

Guidelines written for leak-free A/C

by Bob LaCrosse



NRCNA recently finalized and released new guidelines for roof-mounted outdoor air conditioner installations. The guidelines have been published in a 24-page pamphlet that is small enough to fit easily in a back pocket. The publication is the result of two years of work by technical representatives from NRCA, the Air Conditioning and Refrigeration Institute (ARI) and the Sheet Metal and Air Conditioning Contractors National Association (SMACNA).

The pamphlet describes good construction practices for the interface between the roof and the air conditioning units or their piping, electrical wiring or sheet metal duct work where these elements pass through the roof. Guidelines are provided for curbs, roof penetrations and sealings. The information is not intended to serve as a standard, warranty or certification, however.

In practice, the guidelines will supplement the air conditioning unit manufacturer's specific installation instructions. The pamphlet will give general advice, while the specific requirements of each installation will depend on the circumstances, job conditions and manufacturer's specifications. For more detailed information, the guidelines refer users to *The NRCA Roofing & Waterproofing Manual*, the *SMACNA Architectural Sheet Metal Manual*, HVAC Duct Construction Standards and the National Electrical Code.

Groups meet to study problems

The development of the pamphlet was prompted by the frequent occurrence of leaks in rooftop air conditioning unit housings. In 1982, representatives of ARI were asked to meet with the NRCA Technical Operations Committee to review and discuss the problem. As the representatives of the two groups examined the situation, they found that:

- curbing is normally installed by the mechanical contractor before the roofing is applied; however, the actual air conditioning equipment is not in place before the roofing is installed;
- generally, the curbing used is not provided by the equipment manufacturer, and problems in curbing design or assembly sometimes make waterproofing impossible;
- design problems usually appear within the first few months after installation, while problems caused by abuse or damage show up much later; and

Guidelines For Roof Mounted Outdoor Air-Conditioner Installations



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Air-Conditioning and
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- in the majority of cases where leaking units were installed because the equipment manufacturers were unaware of the problems, roofing contractors were the first ones called to make the necessary repairs.

To improve this situation, ARI and NRCA formed a joint technical liaison committee. The committee prepared text and details for roof-mounted equipment curb criteria, unit installations, external connections (which included exterior duct closures and connections to equipment), electrical piping and drains.

Because of the importance of the duct details, SMACNA was invited to assist in finalizing the document.

The final document, printed in pamphlet form, represents the combined expertise of NRCA, ARI and SMACNA. I believe that by following the guidelines contained in this pamphlet, workers will be able to avoid the roof leaks that have resulted in the past from improper air conditioner installation.