ANSI / CSA C448 Series on Design / Installation of Geoexchange Systems

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CSA Group

Key points about process

- Standards process
- Benefits of bi-national standards

Acknowledgements

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- Waterfurnace Intl.
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- Pretech
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- Groundheat International Inc.
- Ewbank Geo Testing
- Earth Tech
- Newcomb-Boyd
- Versaprofiles
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- Watts Water Technologies
- Geo-Flo Products
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- GeoEnergy Enterprises
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Stakeholder objectives

Our bi-national standards goals

- To produce a consistent Standard for Geothermal / GeoExchange installations that are applicable in the United States and Canada that are drafted by the leading professionals in the Industry

Results

- A consensus Standard has been agreed upon by all participating members and key stakeholders

Lessons learned

- This is the first bi – national Standard for the United States and Canada and a milestone has been attained. Further consultation will be required with the many stakeholders in the industry to expand and improve future editions of the Standard

Key takeaways

- It will be imperative to engage utility providers and third – party ownership firms in future editions to ensure the highest Standards are crafted to meet long – term system performance, financial and reliability objectives required by these entities
- Continued collaboration with key industry stakeholders
- US Canada Regulatory Corporation Council

Next steps

- Publish the BSR / CSA C448 – 2015 Standard and solicit feedback from the Industry

New C448 Format

- C448.0 - 15 Design of GeoExchange systems — Generic applications for all systems
- C448.1 - 15 Design and installation of GeoExchange systems for commercial and institutional buildings
- C448.2 - 15 Design and installation of GeoExchange systems for residential and other small buildings
- C448.3 – 15 Vertical Closed-Loop Ground Heat Exchangers
- C448.4 – 15 Horizontal Closed-Loop Ground Heat Exchangers
- C448.5 – 15 Surface Water (submerged headers)
- C448.6 – 15 Open Loop
- C448.7 – 15 Standing Column Well
- C448.8 – 15 Direct Expansion

New C448 format (continued)

Informative Annexes (non mandatory)

- A - Electrical, environmental, and other guidelines for GeoExchange heat pumps and underground thermal energy storage (UTES) systems
- B - Installation checklist for open- and closed-loop GeoExchange heat pump systems
- C - Site survey worksheet
- D - A multiple measure method for determining the appropriate size of a closed-loop GeoExchange heating and cooling system for a small building
- E - Annual energy requirements based on modified ASHRAE bin hour method

Conclusion

This consensus Standard is the result of countless hours of volunteer work and CSA Group and we believe that this new BSR / CSA C448 – 2016 will prove to be the solid foundation that Geothermal / GeoExchange needs to expand the market penetration of this technology into the conventional HVAC industry.

Questions

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