

Venmar CES...giving ventilation a print application



"Before installing the Venmar HRV system, we had a terrible fume problem from the presses. Customers at the other end of the building would come into the shop and complain about the smell. Even employees who went out to lunch would complain about the smell when they returned. Since we've installed the Venmar units, I can honestly say we haven't had any complaints from anyone working around the presses or coming into the shop."

Butch Segler
Production Manager

At Universal Printing in Brainerd, Minnesota, the indoor air quality was so bad owners feared it might become a labor and a health issue. The offensive odors produced by printing inks and deglasing or cleaning solutions permeated the 26,000 square-foot building from the plant to the offices. The situation gave rise to complaints from customers, plant visitors, and employees who were exposed to this noxious environment 8 to 12 hours a day. What little ventilation there was in the press area of the printing shop could best be described as "crude" or "elementary".

It was time to press Venmar into service!

Situation

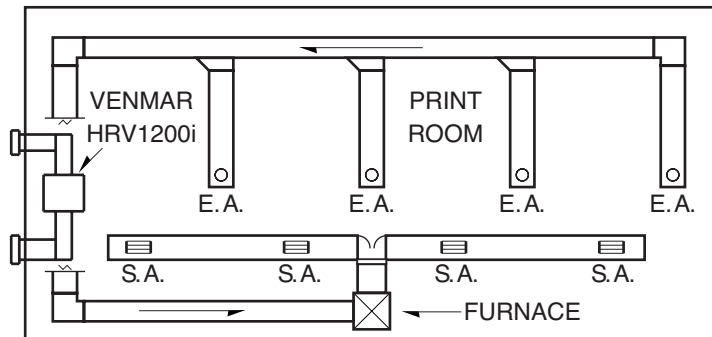
At the root of the problem were two press bays. Each bay was 3,250 square feet (130 ft. x 25 ft.), with a 12 foot ceiling, which were inefficiently ventilated by:

- a 4 foot axial exhaust fan
- open doors for make-up air requirements

Cold Minnesota winters also pointed to a need for a heat recovery system instead of a simple exhaust system.

Standards and Requirements

Reference standard	ASHRAE 62-89
CFM per square foot	.5
Building type	Printing plant: 2 bays
Occupancy	12 people: 6 per bay per shift
Ventilation required	1625 cfm per bay (3250 sq. ft. x .5 cfm/sq. ft.)



E.A. - EXHAUST AIR GRILLE
S.A. - SUPPLY AIR GRILLE

Restrictions and Limitations

Given the location of the press bays within the building, the contractor elected to:

- position the ventilation equipment along the outer wall
- install exhaust and fresh air ducts along the length of the press room bays

Design Solution

Based on the requirements in terms of system sizing, air change rate, number of exhaust points and duct layout, two Venmar HRV1200i units were recommended for this project, with two additional exhaust fans with a capacity of 500 cfm each. This provided:

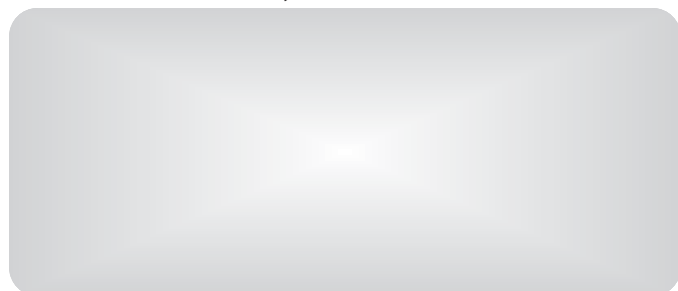
- the cfm requirements of each bay
- two-speed controls (high and low)
- the energy savings of an HRV system in place of simple exhaust

The Results

Adequate ventilation of the press bays has alleviated the problem of offensive fumes produced by the inks, solvents, and other solutions used in the printing process.

- Employees enjoy a healthier and more pleasant working environment
- Retail customers are more inclined to return
- The system provided the required ventilation while generating savings of 52% on operating costs (annual savings of \$3,738 based on normal operating costs of \$7,160 a year for a system without heat recovery)

For more information, contact:



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