Any building owner or operator knows that due to the extreme North American climate, conditioning ventilation air is very expensive. Ventilation air is extremely important to ensure the building is healthy and in turn the occupants are healthy and productive. Thanks to Tempeff Dual Core’s high efficiencies, owners can meet or exceed minimum legislated ventilation requirements, without the usual high operating costs of traditional ventilation heating and cooling equipment. The Dual Core™ system employs two energy cores that deliver extremely high, frost resistant energy recovery. Units can be applied wherever ventilation air is required. Dual Core™ units meet or exceed ASHRAE 62 - 2007 standards for cross leakage rates, and are an excellent solution for energy recovery in ventilation applications.

**Inside Units Requiring Long Duct Runs for Outside Air / Exhaust Air**

Inherent in the design of the Tempeff product is the fact that the Outdoor air and Exhaust air switches each cycle, which is typically every 60 seconds. This means that the Outdoor air and Exhaust air connections are dual duty and must be considered when designing a system. On indoor units care must be taken. It is best to locate the units as close as possible to the outside, mainly to minimize excess cross leakage due to the exhaust air being entrained in the duct, and then drawn back into the unit. For energy recovery equipment ASHRAE 62.1 2007 allows up to 10% total cross leakage for Class 2 air, 5% for Class 3 and is unspecified for Class 1. Thus as long as the excess cross leakage due to the duct work does not exceed those parameters, longer duct runs can be used. Care still must be taken when designing the duct runs, as the pressure inside these runs will alternate positive and negative with each cycle. As the duct runs get longer, the mass of air that is within these ducts becomes greater, thus greater force is required to switch the direction of the airflow as the air stops, then is reversed back up the duct run. To prevent duct noise due to this fluctuation the duct must be designed to handle a wider range of pressure than normal duct layout. Consider that in one cycle (outdoor air duty) the pressure will be negative, and then when the cycle switches to exhaust air duty, the pressure will be positive. Also during the switchover, we have observed a much higher pressure as the fan builds pressure to overcome the inertia of the incoming mass of outdoor air, then the pressure settles back down to normal operating pressure drop for that duct run. At minimum we recommend that a **multiple factor of 4** be used to calculate the pressure differential the duct must handle in a given cycle. For more information about this or other Tempeff Innovations, please contact your local Vemco Sales Team.

**Q & A**

Respond to mail@vemcoinc.com with the correct answer by: April 18th to be eligible for the prize!
(No phone answers accepted; can only win once every 6 months)

**Q:** Tempeff North America products employ Dual Core™ regenerative technology offering up to what percentage **sensible efficiency** and what percentage **latent recovery**?

**Prize:** $50.00 AMEX gift card

**Congrats to** Erik Renna at Morrison Maierle who correctly identified Copper and 316 stainless steel as being the two primary materials the Enervex EcoFlex90+ economizer tubes and fins are made of.