing?’” Maclean laughs. “But then it all came together.”

“It was my first time building with Indaten™, so I didn’t know what to expect.”

Looking at both buildings, it’s clear that Indaten™’s growing popularity is not an accident. “You talk to one person about it, and all of a sudden we get calls about it from three, four other people,” Mulligan says. “Word travels fast, and architects talk.”

The appeal, both Mulligan and Tupper say, is in the aesthetic. Indaten™ seems custom made for the East Coast, a steel that’s designed uniquely to suit the beautiful landscapes of the North Atlantic.

“If you look at pictures of the East Dover House, and you see those trees, that’s as tall as those trees will ever grow,” says Tupper. “It’s very rugged terrain, with the weather and the ocean right there. And to be honest with you, before this exercise, I’m not sure I really understood this product. But I love it now.”

“We have architects coming to us now and asking ‘what is this?’ Because it’s the solution for my saltwater issues. Not just in the steel business, but for everything!”

ORIGINAL ARTICLE STEEL DESIGN MAGAZINE SPRING 2024 - IAN VANDUZER

