SPECIFYING AND DESIGNING IN COLD CLIMATES

SUBSCRIBE WEBSITE PAST ISSUES

The residential real estate market is seeing a shift with homeowners and builders more inclined to invest in energy efficiency. The U.S. Green Building Council recently reported "LEED-certified homes have grown nearly 20% in the last two years." These trends create opportunities for contractors to offer high-performance heat pumps even in cold climates. While some cling to outdated ideas about their effectiveness in climate zones 6 and 7, today's heat pump technologies prove otherwise, offering 100% heating capacity down to 5° F and 76% at -13° F.

Contractors should increase their education and observe best practices for applying high-performance heat pumps in a variety of environments, especially cold climates. In the Q&A below, Dennis Kurzawa, Comfort Engineering Solutions, details a few issues he regularly sees in the field and offers tips for specification. With both residential and commercial project experience, Dennis recently designed the layout for a Michigan-based Passive House using our Zoned Comfort Solutions® with Hyper-Heating INVERTER® (H2i®) technology.

DENNIS KURZAWA

Solutions Specialist, Comfort Engineering Solutions

WHAT IS YOUR EXPERIENCE WITH MITSUBISHI ELECTRIC EQUIPMENT?

Before my current work, I was a mechanical contractor for 34 years and I started using Mitsubishi Electric systems as soon as they were available.

HOW DO YOU DETERMINE THE PROPER DESIGN TEMPERATURE IN COLD CLIMATES?

You have to look at your area's recommended design temperature (in my case, Michigan) and review the coldest temperature. I go a little further and look at temperature averages and seek out information about adverse weather events from previous winters. From there, I add a few extra cold degrees as a buffer to ensure a comfortable customer.

WHAT IS AN ISSUE YOU SEE PROFESSIONALS MAKING IN THE FIELD REGARDING HEAT PUMP DESIGN?

One issue I see is that people are designing systems without the use of the manufacturer-provided design tools or programs. I see this all the time. Solely relying on the published sizing requirements for loads will lead to issues.

WHAT DO YOU THINK ABOUT SUPPLEMENTAL HEAT FOR HEAT PUMPS?

I believe that hyper-heating heat pumps are an effective solution for cold climates. That said, from my experience, it's always comforting for the homeowner to know that there is backup resilient heat. The two can work in tandem.

DO YOU HAVE ANY OTHER TIPS FOR CONTRACTORS?

When you're specifying heat pumps for cold climates, it's important for the home to have a tight envelope; it's a very important component. Even in a retrofit, the homeowner will need to invest in creating a tight environment for the heat pump to work optimally. Also, I have to stress not guessing the load size in these applications. I've seen too much undersizing and wrong specifications of equipment in the field.

For more information about H2i technology, visit MitsubishiComfort.com.

SUZ UNIVERSAL OUTDOOR UNIT

Launched this year, the SUZ Universal Outdoor Unit, part of the M-Series lineup, has opened up extensive design options for engineers and contractors specifying for residential and light commercial applications. Compatible with a variety of indoor units and an expansive size offering, the SUZ also provides value to distributors since it can reduce the amount of inventoried product.

In early 2020, an SUZ H2i unit will be released expanding the single-zone H2i lineup to 8 different indoor units. Single-zone equipment is especially essential in the heating season for retrofits and unit replacements. To learn more, visit MitsubishiComfort.com.

COMPATIBLE INDOOR UNITS AND CAPACITIES

- SLZ-KF Four-Way Ceiling Cassette with 3D i-see Sensor™ in 9,000, 12,000, 15,000 and 18,000 KBTU/H
- MLZ-KP (EZ FIT™ Recessed Ceiling Cassette) in 9,000, 12,000 and 18,000 KBTU/H
- SEZ-KD Low-Static Ducted Unit in 9,000, 12,000, 15,000 and 18,000 KBTU/H
- PEAD Mid-Static Ducted Unit in 9,000, 12,000, 15,000, 18,000, 24,000, 30,000 and 36,000 KBTU/H
- SVZ Multi-Position Air Handler in 12,000, 18,000, 24,000, 30,000 and 36,000 KBTU/H

SALES BUILDER PRO

Sales Builder Pro, Mitsubishi Electric's in-home selling and quotation app, takes the guesswork out of system design for projects in extreme temperatures. Simply input your ACCA Manual J® load calculations, linesets, as well as the altitude, and the program will determine all derates — giving you a correct heating capacity to design around.

VISIT WEBSITE